



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Overview



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



This eight-week module focuses on a “science and society” topic, engaging students in reading compelling informational text about adolescent brain development and the effects of entertainment screen time on the brain. In Unit 1, students first read various texts that will build their background knowledge about adolescent brain development in general. Their learning will center around three areas of the brain, namely the prefrontal cortex, the limbic system, and the developing neurons. Students determine main ideas and evidence in diverse media and clarify their learning about this complex content. Then they begin to focus on the issue of screen time and how it may affect teenagers. In Unit 2, they begin to read argument texts. They trace arguments and evaluate the soundness of reasoning and the sufficiency and relevancy of evidence in the texts and media that they engage with in this unit. They dive deeper into first the potential benefits and then the potential risks of screen time by participating in a robust research project. To organize their research sources and information, students use a researcher’s notebook. Then students conduct Internet-based research. Throughout Unit 2, students engage in many conversations to synthesize and clarify their learning.

To help students grapple with this issue, the second half of Unit 2 introduces students to a modified decision-making process called Stakeholder Consequences Decision-Making (see the end of this document for details). This process will help students understand the implications of various choices and will scaffold their ability to determine, based on evidence and their own values, what they themselves believe should happen. Unit 3 marks the transition from research to writing as students plan and draft a position paper, addressing the question: “*After examining both the potential benefits and risks of entertainment screen time, particularly to adolescent development, make a recommendation. Should the AAP raise the recommended daily entertainment screen time from two hours to four hours?*” Students have several opportunities for feedback and revision during this unit. As a final performance task, students publish and share a visual representation of their position paper. **This task centers on NYSP12 ELA CCLS RI.7.1, W.7.1, W.7.4, and L.7.6.**

Guiding Questions and Big Ideas

- **How is the adolescent brain changing?**
- **Should screen time be limited? Why or why not?**
- **How can I make an informed decision about an issue and then effectively argue my position?**
- *The teenage brain is in a period of dynamic growth and change that is unique to this stage of life.*
- *Researchers wonder how screen time affects the development of adolescents.*
- *Effective arguments include sound, relevant, and sufficient evidence.*



Performance Task

Visual Representation of Position Paper

This performance task gives students a chance to demonstrate the ideas and evidence of their AAP recommendation position papers in a multimedia format. Students will be crafting and sharing a visual representation of their position papers, including their claim, reasons, and evidence based on their research and the decision-making process in Unit 2. **This task addresses NYSP12 ELA CCLS RI.7.1, W.7.1, W.7.4, and L.7.6.**

Content Connections

This module is designed to address English Language Arts standards as students read informational texts about adolescent brain development. This ELA module is designed to expose students to informational text from various sources and encourage the interaction with texts through multiple modalities (e.g. books, articles, electronic, digital). However, this ELA module does not supplant the regular science curriculum and instructional program at the local level aligned to the NYS Learning Standards in Science for this grade level. The informational text in this module intentionally incorporates Science concepts and themes to support potential cross-standards connections to this compelling content. These intentional connections are described below.

NYS Learning Standards in Science:

Intermediate-Level Science Core Curriculum Guide Grades (5-8) <http://www.p12.nysed.gov/ciai/mst/sci/documents/intersci.pdf>

Standard 4: The Living Environment

Key Idea 1: Living Things are both similar to and different from each other and from nonliving things.

Performance Indicators 1.1; Major Understandings 1.1e, 1.1g, 1.1h

Performance Indicators 1.2; Major Understanding 1.2h

Key Idea 4: The continuity of life is sustained through reproduction and development.

Performance indicator 4.3 Major Understanding 4.3c

Big ideas and guiding questions are informed by the Next Generation Science Standards:

Science and Engineering Practices

The eight practices of science and engineering that the Framework identifies as essential for all students to learn and describes in detail are listed below:

8. Obtaining, evaluating, and communicating information

<http://www.nextgenscience.org/sites/ngss/files/Appendix%20F%20%20Science%20and%20Engineering%20Practices%20in%20the%20NGSS%20-%20FINAL%20060513.pdf>



CCS Standards: Reading—Literature	Long-Term Learning Targets
<ul style="list-style-type: none"> RI.7.1. Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. 	<ul style="list-style-type: none"> I can cite several pieces of text-based evidence to support an analysis of informational text.
<ul style="list-style-type: none"> RI.7.2. Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text. 	<ul style="list-style-type: none"> I can determine a theme or the central ideas informational text. I can analyze the development of central ideas in a text.
<ul style="list-style-type: none"> RI.7.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone. 	<ul style="list-style-type: none"> I can determine the meaning of words and phrases in text (figurative, connotative, and technical meanings). I can analyze the impact of word choice on meaning and tone in an informational text.
<ul style="list-style-type: none"> RI.7.5. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas. 	<ul style="list-style-type: none"> I can analyze the organization of an informational text (including how the major sections contribute to the whole and to the development of the ideas).
<ul style="list-style-type: none"> RI 7.7. Compare and contrast a text to an audio, video, or multimedia version of the text, analyzing each medium's portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words). 	<ul style="list-style-type: none"> I can compare and contrast different media versions of informational text (written vs. audio vs. film vs. staged, etc.). I can analyze impact of the techniques unique to each medium.
<ul style="list-style-type: none"> RI.7.8. Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims. 	<ul style="list-style-type: none"> I can identify the argument and specific claims in a text. I can evaluate the argument and specific claims in a text for sound reasoning and relevant, sufficient evidence.
<ul style="list-style-type: none"> RI.7.9. Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts. 	<ul style="list-style-type: none"> I can contrast how multiple authors emphasize evidence or interpret facts differently when presenting information on the same topic.
<ul style="list-style-type: none"> RI.7.10. By the end of the year, read and comprehend literary nonfiction in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range. 	<ul style="list-style-type: none"> I can read grade-level informational texts proficiently and independently. I can read above-grade-level texts with scaffolding and support.



CCS Standards: Writing	Long-Term Learning Targets
<ul style="list-style-type: none">W.7.1. Write arguments to support claims with clear reasons and relevant evidence.<ul style="list-style-type: none">a. Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically.b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence.d. Establish and maintain a formal style.e. Provide a concluding statement or section that follows from and supports the argument presented.	<ul style="list-style-type: none">I can write arguments to support claims with clear reasons and relevant evidence.
<ul style="list-style-type: none">W.7.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)	<ul style="list-style-type: none">I can produce clear and coherent writing that is appropriate to task, purpose, and audience.
<ul style="list-style-type: none">W.7.5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.	<ul style="list-style-type: none">With support from peers and adults, I can use a writing process to ensure that purpose and audience have been addressed.
<ul style="list-style-type: none">W.7.7. Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.	<ul style="list-style-type: none">I can conduct short research projects to answer a question.I can use several sources in my research.I can generate additional questions for further research.



CCS Standards: Writing	Long-Term Learning Targets
<ul style="list-style-type: none">W.7.8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	<ul style="list-style-type: none">I can gather relevant information from a variety of sources.I can use search terms effectively.I can evaluate the credibility and accuracy of each source.I can quote or paraphrase others' work while avoiding plagiarism.I can use a standard format for citation.
<ul style="list-style-type: none">W.7.9. Draw evidence from literary or informational texts to support analysis, reflection, and research.<ul style="list-style-type: none">a. Apply grade 7 Reading standards to literary nonfiction (e.g., "Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims").	<ul style="list-style-type: none">I can select evidence from literary or informational texts to support analysis, reflection, and research.
<ul style="list-style-type: none">W.7.10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	<ul style="list-style-type: none">I can adjust my writing practices for different timeframes, tasks, purposes, and audiences.

CCS Standards: Speaking and Listening	Long-Term Learning Targets
<ul style="list-style-type: none">SL.7.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.<ul style="list-style-type: none">a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.e. Seek to understand other perspectives and cultures and communicate effectively with audiences or individuals from varied backgrounds.	<ul style="list-style-type: none">I can effectively engage in discussions with diverse partners about seventh-grade topics, texts, and issues.I can express my own ideas clearly during discussions.I can build on others' ideas during discussions.



CCS Standards: Speaking and Listening	Long-Term Learning Targets
<ul style="list-style-type: none">• SL.7.2. Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.	<ul style="list-style-type: none">• I can analyze the main ideas and supporting details presented in different media and formats.• I can explain how ideas presented in different media and formats clarify a topic, text, or issue.
<ul style="list-style-type: none">• SL.7.3. Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.	<ul style="list-style-type: none">• I can outline a speaker's argument and specific claims.• I can evaluate the reasoning and evidence presented for soundness, relevance, and sufficiency.
<ul style="list-style-type: none">• SL.7.4. Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.	<ul style="list-style-type: none">• I can present claims and findings with descriptions, facts, details, and examples.• I can use effective speaking techniques (appropriate eye contact, adequate volume, and clear pronunciation).
<ul style="list-style-type: none">• SL.7.5. Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.	<ul style="list-style-type: none">• I can include multimedia components and visual displays in a presentation to clarify claims and to add emphasis.
<ul style="list-style-type: none">• SL.7.6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.	<ul style="list-style-type: none">• I can adapt my speech for a variety of contexts and tasks, using formal English when indicated or appropriate.



CCS Standards: Language	Long-Term Learning Targets
<ul style="list-style-type: none">• L.7.4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.<ul style="list-style-type: none">a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., <i>belligerent</i>, <i>bellicose</i>, <i>rebel</i>).c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).	<ul style="list-style-type: none">• I can use a variety of strategies to determine the meaning of unknown words or phrases.
<ul style="list-style-type: none">• L.7.6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.	<ul style="list-style-type: none">• I can accurately use seventh-grade academic vocabulary to express my ideas.• I can use resources to build my vocabulary.



Central Texts

1. Scholastic Inc. and National Institute on Drug Abuse, “Teens and Decision Making: What Brain Science Reveals,” in *New York Times Upfront* (Vol. 140, Issue 13), April 14, 2008, 18.
2. Richard Knox, “The Teen Brain: It’s Just Not Grown Up Yet,” National Public Radio, March 1, 2010, as found at <http://www.npr.org/templates/story/story.php?storyId=124119468>.
3. Linda Bernstein, “What’s Going On in Your Brain?” in *Current Health* (Vol. 32, Issue 6), Feb. 2006, 20.
4. Judy Willis, “What You Should Know about Your Brain,” in *Educational Leadership* (Vol. 67, Issue 4), 2009.
5. Adriana Galván, “Insights into the Teen Brain” (video), TedxYouth@Caltech, Jan. 19, 2013, as found at <http://tedxtalks.ted.com/video/Insight-Into-the-Teenage-Brain;search:tag:tedxyouth-caltech>.
6. Tara Parker-Pope, Jon Huang, and Mike Mason, “The Child’s Developing Brain,” interactive feature on NYTimes.com, Sept. 15, 2008, as found at <http://www.nytimes.com/interactive/2008/09/15/health/20080915-brain-development.html>.
7. Jay N. Giedd, M.D., “Development of the Young Brain” (video), National Institute of Mental Health, May 2, 2011, as found at <http://www.nimh.nih.gov/news/media/video/giedd.shtml>.
8. Joshua Brustein, Matt Richtel, and Erik Olsen, “Students and Technology, Constant Companions,” interactive feature on NYTimes.com, Nov. 20, 2010, as found at <http://www.nytimes.com/interactive/2010/11/21/technology/20101121-brain-interactive.html?ref=technology>.
9. Jay N. Giedd, M.D., “The Digital Revolution and Adolescent Brain Evolution,” in *Journal of Adolescent Health* (Vol. 51, Issue 2), Aug. 2012, 101–105.
10. Matt Richtel, “Growing Up Digital,” in *Scholastic New York Times Upfront*, Jan. 31, 2011, as found at http://teacher.scholastic.com/scholasticnews/indepth/upfront/this_issue/index.asp?article=013111_digital
11. Justin O’Neill, “You Trouble,” in *Scholastic Choices*, Sept. 2012.
12. Victor C. Strasburger and Marjorie J. Hogan, “Policy Statement: Children, Adolescents, and the Media,” in *Pediatrics* (Vol. 132, Issue 5), Nov. 2013, 958.



Central Texts (continued)

13. David Brooks, “Beyond the Brain” in *The New York Times*, June 18, 2003, A25.
14. Nicholas Carr and Peter Norvig, “Is Google Making Us Stupid?” in *New York Times Upfront* (Vol. 143, Issue 3), Oct. 4, 2010, 22.
15. Peter Gray, “The Many Benefits, for Kids, of Playing Video Games,” *Psychology Today* online, Jan. 7, 2012, as found at <http://www.psychologytoday.com/blog/freedom-learn/201201/the-many-benefits-kids-playing-video-games>.
16. Jane McGonigal, “Gaming Can Make a Better World” (video), Ted Talks, Feb. 2010, as found at http://www.ted.com/talks/jane_mcgonigal_gaming_can_make_a_better_world.html.
17. Queensland University of Technology, “Video Games Benefit Children, Study Finds.”, Medical Xpress, Jan. 16, 2013, as found at <http://medicalxpress.com/news/2013-01-video-games-benefit-children.html>.
18. Sy Mukherjee, “Why Facebook Could Actually Be Good for Your Mental Health,” ThinkProgress, March 19, 2013, as found at <http://thinkprogress.org/health/2013/03/19/1737701/facebook-your-mental-health/>.
19. Aric Sigman, “The ONLINE EDUCA Debate 2009 (Part 2 of 10)” (video), Dec. 2009, as found at <http://www.youtube.com/watch?v=GRi4DPu6WGc>.
20. Matt Richtel, “Attached to Technology and Paying a Price,” in *The New York Times*, June 7, 2010, A1.
21. Heidi St. Clair, “Can You Unplug for 24 Hours?” The Huffington Post, March 22, 2012, as found at http://www.huffingtonpost.com/heidi-sinclair/national-day-of-unplugging_b_1373187.html.
22. Margaret Desler, M.D., “Guest Opinion: Step Away from the Screen,” *Contra Costa Times*, May 2, 2013.
23. Jeffrey Brown, Nicholas Carr, and Mathew Kielty. “Nicholas Carr’s ‘The Shallows: What the Internet is Doing to Our Brains’”. PBS News Hours, August 27, 2010, as found at <http://www.pbs.org/newshour/art/blog/2010/08/conversation-nicholas-carrs-the-shallows-what-the-internet-is-doing-to-our-brains.html>.
24. Various research sources (beginning in Unit 2, Lesson 9).



Week	Instructional Focus	Long-Term Targets	Assessments
Unit 1: Building Background Knowledge: Development of the Adolescent Brain			
Weeks 1–2	<ul style="list-style-type: none"> • Building background knowledge about adolescent brain development • Read various informational sources on the brain development of adolescents. • Introduce Domain-Specific Vocabulary anchor chart • Introduce the Brain Development anchor chart • Listening for main ideas and supporting details • Start Thinking Log and neurologist's notebooks 	<ul style="list-style-type: none"> • I can cite several pieces of text-based evidence to support an analysis of literary text. (RL.7.1) • I can determine a theme or the central ideas of informational text. (RI.7.2) • I can analyze the development of central ideas in a text. (RI.7.2) • I can determine the meaning of words and phrases in text (figurative, connotative, and technical meanings). (RI.7.4) • I can analyze the organization of an informational text (including how the major sections contribute to the whole and to the development of the ideas). (RI.7.5) • I can compare and contrast different media versions of informational text (written vs. audio vs. film vs. staged, etc.). (RI.7.7) • I can analyze impact of the techniques unique to each medium. (RI.7.7) • I can analyze the main ideas and supporting details presented in different media and formats. (SL.7.2) • I can explain how ideas presented in different media and formats clarify a topic, text, or issue. (SL.7.2) 	<ul style="list-style-type: none"> • Mid-Unit 1: “The Development of the Young Brain”: Listening for Main Ideas and Supporting Details (SL.7.2 and RI. 7.7)



Week	Instructional Focus	Long-Term Targets (continued)	Assessments
Weeks 1-2, continued		<ul style="list-style-type: none"> I can accurately use seventh-grade academic and domain-specific vocabulary to express my ideas. (L.7.6) 	
	<ul style="list-style-type: none"> Continue building background knowledge of adolescent development and how it is affected by screen time. Launch independent reading. 	<ul style="list-style-type: none"> I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1) I can analyze the development of central ideas in a text. (RI.7.2) I can analyze the organization of an informational text (including how the major sections contribute to the whole and to the development of the ideas). (RI.7.5) I can explain how ideas clarify a topic, text, or issue. (SL.7.2) I can self-select a text based on personal preferences and read it independently. (RI.7.11a) 	<ul style="list-style-type: none"> End of Unit 1: Analyzing the Main Idea and Supporting Details in “You Trouble” (RI. 7.1, RI.7.2, RI. 7.5, RI. 7.6, L7.6)



Week	Instructional Focus	Long-Term Targets	Assessments
Unit 2: Research Study: The Effects of Screen Time on the Developing Brain			
Weeks 3–7	<ul style="list-style-type: none"> • Introduce Evaluating an Argument anchor chart • Trace the arguments of several informational texts • Listen for arguments in informational videos • Compare and contrast authors' use of evidence in several different text pairings • Start research on the effects of entertainment screen time on the adolescent brain, including teaching the following skills: <ul style="list-style-type: none"> – Evaluating the credibility of sources – Generating supporting research questions – Quoting or paraphrasing others' work • Introduce the researcher's notebook and researcher's roadmap 	<ul style="list-style-type: none"> • I can identify the argument and specific claims in a text. (RI.7.8) • I can evaluate the argument and specific claims in a text for sound reasoning and relevant, sufficient evidence. (RI.7.8) • I can explain how ideas clarify a topic, text, or issue. (SL.7.2) • I can outline a speaker's argument and specific claims. (SL.7.3) • I can evaluate the reasoning and evidence presented for soundness, relevance, and sufficiency. (SL.7.3) • I can analyze the interactions between individuals, events, and ideas in a text. (RI.7.3) • I can contrast how multiple authors emphasize evidence or interpret facts differently when presenting information on the same topic. (RI.7.9) • I can evaluate the credibility and accuracy of each source. (W.7.8) • I can conduct short research projects to answer a question. (W.7.7) • I can generate additional questions for further research. (W.7.7) 	



Week	Instructional Focus	Long-Term Targets (continued)	Assessments
Weeks 3-7, continued		<ul style="list-style-type: none"> I can gather relevant information from a variety of sources. (W.7.8) I can use a variety of strategies to determine the meaning of unknown words or phrases. (L.7.4) 	
	<ul style="list-style-type: none"> Practice comparing authors' use of evidence Continue gathering information on the effects of screen time on the developing brain. Use search terms effectively Conduct Internet-based research Use dictionaries to confirm or revise inferred meanings of words. 	<ul style="list-style-type: none"> I can contrast how multiple authors emphasize evidence or interpret facts differently when presenting information on the same topic. (RI.7.9) I can conduct short research projects to answer a question. (W.7.7) I can generate additional questions for further research. (W.7.7) I can gather relevant information from a variety of sources. (W.7.8) I can use search terms effectively. (W.7.8) I can evaluate the credibility and accuracy of each source. (W.7.8) I can quote or paraphrase others' work while avoiding plagiarism. (W.7.8) I can use a variety of strategies to determine the meaning of unknown words or phrases. (L.7.4) 	<ul style="list-style-type: none"> Mid-Unit 2, Part I: Tracing and Evaluating Arguments (RI.7.8, SL.7.3) Mid-Unit 2, Part II: Research Task: Comparing and Contrasting Texts (RI.7.9, W.7.7, W.7.8, L.7.4c, L.7.4d)



Week	Instructional Focus	Long-Term Targets	Assessments
Weeks 3-7, continued	<ul style="list-style-type: none"> • Introduce the decision-making process including Cascading Consequences chart and Comparing Risks and Benefits chart • Weighing the evidence: Fishbowl discussion on whether or not the recommended time should change • Creating a visual display for a presentation • Formal presentations of claims about whether the AAP should raise the recommended daily entertainment screen time from two hours to four hours. 	<ul style="list-style-type: none"> • I can write arguments to support claims with clear reasons and relevant evidence. (W.7.1) • I can select evidence from literary or informational texts to support analysis, reflection, and research. (W.7.9) • I can use my experience and knowledge of language and logic, as well as culture, to think analytically, address problems creatively, and advocate persuasively. (RI.7.9a and SL.7.2a) • I can come to discussions prepared to refer to evidence on the topic, text, or issue that probes and reflects on ideas under discussion. (SL.7.1 and SL.7.1a) • I can present claims and findings with descriptions, facts, details, and examples, using effective speaking techniques (appropriate eye contact, adequate volume, and clear pronunciation). (SL.7.4) • I can present claims and findings with descriptions, facts, details, and examples. (SL.7.4) • I can include multimedia components and visual displays in a presentation to clarify claims and to add emphasis. (SL.7.5) • I can adapt my speech for a variety of contexts and tasks, using formal English when indicated or appropriate. (SL.7.6) 	<ul style="list-style-type: none"> • End of Unit 2 Assessment: Making a Claim about Recommended Screen Time (Part I: SL.7.1, SL.7.1a, SL.7.1e; Part II: SL.7.3a, SL.7.4, SL.7.5, SL.7.6, and RI.7.9a)



Week	Instructional Focus	Long-Term Targets	Assessments
Unit 3: Performance Task			
Weeks 7–8	<ul style="list-style-type: none"> Analyze model position paper for argument and structure Plan position paper using Screen Time Recommendation Position Paper Planner Introduce Steps to Writing a Position Paper anchor chart Engage in peer feedback to strengthen argument in position papers. Cite sources correctly Draft the position paper 	<ul style="list-style-type: none"> I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1) I can identify the argument and specific claims in a text. (RI.7.8) I can evaluate the argument and specific claims in a text for sound reasoning and relevant, sufficient evidence. (RI.7.8) I can write arguments to support claims with clear reasons and relevant evidence. (W.7.1) I can produce clear and coherent writing that is appropriate to task, purpose, and audience. (W.7.4) With support from peers and adults, I can use a writing process to ensure that purpose and audience have been addressed. (W.7.5) I can use a standard format for citation. (W.7.8) I can select evidence from literary or informational texts to support analysis, reflection, and research. (W.7.9) I can accurately use seventh-grade academic vocabulary to express my ideas. (L.7.6) I can use resources to build my vocabulary. (L.7.6) 	<ul style="list-style-type: none"> Mid-Unit 3: First Draft of Position Paper (RI.7.1, W.7.1a,b,e, W.7.4, W.7.9)



Week	Instructional Focus	Long-Term Targets	Assessments
Weeks 7-8, continued	<ul style="list-style-type: none"> • Create final independent reading product • Revise position paper based on teacher feedback • Reflect on the steps to writing a position paper • Craft visual representation of position paper • Publish visual representations and share with class in a Gallery Walk 	<ul style="list-style-type: none"> • I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1) • I can use established criteria to make informed judgments about the quality of texts, and interpret texts artistically. (RL.7.11b) • I can write arguments to support claims with clear reasons and relevant evidence. (W.7.1) • I can produce clear and coherent writing that is appropriate to task, purpose, and audience. (W.7.4) • With support from peers and adults, I can use a writing process to ensure that purpose and audience have been addressed. (W.7.5) • I can accurately use seventh-grade academic vocabulary to express my ideas. (L.7.6) • I can use resources to build my vocabulary. (L.7.6) 	<ul style="list-style-type: none"> • Final independent reading product (RL.7.11b, RI.7.10, W.7.9) • End of Unit 3 Assessment: Final Draft of Position Paper and Reflection on the Writing Process (RI.7.1, W.7.1c,d, W.7.4, W.7.5, and L.7.6)



Preparation and Materials

This module centers on compelling science content that is not usually taught in an English Language Arts classroom. It is not designed to replace science instruction; rather, it is designed as an opportunity for students to engage in a compelling topic and research rich informational texts as they master the English Language Arts standards. This module satisfies the demands of the CCLS for more rigorous, informational texts that prepare students for college and career. The students read authentic, research-based texts and build knowledge about cutting-edge research in a topic that is personally meaningful.

For your reference, a reading guide has been provided that summarizes the major learning and skills that students will learn from each text. To familiarize yourself with the complex content of this module, first preview the American Academy of Pediatrics Recommendation (which students read in Unit 2) and all of the Unit 1 texts and videos in advance. You may want to read “The Digital Revolution and the Evolution of the Adolescent Mind” by Dr. Jay Giedd in its entirety (found here: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3432415/>) as it thoroughly explains the current research and thinking of screen time and adolescence. You may also find an interview with Dr. Giedd (found here: <http://www.youtube.com/watch?v=2nEBVtPmeCQ>) to be useful. For more general information on the developing teen brain, *PBS Frontline* published an excellent series of videos (found here: <http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/>) that will help build your own background knowledge about this exciting field of research.

Next, read the argument texts from Unit 2. Note that all of the texts center on *entertainment* screen time, an important distinction in the AAP recommendation. In practice, the line between entertainment and education screen time can be blurry, but Unit 2 tries to focus students on digital activities that are most clearly entertainment, i.e., video games and social media.

Because Units 1 and 2 are foundational for the position paper the students write at the end of the module, familiarize yourself with the writing prompt and the model from Unit 3. This will help you direct discussion of the texts in Units 1 and 2, and in particular, the “if/then” statements that the class will add to the Brain Development anchor chart. Although there is much rich information in the readings in Units 1 and 2, the students will write more successfully if you can direct them to the most high-leverage information.

A simple Internet search will yield many more sources if you want to build more background for yourself before you lead students to a deeper understanding of the development of the teenage brain.

A colleague in your science department may also be a good resource, both in terms of content knowledge and attack strategies for reading and writing science-based texts. Consider sharing the readings with your science colleague and discussing the best way to support students in reading about scientific content. You may also want to write your own position paper in response to the prompt in Unit 3 and then share it with your science colleague. Ask him or her for feedback specific to this genre of writing.



Preparation and Materials (continued)

In advance, read the article about the Stakeholder Consequences Decision-Making (SCDM) process to build your own background knowledge about it. You can download the article “Learning to Make Systematic Decisions” at the following URL:

http://education.nationalgeographic.com/education/media/learning-make-systematicdecisions/?ar_a=1

The article is not used with students during the module, but it provides some examples of how students have used this process in a science curriculum. Also, note that in this module, students are not using the entire SCDM process; they will be learning only the Cascading Consequences chart and a modified Stakeholders chart (named Comparing Risks and Benefits chart in this module).

Students do not read a “central” text (book) in this module. Rather, they read a large collection of articles, all of which are provided in the supporting materials of the lessons themselves. It will be particularly important in this module that you have a strong system to help students keep their texts organized. Consider creating a packet of the texts for each unit, or using a folder system.



Unit and Lesson	Text	Content	Literacy Skill
Unit 1: Lesson 1, Lesson 2, Lesson 3	“Teens and Decision Making: What Brain Science Reveals”	This text helps students build background on the brain and more specifically how it works during adolescence. It provides a concise overview of the major learning around the prefrontal cortex, the limbic system, and the developing neurons.	This text helps students identify and analyze the main idea. (RI.7.2, RI.7.1.) It also helps build domain-specific vocabulary. (L.7.4)
Unit 1: Lesson 1 Homework	“The Teen Brain: It’s Just Not Grown Up Yet”	This text helps students build background on the how the brain works during adolescence. It provides this information against the backdrop of the story of a mother and her two sons.	This text helps students identify and analyze the main idea. (RI.7.2, RI.7.1.) It also helps build domain-specific vocabulary. (L.7.4)
Unit 1: Lesson 2 Homework	“What’s Going On in Your Brain?”	This text helps students build background on the brain and more specifically how it works during adolescence. It reinforces much of the information they have read before but does so in an accessible way.	This text helps students identify and analyze the main idea. (RI.7.2, RI.7.1.) It also helps build domain-specific vocabulary. (L.7.4)
Unit 1: Lesson 3	“The Child’s Developing Brain”	This interactive feature helps students visualize the changes occurring in the developing brain.	The students will compare this interactive feature to a text-only version of the information. (RI.7.7)
Unit 1: Lesson 3 Homework	“What You Should Know about Your Brain”	This text helps students build background on the brain and more specifically the role that dopamine plays in the brain. This entire article is available for an extension activity.	This text helps students identify and analyze the main idea. (RI.7.2, RI.7.1.) It also helps build domain-specific vocabulary. (L.7.4)
Unit 1: Lesson 4	“Insights Into the Teen Brain”	The video continues to build students background knowledge about the adolescent brain and in particular, presents findings about the limbic system.	This video helps students identify and analyze the main idea presented in media (SL.7.2) and compare a video to a text. (RI.7.7)
Unit 1: Lesson 5	“The Development of the Young Brain”	This video introduces the students to the issue of digital media (or screen time) and its possible effects on the developing brain.	This video assesses students’ progress toward SL.7.2.



Unit and Lesson	Text	Content	Literacy Skill
Unit 1: Lessons 6–8	Excerpts of “The Digital Revolution and the Evolution of the Adolescent Mind”	This text helps students explore the effects of digital media on the developing brain.	This text helps students identify and analyze the main idea. (RI.7.2, RI.7.1.) It also helps build domain-specific vocabulary. (L.7.4). Through its complexity, it helps build students’ capacity for rigorous text.
Unit 1: Lesson 6-9	“Students and Technology, Constant Companions.”	This multimedia feature illustrates the issues explored in “The Digital Revolution and the Evolution of the Adolescent Mind.” It is also highly engaging.	This text helps students identify and analyze the main idea. (RI.7.2 and SL.7.2)
Unit 1: Lesson 9	“Growing Up Digital”	This text uses case studies to discuss the concerns adults have for children under modern digital influence. It also illustrates the issues in a concrete and engaging way.	This text helps students identify and analyze the main idea. (RI.7.2, RI.7.1.) It also helps build domain-specific vocabulary. (L.7.4).
Unit 1: Lesson 10	“You Trouble”	This text discusses the potential pitfalls of making videos for, and placing videos on, YouTube.	End of Unit 2 Assessment: assesses RI.7.1, RI.7.2, RI.7.5 (structure of text), and command of domain-specific vocabulary. (L.7.4)
Unit 2: Lesson 1	“Policy Statement: Children, Adolescents, and the Media”	This text is an authentic, real-world text that reviews research and describes the reasoning behind the AAP recommendation.	This text helps students analyze the interactions between individuals, events, and ideas in a text (RI.7.3), and evaluate the credibility and accuracy of each source. (W.7.8)



Unit and Lesson	Text	Content	Literacy Skill
Unit 2: Lesson 2	"Beyond the Brain"	This text urges caution in interpreting brain science results. It makes a case to use a cautionary tone when one takes a position on brain science.	This text helps students identify the argument and specific claims in a text, and evaluate the argument and specific claims in a text for sound reasoning and relevant, sufficient evidence. (RI.7.8)
Unit 2: Lesson 3	"Is Google Making Us Stupid?"	The text asks Nicholas Carr and the vice president of research at Google to debate the "yes/no" sides of the question suggested by the title.	This text helps students outline a speaker's argument and specific claims; evaluate the reasoning and evidence presented for soundness, relevance, and sufficiency. (SL.7.3); and identify and then evaluate an argument and specific claims in a text for sound reasoning and relevant, sufficient evidence. (RI.7.8)
Unit 2: Lesson 4	"The Many Benefits, for Kids, of Playing Video Games"	The text lists detailed reasons why children and video games are a good match in terms of education, learning, and social development.	This text helps students conduct short research projects to answer a question, and generate additional questions for further research. (W.7.7)
Unit 2: Lesson 5	"Gaming Can Make a Better World"	This video makes the argument that games are a fertile ground for the creative thinking that can solve worldwide problems.	This video helps students outline a speaker's argument and specific claims; evaluate the reasoning and evidence presented for soundness, relevance, and sufficiency (SL.7.3); and identify and then evaluate an argument and specific claims in a text for sound reasoning and relevant, sufficient evidence. (RI.7.8)



Unit and Lesson	Text	Content	Literacy Skill
Unit 2: Lesson 6	"Video Games Benefit Children, Study Finds."	In this text, Australian researchers determine a difference between "active" and "passive" screen times to make a case that video games are a better use of screen time.	This text helps students contrast how multiple authors emphasize evidence or interpret facts differently when presenting information on the same topic. (RI.7.9)
Unit 2: Lesson 7	"Why Facebook Could Actually Be Good for Your Health"	This text cites research to show that Facebook can act as a kind of reminiscent therapy, boosting positive thoughts.	This text helps students identify the argument and specific claims in a text, and evaluate the argument and specific claims in a text for sound reasoning and relevant, sufficient evidence. (RI.7.8)
Unit 2: Lesson 7	"The ONLINE EDUCA Debate 2009 (Part 2 of 10)"	The speaker, a developmental psychologist, presents evidence that screen time is negatively correlated with face-to-face and social interactions in children.	This text helps students outline a speaker's argument and specific claims, evaluate the reasoning and evidence presented for soundness, relevance, and sufficiency. (SL.7.3); and identify and then evaluate an argument and specific claims in a text for sound reasoning and relevant, sufficient evidence. (RI.7.8)
Unit 2: Lesson 8	"Attached to Technology and Paying a Price"	In this text, the author documents a family's ambivalent interaction with technology, citing research.	This text helps students identify the argument and specific claims in a text, and evaluate the argument and specific claims in a text for sound reasoning and relevant, sufficient evidence. (RI.7.8)
Unit 2: Lessons 11 and 12	"Can You Unplug for 24 Hours?"	The author, a technological expert, cites the antisocial aspects of technology and anecdotally describes how her family meets this challenge.	End of Unit 2 Assessment: assesses identifying argument, claim, evidence, and evaluating all three (RI.7.8) and comparing how two authors write about the same topic. (RI.7.9)



Unit and Lesson	Text	Content	Literacy Skill
Unit 2: Lessons 11 and 12	"Guest Opinion: Step Away from the Screen"	The author, a pediatrician, cites the correlations between screen time and decreasing creativity and obesity.	End of Unit 2 Assessment: assesses identifying argument, claim, evidence, and evaluating all three (RI.7.8) and comparing how two authors write about the same topic. (RI.7.9)
Unit 2: Lessons 11 and 12	"Nicholas Carr's 'The Shallows: What the Internet is Doing to Our Brains'".	In this video, the author sums up the reasons that being on the Internet contributes to distractibility and shallow thinking.	End of Unit 2 Assessment: assesses delineating a speaker's argument and specific claims, evaluates the reasoning and evidence presented for soundness, relevance, and sufficiency. (SL.7.3);



EXPEDITIONARY
LEARNING

Grade 7: Module 7M4A: Assessment Overview



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Note: As each unit is written, often assessments are revised. Use this document as a general guideline. But be sure to refer to each specific unit overview document for the most correct and complete write-ups of each assessment.

Final Performance Task	Visual Representation of Position Paper This performance task gives students a chance to demonstrate the ideas and evidence of their AAP recommendation position papers in a multimedia format. Students will be crafting and sharing a visual representation of their position papers, including their claim, reasons, and evidence based on their research and the decision-making process in Unit 2. This task addresses NYSP12 ELA CCLS RI.7.1, W.7.1, W.7.4, and L.7.6.
Mid-Unit 1 Assessment	“The Development of the Young Brain”: Listening for Main Idea and Supporting Details This assessment centers on NYSP12 ELA CCLS RI.7.7 and SL.7.2. Students will analyze the main idea and details in the video “Development of the Young Brain,” which features Dr. Jay Giedd, a prominent researcher in the field of adolescent neurobiology. They will also compare a portion of the video to the transcript of the video.
End of Unit 1 Assessment	Analyzing the Main Idea and Supporting Details in “You Trouble” This assessment centers on NYSP12 ELA CCLS RI.7.1, RI 7.2, RI.7.5, RI.7.6, and L.7.6. Students will analyze the main idea and supporting ideas in a text that links digital media, brain development, and adolescent behavior by filling out the same chart they have been practicing throughout Unit 1. They also will answer selected response questions about author purpose (RI.7.6), vocabulary (L.7.6), text structure (RI.7.5) and text-based evidence (RI.7.1).



Mid-Unit 2 Assessment	<p>This is a two-part assessment. Both Parts 1 and 2 share one reading, “Can You Unplug for 24 Hours?” Each part also includes additional video or text.</p> <p>Part I: Tracing and Evaluating Arguments</p> <p>Part 1 of this assessment centers on NYSP12 ELA CCLS RI.7.8 and SL.7.3. Students will watch a video, read a related text, and then trace and evaluate the arguments of both pieces.</p> <p>Part II: Research Task: Comparing and Contrasting Texts</p> <p>Part 2 of this assessment centers on NYSP12 ELA CCLS RI.7.9, W.7.7, W.7.8, L.7.4c, and L.7.4d. Students will answer selected response and short constructed response questions about two related texts and the research process. Then they compare and contrast the arguments of both pieces.</p>	
End of Unit 2 Assessment	<p>Making a Claim about the AAP Recommended Screen Time</p> <p>This assessment has two parts. Part 1 centers on NYSP12 ELA CCLS SL.7.1, SL.7.1a, and SL.7.1e. Students engage in a Fishbowl discussion of the two possible answers to the question: “Should the AAP raise its recommended daily screen time from two hours to four hours?” Part 2 of the assessment centers on NYSP12 ELA CCLS SL.7.3a, SL.7.4, SL.7.5, SL.7.6, and RI.7.9. Students individually present their position in answer to the same question they discussed in Part 1. They will craft and use a visual aid to support their oral presentation.</p>	



Mid-Unit 3 Assessment	First Draft of Position Paper This assessment centers on NYSP12 ELA CCLS RI.7.1, W.7.1a, b, e, W.7.4, and W.7.9. Students will write their best first draft of their position paper in which they craft a claim based on their research and using reasons, evidence, and sound reasoning to form an argument. Students will write in response to this prompt: “You are part of the Children and Media Expert Advisory Committee. Your job is to help the American Academy of Pediatrics revisit the recommendation that children older than 2 should spend no more than two hours a day on entertainment screen time. After examining both the potential benefits and risks of entertainment screen time, particularly to adolescent development, make a recommendation. Should the AAP raise its recommended daily entertainment screen time from two hours to four hours?”	
End of Unit 3 Assessment	Final Draft of Position Paper and Reflection on the Writing Process This assessment has two parts. In Part 1, students turn in their final revised, edited position paper, which is assessed for NYSP12 ELA CCLS RI.7.1, W.7.1c, d, W.7.4, and L.7.6. In Part 2, students reflect on the ways in which the steps of writing their position paper helped improve and strengthen their writing. They do this by responding to questions and using evidence from their own work including the essay planner, feedback forms, first draft, and final draft of their paper. Part 2 focuses on NYSP12 ELA CCLS W.7.5.	



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Performance Task



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Summary of Task

- This performance task gives students a chance to demonstrate the ideas and evidence of their AAP recommendation position papers in a multimedia format. Students will be crafting and sharing a visual representation of their position papers, including their claim, reasons, and evidence based on their research and the decision-making process in Unit 2. **This task addresses NYSP12 ELA CCLS RI.7.1, W.7.1, W.7.4, and L.7.6.**

Format

The format is a visual representation of the position paper on large paper or poster board.

Students will include their claim, reasons, and evidence from their position paper.

Students will plan their visual representation using a template.

Final visual presentations will be shared in a Gallery Walk.

Standards Assessed through This Task

- R1.7.1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- W.7.1. Write arguments to support claims with clear reasons and relevant evidence.
- **W.7.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.**
- **L.7.6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.**



Student-Friendly Writing Invitation/Task Description

Your task is to translate your thinking about the effects of screen time on adolescent brain development into visual images. You will create a visual representation of your argument from your position paper. To do so, you will use your claim and at least three of your key reasons and pieces of evidence. You will then select images that represent your key pieces of evidence and organize them on a page or poster, using either paper and markers or a computer. Your images should be engaging and “speak for themselves,” although you may also use words and phrases. You will share your performance task with the rest of the class in a classroom Gallery Walk.

Key Criteria for Success (Aligned with NYSP12 ELA CCLS)

Below are key criteria students need to address when completing this task. Specific lessons during the module build in opportunities for students to understand the task, plan their visual representation, and share their final product.

Your visual representation of the position paper will include:

- Your claim that you made in your position paper
- The reasons you used to support your claim
- Evidence from your position paper that supports your reasons and claim
- Images to support your argument
- A layout that makes your visual representation easy to read and follows your argument
- Domain-specific vocabulary



Options for Students

- Students will create their posters individually. They will primarily base their visual representation on their position paper; however, they may also be looking back at their Brain Development anchor charts, researcher's notebooks, Cascading Consequences charts, Comparing Risks and Benefits charts, and their Position Paper Planners.
- Students might have a partner to assist as they work on their visual representations, but the final version will be an individual's product.
- Students' visual representations might be laid out differently.
- Students may draw their images rather than use existing images.
- Students could participate in a hosted Gallery Walk, where they move around the room in a group and, when they come to their own visual representation, they explain it to other students in their group.

Options for Teachers

- Students may share their visual representations with their own class, with other classes in the school, with parents or other adults, or in a community center or public library.
- Students may create a digital visual representation. These could be posted on an internal school Web site or, with parental permission, posted on a publicly accessible Web site.

Resources and Links

- <http://www.compfight.com/> (a way to search for images at Flickr The Commons)
- <http://search.creativecommons.org/> (a site to search for images with licenses to reuse)
- <http://www.edsocialmedia.com/2010/10/get-students-to-care-about-copyright/> (for your reference)

Central Text and Informational Texts

See Unit 3 Overview.



EXPEDITIONARY
LEARNING

Grade 7: Module 4A

Recommended Texts



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



The list below includes texts with a range of Lexile® text measures about the adolescent brain, technology, and the impact of technology use on the brain. This provides appropriate independent reading for each student to help build content knowledge about the topic.

It is imperative that students read a high volume of texts at their reading level in order to continue to build the academic vocabulary and fluency demanded by the CCLS.

Note that districts and schools should consider their own community standards when reviewing this list. Some texts in particular units or modules address emotionally difficult content.

Common Core Band Level Text Difficulty Ranges:

(As provided in the NYSED Passage Selection Guidelines for Assessing CCSS ELA)

- Grades 2–3: 420–820L
- Grades 4–5: 740–1010L
- Grades 6–8: 925–1185L

Where possible, texts in languages other than English are also provided. Texts are categorized into three Lexile measures that correspond to Common Core Bands: below grade band, within band, and above band. Note, however, that Lexile® measures are just one indicator of text complexity, and teachers must use their professional judgment and consider qualitative factors as well. For more information, see Appendix 1 of the Common Core State Standards.

Title	Author and Illustrator	Text Type	Lexile Measure
Lexile text measures in Grades 2–3 band level (below 740L)			
<i>Yourspace: Questioning News Media</i>	Heather E. Schwartz (author)	Informational	690
<i>The Brain: A Graphic Novel Tour</i>	Joeming Dunn (author); Rod Espinosa (illustrator)	Informational	725* GN

*Lexile based on a conversion from Accelerated Reading level.



Title	Author and Illustrator	Text Type	Lexile Measure
Lexile text measures in Grades 4–5 band level (740–925L)			
<i>A Corner of the Universe</i>	Ann M. Martin (author)	Literature	750
<i>Virtually True: Questioning Online Media</i>	Guofang Wan (author)	Informational	750
<i>The Astounding Nervous System: How Does My Brain Work?</i>	John Burstein (author)	Informational	770
<i>Walk Two Moons</i>	Sharon Creech (author)	Informational	770
<i>A Smart Kid's Guide to Social Networking Online</i>	David J. Jakubiak (author)	Informational	790*
<i>Confessions of a So-Called Middle Child</i>	Maria T. Lennon (author)	Literature	840*
<i>The Brain: Our Nervous System</i>	Seymour Simon (author)	Informational	900
<i>Freaking Out! The Science of the Teenage Brain</i>	Dana Meachen Rau (author)	Informational	900
<i>R U In? Using Technology Responsibly</i>	Brian Lester (author)	Informational	940*

*Lexile based on a conversion from Accelerated Reading level.



Title	Author and Illustrator	Text Type	Lexile Measure
Lexile text measures within Grades 6–8 band level (925–1185L)			
<i>The Misfits</i>	James Howe (author)	Literature	960‡
<i>Freak the Mighty</i>	Rodman Philbrick (author)	Literature	1000
<i>Friend Me! Six Hundred Years of Social Networking in America</i>	Francesca Davis Dipiazza (author)	Informational	1040
<i>What Goes On in My Head?</i>	Robert Winston (author)	Informational	1060*
<i>Managing Your Digital Footprint</i>	Robert Grayson (author)	Informational	1090*
Lexile text measures above band level (over 1185L)			
<i>Social Networking: The Ultimate Teen Guide</i>	Jennifer Obee (author)	Informational	No LXL
<i>The Owner's Manual for Driving Your Adolescent Brain</i>	JoAnn Deak and Terrence Deak (authors); Freya Harrison (illustrator)	Informational	No LXL

*Lexile based on a conversion from Accelerated Reading level;

Lexile® is a trademark of MetaMetrics, Inc., and is registered in the United States and abroad. Copyright © 2013 MetaMetrics

‡Book content may have higher-maturity-level text



Web Sites to Support Research

<http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/view/>

<http://www.news.com.au/lifestyle/parenting/is-technology-damaging-teen-brains/story-fnet08ui-1226467121484>

http://articles.washingtonpost.com/2013-03-13/news/37675597_1_teens-cellphones-video-games

<http://www.npr.org/2013/10/20/238095806/when-playing-video-games-means-sitting-on-lifes-sidelines>

<http://www.psychologytoday.com/blog/health-matters/201006/the-teenagers-brain>

<http://harvardmagazine.com/2008/09/the-teen-brain.html>

http://www.nytimes.com/2010/06/07/technology/07brainside.html?_r=0

<http://www.pbs.org/newshour/rundown/2011/01/miles-obrien-teen-brains-on-technology.html>

<http://science.howstuffworks.com/life/teenage-brain3.htm>

http://ngm.nationalgeographic.com/2011/10/teenage-brains/dobbs-text?rptregcta=reg_free_np&rptregcampaign=20131016_rw_membership_r1p_us_se_w#close-modal (may need to register with National Geographic)

<http://online.wsj.com/news/articles/SB10001424052970203806504577181351486558984>

<http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/>

<http://www.loni.ucla.edu/~thompson/MEDIA/WP/wp1.html>



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Overview



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Unit 1: Building Background Knowledge: Development of the Adolescent Brain

In this first unit, students are introduced the development of the adolescent brain. They first will learn the basic biology of the brain, focusing on three key aspects of brain development: the prefrontal cortex, the limbic system, and changing neurons. Through a variety of sources, including text, video, and interactive Web sites, they learn that the adolescent brain is growing in a dynamic and unique way. With each source, they will practice analyzing the main idea and supporting details. They also will compare how the same ideas are presented in text and visual formats. This prepares them for their mid-unit assessment, which centers on analyzing the main idea in a video and comparing the video to a text (SL.7.2 and RI.7.7).

After the mid-unit assessment, students will begin to examine more specifically, the effects of screen time on the developing brain. They will grapple with a challenging text, which will help them examine the possible positive and negative effects of being “plugged in.” Through carefully designed close readings, students will continue to analyze the main idea and supporting details presented in this text while building their stamina and capacity for a complex text. To help personalize these difficult concepts, in each lesson students will return to an audio slideshow where they hear the voices of students who are immersed in the digital world. Then they read a profile of a student who typifies the positives and negative effects of being “plugged in.” For the end of unit assessment, students will analyze the main idea and supporting ideas in a text that links digital media, brain development, and adolescent behavior (RI.7.1, RI.7.5, and RI.7.6).

Guiding Questions and Big Ideas

- **How is the adolescent brain changing?**
- **Should screen time be limited? Why or why not?**
- **How can I make an informed decision about an issue and then effectively argue my position?**
- *The teenage brain is in a period of dynamic growth and change that is unique to this stage of life.*
- *Behavior shapes the physical structure of the brain, and the physiology of the brain affects behavior.*
- *Researchers wonder how screen time affects the development of adolescents.*



Mid-Unit 1 Assessment	<p>“The Development of the Young Brain”: Listening for Main Idea and Supporting Details</p> <p>This assessment centers on NYSP12 ELA CCLS RI.7.7 and SL.7.2. Students will analyze the main idea and details in the video “Development of the Young Brain,” which features Dr. Jay Giedd, a prominent researcher in the field of adolescent neurobiology. They will also compare a portion of the video to the transcript of the video.</p>
End of Unit 1 Assessment	<p>Analyzing the Main Idea and Supporting Details in “You Trouble”</p> <p>This assessment centers on NYSP12 ELA CCLS RI.7.1, RI 7.2, RI.7.5, RI.7.6, and L.7.6. Students will analyze the main idea and supporting ideas in a text that links digital media, brain development, and adolescent behavior by filling out the same chart they have been practicing throughout Unit 1. They also will answer selected response questions about author purpose (RI.7.6), vocabulary (L.7.6), text structure (RI.7.5) and text-based evidence (RI.7.1).</p>



Content Connections

This module is designed to address English Language Arts standards as students read informational texts about adolescent brain development. This ELA module is designed to expose students to informational text from various sources and encourage the interaction with texts through multiple modalities (e.g. books, articles, electronic, digital). However, this ELA module does not supplant the regular science curriculum and instructional program at the local level aligned to the NYS Learning Standards in Science for this grade level. The informational text in this module intentionally incorporates Science concepts and themes to support potential cross-standards connections to this compelling content. These intentional connections are described below.

NYS Learning Standards in Science:

Intermediate-Level Science Core Curriculum Guide Grades (5-8) <http://www.p12.nysed.gov/ciai/mst/sci/documents/intersci.pdf>

Standard 4: The Living Environment

Key Idea 1: Living Things are both similar to and different from each other and from nonliving things.

Performance Indicators 1.1; Major Understandings 1.1e, 1.1g, 1.1h

Performance Indicators 1.2; Major Understanding 1.2h

Key Idea 4: The continuity of life is sustained through reproduction and development.

Performance indicator 4.3 Major Understanding 4.3c

Big ideas and guiding questions are informed by the Next Generation Science Standards:

Science and Engineering Practices

The eight practices of science and engineering that the Framework identifies as essential for all students to learn and describes in detail are listed below:

8. Obtaining, evaluating, and communicating information

<http://www.nextgenscience.org/sites/ngss/files/Appendix%20F%20%20Science%20and%20Engineering%20Practices%20in%20the%20NGSS%20-%20FINAL%20060513.pdf>



Texts
1. Scholastic Inc. and National Institute on Drug Abuse, “Teens and Decision Making: What Brain Science Reveals,” in New York Times Upfront (Vol. 140, Issue 13), April 14, 2008, 18.
2. Richard Knox, “The Teen Brain: It’s Just Not Grown Up Yet,” National Public Radio, March 1, 2010, as found at http://www.npr.org/templates/story/story.php?storyId=124119468 .
3. Linda Bernstein, “What’s Going On in Your Brain?” in Current Health (Vol. 32, Issue 6), Feb. 2006, 20.
4. Tara Parker-Pope, Jon Huang, and Mike Mason, “The Child’s Developing Brain,” interactive feature on NYTimes.com, Sept. 15, 2008, as found at http://www.nytimes.com/interactive/2008/09/15/health/20080915-brain-development.html .
5. Judy Willis, “What You Should Know about Your Brain,” in Educational Leadership (Vol. 67, Issue 4), 2009.
6. Adriana Galván, “Insights into the Teen Brain” (video), TedxYouth@Caltech, Jan. 19, 2013, as found at http://tedxtalks.ted.com/video/Insight-Into-the-Teenage-Brain;search:tag:tedxyouth-caltech .
7. Jay N. Giedd, M.D., “Development of the Young Brain” (video), National Institute of Mental Health, May 2, 2011, as found at http://www.nimh.nih.gov/news/media/video/giedd.shtml .
8. Joshua Brustein, Matt Richtel, and Erik Olsen, “Students and Technology, Constant Companions,” interactive feature on NYTimes.com, Nov. 20, 2010, as found at http://www.nytimes.com/interactive/2010/11/21/technology/20101121-brain-interactive.html?ref=technology .
9. Jay N. Giedd, M.D., “The Digital Revolution and Adolescent Brain Evolution,” in Journal of Adolescent Health (Vol. 51, Issue 2), Aug. 2012, 101–105.
10. Matt Richtel, “Growing Up Digital,” in Scholastic New York Times Upfront, Jan. 31, 2011, as found at http://teacher.scholastic.com/scholasticnews/indepth/upfront/this_issue/index.asp?article=013111_digital .
11. Justin O’Neill, “You Trouble,” in Scholastic Choices, Sept. 2012.



This unit is approximately 2 weeks or 10 sessions of instruction.

Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
Lesson 1	Introducing Module 4A: This is Your Brain-Plugged In	<ul style="list-style-type: none"> I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1) I can determine a theme or the central ideas of informational text. (RI.7.2) I can analyze the organization of an informational text (including how the major sections contribute to the whole and to the development of the ideas). (RI.7.5) I can analyze the main ideas and supporting details presented in different media and formats. (SL.7.2) 	<ul style="list-style-type: none"> I can analyze photos, videos, and quotes to find a main idea. I can determine important ideas in the article “Teens and Decision Making.” I can analyze the basic structure of an informational text. 	<ul style="list-style-type: none"> Notices and Wonders note-catcher 	<ul style="list-style-type: none"> Domain-Specific Vocabulary anchor chart Gallery Walk protocol
Lesson 2	Identifying Main Ideas and Supporting Details: What’s Going on in the Teenage Brain?	<ul style="list-style-type: none"> I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1) I can use a variety of strategies to determine the meaning of unknown words or phrases. (L.7.4) I can determine the meaning of words and phrases in text (figurative, connotative, and technical meanings). (RI.7.4) 	<ul style="list-style-type: none"> I can determine the main idea and supporting ideas/details in “Teens and Decision Making” I can determine the meaning of unknown technical words. 	<ul style="list-style-type: none"> Neurologist notebook #1 (from homework) Thinking Logs 	<ul style="list-style-type: none"> Brain Development anchor chart Domain-Specific Vocabulary anchor chart



Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
Lesson 3	Comparing Text to Multimedia: Understanding How the Brain Changes	<ul style="list-style-type: none"> I can compare and contrast different media versions of informational text (written vs. audio vs. film vs. staged, etc.). (RI.7.7) I can analyze impact of the techniques unique to each medium. (RI.7.7) I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1) 	<ul style="list-style-type: none"> I can compare a text-only version of “The Child’s Developing Mind” to the multimedia version of that text. I can analyze the impact of the techniques unique to text and multimedia. I can analyze the main idea and supporting details in “Teens and Decision Making.” 	<ul style="list-style-type: none"> Neurologist’s notebook #2 (from homework) Neurologist’s notebook #3 “The Child’s Developing Mind”: Comparing Text to Multimedia 	<ul style="list-style-type: none"> Brain Development anchor chart
Lesson 4	Analyzing the Main Idea in Video: Understanding the Limbic System	<ul style="list-style-type: none"> I can analyze the main ideas and supporting details presented in different media and formats. (SL.7.2) I can explain how ideas presented in different media and formats clarify a topic, text, or issue. (SL.7.2) I can analyze impact of the techniques unique to each medium. (RI.7.7) I can adjust my writing practices for different timeframes, tasks, purposes, and audiences. (W.7.10) 	<ul style="list-style-type: none"> I can analyze the main ideas and supporting idea/details in “Insight into the Teenage Brain.” I can explain how the different aspects of a presentation contribute to my understanding. I can explain how ideas presented in “Insight into the Teenage Brain” clarify my understanding of the brain. I can summarize the main idea and supporting details in a well-explained paragraph. 	<ul style="list-style-type: none"> Thinking Logs 	<ul style="list-style-type: none"> Domain-Specific Vocabulary anchor chart Brain Development anchor chart
Lesson 5	Mid-Unit Assessment: Development of the Young Brain	<ul style="list-style-type: none"> I can compare and contrast different media versions of informational text. (RI. 7.7) I can analyze impact of the techniques unique to each medium. (RI.7.7) I can analyze the main ideas and supporting details presented in different media and formats. (SL. 7.2) I can explain how ideas presented in different media and formats clarify a topic, text or issue. (SL. 7.2) 	<ul style="list-style-type: none"> I can analyze the main idea and supporting ideas/details in “Development of the Young Brain.” I can compare the text and video of “Development of the Young Brain.” I can explain how the ideas presented in the video clarify my understanding of the adolescent brain. 	<ul style="list-style-type: none"> Homework: Summarizing Main Idea and Supporting Details (from Lesson 4) Mid-Unit 1 Assessment Analyzing the Main Idea and Supporting Details: Partner Practice 	



Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
Lesson 6	Close Reading: Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution”	<ul style="list-style-type: none"> I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1) I can determine a theme or the central ideas of informational text. (RI.7.2) I can read above-grade-level texts with scaffolding and support. (RI.7.10) I can use a variety of strategies to determine the meaning of unknown words or phrases. (L.7.4) 	<ul style="list-style-type: none"> I can determine the main idea of Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution.” I can use a variety of strategies to figure out the meaning of new vocabulary. I can read above-grade-level texts with support. 	<ul style="list-style-type: none"> Homework: Summarize Your Learning (from Lesson 5) Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution” text-dependent questions 	<ul style="list-style-type: none"> Domain-Specific Vocabulary anchor chart Brain Development anchor chart
Lesson 7	Close Reading: Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution”	<ul style="list-style-type: none"> I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1) I can read above-grade-level texts with scaffolding and support. (RI.7.10) I can use a variety of strategies to determine the meaning of unknown words or phrases. (L.7.4) I can analyze the organization of an informational text (including how the major sections contribute to the whole and to the development of the ideas). (RI.7.5) 	<ul style="list-style-type: none"> I can identify text-based evidence that does or does not support the main idea of an informational text. I can read “The Digital Revolution and the Adolescent Brain Evolution” with support. I can analyze photos, video, and quotes to find a main idea. 	<ul style="list-style-type: none"> Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution” text-dependent questions Thinking Logs 	<ul style="list-style-type: none"> Brain Development anchor chart
Lesson 8	Close Reading: Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution”	<ul style="list-style-type: none"> I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1) I can read above-grade-level texts with scaffolding and support. (RI.7.10) I can use a variety of strategies to determine the meaning of unknown words or phrases. (L.7.4) 	<ul style="list-style-type: none"> I can determine the main idea in Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution.” I can use a variety of strategies to figure out the meaning of new vocabulary. I can read above-grade-level texts with support. 	<ul style="list-style-type: none"> Homework: Excerpt 4 of “The Digital Revolution and the Adolescent Brain Evolution” Excerpt 4 text-dependent questions Thinking Logs 	<ul style="list-style-type: none"> Brain Development anchor chart Domain-Specific Vocabulary anchor chart Quiz-Quiz-Trade protocol



Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
Lesson 9	Analyzing Main Ideas and Supporting Details: “Growing Up Digital”	<ul style="list-style-type: none"> I can determine a theme or the central ideas of an informational text. (RI.7.2) I can analyze the development of a theme or central idea throughout the text. (RI.7.2) I can cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. (RI.7.1) 	<ul style="list-style-type: none"> I can analyze “Growing Up Digital” to determine its central ideas and evidence, and how they relate to each other. 	<ul style="list-style-type: none"> Text-Dependent Questions: “Growing Up Digital” Reflection Grid 	
Lesson 10	End of Unit Assessment: Analyzing an Informational Text	<ul style="list-style-type: none"> I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1) I can determine a theme or the central ideas in informational text. (RI.7.2) I can analyze the organization of an informational text (including how the major sections contribute to the whole and to the development of the ideas). (RI.7.5) I can acquire and use accurately grade-appropriate general academic and domain-specific words and phrases. (L.7.4) 	<ul style="list-style-type: none"> I cite several pieces of text-based evidence to support an analysis of the text “You Trouble.” I can analyze the organization of “You Trouble.” I can acquire and use accurately grade-appropriate general academic and domain-specific words and phrases in “You Trouble.” 	<ul style="list-style-type: none"> End of Unit 1 Assessment 	



Optional: Experts, Fieldwork, and Service

Experts:

- Invite a local researcher, psychologist, neurologist, or pediatrician to talk to the students about recent findings in the field of adolescent development.
- Invite a local business person to talk about the role of technology in the workplace and its effects on productivity.
- Invite a principal to talk about the pros and cons of integrating technology into the school.

Fieldwork:

- Visit an fMRI research lab or scan center to see the neurological and brain imaging research first-hand.
- Visit a public space to monitor the use of digital devices and the way technology affects the interactions between individuals.

Service:

- Invite students to share their learning with community members or peers with a goal of educating their community about adolescent brain development through a pamphlet or visual display.

Optional: Extensions

- Students could create a poster or presentation for their peers about the development of the teen brain and effective habits for caring for the growing brain.
- Students could spend a week “screen free” and write a journal on their experience (this extension could also be done alongside Unit 2).
- Students could write a short story centered on one of the individuals from the audio slideshow featured in Lessons 6–8. Then they could write an author’s note that explains how they used the character’s actions to illustrate their knowledge of the developing brain and how it may affect teenager behavior. They may also use the characters to illustrate the issues surrounding screen time. Unit 3 of Module 3A has lessons specifically designed to help students write a short story. They could be adapted for this activity.
- Students could return to some of the texts from past modules to analyze the characters in light of their brain development. For example, students may explain how the characters’ behavior reflects an underdeveloped prefrontal cortex or a propensity to seek novel information and thrills. Module 1, 2A, and 2B are particularly suited to this task.
- Students could reflect on their own behavior and how it does or does not support their learning regarding adolescent brain development.



Preparation and Materials

Learning about the Science Content

Unit 1 focuses on the adolescent brain development. This is content that historically has not been taught in the English Language Arts classroom. See Module Overview for recommendations regarding what to read in advance in order to build your own background knowledge. Be sure you have familiarized yourself with the texts in Unit 2. This will be helpful as you decide what information found in the background texts to emphasize.

A note of caution: Students may misinterpret the texts to say that because their brains are developing, they have no control over their actions. For example, they may misunderstand that because they have an underdeveloped prefrontal cortex they *will* make bad decisions or because their limbic system matures first they *cannot help* seeking out thrills and engaging in risky behavior. Additionally, they may misunderstand “developing” as “defective” and believe that somehow their brains are not capable. Decide in advance how you will address these misunderstandings, if need be. Many of the texts have a concluding section that directly address this misunderstanding, and spending enough time on the texts will ensure that students get this nuanced information. Also, creating a classroom climate where students are encouraged to discuss their learning will help you surface and address any misinformation.

This unit includes a number of routines:

1. Neurologist’s notebook

Along with their reading, students will keep a neurologist’s notebook: a note-catcher to get the gist, main idea, and supporting idea/details. This neurologist’s notebook will help students analyze the text and practice RI.7.1 and RI.7.2. It will also hold their new background knowledge about adolescent brain development, which serves as the foundation for their research later in the module. The neurologist’s notebook often involves domain-specific vocabulary work, and this is where students will hold important definitions related to neuroscience.

You will find the neurologist’s notebook in the supporting materials section of each lesson in which they are assigned. Consider preparing the neurologist’s notebook as a packet in advance. Or set up a place (such as a folder) for students to keep their completed neurologist’s notebook so they can return to them as needed for comprehension. Consider collecting the neurologist’s notebook occasionally to check for completion and informally assess students’ understanding.



2. Thinking Log

Starting in Lesson 2, students also use a Thinking Log frequently to synthesize their understanding of adolescent brain development. In contrast to the neurologist's notebook, which helps hold students' learning, the Thinking Logs help students process their learning and react to the information. They also serve to scaffold the skills required by SL.7.2, with a particular focus on explaining "how the ideas clarify a topic, text, or issue under study."

The Thinking Log has space for each lesson where its use is planned in both Units 1 and 2 of this module. Both units are included in the same packet so that students have a place to record and reflect on their understanding of adolescent brain development as they continue to read, watch videos, and research about the topic. Be sure to have a place where students can easily store and retrieve their Thinking Logs.

The entire Thinking Log is in the supporting materials of Lesson 2. Prepare the Thinking Log as a packet for each student. In Lesson 4, collect the Thinking Log to check students' ability to clarify a topic. After that, consider collecting the Thinking Log periodically to check students' understanding of the issue.

3. Brain Development anchor chart

The class will track their learning around three major areas of brain development: the prefrontal cortex, the limbic system, and the pruning and branching neurons. These ideas appear in nearly all the texts in Unit 1. Students will work on an identical "student version" of the anchor chart for their own reference.

The last column on the chart—titled "So what?"—is a major piece of scaffolding for the position paper in Unit 3. Modeling "if/then" statements and then asking the students to practice creating "if/then" statements will help them immensely as they begin to reason out the evidence for their position paper. Continue this practice into Unit 2. Consider the needs of your students as you support them in creating arguments based on this complex material.

As with any anchor chart, the teacher model is provided as a guide, but the specific anchor chart your class creates should reflect the class discussion.

Consider how you will display the anchor chart. Projecting it on a document camera will facilitate adding information to the chart, but having it displayed on chart paper in the classroom will be an important resource for your struggling students.



4. Independent reading

This unit assumes that you have launched an independent reading program with your students before. There is time allotted in Lesson 6 for the students to choose their independent reading book for this module. See the Recommended Texts list in the Module Overview for a list of titles that are thematically linked with this module. Also, see two separate stand-alone documents on EngageNY.org: **The Importance of Increasing the Volume of Reading** and **Launching Independent Reading in Grades 6–8: Sample Plan**, which together provide the rationale and practical guidance for a robust independent reading program. Once students have all learned how to select books and complete the reading log, it takes less class time. After the launch period, the independent reading routine takes about 15 minutes every other week, with an additional day near the end of a unit or module for students to review and share their books. Unit 2 includes time to maintain the independent reading routine (calendared into the lessons) but does not set a particular routine. As you support students in setting and meeting independent reading goals, encourage them to be done with their books by Unit 3, Lesson 5.

Routines and Professional Judgment

Review these documents before you launch the unit and decide which method of organizing these assignments and checking homework will work best for you and your students. The recommended approach, described above, reduces the amount of paper that students are handling and gives them feedback on homework partway through the routine.

You may need to modify this plan to meet the needs of your students. Your routine should allow you to look closely at students' work several days into the homework routine to make sure they are on track.

Your routine also needs to allow students to use the neurologist's notebook and Thinking Logs in class daily and to keep track of them.

This unit, and the units that follow, include instructions for pacing and timing of lessons, oral presentation of material to students, and method of grading assessments. All of these instructions, however, are subject to the knowledge and best professional judgment of teachers about your content area, classroom, school, students, and larger community.



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 1

Introducing Module 4A: This Is Your Brain— Plugged In



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1)

I can determine a theme or the central ideas of informational text. (RI.7.2)

I can analyze the organization of an informational text (including how the major sections contribute to the whole and to the development of the ideas). (RI.7.5)

I can analyze the main ideas and supporting details presented in different media and formats. (SL.7.2)

Supporting Learning Targets

- I can analyze photos, videos, and quotes to find a main idea.
- I can determine important ideas in the article “Teens and Decision Making.”
- I can analyze the basic structure of an informational text.

Ongoing Assessment

- Notices and Wonders note-catcher



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Entry Task (8 minutes)B. Reviewing Learning Targets (2 minutes)2. Work Time<ol style="list-style-type: none">A. Gallery Walk (10 minutes)B. “Teens and Decision Making” (20 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Introducing the Neurologist’s Notebook (5 minutes)4. Homework<ol style="list-style-type: none">A. Read “The Teen Brain—It’s Just Not Grown Up Yet” and use the questions that are to the right of the text to help you synthesize your learning. Fill out neurologist’s notebook #1.	<ul style="list-style-type: none">• This lesson introduces students to Module 4A: This Is Your Brain—Plugged In. Students consider a short video and then participate in a modified Gallery Walk to preview and connect the learning that will follow in future lessons.• The Gallery Walk protocol has been modified, since its purpose here is to pique interest and curiosity, not to share text-based information. Students carefully and silently study the display of video and images, and then record observations and questions to help build background knowledge, foster community, and spark curiosity. Building background knowledge in this way promotes equity, since it “levels the playing field” for students—no matter what level of knowledge students have about the topic when they walk in, all get to learn before sharing with peers. Some of the Gallery Walk items are suggestions; se your judgment about which items to post.• The success of this lesson depends on building suspense and piquing students’ interest. Therefore, do not give away too much information about the module, its texts, or its themes until the class has completed the Gallery Walk.• Students will revisit the Gallery Walk in Lesson 7, as they think back on what they have learned in Unit 1 and what questions they still have that will inform their research in Unit 2. In Lesson 7, students will again use their Notices and Wonders note-catcher from this lesson; be sure they have a place to keep the completed note-catcher until then, or consider keeping the note-catchers for the class and returning them during Lesson 7.• This lesson ends with a read-aloud of one of the building background knowledge texts for this module. Students will return to this text in Lessons 2 and 3. Today they will focus on noticing the structure specifically. This will help them use the structure of the informational texts they read later in the unit to help them determine meaning (RI.7.5).• Throughout the unit, students will use a variety of strategies, both in class and as homework, to process new vocabulary, including a Domain-Specific Vocabulary anchor chart, which is introduced here in Lesson 1.



Agenda	Teaching Notes (continued)
	<ul style="list-style-type: none">• For homework, the students will read a text and complete their first entry in their neurologist’s notebook, which they will come back to throughout the unit. The neurologist’s notebook, which captures main ideas and supporting details, focuses on RI.7.2 and helps to scaffold toward the necessary skills for SL.7.2. Because this is the fourth module of the year and the fourth time students have completed readers’ notes of this kind, students should be able to grapple with these notes on their own. In Lesson 3 you will have a chance to address any misunderstandings.• In the neurologist’s notebook the terms “supporting idea” and “supporting detail” are used interchangeably. This is intentional. Although “detail” is the more common term, in many of the texts they read, students must synthesize many facts together to articulate the supporting idea. The word “idea” is there to signal that it should be a summation of evidence and not just one fact.• Collecting the neurologist’s notebook each day will allow for ongoing formative assessment. Answers for teacher reference will accompany each neurologist’s notebook entry in this unit. Look for this document in the supporting materials immediately following the neurologist’s notebook.• This lesson focuses on SL.7.2 and RI.7.2: students interact with different media and texts to find main ideas, supporting ideas, and details. SL.7.2 is a new standard and will be emphasized throughout Unit 1.• In advance:<ul style="list-style-type: none">– Read the building background knowledge texts that will be used throughout Unit 1 (see Unit 1 Overview).– Prepare the Gallery Walk:<ul style="list-style-type: none">• Most items are for display around the room (on chart paper or taped to the wall)—some items are images and others are quotes.• Post or place the items in a way that will allow students to move freely and comfortably from one item to the next.• Item 1 is a short video, which students will watch together as a class. In Lesson 7, you will display it on a computer.– Review the Gallery Walk protocol (see Appendix).• Post: Learning targets.



Lesson Vocabulary	Materials
main idea, neurological development, central idea, supporting details; (from “Teens and Decision Making”) neurons (para. 3), electrochemical impulse (para. 3), neurotransmitters, (para. 3) prefrontal cortex (para. 6), limbic system (para. 6); (from homework) neurologist, pediatric neurologist, neuroscientists, frontal lobes, myelin or “white matter,” neural insulation, brain chemistry, cognitive deficits, cognitive baseline	<ul style="list-style-type: none">• Notices and Wonders note-catcher (one per student)• “I Forgot My Phone” (video; http://www.youtube.com/watch?v=OINa46HeWg8)• Digital projector• Gallery Walk items (for teacher reference; print and post items in advance)• Domain-Specific Vocabulary anchor chart (new; teacher-created)• “Teens and Decision Making: What Brain Science Reveals” (one per student)• Model Domain-Specific Vocabulary anchor chart (for teacher reference)• Informational Text Structure Map graphic organizer (one per student and one to display)• Document camera• Informational Text Structure Map graphic organizer (model, for teacher reference)• Neurologist’s notebook #1 (one per student)• “Teen Brain—It’s Just Not Grown Up Yet”: Text and Questions (one per student)• Neurologist’s notebook #1 (answers; for teacher reference)



Opening	Meeting Students' Needs
<p>A. Entry Task (8 minutes)</p> <ul style="list-style-type: none"> • Tell students that today they will participate in a Gallery Walk, during which they will listen to and examine diverse media (images, quotes, video) to better understand what this module will be about. • Distribute the Notices and Wonders note-catcher. Explain that during the Gallery Walk today, students should write anything they observe or that is new or interesting in the Notices column. Remind them this is not a space for judging the materials or giving their opinion. Rather, it is a space for observations. They also may find some of the information surprising or may have questions that are not answered in the image or quote. They can write these questions in the Wonders column. Tell them they also should try to figure out what they will learn about in this new module. • Explain they are going to practice using the note-catcher together once as a class. During the Gallery Walk they will be doing this activity in silence. • Play the video “I Forgot My Phone” at http://www.youtube.com/watch?v=OINa46HeWg8 with a digital projector. The video is about 2 minutes long. • Give students a few minutes to record their ideas on their Notices and Wonders note-catcher. • Ask students to turn and talk with a partner: <ul style="list-style-type: none"> * “What did you notice?” * “What did you wonder?” 	<ul style="list-style-type: none"> • Allowing students to discuss with a partner before writing or sharing with the whole class is a low-stress strategy to help them process in a risk-free situation. • Checking in with learning targets helps students self-assess their learning. This research-based strategy supports struggling learners most.
<p>B. Reviewing Learning Targets (2 minutes)</p> <ul style="list-style-type: none"> • Refocus whole class. Ask a student to read the first learning target aloud: <ul style="list-style-type: none"> * “I can analyze photos, videos, and quotes to find a main idea.” • Ask students to turn and talk with a different partner: <ul style="list-style-type: none"> * “What do you think the <i>main idea</i> of this video is?” * “Based on the entry task, what do you think might be a main idea of the module?” • Tell students that as they participate in the Gallery Walk and listen to and examine diverse media (images, quotes, video), they will better understand what this module will be about. 	



Work Time	Meeting Students' Needs
<p>A. Gallery Walk (10 minutes)</p> <ul style="list-style-type: none">• Review the Gallery Walk protocol with students as needed. Remind them of the norms for moving calmly around the room and moving to those images, quotes, and video where there are fewer classmates. Divide the class into small groups.• Give directions: Students will spend about 8 minutes silently wandering to each image, quote, or the video and writing down what they notice and what they wonder. They may linger at an item if they feel a need to do so. They need not worry about getting to all of them. Invite students to play the multimedia feature, which should already be on the class computer screen. Tell them that this feature runs about 2 minutes, but they do not have to stay for the whole 2 minutes.• Ask each small group to bring their Notices and Wonders note-catchers and a pen or pencil and stand by one of the Gallery Walk items.• Invite students to begin the Gallery Walk. Circulate to listen in and clarify procedures as needed. If all groups are working smoothly, consider participating in this step and writing your own Notices and Wonders.• After 8 minutes, invite students to sit and finish writing their thoughts. Focus them on the space at the bottom of the handout, where they can add to their initial thinking.• Refocus the whole group. Starting with Notices, allow students to “popcorn” discuss any of the ideas they have written down.• Repeat with Wonders, inviting students to discuss the questions that they have after the Gallery Walk.• Ask students to think silently about this question:<ul style="list-style-type: none">* “What might the module be about?”• Have them turn and talk with their partner and share their idea.• Next, cold call students to share initial ideas and thoughts on what the module will be about.• Give students specific positive feedback for ways you saw them working well during the Gallery Walk or the discussion. Congratulate them for being willing to ask questions and think about information presented in diverse media; point out that this is something they will do a lot in this module.• Collect students' Notices and Wonders note-catcher (see Teaching Note; students will need these note-catchers again in Lesson 7).	



Work Time (continued)	Meeting Students' Needs
<p>B. “Teens and Decision Making” (20 minutes)</p> <ul style="list-style-type: none"> • Share the title of the module with the students: “This Is Your Brain—Plugged In.” Tell students that in Unit 2 they will concentrate more on the “plugged in” part of this module. Here, in Unit 1, their reading will center on the <i>neurological development</i> of teenagers. They will need to learn a lot about how the brain works before they can think about how the brain is affected by being “plugged in.” • Briefly discuss the prefix “neuro-” (meaning “nerve”) and encourage students to look for words in their reading with that prefix. • Post the Domain-Specific Vocabulary anchor chart and write the phrase “neurological development.” Remind students that domain-specific vocabulary includes words that are not necessarily common in everyday conversation. Instead, they would hear these words when talking about specific content, as in science or social studies class. Complex informational text often contains lots of domain-specific vocabulary words. Connect the purpose of the anchor chart to the first word you have placed on it: <i>neurological development</i>. Model how you know the definition of that phrase by saying something like: “I know the word ‘develop’ means to grow, and I know ‘neuro’ usually refers to the brain, so ...” • Distribute the “Teen and Decision Making: What Brain Science Reveals.” Tell students it will give them important information regarding the adolescent brain. Today, they will hear this article read aloud as they read along in their heads. Set a clear purpose: Their task is to think about ideas in the article that seem important. Encourage students to underline any words they think are domain-specific words. • Read aloud the first eight paragraphs of “Teens and Decision Making”—which includes the introduction of this article as well as a section titled “The Teen Brain: Under Construction”—as students follow along in their heads. • Ask students to share any domain-specific vocabulary. Be sure they have identified <i>neurons</i>, <i>electrochemical impulse</i>, <i>neurotransmitters</i>, <i>prefrontal cortex</i>, and <i>limbic system</i>. • Prompt students to share what they think the definitions are and how they determined them. Remind students to reread the vocabulary in context. Point out that informational texts often restate the definition of a domain-specific word in a phrase right before or after the word (e.g., neurotransmitters). Write the answers on the anchor chart and clarify as needed by referring to the Model Domain-Specific Vocabulary anchor chart (for teacher reference). Tell students they will continue to use this anchor chart throughout the module. 	<ul style="list-style-type: none"> • When reviewing the graphic organizers or recording forms, consider using a document camera to display the document for students who struggle with auditory processing. • During read-alouds, read slowly, fluently, and without interruption or explanation while students look at the text and actively read. This promotes fluency and comprehension, because students are hearing and reading the text as a whole. <p>To further support ELL students, consider providing definitions of challenging vocabulary in students’ home language. Resources such as Google Translate and bilingual translation dictionaries can assist with one-word translation.</p>



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Distribute the Informational Text Structure Map graphic organizer and use the document camera to display it. Explain that in Unit 1 students will be reading many informational texts. These texts, which often explain confusing topics, do so in a predictable way. Knowing a little about the structure of an informational text will help the students as readers and writers. They should think of it as a map. Knowing where you are on a map can help you make more sense of where you are going.• Tell students that complex texts, like this one, often require rereading. Reread the first two paragraphs. Pause and ask:<ul style="list-style-type: none">* “What is the purpose of this paragraph? What is the writer trying to do?”• Listen for students to say that the author is using an anecdote or story to introduce his topic.• Write this information in the Introduction box of the Informational Text Structure Map graphic organizer, referring to the Informational Text Structure Map graphic organizer (model, for teacher reference) as needed.• Next, reread the third paragraph. Pause and ask:<ul style="list-style-type: none">* “What is the purpose of this paragraph?”* “Has the author begun to explain his main idea yet?”• Listen for students to say that this paragraph gives some necessary background that the reader needs in order to understand the main idea. If necessary, prompt students to reread the title, which provides a clue about the focus of the article.• Point out the Background box on the Informational Text Structure Map graphic organizer. Explain to students that authors often take a detour into some background information, especially when they are talking about a complex subject like the human brain. This little detour is not yet the main idea of the article, but it is very important to understanding the main idea. Write: “Brief history or background to give the reader context.”• Reread the fourth paragraph. Pause and ask:<ul style="list-style-type: none">* “What is the purpose of this paragraph?”• Listen for students to say that this paragraph connects the background to the main focus of the article—the way a teenager makes decisions. It acts as a “bridge.” Prompt students with questions such as: “This is the end of introduction. What do we often find at the end of an introduction?”	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Ask students to underline a sentence that points them toward the main idea. Prompt them to reread the title to make sure their sentence relates to the title. Remind them that as writers, they know that in the beginning of text, the writer will give the reader a focus or a thesis statement. Point out that in informational articles, the reader often has to read the whole thing before she or he can know the main idea for sure, but looking for hints along the way is good practice.• Have the students notice the subheadings. Explain that subheadings are a good sign they are entering a supporting chunk of information.• Reread the section titled “The Teen Brain: Under Construction.” Identify helpful features of supporting idea/details paragraphs like quotes from experts. Refer to the Model Informational Text Structure Map graphic organizer (for teacher reference) as needed.• After finishing, have students think about and then talk with a partner:<ul style="list-style-type: none">* “Based on just this initial read, what are two important ideas from the article?”• Reiterate that they will work with this article again in Lesson 2, and their thinking certainly will deepen and change as they understand the text more fully.	



Closing and Assessment	Meeting Students' Needs
<p>A. Introducing the Neurologist's Notebook (5 minutes)</p> <ul style="list-style-type: none"> • Tell students that while they are reading informational texts about the neurological development of teens, they will use a neurologist's notebook to write down the main ideas and details in the sections of text that they read for homework. • Distribute neurologist's notebook #1 and display a copy on the document camera. Remind students that they have kept similar types of reader's notebooks in other modules. Quickly discuss the meaning of the word <i>neurologist</i> with “-logos,” meaning “knowledge or study of.” Explain that this notebook is called the “neurologist's notebook” because that is what they are—people who study and learn all about the brain. • Review the structure and purpose of these notes. They first will read the article and then write down the main idea of what they read and any supporting details. Point out that this note-catcher mirrors the Informational Text Structure Map graphic organizer. • Ask students to think and discuss with a partner: <ul style="list-style-type: none"> * “What is a main idea, and what is a supporting idea/detail?” • Cold call on students to explain their thinking. Listen for them to define main idea, also called a <i>central idea</i>, as “what the article is mostly about” or “the big idea,” and <i>supporting details</i> as “the smaller ideas and facts that explain and clarify the main idea,” “reasons to support the main idea,” and “facts or other information that relate to the main idea and make it clearer and more complete.” • Point out that there will often be vocabulary words that are part of the reading. Sometimes the definitions will be given, but most of the time they will be words students must figure out based on context clues. • Answer any clarifying questions. • Distribute “The Teen Brain—It's Just Not Grown Up Yet”: Text and Questions . Explain that the right-hand column of the paper will help them stop and think while they are reading. 	<ul style="list-style-type: none"> • Some students may benefit from having key sections pre-highlighted in their texts. This will help them focus on small sections rather than scanning the whole text for answers.
Homework	Meeting Students' Needs
<ul style="list-style-type: none"> • Read “The Teen Brain—It's Just Not Grown Up Yet” and use the questions that are to the right of the text to help you synthesize your learning. Fill out neurologist's notebook #1. 	



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 1

Supporting Materials



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Notices and Wonders Note-catcher

Name:

Date:

Notices	Wonders



Notices and Wonders Note-catcher

My initial thoughts:

1. What do you think are some of the ideas that we will explore in this module?

2. Which Gallery Walk item made you most curious to learn more? Why?



Gallery Walk Items
(For Teacher Reference)

Items 1–14 are essential. Items 15–20 are included as optional pieces, depending on space and class size.

Item 1

image of a neuron

<http://commons.wikimedia.org/wiki/File:Neuron-figure-notext.svg>

Photo by Nicolas.Rougier

Creative Commons GNU Free Documentation License

Item 2

“Students and Technology: Constant Companions”

multimedia feature

<http://www.nytimes.com/interactive/2010/11/21/technology/20101121-brain-interactive.html?ref=technology>

Item 3

“The Child’s Developing Brain”

interactive feature

<http://www.nytimes.com/interactive/2008/09/15/health/20080915-brain-development.html>

Item 4

“Ask two media questions and provide age-appropriate counseling for families at every well-child visit: How much recreational screen time does your child or teenager consume daily? Is there a TV set or an Internet-connected electronic device (computer, iPad, cell phone) in the child’s or teenager’s bedroom?” —AAP Recommendations

Item 5

“If I had to live my life again, I would have made a rule to read some poetry and listen to some music at least once a week; for perhaps the parts of my brain now atrophied could thus have been kept active through use.” —Charles Darwin

Item 6

“The nerve cells that connect teenagers’ frontal lobes with the rest of their brains are sluggish. Teenagers don’t have as much of the fatty coating called myelin, or ‘white matter,’ that adults have in this area.” --Richard Knox



Gallery Walk Items
(For Teacher Reference)

Item 8

Find a definition of addiction and display for students.

Item 9

Image of people playing video games

<http://www.flickr.com/photos/wlodi/2254657082/>

Photo by wlodi

Creative Commons Share Alike 2.0

Item 10

“There are billions of neurons in our brains, but what are neurons? Just cells. The brain has no knowledge until connections are made between neurons. All that we know, all that we are, comes from the way our neurons are connected.” —Tim Berners-Lee

Item 11

“The brain is not the mind. It is probably impossible to look at a map of brain activity and predict or even understand the emotions, reactions, hopes, and desires of the mind.” —David Brooks

Item 12

“Vishal has mixed feelings about technology. ‘If it weren’t for the Internet, I’d focus more on school and be doing better academically,’ he says. But thanks to the Internet, he says, he’s discovered and pursued his passion: filmmaking.

“Vishal often spends hours working on music videos or film projects with sophisticated film editing software that he taught himself how to use—and then he’s focused in a way he rarely is when doing homework. He hopes colleges will be so impressed by his portfolio that they’ll overlook his school performance.” —Matt Richtel

Item 13

Cascading Consequences chart

Use sample anchor chart from Lesson 13, Unit 2.



Gallery Walk Items
(For Teacher Reference)

Item 14

Leisure time chart

<http://cdn.theatlantic.com/static/mt/assets/business/Screen%20Shot%202012-06-25%20at%205.17.46%20PM.png>

Bureau of Labor Statistics, American Time Use Survey 2012

Optional items depending on space and class size:

Item 15

“What are the implications for good or ill, of the dramatic changes in the way adolescents spend their time?” —Dr. Jay Giedd

Item 16

“Children use the fist until they are of age to use the brain.” —Elizabeth Barrett Browning

Item 17

image of prefrontal cortex

<http://commons.wikimedia.org/wiki/File:Ptsd-brain.png>

Photo by National Institutes of Health

Item 18:

cross-section of brain compared to a simple brain

<http://en.wikipedia.org/wiki/File:Vertebrate-brain-regions.png>

Photo by SW Ranson. 1920. Public Domain

Item 19

image of an fMRI

<http://en.wikipedia.org/wiki/File:MRI-Philips.JPG>

Photo by Jan Ainali <http://upload.wikimedia.org/wikipedia/commons/e/ee/MRI-Philips.JPG> Creative Commons 3.0 unported license

Item 20

image of a baby playing with an iPad

<http://www.flickr.com/photos/humboldthead/4871746829/>

Photo by Humbolthead <http://www.flickr.com/photos/humboldthead/4871746829/> Creative Commons 2.0 license



“Teens and Decision Making”

Teens and Decision Making: What Brain Science Reveals

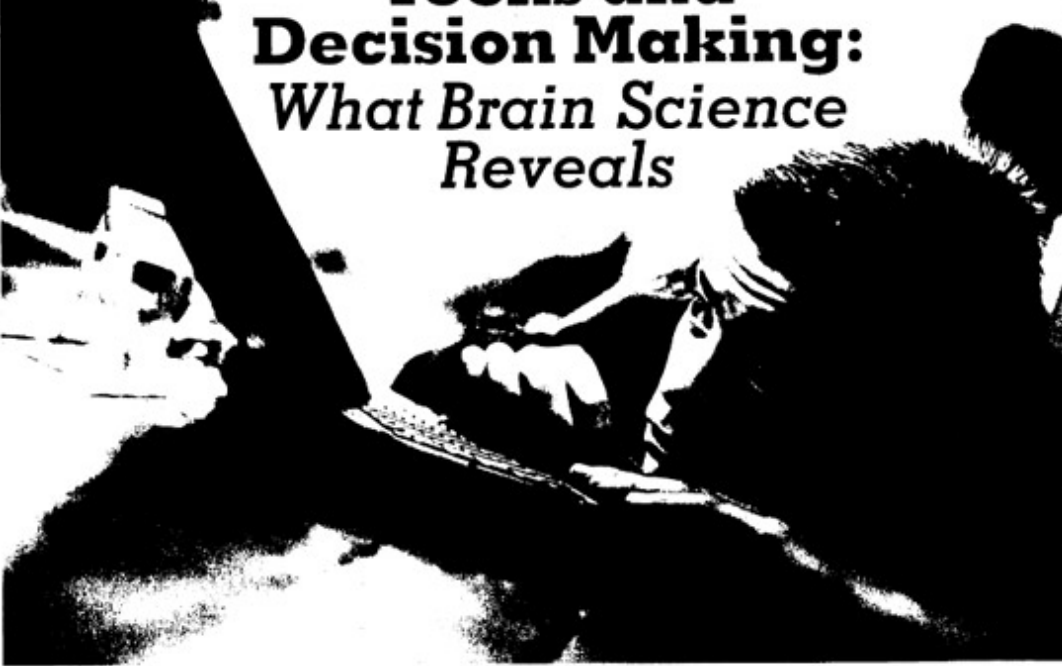
Anonymous

New York Times Upfront; Apr 14, 2008; 140, 13; ProQuest Research Library
pg. 18

**HEADS UP
REAL NEWS
ABOUT DRUGS
AND YOUR BODY**

A Message from Scholastic and The National Institute on Drug Abuse (NIDA)

Teens and Decision Making: What Brain Science Reveals



Do you ever act before thinking? Have you ever wondered why? Do you worry this might create problems? If you answered “yes” to any of these questions, read on.

Picture this: Your finger is poised on the *send* button, your eyes scanning an angry e-mail you’ve dashed off to a friend who has upset you. Some things you’ve written are a little harsh. In your brain a little red light goes off, but, what the heck, you’re steamed and your friend deserves it. You push the button.

Whether you’re aware or not, rushed decisions like this—acting before *thinking it through*—happen more often in teens than in adults. Recent discoveries in brain science may help explain why this is so.

First, a bit on how a brain makes decisions. Decisions don’t “just happen” automatically in your conscious mind. They stem from a series of events in the brain, which happen almost instantaneously. This involves a relay system in which different structures—made up of specialized cells called neurons—talk with each other by way of electrochemical impulses and chemical messengers, called neurotransmitters. Information flowing through this decision-making circuit is analyzed in the different structures. Then the network, as a whole,

FROM SCHOLASTIC AND THE SCIENTISTS OF THE NATIONAL INSTITUTE ON DRUG ABUSE, NATIONAL INSTITUTES OF HEALTH, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Photo: © Denis Feltz/Getty Images

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.



“Teens and Decision Making”

WWW.SCHOLASTIC.COM/HEADSUP

puts out a response. This output provides the basis for our behaviors and actions.

While this process is basically the same for teens and adults, the devil is in the details. Since the brain is not fully developed until the early 20s, the way in which a teen's decision-making circuit integrates information may put him or her at a higher risk of making decisions the teen could later regret.

THE TEEN BRAIN: Under Construction

Not long ago, scientists thought the human brain was fully mature long before the teen years. While research shows that one's brain reaches its maximum size between ages 12 and 14 (depending on whether you are a girl or a boy), it also shows that brain development is far from complete. Regions of the brain continue to mature all the way through a person's early 20s.

A key brain region that matures late is the **prefrontal cortex**, located directly behind your forehead. The prefrontal cortex is very important as a control center for thinking ahead and sizing up risks and rewards. (This area is, in fact, the little red light that was trying to warn you about sending that e-mail.) Meanwhile, another part of the brain that matures earlier is the **limbic system**, which plays a central role in emotional responses.

Since the limbic system matures earlier, it is more likely to gain an upper hand in decision making. This relationship between the emotional center (limbic system) and control center (prefrontal cortex) helps to explain a teen's inclination to rush decisions. In other words, when teens make choices in emotionally charged situations, those choices are often more weighted in *feelings* (the mature limbic system) over *logic* (the not-yet-mature prefrontal cortex).

This is also why teens are more likely to make “bad” choices, such as using drugs, alcohol, and tobacco—all of which pose a risk of serious

health consequences. “Most kids don't really ‘plan’ to use drugs,” says Professor Laurence Steinberg of Temple University, “at least not the first time. They are more likely to experiment *on the spur of the moment*, particularly when influenced by others [peer pressure].”

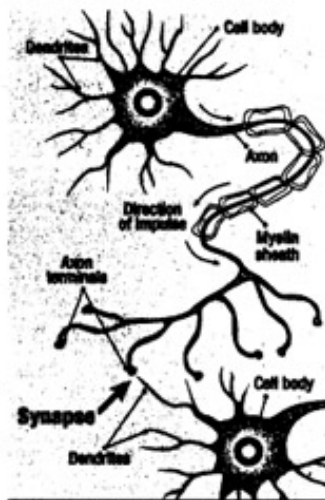
FINE-TUNING THE BRAIN

Like the rest of the body, the brain needs to mature in order to reach peak performance. This process involves slow changes—strongly influenced by brain activity—that have evolved to fine tune (or optimize)

how neural impulses flow throughout the brain, allowing it to process information faster and more reliably.

Inside the brain, information travels through a network of neurons, which have thread-like fibers called **axons** and branch-like structures called **dendrites**. Dendrites bring information into the neurons, while axons take it away and pass it along to the next neuron. Thus, neurons are assembled into circuits where the far end of an axon (its terminal) is positioned close to a dendrite. The small space between the two is called a **synapse**—where information is exchanged.

Throughout childhood and adolescence, the brain is busy fine-tuning itself through two key processes: myelination and synaptic pruning.



A synapse is the small space where an axon and dendrite exchange information.

FROM SCHOLASTIC AND THE SCIENTISTS OF THE NATIONAL INSTITUTE ON DRUG ABUSE, NATIONAL INSTITUTES OF HEALTH, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.



“Teens and Decision Making”

In **myelination**, axons wrap themselves in a fatty substance (myelin sheath), which works like the insulating plastic that surrounds electrical wires. This boosts the brain’s efficiency by increasing the speed with which a signal travels down the axon by up to 100 times. In **synaptic pruning**, synapses not used very often are removed, allowing the brain to redirect precious resources toward more active synapses. This strategic loss of weak synapses shapes the brain and makes it more efficient. This important pruning process molds the brain in response to a person’s experiences and activities.

This means that teens have the potential, through their choices and the behaviors they engage in, to shape their own brain development—



strengthening some circuits and getting rid of others. This makes the type of activities teens are involved in especially important. Skill-building activities, such as many physical, learning, and creative endeavors, not only provide stimulating challenges, but can simultaneously build strong brain pathways. When teens learn and repeat

appropriate behaviors, they are helping to shape their brains—and their futures.

WAIT A MINUTE!

Learning how your brain works can help explain why sometimes you behave like you do. With this knowledge, you can be better equipped to make smart choices.

One tip to follow is to *take a moment* before acting. When making a decision, something as simple as stopping to think can mean the difference between a positive and a negative outcome. By waiting a minute before acting, you allow yourself to:

- consider consequences;
- weigh harmful outcomes (e.g., harm to yourself or others) against short-term benefits (e.g., fitting in or feeling high);
- determine whether peer pressure is making you do something you’d otherwise not do;
- get information or advice, if you need it.

For more information about drugs and your body, visit <http://teens.drugabuse.gov> and www.scholastic.com/headsup.

To learn more about “pausing” to allow yourself to make smart choices, check out www.myspace.com/pause.

Vocabulary

Match each word in Column A to its meaning in Column B.

Column A

1. synapse
2. myelination
3. prefrontal cortex
4. limbic system
5. synaptic pruning

Column B

- A. brain area important for thinking ahead and sizing up risk and reward
- B. process in which axons become wrapped up in fatty myelin sheath
- C. brain system that plays a central role in emotional responses
- D. the small space between axons and dendrites where neurons exchange information
- E. cutting back the number of synapses

Photo © Fancy/Net

FROM SCHOLASTIC AND THE SCIENTISTS OF THE NATIONAL INSTITUTE ON DRUG ABUSE, NATIONAL INSTITUTES OF HEALTH, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

From Scholastic Action, April 21, 2008. Copyright © 2004 by Scholastic Inc. Reprinted by permission of Scholastic Inc.



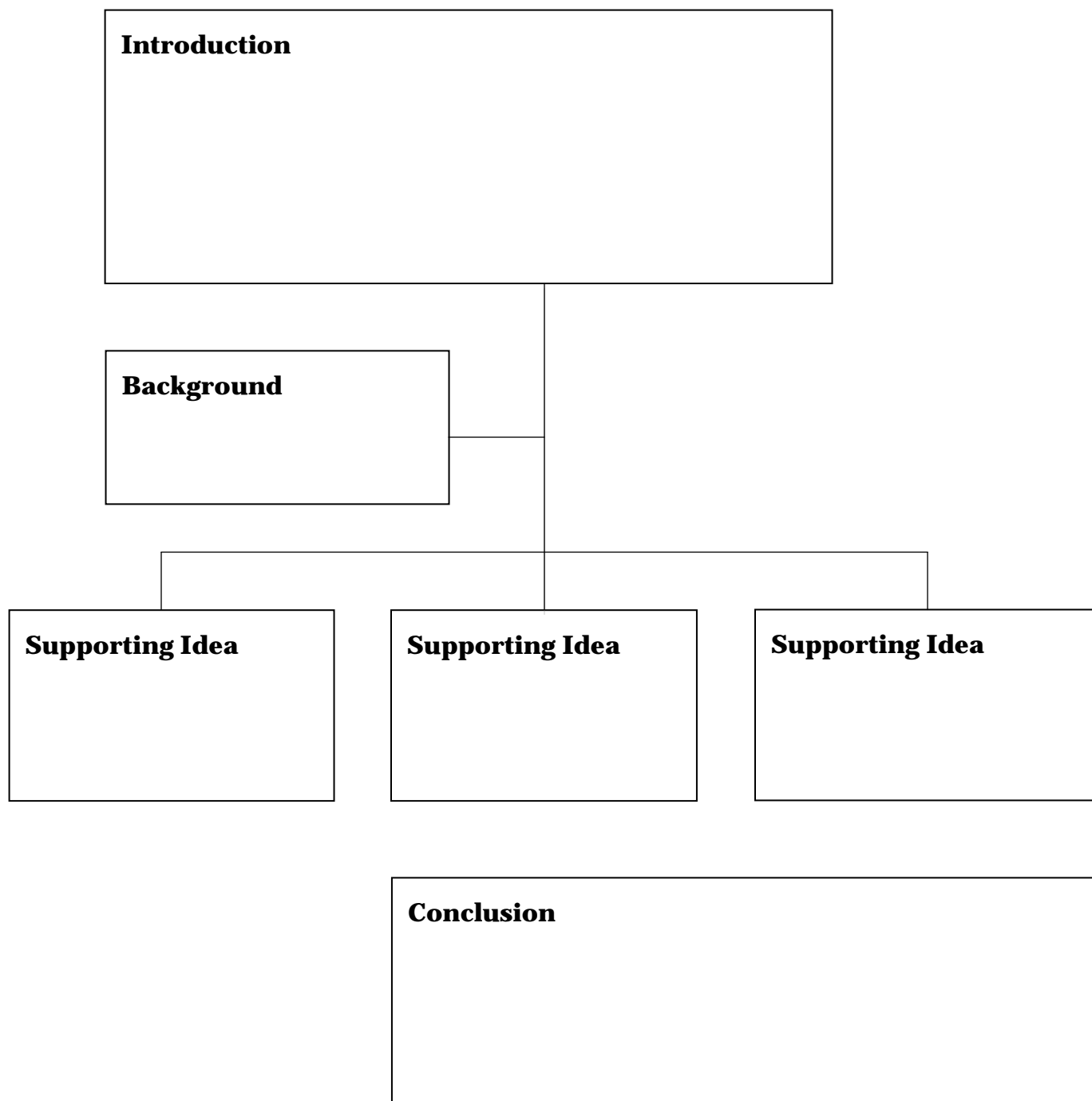
Domain-Specific Vocabulary Anchor Chart

Word	Definition



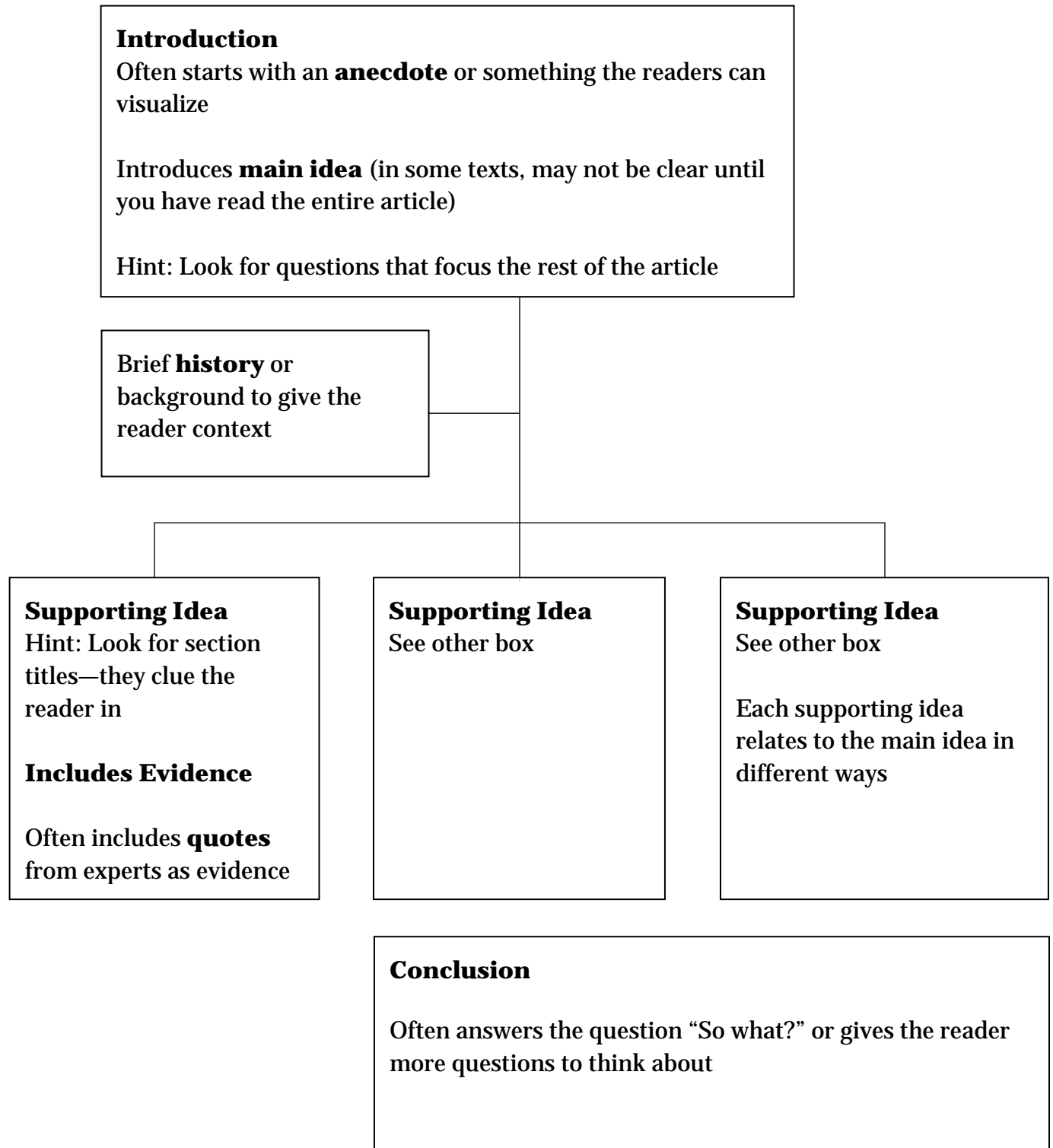
Model Domain-Specific Vocabulary Anchor Chart
(For Teacher Reference)

Word	Definition
neurological development	the way the brain and nervous system grow and get more mature
neurons	specialized cells in the brain
electrochemical impulse	a signal that is both electric and chemical
neurotransmitters	chemical messengers that help to carry the signal in the brain
prefrontal cortex	a region of the brain that is important for sizing up risk and thinking ahead
limbic system	a brain system that plays a central role in emotional response
neurologist	someone who studies the brain





Informational Text Structure Map Graphic Organizer
(Model, For Teacher Reference)





Neurologist's Notebook #1:
"Teen Brain—It's Just Not Grown Up Yet"

Name:

Date:

Directions: Use this note-catcher to get the gist of the reading. Remember that the main idea and supporting idea/details are often not just a single sentence of the text; rather, they may involve multiple sentences.

Main idea:	
Brief background:	Supporting idea/detail:
Supporting idea/detail:	Supporting idea/detail:
Supporting idea/detail:	Supporting idea/detail:



Neurologist's Notebook #1:
"Teen Brain—It's Just Not Grown Up Yet"

Vocabulary

Word	Definition	Context clues: How did you figure out this word?
pediatric neurologist		
neuroscientists		
frontal lobes		
myelin or "white matter"		
neural insulation		
brain chemistry		
cognitive deficits		
cognitive baseline		



Neurologist's Notebook #1:
"Teen Brain—It's Just Not Grown Up Yet"
(Answers, For Teacher Reference)

Name: _____

Date: _____

Directions: Use this note-catcher to get the gist of the reading. Remember that the main idea and supporting details are often not just a single sentence of the text; rather, they may involve multiple sentences.

Main idea:

Knowing how the teen brain works was helpful to Dr. Jensen and her sons.

Brief background:

The nerves that connect the frontal lobe to the rest of the brain are still being coated by neural insulation.

Supporting idea/detail:

Because their frontal lobes are partially connected, teenagers may make bad decisions and not have the insight to think of other people. This helped Dr. Jensen understand her sons' behavior.

Supporting idea/detail:

Teens' brains are also excitable, and this makes them more vulnerable to addiction.

Supporting idea/detail:

Drugs affect the teen brain longer. This helped Dr. Jensen's son know why not to smoke pot.

Supporting idea/detail:

Everyone needs sleep to remember things they learn. This helped Dr. Jensen's sons have better study habits.

Supporting idea/detail:

(intentionally blank)



Neurologist's Notebook #1:
"Teen Brain—It's Just Not Grown Up Yet"
(For Teacher Reference)

Vocabulary

Word	Definition	Context clues: How did you figure out this word?
pediatric neurologist	A doctor who studies the nervous system of children	
neuroscientists	Someone who studies the brain	
frontal lobes	A region of the brain behind the forehead	
myelin or "white matter"	A material that coats the outside of nerve cells	
neural insulation	Another way of saying myelin	
brain chemistry	The chemicals in the brain	
cognitive deficits	Lacking in the ability to think or understand	
cognitive baseline	Having the standard ability to think or understand	



“The Teen Brain: It’s Just Not Grown Up Yet”: Text and Questions

Directions:

Please read the article below. As you read, use the Informational Text Structure Map graphic organizer and the right-hand column to help guide your thinking. Read the entire article before you write anything on the neurologist’s notebook. Then go back and look at your gist notes as you fill in the notebook entry.

The Teen Brain: It’s Just Not Grown Up Yet by Richard Knox

When adolescence hit Frances Jensen’s sons, she often found herself wondering, like all parents of teenagers, “What were you thinking?” “It’s a resounding mantra of parents and teachers,” says Jensen, who’s a pediatric neurologist at Children’s Hospital in Boston. Like when son number one, Andrew, turned 16, dyed his hair black with red stripes and went off to school wearing studded leather and platform shoes. And his grades went south. “I watched my child morph into another being, and yet I knew deep down inside it was the same Andrew,” Jensen says. Suddenly her own children seemed like an alien species. Jensen is a Harvard expert on epilepsy, not adolescent brain development. As she coped with her boys’ sour moods and their exasperating assumption that somebody else will pick up their dirty clothes, she decided to investigate what neuroscientists are discovering about teenagers’ brains that makes them behave that way.

This is the introduction. What is the anecdote that helps introduce this topic?

Underline the sentence that helps you focus on the central idea.

Hint: Wait to write the central idea on the neurologist’s notebook until you have read the whole article once.



“The Teen Brain: It’s Just Not Grown Up Yet”: Text and Questions

Teenage Brains Are Different

She learned that that it’s not so much *what* teens are thinking—it’s *how*. Jensen says scientists used to think human brain development was pretty complete by age 10. Or as she puts it, that “a teenage brain is just an adult brain with fewer miles on it.”

But it’s not. To begin with, she says, a crucial part of the brain—the frontal lobes—are not fully connected. Really.

“It’s the part of the brain that says: ‘Is this a good idea? What is the consequence of this action?’ “ Jensen says. “It’s not that they don’t have a frontal lobe. And they can use it. But they’re going to access it more slowly.”

That’s because the nerve cells that connect teenagers’ frontal lobes with the rest of their brains are sluggish. Teenagers don’t have as much of the fatty coating called myelin, or “white matter,” that adults have in this area.

Think of it as insulation on an electrical wire. Nerves need myelin for nerve signals to flow freely. Spotty or thin myelin leads to inefficient communication between one part of the brain and another.

Here is the background information that the reader needs.

Take gist notes here.



“The Teen Brain: It’s Just Not Grown Up Yet”: Text and Questions

A Partially Connected Frontal Lobe

Jensen thinks this explains what was going on inside the brain of her younger son, Will, when he turned 16. Like Andrew, he’d been a good student, a straight arrow, with good grades and high SAT scores. But one morning on the way to school, he turned left in front of an oncoming vehicle. He and the other driver were OK, but there was serious damage to the car.

“It was, uh, totaled,” Will says. “Down and out. And it was about 10 minutes before morning assembly. So most of the school passed by my wrecked car with me standing next to it.”

“And lo and behold,” his mother adds, “who was the other driver? It was a 21-year-old—also probably not with a completely connected frontal lobe.” Recent studies show that **neural insulation** isn’t complete until the mid-20s.

This also may explain why teenagers often seem so maddeningly self-centered. “You think of them as these surly, rude, selfish people,” Jensen says. “Well, actually, that’s the developmental stage they’re at. They aren’t yet at that place where they’re thinking about—or capable, necessarily, of thinking about the effects of their behavior on other people. That requires insight.”

And insight requires—that’s right—a fully connected frontal lobe.

From this subtitle you know this section will focus on supporting details about the frontal lobe (this includes the prefrontal cortex). Take gist notes about what you learn.



“The Teen Brain: It’s Just Not Grown Up Yet”: Text and Questions

More Vulnerable to Addiction

But that’s not the only big difference in teenagers’ brains. Nature made the brains of children and adolescents excitable. Their **brain chemistry** is tuned to be responsive to everything in their environment. After all, that’s what makes kids learn so easily.

But this can work in ways that are not so good. Take alcohol, for example. Or nicotine, cannabis, cocaine, ecstasy ...

“Addiction has been shown to be essentially a form of ‘learning,’

“ Jensen says. After all, if the brain is wired to form new connections in response to the environment, and potent psychoactive drugs suddenly enter that environment, those substances are “tapping into a much more robust habit-forming ability that adolescents have, compared to adults.” So studies have shown that a teenager who smokes pot will still show **cognitive deficits** days later. An adult who smokes the same dose will return to **cognitive baseline** much faster.

This bit of knowledge came in handy in Jensen’s own household.

“Most parents, they’ll say, ‘Don’t drink, don’t do drugs,’” says Will, son number two. “And I’m the type of kid who’d say ‘why?’ “

When Will asked why, his mom could give him chapter and verse on drugs and teen brains. So they would know, she says, “that if I smoke pot tonight and I have an exam in two days’ time, I’m going to do worse. It’s a fact.”

There were other advantages to having a neuroscientist mom, Will says. Like when he was tempted to pull an all-nighter.

“She would say, ‘Read it tonight and then go to sleep,’” he says. “And what she explained to me is that it will take [what you’ve been reading] from your short-term memory and while you sleep you will consolidate it. And actually you will know it better in the morning than right before you went to sleep.”

It worked every time, he says.

It also worked for Andrew, the former Goth. He’s now a senior at Wesleyan University, majoring in physics.

“I think she’s great! I would not be where I am without her in my life!”

Andrew says of his mom.

For any parent who has survived teenagers, there are no sweeter words.

Look at the subtitle. This is the focus of this section. Take gist notes about what in the teen brain makes it vulnerable to addiction.

Ask yourself: How do the supporting details in this section relate to the central idea?

Knox, Richard. “The Teen Brain: It’s Just Not Grown Up Yet.” NPR. NPR, 1 Mar. 2010. Web.
<<http://www.npr.org/templates/story/story.php?storyId=124119468>>.



“The Teen Brain: It’s Just Not Grown Up Yet”: Text and Questions

Now that you have read and thought about the article, go back and ask yourself:

If I had to describe this article in one sentence, what would I say?

Write that **main idea** in the box in neurologist’s notebook #1.

What was the basic background information summed up in one or two sentences?

Write that in the **background** box in neurologist’s notebook #1.

As you fill in the **supporting ideas/detail** boxes in neurologist’s notebook #1, ask yourself:

What about the partially connected frontal lobe was important? How might that relate to the main idea?

What else about the teen brain makes it different from an adult’s? Why is this important to the main idea?

How do the examples from the Jensen family’s life fit into the main idea?



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 2

Identifying Main Ideas and Supporting Details:

What's Going On in the Teenage Brain?



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1)

I can use a variety of strategies to determine the meaning of unknown words or phrases. (L.7.4)

I can determine the meaning of words and phrases in text (figurative, connotative, and technical meanings). (RI.7.4)

Supporting Learning Targets

- I can determine the main idea and supporting ideas/details in “Teens and Decision Making”
- I can determine the meaning of unknown technical words.

Ongoing Assessment

- Neurologist notebook #1 (from homework)
- Thinking Logs



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Entry Task: Thinking Logs (10 minutes)2. Work Time<ol style="list-style-type: none">A. Introducing the Brain Development Anchor Chart (10 minutes)B. Vocabulary in Action (15 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Adding to the Brain Development Anchor Chart (10 minutes)4. Homework<ol style="list-style-type: none">A. Read "What's Going On in Your Brain?" by Linda Bernstein. Complete neurologist's notebook #2.	<ul style="list-style-type: none">• In this lesson, students are introduced to two important classroom routines: Thinking Logs and the Brain Development anchor chart. They also continue to add to the Domain-Specific Vocabulary anchor chart. These routines help scaffold students toward RI.7.1, RI. 7.2, RI. 7.4, and L.7.4.• First, students begin working with the Thinking Log, which is used throughout Units 1 and 2 as a way to track and reflect on their understanding of the development of the adolescent brain. The Thinking Log serves as a scaffold to SL 7.2—how new information has helped them clarify the issues. See Unit 1 overview for details. Note that the entire Thinking Log for Units 1 and 2 is included in the supporting materials of this lesson: if possible, prepare this as a packet for students.• The Brain Development anchor chart is important scaffold for the student's writing in Unit 3 (see Unit 1 overview). It also provides a common point of reference and a place to hold class thinking about brain development. Like all anchor charts, this one can be created and updated either in an electronic format to be displayed using a projector, on a regular-size piece of paper to be displayed via a document camera, or on a large piece of chart paper to be posted. Students will also maintain their own copy of this anchor chart and update it along with the class anchor chart.• The Brain Development anchor chart will hold the students' learning around the three major aspects of brain development—the prefrontal cortex, the limbic system, and the neurons. Use the Model Brain Development anchor chart for suggested information to include on the anchor chart, but ultimately let the anchor chart reflect the class discussion. To help you guide the students to the background knowledge they need in order to be successful in this module, familiarize yourself with the final essay prompt (Mid-Unit and End of Unit 3 Assessment), model essay, and the content of Unit 2.• Work Time B focuses on RI 7.4 and L 7.4 and will help students grasp difficult and technical scientific terms in an engaging and kinesthetic way. To transition smoothly to this activity, be sure to prepare the materials in advance.• To close, students return to the Brain Development anchor chart and add their learning from the last two sections of the text. Asking the students to complete a sticky note invites everyone to participate in building the class anchor chart in a low-risk way. Alternatively you could collect the students' anchor charts and give formative feedback.



Agenda	Teaching Notes (continued)
	<ul style="list-style-type: none"> • In advance: <ul style="list-style-type: none"> – Prepare the Thinking Log packet. – Prepare the materials for Understanding Axons, Dendrites, and Synaptic Pruning: A Vocabulary Play. • Post: Learning targets.

Lesson Vocabulary	Materials
(from “Teens and Decision Making”) neural impulse (para. 9), axons (para. 10), dendrites (para. 10), synapse (para. 10), myelination (para. 11), synaptic pruning (para. 11), brain pathways (para. 12); (from homework) reckless, localization, regenerate, solidifies	<ul style="list-style-type: none"> • Thinking Logs (one per student) • Brain Development anchor chart—student version (one per student) • Brain Development anchor chart (new; co-created with students in Work Time A) • Document camera • Model Brain Development anchor chart (for teacher reference) • “Teens and Decision Making: What Brain Science Reveals” (from Lesson 1; one per student) • Domain-Specific Vocabulary anchor chart (begun in Lesson 1) • Understanding Axons, Dendrites, and Synaptic Pruning: A Vocabulary Play (10 copies; one copy for each character in the play) • Model Domain-Specific Vocabulary anchor chart (for teacher reference) • Note cards or sticky notes (one per student) • “What’s Going On in Your Brain?” (one per student) • Neurologist’s notebook #2 (one per student) • Neurologist’s notebook #2 (answers, for teacher reference)



Opening	Meeting Students' Needs
<p>A. Entry Task: Thinking Logs (10 minutes)</p> <ul style="list-style-type: none">• Distribute the Thinking Logs. Explain to the students that today they will be starting a routine they will use many times in Unit 1. The Thinking Log contains questions that will be completed on most days. The purpose of this log is to help them reflect on and clarify their thinking on the neurological development of teenagers and their learning from the homework (if they complete the log as an entry task) or their learning from the day's lesson (if they complete the log as an exit ticket).• From the Thinking Log, read aloud the two questions for Lesson 2 and ask students to complete them based on their current thinking:<ul style="list-style-type: none">* "The main idea of last night's reading was that knowing how the brain works was helpful to Dr. Jensen and her sons. How was it helpful to them? How do you think knowing something about how the adolescent brain works would be helpful to you? To your parents? To your school?"* "What else are you wondering about adolescent brain development?"• After a few minutes, cold call on students to explain how the information about the neurological development of teens was useful to Dr. Jensen and her sons. Listen for them to say it helped Dr. Jensen realize there was a scientific explanation for her sons' behavior. It also helped her sons understand why certain behaviors (like taking drugs and staying up all night) are counterproductive for a teenager. Press students to give an example from the text as evidence to explain their ideas.• Ask students to give a Fist to Five on how easily they were able to identify the main idea of last night's reading. A "fist" indicates that they struggled, whereas a "five" indicates that it was easy. It's likely that many students identified that the science information was important but were less sure how the Jensen's story fit into the main idea. Acknowledge the difficulty of this assignment.• If time permits, have students popcorn out some of their answers for the second half of the first question.• Ask them to put their logs in a place where they can easily retrieve them each day.• Collect the neurologist's notebook #1 from homework and use it as a formative assessment to inform your teaching for Lessons 3 and 4.	



Work Time	Meeting Students' Needs
<p>A. Introducing the Brain Development Anchor Chart (10 minutes)</p> <ul style="list-style-type: none"> • Distribute a blank Brain Development anchor chart—student version to each student. Post a class Brain Development anchor chart to work from on a document camera (or on chart paper). • Tell students that today they will be starting an anchor chart to help them track their learning about adolescent brain development. They will maintain their own copy in addition to the class copy used during discussions. • Point out the five columns: Other Developmental Info, Neurons, Prefrontal Cortex, Limbic System, and So What? • Explain that over the next two weeks they will be learning about two specific regions of the brain (the prefrontal cortex and the limbic system). They will also learn about the way neurons are growing and changing. This happens all over the brain and in particular in the frontal lobes. Any other miscellaneous learning can go in the first column. They will use the fifth column later. Remind students to note where they learned the information so they can go back and reread it if necessary. • Ask: <ul style="list-style-type: none"> * “The prefrontal cortex is part of the frontal lobe. What did you learn about the frontal lobe in last night’s homework?” Add students’ answers to the anchor chart and ask them to do the same on their own copy, referencing the Model Brain Development anchor chart (for teacher reference) as needed. • Invite students to give you other important information from the homework. When students begin to give answers about “myelin” or “neural insulation,” thank them for helping you transition to the text they’ll be reading today. • Invite students to get out their copy of “Teens and Decision Making: What Brain Science Reveals” (from Lesson 1). They will continue reading it today. • Ask a student to reread the third paragraph from “Teens and Decision Making.” Then ask: <ul style="list-style-type: none"> * “This is all about how neurons work. How can we capture this information in the Neurons column?” Add students’ answers to the chart, using the Model Brain Development anchor chart (for teacher reference) for guidance. • Ask the students to silently skim the section of the article they read yesterday titled “The Teen Brain: Under Construction,” looking for information to add to the anchor chart. • Ask students to raise their hands when they have some information. Wait for most students to raise their hands. Add the students’ answers to the chart. Prompt with questions such as: “What did we learn about the limbic system? At what age does the brain fully mature? Where does that go on the anchor chart?” 	<ul style="list-style-type: none"> • Anchor charts and recording forms engage students more actively and provide the necessary scaffolding that is especially critical for learners with lower levels of language proficiency and/or learning.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">The Model Brain Development anchor chart (for teacher reference) is provided as a guide, but you should let the anchor chart reflect the discussion in the class. Be sure students walk away with a basic understanding of the prefrontal cortex (what it is and that it is underdeveloped), the limbic system (what it is and how it matures first), and that neurons are in a dynamic branching and pruning stage.	
<p>B. Vocabulary in Action (15 minutes)</p> <ul style="list-style-type: none">Ask students to read silently as you read aloud the section titled “Fine-Tuning the Brain.” Set the intention for students: “Underline words that should go on the Domain-Specific Vocabulary anchor chart.”Read the entire section fluently as students read along in their heads.Ask students to identify any words that should go on the Domain Specific Vocabulary anchor chart. Add them without the definition for now. Be sure to include neural impulse, axons, dendrites, synapse, myelination, synaptic pruning, and brain pathways.Tell students that these are difficult vocabulary words and that you have a short play that will help them visualize these concepts.Lead the students through the Understanding Axons, Dendrites, and Synaptic Pruning: A Vocabulary Play.Refocus the class on the Domain-Specific Vocabulary anchor chart. Add the definitions at this time, referencing the Model Domain-Specific Vocabulary anchor chart (for teacher reference) as needed. Clarify other vocabulary as needed.	<ul style="list-style-type: none">Acting out the vocabulary is an engaging way to reach some of your kinesthetic learners.



Closing and Assessment	Meeting Students' Needs
<p>A. Adding to the Brain Development anchor chart (10 minutes)</p> <ul style="list-style-type: none">• Distribute note cards (or sticky notes if the anchor chart is on a chart paper on the wall).• Ask students to read silently as you reread aloud the sections “Fine-Tuning The Brain” and read “Wait a Minute!” Set the intention for students: “As you follow along, put a check mark on information that should go on the Brain Development anchor chart. Be sure to look for what causes neurons to be strengthened or pruned.”• After you have finished reading, briefly discuss the purpose of the last section and how it implies that kids have some control over their brains and that slowing down and thinking is a good strategy. You’ll revisit this section in the next lesson.• Ask students to write down five facts from these two sections on the note cards (or sticky notes).• As students leave, ask them to place the sticky notes in the corresponding column on the class anchor chart.• Tell students that you will use students’ sticky notes as a way to help build the class anchor chart (see Teaching Notes, above).• Distribute “What’s Going On in Your Brain?” and neurologist’s notebook #2. Preview homework as needed.	
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Read “What’s Going On in Your Brain?” by Linda Bernstein. Complete neurologist’s notebook #2. <p><i>Note: Transfer the information onto the class anchor chart. Be sure students have identified that synaptic pruning occurs based on the environment, choices, and behavior of an individual. This information is central to the module. Use the note cards or sticky notes to inform the entry task in Lesson 3. At that time, you can clarify any misunderstandings.</i></p>	



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 2

Supporting Materials



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Thinking Log:
Unit 1

Name:

Date:

The Thinking Log is a place for you to track and reflect on your understanding of the neurological development of teens. Each entry in your Thinking Log will ask you to explain your current understanding of this issue.

Lesson 2: “Teen Brain—It’s Just Not Grown Up Yet” by Richard Knox

The main idea of last night’s reading was that knowing how the brain works was helpful to Dr. Jensen and her sons. How was it helpful to them? How do you think knowing something about how the adolescent brain works would be helpful to you? To your parents? To your school?

What else are you wondering about the development of the adolescent brain?



Thinking Log:
Unit 1

Lesson 4: Entry Task “What You Should Know about Your Brain”

Dr. Willis says that when you stimulate neuron pathways over and over again, they become stronger. As she says, “Practice makes permanent.” What implications does this have for the kinds of activities that teens do repeatedly?

What else are you wondering about the adolescent brain’s development?



Thinking Log:
Unit 1

Lesson 4: Exit Ticket: “Insight into the Teenage Brain”

What did Dr. Galván’s experiments prove about how teens react differently to dopamine levels than adults and children? How might this explain teen behavior?

What else are you wondering about the adolescent brain’s development?



Lesson 7

How has revisiting the resources in the Gallery Walk clarified your thinking about adolescent brain development?

Reread what you wrote in Lesson 4. How might Dr. Galván's findings relate to the popularity of video games with teenagers specifically?



Thinking Log:
Unit 1

Lesson 8: In “Attention Economy,” Dr. Giedd implies that “real life” activities like traditional homework, talking with friends, and working toward a long-term goal usually don’t provide the same jolt of dopamine of media devices. Why might that be a problem for students?

What else are you wondering about adolescent brain development?



Thinking Log:
Unit 1

Lesson 10

How did today's reading help clarify your thinking about the issue of the teen brain and screen time?

What else are you wondering about adolescent brain development?



Lesson 3

How did today's reading help clarify your thinking about the issue of teen brains and screen time?

What else are you wondering about adolescent brain development?



Thinking Log:
Unit 2

Lesson 4

What role do video games play in your life? How often do you play them? With whom? What in your view are the benefits of playing video games?

What else are you wondering about adolescent brain development?



Lesson 11

How did today's reading and video help clarify your thinking about adolescents and screen time?

What else are you wondering about adolescent brain development?



Lesson 15

What have you found most personally interesting about the risks and benefits of screen time? Why?

Lesson 17

How did the Fishbowls clarify your thinking about entertainment screen time and adolescent neurological development?



Brain Development Anchor Chart—Student Version

Other developmental info	Prefrontal cortex	Neurons	Limbic system	So what?



Model Brain Development Anchor Chart
(For Teacher Reference)

Note: Different parts of the anchor chart are completed in different lessons. The bolded items are added in this lesson.

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
<p>The brain needs sleep to take things from your short-term memory to your long-term memory (Knox)</p> <p>Your brain does not fully develop until the mid-20s (Scholastic)</p>	<p>Also called the “frontal lobe” (Knox)</p> <p>This area helps with insight and understanding the effect of your behavior on someone else (Knox)</p> <p>Matures later than other parts of the brain (Scholastic)</p> <p>Right behind your forehead (Scholastic)</p> <p>Helps with thinking ahead and sizing up risk and reward (Scholastic)</p>	<p>“White matter” is called myelin, and it coats the nerves and makes them “communicate” more effectively (Knox)</p> <p>In order for your brain to make a decision, tiny specialized cells “talk” with each other through a series of neurotransmitters, like a circuit in a computer. Then the whole network puts out a response, which becomes your outward behavior. (Scholastic)</p>	<p>Develops earlier than the PFC (Scholastic)</p> <p>Plays a central role in your emotional response (Scholastic)</p> <p>Associated with decisions made in feeling (Scholastic)</p> <p>When teens make decisions in emotionally charged situations—this one weighs in heavily (Scholastic)</p>	



Model Brain Development Anchor Chart
(For Teacher Reference)

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
		<p>Information travels from neuron to neuron by way of their axons and dendrites (Scholastic)</p> <p>The space between one neuron's axon and the other neuron's dendrites is called its synapse (Scholastic)</p> <p>To make the connection better, the axons wrap themselves in myelin through a process called myelination (Scholastic)</p> <p>Also, if a synapse isn't used often, it is pruned through synaptic pruning. Then that energy is redirected into more active synapse. (Scholastic)</p> <p>Synaptic pruning occurs based on the choices, the behavior, and the environment of an individual (Scholastic)</p>		



Understanding Axons, Dendrites and Synapse: A Vocabulary Play

Materials

- Name tags for each of the characters
- One roll of toilet paper (myelin sheath)
- 10 objects to pass (like rulers, tennis balls, small books, etc.)

Characters

Brain	Axon #2	Dendrite #3
Axon #1	Dendrite #2	Neurotransmitter
Dendrite #1	Axon #3	Myelin
Narrator (this may work better if the teacher plays this role)		

Script

Narrator: Welcome to your brain in action. Here we have three neuron cells: Axon and Dendrite #1, Axon and Dendrite #2, and Axon and Dendrite #3. *(The six students should stand together in groups of two. The groups should be far enough away that they cannot touch each other with outstretched arms.)*

Narrator: One day, an electrical impulse came down from the brain. *(Brain hands one of the 10 objects to Dendrite #1).*

Brain: Hey Cell Body #1, pass this electric message to Cell Body #2.

Dendrite #1: (to Axon #1) Oh, no? How will you pass the message to Dendrite over at Cell Body #2? There's a big empty synapse in the way! *(Axon #1 looks sad.)*

Narrator: Suddenly a big, handsome Neurotransmitter came on to the scene.

Neurotransmitter: I'll help you. Bridging the synapse is what I do best! *(Neurotransmitter grabs the object and passes it into the waiting hand of Dendrite #2.)*

Narrator: This was working pretty well. So the brain kept giving electric impulses. And another. And another. *(Brain, Axon #1, Dendrite #1, Neurotransmitter, and Dendrite #2 keep passing three objects.)*

Axon #1: (to Brain) You know, Brain, we could use some help. You know what would make this easier? If we had some myelin sheath—why, that would help us work faster and more efficiently.



Understanding Axons, Dendrites and Synapse: A Vocabulary Play

Brain: You know, that's a good idea. Since this is a pathway that gets used a lot, I will send over a message to the cells in the Myelin Department. They will wrap you up.

Myelin: Here I am. Did someone order some neural insulation?

Axon #1: I did! (*Myelin wraps the Axon's arms in toilet paper.*)

Narrator: Axon #1 was right. Myelin helped him/her pass the electric impulse faster. So the brain sent more messages. And more myelin. And more messages. And more myelin. (*Students repeat the sequence of sending a message, wrapping the arms in toilet paper, and sending a message three more times. Each time the message gets sent faster.*)

Axon and Dendrite #3: Hey, no one is passing us an electric impulse! We're shriveling up here. (*Students sink to the ground.*)

Brain: Yeah, you're right. Turns out we don't need you guys. I guess you've been pruned.

Narrator: And so, since Cell Body #1 and Cell Body #2 were used all the time, they grew more and more efficient at sending messages. Tune in next time to see if poor Cell Body #3 will ever get a chance to grow and shine, or if they will continue to be a victim of synaptic pruning!

(*Students take a bow.*)



Model Domain-Specific Vocabulary Anchor Chart
(For Teacher Reference)

* Note: This chart is added to throughout Units 1 and 2. The items below are added in Lesson 2.

Word	Definition
neural impulse	an electric and chemical signal that gets passed between neurons
axons	thread-like fibers in neurons that take the electrochemical impulse away from the cell body.
dendrites	branch-like fibers in neurons that bring information into the neurons
synapse	a small space between axons and dendrites where neurons exchange information
myelination	the process in which axons become wrapped in a fatty myelin sheath
synaptic pruning	cutting back on the number of synapses
brain pathways	bundles of elongated, myelin-insulated neurons that collectively connect different regions of the brain.



“What’s Going On in Your Brain?”

What's Going On in Your Brain?
Bernstein, Linda
Current Health 2; Feb 2006; 32, 6; ProQuest
pg. 20

YOUR BODY

What's Going On in Your Brain?

Your control center is in version 2.0.

By Linda Bernstein

Here's a good comeback the next time an adult complains that you're taking too many risks. Just say, "My brain made me do it."

Of course, in the real world, you can't use that excuse to cover reckless behavior. However, it's true that "the brain's inclination for sensation seeking becomes more intense during adolescence," Laurence Steinberg, a professor of psychology at Temple University and an expert on the teenage brain, told *Current Health 2*. At the same time, the brain mechanisms that regulate these desires are not yet fully developed. That's why teens want to do things like bungee jump or drive fast but often don't experience the fear or anxiety adults often associate with such risky activities.

Picture This

Your brain is a mass of cells contained inside your skull. It is, in fact, the boss of you. As the diagram at right shows, there are many parts to the brain, and each has a different function—bossy functions. In fact, the brain is the only organ that has *localization*, explains Dr. Nancy

L. Kuntz, a consultant in child and adolescent neurology at the Mayo Clinic in Rochester, Minn; one specific part controls movement, another helps decode vision, and so on.

Especially important to the teen brain are synaptic pruning and myelin. In childhood, the brain produces many *synapses*—gaps between nerve cells connected by electrical impulses called *neurotransmitters*. As you grow, the brain starts to shed some of those synapses because you don't need them. As Steinberg explains, "the brain starts out like a road map with dirt roads. Those synapses that you need turn into highways, and those not used disappear." That process is *synaptic pruning*.

Pruning is a good thing because the synapses you use get stronger and work better. For instance, during adolescence, as some synapses drop away and others take hold, your thinking becomes clearer and more mature. You get better at planning and controlling impulses.

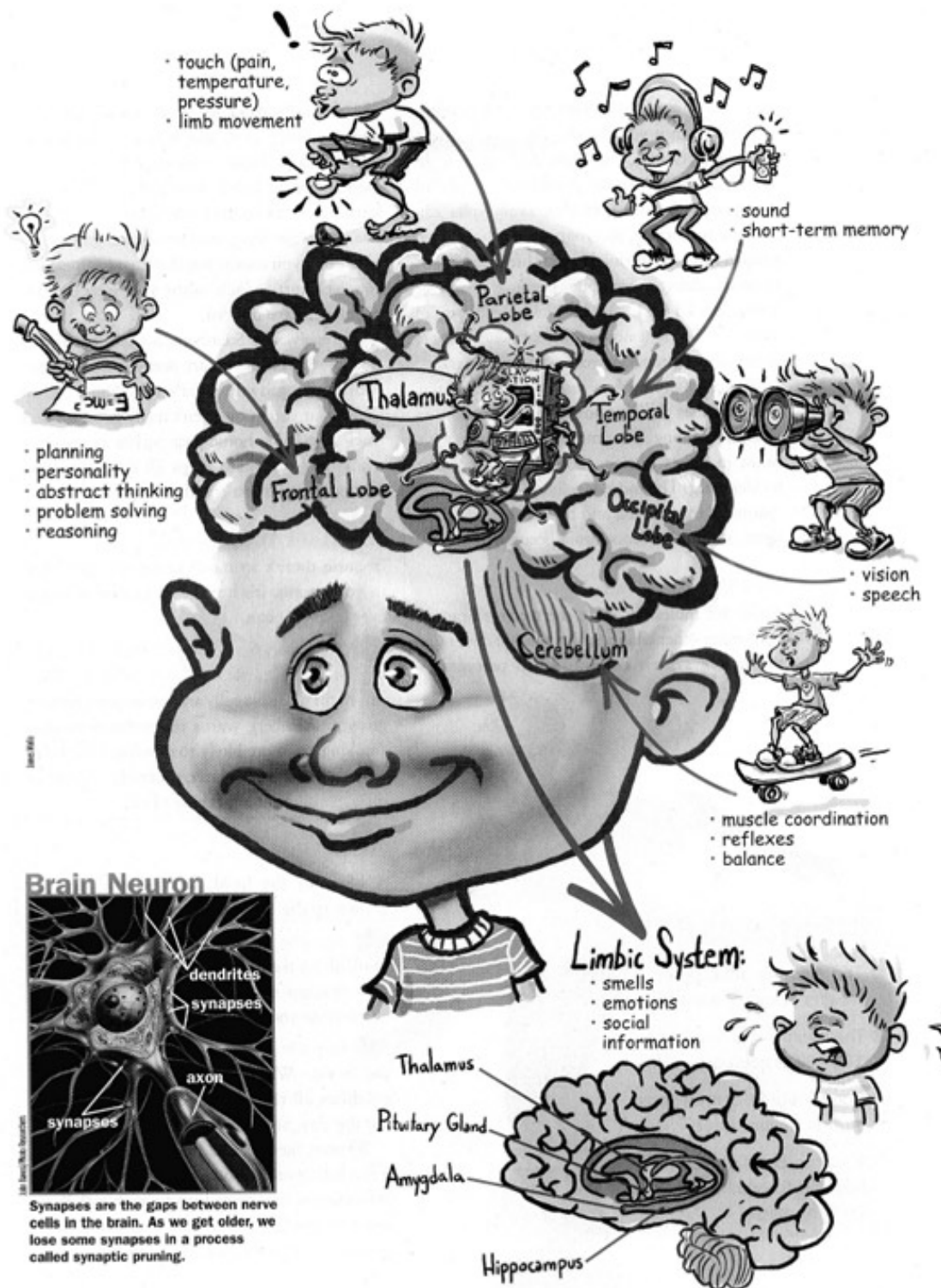
Everyone has about 99 percent of the same synapses, but that still leaves billions that can differ from one person to another, Steinberg says. For instance, if you play guitar every

20 February 2006 *Current Health 2*

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.



“What’s Going On in Your Brain?”



Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.



“What’s Going On in Your Brain?”

day, your brain will have more fine-motor synapses than if you spend a lot of time listening to Fall Out Boy on your MP3 player. (In that case, audio synapses would rule.) The cool thing, says Steinberg, is that brain cells can actually regenerate, so synapses that have been pruned can be re-formed if your life direction or interests change. Synaptic pruning peaks at about age 12 or 13 but continues until you’re about 24. So right now your brain chemistry is pretty active, preparing you to become an adult.

The production of *myelin*—the white matter that insulates the neurons—is as important as synaptic pruning. The amount of myelin in your brain increases during adolescence, according to Steinberg. The more myelin, the faster information is transmitted and the more adept, efficient, and mature your brain becomes.

Get Touchy-Feely

Amid this molecular stuff, the teenage brain is witnessing other changes. Deep inside the brain, the *limbic system* controls smell perceptions

and emotions, and processes social information, Steinberg says, and is one of the first to fully develop. Thus a teen experiences feelings more intensely than he or she did as a child and learns how to control emotions. Notice that you no longer have tantrums when your mom won’t buy you candy, but if a friend snubs you, you feel hurt, which when you were 6, you might not have noticed.

Strangely, says Steinberg, a teen’s *prefrontal cortex*—the brain’s smart part—is out of sync with limbic growth. That’s why you may do things that you know aren’t really good for you (such as coming home past curfew or eating a whole bag of potato chips all at once) while feeling that you just couldn’t help doing it.

Maintain Your Brain

Because there’s so much going on right now in your brain, it’s important to give it whatever help you can.

Stay away from harmful substances, such as illegal drugs, alcohol, and nicotine. They can harm sensitive cells and undermine natural growth. Steinberg warns that teens who start smoking are more likely to develop a life habit than those who start later, probably because of the synaptic pruning taking place.

Wear a helmet when you bike, skateboard, or ski, and wear seat belts in cars. A blow to the head, says Kuntz, may be a blow to the brain. So don’t take chances.

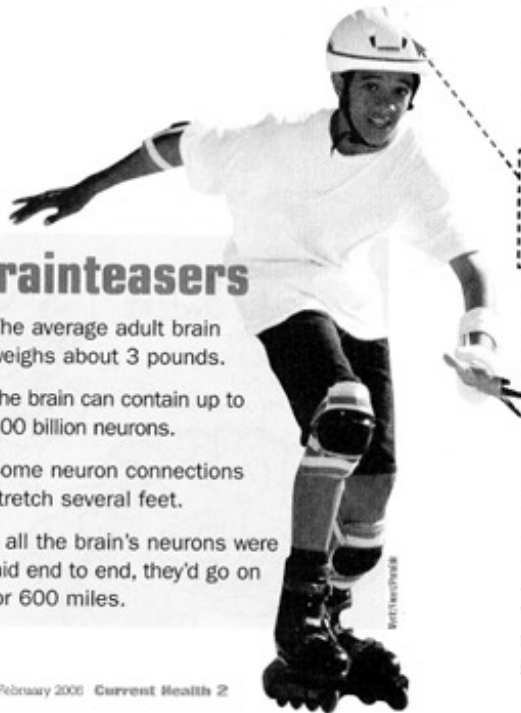
Exercise your mind. Do puzzles, read, think about the world or your life—such activities develop synapses you need and prune away those you don’t, Steinberg says.

Get a lot of sleep. Rest is important to the brain. While you snooze, your brain solidifies all the information it took in during the day, Steinberg says.

By now, having read this article, you might feel a little pumped because absorbing all this information has revved up your mind! Brain work is good for you, and it goes on every minute of every day, whether you think about it or not.

Brainteasers

- The average adult brain weighs about 3 pounds.
- The brain can contain up to 100 billion neurons.
- Some neuron connections stretch several feet.
- If all the brain’s neurons were laid end to end, they’d go on for 600 miles.



22 February 2006 Current Health 2

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

From Current Health 2, February 2006. Copyright © 2006 by Scholastic Inc. Reprinted by permission of Scholastic Inc.



Neurologist Notebook #2:
“What’s Going On in the Teen Brain?”

Name:

Date:

Directions: Use this note-catcher to get the gist of the reading. Remember that the main idea and supporting details are often not just a single sentence of the text; rather, they may involve multiple sentences.

Main idea:

Brief background:

Supporting idea/detail:

Supporting idea/detail:

Supporting idea/detail:

Supporting idea/detail:

Supporting idea/detail:



Neurologist Notebook #2:
“What’s Going On in the Teen Brain?”

Name:

Date:

Vocabulary

Word	Definition	Context clues: How did you figure out this word?
reckless		
localization		
regenerate		
solidifies		



Neurologist Notebook #2:
“What’s Going On in the Teen Brain?”
(Answers, For Teacher Reference)

Name: _____

Date: _____

Directions: Use this note-catcher to get the gist of the reading. Remember that the main idea and supporting details are often not just a single sentence of the text; rather, they may involve multiple sentences.

<p>Main idea: Your Brain is still developing. This means that your actions can influence your development and your actions are influenced by your forming brain.</p>	
<p>Brief Background: The brain is a mass of cells and each part serves a different function Your brain grows synapse in childhood.</p>	<p>Supporting idea/detail: During the teen years your brain is synaptic pruning or getting rid of the ones you don’t need based on what you are using them for.</p>
<p>Supporting idea/detail: Pruning is good because it helps the synapse that are left work better. Myelin also helps the synapse work better.</p>	<p>Supporting idea/detail: Even if synapse are pruned they are not gone forever because they can regrow if you need them</p>
<p>Supporting idea/detail: The limbic system is one of the first to fully develop and is out of sync with the prefrontal cortex. Therefore a teen can control his or her emotions more and feel things more deeply but sometimes make poor decision because the teen “felt” like it.</p>	<p>Supporting idea/detail: You should do things to take care of your brain, like exercise, sleep, and avoid harmful substances.</p>



Neurologist Notebook #2:
“What’s Going On in the Teen Brain?”
(Answers, For Teacher Reference)

Name: _____

Date: _____

Vocabulary

Word	Definition	Context clues: How did you figure out this word?
reckless	Risky or dangerous	
localization	One specific part controls aspect of brain activity	
regenerate	To grow back	
solidifies	To make solid, to make come together	



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 3

Comparing Text to Multimedia: Understanding How the Brain Changes



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can compare and contrast different media versions of informational text (written vs. audio vs. film vs. staged, etc.). (RI.7.7)

I can analyze impact of the techniques unique to each medium. (RI.7.7)

I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1)

Supporting Learning Targets

- I can compare a text-only version of “The Child’s Developing Mind” to the multimedia version of that text.
- I can analyze the impact of the techniques unique to text and multimedia.
- I can analyze the main idea and supporting details in “Teens and Decision Making.”

Ongoing Assessment

- Neurologist’s notebook #2 (from homework)
- Neurologist’s notebook #3
- “The Child’s Developing Mind”: Comparing Text to Multimedia



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Entry Task: Self-Assessment (5 minutes)B. Adding to Anchor Chart (5 minutes)2. Work Time<ol style="list-style-type: none">A. Analyzing Main Idea in “Teens and Decision Making” (15 minutes)B. Comparing Text to an Interactive Version of Text (19 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Previewing Homework (1 minute)4. Homework<ol style="list-style-type: none">A. Read the end of the article “What You Should Know about Your Brain.” Start at the section titled “The Limbic System: Your Emotional Core.” Complete neurologist’s notebook #4 only for the section “Dopamine: Feeling Good Makes You Learn.”	<ul style="list-style-type: none">• Students return to the article “Teens and Decision Making” for the final time in this lesson. Continuing their learning around RI.7.1 and scaffolding toward SL. 7.2, they analyze the main idea and supporting details of this text by completing a neurologist’s notebook entry. This is a difficult assignment, and time is given for students to amend and deepen their thinking. If you collect the neurologist’s notebook entry today, be sure to have it ready to return in Lesson 4, as students will need it to complete the homework for that lesson.• This lesson opens with students self-assessing their ability to analyze the main idea and supporting details in their homework. Although students have worked with main idea throughout the year, this genre of scientific writing poses a unique challenge. All of the articles are divided by subheadings, and finding the common thread between them can be difficult. Students may need encouragement to think of the main idea as a large, summative statement that is general enough to encompass the subheadings but not so general that it says nothing (e.g., “this is about the brain”). It needs to be just specific enough to capture what the article is really about and should be articulated in a statement—not just a phrase.• If students are struggling at this point, you may want to extend the Opening and do this lesson in two class periods instead of one. Both texts in Work Times A and B have plenty of material that could be extended. Alternatively, you could have students revisit the homework from Lesson 1 or Lesson 2 in pairs or triads. All of these texts are building the students’ background knowledge of the physiology of the brain, and the subject is complex enough to warrant multiple reads.• During the Opening, students are introduced to the last column on the Brain Development anchor chart. This column will be stressed in the second half of Unit 1 and throughout Unit 2. Today is a brief introduction and an invitation for students to start making inferences about the implications of the brain research. When you add to the last column of the class chart, the lesson instructions prompt you to use an “if/then” construction. This is intentional. The students will be prompted to make “if/then” statements throughout Unit 1 and Unit 2. This will help students develop good reasoning for the position paper in Unit 3. Again, take more time if you wish, and be sure to let the anchor chart reflect the class discussion. The model is provided for your reference.



Agenda	Teaching Notes (continued)
	<ul style="list-style-type: none">• The second half of this lesson centers on RI. 7.7, which asks students to compare two versions of the same text. This will be new learning for many of the students and will be part of their mid-unit assessment in Lesson 5.• For homework tonight, students read the last half of an excellent article by Dr. Judy Willis. The students will be held accountable only for the dopamine section because it fits best with the focus of the module. The article is presented in its entirety because the other information and vocabulary is useful to know and provides a way for you to differentiate learning for your stronger students. You may assign it if you wish; however, information that is not in the dopamine section will not be emphasized.• In advance:<ul style="list-style-type: none">– Review the upcoming Mid-Unit 1 Assessment to help shape the discussion in Work Time B.– Ready the interactive feature at: http://www.nytimes.com/interactive/2008/09/15/health/20080915-brain-development.html.• Post: Learning targets.



Lesson Vocabulary	Materials
compare, impact, abstract thinking, maturity, unrestrained	<ul style="list-style-type: none">• Self-assessment (one per student and one to display)• Document camera• Brain Development anchor chart—student version (begun in Lesson 2)• Informational Text Structure Map graphic organizer (from Lesson 1)• Informational Text Structure Map graphic organizer (model, for teacher reference; from Lesson 1)• Brain Development anchor chart (begun in Lesson 2)• Model Brain Development anchor chart (for teacher reference)• Neurologist’s notebook #3 (one per student)• Neurologist’s notebook #3 (answers, for teacher reference)• “Teens and Decision Making: What Brain Science Reveals” (from Lesson 1)• “The Child’s Developing Mind”: Comparing Text to Multimedia (one per student)• “The Child’s Developing Mind”: Comparing Text to Multimedia (answers, for teacher reference)• “The Child’s Developing Mind”: Comparing Text to Multimedia interactive feature (multimedia; http://www.nytimes.com/interactive/2008/09/15/health/20080915-brain-development.html)• Interactive white board or computer screen/projector (to display interactive feature)• “What You Should Know about Your Brain” (one per student)• Neurologist’s notebook #4 (one per student)• Neurologist’s notebook #4 (answers, for teacher reference)



Opening	Meeting Students' Needs
<p>A. Entry Task: Self-Assessment (5 minutes)</p> <ul style="list-style-type: none">• Distribute the Self-assessment and instruct students to work on it individually.• After a few minutes, display a copy of the Self-assessment on a document camera. Ask students to raise their hand if they thought Version 1 was more successful at capturing the main idea. Repeat for Version 2.• Acknowledge that Version 1 was better. Briefly explain the strengths of Version 1 (the main idea is general and encompasses the whole article; the supporting idea/details summarize the main points) and the weaknesses of Version 2 (the main idea is too specific; the supporting idea/details are pieces of evidence and not a summary of a major idea).	<ul style="list-style-type: none">• Developing self-assessment and reflection supports all students, but research shows it supports struggling learners most.
<p>B. Adding to the Anchor Chart (5 minutes)</p> <ul style="list-style-type: none">• Direct the students to retrieve their Brain Development anchor chart—student version from Lesson 2 and Informational Text Structure Map graphic organizer from Lesson 1.• Display the Informational Text Structure Map graphic organizer. Point out that the students have now read several conclusions. Ask:<ul style="list-style-type: none">* “What did the conclusions of ‘Teens and Decision Making’ and ‘What’s Going On in Your Brain?’ have in common?”• Briefly discuss the purpose of a conclusion. As needed, refer to the Informational Text Structure Map graphic organizer (model, for teacher reference) from Lesson 1 for guidance.• Point out that a conclusion often answers the questions “What does this information mean to me, the reader?” or “So what?” Display the Brain Development anchor chart that the class has been working on together. Point out the “So what?” column on the anchor chart.• Briefly model how to complete the last column of the class Brain Development anchor chart to support students in filling in their own anchor chart. Refer to the Model Brain Development anchor chart (for teacher reference) as needed. Your model may look like this:<ul style="list-style-type: none">– Circle one of the pieces of information on the anchor chart that says the prefrontal cortex is the last to mature. Draw a line to the “So what?” column and write: “So <u>if</u> the PFC is not as efficient, <u>then</u> teens may make decisions without fully realizing long-term consequences. <u>If</u> they do that, <u>then</u> this can be good (they take daring risks) and bad (they take dangerous risks).”	<ul style="list-style-type: none">• Graphic organizers and recording forms engage students more actively and provide the necessary scaffolding that is especially critical for learners with lower levels of language proficiency and/or learning.



Opening (continued)	Meeting Students' Needs
<ul style="list-style-type: none">– Circle one of the pieces of information that says that synaptic pruning occurs based on the behavior of an individual, and draw a line to the “So what?” column. Write the phrase: “So <u>if</u> synapses are being pruned or strengthened by the activities that teens spend their time on, <u>then</u> teens can shape their brain. And <u>if</u> activities shape one’s brain, <u>then</u> one should be mindful about the activities one is doing. As Dr. Willis says, ‘Practice makes permanent.’”• Explain that students will encounter “if/then” phrases in their homework tonight and that they should pay special attention to what this means. (You may want to preview the homework at this time.)• Encourage students to start asking themselves, “So what?” as they learn more information about the brain.	
Work Time	Meeting Students' Needs
<p>A. Analyzing Main Idea in “Teens and Decision Making” (15 minutes)</p> <ul style="list-style-type: none">• Distribute neurologist’s notebook #3. Invite students to get out their copy of “Teens and Decision Making” (from Lesson 1) and briefly skim over the article. Remind them that this the third time they have interacted with this article.• Ask students to turn and talk with their partner:<ul style="list-style-type: none">* “Now that you have read the entire article, try to sum it up in one sentence. What is the main idea?”• After a few minutes, call on pairs to share their ideas. Guide the class to understand that the main idea should be very general and encompass the entire article. Refer to neurologist’s notebook #3 (answers, for teacher reference) as needed.• Direct the students to fill in the “brief background” box and four of the “supporting idea/details” boxes. Remind students to use the subheadings as a guide. Circulate to ensure that students’ supporting details are valid. Use probing questions such as:<ul style="list-style-type: none">* “How can you say that in one sentence?”* “What is the most important information from this section?”* “Does that match the subheading?”• After 5 minutes, direct the pairs to stand up, bring their neurologist’s notebook entries with them, and form a group of four with another pair to discuss their ideas. Circulate to ensure that the supporting details are valid.	<ul style="list-style-type: none">• Giving students time to amend their original answers promotes deeper thinking and self-assessment.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • After a few minutes, tell the students to return to their seats. • Give them a few minutes to silently amend their neurologist's notebooks #3 as needed. You may wish to collect this to help you identify struggling students. 	
<p>B. Comparing Text to an Interactive Version of Text (19 minutes)</p> <ul style="list-style-type: none"> • Distribute “The Child’s Developing Mind”: Comparing Text to Multimedia to each student. • Ask a student to read the learning targets aloud. <ul style="list-style-type: none"> * “I can compare a text-only version of ‘The Child’s Developing Mind’ to the multimedia version of that text.” * “I can analyze the impact of the techniques unique to text and multimedia.” * “I can analyze the main idea and supporting details in ‘Teens and Decision Making.’” • Discuss the words <i>compare</i> and <i>impact</i>. Explain to students that they will be thinking about how different versions of the same text can deepen their learning about a subject. • Ask students to follow along as you read “The Child’s Developing Mind”: Comparing Text to Multimedia aloud. • Pause after you have completed the reading and answer any questions about vocabulary. You may wish to point out <i>abstract thinking</i>, <i>maturity</i>, and <i>unrestrained</i>. • Give students time to answer Questions 1 and 2 from “The Child’s Developing Mind”: Comparing Text to Multimedia. • Ask students to turn and talk with a partner about their answers. • Invite the students to share out their ideas. Lead off by pointing out this text clearly answers the question “So what?” by linking brain maturity to behavior. Also point out that although the readings from the previous lessons clearly said that behavior can shape the brain, this text is saying that the brain also shapes behavior. Clearly the brain is a complex organ and many factors contribute to how it works. Refer to “The Child’s Developing Mind”: Comparing Text to Multimedia (answers, for teacher reference) as needed. • After a few minutes, invite students to add to their original answers at the end of “The Child’s Developing Mind”: Comparing Text to Multimedia. • Next project the “The Child’s Developing Mind”: Comparing Text to Multimedia interactive feature using an interactive white board or computer screen/projector. You may find it here: http://www.nytimes.com/interactive/2008/09/15/health/20080915-brain-development.html. 	<ul style="list-style-type: none"> • Careful attention to learning targets throughout a lesson engages, supports, and holds students accountable for their learning. Consider revisiting learning targets throughout the lesson so that students can connect their learning with the activity they are working on.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Move the slider bar from 6 years old to 13 years old to 17 years old. Note for the students that the text is the same. Reread the text as it appears in the interactive feature.• Ask students to answer Questions 3–7 on “The Child’s Developing Mind”: Comparing Text to Multimedia.• After a few minutes, invite them to turn and talk with a partner about their ideas.• Invite them to share out their ideas. As you discuss how being able to visualize the information makes it easier to understand, point out that writers often try to help their readers visualize something by using metaphors. In “Teens and Decision Making,” the prefrontal cortex was a “blinking red warning light.” In “What’s Going On in Your Brain?” the author compared the brain to a roadmap. And in “The Teen Brain—It’s Just Not Grown Up Yet,” myelin was compared to insulation on electric wires.• As time permits, feel free to explore this interactive feature.	
Closing and Assessment	Meeting Students' Needs
A. Previewing Homework (1 minute) <ul style="list-style-type: none">• Distribute “What You Should Know about Your Brain” and neurologist’s notebook #4. Answer any clarifying questions.	
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Read the end of the article “What You Should Know about Your Brain.” Start at the section titled “The Limbic System: Your Emotional Core.” Complete neurologist’s notebook #4 only for the section “Dopamine: Feeling Good Makes You Learn.” There is no vocabulary for this notebook entry but lots of rich vocabulary for you to learn on your own.	<ul style="list-style-type: none">• This homework is an opportunity to challenge your stronger students. Consider assigning them the entire article.



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 3

Supporting Materials



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Self-Assessment

Name:

Date:

Entry Task: Self-Assessment

Directions: Please complete this task individually. Read through the two models for neurologist's notebook #2. Then answer the questions below.

Version #1

Version #2

Main idea: Your brain is still developing. This means that your actions can influence your development and your actions are influenced by your forming brain.		Main idea: Your brain is like a map. Through synaptic pruning, some roads are turning into highways and others are disappearing.	
Brief background: The brain is a mass of cells, and each part serves a different function. Your brain grows synapses in childhood.	Supporting detail: During the teen years, your brain is synaptic pruning—or getting rid of the ones you don't need based on what you are using them for.	Brief background: The brain is a mass of cells, and it is the boss of you.	Supporting detail: Teens want to do things like bungee jump.
Supporting detail: Pruning is good because it helps the synapses that are left be more efficient. Myelin wraps the ones that are not pruned.	Supporting detail: Even if synapses are pruned, they are not gone forever because they can regrow if you need them.	Supporting detail: If you play guitar, your fine-motor synapses will grow.	Supporting detail: Everyone has about 99 percent of the same synapses.
Supporting detail: The limbic system is one of the first to fully develop and is out of sync with the prefrontal cortex. Therefore, a teen can control her/his emotions more and feel things more deeply, but sometimes make poor decisions because the teen “felt” like it.	Supporting detail: You should do things to take care of your brain, like exercise, sleep, and avoid harmful substances.	Supporting detail: Synaptic pruning peaks at about age 12 or 13 but continues until age 24.	Supporting detail: The limbic system is out of sync with the prefrontal cortex.



Self-Assessment

Which version is more successful at capturing the main ideas and supporting details? Why?

Which entry is most similar to yours? Why?

What did you struggle with in last night's reading? How can I help you be more successful?



Model Brain Development Anchor Chart

Note: This chart is filled out in different lessons. The bolded items are added in this lesson.

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
<p>The brain needs sleep to take things from your short-term memory to your long-term memory (Knox)</p> <p>Your brain does not fully develop until the mid-20s (Scholastic)</p>	<p>Also called the “frontal lobe” (Knox)</p> <p>This area helps with insight and understanding the effect of your behavior on someone else (Knox)</p> <p>Matures later than other parts of the brain (Scholastic)</p> <p>Right behind your forehead (Scholastic)</p> <p>Helps with thinking ahead and sizing up risk and reward (Scholastic)</p>	<p>“White matter” is called myelin, and it coats the nerves and makes them “communicate” more effectively (Knox)</p> <p>In order for your brain to make a decision, tiny specialized cells “talk” with each other through a series of neurotransmitters, like a circuit in a computer. Then the whole network puts out a response, which becomes your outward behavior. (Scholastic)</p>	<p>Develops earlier than the PFC (Scholastic)</p> <p>Plays a central role in your emotional response (Scholastic)</p> <p>Associated with decisions made in feeling (Scholastic)</p> <p>When teens make decisions in emotionally charged situations—this one weighs in heavily (Scholastic)</p>	<p>So <u>if</u> the PFC is not as efficient, <u>then</u> teens may make decisions without fully realizing long-term consequences. <u>If</u> they do that, <u>then</u> this can be good (they take daring risks) and bad (they take dangerous risks).</p>



Model Brain Development Anchor Chart

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
		<p>Information travels from neuron to neuron by way of their axons and dendrites (Scholastic)</p> <p>The space between one neuron's axon and the other neuron's dendrites is called its synapse (Scholastic)</p> <p>To make the connection better, the axons wrap themselves in myelin through a process called myelination (Scholastic)</p> <p>Also, if a synapse isn't used often, it is pruned through synaptic pruning. Then that energy is redirected into more active synapse. (Scholastic)</p> <p>Synaptic pruning occurs based on the choices, the behavior, and the environment of an individual (Scholastic)</p>		<p>So <u>if</u> synapses are being pruned or strengthened by the activities that teens spend their time on, <u>then</u> teens can shape their brain. And <u>if</u> activities shape one's brain, <u>then</u> one should be mindful about the activities that one is doing. As Dr. Willis says, "Practice makes permanent."</p>



Neurologist's Notebook #3:
"Teens and Decision Making"

Name:

Date:

Directions: Use this note-catcher to get the gist of the reading. Remember that the main idea and supporting details are often not just a single sentence of the text; rather, they may involve multiple sentences.

Main idea:	
Brief background:	Supporting idea/detail:
Supporting idea/detail:	Supporting idea/detail:
Supporting idea/detail:	Supporting idea/detail:



Neurologist's Notebook #3:
"Teens and Decision Making"
(Answers, for Teacher Reference)

Directions: Use this note-catcher to get the gist of the reading. Remember that the main idea and supporting details are often not just a single sentence of the text; rather, they may involve multiple sentences.

<p>Main idea:</p> <p>The teen brain is still maturing and changing in important ways. Therefore, it works a little differently than an adult when a teen is making decisions.</p>	
<p>Brief background:</p> <p>One's thoughts and decisions are caused by neurons sending electrochemical messages back and forth.</p>	<p>Supporting idea/detail:</p> <p>One part of the brain that is still developing is the prefrontal cortex. This helps when one makes decisions because it sizes up risks and thinks ahead about the consequence.</p>
<p>Supporting idea/detail:</p> <p>The limbic system is more fully developed and the more emotional center of the brain. Therefore, when teens make decisions, they sometimes use this part more and think more about how they feel about those decisions and less about the long-term consequences.</p>	<p>Supporting idea/detail:</p> <p>The teen brain is also actively changing. It is pruning synapses that it doesn't use and reinforcing the connection between neurons that it does use.</p>
<p>Supporting idea/detail:</p> <p>Teens can potentially influence which neurons are reinforced by their behavior and thoughts.</p>	<p>Supporting idea/detail:</p> <p>Stopping and thinking through a decision will give one's PFC time to activate and will strengthen the neurons in the PFC.</p>



“The Child’s Developing Brain”:
Comparing Text to Multimedia

Direction:

Please read these excerpts from “The Child’s Developing Brain,” an interactive feature published by the *New York Times* on September 15, 2008. Then answer the questions.

Overview:

Different areas of the brain mature at different rates, which helps explain many of the intellectual and emotional changes seen in children, teens and young adults. While no two children develop in exactly the same way, scientists have been able to link certain developmental milestones to changes in brain tissue, observed by MRI scans taken repeatedly over years.

6 Years old

REASON

The dappled yellow and the red areas of the prefrontal cortex indicate this part of the brain, which affects abstract thinking, reasoning skills and emotional maturity, has yet to develop. This lack of maturity is one reason young children can’t juggle a lot of information and throw tantrums when presented with too many choices.

13 Years Old

JUDGEMENT

The prefrontal cortex is among the last areas to mature. Until it does, children lack the ability to adequately judge risk and make long-term plans. Ask kids at this age what they want to be when they grow up and the answer is likely to change often.

EMOTION

Deep in the limbic system, a capacity for creating emotion increases. As yet, this capacity is unrestrained by the prefrontal cortex, which lags behind. That’s why some teens can seem emotionally out of control.

17 Years Old

ABSTRACT THOUGHT

The deep blue and purple of the maturing prefrontal cortex shows why the brains of older teenagers are capable of dealing with far more complexity than younger children. This development leads to a burst of the social interactions and emotions among older teens. Planning, risk-taking, and self-control become possible.

From The New York Times, September 15, 2008 © 2008 The New York Times. All rights reserved. Used by permission and protected by the Copyright Laws of the United States. The printing, copying, redistribution, or retransmission of this Content without express written permission is prohibited.



The Child's Developing Brain:
Comparing Text to Multimedia

1. What do these readings teach us about the prefrontal cortex and its link to developmental milestones?
2. Reread the introduction. Why do you think the authors included the information that “no two children develop in exactly the same way” before giving this information?

Directions: Now look at the interactive feature that accompanies this text.

3. What is different between the text and the interactive feature? How are they the same?
4. What are the advantages of the text-only version?
5. What are the advantages of the interactive version?
6. Reread what you wrote for Question 1. How is your understanding different after seeing the interactive feature?
7. What other image might the authors have used?



The Child's Developing Brain:
Comparing Text to Multimedia
(Answers, for Teacher Reference)

1. What do these readings teach us about the prefrontal cortex and its link to developmental milestones?

Children reach development milestones as their prefrontal cortex develops. Their “outward” behavior correlates with the “inner” physical maturity of their brain.

2. Reread the introduction. Why do you think the authors included the information that “no two children develop in exactly the same way” before giving this information?

The authors want to remind us that this is not a simple relationship between the biology and the behavior. In fact, this is a very complex set of interactions and although we can make general statements about how children's behavior relates to their brain biology, individuals can and do vary.

Directions: Now look at the interactive feature that accompanies this text.

3. What is different between the text and the interactive feature? How are they the same?

Answers may vary. They present the same facts and information, but the interactive feature is visual.

4. What are the advantages of the text only version?

Answers may vary. The reader can easily read the entry before and after for a quick comparison of the information.

5. What are the advantages of the interactive version?

Answers may vary. It is a very active and visual way of seeing the changes in the brain. It's as if it is changing before your eyes. It makes it easy to compare the differences between a young child's brain and an adolescent's brain.

6. Reread what you wrote for Question 1. How is your understanding different after seeing the interactive feature?

Answers will vary.

7. What other image might the authors have used?

Answers may vary. The author could have included a picture of kids demonstrating the behavior or the development milestone—e.g. throwing a tantrum.



“What You Should Know About Your Brain”

What You Should Know About Your BRAIN



Judy Willis

Although the brain is an amazing organ, it's not equipped to process the billions of bits of information that bombard it every second. Filters in your brain protect it from becoming overloaded. These filters control the information flow so that only approximately 2,000 bits of information per second enter the brain.

The Thinking Brain and the Reactive Brain

Once sensory information enters the brain, it's routed to one of two areas: (1) The *prefrontal cortex*, what we might call the thinking brain, which can consciously process and reflect on information; or (2) the lower, automatic brain, what we might call the reactive brain, which reacts to information instinctively rather than through thinking. The prefrontal cortex is actually only 17 percent of your brain; the rest makes up the reactive brain.

When you are not stressed by negative emotions, you can control what information makes it into your brain. By calming your brain, you can control which sensory data from your environment your brain lets in or keeps out—and influence which information gets admitted to your prefrontal cortex.

When your stress levels are down and your interest is high,

the most valuable information tends to pass into your thinking brain. When you are anxious, sad, frustrated, or bored, brain filters conduct sensory information from the world around you into your reactive brain. These reactive brain systems do one of three things with the information: ignore it; fight against it as a negative experience (sending signals that may cause you to act inappropriately); or avoid it (causing you to daydream). If information gets routed to this reactive brain, it's unlikely your brain will truly process the information or remember it.

Three major brain elements help control what information your brain takes in: the reticular activating system, the limbic system, and the transmitter dopamine. Let's look at how you can help each one work in your favor.

RAS: The Gatekeeper

The first filter that data passes through when entering your brain is the reticular activating system (RAS). Located at the lower back of your brain (your brain stem), the RAS receives input from sensory nerves that come from nerve endings in your eyes, ears, mouth, face, skin, muscles, and internal organs and meet at the top of your spinal cord. These sensory messages must pass through the RAS to gain entry to your higher, thinking brain.

You will learn more successfully if you keep the RAS filter



open to the flow of information you want to enter your prefrontal cortex. If you build your power to focus your attention on the sensory input that is most valuable and important to attend to at the moment, the important input will make it into your thinking brain. If you feel overwhelmed, your reactive brain will take over. Then, what you experience, focus on, and remember will no longer be in your control. It's the difference between *reflecting on* and *reacting to* your world.

➡ What You Can Do

A key to making your brain work optimally, then, is to keep yourself physically healthy and well rested and to develop awareness of—and some control over—your emotions. Then you can approach learning calmly and with positive emotions.

Practice focusing and observing yourself, for example, by taking a short break from work to check in with your emotions. Just take a few minutes to think about what you're feeling. If it's a good feeling, take time to enjoy it and consider how your good emotional state affects your thinking. Do you understand more and get ideas about what you might do with the information you're learning? If you don't like the way you're feeling, think about times you've felt a similar negative emotion (like anxiety or loneliness). What has helped you return to a better mood in the past?

Even though you're not sleeping, you can think of such brain breaks as "syn-naps" because they let your brain replenish neurotransmitters like dopamine (which we'll discuss shortly). As you become aware of your emotions, you build brain networks that help you control your actions with your thinking brain. It also helps to do something active during a short break—such as toss a ball back and forth with a classmate, saying a word related to your lesson each time you catch the ball.

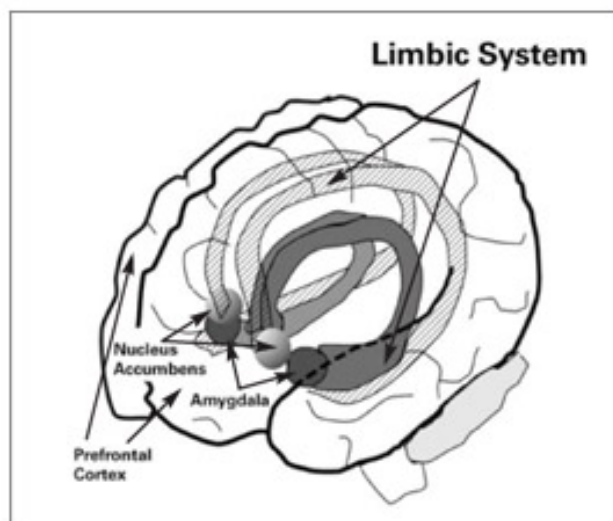
The Limbic System: Your Emotional Core

After the information coming in through your senses gets through the RAS, it travels to the sensory intake centers of your brain. New information that becomes memory is eventually stored in the *sensory cortex areas* located in brain lobes that are each specialized to analyze data from one of your five senses. These data must first pass through your brain's emotional core, the *limbic system*, where your *amygdala* and *hippocampus* evaluate whether this information is useful because it will help you physically survive or bring you pleasure.

The Amygdala

The amygdala is like a central train-routing station; it's a system for routing information based on your emotional state. When you experience negative emotions like fear, anxiety, or even boredom, your amygdala's filter takes up excessive amounts of your brain's available nutrients and oxygen. This

"What You Should Know About Your Brain"



The shaded areas show major components of the limbic system deep within the brain.

puts your brain into survival mode, which blocks entry of any new information into your prefrontal cortex.

For example, suppose your day starts off badly. You overslept, had no time for breakfast, and have too many things to do before school. You're worried about whether your friends will sit with you at lunch and afraid that the mean kid in your class will say hurtful things to you.

It's not only your body that suffers on this kind of day: Your brain is also stressed. This stress closes off the pathways through the RAS and amygdala that direct information into your thinking brain and memory centers. Unless you restore a positive mood, you won't learn much on this particular school day. But if you can turn things around to become calm and focused, your amygdala will "decide" to send new information to your prefrontal cortex.

➡ What You Can Do

Slow down and take a moment to reflect instead of react when you take a test at school or face social conflicts with friends. You might take a deep breath and visualize yourself in a peaceful place. Another technique that helps you choose what to do with your emotions—something only humans can do—is to imagine you're directing yourself in a play. You are the director sitting in a balcony seat watching an actor (the emotional you) on stage below. What advice would you give the emotion-filled actor on the stage if he or she had been pushed by a classmate and wanted to hit back, for example? This technique helps you move away from using your reactive brain and tap your thinking brain, where memories that might help you are stored.

Your teachers play a role too. If your teachers set up lessons



to include some fun activities so that you feel good during a lesson, your amygdala will add a neurochemical enhancement, like a memory chip, that strengthens the staying power of any information presented in the lesson. People actually remember more of what they hear and read if they are in a positive emotional state when they hear or read it.

The Hippocampus

Next to the amygdala is the *hippocampus*. Here, your brain links new sensory input to both memories of your past and knowledge already stored in your long-term memory to make new *relational memories*. These new memories are now ready for processing in your prefrontal cortex.

Your prefrontal cortex contains highly developed nerve communication networks that process new information through what are called *executive functions*, including judgment, analysis, organizing, problem solving, planning, and creativity. The executive function networks can convert short-term relational memories into long-term memories. When you are focused and in a positive or controlled emotional state, your executive functions can more successfully organize newly coded memories into long-term knowledge.

What You Can Do

Reviewing and practicing something you've learned helps. Nerve cells (neurons) forge information into memories by sending messages to other neurons through branches—called axons and dendrites—that almost touch the branches of each neighboring neuron. It takes lots of connections between neurons to relate each neuron's tiny bit of information to that of other neurons so that all the bits add up to a complete memory. When you review or practice something you've learned, dendrites actually grow between nerve cells in the network that holds that memory.

Each time you review that knowledge, this mental manipulation increases activity along the connections between nerve cells. Repeated stimulation—for example, studying the times tables many times—makes the network stronger, just like muscles become stronger when you exercise them. And that makes the memory stay in your brain. Practice makes permanent.

When you review new learning through actions, using the knowledge to create something, solve problems, or apply it to another subject (such as using the times tables to measure the areas of paintings for framing them), this mental manipulation strengthens the neural pathways and your brain becomes even more efficiently wired.

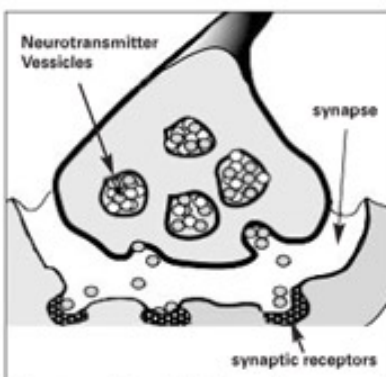
“What You Should Know About Your Brain”

Dopamine: Feeling Good Helps You Learn

Dopamine is one of the brain's most important *neurotransmitters*. Messages connected to new information travel from neuron to neuron as tiny electrical currents. Like electricity, these messages need wiring to carry them. But there are gaps, called *synapses*, between the branches that connect nerve cells and there's no wiring at these gaps. Chemical neurotransmitters like dopamine carry electrical messages across the gap from one neuron to another. This transmission is crucial to your brain's capacity to process new information.

Your brain releases extra dopamine when an experience is enjoyable. As positive emotions cause dopamine to travel to more parts of your brain, additional neurons are activated.

Thus a boost in dopamine not only increases your own sense of pleasure, but also increases other neurotransmitters, such as acetylcholine, that enhance alertness, memory, and executive functions in the prefrontal cortex.



Neurotransmitters like dopamine carry messages across the synapse.

What You Can Do

Certain activities, such as interacting with friends, laughing, physical activity, listening to someone read to you, and acting kindly increase dopamine levels. You'll boost your learning if you get them into your day.

Experiencing pride at accomplishing something is also correlated with higher dopamine. It will increase your learning power if you pursue activities that give you a sense of accomplishment. Think about your personal strengths, such as artistic ability, leadership, helping classmates resolve conflicts, athletic skill, or even qualities like optimism, kindness, and empathy. Use these skills to do projects you want to do—and do them well—and you'll find you can use your brain power more successfully to make judgments and solve problems.

You now have the power to use your most powerful tool to achieve the goals you choose. Congratulations on the dendrites you've grown along the way!

Judy Willis, MD, practiced neurology for 20 years; she currently teaches at Santa Barbara Middle School in California and conducts professional development workshops. She is the author of *Teaching the Brain to Read: Strategies for Improving Fluency, Vocabulary, and Comprehension* (ASCD, 2008); www.RADTeach.com; jwillisneuro@aol.com.

This handout was created to accompany the article “How to Teach Students About the Brain,” by Judy Willis, *Educational Leadership*, 67(4). Copyright © 2009 ASCD.



Neurologist's Notebook #4:
"Dopamine: Feeling Good Helps You Learn"

Name:

Date:

Directions: Use this note-catcher to get the gist of the reading. Remember that the main idea and supporting details are often not just a single sentence of the text; rather, they may involve multiple sentences.

Main idea:	
Brief background:	Supporting idea/detail:
Supporting idea/detail:	Supporting idea/detail:
Supporting idea/detail:	Supporting idea/detail:



Neurologist's Notebook #4:

"Dopamine: Feeling Good Helps You Learn"
(Answers, for Teacher Reference)

Name: _____

Date: _____

Directions: Use this note-catcher to get the gist of the reading. Remember that the main idea and supporting details are often not just a single sentence of the text; rather, they may involve multiple sentences.

Main idea:

Dopamine is an important neurotransmitter. Through your behavior, you can boost your dopamine levels.

Brief background:

A neurotransmitter is something that helps take the message across the synapse.

Supporting idea/detail:

The brain releases extra dopamine when an experience is pleasurable.

Supporting idea/detail:

Dopamine is enjoyable for you and makes it easier for neurons to be activated.

Supporting idea/detail:

If you can get dopamine-boosting activities into your day, you'll learn better.

Supporting idea/detail:

Some of the things that boost dopamine are laughing, physical activity, being kind, and feeling a sense of accomplishment.

Supporting idea/detail:



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 4

Analyzing the Main Idea in Video: Understanding the Limbic System



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can analyze the main ideas and supporting details presented in different media and formats. (SL.7.2)
I can explain how ideas presented in different media and formats clarify a topic, text, or issue. (SL.7.2)
I can analyze impact of the techniques unique to each medium. (RI.7.7)
I can adjust my writing practices for different timeframes, tasks, purposes, and audiences. (W.7.10)

Supporting Learning Targets

- I can analyze the main ideas and supporting idea/details in “Insight into the Teenage Brain.”
- I can explain how the different aspects of a presentation contribute to my understanding.
- I can explain how ideas presented in “Insight into the Teenage Brain” clarify my understanding of the brain.
- I can summarize the main idea and supporting details in a well-explained paragraph.

Ongoing Assessment

- Thinking Logs



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Entry Task: Thinking Log (5 minutes)2. Work Time<ol style="list-style-type: none">A. Analyzing Main Idea in Video (33 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Exit Ticket: Thinking Log (7 minutes)4. Homework<ol style="list-style-type: none">A. Using your neurologist's notebook as a resource, complete the Homework: Summarizing Main Idea and Supporting Details.	<ul style="list-style-type: none">• This lesson focuses on SL.7.2, a standard that students have not worked with in other modules. Although analyzing the main idea and supporting details is not a new skill, applying it to the video they watch in this lesson adds a new dimension. Students' familiarity with the neurologist notebook will help them with their work on this new standard because it is structurally the same as the Main Ideas and Supporting Details note-catcher, which they use in this lesson (applied to video).• Play the video all the way through once before you begin analyzing the main idea and supporting details. This will be particularly important for your ELL and struggling students.• Building off Lesson 3, students will continue to do some RI.7.7 work and think about how images influence their understanding of text.• In addition to explaining more about the limbic system, the video in this lesson helps to balance the information the students have learned about the brain. Many of the articles they have read so far focus on the negative aspects of the adolescent brain (impulsive, risk-taking, unable to make wise decisions in an emotionally charged situation, etc.). Today's lesson emphasizes the positive. As Dr. Galván says, the teen brain, with its built-in desire to seek out risks and rewards, is perfectly suited to the central task of adolescence—breaking away from caregivers.• Review Work Time A carefully to envision students' work with the text and video, and consider how to manage the logistics smoothly.• Students add to their Thinking Logs for both the entry ticket and exit ticket. Be sure those are accessible.• For homework, students will return to their neurologist's notebooks and write a summary. To give them more options to work from, do not collect neurologist's notebook #4 (their homework from the previous lesson) and be sure to return any entries you collected in Lessons 2 or 3. The purpose of this homework is twofold: First, it will help students review the complex information on brain development they have learned so far; second, it will help them grapple with main ideas and supporting details before they are assessed on this skill in the mid-unit assessment in the next lesson.• Look ahead to the mid-unit assessment in the next lesson and prepare any necessary materials.



Agenda	Teaching Notes (continued)
	<ul style="list-style-type: none">• In advance:<ul style="list-style-type: none">– Preview the video and try filling in the note-catcher yourself. This will make the discussion in Work Time A more productive.– Review the Insight into the Teen Brain Teaching Guide, which you will use to guide students through Work Time A.– Ready the video: http://tedxtalks.ted.com/video/Insight-Into-the-Teenage-Brain;search%3Atag%3A%22tedxyouth-caltech%22. (Galvan, Adriana. "Insight Into the Teenage Brain." February 13, 2013. Online video. TEDxhttp://tedxtalks.ted.com/video/Insight-Into-the-Teenage-Brain;search%3Ateenage%20brain%20adriana%20g.)• Post: Learning targets, entry task.



Lesson Vocabulary	Materials
dopamine, striatum	<ul style="list-style-type: none">• Thinking Logs (begun in Lesson 2)• Domain-Specific Vocabulary anchor chart (begun in Lesson 1)• Model Domain-Specific Vocabulary anchor chart (for teacher reference)• Brain Development anchor chart—student version (begun in Lesson 2)• Document camera• Analyzing the Main Idea and Supporting Details in Video note-catcher (one per student and one for display)• “Insight into the Teenage Brain” TedX Talk featuring Dr. Adriana Galván (video; http://tedxtalks.ted.com/video/Insight-Into-the-Teenage-Brain;search%3Atag%3A%22tedxyouth-caltech%22)• Technology to display video• “Insight into the Teen Brain” Teaching Guide (for teacher reference)• Model Analyzing the Main Idea and Supporting Details in Video note-catcher (for teacher reference)• Comparing Text to Video (one to display)• Model Brain Development anchor chart (for teacher reference)• Brain Development anchor chart (begun in Lesson 2)• Homework: Summarizing Main Idea and Supporting Details (one per student)



Opening	Meeting Students' Needs
<p>A. Entry Task (5 minutes)</p> <ul style="list-style-type: none">• Post the entry task in advance:<ul style="list-style-type: none">* “Please retrieve your Thinking Logs and fill out the entry under Lesson 4, “What You Should Know about Your Brain.”• After students have completed the task, cold call several of them to share their thinking about the questions:<ul style="list-style-type: none">* “Dr. Willis says that when you stimulate neuron pathways over and over again, they become stronger. As she says, ‘Practice makes permanent.’ What implications does this have for the kinds of activities that teens do repeatedly?”* “What else are you wondering about the adolescent brain’s development?”• Be sure that students understand that while the brain shapes behavior, behavior can shape the brain. This will likely be a major premise on which they build their position paper in Unit 3. If need be, pull quotes from their previous reading to review this information.	



Work Time	Meeting Students' Needs
<p>A. Analyzing Main Idea in Video (33 minutes)</p> <ul style="list-style-type: none"> Refer the class to the Domain-Specific Vocabulary anchor chart. Add <i>dopamine</i> to the chart and ask a student to use his or her reading from last night to define it, referring to Model Domain-Specific Vocabulary anchor chart (for teacher reference) as needed. Next, ask students to refer to their Brain Development anchor chart—student version. Ask a student to reread all the information in the “limbic system” column. Explain that the video the class will watch today will be talking a lot about the <i>striatum</i>, which is part of the limbic system. Distribute and use a document camera to display the Analyzing the Main Idea and Supporting Details in Video note-catcher. Point out that this note-catcher is nearly identical to the neurologist’s notebook. Students have had lots of practice with main idea and supporting idea/details. Ask a student to read the learning targets. Then ask: <ul style="list-style-type: none"> * “How will analyzing the main idea in a video be different from a text?” Listen for students to say things like: “It will be harder because you won’t be able to reread” or “It will be easier because it’s easier to listen to someone talk.” Ask: <ul style="list-style-type: none"> * “How will analyzing the main idea in a video be the same?” Listen for students to understand that in both text and video the main idea must be a big, general summary statement, and it might not be apparent after just one read or watch. Clarify for students that you will be playing the video several times and that this first time they should watch for “the gist.” Play “Insight into the Teenage Brain” TedX Talk featuring Dr. Adriana Galván all the way through once. (This will take 10 minutes). Invite students to turn and talk and try to identify what the main idea is. Because this is likely to change, they should write their idea in the margin of their note-catcher. Tell students that the class will now watch the video again. You will periodically pause the video so that students can add to the note-catcher. 	<ul style="list-style-type: none"> Careful attention to learning targets throughout a lesson engages, supports, and holds students accountable for their learning. Consider revisiting learning targets throughout the lesson so that students can connect their learning with the activity they are working on. If possible, give English Language Learners an opportunity to preview the video before the lesson, as a “first view” for gist.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Begin showing the video again. Use the “Insight into the Teen Brain” Teaching Guide for suggested pause points and prompts. Refer to the Model Analyzing the Main Idea and Supporting Details in Video note-catcher (for teacher reference) as needed to support students with their note-catchers.• Halfway through the video, display Comparing Text to Video. This will help students compare a text to the video version of the text (RI 7.7,) and build off the work they did in Lesson 3, Use this as the text version of the video and lead a brief discussion to compare the text version to the video version.• At the conclusion of the video, ask the students to identify two pieces of information to add to their Brain Development anchor chart. See Model Brain Development anchor chart (for teacher reference) for suggestions, but be sure that the class Brain Development anchor chart reflects the class discussion as well. As students fill in information on their own copy of the anchor chart, fill in the class anchor chart.	
Closing and Assessment	Meeting Students' Needs
<p>A. Exit Ticket (5 minutes)</p> <ul style="list-style-type: none">• Direct students to return to their Thinking Logs and complete the exit ticket entry in Lesson 4.<ul style="list-style-type: none">– What did Dr. Galván’s experiments prove about how teens react differently to dopamine levels than adults or children? How might this explain teen behavior?– What else are you wondering about the adolescent brain’s development?• If time permits, invite students to share out their thinking. Alternatively, this may be a good point at which to collect students’ thinking for a formative assessment.• Distribute Homework: Summarizing Main Idea and Supporting Details. Clarify any questions.	
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• The Mid-Unit 1 Assessment will be tomorrow. You will analyze the main idea and supporting details in a video. To help you practice, return to your neurologist’s notebook entries and summarize one of the articles that you have read on the Homework: Summarizing Main Idea and Supporting Details.	



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 4

Supporting Materials



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Model Domain-Specific Vocabulary Anchor Chart
(For Teacher Reference)

* Note: This chart is added to over several lessons. This is the entry for Lesson 4.

Word	Definition
dopamine	One of the main neurotransmitters in the brain. Extra dopamine is released during pleasurable activities. It increases the feelings of pleasure and activates more neurons.



Analyzing the Main Idea and Supporting Details in Video Note-catcher

Title Insight into the Teen Brain		Author/Presenter Dr. Adriana Galván
Main Idea		
Background or context		Supporting idea/details
Supporting idea/details	Supporting idea/details	Supporting idea/details
Conclusion (So what does this all mean?)		



Insight into the Teen Brain Teaching Guide
(For Teacher Reference)

Teacher Directions: While you are watching the video for the second time, consider pausing at the times outlined below. If you find students aren't getting the ideas listed here, you may want to rewind the video and watch the section for a third time.

- Pause at **1:03** and model how to summarize the background information. Consider writing: *"Brain changes every day. Brain matures into your twenties—which is good."* Resume the video.
- Pause at **1:41** and model, again, how to summarize the information. Consider writing: *"The teen brain is perfect for the central job of adolescence—breaking away from parents and seeking new things. Teen brain is good at reacting to emotions and social clues when making decisions."* Resume the video.
- Pause at **1:53**. Ask:
"What does putting that question on the overhead do to us as readers? Why is that different from just saying it?" Listen for students to say that it focuses our attention on it, it makes it stand out for us, or it helps us remember it.
- Write the question down in the "main idea" box on the note-catcher. Resume the video.
- Pause at **2:40**. Ask:
"This information about the prefrontal cortex supports what we have read elsewhere about the prefrontal cortex. But how does she relate it to the main idea, which is something about the way teens make decisions?" Listen for students to say that an underdeveloped prefrontal cortex means that teens may make impulsive decisions without considering long-term consequences.
Write down the students' answer on the note-catcher, referring to the teacher model as necessary. Resume video.
- Pause at **3:23**. Ask:
"What have we learned about the striatum? How does this relate to what we already know about the limbic system?" Listen for students to understand that the striatum gets dopamine and is very excitable. They already know that the limbic system is part of the "emotional" and "reactive" parts of the brain, so it makes sense that it is excitable.
- Summarize students' answers on the note-catcher. Refer to the teacher model as needed.
- Resume video.



Insight into the Teen Brain Teaching Guide
(For Teacher Reference)

- Pause at **4:11** and say:

“So far Dr. Galván has been describing the experiment they performed. They brought people in, put them in an fMRI machine, and gave them a reward. Now we are going to read the description of the experiment so we can compare the text version of the information to the presentation.”

Display **Comparing Text to Video** and read aloud. Ask:

“Why shouldn’t I put this information in a ‘supporting idea/details’ box?” Listen for students to understand that this is too specific for the note-catcher. This is an example, not a supporting idea of the main idea. When she explains the results of the experiment—that will be an important point.

- Resume video.
- Pause at **5:01**. Ask questions that will help the students with RI.7.7, such as:
 - “How was hearing the description of the experiment different from reading it?”
 - “How did her voice or hand gestures reinforce what she was saying?”
 - “What images were useful to you?”
 - “What is the effect of including the image and the graph? What does that do to your understanding?”
 - “What other images might have been useful while she was talking?”
 - “Why do you think she put the teenager in red and not white on the graph?”
- Do not add students’ answers to chart. Resume the video.
- Pause at **6:37**. Ask students to turn and talk:
 - “What is the important take-away point from this experiment? How does it relate to the main question?”
- After a few minutes, invite pairs to share out. Write students’ answers on the note-catcher.
- Resume video.
- Pause at **8:05**. Ask:
 - “She is summing up her findings. What is she saying?”
- Write students’ answer on the note-catcher.
- Resume video but pause quickly at **8:09**. Notice the signaling question for the students. She is moving into her conclusion.
- Resume video.



Insight into the Teen Brain Teaching Guide
(For Teacher Reference)

- Pause at **9:34**. Notice the take-home points posted on the screen do not answer the focusing question displayed at the beginning of the video. They also do not correspond with what the presenter is saying. The image does not add to our understanding but instead distracts us.
- At the end of the video, invite students to take a moment and craft what should go in the conclusion box and a main idea.
- If time permits, invite students to share with a partner first. Then ask students to share out their ideas.
- Invite students to amend their note-catchers before they turn them in.



Model Analyzing the Main Idea and Supporting Details in Video: Note-catcher
(For Teacher Reference)

Title Insight into the Teenage Brain		Author/Presenter Dr. Adriana Galván
Main Idea <i>How does the teen brain make decisions? It makes decisions based, in part, on its sensitivity to new and exciting information. Being biased to seek out new thrills can be a positive thing.</i>		
Background or context <i>Brain changes every day Brain matures into your twenties—which is good The teen brain is perfect for the central job of adolescence—breaking away from parents and seeking new things Teen brain is good at reacting to emotions and social clues when making decisions</i>		Supporting idea/details <i>Prefrontal cortex isn't fully developed, so kids are prone to make decisions without regard to long-term consequence.</i>
Supporting idea/details <i>Striatum is important to the risk and reward system (or the limbic system.) It lights up with dopamine when people get something they like.</i>	Supporting idea/details <i>Through an experiment, she found the teen brain activity goes “crazy” relative to the adult brain when it gets something it likes. Therefore, the teen brain becomes biased toward seeking a reward.</i>	Supporting idea/details <i>The thing that is special about the teen brain is that it is more sensitive to reward and novel information. Then the prefrontal cortex comes online and makes the adult brain less sensitive to reward.</i>
Conclusion So what does this all mean? <i>Sensitivity to reward and emotion can lead teens to make foolish decisions but also can lead to new adventures and meeting new people. With more knowledge, we can tap into this positive side of teen decision making.</i>		



Comparing Text to Video

Excerpt from “Insights into the Teenage Brain”

And what is something that people find rewarding? Sugar!

So what we did was we asked people to come to the lab. We asked a group of teenagers and a group of adults, and while they were in the MRI we hooked them up to a straw. We fed them squirts of sugar water every so often.

And first we asked them if they liked it; maybe they weren’t going to like the sugar as much as we thought. But they actually did.

This is a rating scale asking them, “How much do you like the sugar?” And the average response is in red for the teenage group, and the adult is shown in white.

And you can see that everybody liked it. But it was the teenage group that showed this exaggerated sensitivity. They really liked it. So we started to wonder whether there was something neurobiological that represented this difference.

Galvan, Adriana. "Insight Into the Teenage Brain." February 13, 2013. Online video. TEDx<http://tedxtalks.ted.com/video/Insight-Into-the-Teenage-Brain;search%3Ateenage%20brain%20adriana%20g>.



Model Brain Development Anchor Chart
(For Teacher Reference)

Note: This chart is filled out in different lessons. The bolded items are added in this lesson.

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
<p>The brain needs sleep to take things from your short-term memory to your long-term memory (Knox)</p> <p>Your brain does not fully develop until the mid-20s (Scholastic)</p>	<p>Also called the “frontal lobe” (Knox)</p> <p>This area helps with insight and understanding the effect of your behavior on someone else (Knox)</p> <p>Matures later than other parts of the brain (Scholastic)</p> <p>Right behind your forehead (Scholastic)</p> <p>Helps with thinking ahead and sizing up risk and reward (Scholastic)</p>	<p>“White matter” is called myelin, and it coats the nerves and makes them “communicate” more effectively (Knox)</p> <p>In order for your brain to make a decision, tiny specialized cells “talk” with each other through a series of neurotransmitters, like a circuit in a computer. Then the whole network puts out a response, which becomes your outward behavior. (Scholastic)</p>	<p>Develops earlier than the PFC (Scholastic)</p> <p>Plays a central role in your emotional response (Scholastic)</p> <p>Associated with decisions made in feeling (Scholastic)</p> <p>When teens make decisions in emotionally charged situations—this one weighs in heavily (Scholastic)</p>	<p>So <u>if</u> the PFC is not as efficient, <u>then</u> teens may make decisions without fully realizing long-term consequences. <u>If</u> they do that, <u>then</u> this can be good (they take daring risks) and bad (they take dangerous risks).</p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Note: This chart is filled out in different lessons. The bolded items are added in this lesson.

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
		<p>Information travels from neuron to neuron by way of their axons and dendrites (Scholastic)</p> <p>The space between one neuron's axon and the other neuron's dendrites is called its synapse (Scholastic)</p> <p>To make the connection better, the axons wrap themselves in myelin through a process called myelination (Scholastic)</p> <p>Also, if a synapse isn't used often, it is pruned through synaptic pruning. Then that energy is redirected into more active synapse. (Scholastic)</p> <p>Synaptic pruning occurs based on the choices, the behavior, and the environment of an individual (Scholastic)</p>	<p>The limbic system in the teen brain is more sensitive to risk and reward and gets a bigger shot of dopamine in rewarding situations. So the teen brain is more biased toward seeking out new and novel information. (Galván)</p>	<p>So <u>if</u> synapses are being pruned or strengthened by the activities that teens spend their time on, <u>then</u> teens can shape their brain. And <u>if</u> activities shape one's brain, <u>then</u> one should be mindful about the activities that one is doing. As Dr. Willis says, "Practice makes permanent."</p>



Homework: Summarizing Main Idea and Supporting Details

Name: _____

Date: _____

Directions: Read the model below. Choose one of the articles from this unit. Reread it. Then, using the neurologist’s notebook entry you completed for that text as a guide, write a one-paragraph summary of one of the articles we have read.

Model Text:	
In her Tedx Talk titled “Insight into the Teen Brain,” Dr. Galván explores what drives teens to make decisions. She explains that, through a series of experiments, researchers found that adolescents react differently to rewarding situations than adults. They have a much stronger reaction and their brain activity goes “crazy.” According to Dr. Galván, this means that teens are more sensitive to novel or rewarding situations and their brains are biased toward seeking these experiences. She points out that this is a good thing for adolescents because they need to break away from adults and seek new things. Their brains, which seek risks and rewards, will help them decide to do that.	<p>Notice that the first sentence identifies the title, the author, and a very general main idea.</p> <p>Then the author sums up the major supporting ideas.</p>
My Summary of _____ (anything but the Tedx Talk)	<p>Helpful sentence stems</p> <p>explains (author) + states + (information)</p> <p>points out reports says</p> <p>According to + (author) + (information) ...</p> <p>This means that ...</p>



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 5

Mid-Unit Assessment: Development of the Young Brain



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can compare and contrast different media versions of informational text. (RI. 7.7)
I can analyze impact of the techniques unique to each medium. (RI.7.7)
I can analyze the main ideas and supporting details presented in different media and formats. (SL. 7.2)
I can explain how ideas presented in different media and formats clarify a topic, text or issue. (SL. 7.2)

Supporting Learning Targets

- I can analyze the main idea and supporting ideas/details in “Development of the Young Brain.”
- I can compare the text and video of “Development of the Young Brain.”
- I can explain how the ideas presented in the video clarify my understanding of the adolescent brain.

Ongoing Assessment

- Homework: Summarizing Main Idea and Supporting Details (from Lesson 4)
- Mid-Unit 1 Assessment
- Analyzing the Main Idea and Supporting Details: Partner Practice



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Preliminary Viewing of Video (5 minutes)2. Work Time<ol style="list-style-type: none">A. Practicing with a Partner (15 minutes)B. Mid-Unit Assessment (25 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. None4. Homework<ol style="list-style-type: none">A. Complete the Homework: Summarize Your Learning. Also read Excerpt 1 of “The Digital Revolution and the Adolescent Brain Evolution.” Complete neurologist’s notebook #5.	<ul style="list-style-type: none">• This lesson is the Mid-Unit 1 Assessment, which centers on SL.7.2 and RI. 7.7. Students view a video and analyze the main idea and supporting details. Students are given an opportunity to practice with a partner before the assessment begins.• Note that students watch the same video “Development of the Young Brain” for both their practice and the assessment.<ul style="list-style-type: none">– Clip 1 00-1:30: Practice with a partner (Work Time A)– Clip 2 1:30-3:34 to assess SL.7.2 (main idea in diverse media)– Clip 3 3:34-4:50 to assess RI.7.7 (comparing text to video)• The next half of Unit 1 moves on to how brain science relates to the digital revolution. Use the “Summarize Your Learning” assigned for Lesson 5 homework as a way to identify struggling students who may need some additional instruction to understand the basics of brain development. This is necessary foundational learning that they will need to be successful throughout the remainder of this unit as well as Units 2 and 3.• Also for homework, students read the first excerpt of “The Digital Revolution and Evolution of the Adolescent Mind.” This text explores central questions of the module such as: How does the amount of time a teenager spends on screen change her brain? Can the brain adapt to the new digital environment? Will teenagers be able to learn vital social skills if they socialize increasingly online? Will the brain become so accustomed to artificially high levels of dopamine that the “real world” no longer holds its interest? Because this text grapples with these important questions while still being grounded in brain science, it is an important bridge between the texts about neuroscience in Unit 1 and the argument texts in Unit 2. (You may want to familiarize yourself with the entire text as it explores all the different facets of the issue of screen time and adolescent brain development. A link to the full text is provided in the Module Overview.)



Agenda	Teaching Notes (continued)
	<ul style="list-style-type: none">• “The Digital Revolution and the Adolescent Brain Evolution” is a challenging text. Reading complex texts with the proper scaffolding can increase students’ intellectual stamina. In the homework from this lesson they have an opportunity to grapple with this complex text in a highly supported manner. To decrease any anxiety that students may have, explain that tonight’s homework will begin the second half of Unit 1 where they will learn more about the effects of digital media on the brain. This homework builds off of the ideas presented in the video today. The homework is a chance to challenge themselves to get the gist of a very difficult text. They should focus on getting the main idea and not worry about the details. Assure them that this homework is not part of an assessment and they will not be penalized for any wrong answers but you’re confident they can find the main idea. Continue to reinforce that complex text needs to be read multiple times.• The overall grading system and the date of return of this assessment have been left to your discretion. The more quickly an assessment is returned, the more useful the feedback is to the students.• In advance:<ul style="list-style-type: none">– Prepare the materials for the assessment, including the projector and cuing up the video. You may find the video here: http://www.nimh.nih.gov/media/video/giedd.shtml.– Determine pairs for Work Time A.• Post: Learning targets.



Lesson Vocabulary	Materials
None	<ul style="list-style-type: none"> • Video: “Development of the Young Brain” (http://www.nimh.nih.gov/media/video/giedd.shtml.) (see Teaching Notes) • Digital projector • Analyzing the Main Idea and Supporting Details: Partner Practice (one per student) • Analyzing the Main Idea and Supporting Details: Partner Practice (answers, for teacher reference) • Mid-Unit 1 Assessment: Analyzing “Development of the Young Brain” (one per student) • Mid-Unit 1 Assessment: Analyzing “Development of the Young Brain” (answers, for teacher reference) • Homework: Summarize Your Learning (one per student) • Excerpt 1 of “The Digital Revolution and the Adolescent Brain Evolution” (one per student) • Neurologist’s notebook #5 (one per student) • Neurologist’s notebook #5 (answers, for teacher reference)

Opening	Meeting Students’ Needs
<p>A. Preliminary Viewing of Video (5 minutes)</p> <ul style="list-style-type: none"> • Collect the Homework: Summarizing Main Idea and Supporting Details from Lesson 4. • Ask a student to read today’s learning targets: <ul style="list-style-type: none"> * “I can analyze the main idea and supporting details in ‘Development of the Young Brain.’” * “I can compare the text and video of ‘Development of the Young Brain.’” * “I can explain how the ideas presented in the video clarify my understanding of the adolescent brain.” • Explain to students that today they will analyze the main idea and supporting details in a video. Instead of finding a main idea of the whole video, they will be assessed on their ability to find the main idea and supporting details on a specific clip from the video. Assure them that the process of finding the main idea is the same. To prepare, they will watch the entire 4:50 minutes of video once to get an overall sense of the gist. • Play the full video “Development of the Young Brain” one time through. 	



Work Time	Meeting Students' Needs
<p>A. Practicing with a Partner (15 minutes)</p> <ul style="list-style-type: none">• Arrange students in pairs.• Distribute Analyzing the Main Idea and Supporting Details: Partner Practice. Ask a student to read the directions aloud. Clarify as needed.• Play the first clip of the video, stopping at 1:30.• Instruct students to work in pairs to find the main idea and answer the questions.• After a few minutes, refocus the whole group. Play the video a second time, again stopping at 1:30.• Invite the students to amend their thinking from the first viewing.• Ask groups to share out. Answer any misunderstandings or confusion that surfaces.• Direct students to return to their seats.	<ul style="list-style-type: none">• Allowing students to discuss with a partner before writing or sharing with the whole class is a low-stress strategy to help them process in a risk-free situation.
<p>B. Mid-Unit Assessment (25 minutes)</p> <ul style="list-style-type: none">• Tell students that the mid-unit assessment is about to begin. Explain that now they will work independently to find the main idea of a new clip from “Development of the Young Brain.”• Distribute the Mid-Unit 1 Assessment: Analyzing “Development of the Young Brain.” Instruct students to begin on Part I.• After a few minutes, play the second clip of video (from 1:30 to 3:34).• Give students a few minutes to begin filling out the chart.• After 3 minutes, play the second video clip again. Be sure to stop at 3:34.• Tell students to complete Part II and Part III.• After 5 minutes, refocus the whole class.• Ask students to read along silently as you read the transcript of the video found in Part IV of the assessment.• Then play the third video clip (starting at 3:34 and continuing to the end).• Play the third video clip one last time (starting at 3:34 and continuing to the end).• Instruct students to finish Parts IV and V.	<ul style="list-style-type: none">• You may wish to play the video more than twice, depending on the needs of your students.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">As they complete the assessment, distribute Excerpt 1 of “The Digital Revolution and the Adolescent Brain Evolution,” neurologist’s notebook #5, and Homework: Summarize Your Learning.Students who finish early may move on to the homework.	

Closing and Assessment	Meeting Students' Needs
(None)	
Homework	Meeting Students' Needs
<ul style="list-style-type: none">Complete the Homework: Summarize Your Learning. Also read Excerpt 1 of “The Digital Revolution and the Adolescent Brain Evolution.” Complete neurologist’s notebook #5.	



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 5

Supporting Materials



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Analyzing the Main Idea and Supporting Details:
Partner Practice

Name:

Date:

Directions: With a partner, identify the main idea and supporting details of the first video clip.

Name of the Video: Development of the Young Brain 00–1:30	
Author or Presenter: Jay Giedd, MD	
Speaker's main idea	
Supporting idea/detail	Supporting idea/detail
Supporting idea/detail	Supporting idea/detail
Supporting idea/detail	



Analyzing the Main Idea and Supporting Details:
Partner Practice

1. What are two ways the brain of a teenager develops differently from the brain of a younger child? (SL. 7.2)

2. According to Dr. Giedd, what determines which synapses (or brain connections) are reinforced and which are pruned? (SL. 7.2)

3. How could the video have explained and/or shown Dr. Giedd's "gardening metaphor" ("The brain can grow extra connections, sorta like branches, twigs, and roots, to use a gardening metaphor") to make what he is saying easier to understand? (RI. 7.7)



Analyzing the Main Idea and Supporting Details in Video:
Partner Practice
(Answers, For Teacher Reference)

Name:

Date:

Directions: With a partner, identify the main idea and supporting details of the first video clip.

Answers will vary.

Name of the Video: Development of the Young Brain 00–1:30	
Author or Presenter: Jay Giedd, MD	
Speaker's main idea The adolescent brain grows and develops in a different way from that of young children.	
Supporting idea/detail Early in life, there is growth in the auditory and visual centers of the brain as the child is discovering the world around him/her.	Supporting idea/detail In adolescence, the key changes are in the front part of the brain—for reasoning and judgment.
Supporting idea/detail Even though the physical size of the brain is nearly complete, the brain is changing in important ways.	Supporting idea/detail The brain is branching, growing roots; and it's also pruning.
Supporting idea/detail It's pruning according to what is the most used in our environment.	



Analyzing the Main Idea and Supporting Details in Video:
Partner Practice
(Answers, For Teacher Reference)

1. What are two ways the brain of a teenager develops differently from the brain of a younger child? (SL. 7.2)

Unlike the child's brain, the frontal part of the teen's brain is growing and developing. Also, it is not growing in physical size, but it is growing extra connections and pruning other connections.

2. According to Dr. Giedd, what determines which synapses (or brain connections) are reinforced and which are pruned? (SL.7.2)

The connections that are most useful to helping us adapt in our environment are the ones that are reinforced.

3. How could the video have explained and/or shown Dr. Giedd's "gardening metaphor" ("The brain can grow extra connections, sorta like branches, twigs, and roots, to use a gardening metaphor") to make what he is saying easier to understand? (RI. 7.7)

Answers will vary. Students may say an image of a tree with roots growing or branches being pruned would have been useful.



Mid-Unit 1 Assessment:
Analyzing “Development of the Young Brain”

Name:

Date:

Part I: My Current Thinking

What are the ways that the teen brain is growing and changing?

Part II: Informational Video Clip

Directions: Watch the second clip of the video carefully. Then fill in the chart below. You will watch the clip twice. (SL.7.2)

Name of the Video: Development of the Young Brain 1:30–3:30	
Author or Presenter: Jay Giedd, MD	
Main idea	
Supporting idea/detail	Supporting idea/detail
Supporting idea/detail	Supporting idea/detail
Supporting idea/detail	



Mid-Unit 1 Assessment:
Analyzing “Development of the Young Brain”

Part III: Multiple Choice

Directions: Please read the questions and choose the best answer below.

1. Why does Dr. Giedd cite the statistic that an average adolescent spends about 11.5 hours on some type of media per day and that’s up from 6.5 hours just five years ago? (SL.7.2)
 - a. to prove that children waste a lot of time on media devices
 - b. to illustrate his point that the activities of children have changed rapidly in recent years
 - c. to prove that more experiments are needed to see what happens when we multitask
 - d. to illustrate that kids spend a lot of time on media
2. Why does Dr. Giedd compare reading to the new flood of information that a child’s brain must process today? (SL. 7.2)
 - a. to prove that just as the human brain adapted to reading, the brain may be able to adapt to the new information
 - b. to prove that children are reading less and that’s a problem
 - c. to prove that if a child can learn to read, a child can handle all the new information easily
 - d. to prove that human beings are used to reading information
3. Which of these questions did Dr. Giedd NOT raise in this section? (SL.7.2)
 - a. What’s the impact of technology on the brain? For good and for bad?
 - b. Will the brain of a “digital native” be different from that of an older person?
 - c. What are the limitations of the brain’s ability to adapt?
 - d. What makes the brain “prune” or “branch”?



Mid-Unit 1 Assessment:
Analyzing “Development of the Young Brain”

Part IV: Comparing Text to Video

Clip 3:34–4:50

Directions: Please read the transcript of the clip below. Then wait for the teacher to play the video. After viewing the video, answer the question.

Announcer: So, what was the human brain originally developed to do? Well, Dr. Giedd says our brains are fundamentally designed to learn through example.

Giedd: This learning by example is very powerful and that parents are teaching even when they don't realize they're teaching, just by how they handle everyday aspects of their life. How they treat each other as spouses. How they talk about work. When they get stuck in traffic. How they manage their time and their emotions. And this is how most of the teaching is done. It's not when you sit down at these special moments and have a conversation. It's the everyday moments that really have a huge impact on how the brain forms and adapts.

Announcer: Through the work of Dr. Giedd and his colleagues, we've learned so much about the development of the adolescent brain. But researchers like Dr. Giedd may be entering a new golden age of research as these so-called digital natives lead us to new findings in the ever-evolving childhood brain.

1. How was watching the video different from reading the text?
2. Were the videos images effective? Why or why not?
3. What other images might reinforce the content of this video?



Mid-Unit 1 Assessment:
Analyzing “Development of the Young Brain”

Part V: Clarifying My Thinking

How did the video you watched today clarify your thinking about the developing adolescent brain?



Mid-Unit 1 Assessment:
Analyzing “Development of the Young Brain”
(Answers, For Teacher Reference)

Name: _____

Date: _____

Part I: My Current Thinking

What are the ways that the teen brain is growing and changing?

Answer will vary.

Part II: Informational Video Clip

Directions: Watch the second clip of the video carefully. Then fill in the chart below. You will watch the clip twice. (SL.7.2) **Answers will vary.**

Name of the Video: Development of the Young Brain 1:30–3:30	
Author or Presenter: Jay Giedd, MD	
Main Idea (Answers will vary.) The human brain is being challenged by multimedia devices and the new way we get information. Because of our history of adaptation, we can be hopeful that our brains will adapt to these dramatic changes.	
Supporting idea/detail The way we get information and interact with one another has changed dramatically in the past 10 years.	Supporting idea/detail It’s hard for researchers to study the effects of these changes because they happen so quickly.
Supporting idea/detail So far it seems the brain is adapting well.	Supporting idea/detail Because the brain adapted well to other shifts in the past (like reading), we can be hopeful our brains will adapt to this change as well.
Supporting idea/detail There are limitations to how much our brains can adapt so it will be interesting to see how this adaptation occurs.	



Mid-Unit 1 Assessment:
Analyzing “Development of the Young Brain”
(Answers, For Teacher Reference)

Part III: Multiple Choice

Directions: Please read the questions and choose the best answer below.

1. Why does Dr. Giedd cite the statistic that an average adolescent spends about 11.5 hours on some type of media per day and that’s up from 6.5 hours just five years ago? (SL.7.2)
 - a. to prove that children waste a lot of time on media devices
 - b. to illustrate his point that the activities of children have changed rapidly in recent years**
 - c. to prove that more experiments are needed to see what happens when we multitask
 - d. to illustrate that kids spend a lot of time on media
2. Why does Dr. Giedd compare reading to the new flood of information that a child’s brain must process today? (SL. 7.2)
 - a. to prove that just as the human brain adapted to reading, the brain may be able to adapt to the new information**
 - b. to prove that children are reading less and that’s a problem
 - c. to prove that if a child can learn to read, a child can handle all the new information easily
 - d. to prove that human beings are used to reading information
3. Which of these questions did Dr. Giedd NOT raise in this section? (SL.7.2)
 - a. What’s the impact of technology on the brain? For good and for bad?
 - b. Will the brain of a “digital native” be different from that of an older person?
 - c. What are the limitations of the brain’s ability to adapt?
 - d. What makes the brain “prune” or “branch”?**



Mid-Unit 1 Assessment:
Analyzing “Development of the Young Brain”
(Answers, For Teacher Reference)

Part IV: Comparing Text to Video

Clip 3:34–4:50

Directions: Please read the transcript of the clip. Then wait for the teacher to play the video. After viewing the video, answer the question.

Announcer: So, what was the human brain originally developed to do? Well, Dr. Giedd says our brains are fundamentally designed to learn through example.

Giedd: This learning by example is very powerful and that parents are teaching even when they don't realize they're teaching, just by how they handle everyday aspects of their life. How they treat each other as spouses. How they talk about work. When they get stuck in traffic. How they manage their time and their emotions. And this is how most of the teaching is done. It's not when you sit down at these special moments and have a conversation. It's the everyday moments that really have a huge impact on how the brain forms and adapts.

Announcer: Through the work of Dr. Giedd and his colleagues, we've learned so much about the development of the adolescent brain. But researchers like Dr. Giedd may be entering a new golden age of research as these so-called digital natives lead us to new findings in the ever-evolving childhood brain.

1. How was watching the video different from reading the text?

Answers will vary.

2. Were the images effective? Why or why not?

Answers will vary. It is likely the students will say no because the children were playing kickball, which doesn't really reinforce the idea that children learn by example or by watching their parents.

3. What other images might reinforce the content of this video?

Answers will vary.



Mid-Unit 1 Assessment:

Analyzing “Development of the Young Brain”
(Answers, For Teacher Reference)

Part V: Clarifying My Thinking

How did the video you watched today clarify your thinking about the developing adolescent brain?

Answers will vary.



Date:

Dear _____,



Excerpt 1 of “The Digital Revolution and the Adolescent Brain Evolution”

Directions: Please read the excerpt below. Use the column on the right to guide your thinking. Then complete neurologist’s notebook #5.

From “Introduction”	Gist Notes and Vocabulary
The way adolescents of today learn, play, and interact has changed more in the past 15 years than in the previous 570 since Gutenberg’s popularization of the printing press . The Internet, iPads, cell phones, Google, Twitter, Facebook, and other modern marvels unleash a virtual gusher of information to the plugged-in teen brain.	This paragraph articulates the main idea.
In 2010, U.S. adolescents spent an average of 8.5 hours per day interacting with digital devices, up from 6.5 hours in just 2006. Thirty percent of the time they are simultaneously using more than one device, bringing daily total media exposure time to 11.5 hours. These numbers are a moving target and vary by survey, socioeconomic status , ethnicity, and geography, but all indications are that the amount of screen time has been dramatically increasing and is likely to continue to do so as the technology improves and becomes even more widely available.	This paragraph lists lots of evidence. Use the last sentence to help you sum it up.
The pace of “penetration” (i.e., the amount of time it takes for a new technology to be used by 50 million people) is unprecedented . For radio, technological penetration took 38 years; for telephone, 20; for television, 13; for the World Wide Web, 4; for Facebook, 3.6 years; for Twitter, 3 years; for iPads, 2 years; and for Google+, 88 days.	This paragraph is the opposite of the last paragraph. The summation is first, and then the author lists examples as evidence.



Excerpt 1 of “The Digital Revolution and the Adolescent Brain Evolution”

From “Introduction”	Gist Notes and Vocabulary
The pace and pervasiveness of these changes, i.e., the digital revolution, raise several questions relevant to adolescent health—relevance that extends to children, teens, parents, teachers, and society at large. What are the implications, for good or ill, of the dramatic changes in the way adolescents spend their time? How can the technology be harnessed to optimize the positive and minimize the negative? Might the unprecedented rate of change itself overwhelm adaptive mechanisms ?	The author lists lots of questions. How can you sum up this idea?
The digital revolution gives us unique insight how experience shapes the brain, and, in turn, how these brain changes may change our experience. Consideration of the neurobiology and evolutionary history of the adolescent brain may provide some context to explore these questions.	This one is done for you on the note-catcher.

- **Gutenberg’s popularization of the printing press**—Johannes Gutenberg invented the machine that made printing pages automatic. This meant that reading material became more widely available and therefore more people learned to read.
- **socioeconomic status**—One’s socioeconomic status is determined by how much money one has.
- **unprecedented**—If something is unprecedented, nothing like it has happened before.
- **pace and pervasiveness**—Restated as “how quickly and how much things have changed for a lot of people.”
- **adaptive mechanisms**—These are the things a human or animal does to adapt to its environment.

Geidd, Jay N., M.D. "The Digital Revolution and Adolescent Brain Evolution." National Center for Biotechnology Information. National Institute of Health, 5 Aug. 2012. Web. <<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3432415/>>



Neurologist's Notebook #5:

Excerpt 1 of "The Digital Revolution and the Adolescent Brain Evolution"

Name: _____

Date: _____

Directions: Use this note-catcher to get the gist of the reading. Remember that the main idea and supporting idea/details are often not just a single sentence of the text; rather, they may involve multiple sentences.

Main idea:	
Brief background: There is no background in this excerpt.	Supporting idea/detail:
Supporting idea/detail:	Supporting idea/detail:
Supporting idea/detail: The "digital revolution" is a chance to see how well humans adapt to a radical new environment. Looking at the neurobiology of the teen brain and the way it has adapted in the past may be helpful to understand how it will react.	



Neurologist's Notebook #5:

Excerpt 1 of "The Digital Revolution and the Adolescent Brain Evolution"
(Answers, For Teacher Reference)

Directions: Use this note-catcher to get the gist of the reading. Remember that the main idea and supporting details are often not just a single sentence of the text; rather, they may involve multiple sentences.

Main idea: Modern teens learn, play, and interact in ways that are much different from any teenager who has lived in the past 500 years.	
Brief background: There is no background in this excerpt.	Supporting idea/detail: The thing that is different today is the amount of screen time that teenagers spend on digital devices. It is a lot of time.
Supporting idea/detail: Also, a lot of people use devices almost as soon as they come out.	Supporting idea/detail: This much rapid change brings up a lot of questions. Will this be a good thing for the teen brain?
Supporting idea/detail: The "digital revolution" is a chance to see how well humans adapt to a radical new environment. Looking at the neurobiology of the teen brain and the way it has adapted in the past may be helpful to understand how it will react.	



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 6

Close Reading: Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution”



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

- I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1)
- I can determine a theme or the central ideas of informational text. (RI.7.2)
- I can read above-grade-level texts with scaffolding and support. (RI.7.10)
- I can use a variety of strategies to determine the meaning of unknown words or phrases. (L.7.4)

Supporting Learning Targets

- I can determine the main idea of Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution.”
- I can use a variety of strategies to figure out the meaning of new vocabulary.
- I can read above-grade-level texts with support.

Ongoing Assessment

- Homework: Summarize Your Learning (from Lesson 5)
- Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution” text-dependent questions



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Book Frenzy (13 minutes)2. Work Time<ol style="list-style-type: none">A. Introducing the Digital Revolution (7 minutes)B. Excerpt 2: Text-Dependent Questions (20 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Adding to the Anchor Chart (5 minutes)4. Homework<ol style="list-style-type: none">A. Catch up on any reading from the first part of this unit.B. Read your independent reading book.	<ul style="list-style-type: none">• In this lesson, students continue to read excerpts of the “The Digital Revolution and the Adolescent Brain Evolution.” See Teaching Notes from Lesson 5 and the Module Overview to see the rational behind this text. Today’s excerpt explores the adaptability of the brain to the new digital environment. This could be the major premise of a student on the position paper in Unit 3. Taking enough time to add to the anchor chart will support students in using this reasoning in their writing.• “The Digital Revolution and the Adolescent Brain Evolution” is a challenging text. Reading complex texts with the proper scaffolding can increase students’ stamina. To help students be successful, you should read each excerpt aloud twice. You will have the opportunity to model strategies for attacking difficult texts—like identifying vocabulary, paraphrasing long sentences, and rephrasing the main idea. The vocabulary work will help students progress toward L.7.4. The close reading and text-dependent questions in this lesson will guide students to identify the main ideas of the article that are most relevant to their position paper in Unit 3.• Collect the “Summarize Your Learning” homework from Lesson 5 and use it to identify students who may need some additional instruction to understand the basics of brain development before moving on to how brain science relates to the digital revolution. This is foundational learning that they will need in order to be successful throughout the remainder of this unit and in Units 2 and 3.• In this lesson and the following lessons, students listen to a multimedia feature that is linked thematically to the day’s reading. These powerful testimonies from real teenagers are an engaging entry point for students.• In addition, students add their learning to the Brain Development anchor chart. They continue to add to the chart with “if/then” statements. Help students understand that the conclusions from brain research that they will read about are theoretical correlations, not necessarily statements of definitive facts or causations. Their use of words like “may” and “it seems reasonable” when making “if/then” statements will help reinforce this point. This practice with reasoning skills will be very valuable when students write the position paper in Unit 3.



Agenda	Teaching Notes (continued)
	<ul style="list-style-type: none">• In this lesson, students launch their independent reading for this module with a Book Frenzy. Prepare for the Book Frenzy by laying out books from the Recommended Texts list (in the Module Overview) on multiple tables so students can easily browse the selections. Use your professional judgment and experience when pairing books with this module. Many popular coming of age stories will fit well with the content of this module and may help the students think about the characters and the brain science in a new light. This lesson assumes that independent reading projects have been launched in previous modules and that a structure is in place before this lesson. Please see two separate stand-alone documents on EngageNY.org: The Importance of Increasing the Volume of Reading and Launching Independent Reading in Grades 6–8: Sample Plan, which together provide the rationale and practical guidance for a robust independent reading program. You may wish to spend time before this lesson reviewing the independent reading materials and the recommended texts so they can better meet your students’ needs.• In Lesson 7, students will revisit the Gallery Walk from Lesson 1. Be prepared with those materials.• In advance:<ul style="list-style-type: none">– Ready the books for the Book Frenzy. For a list of recommended books, see the Module Overview document.– Load the multimedia feature from the <i>New York Times</i> Web site and be sure you can locate the audio under “Needing to Answer That Text: Allison Miller”: http://www.nytimes.com/interactive/2010/11/21/technology/20101121-brain-interactive.html?ref=technology.– Preview the Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution” Close Reading Guide.– Post the following question from Excerpt 1 of “The Digital Revolution and the Adolescent Brain Evolution”: “What are the implications, for good or ill, of the dramatic changes in the way adolescents spend their time?” Leave this posted for the remainder of Unit 1.• Post: Learning targets.



Lesson Vocabulary	Materials
theorized, abstract, brain plasticity; (from Excerpt 2): adaptable, vessels orbiting, entail (section 1), epigenetic, noteworthy (section 2), plastic brain (section 3), advent, physiology (section 4), specialized, gray matter volume, trajectory, cortical gray matter volume, complementary (section 5)	<ul style="list-style-type: none">• Independent reading books (various titles; one per student; see Teaching Notes)• Digital projector• “Students and Technology: Constant Companions” (multimedia feature; http://www.nytimes.com/interactive/2010/11/21/technology/20101121-brain-interactive.html?ref=technology) (From The New York Times, November 20, 2010 © 2010 The New York Times. All rights reserved. Used by permission and protected by the Copyright Laws of the United States. The printing, copying, redistribution, or retransmission of this Content without express written permission is prohibited.)• Document camera• Digital Revolution Text Structure graphic organizer (one to display)• Posted question from Excerpt 1 (see Teaching Notes, “in advance,” above)• Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution” (one per student)• Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution” text-dependent questions (one per student; one to display)• Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution” Close Reading Guide (for teacher reference)• Domain-Specific Vocabulary anchor chart (begun in Lesson 1)• Model Domain-Specific Vocabulary anchor chart (for teacher reference)• Brain Development anchor chart—student version (begun in Lesson 2)• Brain Development anchor chart (begun in Lesson 2)• Model Brain Development anchor chart (for teacher reference)



Opening	Meeting Students’ Needs
<p>A. Book Frenzy (13 minutes)</p> <ul style="list-style-type: none">• Display an assortment of independent reading books for students to examine and choose from, ideally including some of the titles from the Recommended Texts lists for this module. Consider brief teacher book talks of those titles related to the module.• Give students time to browse and “shop” for books and to select a few titles to try out.	
Work Time	Meeting Students’ Needs
<p>A. Introducing the Digital Revolution (7 minutes)</p> <ul style="list-style-type: none">• Using a digital projector, cue up the multimedia feature “Students and Technology: Constant Companions.”• Play the audio under “Needing to Answer That Text: Allison Miller.” The audio is about 1 minute, 30 seconds long. Then ask:<ul style="list-style-type: none">* “How does what this young woman is saying relate to the reading you did last night?”• Listen for students to understand that she is an example of a “digital native.” She typifies someone who is immersed in modern technology.• Explain that over the next couple of lessons they will continue reading excerpts of “The Digital Revolution and the Adolescent Brain Evolution,” the first of which they read for homework. They will not read the entire text; rather, they will read excerpts that are most relevant to their performance task for this module. This is a difficult text that asks a lot of questions about “digital natives”—like this young woman and also themselves. The author of this text is Dr. Jay Giedd, the researcher featured in the video they watched in Lesson 5. Though the article was written for other researchers, students will be able to read it as well, with support. Explain to students: “This is a good introduction to the kinds of reading and writing people do after they are out of school. If you become a scientist, you may write or read texts just like this.”• Use a document camera to display the Digital Revolution Text Structure graphic organizer. Point out that this graphic organizer lays out the different sections of “The Digital Revolution and the Adolescent Brain Evolution.”• Ask the students to note from the graphic organizer that this text is structured very similarly to the other informational texts they have read. Point out:<ul style="list-style-type: none">* “Research papers have two introductions—an <i>abstract</i> and an introduction. The abstract is a summary of the major points of the article, and the introduction is the place where the writer explains the main idea of the paper.”	<ul style="list-style-type: none">• Graphic organizers engage students more actively and provide the necessary scaffolding especially critical for learners with lower levels of language proficiency and/or learning.• Guiding questions provide motivation for student engagement in the topic and give a purpose to reading a text closely.



Work Time (continued)	Meeting Students’ Needs
<ul style="list-style-type: none">• Point out that they read the introduction last night in Excerpt 1 for homework. Ask:<ul style="list-style-type: none">* “What was difficult about the assignment? What was easy?”• Listen for students to say the vocabulary was difficult and reading a long list of statistics was difficult. But finding the main idea was easier because the author said it outright.• Draw students’ attention to the posted question from excerpt 1, which the author poses at the end of the introduction (Excerpt 1 from homework): “What are the implications, for good or ill, of the dramatic changes in the way adolescents spend their time?”• Tell students that throughout “The Digital Revolution and the Adolescent Brain Evolution,” the author goes on to explain the relevant experiments and findings in education, entertainment, and social interaction, as noted on the graphic organizer. Tell students that they will not be reading from the education section because their final position paper centers on entertainment screen time, but they will read excerpts from the other sections. Read the questions listed in each supporting detail box.• Explain that in the conclusion, Dr. Giedd writes very clearly that because this issue is so new and the research is so new, nobody really knows for sure the answer to these questions. He urges more research be done. Over the course of the module, students will grapple with these big and important questions.• Indicate that in today’s lesson, students will read some of the background of this issue. Then, in Lessons 7 and 8, they will read excerpts from the entertainment and social interaction sections.	



Work Time (continued)	Meeting Students’ Needs
<p>B. Excerpt 2: Text-Dependent Questions (20 minutes)</p> <ul style="list-style-type: none">Ask a student to read the learning targets:<ul style="list-style-type: none">“I can determine the main idea in Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution.”“I can use a variety of strategies to figure out the meaning of new vocabulary.”“I can read above-grade-level texts with support.”Explain that they will answer a set of text-dependent questions to help them read this above-grade-level text.Distribute Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution.” Also distribute and display the Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution” text-dependent questions.Work through this handout in concert with the Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution” Close Reading Guide.Be prepared to add to the Domain-Specific Vocabulary anchor chart during this activity. Use the Model Domain-Specific Vocabulary anchor chart (for teacher reference) for guidance.Give students specific positive feedback for their work grappling with a difficult text.	<ul style="list-style-type: none">Hearing a complex text read slowly, fluently, and without interruption or explanation promotes fluency and comprehension for students: They are hearing a strong reader read the text aloud with accuracy and expression, and are simultaneously looking at and thinking about the words on the printed page. Be sure to set clear expectations that students read along silently in their heads as you read the text aloud.Asking students to identify challenging vocabulary helps them to monitor their understanding of a complex text. When students annotate the text by circling these words, it can also provide a formative assessment for the teacher.



Closing and Assessment	Meeting Students’ Needs
<p>A. Adding to the Anchor Chart (5 minutes)</p> <ul style="list-style-type: none">• Invite students to retrieve their Brain Development anchor chart—student version and focus their attention on the class Brain Development anchor chart.• Explain that you would like to summarize the main idea of the reading today in the “So what?” column of the anchor chart. Refer to the Model Brain Development anchor chart (for teacher reference) as needed. Consider modeling this way:<ul style="list-style-type: none">– Circle one of the quotes from the neurons column that explains synaptic pruning and write in the last column: “<u>If</u> the brain is branching and pruning in adolescence, <u>then</u> it is highly adaptable.”• Ask students to turn and talk with a partner to articulate another “if/then” statement from the reading.• After a few minutes, add the class thinking to the anchor chart. Remind students to add to their own anchor chart. Be sure to add:<ul style="list-style-type: none">– “<u>If</u> it adapted in the past, <u>then</u> it may adapt today. <u>If</u> it is adaptable, <u>then</u> it may be able to adapt to the digital world.”• Stress the word “may” and remind students that Dr. Giedd and other researchers have <i>theorized</i>—that is, made an educated guess—that this is true. Ask:<ul style="list-style-type: none">* “According to what you read last night, what is the difference between the adaptation of today and the adaptation of the past?”• Prompt by reading this quote from Excerpt 1: “Might the unprecedented rate of change itself overwhelm adaptive mechanisms?” Read this several times. Ask a student to simplify it. Listen for students to understand that the digital environment is changing much faster than the environment has ever changed before.	<ul style="list-style-type: none">• Allowing students to discuss with a partner before writing or sharing with the whole class is a low-stress strategy to help them process in a risk-free situation.
Homework	Meeting Students’ Needs
<ul style="list-style-type: none">• Catch up on any reading from the first part of this unit.• Read your independent reading book.	



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 6

Supporting Materials



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Digital Revolution Text Structure Graphic Organizer

Abstract (This is a special feature of science writing. It's a brief summary of the issue, the research, the findings, and the recommendation.)		
Introduction (This is where the main idea or issue is introduced.) What is the issue this paper will examine? What are the questions that drive the research and inquiry?		
History (This is where the author gives relevant history to the issue or past experiments.) What is relevant history of this issue? How does this relate to what I already know about the brain?		
Supporting Idea: Education (These boxes are where the author examines research findings in key areas relating to the main idea.)	Supporting Idea: Entertainment Why is it significant that video games increase dopamine levels in the brain? What is a potential problem of humans spending attention on entertaining activities that raise dopamine levels to artificial levels?	Supporting Idea: Digital Revolution-Social Why is the human brain a "social brain"? What skills does a human being need in order to understand another person?
Conclusion (In a science article, the conclusion is where the author interprets the research or findings, makes a claim, and suggests further areas of study. Remember, scientists use evidence to hone existing questions or create new ones—not necessarily to come up with "the answer.")		



Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution”

Name: _____

Date: _____

From “The Adolescent Brain: Evolution and Neurobiology”	Gist Notes and Vocabulary
(1) Humans, on the other hand, are remarkably adaptable. We can survive everywhere from the frigid North and South poles to the balmy islands on the equator. With technologies developed by our brains we can even live in vessels orbiting our planet. Survival skills in cold climates may entail learning how to find shelter and obtaining nutrients from hunting. In tropical climates it may be more a matter of avoiding certain predators or identifying which fruits are edible and which are toxic.	Vessels orbiting = Entail =
(2) The changes in demands across time are as striking as the changes across geography. Ten thousand years ago, a blink of an eye in evolutionary terms, we spent much of our time securing food and shelter. Modern humans now spend relatively little time and energy obtaining calories (a factor that may, through epigenetic or other factors, be related to earlier puberty and greater height/weight). Instead many of us spend the majority of our waking hours dealing with words or symbols—a particularly noteworthy departure given that reading, which is approximately 5,000 years old, did not even exist for most of human history.	Epigenetic = change in the function of cells that is not due to changes in the DNA Noteworthy = interesting
(3) Having a highly plastic brain is particularly useful during the second decade, when the evolutionary demands of adolescence—being able to survive independently and reproduce—rely critically on the ability to adapt.	plastic brain= plastic here means “able to be changed”



Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution”

From “The Adolescent Brain: Evolution and Neurobiology”	Gist Notes and Vocabulary
<p>(4) Insight into the neurobiology of the developing brain has been greatly enhanced by the advent of magnetic resonance imaging (MRI), which allows exquisitely accurate pictures of brain anatomy and physiology without the use of ionizing radiation.</p> <p>(5) After puberty the brain does not mature by growing larger; it matures by growing more specialized. Gray matter volumes during the first three decades of life follow an inverted “U” shaped developmental trajectory with peak size occurring at different ages in different regions. Total cortical gray matter volume peaks at around age 11 in females and 13 in males. The complementary mechanisms of overproduction/selective elimination allow the brain to specialize in response to environmental demands.</p>	<p>advent—the invention of physiology—the way the brain function</p> <p>Specialized = more suited to a specific purpose Gray matter volume = how many synapses there are in the brain Trajectory = path Cortical gray matter volume—how much gray matter there is in the brain</p> <p>Complementary =</p>

Geidd, Jay N., M.D. "The Digital Revolution and Adolescent Brain Evolution." National Center for Biotechnology Information. National Institute of Health, 5 Aug. 2012. Web. <<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3432415/>>



Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution”:
Text-Dependent Questions

Questions	Notes
<p>In section 1, Dr. Giedd writes, “Humans, on the other hand, are remarkably adaptable.”</p> <p>1. What does it mean to be <i>adaptable</i>?</p> <p>2. What evidence does he give to support this statement?</p> <p>Later in section 1, Dr. Giedd gives another example of <i>adaptation</i>.</p> <p>3. He says that humans used to spend all their time trying to find food, but now we spend our time doing what?</p> <p>4. How is this an example of being adaptable?</p> <p>5. How might being adaptable in the past relate to the “digital revolution” you read about last night?</p>	



Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution”:
Text-Dependent Questions

Questions	Notes
<p>In section 3 Dr. Giedd writes: “Having a highly plastic brain is particularly useful during the second decade, when the evolutionary demands of adolescence—being able to survive independently and reproduce—rely critically on the ability to adapt.”</p> <p>6. How might having a brain that is changing be necessary for someone to adapt?</p> <p>7. Is Dr. Giedd saying that a teenager is more adaptable than an older person? Explain your thinking with evidence from the text.</p> <p>In section 5, Dr. Giedd explains a process you know a lot about. He is talking about myelination, synaptic branching, and pruning. He says, “The complementary mechanisms of overproduction/selective elimination allow the brain to specialize in response to environmental demands.”</p> <p>8. Why would <u>both</u> overproducing and cutting back on synapses make a brain more <i>adaptable</i>?</p>	



Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution”:
Close Reading Guide
(For Teacher Reference)

Total time: 20 minutes

Questions	Close Reading Guide
<p>In section 1 Dr. Giedd writes, “Humans, on the other hand, are remarkably adaptable”</p> <p>1. What does it mean to be <i>adaptable</i>?</p> <p>2. What evidence does he give to support this statement?</p> <p>Later in section 1, Dr. Giedd gives another example of <i>adaptation</i>.</p> <p>3. He says that humans used to spend all their time trying to find food, but now we spend our time doing what?</p> <p>4. How is this an example of being adaptable?</p> <p>5. How might being adaptable in the past relate to the “digital revolution” you read about last night?</p>	<p>(7 minutes) Read through the excerpt once.</p> <p>Then reread Paragraph 1 (it is separated into two chunks on the paper; read them both). Clarify any vocabulary in this section.</p> <p>Ask the questions one at a time. For each question, ask students to think individually and then raise their hands when they know the answer. When most of the class has a hand up, cold call on several students to share out.</p> <p>Listen for students to say:</p> <ol style="list-style-type: none">1. <i>To be able to figure out ways to survive in whatever environment you are in.</i>2. <i>He says that people can live in extremely different environments—like space, the cold, and the tropics.</i>3. <i>We spend our time reading and decoding symbols.</i>4. <i>We have changed our intellectual abilities according to what we need to be able to do.</i>5. <i>Answers will vary. People’s brains will have to be adaptable to be able to handle the “gusher of information.” The past indicates that we will.</i>



Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution”:
Close Reading Guide
(For Teacher Reference)

Questions	Close Reading Guide
<p>In section 3, Dr. Giedd writes: “Having a highly plastic brain is particularly useful during the second decade, when the evolutionary demands of adolescence—being able to survive independently and reproduce—rely critically on the ability to adapt.”</p> <p>6. How might having a brain that is changing be necessary for someone to adapt?</p> <p>7. Is Dr. Giedd saying that a teenager’s brain is more adaptable than an older person? Explain your thinking with evidence from the text.</p>	<p>(4 minutes)</p> <p>Reread Paragraph #2. Clarify any vocabulary. Explain that “plastic” is a technical term. Add it to the Domain-Specific Vocabulary anchor chart along with <i>brain plasticity</i>.</p> <p>Explain to students the subordinate clause starting with “being” modifies “evolutionary demands of adolescence.” They could simplify that sentence by skipping this part and repeating “evolutionary demands of adolescence rely on the ability to adapt.” Ask a student to rephrase the sentence further into simpler words.</p> <p>Remind students that they have read in several texts that the environment and behavior shape the brain.</p> <p>Listen for students to say:</p> <p>6. <i>If someone’s brain is changing, then it can be shaped to be perfectly suited to the environment it is in.</i></p> <p>7. <i>Yes, because their brains can change more easily while an older person’s brain will change more slowly.</i></p>



Excerpt 2 of “The Digital Revolution and the Adolescent Brain Evolution”:
Close Reading Guide
(For Teacher Reference)

Questions	Close Reading Guide
<p>In section 5, Dr. Giedd explains a process you know a lot about. He is talking about myelination, synaptic branching, and pruning that is unique to the adolescent brain. He says, “The complementary mechanisms of overproduction/selective elimination allow the brain to specialize in response to environmental demands.”</p> <p>8. Why would <u>both</u> overproducing and cutting back on synapses make a brain more <i>adaptable</i>?</p>	<p>(7 minutes)</p> <p>This is a difficult paragraph. Students should only be expected to get the gist of the paragraph. Read the question before you reread the paragraph.</p> <p>As you reread, model the skill of rereading and summarizing by pausing after every sentence and repeating it in simpler language. For example, after the first sentence you may say something like: “So, now we can study the brain better because we can take pictures of the inside of the brain.” You may wish to invite students to grapple with this skill.</p> <p>Focus the students on the word <i>specialization</i> and <i>complementary</i>. These will most help them answer the questions.</p> <p>Listen for students to say:</p> <ul style="list-style-type: none">– * <i>Overproducing would make the brain more adaptable because the brain will find new ways to deal with the environment. The more synapses one has, the greater chance one will have a synapse to match the environment.</i>– * <i>Cutting back would make the brain more adaptable because the brain will become more efficient at living in the new environment.</i>



Model Domain-Specific Vocabulary Anchor Chart
(For Teacher Reference)

*Note: This chart is added to over the course of several lessons. The items below are added in Lesson 6

Word	Definition
plastic	Something that is plastic can be changed and formed into a different shape. It will hold the new shape until it is changed again.
brain plasticity	the ability of the brain to change



Model Brain Development Anchor Chart
(For Teacher Reference)

Note: This chart is filled out in different lessons. The bolded items are added in this lesson.

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
<p>The brain needs sleep to take things from your short-term memory to your long-term memory (Knox)</p> <p>Your brain does not fully develop until the mid-20s (Scholastic)</p>	<p>Also called the “frontal lobe” (Knox)</p> <p>This area helps with insight and understanding the effect of your behavior on someone else (Knox)</p> <p>Matures later than other parts of the brain (Scholastic)</p> <p>Right behind your forehead (Scholastic)</p> <p>Helps with thinking ahead and sizing up risk and reward (Scholastic)</p>	<p>“White matter” is called myelin, and it coats the nerves and makes them “communicate” more effectively (Knox)</p> <p>In order for your brain to make a decision, tiny specialized cells “talk” with each other through a series of neurotransmitters, like a circuit in a computer. Then the whole network puts out a response, which becomes your outward behavior. (Scholastic)</p>	<p>Develops earlier than the PFC (Scholastic)</p> <p>Plays a central role in your emotional response (Scholastic)</p> <p>Associated with decisions made in feeling (Scholastic)</p> <p>When teens make decisions in emotionally charged situations—this one weighs in heavily (Scholastic)</p>	<p>So <u>if</u> the PFC is not as efficient, <u>then</u> teens may make decisions without fully realizing long-term consequences. <u>If</u> they do that, <u>then</u> this can be good (they take daring risks) and bad (they take dangerous risks).</p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Note: This chart is filled out in different lessons. The bolded items are added in this lesson.

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
		<p>Information travels from neuron to neuron by way of their axons and dendrites (Scholastic)</p> <p>The space between one neuron's axon and the other neuron's dendrites is called its synapse (Scholastic)</p> <p>To make the connection better, the axons wrap themselves in myelin through a process called myelination (Scholastic)</p>	<p>The limbic system in the teen brain is more sensitive to risk and reward and gets a bigger shot of dopamine in rewarding situations. So it is more biased toward seeking out new information. (Galván)</p>	<p><u>If the brain is branching and pruning in adolescence, then it is highly adaptable.</u> (Giedd)</p> <p><u>If it adapted in the past, then it may adapt today. If it is adaptable, then it may be able to adapt the digital world.</u></p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Note: This chart is filled out in different lessons. The bolded items are added in this lesson.

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
		<p>Also, if a synapse isn't used often, it is pruned through synaptic pruning. Then that energy is redirected into more active synapse. (Scholastic)</p> <p>Synaptic pruning occurs based on the choices, the behavior, and the environment of an individual (Scholastic)</p>		<p>So <u>if</u> synapses are being pruned or strengthened by the activities that teens spend their time on, <u>then</u> teens can shape their brain. And <u>if</u> activities shape one's brain, <u>then</u> one should be mindful about the activities that one is doing. As Dr. Willis says, "Practice makes permanent."</p>



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 7

Close Reading: Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution”



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)	
<p>I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1)</p> <p>I can read above-grade-level texts with scaffolding and support. (RI.7.10)</p> <p>I can use a variety of strategies to determine the meaning of unknown words or phrases. (L.7.4)</p> <p>I can analyze the organization of an informational text (including how the major sections contribute to the whole and to the development of the ideas). (RI.7.5)</p>	
Supporting Learning Targets	Ongoing Assessment
<ul style="list-style-type: none">• I can identify text-based evidence that does or does not support the main idea of an informational text.• I can read “The Digital Revolution and the Adolescent Brain Evolution” with support.• I can analyze photos, video, and quotes to find a main idea.	<ul style="list-style-type: none">• Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution” text-dependent questions• Thinking Logs



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Analyzing the Evidence Entry Task (5 minutes)2. Work Time<ol style="list-style-type: none">A. Close Reading of Excerpt 3 (18 minutes)B. Revisit Gallery Walk (15 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Thinking Log (7 minutes)4. Homework<ol style="list-style-type: none">A. Read Homework: Excerpt 4 of “The Digital Revolution and the Adolescent Brain Evolution” and answer the questions.B. Continue to read your independent reading book.	<ul style="list-style-type: none">• In this lesson, students continue to read excerpts from “The Digital Revolution and the Adolescent Brain Evolution.” See the Teaching Notes from Lesson 5 for more about this text.• This excerpt centers on the effects of video games on the brain. Because students will be reading several texts in Unit 2 about video games, today’s learning will be important. Be sure to take the time in Work Time A to record key information on the class Brain Development anchor chart. Students will continue to focus on the last column of their anchor chart, writing “if/then” statements. This practice will scaffold the students toward creating their position paper in Unit 3. Be sure to emphasize that they should use words and phrases like “may” and “it seems reasonable” to mirror the cautionary tone of scientists.• Students will revisit the Gallery Walk from Lesson 1 to think about what they now know and what they still would like to understand better. This reflective process helps them build on new understandings. A self-monitoring or metacognitive approach can help students develop the ability to take control of their own learning, define learning goals, and monitor their progress.• As in the Gallery Walk in Lesson 1, item 1 is a short video, which students can watch on a computer in the classroom. Cue up the Web page before class starts so that students can click “play” as they get to the station. Choose whether students will use headphones or listen at the station in small groups (quietly so that it will not disrupt others).• The lesson opens with an activity that is designed to help students progress toward RI.7.1. Students weed out irrelevant evidence that does not support the main idea of the text they read in Lesson 6. This is patterned after one of the questions on the end of unit assessment. If you find your students struggling with this, you may want to take more time on this portion of the lesson.• In advance:<ul style="list-style-type: none">– Load the multimedia feature from the <i>New York Times</i> Web site: http://www.nytimes.com/interactive/2010/11/21/technology/20101121-brain-interactive.html?ref=technology.



Agenda	Teaching Notes (continued)
	<ul style="list-style-type: none">– Prepare the Gallery Walk:<ul style="list-style-type: none">• Most items are for display around the room (on chart paper or taped to the wall)—some items are images and others are quotes.• Post or place the items around the room in a way that will allow students to move freely and comfortably from one item to the next.• Item 2 is the multimedia feature from the <i>New York Times Website</i>, which can be cued up at a computer station, but will also need to be viewed as a whole class using a digital projector.– Review the Gallery Walk protocol (see Appendix).• Post: Learning targets.



Lesson Vocabulary	Materials
(from Excerpt 3): socioeconomic, ubiquitous (section 2), encompass, interpersonal formats, infinitely scalable (section 3), predominant molecular currency, nucleus accumbens, commonality (section 4)	<ul style="list-style-type: none">• Analyzing the Evidence entry task (one per student)• Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution” (one per student)• Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution” text-dependent questions (one per student; one to display)• Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution” Close Reading Guide (for teacher reference)• Document camera• Brain Development anchor chart—student version (begun in Lesson 2)• Brain Development anchor chart (begun in Lesson 2)• Model Brain Development anchor chart (for teacher reference)• Notices and Wonders note-catcher (begun in Lesson 1)• “Students and Technology: Constant Companions” (multimedia feature; http://www.nytimes.com/interactive/2010/11/21/technology/20101121-brain-interactive.html?ref=technology) (From The New York Times, November 20, 2010 © 2010 The New York Times. All rights reserved. Used by permission and protected by the Copyright Laws of the United States. The printing, copying, redistribution, or retransmission of this Content without express written permission is prohibited.)• Digital projector• Gallery Walk items (from Lesson 1)• Thinking Log (begun in Lesson 2)• Homework: Excerpt 4 of “The Digital Revolution and the Adolescent Brain Evolution” (one per student)



Opening	Meeting Students’ Needs
<p>A. Analyzing the Evidence Entry Task (5 minutes)</p> <ul style="list-style-type: none">• Distribute the Analyzing the Evidence entry task. Ask students to complete it individually.• After a few minutes, ask students to raise their hand if they can identify the piece of evidence that does not support the main idea. Call on several students. Listen for them to identify the letter “d” as the piece that does not explain that neurons change according to task and environment.• Direct students’ attention to the learning targets.<ul style="list-style-type: none">* “I can identify text-based evidence that does or does not support the main idea of an informational text.”* “I can read ‘The Digital Revolution and the Adolescent Brain Evolution’ with support.”* “I can analyze photos, video, and quotes to find a main idea.”• Tell students the entry task asked them to weed out irrelevant evidence—that is, a quote that did not support the main idea. Ask students to write at the top of the entry task a number from 1 to 5. They should write a 1 if they were very confused and could not identify the piece of evidence that failed to support the main idea. They should write a 5 if they found the piece of evidence quickly and easily.• If time permits, ask a student who wrote a 5 to explain her thought process during the entry task. Alternatively, you could collect this entry task and use it to inform your teaching.• Explain that the text-dependent questions they will do next will help them read “The Digital Revolution and the Adolescent Brain Evolution.”	<ul style="list-style-type: none">• Checking in with learning targets helps students self-assess their learning. This research-based strategy supports struggling learners most.



Work Time	Meeting Students’ Needs
<p>A. Close Reading of Excerpt 3 (18 minutes)</p> <ul style="list-style-type: none"> Distribute Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution.” Tell students that they will read this excerpt with support. Also distribute Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution” text-dependent questions and display a copy on a document camera. Work through this handout in concert with Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution” Close Reading Guide. (Be sure to save time for students to add to the anchor chart). Invite students to retrieve their Brain Development anchor chart—student version and focus their attention on the class Brain Development anchor chart. Tell them that you would like to get this information onto the anchor chart. Do so, using the Model Brain Development anchor chart (for teacher reference) as needed. Consider writing something like this in the limbic system column: <ul style="list-style-type: none"> – “Dopamine is the main neurotransmitter in the limbic system” (Giedd) – “Dopamine flushes the limbic system during basic biological drives, by substance abuse, and addictive behaviors. It is also activated by video games.” (Giedd) Ask students to turn and talk about what to write in the last column: <ul style="list-style-type: none"> * “Create ‘if/then’ statements from the information we learned about the video games, dopamine, and the limbic system.” After 1 minute, ask students to share out. Use the class discussion to add to the anchor chart and invite students to record the information on their own anchor charts. Consider writing something like this: <ul style="list-style-type: none"> – “<u>If</u> video games activate dopamine in the brain similarly to addictive behaviors, <u>then</u> a person may become addicted to video games in the same way someone can be addicted to behaviors.” 	<ul style="list-style-type: none"> Consider partnering ELL students who speak the same home language when discussion of complex content is required. This can allow students to have more meaningful discussions and clarify points in their native language.
<p>B. Revisit Gallery Walk (15 minutes)</p> <ul style="list-style-type: none"> Distribute students’ filled-in Notices and Wonders note-catcher from Lesson 1. Direct students’ attention to the multimedia feature “Students and Technology: Constant Companions” cued up on the digital projector. Explain that they will do one notice and wonder together before they work independently in the Gallery Walk. Tell students to notice how this relates to the ideas explored in their close reading today. Play the audio under “A Shot of Energy: Ramon Ochoa Lopez.” The audio is 1 minute, 28 seconds. 	<ul style="list-style-type: none"> Protocols such as a Gallery Walks are an engaging opportunity for students to reflect on their own learning. Developing reflection supports all students, but research shows it supports struggling learners most.



Work Time (continued)	Meeting Students’ Needs
<ul style="list-style-type: none">• Give students a minute to write down their thoughts. Then cold call on students. Listen for them to say that the reason Ramon loves video games is the dopamine in his brain—the “shot of energy,” as he calls it. But they know that dopamine is also one of the neurotransmitters that a person can get “addicted to.” Perhaps they wonder if Ramon is addicted to video games. Remind students that the word “addiction” is defined in the Gallery Walk.• Tell students they will re-examine the Gallery Walk items from Lesson 1, including quotes, images, and the video. Some of the information will now seem familiar, but some might still be new and interesting; students should add anything they observe, or that is still new or interesting, in the Notices column. They also may still find some of the information surprising or may have additional questions that are not answered in the image or quote. They can add any questions in the Wonders column.• Review the Gallery Walk protocol as needed and get students in small groups with their note-catchers to begin.• Ask them to silently wander to each image, quote, or the video and write down what they notice and what they wonder for about 8 minutes. They may linger at any item and not worry about getting to all the items. Invite students to play multimedia feature from the <i>New York Times Website</i> at the computer station. They can revisit Ramon’s audio or play any other student’s audio. Remind students of the norms for moving calmly around the room and moving to the images, quotes, or video where there are fewer classmates.• Invite students to begin the Gallery Walk. Consider participating in this step and writing your own notices and wonders. Or circulate to listen in and clarify procedures as needed.• After 8 minutes, invite students to sit and finish writing their thoughts, especially adding to their thinking at the bottom of the note-catcher. Starting with notices, allow students to “popcorn” discuss any of the ideas they have written down. Next, invite them to “popcorn” discuss the questions that they still have after the Gallery Walk. Tell them that their questions may become research questions for Unit 2. Collect the Notices and Wonders note-catchers.• Congratulate students on how much they have learned about adolescent brain since Lesson 1. Point out specific learning that students didn’t know in the first Gallery Walk but did know in the second, as well as deeper and/or different questions formed based on greater understanding of the adolescent brain.	



Closing and Assessment	Meeting Students’ Needs
<p>A. Thinking Log (7 minutes)</p> <ul style="list-style-type: none">• Ask students to retrieve their Thinking Logs. Then have them pair up and discuss this question before writing:<ul style="list-style-type: none">* “How has revisiting the resources in the Gallery Walk clarified your thinking about adolescent brain development?”• Then have students respond in their Thinking Log (Lesson 7).• Time permitting, cold call students to share their current thinking.	
Homework	Meeting Students’ Needs
<ul style="list-style-type: none">• Read Homework: Excerpt 4 of “The Digital Revolution and the Adolescent Brain Evolution” and answer the questions. Use the scaffolding steps to help you.• Continue to read your independent reading book.	



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 7

Supporting Materials



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Analyzing the Evidence:
Entry Task

Name:

Date:

Directions:

In Lesson 6, you learned about the adaptability of the brain. You learned that the brain is very adaptable because it literally, physically changes. Its neurons change to fit the tasks it needs to perform in order to thrive in whatever environment it is in.

These are all pieces of evidence from texts throughout Unit 1. Most of the following pieces of evidence support your learning from Lesson 6. **Which one of these does not?** Circle the letter and explain why in the space below.

- a) “For instance, if you play guitar every day, your brain will have more fine-motor synapses than if you spend your time listening to Fall Out Boy on your MP3 player (in that case, audio synapse would rule).” (Bernstein)
- b) “This means that teens have the potential, through their choices and behaviors they engage in, to shape their own brain development—strengthening some circuits and getting rid of others. This makes the kind of activities that teens are involved in especially important.” (Scholastic)
- c) “Your experiences and the people you affiliate with shape the way your brain ultimately develops.” (Galván)
- d) “The nerve cells that connect teenagers’ frontal lobes with the rest of their brains are sluggish. Teenagers don’t have as much of the fatty coating called myelin, or ‘white matter,’ that adults have in this area.” (Knox)
- e) “When you review or practice something you’ve learned, dendrites actually grow between nerve cells in the network that holds that memory.” (Willis)



Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution”

Name: _____

Date: _____

From “Entertainment”	Gist Notes and Vocabulary
(1) The most common forms of digital entertainment are TV (4.5 hours/day), music (3 hours/day), and non-gaming use of computers (1.5 hours/day). Next most common are video games (1.25 hours/day)—from computers, the Internet, game consoles, or handheld/mobile devices.	
(2) Video games are a \$25 billion per year industry and are popular and available across socioeconomic status and gender—99% of teen boys and 94% of teen girls play video games on one or more of the above platforms. The amount of time spent on video games is increasing across all age groups as the quality and variety of games continues to improve and the availability of mobile devices becomes more ubiquitous .	socioeconomic= ubiquitous=seems to be everywhere
(3) Highly popular games encompass a wide range of genres, degree of intellectual demand, and solitary versus interpersonal formats . Game consoles such as Wii Fit and Kinect interact with body movement providing infinitely scalable physical challenges that blur the distinction between video gaming and conventional athletic endeavors.	Encompass= Interpersonal formats= infinitely scalable=it can always get higher or more challenging
(4) From a neurobiological perspective, the popularity of the games reflects their capacity to stimulate the brain’s reward circuitry. Dopamine is the predominant molecular currency of the reward system, and a key component of the circuitry is the nucleus accumbens . The commonality of reward circuitry across domains is striking. All of our basic drives (e.g., hunger, sex, sleep), all substances of abuse, and everything that may lead to addiction (i.e., compulsive behavior characterized by loss of control and continuation despite adverse consequences) increases dopamine in the nucleus accumbens.	Predominant molecular currency=the most often used Nucleus accumbens=a part of the brain that is part of the limbic system Commonality=

Geidd, Jay N., M.D. "The Digital Revolution and Adolescent Brain Evolution." National Center for Biotechnology Information. National Institute of Health, 5 Aug. 2012. Web. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3432415/>

Created by Expeditionary Learning, on behalf of Public Consulting Group, Inc.
© Public Consulting Group, Inc., with a perpetual license granted to Expeditionary Learning Outward Bound, Inc.



Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution”:
Text-Dependent Questions

Questions	Notes
<p>1. What is the purpose of the first paragraph? Is it to define terms, identify a problem, illustrate a problem with an anecdote, or give background? Why?</p> <p>2. In the second paragraph, Dr. Giedd quotes the statistic that “99% of teen boys and 94% of teen girls play video games.” What statement does this evidence support?</p> <p>3. Compare the information in the second paragraph with the different information in the third. What do they have in common? How are they different?</p> <p>4. If you take out the parenthetical phrases of the last sentence, it reads: “All of our basic drives, all substances of abuse, and everything that may lead to addiction increases dopamine in the nucleus accumbens.”</p> <p>What do video games have in common with our basic drives, drugs, and addictive behaviors?</p>	



Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution”:
Text-Dependent Questions

Questions	Notes
How might this relate to the main idea of this section that video games are popular?	



Excerpt 3 of “The Digital Revolution and the Adolescent Brain Evolution”:
Close Reading Guide
(For Teacher Reference)

Total Time: 15 minutes

Questions	Close Reading Guide
<ol style="list-style-type: none">1. What is the purpose of the first paragraph? Is it to define terms, identify a problem, use an anecdote to illustrate a problem, or give background? Why?2. In the second paragraph, Dr. Giedd quotes the statistic that “99% of teen boys and 94% of teen girls play video games.” Why statement does this evidence support?3. Compare the information in the second paragraph with the different information in the third. What do they have in common? How are they different?	<p>(7 minutes)</p> <p>Read the excerpt once.</p> <p>Then reread Paragraphs 1–3. Clarify any vocabulary in this section. You may wish to prompt with questions like these: <i>“Socioeconomic” was in your homework from Lesson 5. What did it mean?</i> <i>The sentence says “solitary versus interpersonal,” so interpersonal is the opposite of solitary. What does it mean?</i></p> <p>Ask the Questions 1–3 one at a time. For each question, ask students to think individually and then raise their hands when they know the answer. When most of the class has a hand up, cold call on several students to share out.</p> <p>Listen for students to say:</p> <ol style="list-style-type: none">1. <i>The purpose is to define terms. He starts defining different types of entertainment and then explains what he means by “video games.”</i>2. <i>That video games are very popular across gender.</i>3. <i>They are both about video games, but the second is about how popular they are while the third is about what kinds there are.</i>



4. If you take out the parenthetical phrases of the last sentence, it reads: “All of our basic drives, all substances of abuse, and everything that may lead to addiction increases dopamine in the nucleus accumbens.”

What do video games have in common with our basic drives, drugs, and addictive behaviors?

How might this relate to the main idea of this section that video games are popular?

(8 minutes)

Reread the last paragraph. Clarify the vocabulary with a question like this:

The base of this word is “common.” How does that help you?

Model rephrasing for the students. Rephrase the first sentence by saying something like: “When you look at it from a brain science perspective, you can see that video games are popular because they tap into our limbic system.”

Then say something like this: “The next sentence will tell us two important things about the reward system or limbic system. Raise your hand when you can identify them.”

Reread the second sentence and pause to let students identify the information. Ask students to share out. Listen for: *Dopamine is the main neurotransmitter in the reward system, and the nucleus accumbens is major part of the limbic system.*

Move on to Question 4. Reread the remainder of the paragraph. Ask the question. Give students time to think individually and then raise their hands when they know the answer. When most of the class has a hand up, cold call on several students to share out.

Listen for students to say:

Video games also increase dopamine levels in the reward center.

Because video games stimulate dopamine like our basic drives, drugs, and addictions, they can feel as addictive or as necessary as those. Therefore, because they make our brain feel this way, they are popular.



Model Brain Development Anchor Chart
(For Teacher Reference)

Note: This chart is filled out in different lessons. The bolded items are added in this lesson.

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
<p>The brain needs sleep to take things from your short-term memory to your long-term memory (Knox)</p> <p>Your brain does not fully develop until the mid-20s (Scholastic)</p>	<p>Also called the “frontal lobe” (Knox)</p> <p>This area helps with insight and understanding the effect of your behavior on someone else (Knox)</p> <p>Matures later than other parts of the brain (Scholastic)</p> <p>Right behind your forehead (Scholastic)</p> <p>Helps with thinking ahead and sizing up risk and reward (Scholastic)</p>	<p>“White matter” is called myelin, and it coats the nerves and makes them “communicate” more effectively (Knox)</p> <p>In order for your brain to make a decision, tiny specialized cells “talk” with each other through a series of neurotransmitters, like a circuit in a computer. Then the whole network puts out a response, which becomes your outward behavior. (Scholastic)</p>	<p>Develops earlier than the PFC (Scholastic)</p> <p>Plays a central role in your emotional response (Scholastic)</p> <p>Associated with decisions made in feeling (Scholastic)</p> <p>When teens make decisions in emotionally charged situations—this one weighs in heavily (Scholastic)</p>	<p>So <u>if</u> the PFC is not as efficient, <u>then</u> teens may make decisions without fully realizing long-term consequences. <u>If</u> they do that, <u>then</u> this can be good (they take daring risks) and bad (they take dangerous risks).</p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
		<p>Information travels from neuron to neuron by way of their axons and dendrites (Scholastic)</p> <p>The space between one neuron's axon and the other neuron's dendrites is called its synapse (Scholastic)</p> <p>To make the connection better, the axons wrap themselves in myelin through a process called myelination (Scholastic)</p>	<p>The limbic system in the teen brain is more sensitive to risk and reward and gets a bigger shot of dopamine in rewarding situations. So it is more biased toward seeking out new information. (Galván)</p> <p>Dopamine is the main neurotransmitter in the limbic system (Giedd)</p>	<p><u>If</u> video games activate dopamine in the brain similarly to addictive behaviors, <u>then</u> a person may become addicted to video games in the same way someone can be addicted to behaviors.</p> <p><u>If</u> the brain is branching and pruning in adolescence, <u>then</u> it is highly adaptable. (Giedd)</p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
		<p>Also, if a synapse isn't used often, it is pruned through synaptic pruning. Then that energy is redirected into more active synapse. (Scholastic)</p> <p>Synaptic pruning occurs based on the choices, the behavior, and the environment of an individual (Scholastic)</p>	<p>The limbic system is activated during basic biological drives, by substance abuse, and addictive behaviors. It is also activated by video games. Giedd</p>	<p><u>If</u> it adapted in the past, <u>then</u> it may adapt today. <u>If</u> it is adaptable, <u>then</u> it may be able to adapt the digital world.</p> <p>So <u>if</u> synapses are being pruned or strengthened by the activities that teens spend their time on, <u>then</u> teens can shape their brain. And <u>if</u> activities shape one's brain, <u>then</u> one should be mindful about the activities that one is doing. As Dr. Willis says, "Practice makes permanent."</p>



Homework: Excerpt 4 of “The Digital Revolution and the Adolescent Brain Evolution”

Name:

Date:

Directions: Please read the excerpt below. Then follow the scaffolding steps to summarize and rephrase the main idea.

From “Entertainment: Attention Economy”

In the fiercely competitive video game industry, top selling games are masterful at engaging our brain’s reward system. Homework is up against some challenging foes. Might the availability of technologies that can persistently keep dopamine levels so high raise the threshold for what our brains deem rewarding in terms of relationships, studying, or working toward other long-term goals that may not have immediate reinforcements?

Scaffolding steps:

1. Circle five words that you would benefit from reviewing their definition. Using a dictionary, context clues, or an adult, find the definition of those words.
2. Rewrite the gist of each sentence or phrase in your own words:
 - a) *In the fiercely competitive video game industry, top selling games are masterful at engaging our brain’s reward system.*
 - b) *Homework is up against some challenging foes.*
 - c) *Might the availability of technologies that can persistently keep dopamine levels so high ...*
 - d) *... raise the threshold for what our brains deem rewarding in terms of relationships, studying, or working toward other long-term goals that may not have immediate reinforcements?*

Geidd, Jay N., M.D. "The Digital Revolution and Adolescent Brain Evolution." National Center for Biotechnology Information. National Institute of Health, 5 Aug. 2012. Web. <<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3432415/>>



Homework: Excerpt 4 of “The Digital Revolution and the Adolescent Brain Evolution”

3. Now reread the paragraph again.

4. What is the problem Dr. Giedd is wondering about? Explain in your own words.

Bonus: Think about the words “attention” and “economy.” Explain what the title means.



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 8

Close Reading: Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution”



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)	
<p>I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1)</p> <p>I can read above-grade-level texts with scaffolding and support. (RI.7.10)</p> <p>I can use a variety of strategies to determine the meaning of unknown words or phrases. (L.7.4)</p>	
Supporting Learning Targets	Ongoing Assessment
<ul style="list-style-type: none">• I can determine the main idea in Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution.”• I can use a variety of strategies to figure out the meaning of new vocabulary.• I can read above-grade-level texts with support.	<ul style="list-style-type: none">• Homework: Excerpt 4 of “The Digital Revolution and the Adolescent Brain Evolution”• Excerpt 4 text-dependent questions• Thinking Logs



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Entry Task: Defining Vocabulary Words from Unit 1 (2 minutes)B. Sharing Unit I Vocabulary (6 minutes)C. Reviewing Learning Targets (2 minutes)2. Work Time<ol style="list-style-type: none">A. Analyzing the Main Idea (7 Minutes)B. Excerpt 5: Text-Dependent Questions (18 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Thinking Logs (4 minutes)B. Adding to the Brain Development Anchor Chart (6 minutes)4. Homework<ol style="list-style-type: none">A. Continue reading your independent reading book.	<ul style="list-style-type: none">• In this lesson, students continue to read excerpts from “The Digital Revolution and the Adolescent Brain Evolution.” See Teaching Notes from Lesson 5 for more on this text. As this is their third encounter with the text-dependent question activity, students will work more independently today.• This excerpt centers on social interaction in the digital world. Today’s learning is central to understanding the model essay in Unit 3.• As in Lesson 7, students will add “if/then” statements to their Brain Development anchor chart. Being able to practice making inferences from science will scaffold them toward creating their position paper in Unit 3. Remind students to use words and phrases like “may” and “it seems reasonable” to mirror the cautionary tone of scientists.• Collect but do not grade Homework: Excerpt 4 of “The Digital Revolution and the Adolescent Brain Evolution.” Rather, use it as formative assessment. Students will need it again in Lesson 9.• In advance:<ul style="list-style-type: none">– Load the multimedia feature from the <i>New York Times</i> Web site: http://www.nytimes.com/interactive/2010/11/21/technology/20101121-brain-interactive.html?ref=technology.– Prepare Quiz-Quiz-Trade cards (see supporting materials) and review the Quiz-Quiz-Trade protocol.– Decide how best to group students into triads for Work Time B.– Consider posting the Domain-Specific Vocabulary anchor chart.• Post: Learning targets.



Lesson Vocabulary	Materials
No new vocabulary	<ul style="list-style-type: none">• Unit 1 Vocabulary Quiz-Quiz-Trade cards (one card per student)• Domain-Specific Vocabulary anchor chart (optional; begun in Lesson 2)• Analyzing the Main Ideas: Sam Crocker (one per student)• “Students and Technology: Constant Companions” (multimedia feature; http://www.nytimes.com/interactive/2010/11/21/technology/20101121-brain-interactive.html?ref=technology) (From The New York Times, November 20, 2010 © 2010 The New York Times. All rights reserved. Used by permission and protected by the Copyright Laws of the United States. The printing, copying, redistribution, or retransmission of this Content without express written permission is prohibited.)• Digital projector• Analyzing the Main Ideas: Sam Crocker (answers, for teacher reference)• Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution” (one per student)• Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution” text-dependent questions (one per student; one to display)• Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution” Close Reading Guide (for teacher reference)• Document camera• Thinking Logs (begun in Lesson 2)• Model Brain Development anchor chart (for teacher reference)• Brain Development anchor chart—student version (begun in Lesson 2)• Brain Development anchor chart (begun in Lesson 2)• Note cards or sticky notes (two per student pairs)



Opening	Meeting Students’ Needs
<p>A. Entry Task: Defining Vocabulary Words from Unit 1 (2 minutes)</p> <ul style="list-style-type: none">• Distribute one vocabulary card for each student from the Unit 1 Vocabulary Quiz-Quiz-Trade cards.• Ask students to write the definition of the word on the back of the card. Remind them that they can use their prior neurologist notebook entries or any of their readings to define the word. If you have posted the Domain-Specific Vocabulary anchor chart, you may suggest the students use it. Consider covering it at this time but letting the students reference it after step 6 to check themselves.	<ul style="list-style-type: none">• If students need help defining the word, prompt them to look at their neurologist notebooks, Domain-Specific Vocabulary anchor chart, or other classroom resources.• Consider allowing students to choose from multiple representations (words, pictures, etc.) on the back of the Quiz-Quiz-Trade card to help define the word.• Checking in with learning targets helps students self-assess their learning. This research-based strategy supports struggling learners most.
<p>B. Sharing Unit 1 Vocabulary (6 minutes)</p> <ul style="list-style-type: none">• Let students know that they will be doing the Quiz-Quiz-Trade protocol. Briefly review the directions:<ol style="list-style-type: none">1. When prompted, find a partner and show him or her the vocabulary word on your card.2. Your partner will use his or her resources to try to define your word.3. Then the process repeats, with you defining your partner’s word.4. After both of you have tried to determine the meaning of the words, share the correct definitions, then trade cards and find new partners.5. Clarify directions as needed, and then invite the class to begin. Circulate to guide students and to listen in on their understanding of the words.6. Once students have partnered up four times, ask them to return to their seats.	<ul style="list-style-type: none">• Allowing students to discuss with a partner before writing or sharing with the whole class is a low-stress strategy to help them process in a risk-free situation.



Opening (continued)	Meeting Students’ Needs
<p>C. Reviewing Learning Targets (2 minutes)</p> <ul style="list-style-type: none">• Read the day’s learning targets aloud or ask a volunteer to do so.• Remind students of the Fist to Five technique (introduced in Module 1).• Cold call a few students to provide evidence for the rating they gave themselves. <p>Tell students that today they will review the homework in preparation for their end of unit assessment (in Lesson 10), during which they will need to identify and evaluate arguments.</p>	

Work Time	Meeting Students’ Needs
<p>A. Analyzing the Main Idea (7 minutes)</p> <ul style="list-style-type: none">• Distribute Analyzing the Main Ideas: Sam Crocker.• Direct the students’ attention to the multimedia feature “Students and Technology: Constant Companions” cued up on the digital projector.• Play the audio under “The Illusion of Social Interaction: Sam Crocker.” The audio is 1:18. Repeat the audio at least two more times.• Give students a minute to write down their thoughts. Then cold call on students. Use Analyzing the Main Ideas: Sam Crocker (answers, for teacher reference) for suggested responses.	



Work Time (continued)	Meeting Students’ Needs
<p>B. Excerpt 5: Text-Dependent Questions (18 minutes)</p> <ul style="list-style-type: none">• Arrange students in pairs.• Distribute Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution.” Also distribute Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution” Text-Dependent Questions and display a copy on a document camera.• Work through this handout in concert with the Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution” Close Reading Guide.• Keep students in pairs for the Closing activities.• Note: Remember to collect Homework: Excerpt 4 of “The Digital Revolution and the Adolescent Brain Evolution.”	<ul style="list-style-type: none">• Hearing a complex text read slowly, fluently, and without interruption or explanation promotes comprehension and fluency for students: They are hearing a strong reader read the text aloud with accuracy and expression and are simultaneously looking at and thinking about the words on the printed page. Be sure to set clear expectations that students read along silently in their heads as you read the text aloud.

Closing and Assessment	Meeting Students’ Needs
<p>A. Thinking Logs (4 minutes)</p> <ul style="list-style-type: none">• Ask students to retrieve their Thinking Logs (from Lesson 2) and answer the questions for Lesson 8:<ul style="list-style-type: none">– In “Attention Economy,” Dr. Giedd argues that “real-life” activities like traditional homework, talking to friends, and working toward a long-term goal usually don’t provide the same jolt of dopamine of media devices. Why might that be a problem for students?– What else are you wondering about the adolescent brain’s development?• After a few minutes, ask students to “popcorn” out their answers.	



Closing and Assessment (continued)	Meeting Students’ Needs
<p>B. Adding to the Brain Development Anchor Chart (6 minutes)</p> <ul style="list-style-type: none"> Refer to the Model Brain Development anchor chart (for teacher reference) as needed for this section of the lesson. Remind students that the class has been practicing making “if/then” statements from the reading. Invite students to retrieve their Brain Development anchor chart—student version and focus their attention on the class Brain Development anchor chart. Add new information to the “prefrontal cortex” column of the anchor chart and ask students to do the same on their own copies: <ul style="list-style-type: none"> “The PFC is central hub of social circuitry. (Giedd)” Ask students to turn and talk with their partner: <ul style="list-style-type: none"> * “What ‘if/then’ statement can you make from the learning about the social brain today?” After a minute, ask students to share out. Circle the statement you just wrote and draw a line to the “So what?” column. Write something like: <ul style="list-style-type: none"> “<u>If</u> the PFC is the social hub and it is still developing in teens, <u>then</u> teens may still need practice with social skills.” “<u>If</u> there are non-verbal social cues that can only be learned in the physical presence of a person, <u>then</u> if someone is mostly socializing online he or she may not learn those skills.” Distribute note cards (or sticky notes if the class anchor chart is posted on the wall). Ask students to make at least two more “if/then” statements with their partner. They can use their learning from today or from any other reading. Look for students to write things like: <ul style="list-style-type: none"> <u>If</u> you’re extra sensitive to dopamine, <u>then</u> you may crave activities that activate dopamine more. <u>If</u> you are synaptic pruning based on your behavior, <u>then</u> your behavior may be shaping your brain. <u>If</u> your prefrontal cortex isn’t fully available, <u>then</u> you should ask for help when you make decisions. Students may place their sticky notes on the anchor chart as they leave (if it’s on chart paper) or hand in their note cards. Be sure they write their names on them. Transfer the students’ ideas to the class anchor chart either during or after class. 	<ul style="list-style-type: none"> Consider supporting your struggling students by providing half of the If/Then statement. You may prompt them with: If you’re extra sensitive to dopamine then... If there are non-verbal social cues that can only be learned in the physical presence of a person then if you are mostly socializing online....



Homework	Meeting Students’ Needs
<ul style="list-style-type: none">• Continue reading your independent reading book.	



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 8

Supporting Materials



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Vocabulary Quiz-Quiz-Trade Cards

neurological development	electrochemical impulse
neurons	neurotransmitter
prefrontal cortex	



Vocabulary Quiz-Quiz-Trade Cards

limbic system	dendrites
neural impulse	synapse
axons	myelination
myelin	synaptic pruning



Vocabulary Quiz-Quiz-Trade Cards

brain pathways	dopamine
plastic	brain plasticity
adaptable	social cognition
gray matter	neural insulation



Vocabulary Quiz-Quiz-Trade Cards

neuroscientists

complementary

socioeconomic

adaptive mechanisms



Analyzing the Main Ideas: Sam Crocker

Name:

Date:

Directions: The audio selection you will listen to today has two main ideas. As you listen, write down at least two supporting details for each main idea. You will hear it three times.

Main idea: My attention span has gotten worse.	Main idea: The social interactions on Facebook are an illusion.
Supporting details:	Supporting details:

Which main idea best relates to the reading you did last night? Why?



Analyzing the Main Ideas: Sam Crocker
(Answers, For Teacher Reference)

Directions: The audio selection you will listen to today has two main ideas. As you listen, write down at least two supporting details for each main idea. You will hear it three times.

Main idea: My attention span has gotten worse.	Main idea: The social interactions are an illusion.
It's harder for me to do nothing. I want to fill empty time. It's hard to focus on one stream of information.	Reading about other people's lives is not real interaction. I learn things about people that I don't care about. I feel like I need to be in touch with the outside world, but it's an illusion.

Which main idea best relates to the reading you did last night? Why?

The main idea that best relates is the fact that Sam's attention span has gotten worse. He says he can't sit and do nothing. He also cannot focus on one thing at a time. It's as if doing nothing or doing one thing doesn't provide enough stimulation for him. In the reading last night, Dr. Giedd asked if someone's brain might get used to a certain level of dopamine and immediate reinforcement. It seems that Sam's is used to the artificially high levels of dopamine from constant stimulation, so he feels restless if he doesn't have that stimulation.



Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution”

Name: _____

Date: _____

From “Digital Revolution—Social”	Gist Notes and Vocabulary
(1) The human brain is a social brain. Our ability to gauge the moods and intentions of others, to detect the truth or falsehood of their communications, to discern friend from foe, and to form alliances are among its most complex and important tasks. These skills are of premier importance to fulfill our biological imperatives of staying alive (through the protection of the group) and reproducing. From this perspective, it is no wonder that so much of our brains is dedicated to social cognition ...	Gauge= Discern= Biological imperative= the thing we must do to live Social cognition=
(2) The central hub of circuitry related to social skills is the late-maturing highly plastic prefrontal cortex. Like any complex skills, mastery requires lots of practice. Much of the discernment relies on exquisitely subtle detection of non-verbal cues such as slight changes in eye gaze, millisecond differences in speech timing, synchrony of response to shared environmental stimuli , breathing patterns, body posture, touch, odors, etc. Might the increasing reliance on digital social interactions hinder exposure to the “real-world” experiences necessary to master these most important skills?	Mastery=if you have mastery in something, you are really good at it. Synchrony=occurring at the same time Stimuli= Hinder=stop or limit

Geidd, Jay N., M.D. "The Digital Revolution and Adolescent Brain Evolution." National Center for Biotechnology Information. National Institute of Health, 5 Aug. 2012. Web. <<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3432415/>>



Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution”:
Text Dependent Questions

Questions	Notes
<p>1. Dr. Giedd states, “The human brain is a social brain.” He then goes on to describe four important social tasks that a person’s brain must be able to do. Describe those four tasks in your own words.</p> <p>2. Dr. Giedd describes the prefrontal cortex as the “late-maturing highly plastic prefrontal cortex.” What does this statement tell us about the prefrontal cortex?</p> <p>3. Referring to the social skills that a human being needs, Dr. Giedd says, “Like any complex skills, mastery requires lots of practice.” How might someone practice social skills?</p> <p>4. What is a <i>non-verbal</i> cue?</p> <p>5. What is one of the non-verbal cues Dr. Giedd lists?</p>	



Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution”:
Text Dependent Questions

Questions	Notes
<p>6. Dr. Giedd describes the non-verbal cues as “exquisitely subtle.” Which of these phrases does NOT reinforce that idea:</p> <p>“slight changes,” “millisecond differences,” or “breathing patterns”</p> <p>7. Why might these be hard to practice if you are socializing digitally?</p> <p>8. Paraphrase this question in your own words:</p> <p>“Might the increasing reliance on digital social interactions hinder exposure to the ‘real-world’ experiences necessary to master these most important skills?”</p>	



Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution”:
Close Reading Guide
(For Teacher Reference)

Total Time: 18 minutes

Questions	Close Reading Guide
<p>1. Dr. Giedd states, “The human brain is a social brain.” He then goes on to describe four important social tasks that a person’s brain must be able to do. Describe those four tasks in your own words.</p>	<p>(8 minutes)</p> <p>Read the excerpt once.</p> <p>Pause to clarify the vocabulary. You may wish to prompt the students with these vocabulary questions:</p> <p><i>What is a gas gauge? What does it do?</i></p> <p><i>The Latin root “cogn-” means to know. How does that help you?</i></p> <p><i>The prefix “dis-” means apart from. How does that help you? (Point out “discernment” in the next paragraph.)</i></p> <p>Read the first question. Then reread the first paragraph. Make sure you pause at the comma after each social task. To further assist students, you may want to hold up fingers to indicate the first, second, etc.</p> <p>Give students a moment to answer the question on their own and then ask them to turn and talk with their partner.</p> <p>Ask partners to raise their hands when they can identify the four tasks of Question 1.</p> <p>When most hands are raised, call on students. Listen for them to say: <i>to tell how others are feeling, to tell who is a friend and who is an enemy, to tell if someone is lying, and to make friends.</i></p> <p>Reread the second paragraph.</p> <p>For the next 10 minutes, students will work in pairs on Questions 2–8. Because this is the third close reading the students have completed, in this lesson you will give them a chance to answer with a partner instead of whole class.</p>
<p>2. Dr. Giedd describes the prefrontal cortex as the “late-maturing highly plastic prefrontal cortex.” What does this statement tell us about the prefrontal cortex?</p>	



Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution”:
Close Reading Guide
(For Teacher Reference)

Questions	Close Reading Guide
<p>3. Referring to the social skills that a human being needs, Dr. Giedd says, “Like any complex skills, mastery requires lots of practice.”</p> <p>Rephrase that sentence.</p> <p>How might someone practice social skills?</p>	<p>You may consider working with a group of struggling students or circulating to provide assistance.</p> <p>Listen for students to something like:</p> <p>2. <i>The PFC matures late and is very changeable.</i></p> <p>3. <i>“Like any hard skill, in order to become very good at it, one needs to do it over and over again.” Someone practices social skills by being around and trying to relate to people.</i></p>
<p>4. What is a <i>non-verbal</i> cue?</p> <p>5. What is one of the non-verbal cues Dr. Giedd lists?</p> <p>6. Dr. Giedd describes the non-verbal cues as “exquisitely subtle.” Which of these words does NOT reinforce that idea:</p> <p>“slight changes, “millisecond differences,” or “breathing patterns”</p> <p>7. Why might these be hard to practice if you are socializing digitally?</p>	<p>4. <i>A non-verbal cue is something that is not said in words, i.e., body language.</i></p> <p>5. <i>Changes in breathing patterns, body postures, eye gaze, etc.</i></p> <p>6. <i>“Breathing patterns” does not reinforce the idea of subtle.</i></p> <p>7. <i>Because you need to be physically around someone to practice non-verbal cues.</i></p>



Excerpt 5 of “The Digital Revolution and the Adolescent Brain Evolution”:
Close Reading Guide
(For Teacher Reference)

Questions	Close Reading Guide
<p>8. Paraphrase this question in your own words:</p> <p>“Might the increasing reliance on digital social interactions hinder exposure to the ‘real-world’ experiences necessary to master these most important skills?”</p>	<p><i>8. If we are interacting socially, will we still get enough practice with non-verbal social cues to get good at socializing?</i></p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Note: This chart is filled out in different lessons. The bolded items are added in this lesson.

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
<p>The brain needs sleep to take things from your short-term memory to your long-term memory (Knox)</p> <p>Your brain does not fully develop until the mid-20s (Scholastic)</p>	<p>Also called the “frontal lobe” (Knox)</p> <p>This area helps with insight and understanding the effect of your behavior on someone else (Knox)</p> <p>Matures later than other parts of the brain (Scholastic)</p> <p>Right behind your forehead (Scholastic)</p> <p>Helps with thinking ahead and sizing up risk and reward (Scholastic)</p>	<p>“White matter” is called myelin, and it coats the nerves and makes them “communicate” more effectively (Knox)</p> <p>In order for your brain to make a decision, tiny specialized cells “talk” with each other through a series of neurotransmitters, like a circuit in a computer. Then the whole network puts out a response, which becomes your outward behavior. (Scholastic)</p>	<p>Develops earlier than the PFC (Scholastic)</p> <p>Plays a central role in your emotional response (Scholastic)</p> <p>Associated with decisions made in feeling (Scholastic)</p> <p>When teens make decisions in emotionally charged situations—this one weighs in heavily (Scholastic)</p>	<p>So <u>if</u> the PFC is not as efficient, <u>then</u> teens may make decisions without fully realizing long-term consequences. <u>If</u> they do that, <u>then</u> this can be good (they take daring risks) and bad (they take dangerous risks).</p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
	<p>The PFC is the central hub of social circuitry (Giedd)</p>	<p>Information travels from neuron to neuron by way of their axons and dendrites (Scholastic)</p> <p>The space between one neuron's axon and the other neuron's dendrites is called its synapse (Scholastic)</p> <p>To make the connection better, the axons wrap themselves in myelin through a process called myelination (Scholastic)</p>	<p>The limbic system in the teen brain is more sensitive to risk and reward and gets a bigger shot of dopamine in rewarding situations. So it is more biased toward seeking out new information. (Galván)</p> <p>Dopamine is the main neurotransmitter in the limbic system (Giedd)</p>	<p><u>If</u> the PFC is the social hub and it is still developing in teens, <u>then</u> teens may still need practice with social skills. <u>If</u> there are non-verbal social cues that can only be learned in the physical presence of a person, <u>then</u> if someone is mostly socializing online he or she may not learn those skills.</p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
		<p>Also, if a synapse isn't used often, it is pruned through synaptic pruning. Then that energy is redirected into more active synapse. (Scholastic)</p> <p>Synaptic pruning occurs based on the choices, the behavior, and the environment of an individual (Scholastic)</p>	<p>The limbic system is activated during basic biological drives, by substance abuse, and addictive behaviors. It is also activated by video games. Giedd</p>	<p><u>If</u> video games activate dopamine in the brain similarly to addictive behaviors, <u>then</u> a person may become addicted to video games in the same way someone can be addicted to behaviors.</p> <p><u>If</u> the brain is branching and pruning in adolescence, <u>then</u> it is highly adaptable. (Giedd)</p> <p><u>If</u> it adapted in the past, <u>then</u> it may adapt today. <u>If</u> it is adaptable, <u>then</u> it may be able to adapt the digital world.</p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
				So <u>if</u> synapses are being pruned or strengthened by the activities that teens spend their time on, <u>then</u> teens can shape their brain. And <u>if</u> activities shape one's brain, <u>then</u> one should be mindful about the activities that one is doing. As Dr. Willis says, "Practice makes permanent."



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 9

Analyzing Main Ideas and Supporting Details:

“Growing Up Digital”



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)	
I can determine a theme or the central ideas of an informational text. (RI.7.2) I can analyze the development of a theme or central idea throughout the text. (RI.7.2) I can cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. (RI.7.1)	
Supporting Learning Target	Ongoing Assessment
<ul style="list-style-type: none">I can analyze “Growing Up Digital” to determine its central ideas and evidence, and how they relate to each other.	<ul style="list-style-type: none">Text-Dependent Questions: “Growing Up Digital”Reflection Grid



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Listening for Gist: “Growing Up Digital” (10 minutes)2. Work Time<ol style="list-style-type: none">A. Reading Closely: “Growing Up Digital” (15 minutes)B. Analyzing the Main Idea: “Growing Up Digital” (15 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. “Attention Economy,” “Growing Up Digital,” and End Reflection (5 minutes)4. Homework<ol style="list-style-type: none">A. Continue reading your independent reading book and study for the end of unit assessment in the next lesson. Be sure to bring your independent reading book to class.	<ul style="list-style-type: none">• In this lesson, students read and analyze an informational text that acts as a bridge between the building background on neuroscience texts in this unit and the argument texts about the effects of screen time that will follow in Unit 2. This text, “Growing Up Digital,” is more accessible than the text in Lessons 6–8 but deals with similar themes. Namely, this text puts a human face on the issue of screen time and the developing adolescent brain.• Students return to the multimedia slideshow “Students and Technology: Constant Companions” for the last time. “Growing Up Digital” references the students who are featured in the slideshow.• In addition, students return to the neurologist’s notebook and work with RI.7.1 and RI.7.2 one more time before the end of unit assessment in Lesson 10. Work Time B is devoted to analyzing the main idea and the structure of the text.• Students complete a Reflection Grid in the Closing. Think about how you might incorporate or display it in class. Consider summarizing all student responses overnight and sharing it with the students in Lesson 10. Having a chance to reflect and share their individual learning is particularly important in this module, where the content is so personally applicable.• Be ready to return Homework: Excerpt 4 of “The Digital Revolution and the Adolescent Brain Evolution” from Lesson 8 because students will need it for today’s lesson.• In advance:<ul style="list-style-type: none">– Load the multimedia feature from the <i>New York Times</i> Web site: http://www.nytimes.com/interactive/2010/11/21/technology/20101121-brain-interactive.html?ref=technology.– Review: “Growing Up Digital.”• Post: Learning targets.



Lesson Vocabulary	Materials
stark, gratification, stimuli, tension	<ul style="list-style-type: none">Digital projector“Students and Technology: Constant Companions” (multimedia feature; http://www.nytimes.com/interactive/2010/11/21/technology/20101121-brain-interactive.html?ref=technology) (From The New York Times, November 20, 2010 © 2010 The New York Times. All rights reserved. Used by permission and protected by the Copyright Laws of the United States. The printing, copying, redistribution, or retransmission of this Content without express written permission is prohibited.)“Growing Up Digital” (one per student)Definitions in “Growing Up Digital” (for teacher reference)Text-Dependent Questions: “Growing Up Digital” (one per student)Text-Dependent Questions: “Growing Up Digital” (answers, for teacher reference)Neurologist’s notebook #5 (one per student and one for display)Neurologist’s notebook #5 (answers, for teacher reference)Document cameraReflection Grid (one per student)



Opening	Meeting Students’ Needs
<p>A. Listening for Gist: “Growing Up Digital” (10 minutes)</p> <ul style="list-style-type: none">• Using a digital projector to cue up the multimedia feature “Students and Technology: Constant Companions.”• Play the audio under the student “Vishal.” The audio is about 1 minute, 30 seconds long. Then ask students:<ul style="list-style-type: none">* “From this audio, what are some predictions you can make about the subject of our reading today?”• Cold call two or three students for their answers.• Distribute a copy of “Growing Up Digital” to each student. Tell students that this text looks at the same issues they have been exploring in Lessons 6–8 but does so by looking at some specific students. The class has listened to the audio stories of each of these students.• Orient students to the text. Explain that the left margin is where they will take gist notes.• Inform the students that you will read this text aloud to them while they read along silently in their heads.• As they listen to you, they should write down the gist of each paragraph. Remind them to write legibly and small. Assure them that you will pause so they have time to jot down notes without missing the next part of the text, but they should feel free to underline words or phrases they think are important.• Begin reading. Make sure students are adding to their notes as you read.• This text takes about 5 minutes to read aloud, not including time to stop and allow students to take notes.• Define the vocabulary words listed under “Vocabulary” for students as you read, and have them jot down a brief definition of each on their copy of the text. Use Definitions in “Growing up Digital” (for teacher reference) as a resource as needed.	<ul style="list-style-type: none">• Hearing a complex text read slowly, fluently, and without interruption or explanation promotes comprehension and fluency for students: They are hearing a strong reader read the text aloud with accuracy and expression and are simultaneously looking at and thinking about the words on the printed page. Be sure to set clear expectations that students read along silently in their heads as you read the text aloud.• Consider posting the list of definitions for this text so students may refer to it as they read.



Work Time (continued)	Meeting Students’ Needs
<p>B. Reading Closely: “Growing Up Digital” (15 minutes)</p> <ul style="list-style-type: none"> • Arrange students in pairs. Tell them they will now read “Growing Up Digital” closely with a partner, just as they did in the last lesson. They will read with some guiding questions. After they have discussed the questions, they will write their ideas on the right-hand side of the paper. • Distribute Text-Dependent Questions: “Growing Up Digital.” Ask the students to read along as you read the directions. Clarify any questions. Invite them to begin; circulate to help as needed. • After 10 minutes, debrief students on the questions. Use Text-Dependent Questions: “Growing Up Digital” (answers, for teacher reference) as a guide. 	
<p>C. Analyzing the Main Idea: “Growing Up Digital” (15 minutes)</p> <ul style="list-style-type: none"> • Distribute neurologist’s notebook #5 and display it with a document camera. • Explain that “Growing Up Digital” is an informational text that is structured similarly to the other informational texts students have read. It starts with an anecdote, gives some background, and then explores an issue. • Ask students to turn and talk: <ul style="list-style-type: none"> * “What is the main idea of this text?” • Tell them to skim back through the first page of the text and underline a sentence that hints at the main idea. • Ask for students to share out. Direct students to Paragraph 4 of “Growing Up Digital,” and point out that the main idea is directly stated in the second sentence. Write it on the displayed neurologist’s notebook #5 and ask students to do the same on their copy. Refer to neurologist’s notebook #5 (answers, for teacher reference) as needed. • Ask students to reread Paragraphs 5 and 6 and articulate the two sentences of information to include in the background box on neurologist’s notebook #5. • After 1 minute, ask students to share what they wrote. Write it on the displayed copy. • Ask students to reread Paragraphs 7 and 8 silently. After a moment, ask students to raise their hands when they can identify another paragraph from the text that explores how schools deal with the “tension” of technology. When most hands are up, ask for a student to share out. Listen for the student to identify Paragraphs 20 and 21. • Point out that sometimes an author will explore one supporting idea in several places. Write a supporting idea/detail about the school and technology in one of the boxes. 	<ul style="list-style-type: none"> • Careful attention to learning targets throughout a lesson engages, supports, and holds students accountable for their learning. Consider revisiting learning targets throughout the lesson so that students can connect their learning with the activity they are working on. • Consider writing these questions on the board for struggling learners who benefit from visuals to reinforce discussion.



Work Time (continued)	Meeting Students’ Needs
<ul style="list-style-type: none">• Next, ask students to turn and talk:<ul style="list-style-type: none">* “What is the purpose of the ‘27,000 Texts a Month’ section? Why would the author include it?”• Listen for students to say something like: “This section gives lots of examples of students being affected in different ways. It shows the many faces of this problem.”• Ask students to articulate a supporting idea from the “27,000 Texts a Month” section in their notebook.• Finally, ask:<ul style="list-style-type: none">* “Is there a supporting idea that we haven’t captured yet?”• Prompt students to return to the text-dependent questions. Listen for them to identify that the author also discusses the positives of “growing up digital.” Add students’ thinking to the displayed copy of neurologist’s notebook #5 and have them do the same on their own copy. They may also identify that parents are conflicted about the use of technology.	



Closing and Assessment	Meeting Students’ Needs
<p>A. “Attention Economy,” “Growing Up Digital,” and End Reflection (5 minutes)</p> <ul style="list-style-type: none">• Return the students’ Homework: Excerpt 4 of “The Digital Revolution and the Adolescent Brain Evolution,” from Lesson 8.• Ask students to take a few moments to review the short section titled “Attention Economy.”• With a partner, have students discuss the following prompt:<ul style="list-style-type: none">* “How does the article we have just read connect with the information in ‘Attention Economy’?”• Discuss student observations as a whole class. Listen for specific connections to the behavior of the students in the article and dopamine levels.• Hand out the Reflection Grid. Ask students to fill in each square with their reflections on Unit 1 using the following guide to the symbols on the grid: Something positive they learned goes in the box (+); something negative they learned goes in the box (-); something that surprised them goes in the box (!); and something they still have a question about goes in the box (?). Collect the grids and review them as a formative assessment.• Remind students that their end of unit assessment will take place during the next lesson. Assure them that there are no tricks to the assessment; it covers the same skills and concepts they have been practicing all along in the unit.	
Homework	Meeting Students’ Needs
<ul style="list-style-type: none">• Continue reading your independent reading book and study for the end of unit assessment in the next lesson. Be sure to bring your independent reading book to class.	



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 9

Supporting Materials



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.

“Growing Up Digital”

By Matt Richtel

(1) The day before the start of Vishal Singh’s senior year in high school, he faces a stark choice on his bedroom desk: book or computer?

(2) Vishal, a bright 17-year-old Californian who spends most of his time on Facebook, YouTube, and making digital videos, has read just 43 pages of his summer reading assignment, Kurt Vonnegut’s *Cat’s Cradle*. Instead of picking up the book, he clicks to YouTube.

(3) On YouTube, “you can get a whole story in six minutes,” he explains. “A book takes so long. I prefer the immediate gratification.”

(4) Students have always faced distractions. But computers and cellphones, and the constant stream of stimuli they offer, are a new challenge to focusing and learning.

(5) Researchers say the lure of these technologies is particularly powerful for young people. But because developing brains can get used to constantly switching tasks a lot more easily than adult brains, the risk is that today’s teenagers will be less able to stay focused on anything, not just schoolwork.

(6) “Their brains are rewarded not for staying on task but for jumping to the next thing,” says Michael Rich, a professor at Harvard Medical School and head of the Center on Media and Child Health in Boston. “The worry is we’re raising a generation of kids in front of screens whose brains are going to be wired differently.”

(7) But even as some educators express unease about students’ digital diets, they are increasingly using technology in the classroom, seeing it as a way to connect with students and give them the skills they need. Across the country, schools are equipping themselves with computers, Internet, and mobile devices.

(8) It is a tension on vivid display at Vishal’s school, Woodside High School in Redwood City, California. Here, as elsewhere, it’s not uncommon for students to send hundreds of text messages a day or spend hours playing video games, and virtually everyone is on Facebook.

“Growing Up Digital”

27,000 Texts a Month

(9) Allison Miller, 14, sends and receives 27,000 texts a month. She texts between classes, the moment soccer practice ends, while being driven to and from school, and often while studying. But it comes at a cost: She blames multitasking for the three B’s on her recent progress report.

(10) “I’ll be reading a book for homework and I’ll get a text message and pause my reading and put down the book, pick up the phone to reply to the text message, and then 20 minutes later realize, ‘Oh, I forgot to do my homework.’”

(11) Some shy students do not socialize through technology—they recede into it. Ramon Ochoa-Lopez, 14, plays six hours of video games on weekdays and more on weekends, leaving homework to be done in the bathroom before school.

(12) Students say that their parents, worried about the distractions, try to police their computer time. But it’s trickier with cellphones, since a lot of parents want to be able to call their children at any time, so simply taking the phone away isn’t an option.

(13) Sam Crocker, Vishal’s closest friend, who has straight A’s but lower SAT scores than he would like, blames the Internet’s distractions for his inability to finish either of his two summer-reading books.

(14) “Facebook is amazing because it feels like you’re doing something and you’re not doing anything,” Sam says. “It’s the absence of doing something, but you feel gratified anyway.”

(15) He concludes: “My attention span is getting worse.”

No Downtime

(16) That’s what has doctors worried. “Downtime is to the brain what sleep is to the body,” says Dr. Rich of Harvard Medical School. “But kids are in a constant mode of stimulation.”

(17) Rich isn’t suggesting young people toss out their phones and computers, but that they take a more balanced approach to what he says are powerful tools necessary to compete and succeed in modern life.

(18) Vishal has mixed feelings about technology. “If it weren’t for the Internet, I’d focus more on school and be doing better academically,” he says. But thanks to the Internet, he says, he’s discovered and pursued his passion: filmmaking.

“Growing Up Digital”

(19) Vishal often spends hours working on music videos or film projects with sophisticated film editing software that he taught himself how to use—and then he’s focused in a way he rarely is when doing homework. He hopes colleges will be so impressed by his portfolio that they’ll overlook his school performance.

(20) Some teachers are alarmed by what they see. Marcia Blondel, a veteran English teacher, has resorted to having students read aloud in class because many lack the attention span to read assignments on their own.

(21) “You can’t become a good writer by watching YouTube, texting, and e-mailing a bunch of abbreviations,” says Blondel.

(22) By late October, Vishal’s grades began to slip. Vishal says he’s investing himself more in his filmmaking. But he is also using Facebook late at night and surfing for videos on YouTube. Evidence of the shift comes in a string of Facebook updates.

(23) Saturday, 11:55 p.m.: Editing, editing, editing.

(24) Sunday, 3:55 p.m.: 8+ hours of shooting, 8+ hours of editing. All for just a three-minute scene. Mind = Dead.

(25) Sunday, 11:00 p.m.: Fun day, finally got to spend a day relaxing ... now about that homework ...

From The New York Times, November 20, 2010 © 2010 The New York Times. All rights reserved. Used by permission and protected by the Copyright Laws of the United States. The printing, copying, redistribution, or retransmission of this Content without express written permission is prohibited.



Definitions in “Growing Up Digital”
(For Teacher Reference)

stark: strong

gratification: pleasure, especially the satisfaction of a desire

stimuli: something (as an environmental change) that acts to partly change bodily activity (as by exciting a sensory organ); heat, light, and sound are common physical *stimuli*

tension: when something is stretched, stressed, “tense”



Text-Dependent Questions: “Growing Up Digital”

Name: _____

Date: _____

Questions	Write the answer to each question below.
1. After Paragraph 4: How does the story of Vishal help us visualize and understand the main idea in Paragraph 4?	
2. After Paragraph 8: Why would the use of technology in school be described as a “tension”?	
3. After Paragraph 16: Why would the author choose to use quotations from doctors and researchers in this article?	



Text-Dependent Questions: “Growing Up Digital”

Questions	Write the answer to each question below.
<p>4. After Paragraph 19: What is the point of describing the <i>benefits</i> of technology, such as Vishal’s filmmaking, in an article about the <i>dangers</i> of technology?</p>	
<p>5. In this article, how does technology affect Vishal? How do you think it might affect his brain? What do you know about the adolescent brain that makes you think this?</p>	



Text-Dependent Questions: “Growing Up Digital”
(Answers, for Teacher Reference)

Questions	Write the answer to each question below.
1. After Paragraph 4: How does the story of Vishal help us visualize and understand the main idea in Paragraph 4?	Vishal puts a human face on the central idea. It draws us into the story of the text and makes us want to know more.
2. After Paragraph 8: Why would the use of technology in school be described as a “tension”?	Tension is when something is stressed or stretched tight. Technology gives benefits to school, but it also has dangers. This is a tension.
3. After Paragraph 16: Why would the author choose to use quotations from doctors and researchers in this article?	Expert opinions that agree with the main idea are one way the central idea is made stronger and more valid.



Text-Dependent Questions: “Growing Up Digital”
(Answers, for Teacher Reference)

Questions	Write the answer to each question below.
4. After Paragraph 19: What is the point of describing the <i>benefits</i> of technology, such as Vishal’s filmmaking, in an article about the <i>dangers</i> of technology?	The article is addressing the ideas that technology can be beneficial in order to point out how difficult it is to resist technology and create balance.
5. In this article, how does technology affect Vishal? How do you think it might affect his brain? What do you know about the adolescent brain that makes you think this?	Vishal has found a passion for filmmaking through technology, and identifies himself as a filmmaker. He may get strong doses of dopamine from his film work. However, he may not have enough development in his prefrontal lobe to be able to make balanced decisions about how he spends his time online.



Neurologist's Notebook #5:
"Growing Up Digital"

Name:

Date:

Directions: Use this note-catcher to get the gist of the reading. Remember that the main idea and supporting details are often not just a single sentence of the text; rather, they may involve multiple sentences.

Main idea:	
Brief background:	Supporting idea/detail:
Supporting idea/detail:	Supporting idea/detail:
Supporting idea/detail:	Supporting idea/detail:

Neurologist's Notebook #5:
"Growing Up Digital"
(Answers, For Teacher Reference)

Directions: Use this note-catcher to get the gist of the reading. Remember that the main idea and supporting details are often not just a single sentence of the text; rather, they may involve multiple sentences.

<p>Main idea:</p> <p>Teen students distracted by technology may be rewiring their brains, making it difficult to concentrate on anything.</p>	
<p>Brief background:</p> <p>Experts worry that because their brains are "rewarded" for jumping to new tasks, teens are rewiring their attention spans to be shorter permanently.</p>	<p>Supporting idea/detail:</p> <p>Schools are "wiring up," but teachers express ambivalence about the effects of technology on their students.</p>
<p>Supporting idea/detail:</p> <p>Real teens like Sam, Allison, Ramon, and Vishal all struggle with balancing school and technology in different ways.</p>	<p>Supporting idea/detail:</p> <p>Parents find it challenging to help kids cut down on technology when it is such an important part of their lives.</p>
<p>Supporting idea/detail:</p> <p>Experts suggest downtime is important to the brain.</p>	<p>Supporting idea/detail:</p> <p>There are also positives to technology, and students may follow their passions.</p>



Reflection Grid

Name: _____

Date: _____

+

-

!

?



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 10

End of Unit Assessment: Analyzing an Informational Text



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1)

I can determine a theme or the central ideas in informational text. (RI.7.2)

I can analyze the organization of an informational text (including how the major sections contribute to the whole and to the development of the ideas). (RI.7.5)

I can acquire and use accurately grade-appropriate general academic and domain-specific words and phrases. (L.7.4)

Supporting Learning Targets

- I cite several pieces of text-based evidence to support an analysis of the text “You Trouble.”
- I can analyze the organization of “You Trouble.”
- I can acquire and use accurately grade-appropriate general academic and domain-specific words and phrases in “You Trouble.”

Ongoing Assessment

- End of Unit 1 Assessment



Agenda	Teaching Notes
<ol style="list-style-type: none">Opening<ol style="list-style-type: none">Reviewing the Learning Targets (3 minutes)Introducing the End of Unit 1 Assessment (2 minutes)Work Time<ol style="list-style-type: none">End of Unit 1 Assessment (35 minutes)Closing and Assessment<ol style="list-style-type: none">Thinking Log (5 minutes)Homework<ol style="list-style-type: none">Complete the Independent Reading Check-in.	<ul style="list-style-type: none">In this lesson, students take the End of Unit 1 Assessment. Just as they have been doing in each lesson in this unit, they analyze the main idea of an informational text. The text today is “You Trouble” by Justin O’Neill.The overall grading system and the date of return of this assessment have been left to the discretion of the teacher. The more quickly an assessment is returned, the more useful the feedback is to the students.During the Closing, students reflect on the information about teens, risk taking, and screen time presented in “You Trouble.” When students begin to do their research in Unit 2 and their writing in Unit 3, they may want to refer to the ideas in this text. Consider having it accessible after the assessment.For homework, students complete an Independent Reading Check-in. This is the first check-in they have completed since choosing their books in Lesson 6. Use this check-in to identify students who may have chosen a book that does not match their abilities or interests. Provide additional support as needed.Post: Learning targets.

Lesson Vocabulary	Materials
	<ul style="list-style-type: none">End of Unit 1 Assessment: “You Trouble” (assessment text; one per student)End of Unit 1 Assessment: “You Trouble” (answers, for teacher reference)Thinking Logs (begun in Lesson 2)Independent Reading Check-in (one per student)



Opening	Meeting Students' Needs
<p>A. Reviewing the Learning Targets (3 minutes)</p> <ul style="list-style-type: none">• Read the learning targets:<ul style="list-style-type: none">* I can cite several pieces of text-based evidence to support an analysis of the text 'You Trouble.'* I can analyze the organization of 'You Trouble.'* I can acquire and use accurately grade-appropriate general academic and domain-specific words and phrases in 'You Trouble.'• Ask students to turn to a partner and take turns sharing one strategy that they can use to analyze the main idea. Cold call students to share their strategy.	<ul style="list-style-type: none">• Taking time to ask for students' ideas about other tasks they can complete while their classmates are working can greatly enhance student buy-in for setting clear expectations for focused work time.• Checking in with learning targets helps students self-assess their learning. This research-based strategy supports struggling learners most.• Allowing students to discuss with a partner before writing or sharing with the whole class is a low-stress strategy to help them process in a risk-free situation.
<p>B. Introducing the End of Unit 1 Assessment (2 minutes)</p> <ul style="list-style-type: none">• Tell students that today they get to demonstrate their progress on these learning targets in the End of Unit 1 Assessment.• Write on the board: "If you finish early, you can ..." and prompt students to suggest appropriate silent activities that they can complete. This list may include: completing the Independent Reading Check-in for homework; continuing to read independent reading books, rereading any articles used in Unit 1, or completing homework for other classes.	



Work Time	Meeting Students' Needs
<p>A. End of Unit 1 Assessment (35 minutes)</p> <ul style="list-style-type: none">• Distribute the End of Unit 1 Assessment: “You Trouble.”• Remind students to remain silent until all classmates are finished with their work.• Prompt students to begin.• When they complete their assessment, encourage students to stay seated and complete one of the “If you finish early ...” tasks listed on the board.• At the conclusion of the allotted time, collect students’ assessments.	
Closing and Assessment	Meeting Students' Needs
<p>A. Thinking Log (5 minutes)</p> <ul style="list-style-type: none">• Ask students to retrieve their Thinking Logs and find Lesson 10:<ul style="list-style-type: none">* “How did today’s reading help clarify your thinking about the issues of screen time and the teen brain?”• Distribute the Independent Reading Check-in to be completed for homework.	
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Complete the Independent Reading Check-in.	



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 1: Lesson 10

Supporting Materials



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



You Trouble

It might be funny to watch some guy jump off his roof onto a trampoline. But some say “stunt videos” encourage teens to take dangerous risks—and should be banned.

by Justin O'Neill

In 2009, a 15-year-old boy decided to become famous. His plan was to soak a basketball in gasoline, set it on fire, and sink a perfect three-pointer. He would film the glorious scene and post the video on YouTube. He dreamed of being an Internet celebrity.

Unfortunately, the plan didn't work out quite as he imagined. As he took his shot, his clothing burst into flames. He was rushed to the hospital with second- and third-degree burns on his chest and legs.

He survived, but he'll have the scars forever.

No Pain, No Gain

YouTube hosts countless clips of people, many of them young teens, attempting wild, dangerous, and downright *stupid* stunts. Many of the videos are inspired by shows like *Jackass* and *Fear Factor*, and they cover pretty much any risky activity you can imagine: playing with fire, “surfing” on top of moving cars, soaring off *flimsy* homemade ramps on bikes

Do stunt videos make teens take crazy risks?

ANTONIO BOLLORETTI/REUTERS (TEEN FALLING IN AIR); LANCE/USA; MARCUS WELCH/USA (GETTY IMAGES); TEEN ON SKATEBOARD

SCHOLASTIC.COM/CHOICES SEPTEMBER 2012 21

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.



and skateboards, shooting people point-blank with paintball guns.

Stunt videos on YouTube get millions of hits. But according to some experts, they are far from harmless entertainment. These experts say that by hosting such videos, YouTube encourages young viewers to take potentially deadly risks.

Research by the Centers for Disease Control and Prevention shows that more than 180,000 Americans die from accidental injuries every year. That works out to one person every three minutes. More than 14,000 of them are under the age of 19.

Is YouTube to blame?

Laughing at Violence

Daredevils—from the “human cannonballs” of the 1800s, to legendary stuntman Evel Knievel, to *Jackass*’s Johnny Knoxville—are nothing new. People have always found it entertaining to watch others attempt risky things, and also, sometimes, to watch them fail. Audiences love to see a good wipeout or blowup, at least as long as it’s not too serious. In fact, viewers often shriek with laughter at stunts gone wrong.

Laughter may seem like an odd reaction to violence but, says family therapist Clair Mellenthin, “our tendency to laugh at people getting hurt goes back in human history



for centuries.”

She believes such laughter is a defense mechanism—a way

of coping with disturbing situations. “Even little babies laugh when they see people fall down,” she says.

Some of the earliest Greek comedies featured characters falling off the stage, being chased by wild animals, or smacking into walls. And now, in the age of the Internet, anyone with a camera and a YouTube account can create this kind of “entertainment.”

YouTube provides access to an audience of millions. Many of those viewers—particularly teenage viewers—are inspired by what they see and eager to try it for themselves. “YouTube has taken the one-upmanship of playing in the neighborhood to the global level,” says Mellenthin. “The peer pressure is greatly increased, because now we can see what others

are doing **literally** around the world.”

Don't Blame Me, Blame My Brain

There is another reason, beyond peer pressure, that many teens are willing to risk their safety and even their lives for the sake of a 30-second stunt video: Their brains are telling them to. During your teen years, the area of your brain that seeks pleasure and reward is well-developed. However, the area of your brain that controls judgment, the prefrontal cortex, is not. This fact, combined with the hormones that are surging through your body and your natural desire for new experiences, can lead to serious risk-taking: The voice in your head that tells you to do something exciting is a lot



What Do You Think?

Should YouTube allow dangerous stunt videos?

FIND AN
ACTIVITY
ONLINE!

Do you think YouTube should do more to stop people from posting stunt videos? Go back to the article and find evidence to support each side of this debate. Then write your own opinion.



louder than the one that tells you why you shouldn't.

This doesn't mean risk-taking teens aren't thinking. Often, they can see quite clearly how dangerous a certain activity is. They just do it anyway.

"A lot of [teens'] risk-taking is not **impulsive**," says Valerie Reyna, a psychology professor at Cornell University. After carefully considering a risk, teens are likely to decide it's worth it for the thrill. Adults are more likely to skip this weighing of pros and cons and automatically rule out high-risk activities.

It's true that the odds of being killed while leaping from your bedroom window into your swimming pool may be relatively small. But there's a problem with this logic that most teens don't quite get. That is, no matter how small the risk, the worst possible thing *can* happen to you. And as Reyna says, when trying something risky, "it only takes once" to be killed.

Not Worth It

Fully developed brains or no, Reyna believes, teens do have the ability to take precautions and behave sensibly. Most know that no matter how exciting or hilarious something they saw in a video might be, they shouldn't do it if it's



obviously dangerous.

Defenders of YouTube's right to display stunt videos argue that it's not YouTube's responsibility to censor its content. Instead, they say, it's parents who must **ensure** that their teenage kids are behaving safely and responsibly.

It's not as if YouTube isn't making an effort, though. According to its official Community Guidelines, the site "draw[s] the line at content that's intended to . . . encourage dangerous, illegal activities that have an **inherent** risk of serious physical harm or death." YouTube staff members comb through the website 24 hours a day, looking for videos that violate their policies—but are they doing enough?

Whether or not you believe YouTube should have stricter rules, here's a piece of advice: Never light a basketball on fire.

That's just stupid.



You Safe

Millions of teens are injured in accidents every year—even those not looking for YouTube fame. Here are five ways to lower your risk of getting hurt.

- 1 WEAR A SEAT BELT**
In the U.S., car accidents are the leading cause of death and injury to teens. Wearing a seat belt cuts the risk of serious injury by 50 percent.
- 2 WEAR A HELMET**
Whether you're biking, skiing, or skateboarding, wearing a helmet can reduce the chance of serious head injury by 40 percent and death by 27 percent.
- 3 TAKE THE CLASS**
Boating might look easy. So might driving a car. But kids who take even short training programs dramatically reduce their chances of getting hurt. Studies show that driver-education programs can reduce fatal car crashes by 40 percent.
- 4 FOLLOW THE RULES**
It sounds obvious, but many accidents can be avoided simply by obeying laws and guidelines. Ninety-two percent of ATV-related deaths are associated with warned-against behaviors, such as driving at excessive speeds or carrying too many passengers.
- 5 DON'T GET BURNED**
Stay far away from fireworks, no matter how cool they look. More than 9,300 people in the U.S. are seriously injured by fireworks each year, and 45 percent are under the age of 14.

Sources: 1. National Organizations for Youth Safety; 2. Study: "Bicycle helmets and injury prevention: A formal review" (Attewell, Robyn, et al.); 3. Centers for Disease Control and Prevention; 4. Special Vehicle Institute of America; 5. FEMA

End of Unit 1 Assessment: “You Trouble”

Name:

Date:

Long-Term Learning Targets Assessed:

- I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1)
- I can determine a theme or the central ideas in informational text. (RI.7.2)
- I can analyze the organization of an informational text (including how the major sections contribute to the whole and to the development of the ideas). (RI.7.5)
- I can acquire and use accurately grade-appropriate general academic and domain-specific words and phrases. (L.7.6)

1. What is the main idea of this article? (RI.7.2)

- a. Teens see lots of dangerous stunts on YouTube and sometimes try these themselves. People disagree about the best way to prevent this.
- b. It is human nature to take risks. Some people are taking it too far.
- c. Teens are especially susceptible to risk because they have an underdeveloped prefrontal cortex.
- d. Parents, not YouTube, should make sure that teens are not taking foolish risks.



End of Unit 1 Assessment: “You Trouble”

2. Please fill in the chart below. (RI.7.1)

Main idea	
Background or context for this idea	
Supporting idea	Supporting idea
Supporting idea	Supporting idea
Supporting idea	Supporting idea
Supporting idea	Supporting idea
Supporting idea	Supporting idea

End of Unit 1 Assessment: “You Trouble”

3. Why does the author start the article by quoting the statistic that “one person every three minutes” dies from an accidental injury? (RI.7.1)
- He wants to show this is a serious problem.
 - He wants to show that YouTube is very dangerous.
 - He wants the reader to be more careful.
 - He wants the reader to be sad.
4. What is the purpose of the section called “Laughing at Violence”? (RI.7.5)
- to give an example of risky entertainers, like daredevils
 - to explain why people laugh at other people taking risks and what we should do about it
 - to prove that YouTube is not to blame because people have been laughing at violence for a long time
 - to explain the history of people taking risks for entertainment and how YouTube fits into that big picture
5. Go back to the section titled “No Pain, No Gain.” The word **flimsy** (in the first paragraph) means “easily broken.” Which other word in the sentence best helps you get this meaning? (L.7.6)
- soaring
 - ramp
 - homemade
 - skateboard
6. Most of the evidence in this text supports the idea that YouTube creates a situation where there is greater peer pressure on kids to do unwise things. Which of the following pieces of evidence does NOT support this idea? (RI.7.1)
- “YouTube provides access to an audience of millions.”
 - “The peer pressure is greatly increased because now we can see what others are doing literally around the world.”
 - “There is another reason, beyond peer pressure, that many teens are willing to risk their safety and even their lives for the sake of a 30-second stunt video ...”
 - “YouTube has taken the one-upmanship of playing in the neighborhood to the global level ...”

End of Unit 1 Assessment: “You Trouble”

7. The text states, “And now, in the age of the Internet, anyone with a camera and a YouTube account can create this kind of ‘entertainment.’” Which piece of evidence best supports this idea? (RI.7.1)
- “He would film the glorious scene and post the video on YouTube. He dreamed of being an Internet celebrity.”
 - “Many of those viewers—particularly young viewers—are inspired by what they see and eager to try it for themselves.”
 - “Often they see quite clearly how dangerous a certain activity is. They just do it anyway.”
 - “Defenders of YouTube’s right to display stunt videos argue that it is not YouTube’s responsibility to censor its content.”
8. According to Valeria Reyna, why do teens take risks? (RI.7.1)
- They aren’t supervised by their parents enough.
 - They can’t weigh the pros and cons because their prefrontal cortex isn’t developed.
 - They decide to do something even though they know it’s dangerous because they think it’s worth the thrill.
 - They do it because they see videos of people doing it.
9. What is the meaning of the word **impulsive**? (L.7.6)
- done without considering the consequences
 - disgusting or off-putting
 - thoughtfully executed
 - pulsating
10. Why might the author have included the box “You Safe” in the text, even though it has nothing to do with YouTube videos? (RI.7.5)
- to give teens tips to keep them safe
 - to give teens ways to be safe when they are making their own YouTube video
 - to give teens statistics that will convince them to make wise choices
 - to give teens information about the kinds of accidents that can happen

End of Unit 1 Assessment: “You Trouble”
(Answers, for Teacher Reference)

Standards Assessed:

I can cite several pieces of text-based evidence to support an analysis of informational text. (RI.7.1)

I can determine a theme or the central ideas in informational text. (RI.7.2)

I can analyze the organization of an informational text (including how the major sections contribute to the whole and to the development of the ideas). (RI.7.5)

I can acquire and use accurately grade-appropriate general academic and domain-specific words and phrases. (L.7.6)

1. What is the main idea of this article? (RI.7.2)

- a. Teens see lots of dangerous stunts on YouTube and sometimes try these themselves. People disagree about the best way to prevent this.**
- b. It is human nature to take risks. Some people are taking it too far.
- c. Teens are especially susceptible to risk because they have an underdeveloped prefrontal cortex.
- d. Parents, not YouTube, should make sure that teens are not taking foolish risks.

End of Unit 1 Assessment: “You Trouble”
(Answers, for Teacher Reference)

2. Please fill in the chart below. (RI.7.1)

Answers will vary.

<p>Main idea Teens see lots of dangerous stunts on YouTube and sometimes try these themselves. People disagree about why this happens and the best way to prevent this.</p>	
<p>Background or context for this idea YouTube is a popular Web site where people can post stunt videos. Accidents kill a lot of people. People naturally find it entertaining to watch people do risky things. They have been doing this for a long time.</p>	
<p>Supporting idea YouTube is a type of peer pressure on teens.</p>	<p>Supporting idea Teens are naturally impulsive because their brains don’t always see that the risks outweigh the thrill.</p>
<p>Supporting idea Even though teens are wired to take risks, they can behave sensibly.</p>	<p>Supporting idea Defenders of YouTube say parents, not YouTube, should keep kids safe.</p>
<p>Supporting idea YouTube does take some precautions like outlawing posting of behavior that is illegal or extremely dangerous.</p>	<p>Supporting idea</p>



End of Unit 1 Assessment: “You Trouble”
(Answers, for Teacher Reference)

3. Why does the author start the article by quoting the statistic that “one person every three minutes” dies from an accidental injury? (RI.7.1)
- a. **He wants to show this is a serious problem.**
 - b. He wants to show that YouTube is very dangerous.
 - c. He wants the reader to be more careful.
 - d. He wants the reader to be sad.
4. What is the purpose of the section called “Laughing at Violence”? (RI.7.5)
- a. to give an example of risky entertainers, like daredevils
 - b. to explain why people laugh at other people taking risks and what we should do about it
 - c. to prove that YouTube is not to blame because people have been laughing at violence for a long time
 - d. **to explain the history of people taking risks for entertainment and how YouTube fits into that big picture**
5. Go back to the section titled “No Pain, No Gain.” The word **flimsy** (in the first paragraph) means “easily broken.” Which other word in the sentence best helps you get this meaning? (L.7.6)
- a. soaring
 - b. ramp
 - c. **homemade**
 - d. skateboard
6. Most of the evidence in this text supports the idea that YouTube creates a situation where there is greater peer pressure on kids to do unwise things. Which of the following pieces of evidence does NOT support this idea? (RI.7.1)
- a. “YouTube provides access to an audience of millions.”
 - b. “The peer pressure is greatly increased because now we can see what others are doing literally around the world.”
 - c. **“There is another reason, beyond peer pressure, that many teens are willing to risk their safety and even their lives for the sake of a 30-second stunt video ...”**
 - d. “YouTube has taken the one-upmanship of playing in the neighborhood to the global level ...”

End of Unit 1 Assessment: “You Trouble”
(Answers, for Teacher Reference)

7. The text states, “And now, in the age of the Internet, anyone with a camera and a YouTube account can create this kind of ‘entertainment.’” Which piece of evidence best supports this idea? (RI.7.1)
- a. **“He would film the glorious scene and post the video on YouTube. He dreamed of being an Internet celebrity.”**
 - b. “Many of those viewers—particularly young viewers—are inspired by what they see and eager to try it for themselves.”
 - c. “Often they see quite clearly how dangerous a certain activity is. They just do it anyway.”
 - d. “Defenders of YouTube’s right to display stunt videos argue that it is not YouTube’s responsibility to censor its content.”
8. According to Valeria Reyna, why do teens take risks? (RI.7.1)
- a. They aren’t supervised by their parents enough.
 - b. They can’t weigh the pros and cons because their prefrontal cortex isn’t developed.
 - c. **They decide to do something even though they know it’s dangerous because they think it’s worth the thrill.**
 - d. They do it because they see videos of people doing it.
9. What is the meaning of the word **impulsive**? (L.7.6)
- a. **done without considering the consequences**
 - b. disgusting or off-putting
 - c. thoughtfully executed
 - d. pulsating
10. Why might the author have included the box “You Safe” in the text, even though it has nothing to do with YouTube videos? (RI.7.5)
- a. **to give teens tips to keep them safe**
 - b. to give teens ways to be safe when they are making their own YouTube video
 - c. to give teens statistics that will convince them to make wise choices
 - d. to give teens information about the kinds of accidents that can happen



Independent Reading Check-in

Name:

Date:

1. Did you meet your independent reading goal for today's check-in?

2. If yes, what helped you do that?

3. If no, what got in your way? How can I help you?

4. Below, write a brief paragraph explaining that your book a) does or b) does not connect to your current experience as a middle-schooler. Use at least two pieces of specific evidence from the book to support your claim, and be sure to explain how that evidence supports your claim.
