



EXPEDITIONARY
LEARNING

Grade 5: Module 2B: Unit 2: Lesson 3

Making Inferences: What Motivated Philo Farnsworth?



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 engage effectively in a range of collaborative discussions with diverse partners on grade 5 topics and texts. (SL.5.1)

I can quote accurately from the text when explaining what the text says explicitly and when making inferences. (RI.5.1)

I can determine the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies. (L.5.4)

- a. I can use context as a clue to the meaning of a word or phrase.
- b. I can consult reference materials, both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.

Supporting Learning Targets

- I can engage in collaborative discussions with peers.
- I can make inferences using quotes and paraphrased details from the text.
- I can determine the meaning of key words using a variety of strategies.

Ongoing Assessment

- Making Inferences graphic organizer: What Motivated Philo Farnsworth?
- Vocabulary, four-column chart (in journal)
- Group Norms Checklist (teacher assessment)



Agenda	Teaching Notes
<ol style="list-style-type: none"> 1. Opening <ol style="list-style-type: none"> A. Homework Review and Engaging the Reader: Starting the Graphic Organizer (10 minutes) 2. Work Time <ol style="list-style-type: none"> A. Determining the Gist: <i>The Boy Who Invented TV</i> Pages 10–13 (10 minutes) B. Second Read: Making Inferences (20 minutes) C. Vocabulary to Deepen Understanding (15 minutes) 3. Closing and Assessment <ol style="list-style-type: none"> A. Debrief and Review Learning Targets (5 minutes) 4. Homework <ol style="list-style-type: none"> A. Reread pages 10–13 and create graphic novel template. B. Read Independently. 	<ul style="list-style-type: none"> • In this lesson, students make and later revise an inference about Philo Farnsworth’s move to Idaho. The purpose is to demonstrate that strong inferences are based on thoughts or ideas from the reader’s preexisting knowledge as well as details from the text. This activity also highlights for students that inferences can be supported or sometimes changed with the addition of new information. • Students are introduced to a Making Inferences anchor chart in Work Time B. The definitions for <i>infer</i> and <i>inference</i> on the anchor chart are intentionally left incomplete to allow students to grapple with the meaning of evidence as it relates to making inferences. Adding specific information about the types of evidence used to make an inference during the lesson draws students’ attention to the idea that inferences require both details from the text and ideas from the students’ own knowledge base. • In Work Time C, students use a glossary to explore vocabulary words in the text. This activity builds on previous work using resources to determine the meaning of words but provides exposure to a new type of resource. • In advance: <ul style="list-style-type: none"> – Review and familiarize yourself with the Making Inferences graphic organizer to prepare to support students during the Opening and Work Time B. – Create a Making Inferences anchor chart (see supporting materials). Familiarize yourself with aspects of the anchor chart to be completed during the lesson to prepare to support student thinking. – Review the Stretch-o-Meter protocol (from Unit 1, Lesson 2) to prepare for modeling the activity in Work Time B. – Review Milling to Music in Checking for Understanding techniques (see Appendix). • Post: Learning targets.



Lesson Vocabulary	Materials
<p>inference, engage, collaborative, quotes, paraphrased, draw, conclusion, evidence, relevant, determine, variety, strategies; electricity, magnetism, devised, pulleys</p>	<ul style="list-style-type: none">• Making Inferences graphic organizer: What Motivated Philo Farnsworth? (one per student)• Making Inferences graphic organizer: What Motivated Philo Farnsworth? (answers, for teacher reference)• Journals (begun in Unit 1, Lesson 1; one per student)• <i>The Boy Who Invented TV: The Story of Philo Farnsworth</i> (book; one per student)• Group Norms anchor chart (from Unit 1, Lesson 1)• Group Norms Checklist (from Lesson 1; one per student for teacher use)• Making Inferences anchor chart (new; teacher-created; see supporting materials)• Vocabulary Strategies anchor chart (from Unit 1, Lesson 2)• Vocabulary Resource Page, Glossary (one per student)• Document camera• Graphic novel templates, A, B, C (several options for students to choose from; one per student)



Opening	Meeting Students' Needs
<p>A. Engaging the Reader: Homework Review and Starting the Graphic Organizer (10 minutes)</p> <ul style="list-style-type: none">• Ask students to locate their Homework: Vocabulary Strategies handout and find a partner who is not in their discussion group.• Direct students to share with their partners the terms and definitions they explored in their homework task, as well as which vocabulary strategies they found most helpful.• After 1 or 2 minutes, cold call several students to share out whole class about an interesting vocabulary word their partner discussed. Answers will vary.• Invite students to now think about a term they will be using throughout today's lesson. Ask them to consider and discuss the meaning of <i>inference</i> as it is used in the following sentence:<ul style="list-style-type: none">* "After looking at the picture on page 7 of the book, Jon made an <i>inference</i> about how the main character was feeling."• After 1 or 2 minutes, invite several students to share possible definitions for <i>inference</i>. Encourage them to explain how they determined the meaning of the word. Listen for answers such as:<ul style="list-style-type: none">– "I think an inference is a conclusion that you draw based on the information you have from the text and your own knowledge. In the sentence, Jon made an inference about how the main character was feeling. First he considered the information in the picture, but he also had to use his own knowledge about how people look when they feel a certain way to make his inference."• Distribute the Making Inferences graphic organizer: What Motivated Philo Farnsworth? Read the focusing question aloud or invite a student to read it aloud:<ul style="list-style-type: none">* "Why was Philo Farnsworth's move from Utah to Idaho such an important event in his life?"• Ask students to consider and discuss the focusing question. Remind them to refer to relevant details from their notes and what they have already read in <i>The Boy Who Invented TV</i> to answer the question.• After 1 or 2 minutes, cold call several students to share out their answer. Encourage them to explain what details helped them develop their answer. Listen for answers like these:<ul style="list-style-type: none">– "In the text we read in the last lesson, it says that Philo was bullied at school. I think the move will help him because he will be able to make new friends who like the same kinds of things he does and do not tease him."– "In the text, it says that life on a farm required a lot of hard work. Philo had a lot of chores and jobs to do, so maybe his move to Idaho was important for his life because he moved to a city where he had more free time and could focus on inventing the TV."	<ul style="list-style-type: none">• Provide a sentence starter to help all students gain access to the discussion in response to the focus question ("Philo's move from Utah to Idaho was such an important event in his life because ...").



Opening (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Explain that the answers they shared are <i>inferences</i> they have made because they used details from the text to develop an answer to the focusing question even though the answer was not explicitly stated in the text.• Give students 1 or 2 minutes to record the relevant details from their notes and the text into the first box on their graphic organizer, labeled Knowledge Base, and their inferences into the second box, labeled Inference.	



Work Time	Meeting Students' Needs
<p>A. Determining the Gist: <i>The Boy Who Invented TV</i> Pages 10–13 (10 minutes)</p> <ul style="list-style-type: none"> • Direct students to locate their journals and <i>The Boy Who Invented TV</i> texts before meeting in their small groups. • Read aloud or invite a student to read aloud the first learning target: <ul style="list-style-type: none"> * “I can engage in collaborative discussions with peers.” • Draw students’ attention to the terms <i>engage</i> and <i>collaborative</i>, discussed in Lesson 1. Give them a moment to review the meaning of each term with a classmate. • After 1 minute, cold call a few students to share definitions for the terms. Listen for: <ul style="list-style-type: none"> – “<i>Engage</i> means ‘to participate actively.’” – “<i>Collaborative</i> means ‘working together.’” • As needed, review with students what it means to engage in collaborative discussions. • Add any new ideas or suggestions students share to the Group Norms anchor chart. Encourage students to refer to the anchor chart as they work collaboratively in their groups today. Remind them you’ll continue to observe their discussions. • Direct students to work in their groups to read pages 10 -13 of <i>The Boy Who Invented TV</i> and determine the gist. Remind them that they should consider both the images and text in their discussion. • Circulate to provide assistance and to use the Group Norms Checklist to assess SL.5.1. • After 4 or 5 minutes, cold call several students to share their gist statements. Listen for responses similar to these: <ul style="list-style-type: none"> – “Philo Farnsworth’s family moved to a new home where they had electricity.” – “Philo Farnsworth started reading more science magazines and learning about machines.” • Give students 1 or 2 minutes to record their gist statement on the same page as prior gist statements from <i>The Boy Who Invented TV</i>. 	<ul style="list-style-type: none"> • Consider recording student-generated synonyms for key terms above or below where they appear in the learning target to promote understanding of the target. • Offer these possible sentence starters to promote discussion during the introduction of the learning targets: “I think ‘engage in collaborative discussion’ means ...” and “I’ll know I’m engaged if....” • To support struggling readers, consider abbreviating the amount of text they are responsible for. Be sure to select the text passage carefully to ensure they are set up to contribute meaningfully to the group discussion of the gist. • Consider displaying the text under the document camera as you read aloud. Although students have a copy of the text in front of them, struggling readers often have difficulty finding where you are if they lose their spot for any reason. Having the option to track you on the screen as you read and point minimizes anxiety and promotes fluency.



Work Time (continued)	Meeting Students' Needs
<p>B. Second Read: Making Inferences (20 minutes)</p> <ul style="list-style-type: none"> • Explain that students now have the opportunity to read more closely so they can use the details from this new section of text to revise their inferences from the beginning of the lesson. • Read aloud or invite a student to read aloud the second learning target: <ul style="list-style-type: none"> * “I can make inferences using quotes and paraphrased details from the text.” • Invite several students to share what they notice about the learning target. Listen for ideas such as: <ul style="list-style-type: none"> – “I notice we are going to be working on making inferences again.” – “I notice that sometimes we will use quotes and sometimes we will use paraphrased details from the text to make our inferences.” • Draw students’ attention to the terms <i>inference</i>, <i>quote</i>, and <i>paraphrased</i>. • Cold call students to explain the difference between quotes and paraphrased details. Listen for: <ul style="list-style-type: none"> – “When you quote, you use the exact words from the text and you put quotation marks around them to indicate that they are not your own words but are the words of the author.” – “When you paraphrase details, you put them in your own words.” – “Quoting is useful when you want to prove something specific or support your thinking with ‘credible’ evidence.” – “Paraphrasing is good when you just want to communicate an idea that is similar to what you read to give a summary or share a general idea.” • Invite several students to restate the learning target in their own words. • Display the Making Inferences anchor chart. • Read aloud or invite a student to read aloud the definitions of <i>infer</i> and <i>inference</i>. <ul style="list-style-type: none"> * “To <i>infer</i> is to draw conclusions based on evidence.” * “An <i>inference</i> is a conclusion drawn from evidence.” • Direct student attention to the terms draw, conclusion, and evidence. Explain that some of these words have more than one meaning and will need to be considered carefully. Ask them to think about and discuss the meaning of each term as they are used in the definitions to be prepared to share out. 	<ul style="list-style-type: none"> • To support visual learners, after the Stretch-o-Meter, consider displaying a sample of a student’s inference that changed significantly. • Offer a sentence starter to give all students access to the discussion about Philo’s character after reading aloud page 12 (“Based on what we just read, what I can infer about Philo’s character traits is ...”).



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• After 1 or 2 minutes, cold call a few students to define each term. Listen for:<ul style="list-style-type: none">– “<i>Draw</i> has multiple meanings, but here it means ‘to reach an idea or conclusion.’”– “A <i>conclusion</i> is a judgment based on information.”– “<i>Evidence</i> is information or a set of specific details that lead you to form an idea.”• Invite a few students to restate the definitions of <i>infer</i> and <i>inference</i> in their own words.• Ask students to consider and discuss:<ul style="list-style-type: none">* “Where does the evidence you use to make inferences come from?”• After 1 or 2 minutes, invite several students to share out the ideas they discussed. Listen for suggestions such as:<ul style="list-style-type: none">– “You could find evidence by reading details in the text during class.”– “You might be able to use information that you already have from your own experiences.”– “If you have read other books that have connections to the book we are reading about Philo Farnsworth, you could use information from those books.”– “There might be quotes in <i>The Boy Who Invented TV</i> that give you information to help you make inferences about Philo Farnsworth.”• Say something like:<ul style="list-style-type: none">* “Inferences are the readers’ judgments, so they come from your own thoughts and ideas about your prior experiences and knowledge base, but a strong inference must also be based on the information you read in the text. An inference is the judgment you make by connecting your own knowledge and ideas to the details in the text. I am going to add to our definitions of <i>infer</i> and <i>inference</i> to make them clearer.”• Write: “from the text, your thoughts, and your knowledge base” at the end of each definition.• Say something like:<ul style="list-style-type: none">* “Making inferences can be very tricky because you are drawing conclusions about what the author wants you to know but is not necessarily saying to you directly. Let’s discuss a few strategies to guide your thinking on this work.”• Direct students’ attention to the Suggestions for Making Inferences section of the anchor chart. Cold call a student to read the first suggestion and invite several students to restate the suggestion in their own words.• Cold call a few students to read the second suggestion and associated explanatory points aloud.	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Ask students to consider and discuss the meaning of the term <i>relevant</i> in the first explanatory point.• After 1 minute, invite a few students to share possible definitions. Listen for them to identify that <i>relevant</i> means “related to” or “on topic.”• Ask students to consider and discuss the meaning of the phrase “read between the lines.”• After 1 or 2 minutes, cold call a few students to share out. Listen for:<ul style="list-style-type: none">– “You have to figure out what the author is trying to explain by giving you certain information. It takes some thinking because you have to use your own knowledge with the details in the text to really understand what the author is saying.”– “If you are reading between the lines, you are trying to understand the things the author is telling you without saying them directly.”• Invite students to read the last two suggestions on the anchor chart aloud.• Explain that the class is going to work together to make an inference about a short section of today’s text.• Ask students to follow along as you read aloud from page 12, starting with “The electric generator broke down a lot ...” and ending with “It worked.”• Ask students to discuss this question with someone sitting near them:<ul style="list-style-type: none">* “After reading these paragraphs from page 12, what can you infer about Philo Farnsworth’s character traits?”• After 1 or 2 minutes, cold call students to share out their responses. Encourage them to explain what evidence and ideas they used to make their inferences. Refer to the Making Inferences anchor chart in the supporting materials for possible student responses.• Record a few strong student examples on the class anchor chart.• Using the student examples you record on the anchor chart, point out or invite students to share the specific details in the text as well as the knowledge base used to make each inference. Examples could include:<ul style="list-style-type: none">– “I thought he might be curious because he was bombarding the repairman with questions, and I know that people who are curious ask a lot of questions.”– “I think Philo is clever because in the text it said that it was expensive to repair the generator, but Philo figured out how to do it himself. I know that generators are complicated machines so I think fixing one would probably be hard. If Philo could learn to fix it, he must be clever. Even though the author didn’t say it, I also think that Philo knew he could save his family money if he learned to fix the generator.”	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Explain that students now have the opportunity to use their deeper understanding of what it means to make an inference and the new information from today's reading to revise their inference from the beginning of the lesson. Direct them to work in their groups to complete the second half of the Making Inferences graphic organizer. Remind them to use paraphrased details, direct quotes, and their own thoughts and ideas as they revise their inferences.• After 5 or 6 minutes, cold call several students to share their responses. Refer to the Making Inferences graphic organizer: What Motivated Philo Farnsworth? (answers, for teacher reference) for possible student responses.• Review the Stretch-o-Meter protocol with students. Explain that they will use the Stretch-o-Meter to show how much they revised their inferences from the beginning of the lesson. Model for students as you explain that if their inference from the beginning of class was exactly the same as their inference now, they should stay squished up in a ball. If they revised their inference a little bit, they might be a bit taller. If they completely changed their inference, they should be as stretched out as they can get.• Direct students to use the Stretch-o-Meter.• Invite several students with different amounts of stretch to share about the change, or lack of change, in their inferences. Ask them to use details from the text as they explain why they did or did not revise their work.• Say something like:<ul style="list-style-type: none">* "Sometimes as readers discover new information in the text, their inferences change. It's okay for your inferences to change and evolve as you learn new information. Sometimes instead of changing your inference, new information might support your inference. The more evidence you have to support an inference, the stronger it becomes."	



Work Time (continued)	Meeting Students' Needs
<p>C. Vocabulary to Deepen Understanding (15 minutes)</p> <ul style="list-style-type: none"> • Explain that now students have the opportunity to explore key vocabulary from the text to deepen their understanding. • Read aloud or invite a student to read aloud the third learning target: <ul style="list-style-type: none"> * “I can determine the meaning of key words using a variety of strategies.” • Draw student attention to the terms <i>determine</i>, <i>variety</i>, and <i>strategies</i> and remind them that these terms have been discussed in previous lessons. Invite a few students to use their understanding of these terms to restate the learning target in their own words. • Refer to the Vocabulary Strategies anchor chart and ask students to consider and discuss: <ul style="list-style-type: none"> * “Which vocabulary strategies have you found most helpful in previous lessons? Why?” • After 1 or 2 minutes, cold call several students to share out whole class. Listen for them to mention strategies such as using roots and affixes to figure out the meaning of the word, using context clues to determine a synonym for the word, or using resources such as the dictionary or Internet. • Say something like: <ul style="list-style-type: none"> * “Different strategies are helpful in different circumstances, and what works for one word, or even one student, might not work for another. In our previous lessons, we have practiced using context clues, roots and affixes, and resources to help us determine the meanings of words. Today you will use a variety of strategies to determine the meanings of key terms, but you will have the opportunity to focus on using a vocabulary reference material.” • Invite students to share the names of the vocabulary resources they referred to in previous lessons. Listen for them to identify print dictionaries and Internet definitions. • Ask students to consider and discuss the similarities and differences between these two resources. • After 1 or 2 minutes, invite several students to share out. Listen for ideas such as: <ul style="list-style-type: none"> – “They both describe the definitions for vocabulary words. For multiple-meaning words, they share more than one definition.” – “They are both useful when you are trying to determine the meaning of a challenging word.” – “They both give you information about the part of speech and the way the word is supposed to be pronounced.” – “Dictionary pages contain many words that are listed in alphabetical order, but an Internet definition includes only the definitions for the word you typed into the search engine.” 	<ul style="list-style-type: none"> • Consider recording student-generated synonyms for key terms above or below where they appear in the learning target to promote understanding of the target. • To support ELLs and students who need more processing/writing time, consider paring down the number of words or the type of response students are expected to produce in their vocabulary journals.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Say something like: “Today we will be looking at a new type of resource, a glossary. Internet and dictionary pages are resources that are separate from the text, and they often share many possible definitions for a term. A glossary is different because it is attached to a specific text. Glossaries are usually found at the end of a nonfiction text. You might remember that there was a glossary at the back of <i>Investigating the Scientific Method with Max Axiom</i>. Because a glossary is attached to a specific text, it usually includes only the definitions that are relevant for that book. You are creating your own glossaries in your journals to help you better understand the key terms for this module. <i>The Boy Who Invented TV</i> does not have a glossary, but today you will examine a glossary page that includes many of the terms from pages 10–13.” • Distribute the Vocabulary Resource Page, Glossary. Invite students to share what they notice about the glossary page. Listen for observations such as: <ul style="list-style-type: none"> – “I notice the words are listed in alphabetical order.” – “I notice there is only one definition for each term.” – “I notice that some of the terms are related to each other.” • Explain that although the glossary doesn’t include all of today’s vocabulary terms, it may be a helpful reference for today’s vocabulary work. <ul style="list-style-type: none"> – Display these vocabulary terms via a document camera: <i>electricity, magnetism, devised, pulleys</i>. • Ask students to work in their groups to determine the meaning of each term and add it to the four-column chart in their own journal glossaries. • After 5-6 minutes, cold call several students to share definitions for each term. Listen for: <ul style="list-style-type: none"> – “<i>Electricity</i> is a form of energy that is found in nature but can be created artificially by rubbing together two unlike things (like glass and silk), by the action of chemicals, or by a generator.” – “<i>Magnetism</i> is the science that deals with magnetic occurrences or conditions.” – “<i>Devised</i> means ‘to come up with’ or ‘to invent.’” – “<i>Pulleys</i> are wheels with grooved rims used with a rope or chain to change the direction of a pulling force and increase the force applied for lifting.” • Give students 1 or 2 minutes to use their new understanding of key vocabulary to revise the second half of their Making Inferences graphic organizers. 	



Closing and Assessment	Meeting Students' Needs
<p>A. Debrief and Review Learning Targets (5 minutes)</p> <ul style="list-style-type: none"> • Use Milling to Music to allow students to find a partner. Ask pairs to consider and discuss this question: <ul style="list-style-type: none"> * “How do you know if you have made a strong inference?” • Cold call a few students to share out whole class. Listen for comments like these: <ul style="list-style-type: none"> – “If you used a few pieces of evidence from the text that connects to your own knowledge, then you probably made a strong inference.” – “A strong inference is based on quotes or paraphrased details from the text and your own knowledge.” • Have students Mill to Music again to find a new partner. Display the learning targets. Ask pairs to consider and discuss: <ul style="list-style-type: none"> * “Which learning target was most challenging for you today?” * “What strategies did you use to work toward the target?” • After 1 or 2 minutes, invite a few students to share out whole class. • Have students continue milling to find a third partner. Ask pairs to consider and discuss: <ul style="list-style-type: none"> * “Which learning target did you feel most confident about today? Why?” • After 1 or 2 minutes, invite a few students to share whole class. • Preview the graphic novel templates (A, B, C): students will choose and complete one template for homework. 	<ul style="list-style-type: none"> • Offer a sentence starter for Milling to Music to give all students access to the prompts (“You know you made a strong inference when ...” or “The learning target that was the most challenging today was ...” or “One strategy I used to work toward this target is ...”).
Homework	Meeting Students' Needs
<ul style="list-style-type: none"> • Reread pages 10-13 of <i>The Boy Who Invented TV</i>. Create a Philo Farnsworth graphic novel template page. Select one of the graphic novel templates. Use the template to create a graphic novel page about pages 10–13. Bring your complete graphic novel page as an admit ticket to the next lesson. • Read your independent reading book for at least 15 minutes. 	<ul style="list-style-type: none"> • Consider providing an audio version of the text to support struggling readers.



EXPEDITIONARY
LEARNING

Grade 5: Module 2B: Unit 2: 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.



Making Inferences graphic organizer:
What Motivated Philo Farnsworth?

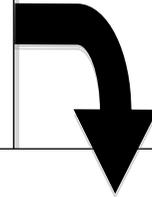
Name: _____

Date: _____

Focusing question: Why was Philo Farnsworth's move from Utah to Idaho such an important event in his life?

Knowledge Base:

Details about the focusing question from previous reading and images viewed



Inference:

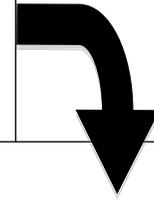
Response to focusing question



Making Inferences graphic organizer:
What Motivated Philo Farnsworth?

New Information from the Text:

Paraphrased details, quoted text, and observations from images



Revised Inference:

Revised response to focusing question



Making Inferences graphic organizer:
What Motivated Philo Farnsworth?
(Answers, for Teacher Reference)

(Some possible student responses)

Focusing question: Why was Philo Farnsworth's move from Utah to Idaho such an important event in his life?

Knowledge Base:

Details about the focusing question from previous reading and images viewed

Philo Farnsworth was bullied by kids at school in Utah.

Inference:

Response to focusing question

Philo Farnsworth's move to Idaho may have been important because he made new friends and didn't get teased anymore.



Making Inferences graphic organizer:
What Motivated Philo Farnsworth?
(Answers, for Teacher Reference)

New Information from the Text:

Paraphrased details, quoted text, and observations from images

- **Philo Farnsworth moved to a house with electricity for the first time.**
- **He found lots of science magazines in the attic, and on page 10 it says, “That’s where he saw the word ‘television’ for the first time.”**
- **One of the images shows him asking lots of questions about the generator. He was curious to learn about how electrical machines worked.**
- **He started inventing electrical machines that could make his chores easier.**
- **I know that learning about machines was important to Philo because I know that he is going to invent the TV.**

Revised Inference:

Revised response to focusing question

Philo Farnsworth’s move to Idaho was an important event in his life because it gave him the opportunity to be more of a scientist by learning about electricity and electrical machines.

Making Inferences Anchor Chart
(for Teacher Reference)

Making Inferences

Definitions

infer: (verb) to draw conclusions based on evidence *from the text, your thoughts, and your knowledge base*

inference: (noun) a conclusion drawn from evidence *from the text, your thoughts, and your knowledge base*

Suggestions for Making Inferences

- To make an inference, you have to draw a conclusion because the author is communicating something but doesn't say it directly in the text.
- You have to "read between the lines."
 - Locate important and relevant details in the text.
 - Use your own thoughts, ideas, and knowledge base to decide what the author is trying to communicate by sharing those details.
- Because it is your own conclusion, an inference statement often starts with "I think...."
- You can use both direct quotes and paraphrased details as evidence to support your inferences.

Example

Text (from page 12):

"The electric generator broke down a lot, and repairs were costly. Each time the repairman came, Philo bombarded him with questions.

After yet another breakdown, Philo set out to fix the machine himself. He took it apart, cleaned it, put it back together, and pressed the 'on' button. It worked."

Inferences about Philo's character traits:

(Possible student suggestions)

- *I think Philo was curious because he bombarded the repairman with questions.*
- *I think Philo was clever because he figured out how the generator worked to save his family money.*



Vocabulary Resource Page, Glossary

Learning Target: I can determine the meaning of key words using a variety of strategies.

Glossary

circuit	A closed path in which an electrical current flows
device	Something made for a particular purpose
electric current	A flow of electricity
electrical engineer	A person who designs or can fix electrical machinery
electricity	A form of energy created by rubbing two unlike things (like glass and silk) together
gears	A set of toothed wheels that work together to change speed
generator	A machine that generates electricity
lever	A rigid bar resting on a pivot used to help move an object
magnet	A material which attracts things made of iron
magnetic	Attracted to a magnet
magnetism	The science of magnets
motor	A machine that produces power for doing work
pulleys	A wheel with a grooved rim around which a cord passes in order to change the direction of a force applied to the cord.



Graphic Novel Template A

Name: _____

Date: _____

Directions:

1. Reread pages 10–13 of *The Boy Who Invented TV*.
2. Use the frames/panels below to create a graphic novel version of pages 10–13.
3. Incorporate both text and visual elements into your graphic novel page.
4. Bring your completed template to class to share at the start of our next lesson.

The template consists of a large rectangular frame containing three rounded rectangular panels. On the left side, there is a single large vertical panel. On the right side, there are two smaller horizontal panels stacked vertically, one above the other.



Graphic Novel Template B

Name: _____

Date: _____

Directions:

1. Reread pages 10–13 of *The Boy Who Invented TV*.
2. Use the frames/panels below to create a graphic novel version of pages 10–13.
3. Incorporate both text and visual elements into your graphic novel page.
4. Bring your completed template to class to share at the start of our next lesson.



Graphic Novel Template C

Name: _____

Date: _____

Directions:

1. Reread pages 10–13 of *The Boy Who Invented TV*.
2. Use the frames/panels below to create a graphic novel version of pages 10–13.
3. Incorporate both text and visual elements into your graphic novel page.
4. Bring your completed template to class to share at the start of our next lesson.