



EXPEDITIONARY
LEARNING

Grade 5: Module 2B: Unit 1: Lesson 3

Paraphrasing Quotes and Analyzing Visual Elements, Part 2: *Investigating the Scientific Method with Max Axiom Super Scientist*



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can paraphrase information in notes and finished work. (W.5.8)

I can analyze how visual and multimedia elements contribute to the meaning, tone, or beauty of a text. (RL.5.7)

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

a. I can use context as a clue to the meaning of a word or phrase.

c. 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 explain the next steps Max Axiom takes to solve a problem by paraphrasing quotes from *Max Axiom*.
- I can analyze how visual elements in *Max Axiom* contribute to my understanding of the steps Max Axiom takes to solve a problem.
- I can use context clues and reference materials to determine the meaning of key words and phrases.

Ongoing Assessment

- Entry task (from Lesson 2 homework)
- Gist (in journal)
- *Max Axiom*: Details and Visual Elements graphic organizer, page 2
- Vocabulary defined (in journal)
- Independent Reading Choice Board response



Agenda	Teaching Notes
<ol style="list-style-type: none"> 1. Opening <ol style="list-style-type: none"> A. Reviewing Homework and Engaging the Reader (5 minutes) 2. Work Time <ol style="list-style-type: none"> A. Determining the Gist: <i>Max Axiom</i>, Section 2: “Searching for Answers” (15 minutes) B. Second Read: Explaining Steps Max Axiom Takes to Solve a Problem and Analyzing Visual Elements (20 minutes) C. Vocabulary to Deepen Understanding (15 minutes) 3. Closing and Assessment <ol style="list-style-type: none"> A. Debrief and Reviewing Learning Targets (5 minutes) 4. Homework <ol style="list-style-type: none"> A. Reread Section 2 of <i>Max Axiom</i>. B. Finish class work C. Independent reading. 	<ul style="list-style-type: none"> • This lesson follows a format similar to Lesson 2. In this lesson, students read closely to analyze details and visual elements that explain complex ideas associated with the next steps Max Axiom takes to solve a problem: forming a hypothesis and designing an experiment. Continue emphasizing that these are steps used during the process of scientific inquiry, and that real world scientists and inventors do not typically arrive at solutions by following as sequential a process as Max does in this graphic novel. As students identify key details, they practice paraphrasing ideas from the text. Students’ work with paraphrasing will be expanded and assessed in Units 2 and 3. • As students determine the meaning of unknown and key vocabulary in this lesson, they focus on specific vocabulary strategies related to using context clues and reference materials. Based on the needs of your class, Work Time C may run longer than 15 minutes; preview the part of the lesson and adjust accordingly. • In advance: <ul style="list-style-type: none"> – Display the Close Readers do These Things, Quote/Paraphrase, and Vocabulary Strategies anchor charts from Lesson 2. – Review Popcorn Read and Fist to Five (see Appendix). – Review and familiarize yourself with <i>Max Axiom</i>: Details and Visual Elements graphic organizer, page 2 (answers, for teacher reference) to prepare to support students as they identify and analyze key details and visual elements in Work Time B. – Review the discussion and reference materials in Work Time C to prepare to offer support as students analyze the word “variable” and determine the meaning of other key terms. – Collect a variety of reference materials for student to use as they define key terms (such as print and online dictionaries). – Consider displaying key vocabulary from the text to save time during Work Time C.



Lesson Vocabulary	Materials
explain, steps, analyze, visual elements, contribute, context clues, reference materials, determine, hypothesis, evidence (10), variable (12), (in)dependent variable, controlled variable, accurate (13), procedure (14), reproduce (15)	<ul style="list-style-type: none">• Close Readers Do These Things anchor chart (from Lesson 2)• Document camera• <i>Investigating the Scientific Method with Max Axiom Super Scientist</i> (book; one per student)• Journal (students' own, begun in Lesson 1)• Quote/Paraphrase anchor chart (from Lesson 2)• <i>Max Axiom: Details and Visual Elements</i> graphic organizer, page 2 (one per student)• Visual Elements of a Graphic Novel reference page (from Lesson 1, taped into journals)• <i>Max Axiom: Details and Visual Elements</i> graphic organizer, page 2 (answers, for teacher reference)• Vocabulary Strategies anchor chart (from Lesson 2)• Dictionaries (print; at least one per group)



Opening	Meeting Students' Needs
<p>A. Reviewing Homework and Engaging the Reader (5 minutes)</p> <ul style="list-style-type: none">• Ask students to take out the entry task they completed for homework.• Then ask them to turn and share with a nearby partner:<ul style="list-style-type: none">* “What is one close reading strategy you used while reading your independent reading book?”* “Why did you choose to focus on that strategy?”* “How did using this strategy help you to better understand the text?”• Cold call a few students to share ideas they heard from their partners.• Direct students' attention to the Close Readers Do These Things anchor chart, posted on the document camera.• Review Popcorn Read protocol with students, and clarify as necessary. Remind students that sometimes when a point is very meaningful, it will be shared more than one time during a popcorn read.• Ask one student to begin by reading aloud one strategy he or she finds to be particularly helpful from the Close Readers Do These Things anchor chart.• Once all students share or the popcorn read reaches a natural conclusion, explain that students will begin today's close read by reading for gist.	<ul style="list-style-type: none">• Provide sentence starters to support student discussions: “One close reading strategy I used is _____,” “I chose to focus on this strategy because _____,” or “This strategy helped me understand the text because _____.”



Work Time	Meeting Students' Needs
<p>A. Determining the Gist: <i>Max Axiom</i>, Section 2: “Searching for Answers” (15 minutes)</p> <ul style="list-style-type: none"> Ask students to locate their <i>Investigating the Scientific Method with Max Axiom Super Scientist</i> books and their journals and sit in their small groups. Review the group norms established in Lesson 1. Ask students to consider the work their group has done over the past two lessons and use Fist to Five to share how successfully their group is meeting the norms. If several groups are showing three or fewer fingers, consider revisiting group norms with the whole class. If a small number of students are showing three or fewer fingers, consider providing them with additional support during group discussions in today’s lesson. Tell students that in today’s first read, they will work in their groups to read and determine the gist. Ask students to consider and then take 1 or 2 minutes to discuss the following question: <ul style="list-style-type: none"> * “How does reading for gist help us become close readers?” Cold call several students to share their ideas. Listen for comments such as: <ul style="list-style-type: none"> – “I think reading for the gist is helpful, because once I know the gist it’s easier to think about the details.” – “Reading for the gist can help close readers learn about the main points so they know what to focus on when they do their second read,” or similar suggestions. Ask students to open to page 10 of <i>Max Axiom</i>, and take 5 minutes to silently read Section 2: “Searching for Answers.” Remind them to consider the gist as they read. Refocus whole class and ask students to take 1 or 2 minutes to discuss the following question with their group: <ul style="list-style-type: none"> * “What is the gist of Section 2: ‘Searching for Answers’?” After 1 or 2 minutes, cold call a student from each group to share out. Listen for: <ul style="list-style-type: none"> – “Max is thinking of a hypothesis and planning his experiment.” – “Max is explaining about all the things you need to consider as you make a hypothesis and decide how to test it,” or similar responses. Give students 1 minute to record their gist statements on the same page in their journal where they recorded the gist of Section 1 during Lesson 2. 	<ul style="list-style-type: none"> For students who struggle to determine the gist of longer passages, encourage them to find the gist of facing pages to keep track as they go and make it more manageable to determine the gist of the entire section. Allow struggling writers to dictate their gist statement to a peer or aide.



Work Time (continued)	Meeting Students' Needs
<p>B. Second Read: Explaining Steps Max Axiom Takes to Solve a Problem and Analyzing Visual Elements (20 minutes)</p> <ul style="list-style-type: none"> Ask the class to read aloud the first learning target: <ul style="list-style-type: none"> * "I can explain the next steps Max Axiom takes to solve a problem by paraphrasing information from <i>Max Axiom</i>." Draw students' attention to the terms <i>explains</i>, <i>steps</i>, and "paraphrased," discussed in previous lessons. Ask students to consider the meaning of these terms as they think about how to rephrase the learning target. Invite several students to think about and share out a paraphrased version of the learning target. Read the second target aloud, or invite a volunteer to read it aloud: <ul style="list-style-type: none"> * "I can analyze how visual elements in <i>Max Axiom</i> contribute to my understanding of the next steps Max Axiom takes to solve a problem." Ask students to recall from previous lessons and discuss the meaning of the words <i>analyze</i>, <i>visual elements</i>, and <i>contribute</i>. Cold call a few students to share out whole group. Listen for: <ul style="list-style-type: none"> – "Analyze means to study carefully." – "Visual elements are things the author does with text or pictures to draw our attention to specific information." – "Contribute means to add to or support." Invite several students to think about and share out a paraphrased version of the second learning target. Then, say something like: "We had similar targets in Lesson 2. As we read each section of <i>Max Axiom</i>, we will practice paraphrasing details and analyzing visual elements so that we can deepen our understanding of these strategies and the complex ideas presented in the text." Display the Quote/Paraphrase anchor chart and tell students that before they begin their analysis, it may be helpful to revisit this chart. Ask students to think about then discuss the following questions in groups: <ul style="list-style-type: none"> * "What is the difference between quoting and paraphrasing?" * "When is it useful to paraphrase?" * "How do you know if you paraphrased accurately?" 	<ul style="list-style-type: none"> To support visual learners and ELL students, display a drawing, picture from the internet, or familiar synonym above or below key words in learning targets. To support visual learners, consider allowing students from each group to display an example of the visual element (speech bubbles or images) under the document camera. For students who struggle with the physical act of writing, allow them to type their responses on a computer or word processor, or dictate to an aide or a peer acting as a scribe.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Cold call a few students to share out whole class. Listen for: <ul style="list-style-type: none"> – “Quotes are exactly what’s said in the text with quote marks around them; when you paraphrase, you put the idea into your own words and you don’t need quotation marks.” – “Paraphrasing is helpful when you want to communicate an idea from the text but you don’t need to prove a specific point.” – “An accurately paraphrased quote restates the quote in a way that still sounds natural and expresses the same idea,” or similar suggestions. • Distribute Max Axiom: Details and Visual Elements graphic organizer, page 2 to students. • Orient students to the format of the graphic organizer by pointing out the two largest boxes: “Form a Hypothesis” and “Design an Experiment.” Tell students they will paraphrase quotes from the text as they did in Lesson 2 to explain the next steps Max Axiom takes to solve a problem. • Refocus students’ attention on <i>Max Axiom: Detail and Visual Elements graphic organizer, page 2</i>. Remind them to paraphrase quotes from the text to complete the “details” section of each box. • Then, ask students to look at the lower half of each box, which highlights the visual elements: speech bubbles and images. Remind students that in this section they will explain how the visual element supports their understanding of the steps Max Axiom takes to solve a problem. • Ask students where they could look if they would like to review the meaning of each visual element. Listen for students to refer to the Visual Elements of a Graphic Novel reference page they taped into their journal in Lesson 1. • Tell students they will have an opportunity to examine key vocabulary from the text more closely to define and sort them into the “scientific” or “academic” key word boxes on their graphic organizers during Work Time C. • Assign students to work collaboratively with their group to read Section 2 a second time and complete the assigned portions of <i>Max Axiom: Details and Visual Elements graphic organizer, page 2</i>. • After about 10 minutes, refocus whole group. Ask students to share out the paraphrased quotes they recorded onto their graphic organizers to explain how to form a hypothesis. Refer to Max Axiom: Details and Visual Elements graphic organizer, page 2 (answers, for teacher reference) as needed. • Invite students to share how the speech bubbles their group identified supported their understating of how to form a hypothesis. 	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Ask students to share out the paraphrased quotes they recorded to explain how to design an experiment.• Invite students to share how the images their group identified supported their understating of how to design an experiment.• Acknowledge students' ability to identify and paraphrase key details, as well as their analysis of how visual elements support their understanding of the ideas conveyed in Section 2 of <i>Max Axiom</i>.• Ask students to consider the information they recorded on their graphic organizers, as well as other specific details from the text to help them answer the following question:<ul style="list-style-type: none">* "Why do you think it's important for scientists to form a hypothesis?"• Give students 2 minutes to discuss the reflection question and details to from the text that support their thinking in groups.• Ask a few students to share out whole group. Encourage students to use specific details from the text or their graphic organizer to support their response. Listen for:<ul style="list-style-type: none">– "I think scientists need to create a hypothesis because it helps them focus their experiment. I think this because on page 11 Max says that his record of the hypothesis 'helps maintain a clear direction during the project.'"– "I think the hypothesis is important because it helps the scientist decide how to design an experiment that is connected to the research. On page 10, Max says that he used his research to create the hypothesis. Then, on page 11 Max says, 'the main purpose of an experiment is to show whether the data you collect supports the hypothesis,' so the hypothesis really helps connect the different steps Max Axiom uses, like the research and data," or similar responses.• Give students 1 or 2 minutes to record their response to the question, plus supporting details, on a new page in their journals.	



Work Time (continued)	Meeting Students' Needs
<p>C. Vocabulary to Deepen Understanding (15 minutes)</p> <ul style="list-style-type: none"> Refer to the Vocabulary Strategies anchor chart, then say something like: “As we take a close look at some key terms from Section 2 of <i>Max Axiom</i>, we are going to focus on two strategies in particular.” Introduce the third learning target: <ul style="list-style-type: none"> * “I can use context clues and reference materials to determine the meaning of key words and phrases.” Underline the terms <i>context clues</i>, <i>reference materials</i>, and <i>determine</i>. Ask students to consider and then discuss the meaning of these terms with group members. After 1–2 minutes, invite several students to share possible definitions. Listen for: <ul style="list-style-type: none"> – “Context clues are details in the text that help you understand what an unfamiliar word means.” – “Reference means something that shares information; reference materials are the resources you might look at to collect information.” – “When studying vocabulary, reference materials include dictionaries, glossaries, and the internet.” – “Determine means to find out,” or similar suggestions. Invite a few students to paraphrase the learning target based on their understanding of key terms. Tell students that this learning target will be particularly helpful for determining the meaning of words in Section 2 of <i>Max Axiom</i>. As they determine the meaning of unfamiliar terms from the text today, encourage students to continue building the glossary they began in Lesson 2. Ask students to turn to page 12 in <i>Max Axiom</i> and search for the term <i>variable</i> or <i>variables</i>. Call on students to hold up their books and point out where they see this term on page 12. Say something like: “Some words can be used in multiple ways, and if the definitions are very similar, it can be tricky to determine exactly which definition is intended. The term ‘variable’ is used frequently on pages 12 and 13 because it is very important to understanding how to design an experiment, but it is also a tricky word to fully understand because it can be used in a variety of contexts. To help us analyze how the term is used in the context of <i>Max Axiom</i>, we are going to consult a reference material.” Ensure all students can see a dictionary and guide them to locate the word ‘variable.’ Post this word for all students to see. Explain that dictionaries, glossaries, thesauri, and the internet are all useful reference materials students have likely used before, but today they will look closely at a page from a dictionary. 	<ul style="list-style-type: none"> To support visual learners and ELL students, display a drawing, image from the internet, or familiar synonym above or below key words in the learning target. Consider using a think-aloud strategy, either whole class or with a small group, to model using vocabulary strategies for the first several terms. Consider modeling with a small group or individual students, how to complete the four-column chart with the first two terms. For student reference, display a working definition of “academic vocabulary,” or “words found in a variety of genres and subjects unrelated to science,” and “scientific vocabulary,” or “words unique to science concepts.”



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Ask students to briefly think about and discuss in groups: <ul style="list-style-type: none"> * “What do you notice about the dictionary page that the word ‘variable’ is on?” • After 1 minute, cold call a few students to share out and listen for responses such as (these may vary depending on the dictionary students use): <ul style="list-style-type: none"> – “I notice the words are in alphabetical order.” – “I notice that there are words at the top of the page that list the first and last vocabulary terms on the page.” – “I notice that many of these words have multiple meanings.” – “I notice that variable is on this page and that some of the other words on the page sound similar to variable.” – “I notice that under each term, it shows how to pronounce the word, the part of speech, and the definition.” • Ask students to discuss in groups: <ul style="list-style-type: none"> * “What can you learn about the term variable from looking at this resource?” • After 1 minute, invite students to share out. Listen for ideas such as: <ul style="list-style-type: none"> – “Variable can be an adjective and a noun.” – “Variable can mean ‘not having a pattern, an element that is likely to change,’ or ‘a factor represented by a symbol that has an unknown or changing value.’” – “All the definitions of variable have something to do with change, but they are each a little different.” – “‘Changeable,’ ‘fickle,’ and ‘unsteady’ are synonyms for variable.” – “Variable is related to the word ‘vary’ because vary means change. I think they have the same root.” • If students do not identify the connection between variable and other terms on the page with the same root, bring that to their attention as a way to build on their knowledge of root words from Lesson 2. • Ask students to look at page 12 of <i>Max Axiom</i>. Read aloud the first speech bubble, “Welcome aboard, Max. Looks like variable winds for the flight. We should arrive in 30 minutes.” • Ask students to think about and discuss in groups the meaning of the term “variable” in the context of this speech bubble. Encourage students to refer to the dictionary page and any context clues from the first panel as they discuss. 	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• After 1 minute, invite several students to share their definition as well as how their group determined the meaning of the word. Listen for:<ul style="list-style-type: none">– “We think that variable means ‘not consistent or likely to change’ because we know that in this sentence variable is describing the winds so it is an adjective.”– “We decided that in this sentence, variable means ‘changeable’ because we looked at the synonyms for variable and found one that made the most sense in the sentence,” or similar suggestions.• If students do not identify the part of speech, bring this to their attention. Remind students that knowing how the word is used in the sentence can help them understand what it might mean.• Ask students to consider and discuss the term variable as it is used in the next panel. Remind them to refer to the dictionary page and any clues they can find in the panel as they discuss.• After 1 or 2 minutes, cold call several students to share their definitions as well as how their group determined the meaning of variable in this context. Listen for:<ul style="list-style-type: none">– “We decided that here the word variables refers to things, so the word is a noun. We didn’t see anything about a symbol in the text, so we think variable means an element or factor that is likely to change,” or similar ideas.• Explain that sometimes the term variable is used in conjunction with other words to refer to something very specific. Direct students’ attention to the third panel on page 12. Read aloud the second speech bubble, “The independent variables of an experiment are parts the scientist changes to test the hypothesis.”• Ask students what they notice about the phrase “independent variables.” Listen for:<ul style="list-style-type: none">– “I notice it still has to do with change, but now it means specific parts of an experiment that a scientist changes.”– “I notice that the independent variables help the scientist test the hypothesis,” or similar suggestions.• Ask students to discuss with their group members:<ul style="list-style-type: none">* “Do you think the term variable is academic or scientific as it is used in the context of <i>Max Axiom</i>?”• After 1 minute, cold call students to share. Listen for:<ul style="list-style-type: none">– “I think variable is scientific in this context because an independent variable is a very specific part of a science experiment; however, outside of a science context it could be academic,” or similar suggestions.	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Confirm or explain that depending on the context, variable can be academic or scientific. • Direct students to add the terms “variable,” <i>independent variable</i>, <i>dependent variable</i>, and <i>controlled variable</i> to their glossaries using the four-column chart they started in the previous lesson. • After 1-2 minutes, refocus whole class. Explain that in addition to variable, there are many other key terms in Section 2 of <i>Max Axiom</i>. Explain that as they continue to work with group members, they should: <ol style="list-style-type: none"> 1. Consult reference materials and use other vocabulary strategies to identify the meaning of the terms <i>hypothesis</i>, <i>evidence</i>, <i>accurate</i>, <i>procedure</i>, and <i>reproduce</i>. 2. Add each term to the four-column chart in your glossary. 3. Write an “A” next to words you believe are academic and an “S” next to words you think are scientific. • Clarify directions as needed. Circulate to offer support. • After 4-5 minutes, refocus whole class and invite students to share a synonym or definition for each key term and explain if the word is academic or scientific in this context. Listen for ideas such as: <ul style="list-style-type: none"> – “A hypothesis is a prediction based on evidence; it is scientific because it is a specific step scientists use to solve a problem.” – “Evidence means the details or information that prove if something is true or false; it is academic because it can be used in a variety of contexts to describe how to prove something, such as in an argument.” – “Accurate means correct; it is academic because it used in contexts other than science.” – “Procedure means steps or plan used to compete a task; it is academic because it is a word that can be used in a variety of contexts.” – “Reproduce means to produce or create again; it is academic because it is used in a variety of contexts where it has a similar or different meanings,” or similar suggestions. • Ask students to record academic and scientific terms in the key word boxes on their graphic organizers. Remind them that the purpose for defining key words is to help them deepen their understanding of important ideas conveyed through the text. • Give students 1 or 2 minutes to revise the paraphrased details on their <i>Max Axiom</i>: Details and Visual Elements graphic organizer based on new understandings about key vocabulary. • If students are not able to complete the vocabulary sort or revision of graphic organizers in the time allotted, allow them to complete for homework. 	



Closing and Assessment	Meeting Students' Needs
<p>A. Debrief and Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none"> Ask students to turn and talk with a nearby partner who is not in their regular group: <ul style="list-style-type: none"> * “Which close reading strategy most helped you understand the next steps Max Axiom took to solve a problem?” Give partners 2 minutes to discuss, then cold call several students to share out the strategies they used. Listen for: <ul style="list-style-type: none"> – “It helped me to gather quotes from the text before I paraphrased and when we were answering the question about why a hypothesis is important.” – “Rereading the text helped me because there were some complex words I didn’t really understand the first time.” Read each of the learning targets aloud and ask students to show a thumbs-up or thumbs-down to indicate their mastery. Note students who show a thumbs-down, as they may need more support. 	<ul style="list-style-type: none"> Provide a sentence frame to support students during their discussions: “The close reading strategy that helped me understand steps 3 and 4 of the scientific method is _____, because _____.”
Homework	Meeting Students' Needs
<ul style="list-style-type: none"> Reread Section 2 of <i>Max Axiom</i>. Add to or revise at least one area of your <i>Max Axiom</i>: Details and Visual Elements graphic organizer, based on new insights from your reread of the text or new understandings about key terms. If not finished in class, complete the four-column chart for each vocabulary word from this lesson, and sort key terms into the “academic” or “scientific” key word boxes on your graphic organizer. Read your independent reading book for at least 30 minutes and write a response to a third question from your Independent Reading Choice Board (from Lesson 1). 	<ul style="list-style-type: none"> Allow struggling writers to dictate their responses to someone at home. Consider providing a recording of the text for struggling readers.



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Supporting Materials



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Max Axiom: Details and Visual Elements Graphic Organizer, Page 2

How do authors structure text and use visual elements to engage and support readers' understanding of complex ideas?

SECTION 2: "SEARCHING FOR ANSWERS"

Step 3: Form a Hypothesis

Details that explain *how* to form a hypothesis

Visual Element Focus: "Speech Bubbles/Thought Bubbles"

How do speech bubbles or thought bubbles support your understanding of the third step Max Axiom takes to solve a problem?



Key Terms
(scientific)

Step 4: Design an Experiment

Details that explain *how* to design an experiment

Visual Element Focus: "Images/Photos"

How do images and photos support your understanding of the fourth step Max Axiom takes to solve a problem?



Key Terms
(academic)



Max Axiom: Details and Visual Elements Graphic Organizer, Page 2
(Answers, for Teacher Reference)

How do authors structure text and use visual elements to engage and support readers' understanding of complex ideas?

SECTION 2: "SEARCHING FOR ANSWERS"

Step 3: Form a Hypothesis

Details that explain *how* to form a hypothesis

- **Use the information you collected in your research to make a prediction about what will happen.**
- **You have to use evidence to make a hypothesis.**
- **You should write your hypothesis down because it won't change during the experiment.**

Visual Element Focus: "Speech Bubbles/Thought Bubbles"

How do speech bubbles or thought bubbles support your understanding of the third step Max Axiom takes to solve a problem?

In the speech bubbles, Max explains what a hypothesis is and that you have to use evidence. By reading the thought bubbles on the bottom of page 10, I learned how Max made his hypothesis.

Key Terms
(scientific)

**hypothesis,
controlled
variable,
independent
variable**



Max Axiom: Details and Visual Elements Graphic Organizer, Page 2
(Answers, for Teacher Reference)

How do authors structure text and use visual elements to engage and support readers' understanding of complex ideas?

SECTION 2: "SEARCHING FOR ANSWERS"

Step 4: Design an Experiment

Details that explain *how* to design an experiment

- **You have to pick the parts of the experiment you want to change to test the hypothesis. They are called the independent variables.**
- **You need to decide what part you will measure to see how it changes with the independent variable. The part you measure is called the dependent variable.**
- **You have to think about the controlled variables so you know which parts of the experiment will stay the same.**
- **Scientists use procedures or plans that include a materials list when they design an experiment.**

Visual Element Focus: "Images/Photos"

How do Images and Photos support your understanding of the fourth step Max Axiom takes to solve a problem?

The images on page 13 help me understand the difference between independent and dependent variables and how they are used in experiments.

Key Terms
(academic)

**evidence, variable,
(in)dependent,
controlled,
accurate,
procedure,
reproduce**