UNIT: "THE MAKING OF A SCIENTIST"

ANCHOR TEXT

"The Making of a Scientist," Richard Feynman (Informational)

RELATED TEXTS

Literary Texts (Fiction)

- *The Templeton Twins Have an Idea: Book 1,* Ellis Weiner

Informational Texts (Nonfiction)

- "What Are the Differences Between Hypothesis, Theories, and Laws?," Fayetteville-Manlius High School
- *When Is a Planet Not a Planet?: The Story of Pluto,* Elaine Scott
- "Modern Science: What's Changing?" *Understanding Science: How Science Really Works* (Berkeley)
- "Galileo" from *Pioneer Astronomers,* Navin Sullivan[1] or "Galileo Galilei: Biography, Inventions & Other Facts," Nola Taylor Redd (SPACE.com)
- "Explore a Model of Earth's Yearly Revolution Around the Sun," Classzone
- "Quarter of Americans Convinced Sun Revolves Around Earth, Survey Finds," Liz Fields
- "New Theory: Galileo Discovered Neptune," Robert Roy Britt (SPACE.com)
- Chapter 8 of *Giants of Science: Isaac Newton*, Kathleen Krull

Nonprint Texts (Fiction or Nonfiction) (e.g., Media, Video, Film, Music, Art, Graphics)

- "**Galileo's Telescope: How He Changed the World**," Discovery Channel Science Documentary
- "Galileo: Sun-Centered System," PBS

UNIT FOCUS

Students learn about the steps of scientific investigation. Students explore how various theories have changed over time by gaining knowledge through scientific investigation. They will begin to use evidence and read about peoples' findings to compare and contrast different theories. Students read literature to support their understanding of science.

Text Use: Citing evidence to compare and contrast theories, applying study of literature to scientific topics, integrating sources of information to support ideas

Reading: RL.5.1, **RL.5.2**, **RL.5.3**, **RL.5.10**, **RI.5.1**, **RI.5.2**, **RI.5.3**, **RI.5.4**, **RI.5.5**, **RI.5.6**, **RI.5.7**, **RI.5.8**, **RI.5.9**, **RI.5.10**

Reading Foundational Skills: RF.5.3a, **RF.5.4.a-c**

Writing: W.5.1a-d, **W.5.2.a-e**, **W.5.4**, **W.5.5**, **W.5.8**, **W.5.9a-b**, **W.5.10**

Speaking and Listening: SL.5.1a-d, **SL.5.2**, **SL.5.3**, **SL.5.4**, **SL.5.5**, **SL.5.6**

Language: L.5.1a-e; **L.5.2a-b, d-e**; **L.5.3a**; **L.5.4a-c**; **L.5.5a, c**; **L.5.6**

CONTENTS

[1] This text has limited availability, although it is sometimes available in basals.

"The Making of a Scientist" Unit Overview

Unit Focus

- **Topic**: Scientific theories
- **Themes**: The importance of observation and investigation to verify understanding
- **Text Use**: Citing evidence to compare and contrast theories, applying study of literature to scientific topics, integrating sources of information to support ideas

Summative Unit Assessments

A culminating writing task:

- Determine main idea and explain how it is supported by details in the text
- Integrate information from several texts to explain connections

A cold-read task:

- Read and understand complex text
- Integrate information from texts on similar topics
- Write in response to text

An extension task:

- Identify theme and how it is supported by key details
- Compare key details of literary text to literary nonfiction

Daily Tasks

Daily instruction helps students read and understand text and express that understanding.

- Lesson 1: "The Making of a Scientist" and *The Templeton Twins Have an Idea: Book 1* (sample tasks)
- Lesson 2: "What Are the Differences Between Hypothesis, Theories, and Laws?" and pages 15-17 of *When Is a Planet Not a Planet?: The Story of Pluto*
- Lesson 3: "Modern Science: What's Changing?," *Understanding Science: How Science Really Works* (sample tasks)
- Lesson 4: *When Is a Planet Not a Planet?: The Story of Pluto* (sample tasks)
- Lesson 5: "Galileo Galilei: Biography, Inventions & Other Facts" and Minutes 22:23-29:01 of "Galileo's Telescope: How He Changed the World" (sample tasks)
- Lesson 6: "Quarter of Americans Convinced Sun Revolves Around Earth, Survey Finds," "Galileo: Sun-Centered System," and *"Explore a Model of Earth's Yearly Revolution Around the Sun"* (cold-read task)
- Lesson 7: "New Theory: Galileo Discovered Neptune" and "The Making of a Scientist" (sample tasks)
- Lesson 8: Chapter 8 of *Giants of Science: Isaac Newton* (sample tasks)
- Lesson 9: "The Making of a Scientist" (culminating writing task)
- Lesson 10: *The Templeton Twins Have an Idea: Book 1* (extension task)

SUMMATIVE UNIT ASSESSMENTS

CULMINATING WRITING TASK[2]

In "The Making of a Scientist," Richard Feynman describes the lessons that his father taught him. Select one of the examples that Feynman uses in his memoir (the dinosaur, the birds, or the wagon). Determine the lesson Feynman's father was trying to teach him and write a multi-paragraph essay explaining how this example helps to develop that lesson. (**RI.5.2**, **RI.5.3**, **RI.5.8**) Then, explain the relationship between the example that you selected and the steps of the scientific method. Include details from the text and related texts in this unit to support your answer. (**RI.5.1**, **RI.5.1**, **RI.5.9**)

Teacher Note: *Students should introduce and explain how the author's example teaches a lesson and relates to the scientific method. (**W.5.2a**, **W.5.9b**) The completed writing should use appropriate transitions; precise and grade-appropriate language; a variety of sentence patterns for meaning, interest, and style; and should provide a relevant conclusion. (**W.5.2b-e**, **W.5.4**, **L.5.3a**, **L.5.6**) The essay should also demonstrate proper grammar and usage. (**L.5.1b-d**; **L.5.2a-b, d-e**) Use peer and teacher conferencing in the process of developing the essay. (**W.5.5**)*

UNIT FOCUS	UNIT ASSESSMENT	DAILY TASKS
What should students learn from the texts?	**What shows students have learned it?**	**Which tasks help students learn it?**
• **Topic**: Scientific theories • **Themes**: The importance of observation and investigation to verify understanding • **Text Use**: Citing evidence to compare and contrast theories, applying study of literature to scientific topics, integrating sources of information to support ideas	This task assesses: • Determining main idea and explaining how it is supported by details in the text • Integrating information from several texts to explain connections	**Read and understand text:** • Lesson 1 (sample tasks included) • Lesson 2 • Lesson 4 (sample tasks included) **Express understanding of text:** • Lesson 7 (sample tasks included) • Lesson 8 (sample tasks included) • Lesson 9 (use this task)

[2] Culminating Writing Task: Students express their final understanding of the anchor text and demonstrate meeting the expectations of the standards through a written essay.

COLD-READ TASK[3]

Watch "Galileo: Sun-Centered System," PBS, and "Explore a Model of Earth's Yearly Revolution Around the Sun," *Classzone*. Read "Quarter of Americans Convinced Sun Revolves Around Earth, Survey Finds," by Liz Fields, independently. Then **answer** a combination of multiple-choice and constructed-response questions[4] about the text and in comparison to the other texts in the unit, using evidence for all answers. Sample questions:

1. Summarize the article. Explain why most Americans hold a misunderstanding about science. (**RI.5.1**, **RI.5.2**, **RI.5.10**)
2. How did Galileo's observation of Venus help him to develop the theory of a sun-centered system? (**RI.5.1**, **RI.5.7**)
3. Explain how Galileo used scientific investigation, his telescope, and his study of the planet Venus to determine that the Earth and other planets revolved around the sun. (**RI.5.1**, **RI.5.7**)
4. Use information from all three sources to explain how the theory of the sun and planets has changed over time. In your response, explain the theories of Ptolemy, Copernicus, and Galileo. Include why some theories were more widely accepted than others. (**RI.5.1**, **RI.5.2**, **RI.5.3**, **RI.5.6**, **RI.5.7**, **RI.5.9**, **RI.5.10**)

UNIT FOCUS	UNIT ASSESSMENT	DAILY TASKS
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• **Topic**: Scientific theories • **Themes**: The importance of observation and investigation to verify understanding • **Text Use**: Citing evidence to compare and contrast theories, applying study of literature to scientific topics, integrating sources of information to support ideas	This task focuses on: • Reading and understanding complex text • Integrating information from texts on similar topics • Writing in response to text	**Read and understand text:** • Lesson 2 • Lesson 3 (sample tasks included) **Express understanding of text:** • Lesson 5 (sample tasks included) • Lesson 6 (use this task)

[3] Cold-Read Task: Students read a text or texts independently and answer a series of multiple-choice and constructed-response questions. While the text(s) relate to the unit focus, the text(s) have not been taught during the unit. Additional assessment guidance is available at http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/end-of-year-assessments.

[4] Ensure that students have access to the complete texts as they are testing.

EXTENSION TASK[5]

Have students read *The Templeton Twins Have an Idea: Book 1* by Ellis Weiner independently throughout the unit.

Set a schedule and goals for reading and keep track of reading in a reading log or journal. (**SL.5.1a-d**, **SL.5.6**) Respond in writing to teacher-provided text-dependent prompts or tasks (see Teacher Note below for instructional opportunities). Engage groups of students in discussions around sets of questions (either teacher- or student-created) about the shared text. Students should compare the father in the novel to Richard Feynman's father.

Have students write an essay that identifies the theme of *The Templeton Twins Have an Idea*. Then have students identify key details in the novel that are similar to key details in Richard Feynman's memoir. Instruct students to identify how the father of the Templeton twins responds to certain challenges, and how those responses are similar to the responses of Feynman's father. Prompt students to use evidence from both texts to support claims. (**RL.5.1**; **RL.5.2**; **W.5.1a-b**, **e**; **W.5.2a-b**, **f**; **W.5.9a-b**; **W.5.10**)

Have students present the information to the class as a group in a multimedia presentation that presents the theme, and then explains how the father of the Templeton twins is similar to or different from Richard Feynman's father. (**SL.5.4**, **SL.5.5**, **SL.5.6**)

Teacher Note: *Help structure independent reading for students. Provide opportunities for them to collaborate in reading the text. (**RL.5.10**)*

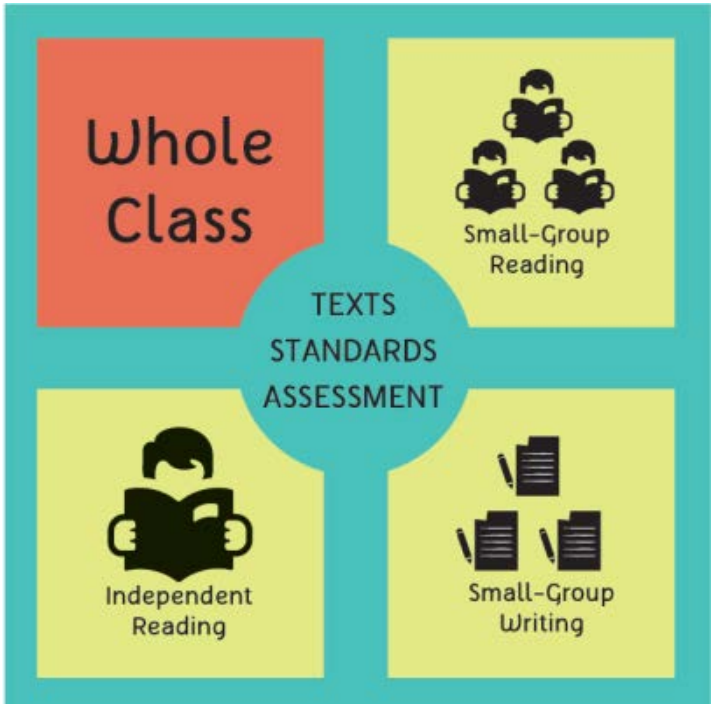
UNIT FOCUS	UNIT ASSESSMENT	DAILY TASKS
What should students learn from the texts?	**What shows students have learned it?**	**Which tasks help students learn it?**
• **Topic**: Scientific theories • **Themes**: The importance of observation and investigation to verify understanding • **Text Use**: Citing evidence to compare and contrast theories, applying study of literature to scientific topics, integrating sources of information to support ideas	This task focuses on: • Identifying theme and how it is supported by key details • Comparing key details of literary text to literary nonfiction	**Read and understand text:** • Lesson 1 (sample tasks included) • Lesson 5 (sample tasks included) **Express understanding of text:** • Lesson 7 (sample tasks included) • Lesson 10 (use this task)

[5] Extension Task: Students connect and extend their knowledge learned through texts in the unit to engage in research or writing. The research extension task extends the concepts studied in the set so students can gain more information about concepts or topics that interest them. The writing extension task either connects several of the texts together or is a narrative task related to the unit focus.

INSTRUCTIONAL FRAMEWORK

In English language arts (ELA), students must learn to read, understand, and write and speak about grade-level texts independently. To do this, teachers must select appropriate texts and use those texts so students meet the standards, as demonstrated through ongoing assessments. To support students in developing independence with reading and communicating about complex texts, teachers should incorporate the following interconnected components into their instruction.

Click here[6] to locate additional information about this interactive framework.



Whole-Class Instruction

This time is for grade-level instruction. Regardless of a student's reading level, exposure to grade-level texts supports language and comprehension development necessary for continual reading growth. ***This plan presents sample whole-class tasks to represent how standards might be met at this grade level.***

Small-Group Reading

This time is for supporting student needs that cannot be met during whole-class instruction. Teachers might provide:

1. intervention for students below grade level using texts at their reading level;
2. instruction for different learners using grade-level texts to support whole-class instruction;
3. extension for advanced readers using challenging texts.

Small-Group Writing

Most writing instruction is likely to occur during whole-class time. This time is for supporting student needs that cannot be met during whole-class instruction. Teachers might provide:

1. intervention for students below grade level;
2. instruction for different learners to support whole-class instruction and meet grade-level writing standards;
3. extension for advanced writers.

Independent Reading

This time is for increasing the volume and range of reading that cannot be achieved through other instruction but is necessary for student growth. Teachers can:

1. support growing reading ability by allowing students to read books at their reading level;
2. encourage reading enjoyment and build reading stamina and perseverance by allowing students to select their own texts in addition to teacher-selected texts.

[6] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources

TEXT SEQUENCE AND SAMPLE WHOLE-CLASS TASKS

TEXT SEQUENCE	TEXT USE
LESSON 1:[7] "The Making of a Scientist," Richard Feynman *The Templeton Twins Have an Idea: Book 1,* Ellis Weiner	**TEXT DESCRIPTION:** "The Making of a Scientist" is a memoir written by Richard Feynman about his interactions with his father and why he became a scientist. **TEXT FOCUS:** This anchor text explains Feynman's reasons for becoming a scientist, allowing students to examine the meaning and structure of the text through close reading and discussion while using context to determine the meaning of unknown words and phrases. (**RI.5.1**, **RI.5.2**, **RI.5.4**, **RI.5.5**, **W.5.9**, **SL.5.1**, **L.5.4a**) The text affords opportunity to decipher complex sentence structure through paraphrasing and support to build capacity to unpack meaning from syntactically complex text in later reading. **MODEL TASKS** **Sample Task:** • Assign *The Templeton Twins Have an Idea* for independent reading to prepare for the Extension Task. o Create structured, independent reading of the text. Provide opportunities for students to collaborate during class to read and analyze the texts. o Have students set a schedule and goals for their reading and keep track of it in a reading log or journal. o As students encounter words that impede their ability to read the text, have them select three to four of those words and work with a partner to understand the meaning and record their efforts in their reading log or journal. (**L.5.6**) This should be ongoing throughout the reading of *The Templeton Twins Have an Idea*. Example process for working with vocabulary: Define the words in context and verify the meanings with your partner. (**RI.5.4**; **L.5.4a**, **c**) Then analyze the words through semantic mapping,[8] verify their part of speech, identify how Greek or Latin affixes and roots provide clues to a word's meaning, and recognize the relationship between particular words and their associations. (**L.5.4b**, **c**; **L.5.5c**) Evaluate how the use of the words contributes to reader interest and consider how to emulate the same word use in your own writing.

[7] **Note:** One lesson does not equal one day. Teachers should determine how long to take on a given lesson. This will depend on each unique class.
[8] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class

TEXT SEQUENCE	TEXT USE
	• Access a sample lesson[9] for "The Making of a Scientist" from Achievethecore.org that incorporates a close reading task with vocabulary, syntax, discussion, and writing tasks. Due to the complex nature of the text and the placement of a 6th grade lesson at the beginning of the 5th grade year, page 6 "Directions for Teachers," #1 and #2, should be interchanged. After engaging students in an initial read-aloud exercise and analysis of "The Making of a Scientist," instruct students to reread the text in small groups or pairs. *Note: The questions and writing task are aligned to standards for a different grade level, so it is important that alignment to grade 5 standards is verified. If necessary revise the questions slightly so students meet standards for grade 5.*
LESSON 2: "What Are the Differences Between Hypothesis, Theories, and Laws?," Fayetteville-Manlius High School Pages 15-17 of *When Is a Planet Not a Planet: The Story of Pluto*, Elaine Scott	**TEXT DESCRIPTION:** "What Are the Differences Between Hypothesis, Theories, and Laws?" offers brief definitions and explanations of three of the most commonly used terms in science: hypothesis, theory, and law. Pages 15-17 of *When Is a Planet Not a Planet: The Story of Pluto* provide similar information. **TEXT FOCUS:** These brief definitions offer students the opportunity to distinguish between a scientific hypothesis, theory, and law. (**RI.5.4**) By using the relationship between these often-confused terms, students can better distinguish the use of these terms as they read the texts of this unit.(**L.5.5c**) Assign the definitions to be read independently as students take notes or highlight key parts of the definitions followed by whole-class discussion in which students identify how the three terms relate to each other. (**RI.5.3**) Have students read the excerpt from *When Is a Planet Not a Planet* in pairs. (**RI.5.10**) *When Is a Planet Not a Planet* provides an analogy to support student understanding of the terminology. Draw students' attention to this technique, asking them how Elaine Scott supports her main ideas. (**RI.5.8**) Then have students compare and contrast the presentations of each text, focusing on how each attempts to clarify the definitions of the terminology. (**RI.5.5**)
LESSON 3: "Modern Science: What's Changing?," *Understanding Science: How Science Really Works* (Berkeley)	**TEXT DESCRIPTION:** "Modern Science: What's Changing?" informs the reader of changes in science, including how technology has enhanced research. **TEXT FOCUS:** This article allows students to examine how the author connects two or more main ideas from various topics presented in the text. (**RI.5.2**, **RI.5.3**) **MODEL TASKS** **LESSON OVERVIEW:** Students work together to read and summarize sections of the article then determine two or more main ideas. (**RI.5.2**) After discussing how these ideas are connected, students evaluate how words and phrases reveal the meaning of the text. (**RI.5.4**, **L.5.4a-c**) Students conclude the lesson by presenting their group work and writing a paragraph summarizing the article. (**SL.5.1a-c**, **SL.5.4**, **W.5.2a-e**)

[9] http://achievethecore.org/page/239/the-making-of-a-scientist-by-richard-feynman

TEXT SEQUENCE	TEXT USE
	READ AND UNDERSTAND THE TEXT: • Engage in a group jigsaw[10] to examine "Modern Science: What's Changing?" The text can be broken into five parts based on the topics: "Modern Science: What's Changing?," "Publication and Peer Review," "Virtual Science," "Specialization and Collaboration," and "Regulation." (**RI.5.10**) As they read, prompt students to do the following: o Use Cornell notes[11] to summarize their section. (**RI.5.1**, **RI.5.2**) o Based on their summary, determine two or more main ideas of the text. (**RI.5.2**) Discuss as a small group how the ideas are connected. (**RI.5.3**) Add any additional key points, evidence, or reflections to the Cornell notes. (**RI.5.1**) o Reread the text and highlight or circle words and phrases that reveal the author's attitude toward the subject of the text. Explain how the author uses evidence to support points in the text. (**RI.5.8**) • Provide time for students to read *The Templeton Twins Have an Idea* independently to prepare for the Extension Task. **EXPRESS UNDERSTANDING:** • Have each group present the summary, tone, main ideas, and author's purpose, citing evidence from the text to support their analysis. (**SL.5.1a-d**, **SL.5.2**, **SL.5.3**, **SL.5.4**) • Then conduct a whole-class discussion in which students use accountable talk[12] to pose questions, draw connections between sections, and integrate information from the other sections to develop an understanding of the changes in science. Prompt students to take notes during the discussion to be used in their writing. • Instruct each student to write a paragraph that summarizes all sections of the article. Students may use the article, notes from their jigsaw group work, and notes from the class discussion to write their summary. The writing should introduce the topic; group related information together; include details and facts that support the main idea of the article; use linking words to connect ideas and information; link ideas across categories of information using words, phrases, and clauses; and include a concluding statement. (**RI.5.1**; **RI.5.2**; **W.5.2a-e**; **W.5.4**; **W.5.10**; **L.5.2a-b**, **d-e**; **L.5.3a**; **L.5.6**) • Determine the necessary support during the writing process (i.e., providing an answer frame[13] to support organizing their writing, modeling, showing models of strong and weak student work, providing descriptive feedback, etc.). • **Engage students in peer editing to ensure the paragraph meets expectations. (W.5.5)**

[10] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class
[11] http://coe.jmu.edu/learningtoolbox/cornellnotes.html
[12] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class
[13] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class

TEXT SEQUENCE	TEXT USE
	o Have the class form a single circle. Each student in the circle must have a completed written response. o Ask students to pass their written response two times to the left. o Have students complete #1 below with the written response. Then have students pass the responses to the left one time. Have students complete #2 below with the new response. Repeat until all steps are complete. 1. Read the first two sentences. Identify and underline the main idea sentence that introduces the topic. If there is no main idea sentence, write in the margin "Missing main idea sentence." 2. Locate the underlined main idea sentence. Verify the correct sentence is underlined. Read the full paragraph. Circle related information that has been grouped together. For each grouping, list at least one detail that supports the main idea sentence. 3. Read the full paragraph. Put a star next to any textual details or examples used in the response. If it supports the main idea, put a plus sign next to the example. If it does not support the main idea, put a minus sign next to the example. (**RI.5.1**, **RI.5.8**) 4. Review the sentences and locate any transitions or conjunctions. Ensure the sentences with transitions or conjunctions are formed correctly. Highlight any possible errors in green. If no transitions or conjunctions are used, suggest where one could be added. (This may require a brief mini-lesson in which the teacher models how this can be done.) (**L.5.1a**, **L.5.1e**, **L.5.6**) 5. Focus on revising the sentences to increase reader interest or develop style. (**W.5.4**, **L.5.3a**) Select a simple sentence from the paragraph. Expand the sentence by adding details, examples, or grade-appropriate words and phrases, or combine the sentence with another sentence using a grade-appropriate conjunction. (This may require a brief mini-lesson in which the teacher models how this can be done.) (**L.5.1a**, **L.5.1e**, **L.5.6**) 6. Ensure the verb tense is consistent throughout the writing. Highlight any possible errors in pink. (This may require a brief mini-lesson in which the teacher models how this can be done and students practice with verb tense.) (**L.5.1b**, **L.5.1c**, **L.5.1d**) 7. Circle strong vocabulary words in the text. If necessary, make suggestions for how to improve the vocabulary (i.e., consulting a thesaurus). (**RI.5.4**, **L.5.6**) 8. Highlight any potential spelling or grammatical mistakes in yellow, including misusing commas. (This may require a brief mini-lesson on the grade-specific expectations.) (**L.4.1g**, **L.4.2a-d**) 9. Return the written response to the original owner and ask the owner to review the feedback. Have

TEXT SEQUENCE	TEXT USE
	students rewrite their responses, revising sentences and strengthening their examples. (**W.5.4**, **W.5.5**) 10. Have students complete a final draft.
LESSON 4: *When Is a Planet Not a Planet?: The Story of Pluto,* Elaine Scott	**TEXT DESCRIPTION:** In *When Is a Planet Not a Planet?: The Story of Pluto*, Scott uses the 2006 downgrading of Pluto from a planet to a dwarf planet as an opportunity to discuss the changing nature of scientific conclusions. The text discusses how the number of planets, the classification of what can be called a planet, and how scientists come to conclusions have changed through history. Included in the text are captioned color illustrations, ranging from portraits to artistic renderings to NASA images. **TEXT FOCUS:** Students can use the illustrations that accompany the text as powerful tools for gathering information and determining meaning. (**RI.5.7**) The narrative style of the text creates opportunities for students to analyze how an author's words contribute to developing meaning in a text. (**L.5.3a**) **MODEL TASKS** **LESSON OVERVIEW:** Students first listen to *When Is a Planet Not a Planet?: The Story of Pluto* read aloud by an expert reader and then reread the text with a partner. They complete various graphic organizers to demonstrate understanding of the main ideas, key details, and domain-specific vocabulary words presented in the text. Students end the lesson by writing a paragraph response about the main ideas of the text. (**RI.5.1**, **RI.5.4**, **RI.5.10**) **READ AND UNDERSTAND THE TEXT:** • Read aloud the Introduction, Chapter 1: "The Wanderers," and Chapter 2: "Some Early Astronomers" once as students follow along to model reading with accuracy, appropriate rate, and expression. Then strategically group readers (one more able and one less able) in a paired reading[14] of the chapters, taking turns reading alternate sentences and providing assistance to each other using context to confirm or self-correct their word recognition and understanding until the entire text has been read. Circulate throughout the classroom to monitor students' oral reading and to ensure accuracy, appropriate rate, and expression are evident. (**RF.5.4a**, **b**, **c**) Additional techniques for how to address fluency can be found within the ELA Instructional Framework.[15] • Create a vocabulary list from pages 1-6 of *When Is a Planet Not a Planet?* as a class. Include *astronomical*, *societies*, *ancient, ancestors*, *crescent-shaped, sliver*. First, have students define the words in context. (**RI.5.4**, **L.5.4a**) **Then** have

[14] http://www.fcrr.org/studentactivities/F_022b.pdf
[15] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/small-group-reading

TEXT SEQUENCE	TEXT USE
	them verify the preliminary definitions of the words using a dictionary. (**L.5.4c**) • Ask students to practice pronouncing the words on the vocabulary list with a partner. Then have the pairs take turns reading aloud a paragraph[16] from pages 1-6 to each other. (**RF.5.3a**, **RF.5.4a-c**, **L.5.6**) • Conduct a discussion in which students analyze the ways Elaine Scott develops a main idea in the first portion of the text. (**RI.5.2**, **SL.5.1a-d**, **SL.5.4**, **SL.5.6**) Ensure students use accountable talk[17] throughout the discussion to pose and respond to the questions of others and refer to specific textual details, quoting accurately. (**RI.5.1**) Keep track of answers on the board and have students record information in notes or on a reading log. Possible questions: o Reread pages 1-6. Summarize the focus of each paragraph into one sentence. Based on the introduction, what is a focus or main idea of the book? (**RI.5.2**) On page 5, what evidence does the author provide to support the statement that "people have paid attention to object in the night sky" since "the beginning of time"? (**RI.5.8**) • Have students read pages 7-13 in small groups. While reading, have students complete a timeline[18] to summarize Chapter 2: "Some Early Astronomers." Ask students to write the name of each scientist and the dates he lived in the middle of the timeline in the order they are introduced in Chapter 2. For each bubble coming off the scientist's name, have students record the following information: o A description of the scientist's discoveries or theories o Whether the scientist was proven right or wrong and who agreed or disagreed (if available) • Conduct a discussion in which students analyze the information on their graphic organizers to further understand Chapter 2. (**SL.5.1a-d**, **SL.5.4**, **SL.5.6**) Ensure students use accountable talk[19] throughout the discussion to pose and respond to the questions of others and refer to specific textual details, quoting accurately. (**RI.5.1**) Keep track of answers on the board and have students record information in notes or on a reading log. Possible questions: o How do the various ideas of the scientists connect to each other? (**RI.5.3**) o Identify the words and phrases the author uses to make connections between the scientists and their ideas and support reader understanding of those connections. (**RI.5.4**, **RI.5.8**, **L.5.1a**) o Why did the author include this chapter in the text? What is a main idea of Chapter 2 of the text? (**RI.5.2**)

[16] http://www.fcrr.org/studentactivities/F_014c.pdf
[17] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class
[18] http://freeology.com/wp-content/files/blanktimelineblack.pdf
[19] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class

TEXT SEQUENCE	TEXT USE
	• Read aloud Chapter 3: "Ideas That Work and Those That Don't" as students follow along. • Create a vocabulary list from Chapter 4 of *When Is a Planet Not a Planet?* as a class. Include *farthest, terrestrial*, *composed*, *primarily, nebula*, *protoplanetary*, *swirled, instruments*, *orbital*, *oblong*, *originally*. First, have students define the words in context. (**RI.5.4**, **L.5.4a**) **Then** have them verify the preliminary definitions of the words using a dictionary. (**L.5.4c**) • Ask students to practice pronouncing the words on the vocabulary list with a partner. Then have the pairs take turns reading aloud a paragraph[20] from Chapter 4 to each other. (**RF.5.3a**, **RF.5.4a-c**, **L.5.6**) • Conduct a discussion in which students analyze the ways Elaine Scott develops a main idea in Chapter 4. (**RI.5.2**, **SL.5.1a-d**, **SL.5.4**, **SL.5.6**) Ensure students use accountable talk[21] throughout the discussion to pose and respond to the questions of others and refer to specific textual details, quoting accurately. (**RI.5.1**) Keep track of answers on the board and have students record information in notes or on a reading log. Possible questions: o Reread paragraphs 1-4 of Chapter 4. What are the differences between the planets closest to the sun and farthest from the sun? Summarize the theory the author provides for these differences. (**RI.5.2**, **RI.5.8**) o Reread the first full paragraph on page 24. How are the various sentences in the paragraph organized? What words or phrases reveal the organization? (**RI.5.4**, **L.5.1a**) o Reread the second full paragraph on page 24. How are the sentences organized differently in this paragraph from the previous paragraph? What words or phrases reveal the organization? (**RI.5.4**, **RI.5.5**, **L.5.1a**) o What are the various "problems with Pluto"? How do the illustrations and graphics support understanding of the information in the chapter? (**RI.5.3**, **RI.5.7**) o What is the main idea of Chapter 4? (**RI.5.2**) • Read aloud Chapter 5: "Finding Planets" and Chapter 6: "What Is a Planet?" • Work as a class to determine a main idea of the last two chapters. Then have students review the main ideas identified throughout the text. Have students select two main ideas. Underneath each main idea statement, ask students to list bulleted ideas and quotations from the text that support each main idea. • Continue to provide time for students to read *The Templeton Twins Have an Idea* independently over the course of the

[20] http://www.fcrr.org/studentactivities/F_014c.pdf
[21] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class

TEXT SEQUENCE	TEXT USE
	unit to prepare for the Extension Task. (**RL.5.10**; **RF.5.3a**; **RF.5.4.a**, **c)** **EXPRESS UNDERSTANDING:** • Have students write a response to the following prompt: Determine the main ideas of *When Is a Planet Not a Planet?: The Story of Pluto* and explain how specific details from the text support the main ideas. Refer to information from the text to support your response. (**RI.5.1**, **RI.5.2**, **RI.5.10**, **W.5.2a-e**, **W.5.10**) Depending on student writing ability, determine the necessary support during the writing process (i.e., providing an **answer frame**[22] to support them in organizing their writing, modeling, showing models of strong and weak student work, providing descriptive feedback, etc.). Use the following process with students: o Students identify their writing task from the prompt provided. o Students complete an evidence chart as a prewriting activity. Remind students to use any relevant notes they have compiled. An evidence chart has two columns: (1) Evidence: detail or example, (2) Elaboration/explanation of how this evidence supports the student's ideas. (**RI.5.1**, **W.5.2b**, **W.5.9b**) o Once students have completed the evidence chart, encourage them to look back at the writing prompt to remind themselves what kind of response they are writing and to think about the evidence they found. o Student pairs review each other's evidence chart and offer feedback. (**W.5.5**) o Students develop a main idea statement.[23] This could be done independently or with a partner, a small group, or the entire class. As needed, model for students how to create a main idea statement. (**W.5.2a**) o Students complete a first draft. o Then the class forms a single circle. Each student in the circle must have a completed written response. Ask students to pass their written response two times to the left. Have students complete #1 below with the written response. Then have students pass the responses to the left one time. Have students complete #2 below with the new response. Repeat this process until all steps are complete. 1. Read the first paragraph. Identify and underline the main idea sentence that introduces the topic. If there is no main idea sentence, write in the margin "Missing main idea sentence."

[22] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class

[23] Resources for developing thesis statements: http://owl.english.purdue.edu/owl/resource/545/01/ or http://www.indiana.edu/~wts/pamphlets/thesis_statement.shtml.

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	2. Locate the underlined main idea sentence. Verify the correct sentence is underlined. Read the full essay. Next to each paragraph, write a one-sentence summary. Underneath each summary sentence, list at least one detail that supports the main idea sentence. 3. Read the full essay. Put a star next to any textual details or examples used in the response. If it supports the main idea, put a plus sign next to the example. If it does not support the main idea, put a minus sign next to the example. (**RI.5.1**, **RI.5.8**) 4. Review the sentences and locate any transitions or conjunctions. Ensure the sentences with transitions or conjunctions are formed correctly. Highlight any possible errors in green. If no transitions or conjunctions are used, suggest where one could be added. (This may require a brief mini-lesson in which the teacher models how this can be done.) (**L.5.1a**, **L.5.1e**, **L.5.6**) 5. Focus on revising the sentences to increase reader interest or develop style. (**W.5.4**, **L.5.3a**) Select a simple sentence from the paragraph. Expand the sentence by adding details, examples, or grade-appropriate words and phrases, or combine the sentence with another sentence using a grade-appropriate conjunction. (This may require a brief mini-lesson in which the teacher models how this can be done.) (**L.5.1a**, **L.5.1e**, **L.5.6**) 6. Ensure the verb tense is consistent throughout the writing. Highlight any possible errors in pink. (This may require a brief mini-lesson in which the teacher models how this can be done and students practice with verb tense.) (**L.5.1b**, **L.5.1c**, **L.5.1d**) 7. Circle strong vocabulary words in the text. If necessary, make suggestions for how to improve the vocabulary (i.e., consulting a thesaurus). (**RI.5.4**, **L.5.6**) 8. Highlight any potential spelling or grammatical mistakes in yellow, including misusing commas. (This may require a brief mini-lesson on the grade-specific expectations.) (**L.4.1g**, **L.4.2a-d**) 9. Return the written response to the original owner and ask the owner to review the feedback. Have students rewrite their responses, revising sentences and strengthening their examples. (**W.5.4**, **W.5.5**) o Students complete a final draft.
LESSON 5: "Galileo" from *Pioneer Astronomers,* Navin Sullivan, or "Galileo Galilei:	**TEXT DESCRIPTION:** "Galileo Galilei: Biography, Inventions & Other Facts" provides the reader with a short biography of Galileo's life, specifically describing his work with pendulums and telescopes. The video explains the development and enhancement of the telescope. **TEXT FOCUS:** Watching the video while reading the biography will help students understand the development of the telescope over time. Students explain the relationship between Galileo's and Newton's work with the telescope. (**RI.5.3**) Students will

TEXT SEQUENCE	TEXT USE
Biography, Inventions & Other Facts," Nola Taylor Redd (SPACE.com) Minutes 22:23-29:01 of "**Galileo's Telescope: How He Changed the World**," Discovery Channel Science Documentary	integrate information from the text and the video in order to write about the development of the telescope knowledgeably. (**RI.5.9**) Studying these texts together provides practice for the cold-read assessment, as students do this work collaboratively before having to engage in similar tasks independently. **MODEL TASKS** **LESSON OVERVIEW:** Students read "Galileo Galilei: Biography, Inventions & Other Facts" in small groups, defining key vocabulary throughout. Watch the video linked to the biography, as well as "Galileo's Telescope: How He Changed the World" as a class. Students take notes and build their understanding of the telescope in order to respond to a writing prompt about the development of the telescope. **READ THE TEXT:** • Have students read "Galileo Galilei: Biography, Inventions & Other Facts" in small groups, summarizing the text and defining key vocabulary throughout, consulting reference material when needed. (**RI.5.2**, **RI.5.10**, **L.5.4c**) • Watch the videos as a class after reading the biography. Have students take anecdotal notes while watching the videos. • Continue to provide time for students to read *The Templeton Twins Have an Idea* independently over the course of the unit to prepare for the Extension Task. (**RL.5.10**; **RF.5.3a**; **RF.5.4.a**, **c)** **UNDERSTAND THE TEXT:** • Have each student independently determine two or more main ideas from "Galileo Galilei: Biography, Inventions & Other Facts" and identify key details to support the main ideas, using their notes from the small-group read. Have students share their summaries of the text, including main ideas and details. (**RI.5.2**) • Facilitate a discussion of general academic and domain-specific words from the text by eliciting volunteers to share out definitions from the group reading. Sample vocabulary words from the text include: *insights*, *parabola, pendulum, arc, sunspots, contemporaries*, *imply*, *celestial, and heresy.* **EXPRESS UNDERSTANDING:** • Instruct students to work collaboratively to answer questions about the texts in writing, such as (**RI.5.7**, **RI.5.9**): o The text says that Galileo "laid the foundation for future scientists." What does this phrase mean? (**RI.5.4**) o What did Galileo do before designing the first pendulum clock? (**RI.5.1**) How did those experiments lead to the invention of the pendulum clock? (**RI.5.3**) Cite evidence from the text and videos to support your answer. o Explain the relationship between Galileo and the method of scientific investigation. (**RI.5.3**)

TEXT SEQUENCE	TEXT USE
	○ How did Galileo solve the problem of fuzzy images in the telescope? (**RI.5.1**) ○ What did Newton discover about the light of a telescope? (**RI.5.1**) ○ Compare and contrast Galileo's and Newton's thoughts about the telescope. Explain how their contributions to the telescope shaped the way that we see a telescope today. (**RI.5.1**, **RI.5.2**, **RI.5.3**, **RI.5.7**, **RI.5.9**) • After all students have turned in their written responses, discuss the questions using accountable talk.[24] Then hand back the responses and allow students to revise what they have written in a different colored ink based on the discussion, focusing on improving the relevancy of their evidence and accuracy of their response. (**W.5.4**, **W.5.5**)
LESSON 6: "Quarter of Americans Convinced Sun Revolves Around Earth, Survey Finds," Liz Fields "Galileo: Sun-Centered System," PBS "Explore a Model of Earth's Yearly Revolution Around the Sun," *Classzone*	**TEXT DESCRIPTION:** The article explains that many Americans still have misconceptions concerning science theory. The videos provide information on several scientists' theories of the revolution of the sun and planets, as well as a video of the Earth's rotation around the sun. **TEXT FOCUS:** Pairing these videos with the article allows students to analyze multiple explanations of the same events and explain the relationship of changing ideas over time. (**RI.5.3**, **RI.5.6**) Students will integrate information from these texts in order to write about the theories of the sun and planet revolution. (**RI.5.9**) **MODEL TASK** **SAMPLE SUMMATIVE TASKS:** Cold-Read Task
LESSON 7: "New Theory: Galileo Discovered Neptune," Robert Roy Britt (SPACE.com) "The Making of a Scientist," Richard Feynman	**TEXT DESCRIPTION:** The article provides information that leads the reader to the understanding that Galileo discovered Neptune years before it was "officially" discovered. **TEXT FOCUS:** Reading this text, which describes Galileo, allows students to compare Galileo to Richard Feynman's father. **MODEL TASKS** **LESSON OVERVIEW:** Students read the article in small groups, noting the evidence that suggests Galileo discovered Neptune. After sharing out evidence gleaned from the text, students participate in a whole-class discussion comparing the scientific ideals of Galileo and Feynman's father.

[24] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class

TEXT SEQUENCE	TEXT USE
	READ AND UNDERSTAND THE TEXT: • Assign "New Theory: Galileo Discovered Neptune" **to be read in small groups. Instruct students to underline the evidence that suggests Galileo discovered Neptune years before the officially noted discovery date. (RI.5.1, RI.5.2, RI.5.3, RI.5.8)** • After the small-group reading, have students share out examples of evidence supporting the author's claim, then emphasize Galileo's diligent note-taking and observation skills. (**RI.5.1**, **RI.5.2**, **RI.5.3**) • Write the following quote from the Feynman memoir on the board: "I learned very early the difference between knowing the name of something and knowing something." Then ask students the following questions: o How does this quote serve as the main idea of both the memoir and the Galileo article? (**RI.5.2**, **RI.5.9**) o What details from the article support this idea? (**RI.5.3**) • Conduct a Socratic seminar[25] that explores the following question: How did Galileo and Richard Feynman's father use the scientific method to explore the world around them? (**RI.5.1**, **RI.5.2**, **RI.5.3**) o Prior to the seminar, have student pairs locate evidence from the text to support their answers. Have students include their evidence and notes in their events and character graphic organizer begun in a previous lesson. (**RI.5.1**, **W.5.8**, **SL.5.1a**) o During the seminar, divide the class into two circles (inner and outer), with one partner on the inner circle and one partner on the outer circle. (**SL.5.1b**, **c**, **d**; **SL.5.4**; **SL.5.6**) o Then have the inner circle discuss the questions for five minutes. As the inner circle discusses, prompt each partner in the outer circle to evaluate the partner's specific claims and use of evidence, assessing the reasoning and evidence. (**SL.5.3**) Students can record their comments using a backchannel platform like TodaysMeet. (**W.5.6**) o Following the first discussion, allow the pairs to discuss their performance and offer suggestions for improvement. Then swap circles. Have the second group of students discuss for five minutes. **EXPRESS UNDERSTANDING:** • Following the seminar, have students independently write a response to the following prompt: The text suggests that Richard Feynman's father and Galileo knew, "the difference between knowing the name of something and knowing

[25] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class

TEXT SEQUENCE	TEXT USE
	something." What was meant by that? Use evidence from the text to support your explanation of this statement.
LESSON 8: Chapter 8 of *Giants of Science: Isaac Newton*, Kathleen Krull	**TEXT DESCRIPTION:** Chapter 8 explains to the reader how Edmund Halley persuaded Isaac Newton to develop and publish his work on the laws of motion. **TEXT FOCUS:** This text affords students the opportunity to practice reading complex text with appropriate rate and expression. Students can make connections between the ideas and concepts in the text (**RI.5.3**) while integrating information from texts previously read in the unit to connect to Newton's work. (**RI.5.3**, **RI.5.9**) **MODEL TASKS** **LESSON OVERVIEW:** Students read and summarize Chapter 8 of *Giants of Science: Isaac Newton* in small groups, **taking notes on the interaction between the individuals. Students participate in a Fishbowl discussion in which they explain the interaction between Isaac Newton and Edmund Halley and Isaac Newton and Humphrey Newton, and then support their opinion on the topic in a written paragraph.** **READ AND UNDERSTAND THE TEXT:** • Ask an expert reader to read aloud Chapter 8 of *Giants of Science: Isaac Newton* while students follow along. • **Note for Small-Group Reading:** Teachers may choose to engage struggling readers with additional readings of whole-class texts either before or after the texts are read as a whole class. This will provide extra time for students to process the information. This can help students be more prepared to participate in the whole-class discussion. Have students who are struggling with reading fluency (a rubric for assessing reading fluency is available here[26]) listen to an audio recording of Chapter 8 while following along with the printed text in advance of reading the text in class. Students can then listen to the recording a second time and read the text out loud along with the recording to practice reading with the appropriate rate and expression. (**RF.5.4b**) Additional techniques for how to address fluency can be found within the ELA Instructional Framework.[27] • Create a vocabulary list from Chapter 8 of *Giants of Science: Isaac Newton* as a class. Include *paranoid, divulging, sabotaged, analysis, nemesis, elliptical, pilgrimage, principles, publication, criticism, applications, fundamental, circumstances.* First, have students define the words in context. (**RI.5.4**, **L.5.4a**) **Then p**rovide students with a list of Greek and Latin affixes and roots and have them verify the preliminary definitions of the words based on their affixes or using a

[26] http://www.timrasinski.com/presentations/multidimensional_fluency_rubric_4_factors.pdf

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	dictionary. (**L.5.4b**, **c**) Reinforce understanding by having students illustrate the various relationships of the words (synonyms, antonyms, cause/effect, shades of meaning, etc.) through semantic maps.[28] (**L.5.5c**) • Ask students to practice pronouncing the words on the vocabulary list with a partner. (**RF.5.3a**) Then have the pairs take turns reading aloud a paragraph[29] from Chapter 8 to each other. (**L.5.6**) • Reread the bottom of page 80 through page 85 aloud to the students. Conduct a discussion in which students analyze the significance of Newton's work, including the ways that his work is connected to the work of all scientists who followed him. (**RI.5.3**, **SL.5.1a-d**, **SL.5.4**, **SL.5.6**) Ensure students use accountable talk[30] throughout the discussion to pose and respond to the questions of others and refer to specific textual details, quoting accurately. (**RI.5.1**) o Explain the relationship between Newton's three laws of motion and his theory of gravitation. (**RI.5.3**) How does Newton use the "same *principles*" to connect the laws and the theory? (**RI.5.1**, **RI.5.2**, **RI.5.3**, **L.5.4**) o How do scientists use Newton's "rules of reasoning" today? What is the significance of these rules for all scientists who came after Newton? (**RI.5.1**, **RI.5.2**, **RI.5.3**) • Display or project the last paragraph on page 84 and the first on page 85: "Newton, genius that he was, realized that even he would not find answers to all the questions he had. And he would make mistakes. So he reassured future scientists by admitting, 'To explain all nature is too difficult a task for any one man, or even for any one age. 'Tis much better to do a little with certainty, and leave the rest for others that come after you, than to explain all things.' So his book was like a box of toys, with enough in it for all the thinkers who came after him to play with." Have students rewrite the paragraph into their own words. • Ask students, "How do these two paragraphs support the idea that Newton intentionally made his book difficult to comprehend? Explain Halley's impact on Newton's work. What is the meaning of 'so his book was like a box of toys'? How does Newton ensure a connection between himself and scientists for years to come?" (**RI.5.2**, **RI.5.3**, **RI.5.4**, **L.5.1a**, **L.5.4a**, **L.5.5a**, **L.5.5c**, **L.5.6**) • Then divide the class into pairs to explain the importance of *The Principia* to science. (**RI.5.3**) Ask students to independently reread Chapter 8. As they read, have the pairs locate details and words in this chapter that explain the significance of Newton's work. Have students record their findings in a journal. (**RI.5.1**, **RI.5.4**, **RI.5.8**, **L.5.5a**, **L.5.6**) Have each pair partner with another pair to share their findings. (**SL.5.1a-d**) Prompt the pairs to discuss and add any details

[29] http://www.fcrr.org/studentactivities/F_014c.pdf
[30] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class

TEXT SEQUENCE	TEXT USE
	that may have been missed. • Create a class summary of Chapter 8 based on the notes created by each pair. Then determine the main ideas of the text as a class. (**RI.5.2**) • Continue to provide time for students to read *The Templeton Twins Have an Idea* independently over the course of the unit to prepare for the Extension Task. (**RL.5.10**; **RF.5.3a**; **RF.5.4.a**, **c)** **EXPRESS UNDERSTANDING:** • Conduct a philosophical chairs debate[31] focused on the following question: Which individual—Edmund Halley or Humphrey Newton—had the most influence over Newton completing the *Principia*? (**RI.5.1**, **RL.I.2**, **RI.5.3**, **RI.5.9**) o Prior to the debate, ask students to form an initial opinion. Have the two groups (one that selected Halley and one that selected Newton) work together to write an opening argument for the debate. The argument should present the group's opinion and provide reasons and evidence from the texts as support; use grade-appropriate words and phrases, including transitions and conjunctions; and provide a relevant conclusion. (**RI.5.1**, **W.5.1a-d**, **SL.5.1a-b**) o Form two lines facing each other, with one line representing Halley and one line representing Newton. o Ask each group to present their opening argument. (**SL.5.4**, **SL.5.6**) o Then have the students discuss their reasons and evidence, asking questions, challenging thoughts or evidence, and presenting additional reasons. Ensure that students explain how the ideas presented in the discussion support the discussion question and locate additional evidence that supports or negates the claims presented. (**SL.5.3**) The goal of the discussion is for students to convince other students to agree with their opinion. As students change their opinions, prompt them to change lines to represent the change in their opinion. (**SL.5.1c-d**) o After the debate, have students return to their original groups to review their initial claims and evidence given what was presented from others during the class discussion. (**W.5.8**, **SL.5.1d**) • Then have students independently write an essay in response to the discussion prompt: Which individual—Edmund Halley or Humphrey Newton—had the most influence over Newton completing the *Principia*? Prompt students to state their opinions and provide logically ordered reasons that are supported by textual evidence. (**RI.5.1**; **RI.5.3**; **RI.5.9**;

[31] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class

TEXT SEQUENCE	TEXT USE
	W.5.1a-d; **W.5.4**; **W.5.9a-b**; **W.5.10**; **L.5.1b-d**; **L.5.2a-b, d-e**; **L.5.3a**; **L.5.6)** Depending on student writing ability, determine the necessary support during the writing process (i.e., providing an **answer frame**[32] to support them in organizing their writing, modeling, showing models of strong and weak student work, providing descriptive feedback, etc.). Use the following process with students: o Students identify their writing task from the prompt provided. o Students complete an evidence chart as a prewriting activity. Remind students to use any relevant notes they have compiled. An evidence chart has two columns: (1) Evidence: detail or example, (2) Elaboration/explanation of how this evidence supports the student's opinion. (**RI.4.1**, **W.5.1b**, **W.5.9b**) o Once students have completed the evidence chart, prompt them to look back at the writing prompt to remind themselves what kind of response they are writing and to think about the evidence they found. o Student pairs review each other's evidence chart and offer feedback. (**W.5.5**) o Students develop a main idea statement.[33] This could be done independently or with a partner, a small group, or the entire class. As needed, model for students how to create a main idea statement. (**W.5.1a**) o Students complete a first draft. o **Engage students in peer editing to ensure the essay meets expectations for content, organization, style, and grammar.** (**W.5.4**, **W.5.5**) **Use a process similar to Lesson 4.** o Have students complete a final draft.
LESSON 9: "**The Making of a Scientist**," Richard Feynman	**TEXT DESCRIPTION:** "The Making of a Scientist" is a memoir written by Richard Feynman about his interactions with his father and why he became a scientist. **MODEL TASK** **SAMPLE SUMMATIVE TASK: Culminating Writing Task**
LESSON 10: *The Templeton Twins Have*	**TEXT DESCRIPTION:** *The Templeton Twins Have an Idea* is the story of two children who were kidnapped so that their father would turn over one of his inventions to his nemesis.

[32] http://www.louisianabelieves.com/resources/classroom-support-toolbox/teacher-support-toolbox/lesson-assessment-planning-resources/whole-class

[33] Resources for developing thesis statements: http://owl.english.purdue.edu/owl/resource/545/01/ or http://www.indiana.edu/~wts/pamphlets/thesis_statement.shtml.

TEXT SEQUENCE	TEXT USE
an Idea: Book 1, Ellis Weiner	**TEXT FOCUS:** Students determine a theme and relate it to the main ideas of the anchor text. Students identify and write about challenges faced by the father and discuss how his responses compare to the responses of Feynman's father. **MODEL TASK** **SAMPLE SUMMATIVE TASK:** Extension Task