Grade 8: Module 4: Unit 2: Lesson 6

Using Search Terms for Further Research:
Industrial Organic Food Chain

Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)	
I can conduct short research projects to answer a question (including a self-generated question). (W.8.7) I can use several sources in my research. (W.8.7) I can gather relevant information from a variety of sources. (W.8.8) I can use search terms effectively. (W.8.8) I can evaluate the credibility and accuracy of each source. (W.8.8) I can quote and paraphrase others' work while avoiding plagiarism. (W.8.8) I can use a standard format for citation. (W.8.8)	

Supporting Learning Targets	Ongoing Assessment
• I can use research skills to determine consequences of the industrial organic food chain. • I can list the criteria of credible research sources. • I can choose the most effective search terms to find relevant research sources to answer my research question. • I can identify the relevant information in a research source to answer my research question.	

Agenda	Teaching Notes
1. Opening A. Discuss Homework Article (5 minutes) B. Unpacking Learning Targets (2 minutes) 2. Work Time A. Mini Lesson and Shared Reading: Using Search Terms Effectively (10 minutes) B. Research, Read, and Record (23 minutes) 3. Closing and Assessment A. Refining the Research Question (5 minutes) 4. Homework A. Finish filling out the researcher's notebook for your article (if necessary). B. Use the consequences you recorded from your research article to add to your personal Industrial Organic Food Chain Cascading Consequences chart. Add new consequences in a different color so they are easy to see. Remember that some of the consequences might be new and some might be cascading consequences from consequences you have already listed. Think carefully about where you put your consequences.	• In this lesson, students extend their research on the consequences of Pollan's industrial organic food chain through independent research. Students will discuss the information they find in their research teams and add to their team Cascading Consequences charts for this food chain. The addition of other perspectives on Pollan's food chains will round out students' research and prepare them to craft their own arguments for the end of unit assessment, as well as in Unit 3. • Students practice determining credibility, accuracy, and effective search terms, using these skills to conduct independent research on the consequences of the industrial organic food chain. The supporting research question they use to conduct their research comes from their exit ticket from Lesson 5. Students begin the research process by transposing this question (taking into account the feedback or corrections you may have provided) onto page 5 of their researcher's notebooks. • Unless you decide to have students print the articles they decide on, they will not be able to text code for consequences as they did in Lesson 3. Instead, from this point forward, the researcher's notebook prompts students to reread for consequences and then paraphrase. • There are three new features on the researcher's notebook for this food chain: the search terms chart in the Gathering Sources section of the notebook (page 4), the Assessing Credibility section (page 5), and the Evaluating the Source section (pages 6 and 7). Students may need some guidance with these new features at first. These new features will continue to appear for each of the remaining food chains. Note that Part B of Evaluating the Source is an extension for those students who have time to complete it. • Students are introduced to search terms by reading an article and identifying the most important words and phrases in the text. By working backwards, students learn how important key words are in an internet search, and will get an idea of how "zooming in" too far with very specific search terms yields limited results, while "zooming out" too far with general search terms yields too many unspecific results. For this activity, the reading is designed to happen quickly, as the article itself is not the focus of the mini lesson. After reading the article, you conduct a sample search using a recommended search engine: SweetSearch. If you cannot model the internet search using a display device, consider modeling it on the board using the process outlined in the lesson.

Agenda	Teaching Notes
	• Part A of the homework in this lesson requires that students complete the researcher's notebook using the article they chose in class (if they have not done so by the end of class). This requires students to print the article, save it, or access it at home. Consider which option(s) would work best for your students and prepare accordingly.
	• In advance: Prepare the What Makes a Source Accurate and Credible? anchor chart. Leave blank space under the heading so students can contribute criteria from the Assessing Sources homework article, or from memory. Prepare the Effective Search Terms Are … anchor chart as well. There is no need to leave blank space on this chart, as students will use it as a reference, not add to it. (See supporting materials for anchor chart samples.)
	• Post: Learning targets; Paraphrasing anchor chart (next to researcher's roadmap).

Lesson Vocabulary	Materials
	• What Makes a Source Accurate and Credible? anchor chart (new; teacher-created; see supporting materials)
	• Researcher's notebook (from Lesson 3; students' own, plus the one that was displayed and filled out as a model in Lesson 3)
	• "Lunch or Junk" article (one per student)
	• Effective Search Terms Are … anchor chart (new; teacher-created; see supporting materials)
	• Exit Ticket: Developing a Supporting Research Question: Consequences of Industrial Organic Food Chain (from Lesson 5)
	• Research task card (one per student)

Opening	Meeting Students' Needs
A. Discuss Homework Article (5 minutes)	
• Ask students to take out the Assessing Sources text they read for homework last night. Invite students to pair/share about the most important takeaways about credibility and accuracy they got from the text.	
• Cold call on some students to share what they discussed with their partners. Add key ideas to the **What Makes a Source Accurate and Credible? anchor chart**.	
• Explain that in their **researcher's notebooks** for the industrial organic food chain, they will practice determining whether the texts they find are credible and accurate using the checklist from the Assessing Sources text.	
B. Unpacking Learning Targets (2 minutes)	• ELLs often benefit from access to visual representations of learning targets.
• Read the first learning target aloud with students:	
* "I can use research skills to determine consequences of the industrial organic food chain."	• ELLs might benefit from visual representations of each of the four food chains.
• Remind students of the overarching research question for the unit and tell them that this first learning target focuses their question on the industrial organic food chain, which they will research today:	
* "What are the consequences of each of Michael Pollan's food chains?"	
• Read the next learning target aloud to students:	
* "I can list the criteria of credible research sources."	
• Tell students that now that they have learned about what makes sources credible and accurate, their next step will be to determine what kind of search yields the best results when researching on the internet.	
• Read the remaining learning targets aloud with students:	
* "I can choose the most effective search terms to find relevant research sources to answer my research question."	
* "I can identify the relevant information in a research source to answer my research question."	
• Ask students to raise their hands if they have ever typed an entire question into a search engine. Explain that most search engines filter those questions, using the most important words to locate general information. Explain that using a database or search engine for research—not just surfing the web—requires more specific search terms, and typing a whole question in the search bar will likely not give the best results.	

Work Time	Meeting Students' Needs
A. Mini Lesson and Shared Reading: Using Search Terms Effectively (10 minutes)	• As students research, consider meeting in small groups with those who are having difficulty with the research skills introduced in the lesson or in previous lessons.
• Distribute **"Lunch or Junk" article**. Inform students that you will read the article aloud as they follow along silently.	
• After you have read the text, ask students to take two minutes in teams to circle the words they think are the most important single words in the text. The words they choose should be most important because they reflect the overall meaning of the article. Explain that students must choose five words or less.	
• Select volunteers to share their responses. The words could include: health, school lunch, diabetes, problem, junk food, obese, overweight, and kids. Write each word on the board in a list.	• For students requiring serious reading interventions, consider compiling a research folder or digital collection of level-appropriate texts for students to read in place of the internet search.
• Clarify that the key words used in an internet search are called search terms. Call students' attention to the **Effective Search Terms Are… anchor chart**. Invite students to read the criteria aloud with you. Explain that part of being a good researcher is being able to conduct an effective internet search to find information about a topic or answer a research question.	In Section 3—Evaluating the Source, Part B—of each food chain within the researcher's notebook, students are offered a chance to extend their research. Consider directing accelerated learners or students who complete their research early to this extension section. You might ask these students to include the additional research they conduct in conversations within their research teams, which the goal of adding even more details to their Cascading Consequences and Stakeholders charts.
• Ask students to think about how they could use the words on the board to create an internet search that would help them locate the article they've just read. Explain that you know it may sound strange to work backwards (you've already found the article, so why would you do a fake internet search for it?), but this exercise will help students understand the value of keywords in finding an article online.	
• Demonstrate on the board or display how you would combine some of those words the students identified in the article to conduct an effective internet search. For example: "health problem school lunch" or "school lunch food unhealthy."	
• Display the Industrial Organic section of the researcher's notebook that was used as a model in Lesson 3 and tell students that you are now going to model how to use a search engine and appropriate search terms to answer a sample research question. Explain that at the same time you are going to show them how to fill out the researcher's notebook.	
• Read the sample research question aloud to students:	
* "How does corn syrup affect human health?"	
• Explain that you will now use the criteria on the anchor chart to conduct an internet search using SweetSearch.	
• Ask students to help you choose the most important words in the question to enter into the SweetSearch search bar. *Corn syrup* and *health* should surface as the most important words. Record these words on the chart in the researcher's notebook.	
• Type them into the search bar and conduct a search. Scroll through the results with students and ask if anyone sees a title that might answer the research question.	
• Explain to students that sometimes they may need to group words together in a search in order to get effective results.	

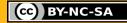| Work Time (continued0	Meeting Students' Needs
• Model a search for students using quotation marks in search terms. For example: *"corn syrup" health* may yield better results than "corn syrup health" because "corn syrup" is a term with a specific meaning. Update the chart in the researcher's notebook. • Demonstrate for students how the search results change when the words "corn syrup" are grouped using quotation marks. • Point out the information on the Effective Search Terms Are … anchor chart about using quotation marks to group words if necessary. • Tell students they will now try using search terms themselves as they research the questions they came up with yesterday. Remind students that they may refer to the anchor charts as much as they need to throughout the research process.	
B. Research, Read, and Record (23 minutes) • Pass back the **Exit Ticket: Developing a Supporting Research Question** from Lesson 5 and ask students to take out their researcher's notebooks. Instruct students to copy the questions from their exit tickets into their researcher's notebooks under the Gathering Sources heading of the Industrial Organic section on page 4. • Pair students up. Distribute the **Research task card**, reading the instructions and steps aloud. Select a pair of students to model the process with, reading each step aloud before they do it in front of the class. • Emphasize that the steps are designed to repeat, and that students will likely repeat steps a few times in order to find a relevant and credible article. • Refocus students on the researcher's notebook. Remind students that they used the notebook in Lesson 3 to track their research on the consequences of the industrial food chain. Tell them that they will do the same thing today, recording information about the best article they find about the industrial organic food chain. The task card will help them locate the article, and the researcher's notebook is where they will record their findings. Call student's attention to the Gathering Sources section under "II. Industrial Organic" on page 4. • Focus students on the new features of the researcher's notebook: the search terms chart on page 4 and the text credibility and accuracy checklist on page 5. Explain that students will record the search terms they use as they conduct their research in the search terms box. After deciding on a text, they will assess its credibility and accuracy using the checklist. Students should then use what they have recorded on the checklist to describe whether they think the source is credible and accurate or not. Instruct students to look over the chart and checklist for a moment to see if they have any questions. Clarify as needed. • Tell students to ignore the final box, Refining the Search, for now.	• When reviewing the graphic organizers or recording forms, consider using a document camera to visually display the document for students who struggle with auditory processing. • Providing models of expected work supports all learners, but especially supports challenged learners. • Research time in Lessons 3, 6, and 9 is critical practice working toward the mid-unit assessment in Lesson 11. This time can be used to meet individually with struggling students and to provide support on key research skills.

Work Time (continued0	Meeting Students' Needs
• Invite students to begin researching. Remind them to have their task card, researcher's notebook, and a writing utensil with them. Circulate to answer questions and check student progress, making sure the search results students get are relevant to the industrial organic food chain. • Circulate to make sure all students find an article they may use for tracking their research in the researcher's notebook. Assist students in refining their search terms where necessary.	

Closing and Assessment	Meeting Students' Needs
A. Refining the Research Question (5 minutes) • Focus students on Part A of the final section of the researcher's notebook: Refining the Search. Tell students that now that they have found an article and started to do some research on their topic related to the industrial organic food chain, they are going to generate a new research question to refine their search on this topic. • Invite students to refine their question and to record the new refined question in the researcher's notebook.	

Homework	Meeting Students' Needs
• Finish filling out the researcher's notebook for your article (if necessary). • Use the consequences you recorded from your research article to add to your personal Industrial Organic Food Chain Cascading Consequences chart. Add new consequences in a different color so that they are easy to see. Remember that some of the consequences might be new and some might be cascading consequences from consequences you have already listed. Think carefully about where you put your consequences.	

EXPEDITIONARY
LEARNING

Grade 8: Module 4: Unit 2: Lesson 6
Supporting Materials

What Makes a Source Accurate and Credible?
Anchor Chart for Teacher Reference

What makes a source accurate and credible?
• An expert author • Author's purpose = NOT to persuade or sell you something • Current or updated information (look at publishing date!) • Specific facts and details to support ideas • Information that expands on what I already know about • the topic (but not ALWAYS)   • If from a website, the site should be associated with a: • University • Credible media outlet • Government • Well-known non-governmental organization **Beware of Wikipedia and similar sites!

Lunch or Junk?

Health experts get tough on school lunches

It's lunchtime at Hall Memorial School in Connecticut, and 10-year-old Haley is making her way through the food line. Many of her friends are thrilled with the day's lunch selections: pizza and French fries and hot dogs. But Haley feels discouraged. "I use four or five napkins just trying to get the grease off the pizza," she says. "Where are the healthy options?"

Health experts are asking the same question. They say foods high in fat, salt, and sugar should be banned from school lunch programs. This includes some items you might not suspect, like fruit punch, which is loaded with sugar, and macaroni and cheese, which is sky-high in fat and salt. "Children are already consuming too much junk food," says Jen Keller, a dietitian at the Physician's Committee for Responsible Medicine. "It's important to offer them only healthy items in school."

It's not that health experts want to deprive kids of foods they like best. They just want to help kids avoid many of the health problems that come with eating large quantities of unhealthful food. Today, 15 percent of children ages 6 to 11 are obese, or seriously overweight. That's up from just 6.5 percent in the late 1970s. Poor diet and obesity can cause diseases like type-2 diabetes, which can lead to blindness and kidney problems. As of a few years ago, this disease was so rare in children that it was called "adult onset diabetes." "Many foods that are offered in cafeterias are linked to these problems," Keller says.

Most schools do offer some healthful foods, but experts say that doesn't solve the problem. "Given a choice, most kids are going to choose junk over something healthy," says Pat Thorton, a psychologist who studies obesity in children.

Thorton and other experts agree that schools and parents need to educate kids about making good food choices, both in and out of school. For example, few kids understand that many popular candies, chips, and sodas come in containers that actually contain two or even three servings. And kids need to become skeptical about food advertisements they see on TV and in magazines. "Just because Beyonce sells Pepsi doesn't mean it's a good product for your body," Thorton says.

Of course some kids already seem to know all of this. "The junk food is tempting," says 10-year-old Tim. "But my parents tell me that if I eat healthy now, I'll have strong bones when I get older."

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Effective search terms are …
• **Specific**
• **Relevant** to the research question
• The **most** important words—no "filler words"
• **Two to three words**—not whole sentences or questions!
• Terms with **special meanings**
• (e.g., "corn syrup," not just "corn" or "syrup")
Remember:
• Use quotations marks when necessary to "stick" words together.
• Refine your terms until you get good results.

Work in pairs and follow the steps on this card to conduct a search for an article that will answer your supporting research question. The steps are designed to be repeated if you don't find a relevant article the first time. Don't be afraid to repeat steps—it will be worth it to find the right article! Once you find a relevant and credible article, use your researcher's notebook to record the necessary information. Discussing each of these steps with your partner will help you to determine whether you have found a good article for answering your question.

Overarching Research Question:
What are the consequences of each of Michael Pollan's food chains?

Step 1: Brainstorm search terms. Think about the most important words in your supporting research question. Record the search terms you try in your researcher's notebook.

Step 2: Scan the titles of your search results. Do they seem relevant to your supporting research question? If yes, move to Step 3. If no, return to Step 1.

Step 3: Based on titles and/or descriptions of the articles, open an article that seems relevant to your supporting question. Scan the headings, pictures (if any), and general structure of the article. If these text features hint that the article may answer your supporting question, move to Step 4. If not, return to Step 3. If there are no headings or pictures, skip to Step 4.

Step 4: Read the first paragraph of the article for the gist. If the first paragraph begins to answer or introduces possible answers to your supporting research question, move to Step 5. If not, return to Step 3.

Step 5: Read the whole article to get the gist. If the article answers your supporting research question, move to Step 6. If not, return to Step 3.

Step 6: Fill out the researcher's notebook. Follow the directions in your researcher's notebook to record the consequences of the food chain that you find in your article.