



EXPEDITIONARY  
LEARNING

# Grade 5: Module 2B: Unit 3: Overview



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### Unit 3: Researching Inventions That Changed People's Lives and Teaching through Graphic Novels

In this third unit, students will return to the genre of the graphic novel, reviewing the elements that make this type of work uniquely suited to conveying an author's complex ideas in an engaging format. Then they will work within expert groups to conduct research on one of two inventions that changed people's lives: the traffic signal (invented by Garrett A. Morgan) or the airplane (invented by the Wright brothers). Students will read short pieces of challenging informational text and be guided through the process of paraphrasing and note-taking to gather information. The mid-unit assessment will gauge students' mastery of note-taking skills: They will read, respond to questions, and take notes on one of two unfamiliar informational texts either about the invention of the traffic signal or the airplane. For the end of unit assessment, students will use the notes they took during the first part of the unit as well as the mid-unit assessment to create a storyboard about their invention, including why the invention was wanted or needed, who invented it, when and where it was invented, how it solved a problem, and the ways in which it changed people's lives.

To complete the unit, students will teach others what they have learned by writing in the graphic novel style (which intentionally blends aspects of informative and narrative writing) to depict and explain why the traffic signal or airplane was invented and how it changed people's lives. Students will revise and edit the storyboards they created for the end of unit assessment, then create a graphic novelette with four sections that describe why the invention was needed; background information about the inventor(s); the process the inventor(s) used to develop a solution; and how the invention changed people's lives. For the final performance task, students will read and present their graphic novelettes to a small group of their peers. This research-based performance task centers on **NYSP12 ELA Standards RI.5.1, RI.5.4, RI.5.9, L.5.3, L.5.4, W.5.2, W.5.3, W.5.4, W.5.5, W.5.6, W.5.7, and W.5.8.**

#### Guiding Questions and Big Ideas

- *Text structure and visual elements can support our understanding of complex ideas.*
- *New or improved technologies are developed to meet societal demands.*
- **How do new or improved technologies meet societal needs?**
- **How do authors structure text and use visual elements to engage and support readers' understanding of complex ideas?**



Mid-Unit 3 Assessment	<p><b>On-Demand Note-Taking and Text-Dependent Questions: “Garrett Augustus Morgan” or “How Did We Learn to Fly?”</b></p> <p>This assessment centers on NYSP12 ELA CCLS RI.5.1, RI.5.4, RI.5.7, W.5.7, and W.5.8. For this assessment, students read and take notes on an unfamiliar text related to the invention they have studied in the first half of the unit, Garrett A. Morgan’s traffic signal or the Wright brothers’ airplane. After taking notes about why the invention was needed, the inventor(s), the process for developing the invention, and how the invention changed people’s lives, students will respond to multiple-choice and short-answer questions to demonstrate their understanding of how to use details from the text to explain and make inferences, determine the meaning of new terms from context, and use several resources to answer a question quickly.</p>
End of Unit 3 Assessment	<p><b>Text-Dependent Questions and Story Board Draft: “You Can Do a Graphic Novel” Excerpt</b></p> <p>This assessment centers on NYSP12 ELA CCLS RI.5.1, RI.5.4, RI.5.9, W.5.2, W.5.3a and b, W.5.4, and W.5.8. For the end of unit assessment, students will read excerpts from the guide “You Can Do a Graphic Novel,” then answer multiple-choice and short constructed response questions about the text. Then, students create storyboards as a draft for the creation of their graphic novels. Students complete four storyboard templates with information from their notes about the invention and inventor they studied in the first part of the unit (Garrett A. Morgan’s traffic signal or the Wright brothers’ airplane) to establish a plan for the graphic novelette they will write for the final performance task. Students are asked to include details about the need for the invention, the history of the inventor(s), the process the inventor(s) used to develop a solution that met people’s needs, and how the invention changed people’s lives.</p>



### Content Connections

This module is designed to address English language arts standards as students read literature and informational text about inventions that have been developed to meet societal needs. However, the module intentionally incorporates scientific practices and themes to support potential interdisciplinary connections to this compelling content.

These intentional connections are described below.

#### **NYS Science Standard 1: Analysis, Inquiry, and Design: Engineering Design**

##### **Key Idea 1:**

Engineering design is an iterative process involving modeling and optimization (finding the best solution within given constraints); this process is used to develop technological solutions to problems within given constraints.

T1.1 Identify needs and opportunities for technical solutions from an investigation of situations of general or social interest.

T1.1a Identify a scientific or human need that is subject to a technological solution that applies scientific principles.

T1.2 Locate and utilize a range of printed, electronic, and human information resources to obtain ideas.

T1.2a Use all available information systems for a preliminary search that addresses the need.

#### **Next Generation Science Standards: 3–5 Engineering Design**

##### **ETS1.B: Developing Possible Solutions**

- Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions. (3-5-ETS1-2)
- At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs. (3-5-ETS1-2)
- Tests are often designed to identify failure points or difficulties, which suggest the elements of the design that need to be improved. (3-5-ETS1-3)



**Central Texts**

1. Paula Morrow, "Garrett Morgan: Inventor Hero," in *Ask* magazine (February 2008), 19–21.
2. "Transportation, from the Soap Box Derby to the Jeep: First Automatic Traffic Signal," Ohio Academy of Sciences, <http://www.heartlandscience.org/trans/signal.htm>.
3. David White, "The Twofold Genius of Garrett Morgan," Social Studies for Kids, <http://www.socialstudiesforkids.com/articles/ushistory/garrettmorgan.htm>.
4. "Garrett Augustus Morgan," excerpts, Enchanted Learning, <http://www.enchantedlearning.com/inventors/page/m/morgan.shtml>.
5. "Airplane," excerpts, *the New Book of Knowledge*, Grolier Online, 2013.
6. Shashank Nakate, "Invention of the Airplane," excerpts, <http://www.buzzle.com/articles/invention-of-the-airplane.html>.
7. Kate Reuther, "Inventing the Plane," Scholastic Teacher, 2014.
8. "How Did We Learn to Fly Like the Birds?" excerpts, NASA, <http://www.grc.nasa.gov/WWW/k-12/UEET/StudentSite/historyofflight.html>.



**This unit is approximately 3 weeks or 17 sessions of instruction.**

Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
<b>Lesson 1</b>	Reviewing Visual Elements of a Graphic Novel: <i>Max Axiom</i>	<ul style="list-style-type: none"> <li>I can analyze how visual and multimedia elements contribute to the meaning, tone, or beauty of a text. (RL.5.7)</li> <li>I can recognize, interpret, and make connections in narratives, poetry, and drama to other texts, ideas, cultural perspectives, eras, personal events, and situations. (RL.5.11)               <ol style="list-style-type: none"> <li>I can self-select texts to develop personal preferences regarding favorite authors.</li> <li>I can use established criteria to categorize, select texts, and assess to make informed judgments about the quality of the pieces.</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>I can make observations and ask questions during a Tea Party about inventions that have been developed to meet societal demands.</li> <li>I can analyze how the visual elements in <i>Max Axiom</i> contribute to my understanding of the steps Max takes to solve a problem.</li> <li>I can use established criteria to select an appropriate text for independent reading.</li> </ul>	<ul style="list-style-type: none"> <li>Visual Element note-catcher</li> <li>Reflection in Journal</li> <li>Independent Reading Criteria Self-Assessment</li> </ul>	<ul style="list-style-type: none"> <li>Tea Party protocol</li> </ul>
<b>Lesson 2</b>	Expert Research Groups: How the Traffic Signal and Airplane Met Society's Needs, Part 1	<ul style="list-style-type: none"> <li>I can conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (W.5.7)</li> <li>I can gather relevant data from print and digital sources; I can summarize or paraphrase information in notes and finished work. (W.5.8)</li> <li>I can quote accurately from the text when explaining what the text says explicitly and when making inferences. (RI.5.1)</li> <li>I can determine the meaning of general academic and domain-specific words. (RI.5.4)</li> </ul>	<ul style="list-style-type: none"> <li>I can conduct research to take notes about how an invention was developed to meet society's needs.</li> <li>I can explain what people needed and how their needs were met, using quotes from the text.</li> <li>I can determine the meaning of unfamiliar words and phrases by using context clues and other strategies.</li> </ul>	<ul style="list-style-type: none"> <li>Independent Reading Choice Board response (from homework)</li> <li>Expert Text graphic organizer</li> <li>Vocabulary task cards</li> </ul>	<ul style="list-style-type: none"> <li>Expert Text anchor chart</li> <li>Group Norms anchor chart</li> <li>Quote/Paraphrase anchor chart</li> </ul>



Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
<b>Lesson 3</b>	Expert Research Groups: How the Traffic Signal and Airplane Met Society's Needs, Part 2	<ul style="list-style-type: none"> <li>I can conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (W.5.7)</li> <li>I can gather relevant data from print and digital sources; I can summarize or paraphrase information in notes and finished work. (W.5.8)</li> <li>I can quote accurately from the text when explaining what the text says explicitly and when making inferences. (RI.5.1)</li> <li>I can determine the meaning of general academic and domain-specific words. (RI.5.4)</li> </ul>	<ul style="list-style-type: none"> <li>I can conduct research to take notes about how an invention was developed to meet society's needs.</li> <li>I can explain what people needed and how their needs were met, using quotes from the text.</li> <li>I can determine the meaning of unfamiliar words and phrases by using context clues and other strategies.</li> </ul>	<ul style="list-style-type: none"> <li>Independent Reading Choice Board response (from homework)</li> <li>Expert Text note-catcher: The Airplane (airplane expert groups)</li> <li>Invention of the Traffic Signal note-catcher (traffic signal expert groups)</li> <li>Vocabulary cards (from homework)</li> </ul>	<ul style="list-style-type: none"> <li>Expert Text anchor chart</li> <li>Vocabulary Strategies anchor chart</li> <li>Group Norms anchor chart</li> </ul>



Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
<b>Lesson 4</b>	Expert Research Groups: How the Traffic Signal and Airplane Met Society's Needs, Part 3	<ul style="list-style-type: none"> <li>I can conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (W.5.7)</li> <li>I can gather relevant data from print and digital sources; I can summarize or paraphrase information in notes and finished work. (W.5.8)</li> <li>I can quote accurately from the text when explaining what the text says explicitly and when making inferences. (RI.5.1)</li> <li>I can determine the meaning of general academic and domain-specific words. (RI.5.4)</li> <li>I can draw on information from multiple print sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (RI.5.7)</li> </ul>	<ul style="list-style-type: none"> <li>I can conduct research to take notes about how an invention was developed to meet society's needs.</li> <li>I can explain what people needed and how their needs were met, using quotes from the text.</li> <li>I can answer a question quickly, drawing on information from multiple sources.</li> </ul>	<ul style="list-style-type: none"> <li>Graphic Novel Sketch, Part 1 (from homework)</li> <li>Expert Text note-catcher: Traffic Signal (airplane expert groups)</li> <li>Invention of the Airplane note-catcher (airplane, expert groups)</li> <li>Answering Question from Multiple Sources handout</li> </ul>	<ul style="list-style-type: none"> <li>Group Norms anchor chart</li> <li>Expert Text anchor chart</li> <li>Vocabulary Strategies anchor chart</li> <li>Locating Answers Quickly anchor chart</li> <li>Gallery Walk protocol</li> </ul>





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<b>Lesson 5</b>	Mid-Unit Assessment: On-Demand Note-taking and Text-Dependent Questions	<ul style="list-style-type: none"> <li>I can conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (W.5.7)</li> <li>I can quote accurately from the text when explaining what the text says explicitly and when making inferences. (RI.5.1)</li> <li>I can determine the meaning of general academic and domain-specific words. (RI.5.4)</li> <li>I can draw on information from multiple print sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (RL.5.7)</li> <li>I can paraphrase information in notes and finished work. (W.5.8)</li> </ul>	<ul style="list-style-type: none"> <li>I can conduct research to take notes about how an invention was developed to meet society's needs.</li> <li>I can explain what people needed and how their needs were met, using quotes from the text.</li> <li>I can answer a question quickly, drawing on information from multiple sources.</li> <li>I can determine the meaning of unfamiliar words and phrases from context.</li> </ul>	<ul style="list-style-type: none"> <li>Graphic Novel Sketch, Part 2 (from homework)</li> <li>Mid-Unit Assessment A or B</li> <li>Tracking My Progress Mid-Unit 3 recording form</li> </ul>	



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<b>Lesson 6</b>	Summarizing Notes: Planning a Graphic Novelette Part 1: <i>The Invention of Television</i>	<ul style="list-style-type: none"> <li>I can write informative texts to examine a topic and convey ideas and information clearly. (W.5.2)               <ul style="list-style-type: none"> <li>I can introduce a topic clearly, provide a general observation and focus, and group related information logically.</li> </ul> </li> <li>I can write narratives to develop real experiences using effective technique, descriptive details, and clear event sequences. (W.5.3)               <ul style="list-style-type: none"> <li>I can orient the reader by establishing a situation and introducing characters.</li> <li>I can use narrative techniques such as dialogue to develop experiences and events.</li> </ul> </li> <li>I can summarize information in notes and finished work. (W.5.8)</li> <li>I can use knowledge of language and its conventions when writing. (L.5.3)               <ul style="list-style-type: none"> <li>I can compare and contrast the varieties of English used in stories.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>I can explain what life was like before television by summarizing my notes on a storyboard.</li> <li>I can explain how people's needs inspired the development of television and how people's needs were met, by using narrative techniques, including dialogue.</li> <li>I can introduce the character who invented television by including descriptive details.</li> </ul>	<ul style="list-style-type: none"> <li>Independent Reading Choice Board response (from homework)</li> <li>Storyboard, Section 1 charts</li> </ul>	<ul style="list-style-type: none"> <li>Independent Reading Criteria anchor chart</li> </ul>



Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
<b>Lesson 7</b>	Summarizing Notes: Planning a Graphic Novelette, Part II: The Invention of Television	<ul style="list-style-type: none"> <li>I can integrate information from several texts on the same topic in order to write about the topic knowledgeably. (RL.5.9)</li> <li>I can write informative texts to examine a topic and convey ideas and information clearly. (W.5.2)               <ul style="list-style-type: none"> <li>I can develop the topic with facts, definitions, details, quotations, or other related information.</li> <li>I can link ideas within and across categories of information using words, phrases, and clauses.</li> </ul> </li> <li>I can summarize information in notes and finished work. (W.5.8)</li> </ul>	<ul style="list-style-type: none"> <li>I can explain Philo Farnsworth's background by summarizing my notes on a storyboard.</li> <li>I can explain how Philo Farnsworth developed television by summarizing my notes on a storyboard.</li> <li>I can connect the ideas on my three storyboards by using linking words and phrases.</li> </ul>	<ul style="list-style-type: none"> <li>Independent Reading Choice Board response (from homework)</li> <li>Homework Task Card: Unit 3, Lesson 6 (from homework)</li> <li>Storyboard, Section 2 Chart: Background on the Inventor</li> <li>Storyboard, Section 3 Chart: Information about the Process and Solution</li> </ul>	<ul style="list-style-type: none"> <li>Linking Words anchor chart</li> </ul>
<b>Lesson 8</b>	Summarizing Notes: Planning a Graphic Novelette, Part III: The Invention of Television	<ul style="list-style-type: none"> <li>I can integrate information from several texts on the same topic in order to write about the topic knowledgeably. (RL.5.9)</li> <li>I can write informative texts to examine a topic and convey ideas and information clearly. (W.5.2)               <ul style="list-style-type: none"> <li>I can include illustrations to aid comprehension.</li> <li>I can use precise language and domain-specific vocabulary to explain a topic.</li> <li>I can provide a concluding section related to the information presented.</li> </ul> </li> <li>I can summarize information in notes and finished work. (W.5.8)</li> </ul>	<ul style="list-style-type: none"> <li>I can explain how television changed people's lives by summarizing my notes on a storyboard.</li> <li>I can support readers' comprehension of the information on my storyboard by including illustrations.</li> <li>I can use precise language and scientific vocabulary to explain the invention of television.</li> </ul>	<ul style="list-style-type: none"> <li>Homework Task Card: Unit 3, Lesson 7: Brainstorming Visual Elements (from homework)</li> <li>Storyboard, Section 4 Chart: How Television Changed People's Lives</li> </ul>	<ul style="list-style-type: none"> <li>Quiz, Quiz, Trade protocol</li> <li>Praise-Question-Suggest protocol</li> </ul>



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<b>Lesson 9</b>	End of Unit Assessment, Part 1: Text-Dependent Questions and Storyboard Draft: "You Can Do a Graphic Novel" Excerpt	<ul style="list-style-type: none"> <li>I can quote accurately from the text when explaining what the text says explicitly and when making inferences. (RI.5.1)</li> <li>I can determine the meaning of general academic and domain-specific words. (RI.5.4)</li> <li>I can integrate information from several texts on the same topic in order to write about the topic knowledgeably. (RI.5.9)</li> <li>I can write informative texts to examine a topic and convey ideas and information clearly. (W.5.2) <ul style="list-style-type: none"> <li>I can introduce a topic clearly, provide a general observation and focus, and group related information logically.</li> <li>I can include illustration to aid comprehension.</li> <li>I can link ideas within and across categories of information using words, phrases, and clauses.</li> <li>I can use precise language and domain-specific vocabulary to explain a topic.</li> </ul> </li> <li>I can write narratives to develop real experiences using effective technique, descriptive details, and clear event sequence. (W.5.3)</li> </ul>	<ul style="list-style-type: none"> <li>I can determine the meaning of unfamiliar words, using context clues and other strategies.</li> <li>I can explain how to create a graphic novel, using evidence from the text.</li> <li>I can summarize information about why people wanted or needed an invention in the caption box of my storyboard Splash Page.</li> <li>I can describe what people needed or wanted and how their needs were met, using dialogue in my storyboard Splash Page.</li> </ul>	<ul style="list-style-type: none"> <li>Independent Reading Choice Board response (from homework)</li> <li>End of Unit Assessment, Part 1, A: Text-Dependent Questions</li> <li>End of Unit Assessment, Part 1, B: Storyboard, Section 1</li> </ul>	<ul style="list-style-type: none"> <li>Vocabulary Strategies anchor chart</li> <li>Linking Words anchor chart</li> <li>Chalk Talk protocol</li> </ul>



Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
Lesson 9, continued		<ul style="list-style-type: none"><li>a. I can orient the reader by establishing a situation and introducing characters.</li><li>b. I can use narrative techniques such as dialogues to develop experiences and events.</li><li>• I can produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (W.5.4)</li><li>• I can summarize information in notes and finished work. (W.5.8)</li></ul>			



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<b>Lesson 10</b>	End of Unit Assessment, Part II: Storyboard Draft, Sections 2 and 3	<ul style="list-style-type: none"> <li>I can integrate information from several texts on the same topic in order to write about the topic knowledgeably. (RI.5.9)</li> <li>I can write informative texts to examine a topic and convey ideas and information clearly. (W.5.2) <ul style="list-style-type: none"> <li>I can include illustrations to aid comprehension.</li> <li>I can develop the topic with facts, definitions, details, quotations, or other related information.</li> <li>I can link ideas within and across categories of information using words, phrases, and clauses.</li> <li>I can use precise language and domain-specific vocabulary to explain a topic.</li> </ul> </li> <li>I can produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (W.5.4)</li> <li>I can summarize information in notes and finished work. (W.5.8)</li> </ul>	<ul style="list-style-type: none"> <li>I can summarize information about the inventor's background in the caption box of my Storyboard, Section 2,</li> <li>I can summarize information about the process for developing an invention in the caption box of my Storyboard, Section 3.</li> <li>I can support readers' understanding of the key ideas on my storyboards by adding visual elements that emphasize important details.</li> </ul>	<ul style="list-style-type: none"> <li>Homework: Unit 3, Lesson 9 (from homework)</li> <li>Independent Reading Choice Board response (from homework)</li> <li>End of Unit Assessment, Part II, A: Storyboard, Section 2</li> <li>End of Unit Assessment, Part II, B: Storyboard, Section 3</li> </ul>	<ul style="list-style-type: none"> <li>Linking Words anchor chart</li> <li>Peer Critique protocol</li> </ul>



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<b>Lesson 11</b>	End of Unit Assessment, Part III: Storyboard Draft, Section 4	<ul style="list-style-type: none"> <li>I can integrate information from several texts on the same topic in order to write about the topic knowledgeably. (RI.5.9)</li> <li>I can write informative texts to examine a topic and convey ideas and information clearly. (W.5.2) <ul style="list-style-type: none"> <li>I can include illustrations to aid comprehension.</li> <li>I can link ideas within and across categories of information using words, phrases, and clauses.</li> <li>I can use precise language and domain-specific vocabulary to explain a topic,</li> <li>I can provide a concluding section related to the information presented.</li> </ul> </li> <li>I can summarize information in notes and finished work. (W.5.8)</li> <li>I can use knowledge of language and its conventions when writing. (L.5.3) <ul style="list-style-type: none"> <li>I can expand, combine, and reduce sentences for meaning, reader/listener interest, and style.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>I can edit a storyboard caption to address readers' understanding and interest by expanding combining, or reducing sentences for meaning and style.</li> <li>I can summarize information about how an invention met society's needs in the caption box of my Storyboard, Section 4.</li> <li>I can reflect on my learning about how to make a plan for a graphic novelette.</li> </ul>	<ul style="list-style-type: none"> <li>Independent Reading Choice Board response (from homework)</li> <li>Homework: Unit 3, Lesson 10 (from homework)</li> <li>Edited storyboard caption</li> <li>End of Unit Assessment, Part III: Storyboard, Section 4</li> <li>Tracking My Progress, End of Unit 3 recording form</li> </ul>	<ul style="list-style-type: none"> <li>Linking Words anchor chart</li> <li>Back-to-Back, Face-to-Face protocol</li> </ul>



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<b>Lesson 12</b>	Peer Critique and Revision: Storyboard, Sections 1-4	<ul style="list-style-type: none"> <li>I can produce clear and coherent writing that is appropriate to task, purpose, and audience. (W.5.4)</li> <li>With support from peers and adults, I can use a writing process to produce clear and coherent writing. (W.5.5)</li> <li>I can follow our class norms when I participate in a conversation. (SL.5.1)</li> </ul>	<ul style="list-style-type: none"> <li>I can follow our group norms when working with partners to give and receive feedback.</li> <li>I can use feedback from peers to revise my storyboards to better meet the criteria.</li> </ul>	<ul style="list-style-type: none"> <li>Independent Reading Choice Board response (from homework)</li> <li>End of Unit 3 Assessment: Storyboards (1-4) revised</li> <li>Storyboard Criteria for Success form</li> <li>Group Norms checklist</li> </ul>	<ul style="list-style-type: none"> <li>Group Norms anchor chart</li> <li>Peer Critique protocol</li> <li>Four Corners protocol</li> <li>Gallery Walk protocol</li> </ul>
<b>Lesson 13</b>	Storyboard Revision: Managing the Sequence of Events and Using Sensory Details	<ul style="list-style-type: none"> <li>I can write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. (W.5.3)               <ul style="list-style-type: none"> <li>c. I can use a variety of transitional words, phrases, and clauses to manage the sequences of events.</li> <li>d. I can use concrete words and phrases and sensory details to convey experiences and events precisely.</li> </ul> </li> <li>With guidance and support from peers and adults, I can develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. (W.5.5)</li> </ul>	<ul style="list-style-type: none"> <li>I can use a variety of transitional words and phrases to manage the sequence of events in my storyboard drafts.</li> <li>I can use sensory details to convey experiences and events precisely in my storyboard drafts.</li> </ul>	<ul style="list-style-type: none"> <li>Storyboard revisions (from homework)</li> <li>Independent Reading Choice Board response (from homework)</li> <li>End of Unit Assessment Storyboards (1-4) revised</li> </ul>	<ul style="list-style-type: none"> <li>Narrative Transitions anchor chart</li> </ul>





Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
<b>Lesson 14</b>	Creating a Graphic Novelette and Peer Critique: Section 1	<ul style="list-style-type: none"> <li>I can write narratives to develop real experiences using effective technique, descriptive details, and clear event sequence. (W.5.3)               <ol style="list-style-type: none"> <li>I can orient the reader by establishing a situation and introducing characters.</li> <li>I can use narrative techniques such as dialogue to develop experiences and events.</li> </ol> </li> <li>With guidance and support from peers and adults, I can develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. (W.5.5)</li> <li>I can use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others. (W.5.6)</li> <li>I can follow our class norms when I participate in a conversation. (SL.5.1)</li> </ul>	<ul style="list-style-type: none"> <li>I can create and label pages for my graphic novelette.</li> <li>I can plan Section 1 of my graphic novelette based on criteria from the Graphic Novelette rubric.</li> <li>I can follow our group norms when working with partners to give and receive feedback.</li> </ul>	<ul style="list-style-type: none"> <li>Graphic Novelette: Section 1</li> <li>Peer Critique based on Graphic Novelette: Section 1</li> </ul>	<ul style="list-style-type: none"> <li>Group Norms anchor chart</li> <li>Peer Critique protocol</li> </ul>



Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
<b>Lesson 15</b>	Creating a Graphic Novelette and Peer Critique: Sections 2, 3, and 4	<ul style="list-style-type: none"> <li>I can write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. (W.5.3)               <ul style="list-style-type: none"> <li>a. I can organize an event sequence that unfolds naturally.</li> <li>e. I can provide a conclusion that follows from the narrated experiences or events.</li> </ul> </li> <li>With guidance and support from peers and adults, I can develop and strengthen writing as needed by planning, revising, editing, rewriting or trying a new approach. (W.5.5)</li> <li>I can use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others. (W.5.6)</li> <li>I can follow our class norms when I participate in a conversation. (SL.5.1)</li> </ul>	<ul style="list-style-type: none"> <li>I can plan Section 2 of my graphic novelette based on criteria from the Graphic Novelette rubric.</li> <li>I can plan Section 3 of my graphic novelette based on criteria from the Graphic Novelette rubric.</li> <li>I can plan Section 4 of my graphic novelette based on criteria from the Graphic Novelette rubric.</li> </ul>	<ul style="list-style-type: none"> <li>Graphic Novelette: Sections 2,3, and 4</li> <li>Peer critique based on Graphic Novelette rubric: Sections 2, 3 and 4</li> </ul>	<ul style="list-style-type: none"> <li>Group Norms anchor chart</li> <li>Peer Critique protocol</li> </ul>



Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
<b>Lesson 16</b>	Creating a Graphic Novelette and Peer Critique: Glossary, Citations, and Table of Contents	<ul style="list-style-type: none"><li>• I can write informative texts to examine a topic and convey ideas and information clearly. (W.5.2)<ul style="list-style-type: none"><li>d. I can use precise language and domain-specific vocabulary to explain a topic.</li></ul></li><li>• I can use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others. (W.5.6)</li><li>• I can create a list of sources. (W.5.8)</li><li>• I can follow our class norms when I participate in a conversation. (SL.5.1)</li></ul>	<ul style="list-style-type: none"><li>• I can create an alphabetized glossary of academic and scientific key words for my graphic novelette.</li><li>• I can create a citations page with a list of my sources for my graphic novelette.</li><li>• I can create a table of contents for my graphic novelette.</li></ul>	<ul style="list-style-type: none"><li>• Glossary page with key terms alphabetized</li><li>• Citations page</li><li>• Table of Contents page</li></ul>	<ul style="list-style-type: none"><li>• Group Norms anchor chart</li><li>• Peer Critique protocol</li></ul>



Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
<b>Lesson 17</b>	Final Performance Task: Presenting Graphic Novelettes	<ul style="list-style-type: none"> <li>• I can quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (RI.5.1)</li> <li>• I can determine the meaning of general academic and domain-specific words and phrases in a text relevant to a fifth-grade topic or subject area. (RI.5.4)</li> <li>• I can integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (RI.5.9)</li> <li>• I can write informative texts to examine a topic and convey ideas and information clearly. (W.5.2)</li> <li>• I can write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. (W.5.3)</li> <li>• I can produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (W.5.4)</li> <li>• With guidance and support from peers and adults, I can develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. (W.5.5)</li> <li>• I can conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (W.5.7)</li> </ul>	<ul style="list-style-type: none"> <li>• I can create a cover for my graphic novelette based on the rubric criteria, then bind all the pages and cover together.</li> <li>• I can present my completed graphic novelette to peers in my triad.</li> </ul>	<ul style="list-style-type: none"> <li>• Completed graphic novelette</li> <li>• Graphic Novelette presentations</li> </ul>	<ul style="list-style-type: none"> <li>• Group Norms anchor chart</li> </ul>



Lesson	Lesson Title	Long-Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
Lesson 17, continued		<ul style="list-style-type: none"> <li>I can recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work; and provide a list of sources. (W.5.8)</li> <li>I can use knowledge of language and its conventions when writing, speaking, reading or listening. (L.5.3) <ul style="list-style-type: none"> <li>a. I can expand, combine, and reduce sentences for meaning, reader/listener interest and style. (L.5.3)</li> <li>b. I can compare and contrast the varieties of English used in stories, dramas, or poems.</li> </ul> </li> <li>I can determine or clarify the meaning of unknown and multiple-meaning words and phrases based on fifth-grade reading and content, choosing flexibly from a range of strategies. (L.5.4)</li> </ul>			



**Optional: Experts, Fieldwork, and Service**

**Experts:**

- Invite graphic novelists or comic book writers and illustrators to speak with the class about how they develop their ideas.

**Fieldwork:**

- Arrange for students to visit a local library, comic book store, or bookstore with a large selection of graphic novels. In advance, contact an expert at the location you choose to determine effective ways to help students learn more about the graphic novel style of writing.

**Service:**

- Coordinate with a local library to have students read their graphic novelettes to children during a designated “story hour” for the purpose of educating younger kids about the invention of the traffic signal or airplane.

**Optional: Extensions**

- Allow students to add additional pages and sections to their graphic novelettes.
- Arrange for students to display and/or share their novelettes with students in lower grades.
- During science instruction, go into more depth regarding what motivates inventors (see note below).



### Preparation and Materials

As noted in the Module overview, released along with this module is a stand-alone document titled **Foundational Reading and Language Standards Resources Package for Grades 3–5**. This resource package is designed to give teachers resources and guidance for addressing the CCSS foundational reading and language ELA standards. The package cites example lessons within the modules in which these standards are addressed. It also includes resources for literacy instruction that occurs alongside the modules.

These resources will be referenced throughout Module 2B, when opportunities exist for connecting and differentiating instruction in the lessons. Before launching this module, review the Foundational Reading and Language Standards Resources Package for Grades 3–5 and determine how your current GRAIR time aligns with these resources.

For grade 5 specifically, review the Show the Rule™ Strategy (aligned with CCLS L.5.1, 2, and 3) in advance of Unit 3, as this unit provides opportunities for language work with students. See the specific Show the Rule™ example lesson, which describes a week-long instructional sequence for teaching students about conjunctions. This lesson sequence, and similar lessons designed by teachers, would happen alongside Unit 3, during the Additional Literacy Block.

**This unit includes a number of steps for the completion of students’ graphic novelettes.**

Review the Performance Task, as well as Lessons 14-16, before launching this unit. Determine whether you will have students use Option A, which requires the use of technology and helps to address Standard W.5.6, or Option B, which does not require the use of technology.

Also consider following the steps described in those lessons for how to create a graphic novelette to make your own model graphic novelette and become familiar with the steps involved, so you are able to effectively guide students in their work. Consider coordinating with a media specialist, technology teacher, and/or art instructor to support students in the creation of their graphic novelettes and to provide additional opportunities and time for students to complete each element of their novelettes.

In Lessons 6 onward, students use highlighters as a part of their process for creating their storyboards. Prepare a class set of each of these four colors: yellow, orange, blue, and green.

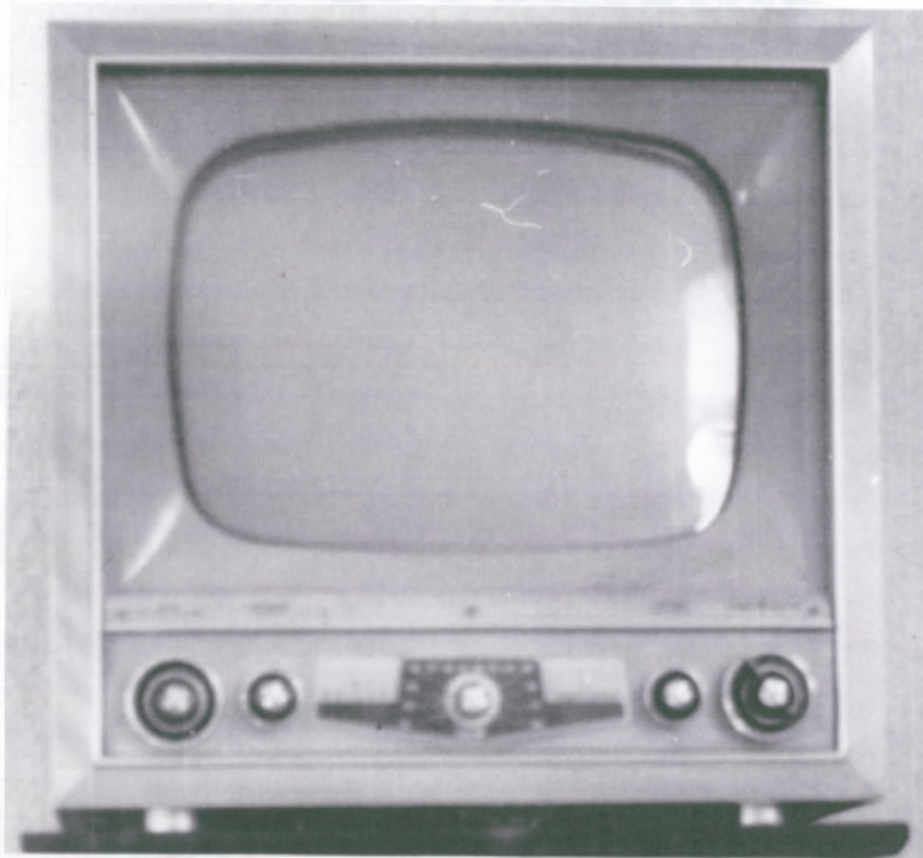
See also the **Graphic Novelette model**, below, for teacher reference.

**Note:** In this unit, students focus on determining information about how either the invention of the traffic signal or the invention of the airplane met the needs of society. This question intentionally aligns to 5<sup>th</sup> Grade Next Generation Science Standards, related to Engineering. However, it is important to recognize that not all scientists develop new or improved technologies to meet the needs of society; rather, they have an internal motivation to bring their ideas to fruition without considering or even realizing how their inventions/innovations will be used by society. Consider going more deeply into this concept with students during science instruction. This module is intended to connect to, but not replace, science instruction.



# Philo Farnsworth's Invention of Television

## Table of Contents



*By: S. Dalrymple*





# Table of Contents

Section 1: Why TV Was Invented ...p. 1

Section 2: Philo's Early Years ...p. 3

Section 3: Philo's Amazing Invention ...p. 5

Section 4: How TV Changed People's Lives ...p. 7

Glossary ...p. 9

Citations ...p. 10



## Section 1: Why TV Was Invented



*I wish we had something more fun to do than work and sit around picking dead grass out of the lawn. I want to see something more interesting.*

*People wanted an invention like the television for entertainment and communication. People who lived on farms before the television was invented did not have very many things to do for fun. It was also hard for them to learn about things happening far away because travel and mail were very slow.*

1



*ed*

*I'm Philo Farnsworth. I invented television because I thought it would be a fun way to bring people together. Let me take you back in time to tell you about how I became motivated to invent TV.*



2





## Section 2: Philo's Early Years



*Philo Farnsworth grew up on a farm in Utah that did not have electricity. Even when he was very young, Philo was curious and was always asking questions. When he moved to a house in Idaho with electricity, he started to learn more about the science of electricity. Philo wanted to be an inventor, and he believed that he could use electricity to develop a television that would bring people together.*



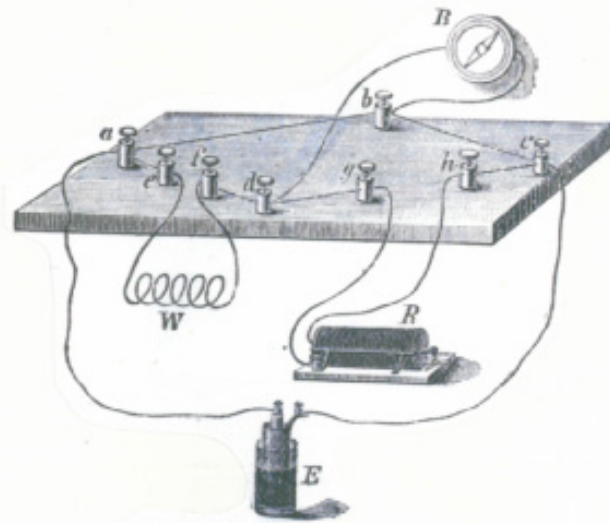
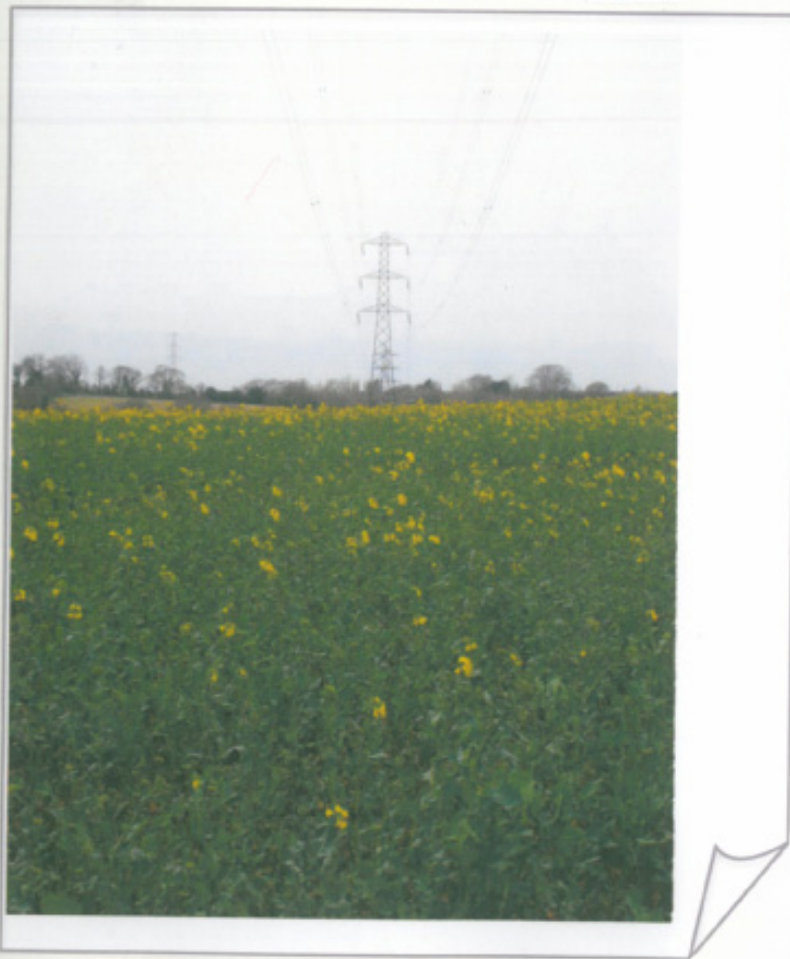


Fig. 118.





## Section 3: Philo's Amazing Invention



*After learning about electricity, Philo developed an idea for an image dissector camera. It could make a television work by transmitting parallel lines of light as electrons and then reassembling them on a television screen. He found some investors and spent a lot of time trying to make his invention work. Finally he succeeded and invented the television!*







**Electron:** a very small particle of matter that has a negative charge of electricity and that travels around the nucleus of an atom.





## Section 4: How TV Changed People's Lives

Let's see what's on TV!



7





*Philo Farnsworth's television made it possible for people to learn about things that were happening all over the world because it allowed people to see them on a television screen. News and information spread very quickly. People all over the world could now watch events at the same time. The television changed the way people communicate.*



# Glossary

**Television:** (n.) an electronic device that receives and reproduces images and sounds.

**Electricity:** (n.) energy created by the movement of particles such as electrons, positrons and ions.

**Electron:** (n.) a very small particle of matter that has a negative charge of electricity and that travels around the nucleus of an atom.

**Invented:** (v.) created something new.

**Communicate:** (v.) share information; convey ideas.



# Citations

Krull, Kathleen. *The Boy Who Invented TV: The Story of Philo Farnsworth.*

"The TV Guy," from <http://www.ilovehistory.utah.gov/people/difference/farnsworth.html>

"TV Turns On," from [http://www.livinghistoryfarm.org/farminginthe40s/life\\_27.html](http://www.livinghistoryfarm.org/farminginthe40s/life_27.html)

Hudson, Robert. "How Television Changed the World."



This is the story of how, as a young boy, Philo Farnsworth became fascinated with electricity and using it to develop what he called an "image dissector," but what we call "television." Philo eventually invented television, in the late 1920's, because he wanted people to be able to "share the same stories" and he believed TV could lead to world peace. Philo's invention drastically changed people's lives.

