

ELA Lesson Plan #1 (short version¹)

Lesson Title	LESSON 1: What is Science?	Class Level /GLE	Intermediate/4-8 GLE
Unit Title	Find It! Prove It!: Introducing the Scientific Method	Teacher Name	Joan Schottenfeld
<p>NOTE: This is a heavily scaffolded lesson that introduces students to the concept of “science” using a KWL Chart, annotation, and summarizing. Future lessons will transfer responsibility to students for using and integrating these processes with growing independence as they read to <u>build background knowledge</u> related to the topic of each experiment.</p> <p>Estimated lesson time: 1 hour and 35 minutes</p>			

CCRS AE <i>(use notation & shorthand)</i>	ELA Learning Objectives By the end of this lesson, students will be able to:	Evidence of Learning Students will show their learning by:
R1C (read closely and cite)	Annotate and reference key details in scientific texts	Annotating a text about the study of science; citing text to support claims in the class discussion; Exit Ticket reflections
R2C (main idea and details; summary)	Identify the main idea in each paragraph of a scientific text; create an oral summary	Margin notes and text markings as part of the “Getting the Gist” activity; Exit Ticket reflections
L6 (acquire and use vocab)	Define “science,” “scientist,” and “evidence”	Accurately using science, scientist, and/or evidence in the Exit Ticket

Student Texts and Other Resources	
<ul style="list-style-type: none"> ● Include authentic print and/or digital texts that are appropriate for adults. ● Include texts that accurately and respectfully represent diverse identities, cultures, and perspectives. 	<ul style="list-style-type: none"> ● Include text complexity level for each text. ● List instructional videos, websites, and handouts for students. ● Include hyperlinks.
<ul style="list-style-type: none"> ● What Is Science? (GLE 4), What Is Science? (GLE 6), or another short text on the topic ● Lab journals (notebooks, paper folders, or Google Drive folders) ● (Optional) Handout: Getting the Gist ● (Optional) Post-it notes (two different colors if possible) 	

¹ To read more in-depth descriptions of certain steps in the lesson plan, click on “Tell me more about this” where indicated. You will be taken to the longer version of the lesson plan.

Instructional Shifts <i>(Which ones are addressed in this lesson?)</i>	X	Engage with complex text and its academic language.
	X	Ground reading, writing, and speaking in evidence from literary and informational texts.
	X	Build knowledge through content-rich nonfiction.

Instructional Process <i>Sequence and concisely describe culturally-responsive and evidence-based instruction.</i>	
<ul style="list-style-type: none"> ● Incorporate the “I do,” “We do,” “You do” model. ● Contextualize skill instruction within authentic texts and tasks. ● Incorporate a variety of tasks and interactions that foster engagement. ● Support learners in making connections to their lives. 	<ul style="list-style-type: none"> ● Involve students in using technology to find, evaluate, consume, create, organize, communicate, and share digital content. ● Include choice and flexibility where appropriate to meet diverse needs. ● Provide additional modifications as needed for English Learners, students with learning disabilities (LD), and students at different levels.

TIME ESTIMATE: 95 minutes

TIME / MATERIALS	STEP-BY-STEP DIRECTIONS	FURTHER DIFFERENTIATION <i>(e.g., EL, LD, different levels)</i>
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Warm-Up/Introduction

- Review unit goal/cumulative project.
- Review key learnings from previous lesson(s)/Activate prior knowledge.
- Introduce the objectives—and address why they are important.

10 min. 4 carnations in jars of water	<p><i>(Prep: Place four white carnations in clear jars filled halfway with water. Display where students can see them.)</i></p> <ol style="list-style-type: none"> 1. Explain that today the class is starting a new unit, about the basics of science. Draw students’ attention to the white carnation in clear jars prepared before class and mention that these will be used in the lesson to help us think about key aspects of what we call “science.” 2. Think-Pair-Share: Ask students to talk in pairs for 3 minutes about the following: <ul style="list-style-type: none"> ● What is involved in the study of science? ● What “makes” a scientist? ● Is science important? Why or why not? ● Do you “like” science? Invite a few pairs to report out and emphasize any mention of “experiments” or “the scientific method” and why science is important. 3. Lesson Objectives: Explain that in today’s lesson, students will build on what they already know about science to develop working 	
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	<p>definitions of science and scientists. That understanding will move the class into understanding the scientific method in the next lesson.</p> <p>4. Culminating Project: Overview the culminating project by saying something like: <i>“By the end of the unit, you’ll be reading, writing, and speaking like scientists: reading and conducting simple experiments, writing up what you find, and sharing conclusions with others. We need to understand how science is done and how to evaluate it. We’ll also be building knowledge about some science topics, which is important for understanding our world.”</i></p> <ul style="list-style-type: none"> ● Build on students’ earlier comments to suggest that these skills are important because, even if they aren’t going to be scientists, so much of our adult lives is informed by science. 	
<p>Body</p> <ul style="list-style-type: none"> ● Explain and model 1) the target knowledge or skill and/or 2) processes to follow to accomplish tasks. ● Provide scaffolded practice and feedback. ● Engage learners in inquiring, exploring, and problem-solving. ● Include multiple kinds of interactions (e.g., whole group, small group, pairs). ● Pose questions that require critical thinking and evidence from text. ● Use technology appropriate to the task(s). 		
<p>75 min</p> <p>What Is Science? (GLE 4) What Is Science? (GLE 6) or another short text</p> <p>KWL Chart (Google Doc)</p>	<p>Introducing the KWL Chart (15 min.)</p> <ol style="list-style-type: none"> 1. Introduce/Review the idea that readers always bring what they know to the task of reading. Explain that as students read about science today, they will want to continue to think about what they already know. One tool they can use to track their own learning and help them better integrate new information with old is called a KWL Chart. 2. Before distributing the text (either “What Is Science?” or another text that introduces the concept of science), display the text using an LCD projector, SMARTBoard, Zoom whiteboard, or a Jamboard. Explain/remind students that skilled readers always <u>preview</u> a text to get an idea of what it’s about and what they might want to pay attention to. Direct them to the <u>title</u>, <u>boldfaced words</u>, and any <u>headings</u> or <u>images</u>; ask for predictions about what the text will be about. (You may want to cover the text in the paragraphs or replace the text with XXXXXX to make the point that the other features can give us a sense of the topic of the text. That information can help the reader start to think about what they already know about a topic.) <ul style="list-style-type: none"> ● Be sure to ask learners to refer to justify their predictions. introduce the idea of “evidence” - that scientists, and skilled readers—are trained to focus on the evidence they have for 	<p>Since this is the first and thus a heavily-scaffolded lesson, all students are using the same text. (They will use leveled texts in future lessons.) The selected text should be at a text complexity level that the lower performing students may find challenging but not frustrating.</p> <p>Alternatively, two levels of the text are provided, if the</p>

	<p>claims that they make. In this unit (and always in this class), we'll be asking each other things like "Why do you think that? Where did you see/hear/read that? What makes you think that?"</p> <p>3. Explain that now it's time to think about what they already know about science, before they read the article. Introduce the KWL chart (Google Doc) and lead the class in completing the "Know" (K) and then the "Want to Know" (W) columns. (Explain that the class will walk through the process together today but that by the end of the unit, students will be able to use the chart by themselves.</p>	<p>spread of reading levels in your classroom is too wide to use just one text.</p> <p>If students are already familiar with how to use a KWL Chart independently, they may work in groups to complete the first 2 columns. If this is the class's first experience with Google Docs, be sure to explain how it works and draw attention to how you are adding text.</p> <p>Provide question starters as needed: Who? What? Where? When? Why? How?</p>
<p>Optional (for in-person): Post-it notes</p> <p>Optional (for remote): Post text on a virtual whiteboard (e.g., Jamboard). Use the annotation tools during the "I Do" and "We Do," so students are ready to use those in virtual breakout rooms at the</p>	<p>Reading the Text (30 min.)</p> <p>4. Explain that now it's time to read the text to see if students can find answers to their questions.</p> <p>5. Introduce the Getting the Gist summarizing approach: Explain that scientists need to read a lot about their topics in order to think critically about them. In this unit, students will be learning a reading strategy that they can apply when they want to learn from science texts, but it can also be applied when reading texts on other topics. It's a "high-power" strategy.</p> <p>6. "I Do": Continue to display and do a think-aloud with the first paragraph, reading the paragraph aloud, marking the text, writing the topic in the left margin (or on a post-it note), and the main idea in the right margin.</p> <p>7. "We Do": Invite a student (or use popcorn or Collaborative Oral Reading) to read the next paragraph aloud. After the reading, ask for suggestions about what to underline/highlight in the paragraph and why. Highlight and make margin notes as appropriate, being sure to discuss and celebrate what is being learned. Using student input, in the left margin, write the topic; in the right margin, write the main idea. (Students do the same on their copies.)</p>	<p>In situations where there is little room in the text margins and post-it notes are unavailable, students can use a chart to capture the main ideas of each paragraph.</p>

<p>“Y’all Do” stage.</p>	<p>8. “Y’all Do”: For the next paragraph, have students in pairs to read, annotate, and find the topic and main idea. Debrief, ensuring that students back up their claims with evidence from the text (e.g., <i>How do you know that? What evidence do you have to support that statement?</i>). [Continue for the remaining paragraphs, stepping in with more scaffolding as needed. Note: It’s best to have a short text for this first reading.]</p> <p>9. Summarizing: When the main idea for each paragraph has been noted in the right margin, point out that if they read through the list of statements in the “Main Idea” column, they have automatically created a simple summary of the whole text. Have someone demonstrate.</p> <p>10. Explain why you find the Getting the Gist strategy useful (e.g., <i>“Reading closely and marking the text keeps my attention;” “Trying to come up with the idea that links all the details together somehow cements the info in my brain. I suspect I’ll remember a lot of this info tomorrow!”</i>). Solicit student input, but it may not be until they see how they’re able to later recall what they’ve read that they’ll see the benefit. Consider asking them to try to summarize what they’ve read with a family member that evening and see what they think.</p>	<p>Mixed grouping is fine here. Students will practice in leveled groups in future lessons. However, if you are using 2 different levels of text, pair students reading the same level together.</p>
<p>Partially completed KWL Chart from earlier in the lesson</p>	<p>Completing the KWL Chart (15 min.)</p> <p>11. Return to the KWL Chart and as a class complete the “What We Learned” (L) column.</p> <ul style="list-style-type: none"> ● Ask students to show where they found the information in the text, re-emphasizing that skilled readers are always looking for evidence to back up conclusions they draw from reading. Point out that the annotations can help locate needed evidence. <p>12. Close this part of the lesson by discussing whether or not the text markings were helpful and what else they learned from the reading that they didn’t expect to.</p> <p>Nailing Down Concepts (10 min.)</p> <p>13. If possible, give each student a “lab journal,” either a notebook, a paper folder, or a Google Doc folder. Explain that they’ll be using their notebook/folder to capture their notes as they work through the unit. Scientists tend to keep all their questions, observations, and results in such a journal, what they might call a “lab journal.” Have students add their background reading (“What Is Science?”) to the notebook.</p>	

	<p>14. Introduce the key term(s) for the unit relevant to the day’s unit, tie the terms to the reading in some way, and have students write down the definitions in their lab journal.</p> <ul style="list-style-type: none"> ● Science: the process of building knowledge about the world through observation, experimentation, and the use of evidence ● Scientist: someone who carefully uses tools and clear methods to gather evidence about how the world works. [Draw students’ attention to the -ist suffix, explaining how that indicates a <u>person</u> who does whatever the main part of the word is describing. Vocabulary lessons can then later be developed around the -ist suffix as an anchor concept.] ● Evidence: information that supports a claim <p>Setting up Experiment #1 (5 min.)</p> <p>15. Return to the carnations introduced at the beginning of the lesson. Ask students to put a few drops of different colored food coloring in the different vases.</p> <p>16. Ask students: “<i>What do you think is going to happen?</i>” Encourage students who have seen this experiment before NOT to share! [NOTE: Students should see results in the carnations by the next time the class meets. At that point, you will use this experience with the carnations to very briefly introduce the term “hypothesis” and to discuss the Scientific Method.]</p> <p>17. Tell the students to check the carnations when they arrive in class for their next meeting and to be prepared to report out on what has happened to the flowers.</p>	
<p>Wrap-Up/Reflection</p> <ul style="list-style-type: none"> ● <i>Lead reflection in what students learned and how they might use what they learned in their lives.</i> ● <i>Preview the next lesson.</i> 		
<p>10 min</p>	<p>Exit Ticket</p> <ol style="list-style-type: none"> 1. Review the day’s lesson and explain that as learners we need to take time to reflect on what we’ve learned. This helps us recognize and celebrate what we’ve learned as well as realize where our gaps are. 2. Offer the following options on Google Forms and invite students to respond to #1 and at least one other prompt: <ul style="list-style-type: none"> ● How would you explain science and what a scientist is to someone who has never heard of them before? ● What’s an “aha” you had about finding and using evidence when you read or do science? 	<p>Options can be provided for the Exit Ticket by providing leveled assignments - 1) simple sentences using the vocabulary; 2) a short paragraph of 3-5 sentences with vocabulary; 3) a longer paragraph with vocabulary and elaboration for higher-level learners.</p>

	<ul style="list-style-type: none">● What did you find helpful about marking the text? What do you want to do differently next time?● What did you learn about summarizing that you want to remember? <ol style="list-style-type: none">3. Explain that you'll read through their responses and share some feedback during the next class.4. Collect the annotated texts to check for appropriate use of text marking and main idea statements.	
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