



EXPEDITIONARY
LEARNING

Grade 4: Module 3A: Unit 2: Lesson 12

Connecting Key Vocabulary and End of Unit 2 Assessment, Part I: Reading and Answering Questions about Wedges



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

- I can explain the main points in a scientific text, using specific details in the text. (RI.4.3)
- I can determine the meaning of academic words or phrases in an informational text. (RI.4.4)
- I can determine the meaning of content words or phrases in an informational text. (RI.4.4)
- I can choose evidence from informational texts to support analysis, reflection, and research. (W.4.9)

Supporting Learning Targets

- I can make connections between the meaning of vocabulary words related to simple machines.
- I can document what I learn about a simple machine in my own words.
- I can find the meaning of scientific and academic words related to a simple machine.
- I can answer questions about simple machines and how they work using details from a scientific text.

Ongoing Assessment

- End of Unit 2 Assessment, Part I: Reading and Answering Questions about Wedges
- Tracking My Progress, End of Unit 2, Part 1 recording form



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Reviewing Learning Targets (5 minutes)2. Work Time<ol style="list-style-type: none">A. Connecting Key Vocabulary: Interactive Word Wall (15 minutes)B. End of Unit 2 Assessment: Answering Questions about Wedges (35 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Tracking My Progress, End of Unit 2 Assessment, Part I (5 minutes)4. Homework<ol style="list-style-type: none">A. Continue reading in your independent reading book for this unit at home.	<ul style="list-style-type: none">• This end of unit assessment has two parts. In this lesson, Part I, students will read and answer questions about the wedge. Then in Lesson 13, Part II, they will read, conduct, and write about an experiment with wedges.• Also in this lesson, students participate in another round of Interactive Word Wall (similar to Lesson 7) using the Vocabulary word cards from Lesson 11.• Before distributing the text <i>Simple Machines: Forces in Action</i> to students, use a large sticky note or small strip of paper to cover up the “How Does It Work?” box on the top half of page 15.• Review: Interactive Word Wall protocol (see Appendix).• Post: Learning targets.



Lesson Vocabulary	Materials
<p>decrease, distance, effort, force, inclined plane, increase, lever, pulley, wheel and axle, work (review from previous lessons)</p> <p>Do not pre-teach specific vocabulary in the assessment text.</p>	<ul style="list-style-type: none"> • Interactive Word Wall directions (from Lesson 7) • Document camera • Vocabulary word cards (from Lesson 11; one complete set per group of four) • Interactive Word Wall symbols (from Lesson 7; one set per group) • End of Unit 2 Assessment, Part I: Reading and Answering Questions about Wedges (one per student) • <i>Simple Machines: Forces in Action</i> pages 12–13 (book; one per student) • Tracking My Progress, End of Unit 2, Part I recording form (one per student) • End of Unit 2 Assessment, Part I: Reading and Answering Questions about Wedges (answers, for teacher reference) • 2-Point Rubric: Writing from Sources/Short Response (for teacher reference)

Opening	Meeting Students' Needs
<p>A. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none"> • Post the first learning target: “I can make connections between the meaning of vocabulary words related to simple machines.” Read the target aloud to students and ask them to turn to a partner to discuss its meaning. Have a few pairs share out. Tell students that this target should be familiar to them since it was used the last time they participated in an Interactive Word Wall activity. If necessary, remind students that when they “make connections between the meaning of vocabulary,” they explain the meanings of words are related to one another. • Explain that also in today’s lesson, they will complete Part I of a two-part assessment. They will read more about the sixth simple machine (the wedge). Then, in the next lesson, for Part II, they will read, conduct, and write about an experiment with wedges. Post the remaining learning targets: “I can document what I learn about a simple machine in my own words,” “I can find the meaning of scientific and academic words related to a simple machine,” and “I can answer questions about simple machines and how they work using details from a scientific text.” Tell students that these targets should look familiar from previous lessons. Have students give a quick thumbs-up, thumbs-sideways, or thumbs-down to show that they understand each target. Clarify as necessary. 	



Work Time	Meeting Students' Needs
<p>A. Connecting Key Vocabulary: Interactive Word Wall (15 minutes)</p> <ul style="list-style-type: none">• Tell students they will use the cards from the previous lesson for Quiz-Quiz-Trade (Lesson 11) to participate in another round of Interactive Word Wall. Remind students they have done this before (Lesson 7). Review the purpose of this activity: to help them develop a deeper understanding of the scientific concepts related to simple machines and help to prepare them for their end of unit assessment.• Post the Interactive Word Wall directions and review with students. Using the document camera (or with magnets on the board), briefly review with students how to make a connection between words using the Vocabulary word cards and the Interactive Word Wall symbols.• Divide students into groups of four (it's fine to have groups of three or five if there is an uneven number of students). Distribute a set of Vocabulary word cards (with additional words from Lesson 11) and Interactive Word Wall arrows to each group.• Give groups 10 minutes to make connections. If they finish early, encourage them to start again and try to make new connections with their words.• Ask each group to share a connection they made and why. Listen for students to explain the trade-off of using simple machines: Effort is decreased but distance is increased. Listen for: "We connected the word <i>pulley</i> with the words <i>effort</i> and <i>decrease</i>, because the pulley decreases the amount of effort needed to lift something up." Collect Vocabulary word cards and have students prepare their desk for the assessment.	<ul style="list-style-type: none">• Consider allowing students to draw a diagram or picture to explain their connections.



Work Time (continued)	Meeting Students' Needs
<p>B. End of Unit 2 Assessment: Answering Questions about Wedges (35 minutes)</p> <ul style="list-style-type: none">• Distribute the End of Unit 2 Assessment, Part I: Reading and Answering Questions about Wedges and the text <i>Simple Machines: Forces in Action</i>. Remind students it's important to read the text several times.• Point out the directions at the top of the assessment:<ol style="list-style-type: none">1. Read pages 12–13 in the text <i>Simple Machines: Forces in Action</i> for the gist.2. Reread the text and take notes using the graphic organizer below.3. Reread the text and answer the questions following the graphic organizer.• Clarify if needed.• Invite students to begin. Circulate to observe test-taking strategies and record observations for future instruction. For example, are students going back to the text to look for answers? Do they appear to be reading the text completely before beginning the assessment? Are they annotating the text or their assessment? This information helps when preparing students for future assessments and standardized tests.	



Closing and Assessment	Meeting Students' Needs
<p>A. Tracking My Progress, End of Unit 2 Assessment, Part I (5 minutes)</p> <ul style="list-style-type: none">• Ask students to reflect on the following learning target and then record their progress using the Tracking My Progress, End of Unit 2, Part I recording form: "I can answer questions about simple machines and how they work using details from a scientific text."• Collect Tracking My Progress sheets for additional assessment. Congratulate students on their research about all six simple machines. Remind students that tomorrow they will complete Part II of the assessment, during which they will read, conduct, and write about an experiment with wedges. This will be similar to the experiments they have conducted on inclined planes, levers, pulleys, and the wheel and axle.	
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Continue reading in your independent reading book for this unit at home. <p><i>Note: For Part II of this assessment, students will read and answer questions about an experiment using wedges (pages 14 and 15 of Simple Machines: Forces in Action). As with the experiments in Lessons 2, 4, and 10, be sure to use a large sticky note or small strip of paper cover up the "How Does It Work?" box on the top half of page 15.</i></p> <p><i>Before Lesson 13, prepare the necessary materials for the experiment. If materials are limited, consider having students conduct the experiment with a partner or in small groups and then asking them to answer questions individually.</i></p>	



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Supporting Materials



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End of Unit 2 Assessment, Part I:
Reading and Answering Questions about Wedges

Name: _____

Date: _____

Directions:

1. Read pages 12–13 in the text *Simple Machines: Forces in Action* for the gist.
2. Reread the text and take notes using the graphic organizer below.
3. Reread the text and answer the questions below the graphic organizer.

Read and Record:

What a wedge looks like:	Type of work it helps a person do:	Examples of a wedge:



End of Unit 2 Assessment, Part I:
Reading and Answering Questions about Wedges

Read and Answer:

1. According to the text, the main function of a wedge is to:
 - A. lift heavy loads
 - B. push things apart
 - C. pull things together
 - D. raise something higher

2. Which of the following lines from the text describes HOW a wedge works?
 - A. “A doorstop is a wedge used to hold things.”
 - B. “You can push a thin wedge a longer distance than a thick wedge ...”
 - C. “When the axe hits the log, the force is pushed from above to the sides and splits the log apart.”
 - D. “You have a wedge inside you—your teeth!”

3. Which is an example of a wedge doing work?
 - A. teeth biting into something
 - B. your mouth opening and closing
 - C. a closed door
 - D. a knife sitting in the sink

4. What evidence from the text best supports the answer to Question 3 above?
 - A. “A doorstop is a wedge ...”
 - B. “The wedge is a simple machine that is used to push things apart.”
 - C. “You can split an apple using your jaw muscles.”
 - D. “You can push a thin wedge a longer distance than a thick wedge ...”



End of Unit 2 Assessment, Part I:
Reading and Answering Questions about Wedges

5. Which of the following words has a similar meaning to the word *narrower* as it is used in the text: “The sharper the point or *narrower* the edge of the wedge, the less effort it takes to push an object apart.”
- A. thinner
 - B. limited
 - C. taller
 - D. stricter
6. Using the scientific meaning of the word *work*, which of the following describes work being done?
- A. a baby crawling
 - B. reading a book
 - C. a knife in the sink
 - D. hammering a nail into wood
7. How is the wedge related to the inclined plane? Use evidence from the text to support your explanation.



End of Unit 2 Assessment, Part I:
Reading and Answering Questions about Wedges

8. How does a screw affect work? Use details from the text to support your explanation.



Tracking My Progress, End of Unit 2 Assessment, Part I

Name: _____

Date: _____

Learning target: I can answer questions about simple machines and how they work using details from a scientific text.

1. The target in my own words is:

2. How am I doing? Circle one.

I need more help to learn this



I understand some of this



I am on my way!



3. The evidence to support my self-assessment is:



End of Unit 2 Assessment, Part I:
Reading and Answering Questions about Wedges
(Answers, for Teacher Reference)

Standards Assessed:

Graphic Organizer (W.4.8); Questions 1, 2, 3, and 4 (RI.4.3); Questions 5 and 6 (RI.4.4); Questions 7 and 8 (W.4.9); and (RI.4.3)

Directions:

1. Read pages 12–13 in the text *Simple Machines: Forces in Action* for the gist.
2. Reread the text and take notes using the graphic organizer below.
3. Reread the text and answer the questions below the graphic organizer.

Read and Record: [possible responses]

What a wedge looks like:	Type of work it helps a person do:	Examples of a wedge:
<ul style="list-style-type: none">• Two inclined planes joined back to back• A triangle that is narrow at one end and wider at the other• Wide on one end, thin on the other	<ul style="list-style-type: none">• Helps push things apart• Chopping wood• Cutting food• Biting into something• Holding a door open	<ul style="list-style-type: none">• axe• nail• knife• teeth• doorstop



End of Unit 2 Assessment, Part I:
Reading and Answering Questions about Wedges
(Answers, for Teacher Reference)

Read and Answer:

1. According to the text, the main function of a wedge is to:
 - A. lift heavy loads
 - B. **push things apart**
 - C. pull things together
 - D. raise something higher

2. Which of the following lines from the text describes HOW a wedge works?
 - A. “A doorstop is a wedge used to hold things.”
 - B. “You can push a thin wedge a longer distance than a thick wedge ...”
 - C. **“When the axe hits the log, the force is pushed from above to the sides and splits the log apart.”**
 - D. “You have a wedge inside you—your teeth!”

3. Which is an example of a wedge doing work?
 - A. **teeth biting into something**
 - B. your mouth opening and closing
 - C. a closed door
 - D. a knife sitting in the sink

4. What evidence from the text best supports the answer to Question 3 above?
 - A. “A doorstop is a wedge ...”
 - B. **“The wedge is a simple machine that is used to push things apart.”**
 - C. “You can split an apple using your jaw muscles.”
 - D. “You can push a thin wedge a longer distance than a thick wedge ...”



End of Unit 2 Assessment, Part I:
Reading and Answering Questions about Wedges
(Answers, for Teacher Reference)

5. Which of the following words has a similar meaning to the word *narrower* as it is used in the text: “The sharper the point or *narrower* the edge of the wedge, the less effort it takes to push an object apart.”
- A. **thinner**
 - B. limited
 - C. taller
 - D. stricter
6. Using the scientific meaning of the word *work*, which of the following describes work being done?
- A. a baby crawling
 - B. reading a book
 - C. a knife in the sink
 - D. **hammering a nail into wood**



End of Unit 2 Assessment, Part I:
Reading and Answering Questions about Wedges
(Answers, for Teacher Reference)

Use the rubric below to score the answers to the following. Be sure students' explanations are scientifically accurate and based on the text.

7. How is the wedge related to the inclined plane? Use evidence from the text to support your explanation.

[Possible Answer] The wedge is made of two inclined planes joined back-to-back. The wedge is made to move and the inclined plane is not. They both make work easier by making it take less effort.

8. How does a screw affect work? Use details from the text to support your explanation.

[Possible Answer] The wedge is used to push things apart. When you push on a wedge you can cut into something easier, like teeth cutting into an apple. If you have to take a bite of an apple, you can use your teeth to do the work. It takes less effort than trying to pull off a chunk with your fingers.



2-Point Rubric: Writing from Sources/Short Response¹
(For Teacher Reference)

Use the below rubric for determining scores on short answers in this assessment.

2-point Response	The features of a 2-point response are:
	<ul style="list-style-type: none">• Valid inferences and/or claims from the text where required by the prompt• Evidence of analysis of the text where required by the prompt• Relevant facts, definitions, concrete details, and/or other information from the text to develop response according to the requirements of the prompt• Sufficient number of facts, definitions, concrete details, and/or other information from the text as required by the prompt• Complete sentences where errors do not impact readability
1-point Response	The features of a 1-point response are:
	<ul style="list-style-type: none">• A mostly literal recounting of events or details from the text as required by the prompt• Some relevant facts, definitions, concrete details, and/or other information from the text to develop response according to the requirements of the prompt• Incomplete sentences or bullets
0-point Response	The features of a 0-point response are:
	<ul style="list-style-type: none">• A response that does not address any of the requirements of the prompt or is totally inaccurate• No response (blank answer)• A response that is not written in English• A response that is unintelligible or indecipherable

¹From New York State Department of Education, October 6, 2012.