

## 9.3.1

## Lesson 5

## Introduction

In this lesson, students reread and analyze pages 16–20 of *Animals in Translation* (from “The only research I was interested in doing” to “Why couldn’t they see what they were doing wrong?”). In this passage Grandin explains what it means to be a visual thinker. Students will continue to examine the ways that Grandin develops her central idea (autism has made understanding animals easy) in this chapter. The lesson assessment asks students to analyze how Grandin unfolds an analysis or series of events.

Students will continue to track topics in the text and generate inquiry questions. Students will also begin selecting and refining inquiry questions for research. For homework, students will read and annotate pages 20–23. Additionally, students will choose one topic, generate five inquiry questions, and select and revise two of those inquiry questions.

## Standards

Assessed Standard(s)	
RI.9-10.3	Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.
Addressed Standard(s)	
RI.9-10.2	Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
SL.9-10.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.

## Assessment

Assessment(s)
The learning in this lesson will be captured through a Quick Write at the end of the lesson. Students will

answer the following prompt based on the close reading (citing evidence from the text and analyzing key words and phrases) completed in the lesson.

- Analyze how Grandin unfolds an analysis or series of ideas or events, including the order in which she makes her points. Discuss how Grandin introduces and develops her points and the connections she draws between them.

 This assessment is evaluated using the Short Response Rubric.

### High Performance Response(s)

A high performance response may include the following:

- Grandin begins her story with the central idea that her autism enables her to “understand the way animals think” (p. 1). Grandin further develops and refines this idea when she describes what it means to be a “visual thinker.” She does it in several steps. She begins by saying that she does not mean “just that [she’s] good at making architectural drawing and designs.” She then explains that she “actually thinks in pictures.” When she thinks, she “has no words in [her] head” (p. 17). She then offers two examples: she cannot understand economics or algebra because she cannot visualize them. Grandin explains that her visual thinking ability helps her see and understand what animals see.
- Grandin begins her story with the central idea that her autism enables her to “understand the way animals think” (p. 1). She explains that she is a visual thinker. She thinks in pictures. Grandin develops and refines what it means with an example of a court. She says: “If you think about a judge and jury, all deliberations are in pictures.” She explains that words do not “come in” until her thought process is complete. Her “final judgment,” her “final verdict,” only these are “in words” (p. 17). Grandin explains that her visual thinking ability helps her see and understand what animals see.

## Vocabulary

### Vocabulary to provide directly (will not include extended instruction)

- refining (v.) – making more fine, subtle, or precise

### Vocabulary to teach (may include direct word work and/or questions)

- obsolete (adj.) – no longer in use
- gravitated (v.) – was attracted by, as if by an irresistible force

## Lesson Agenda/Overview

Student-Facing Agenda	% of Lesson
<b>Standards &amp; Text:</b> <ul style="list-style-type: none"> <li>Standards: RI.9-10.3, RI.9-10.2, SL.9-10.1</li> <li>Text: <i>Animals in Translation</i> (pp. 16–20)</li> </ul>	
<b>Learning Sequence:</b> <ol style="list-style-type: none"> <li>Introduction of Lesson Agenda</li> <li>Homework Accountability</li> <li>Pages 16–20 Reading and Discussion</li> <li>Refining Inquiry Questions</li> <li>Quick Write</li> <li>Closing</li> </ol>	<ol style="list-style-type: none"> <li>5%</li> <li>10%</li> <li>40%</li> <li>30%</li> <li>10%</li> <li>5%</li> </ol>

## Materials

- Student copies of the **Topic Tracking Tool** (refer to 9.3.1 Lesson 2)
- Student copies of the **Posing Inquiry Questions Handout** (refer to 9.3.1 Lesson 3)
- Student copies of the **Short Response Rubric and Checklist** (refer to 9.3.1 Lesson 1)

## Learning Sequence

How to Use the Learning Sequence	
Symbol	Type of Text & Interpretation of the Symbol
10%	Percentage indicates the percentage of lesson time each activity should take.
no symbol	Plain text indicates teacher action.
	<b>Bold text indicates questions for the teacher to ask students.</b>
	<i>Italicized text indicates a vocabulary word.</i>
►	Indicates student action(s).
💬	Indicates possible student response(s) to teacher questions.
❗	Indicates instructional notes for the teacher.

## Activity 1: Introduction of Lesson Agenda

5%

Begin by reviewing the agenda and assessed standard for this lesson: RI.9-10.3. Explain that today students continue reading and analyzing pages 16–20 of *Animals in Translation*, track potential research topics, as well as generate and refine further inquiry questions.

- ▶ Students follow along and read the agenda.

## Activity 2: Homework Accountability

10%

Instruct students to form pairs to do a Turn-and-Talk, discussing 3–4 annotations and why they annotated those sections of text from pages 16–20 in *Animals in Translation*.

- ▶ Students do a Turn-and-Talk and discuss 3–4 annotations.

Have students share out the annotations they discussed.

☞ Students responses may include the following:

- Boxes around the words: macroeconomics, macramé, obsolete, gravitated, spectrum, anthropomorphic
- Star near title of section: “Seeing the Way Animals See:” – This is an interesting concept, looking at the way animals see.
- Star near “I’m a visual thinker.” – The narrator combines seeing with thinking.
- Star near “I flunked algebra.” – She makes a connection between visual thinking and flunking algebra, since she could not visualize it.
- Star near “final judgment” – The idea is that when she thinks it is in pictures, not words. Those only appear after she has visualized the facts.
- Star near “when I was young” – This points to the fact that her special way of seeing things sets her apart from others even if earlier on she did not realize it.
- Underline the sentence in italics: “*You get food by being highly attuned to the visual environment.*” – This sentence must be important since it is in italics. She is making the connection between what animals see and their survival.
- Underline “Well let’s look at it from the animal’s point of view.” – She uses the quote to tell us what her thoughts were when she decided that in order to understand the problem the animals were having she needed to see it from their perspective.

Instruct student pairs to discuss their three potential areas of interest using their inquiry questions generated in the previous lesson.

- ▶ Students discuss their three areas of interest in pairs.

💬 Student responses may include:

- Based on the topic of Anthropomorphizing Animals there were a few areas of interest I identified.
- One of my inquiry questions was, "How have people anthropomorphized animals throughout history?"
- Using this inquiry question, I searched for different ways people have anthropomorphized animals throughout history.
- One area that interests me is the way that people have told stories using anthropomorphized animals. This happens in fables and lots of other stories.
- I also found that anthropomorphizing did not start with animals but with gods. Zeus is an example of an anthropomorphized god, meaning that he was a god who behaved like a person sometimes—he got angry, jealous, etc.
- I would also be interested in researching how anthropomorphizing has affected the way humans have treated different kinds of animals.

① This response is an example of what students might discuss as a potential area of interest based on a topic from the previous lesson. This activity is priming students to use the Exploring A Topic Tool in Lesson 6.

### Activity 3: Pages 16–20 Reading and Discussion

**40%**

Introduce the Quick Write assessment (Analyze how Grandin unfolds an analysis or series of ideas or events, including the order in which she makes her points. Discuss how Grandin introduces and develops her points and the connections she draws between them). Explain to students that this is the lesson assessment and the focus for today’s reading.

- ▶ Students read the assessment and listen.

Instruct students to form pairs, take out their Topic Tracking Tool, and read *Animals in Translation*, pages 16–18 from “The only research I was interested in doing” to “it was just what I naturally gravitated to.” Direct student pairs to discuss their answers and then record them in writing. Remind students to also record potential topics for research as they read. Display the following questions for students.

① For potential student topics for this reading see the Model Topic Tracking Tool at the end of this lesson.

- ▶ Student pairs reread, discuss, track topics, and record their answers to the following questions.

**How does Grandin explain what it means to be a “visual thinker?”**

- Grandin articulates what it means to be a “visual thinker” in several steps. She begins by saying that she does not mean “just that [she’s] good at making architectural drawing and designs.” She then explains that she “actually thinks in pictures.” When she thinks, she “has no words in [her] head” (p. 17). She then offers two examples: she cannot understand economics or algebra because she cannot visualize them.

### How does the word *obsolete* further contribute to Grandin’s explanation of the “visual thinker”?

- Grandin says that she knew that the dot-com industry would suffer a crisis (which it did). She argues that since she could not visualize these companies, they would fail. What she did see were images of “rented office space” and computers that “would be obsolete in two years” (p. 17). In this context the rented office space and computers were no longer in use.

### How does Grandin use the concept of judge and jury to explain her thought process?

- Grandin describes her thought process: “If you think about a judge and jury, all deliberations are in pictures.” She explains that words do not “come in” until her thought process is complete. Her “final judgment,” her “final verdict,” only these are “in words” (p. 17).
- ① If students struggle with this question due to lack of background knowledge about the legal process, ask if they can determine the meanings of the words “deliberations” and “verdict” from the context of this paragraph. The author makes a fairly explicit connection, but it is worthwhile to confirm that students understand these references.

### Why did Grandin *gravitate* to the animals’ visual environment? What does the word *gravitate* mean in this sentence?

- Grandin explains that she did not like the lab work. She *gravitated* toward, or was drawn instead, to the animals’ “natural environment.” She knew that she would learn more when she shared their “visual environment.” One may infer that she wanted to be able to see what the animals saw.

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Instruct student pairs to continue reading pages 18–20 from “Being verbal thinkers, behaviorists hadn’t really thought about” to “Why couldn’t they see what they were doing wrong?” Direct student pairs to discuss their answers and then record them in writing. Remind students to continue tracking potential research topics. Display the following questions for students.

- ▶ Student pairs reread, discuss, track topics, and record their answers to the questions.

### What are “verbal thinkers” and what do they fail to realize?

- 💬 “Verbal thinkers,” unlike “visual thinkers,” think in words. They do not consider the animals’ “visual environment.” In the wild, animals “*get food by being highly attuned to the visual environment*” (p. 19).

### How does Grandin make the connection between her visual thinking ability and her research?

- 💬 In this passage, Grandin specifically mentions her research. She describes the move she made from the lab to the yard. She was investigating a problem: the animals did not want to go through “the chutes,” the “narrow passages.” She knew that the problem, and therefore the solution, had to be visual. She determined that in order to solve the problem she had to see what the animals see.

## Activity 4: Refining Inquiry Questions

**30%**

Remind students that in the two previous lessons they have been generating inquiry questions, and in this lesson they will focus on selecting and refining the best questions to support rich inquiry and research. Display and ask students to retrieve the Posing Inquiry Questions Handout. Instruct students to first form the same research groups of four to five students they established in the previous lesson. Instruct each group to generate five inquiry questions based on the topics recorded in this lesson.

- ① The heterogeneous groups of four to five students were established in the previous lesson.
- ① Explain to students that to *refine* means “to make more fine, subtle, or precise.” Students will make their questions better and more precise after using the questions on the Posing Inquiry Questions Handout.
  - ▶ Students take out their Posing Inquiry Questions Handout and form the same research groups from the previous lesson. Student groups begin generating inquiry questions.
- 💬 Students responses may include:
  - Topic: Visual thinking
  - Inquiry Questions:
    - What are the causes of visual thinking?
    - What are the major aspects of visual thinking?
    - Who are famous visual thinkers?
    - What are the benefits of visual thinking compared to verbal thinking?
    - What has been a major contribution of visual thinking to science?

Direct student groups to read the Selecting and Refining Questions portion of the Posing Inquiry Questions Handout. Explain that choosing strong inquiry questions, just like using strong evidence when making a claim, is an important part of the research process. Explain to students that they need strong inquiry questions to support thorough research. Remind students that as they use the Selecting and Refining portion of this handout they will not always be able to answer every question without doing some initial investigation, like they have done for homework in the previous lessons. For example, the question “Can your question be truly answered through research?” may require some exploration to answer.

- ▶ Student groups follow along and read the Selecting and Refining portion of the Posing Inquiry Questions Handout.

Display the following inquiry question for students: “What is visual thinking?” Explain that it is possible to determine the strength of this inquiry question by using the Selecting and Refining section of the handout. Model for students how to answer these questions using the “Think Aloud” technique.

**Are you genuinely interested in answering your question?**

- 💬 Yes, I would like to know more about visual thinking.

**Can your question truly be answered through your research?**

- 💬 I am sure I can find out more about visual thinking but I would need to do some exploration.

**Is your question clear? Can you pose your question in a way that you and others understand what you are asking?**

- 💬 This is a clear question although not everyone may know the meaning of the word *visual*.

**What sort of answers does your question require?**

- 💬 This question requires an explanation of the process of visual thinking but it might not be very long.

**Do you already know what the answer is?**

- 💬 From reading *Animals in Translation*, I actually already know about visual thinking, which means to think in pictures.
- ▶ Student groups follow along as the teacher models responses to the questions.

Ask student groups:

**Based on the responses to the questions in the Selecting and Refining section, is this a good inquiry question?**



- ☞ No, this inquiry question can already be answered using the Grandin text. It would not be a strong question for research.
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Display the following example inquiry questions: 1. “Who are famous visual thinkers?” 2. “What are the benefits of visual thinking compared to verbal thinking?” Instruct students to use the Selecting and Refining questions in their groups to decide which question is a stronger inquiry question. Explain to students that in this lesson, they will continue the work of collaborative discussion outlined in SL.9-10.1, to which students were previously introduced. Remind students these discussion strategies have been taught in previous modules. Ask student groups to go through and discuss each of the Selecting and Refining questions for the first inquiry question, and then repeat the process for the second inquiry question.

① Consider reminding students of the skills inherent in the sub-standards of Standard SL.9-10.1, to which students were previously introduced.

- ▶ Student groups use the Selecting and Refining questions on the Posing Inquiry Questions Handout for the displayed inquiry questions.

Ask student groups to share which of the inquiry questions (1 or 2) is a stronger inquiry question and which Selection and Refining questions assisted with their understanding.

- ▶ Student groups share which question is a stronger inquiry question.
  - ☞ “What are the benefits of visual thinking compared to verbal thinking?” is a stronger inquiry question because it would have a more complicated answer than just finding famous visual thinkers. We also already know that Temple Grandin is a famous visual thinker, and question 1 does not necessarily illuminate potential areas of investigation as it can be answered by identifying individuals who are famous visual thinkers.
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Instruct student groups to use the Selecting and Refining questions to select the strongest of the five inquiry questions they generated in this lesson. Explain that the purpose of selecting and refining is to prepare them for their homework assignment, which is to select a topic, generate inquiry questions, and select and refine the two strongest inquiry questions.

- ▶ Student groups use the Selecting and Refining questions to choose the strongest inquiry question from the five they generated in this lesson.
- ☞ Student responses will vary depending on the topic, inquiry questions, and refining process.

## Activity 5: Quick Write

10%

Instruct students to respond briefly in writing to the following prompt:

**How does Grandin unfold an analysis or series of ideas or events, including the order in which the points are made? Discuss how they are introduced and developed, and the connections that are drawn between them.**

Remind students to use the Short Response Checklist and Rubric to guide their written responses.

① Display the prompt for students to see, or provide the prompt in hard copy.

- ▶ Students independently answer the prompt using evidence from the text.
- 🗨 See the High Performance Response at the beginning of this lesson.

## Activity 5: Closing

5%

Display and distribute the homework assignment. For homework, instruct students to read and annotate pages 20–23 from “I remember one situation in particular” to “The cows all walked into the chute just as nice as could be.” In addition, instruct students to select a topic from the Topic Tracking Tool, and use the Generating Questions and Selecting and Refining Questions sections of the Posing Inquiry Questions Handout to generate five inquiry questions and select, as well as refine, two of those inquiry questions. Remind students to be prepared to discuss their topic and the inquiry questions they selected and refined in the following lesson.

- ▶ Students follow along.

## Homework

For homework, first read and annotate pages 20–23 from “I remember one situation in particular” to “The cows all walked into the chute just as nice as could be.” Be prepared to discuss 3–4 of your annotations. Second, select one topic from all of the topics recorded on your Topic Tracking Tool. Use the Generating Questions and Selecting and Refining Questions sections of the Posing Inquiry Questions Handout to generate five inquiry questions and select, as well as *refine*, two of those inquiry questions. Be prepared to discuss your topic and the inquiry questions you selected and refined in the following lesson.

## Model Topic Tracking Tool

<b>Name:</b>		<b>Class:</b>		<b>Date:</b>	
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Topic	Page Number(s)	Key Information About the Topic from the Text
Visual thinking	16–20	This portion of text is largely about Grandin’s process of visual thinking and how it has helped her understand animals. She describes visual thinking as, “During my thinking process I have no words in my head at all, just pictures.”
Visual illusions	16, 19	Grandin writes that as a student she was only interested in “studying visual illusions in animals.” She experimented with visual illusions on cattle and tried to determine why some cattle might not want to go through chutes.
Skinner Box	18	In this text Grandin references the Skinner Box which is “a special cage...behaviorists used to test and analyze a rat’s behavior.” This is a specific device used in behaviorist experiments. Grandin also says that in the Skinner box “usually the punishment would be a shock.”
Environment affecting behavior	19	Grandin ties in visual thinking with how environment affects animal behavior using an example of cattle and a ladder: “Those cattle would just not walk by that ladder.”

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