

enVision A|G|A © 2018

Teaching a Lesson: Part 2

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Introduction



In this two-part tutorial, we will explore how to teach a lesson using **enVision A|G|A**.

In Part 1 of this tutorial, we reviewed the print and digital planning resources at the topic and lesson level. Be sure to look at Part 1 prior to going through this tutorial.

In this Part 2, we will examine the instructional design of **enVision A|G|A** and how to teach using the four-step lesson structure.

You can also follow along using the print or digital version of your Teacher's Edition.

Instructional Design

Four-step lesson structure:

- Step 1: Explore
- Step 2: Understand & Apply
- Step 3: Practice & Problem Solving
- Step 4: Assess & Differentiate

STEP 1 | Explore

EXPLORE & REASON

Introduce the Essential Question

STEP 2 | Understand & Apply

PRACTICE & PROBLEM SOLVING

STEP 3 | Practice & Problem Solving

LESSON QUIZ

Item Analysis

Item	DOK
1	1
2	1
3	2
4	1
5	2

STEP 4 | Assess & Differentiate

Item Analysis

Example	Item
1	14-19
2	10, 14-19, 13
3	20, 21

The **enVision A|G|A** instructional model is built on the interaction between problem-based learning and explicit visual instruction. These components are reflected in the four-step instructional design of each lesson: Explore, Understand & Apply, Practice & Problem Solving, and Assess & Differentiate. Please keep in mind that although lesson activities will vary, the four-step instructional design is the same for each course.

Next, let's dig deeper into each step.

Step 1: Explore

STEP 1 Explore

EXPLORE & REASON

INSTRUCTIONAL FOCUS Students use their knowledge of the features of the graph of the absolute value parent function to explore the graph of the quadratic parent function.

STUDENT COMPANION Students can complete the *Explore & Reason* activity on page 167 of their *Student Companion*.

Before WHOLE CLASS

Implement Tasks That Promote Reasoning and Problem Solving ETP

Q: What do you notice about the function and graph on the left?
[Answers may vary. Sample: The absolute value function has a minimum, reflection symmetry across the y-axis, and a non-negative range. The rate of change is negative to the left of the y-axis and positive to the right of the y-axis.]

During SMALL GROUP

Support Productive Struggle in Learning Mathematics ETP

Q: What features of the graph of the absolute value function could you look at to compare and contrast the two graphs? [the vertex, the axis of symmetry, the shape, the direction of the graph]

For Early Finishers

Q: How does the graph on the right compare or contrast to the graph of a linear function? Of an exponential function? [A linear function and an exponential function do not have an axis of symmetry or a maximum/minimum value.]

After WHOLE CLASS

Facilitate Meaningful Mathematical Discourse ETP

Facilitate a discussion about the similarities and differences of the graphs of absolute value and quadratic functions.


Q: What similarities do you notice between the two graphs?
What differences?
[both have a vertex, both have an axis of symmetry; the graph on the left has straight line segments, the graph on the right has curves]

Q: When does the graph of an absolute value function open downward?

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AVAILABLE ONLINE

EXPLORE & REASON



A. Look for Relationships How is the graph of $f(x) = |x|$ similar to the graph of $g(x) = x^2$? How is it different?

B. What do you notice about the axis of symmetry in each graph?

8-1

STUDENT EDITION, PAGE 315

8-1

EXPLORE & REASON

1. CAN: Identify key features of the graph of the quadratic parent function.

VOCABULARY

- parabola
- quadratic parent function

ESSENTIAL QUESTION

What is the quadratic parent function and how can you recognize the key features of its graph?

EXAMPLE Identify a Quadratic Parent Function

SAMPLE STUDENT WORK

A. Both graphs open upward, have turning points, and have symmetry about the y-axis. The graph of $f(x) = |x|$ is linear pieces while the graph of $g(x) = x^2$ is curved.

B. The axis of symmetry is $x = 0$ for both graphs.

Problem-based launch activity

In Step 1: Explore, each lesson opens with a problem-based launch activity in which students work collaboratively to draw on their existing math knowledge.

Students can solve the problem in math journals, in the optional *Student Companion*, or online when you assign the task via Savvas Realize™.

Use questioning strategies to facilitate the Explore problem. The Teacher's Edition provides support to facilitate these question-driven conversations before, during, and after the activity. Throughout each lesson, the Effective Teaching Practice (ETP) icons alert you to questions and strategies that focus on the eight Effective Mathematics Teaching Practices.

As students work on the problem, determine which student work examples you want to share with the class. For students who have mastered the problem, provide differentiation by asking them to explore the For Early Finishers question.

Encourage your students to talk to each other about their methods and to evaluate the problem-solving process. Consider presenting some of the sample student work examples as additional strategies.

Finally, pose the Habits of Mind question (also available online) to encourage students to pause and reflect on their learning, and to make content connections.

Types of Opening Activities

Three different types of opening activities:



The image shows three rectangular buttons stacked vertically. Each button has a circular icon on the left containing a stylized 'e' with three dots above it. The text on the buttons is in blue, uppercase letters. The background of the slide is light blue with a pattern of overlapping circles and dots.

- EXPLORE & REASON
- MODEL & DISCUSS
- CRITIQUE & EXPLAIN

When you are done, click **Next**.

There are three different types of opening activities that your students will encounter in Step 1: Explore and Reason, Model and Discuss, and Critique and Explain. Take a minute to read about each type of activity.

Explore & Reason

Exit
8-1: Explore & Reason

EXPLORE & REASON

A. **Look for Relationships** How is the graph of $f(x) = |x|$ similar to the graph of $f(x) = x^2$? How is it different?

Enter your answer.

A coordinate plane showing the graph of the absolute value function $f(x) = |x|$. The graph is a V-shape opening upwards with its vertex at the origin (0,0). The x-axis and y-axis both range from -8 to 8, with grid lines every 1 unit and labels at -8, -4, 0, 4, and 8.

B. What do you notice about the axis of symmetry in each graph?

Enter your answer.

A coordinate plane showing the graph of the quadratic function $f(x) = x^2$. The graph is a parabola opening upwards with its vertex at the origin (0,0). The x-axis and y-axis both range from -8 to 8, with grid lines every 1 unit and labels at -8, -4, 0, 4, and 8.

Explore & Reason:
Students explore a mathematical concept and use reasoning to draw conclusions.

Students explore a mathematical concept and use reasoning to draw conclusions.

Model & Discuss

Exit
8-4: Model & Discuss

MODEL & DISCUSS

The graphic shows the heights of a supply package dropped from a helicopter hovering above ground.

A. Model With Mathematics Would a linear function be a good model for the data? Explain.

Enter your answer.

B. Would a quadratic function be a good model for the data? Explain.

Enter your answer.

Time	Height
0 s	350 ft
1 s	335 ft
2 s	283 ft
3 s	206 ft
4 s	96 ft

1

2

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Model & Discuss:
Students are presented with a scenario that requires them to apply the mathematical modeling process. Students consider and analyze possible models for the problem presented.

Students are presented with a scenario that requires them to apply the mathematical modeling process. Students consider and analyze possible models for the problem presented.

Critique & Explain

Exit
8-2: Critique & Explain

CRITIQUE & EXPLAIN
A-Z

Allie states that the two graphs shown may look different, but they are actually the same figure. Esteban disagrees, stating that they are different figures because they look different.

A. Give one mathematical argument to support Esteban's thinking.

Enter your answer.

B. Give one mathematical argument to support Allie's thinking.

Enter your answer.

C. Construct a mathematical argument to support your thinking.

Enter your answer.

Critique & Explain:
Students evaluate examples of mathematical reasoning and critique the reasoning as appropriate. In all instances, students are asked to respond to a mathematical argument and construct their own mathematical arguments.

Students evaluate examples of mathematical reasoning and critique the reasoning as appropriate. In all instances, students are asked to respond to a mathematical argument and construct their own mathematical arguments.

Step 2: Understand & Apply

STEP 2 Understand & Apply

INTRODUCE THE ESSENTIAL QUESTION

Establish Mathematics Goals to Focus Learning

Introduce to students quadratic functions as functions in which the highest degree term is of the second degree. Remind them that, as with other functions, graphs and tables can help them identify the key features of quadratic functions. Explain that they will first study the quadratic parent function.

EXAMPLE 1 Identify a Quadratic Parent Function

Use and Connect Mathematical Representations

Q: What features can you use to describe the graph of the quadratic parent function?

[Its shape, the direction it opens, and the location of the vertex, symmetry across the y-axis]

Q: How are the representations of the vertex in the table and on the graph similar?

[The vertex represents the lowest value for $f(x)$ in the table and is also the lowest point on the graph.]

Try It! Answers

1. The values of $f(x)$ are always positive, except at the vertex where the value of $f(x)$ is 0.

ADDITIONAL EXAMPLES

Example 2 Help students connect the shape of a parabola with the value of a in $f(x) = ax^2$.

Q: How can you use the graphs of the functions to determine the possible values for a ?

[Look at whether the parabola opens upward or downward. If it opens upward, $a > 0$. If it opens downward, $a < 0$. Then look at the shape of the parabola compared to the parent function. If it is wider, then $0 < |a| < 1$. If it is narrower, then $|a| > 1$.]

Example 4 Help students write a cost function based on the diameter of a circular table.

Q: What is a reasonable domain for this function?

[$x > 0$; The diameter must be a positive number]

Make the important mathematics of the lesson explicit through direct instruction

In Step 2: Understand and Apply, you will make the important mathematics of the lesson explicit with enhanced direct instruction that connects back to the problem in Step 1.

Begin by introducing the Essential Question to focus students' thinking on the key concepts of the lesson. Then use visual learning examples to connect students' thinking from the Explore section to the new mathematical ideas of the lesson.

Students can interact with these examples in their Student Editions or online through Savvas Realize. Use these visual examples to engage students in rich classroom conversations about multiple representations to deepen their conceptual understanding.

Every lesson has additional examples to extend students' learning and help make explicit the mathematical concepts presented. This includes Conceptual Understanding examples.

Many examples have embedded interactivities on Savvas Realize, powered by Desmos, to allow students to interact with modeling tools digitally.

In addition, specific examples are designed to help students develop procedural fluency and application skills. Please note that Geometry also has Proof examples.

As you teach Step 2, check for understanding by posing the Try It! and Habits of Mind questions to your students. Then use the results to guide your instruction. Use the Response to Intervention (RtI) notes in your Teacher's Edition to differentiate instruction for your struggling students.

The English Language Learners section provides strategies to support the development of your students' English language proficiency. Here you'll find specific guidance for the three levels of English language proficiency: Beginning, Intermediate, and Advanced.

Note that throughout Step 2, support for differentiated instruction is provided at point-of-use for all students, including your advanced learners.

At the end of Step 2, a Concept Summary presents a summary of the main math concepts in the lesson, along with guiding questions to help you monitor students' understanding.

Note that **enVision A|G|A** lessons are designed to span two days of instruction, and have natural breaks that occur at different places within the lesson. These breaks will not be in the same place for every lesson, but before or after the Step 2 Concept Summary may be a good stopping point.

Formative Assessment Opportunities

STEP 2 Understand & Apply

CONCEPT SUMMARY Features of the Quadratic Function $f(x) = ax^2$

Q: What characteristics of a quadratic function does the value of the leading coefficient a affect?
[the direction that the parabola opens and the width of the parabola]

Do You UNDERSTAND? | Do You KNOW HOW?

Common Error

Exercise 7 Students may think that since $5 > 1$, the graph of $f(x)$ would be wider than the parent function. Remind students that when $|a| > 1$, the graph is vertically stretched, and therefore is narrower than the parent function.

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AVAILABLE ONLINE

CONCEPT SUMMARY Features of the Quadratic function $f(x) = ax^2$

$f(x) = x^2$

Vertex: (0, 0)
Axis of symmetry: $x = 0$

The function has a minimum value and opens upward.

$f(x) = ax^2$

When $a < 0$, the parabola opens downward.

WORDS

The function $f(x) = x^2$ is the same as $f(x) = 1x^2$. It is the quadratic parent function. The function decreases over the interval $x < 0$ and increases over the interval $x > 0$.

When $0 < |a| < 1$, the graph of $f(x) = ax^2$ is wider than the graph of $f(x) = x^2$. When $|a| > 1$, graph of $f(x) = ax^2$ is narrower than the graph of $f(x) = x^2$.

Do You UNDERSTAND?

- ESSENTIAL QUESTION** What is the quadratic parent function and how can you recognize the key features of its graph?
- Communicate Precisely** How is the graph of $f(x) = ax^2$ similar to the graph of $f(x) = x^2$? How is it different?
- Vocabulary** Make a conjecture about why the term quadratic parent function includes the word "parent."
- Error Analysis** Abby graphed the function $f(x) = -13x^2$ by plotting the point $(-2, 52)$. Explain the error Abby made in her graph.

Do You KNOW HOW?

How does the value of a in each function affect its graph when compared to the graph of the quadratic parent function?

- $g(x) = 4x^2$
- $h(x) = 0.8x^2$
- $j(x) = -5x^2$
- $k(x) = -0.4x^2$

5. Given the function $f(x) = 2.5x^2 + 3$, find the average rate of change over the interval $0 \leq x \leq 4$. What does the average rate of change tell you about the function?

Formative assessment activities are available in print and online

increases over the interval $x > 0$.

- The graphs of both functions have axis of symmetry $x = 0$ and vertex and x - and y -intercepts at $(0, 0)$. The graph of $f(x) = ax^2$ becomes narrower as $|a|$ becomes greater, and for $a < 0$, the graph opens downward.
- The word "parent" is included because all other quadratic functions are related to the parent function.
- The sign of the y -value is incorrect. The point should be $(-2, -52)$.
- The graph is narrower than the graph of the parent function.
- The graph is wider than the graph of the parent function.

Each lesson contains formative assessment activities after the Concept Summary. These activities—called Do You Understand? and Do You Know How?—are available in print and online. Explore each area of the page to learn more.

11

Do You Understand?

STEP 2 Understand & Apply

CONCEPT SUMMARY Features of the Quadratic Function $f(x) = ax^2$

Q: What characteristics of a quadratic function does the value of the leading coefficient a affect?
[the direction that the parabola opens and the width of the parabola]

Do You UNDERSTAND? | Do You KNOW HOW?

Common Error
Exercise 7 Students may think that since $5 > 1$, the graph of $f(x)$ would be wider than the parent function. Remind students that when $|a| > 1$, the graph is vertically stretched, and therefore is narrower than the parent function.

AVAILABLE ONLINE

CONCEPT SUMMARY Features of the Quadratic Function $f(x) = ax^2$

$f(x) = x^2$

GRAPHS

The function has a minimum value and opens upward.

Vertex: (0, 0)
Axis of symmetry: $x = 0$

WORDS

The function $f(x) = x^2$ is the same as $f(x) = 1x^2$. It is the quadratic parent function. The function decreases over the interval $x < 0$ and increases over the interval $x > 0$.

$f(x) = ax^2$

When $a < 0$, the parabola opens downward.

WORDS

When $0 < |a| < 1$, the graph of $f(x) = ax^2$ is wider than the graph of $f(x) = x^2$. When $|a| > 1$, graph of $f(x) = ax^2$ is narrower than the graph of $f(x) = x^2$.

Do You Understand?

The questions in the Do You Understand? section target students' conceptual understanding. Students answer the lesson's Essential Question and other critical-thinking questions so you can assess their understanding of the lesson concepts.

Do You UNDERSTAND?

- 1. Recognize Key Features** What is the quadratic parent function and how can you recognize the key features of its graph?
- 2. Communicate Precisely** How is the graph of $f(x) = ax^2$ similar to the graph of $f(x) = x^2$? How is it different?
- 3. Vocabulary** Make a conjecture about why the term quadratic parent function includes the word "parent."
- 4. Error Analysis** Abby graphed the function $f(x) = -13x^2$ by plotting the point $(-2, 52)$. Explain the error Abby made in her graph.

Do You KNOW HOW?

How does the value of a in each function affect its graph when compared to the graph of the quadratic parent function?

- $g(x) = 4x^2$
- $h(x) = 0.8x^2$
- $f(x) = -5x^2$
- $k(x) = -0.4x^2$

9. Given the function $f(x) = 2.5x^2 + 3$, find the average rate of change over the interval $0 \leq x \leq 4$. What does the average rate of change tell you about the function?

LESSON 8-1 Key Features of a Quadratic Function 319

The questions in the Do You Understand? section target students' conceptual understanding. Students answer the lesson's Essential Question and other critical-thinking questions so you can assess their understanding of the lesson concepts.

Do You Know How?

STEP 2 Understand & Apply

CONCEPT SUMMARY Features of the Quadratic Function $f(x) = ax^2$

Q: What characteristics of a quadratic function does the value of the leading coefficient a affect?
[the direction that the parabola opens and the width of the parabola]

Do You UNDERSTAND? | Do You KNOW HOW?

Common Error

Exercise 7 Students may think that since $5 > 1$, the graph of $f(x)$ would be wider than the parent function. Remind students that when $|a| > 1$, the graph is vertically stretched, and therefore is narrower than the parent function.

Answers

- $f(x) = x^2$; a parabola that opens upward, with axis of symmetry $x = 0$, minimum, vertex, and x - and y -intercepts at $(0, 0)$. The function decreases over the interval $x < 0$ and increases over the interval $x > 0$.
- The graphs of both functions have axis of symmetry $x = 0$ and vertex and x - and y -intercepts at $(0, 0)$. The graph of $f(x) = ax^2$ becomes narrower as $|a|$ becomes greater, and for $a < 0$, the graph opens downward.
- The word "parent" is included because all other quadratic functions are related to the parent function.
- The sign of the y -value is incorrect. The point should be $(-2, -52)$.
- The graph is narrower than the graph of the parent function.
- The graph is wider than the graph of the parent function.

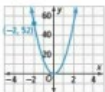
PearsonRealize.com

Do You Know How?

The Do You Know How? exercises focus on procedural fluency and application. These problems focus on determining students' success with applying the skills in the lesson.

Do You UNDERSTAND?

- Communicate Precisely** What is the quadratic parent function and how can you recognize the key features of its graph?
- Communicate Precisely** How is the graph of $f(x) = ax^2$ similar to the graph of $f(x) = x^2$? How is it different?
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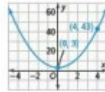


Do You KNOW HOW?

How does the value of a in each function affect its graph when compared to the graph of the quadratic parent function?

- $g(x) = 4x^2$
- $h(x) = 0.8x^2$
- $f(x) = -5x^2$
- $k(x) = -0.4x^2$

9. Given the function $f(x) = 2.5x^2 + 3$, find the average rate of change over the interval $0 \leq x \leq 4$. What does the average rate of change tell you about the function?



LESSON 8-1 Key Features of a Quadratic Function 319

The Do You Know How? exercises focus on procedural fluency and application. These problems focus on determining students' success with applying the skills in the lesson.

Common Error

STEP 2 Understand & Apply

CONCEPT SUMMARY Features of the Quadratic Function $f(x) = ax^2$

Q: What characteristics of a quadratic function does the value of the leading coefficient a affect?
[the direction that the parabola opens and the width of the parabola]

Do You UNDERSTAND? | Do You KNOW HOW?

Common Error

Exercise 7 Students may think that since $5 > 1$, the graph of $f(x)$ would be wider than the parent function. Remind students that when $|a| > 1$, the graph is vertically stretched, and therefore is narrower than the parent function.

Answers

Common Error:

The Common Error section provides guidance to help you address common student misconceptions as well as suggestions for remediation.

functions are related to the parent function.

4. The sign of the y -value is incorrect. The point should be $(-2, -52)$.

5. The graph is narrower than the graph of the parent function.

6. The graph is wider than the graph of the parent function.

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CONCEPT SUMMARY Features of the Quadratic Function $f(x) = ax^2$

$f(x) = x^2$

GRAPHS

Vertex: $(0, 0)$
Axis of symmetry: $x = 0$

The function has a minimum value and opens upward.

WORDS

The function $f(x) = x^2$ is the same as $f(x) = 1x^2$. It is the quadratic parent function. The function decreases over the interval $x < 0$ and increases over the interval $x > 0$.

$f(x) = ax^2$

When $a < 0$, the parabola opens downward.

When $0 < |a| < 1$, the graph of $f(x) = ax^2$ is wider than the graph of $f(x) = x^2$. When $|a| > 1$, graph of $f(x) = ax^2$ is narrower than the graph of $f(x) = x^2$.

Do You UNDERSTAND?

1. **Communicate Precisely** What is the quadratic parent function and how can you recognize the key features of its graph?
2. **Communicate Precisely** How is the graph of $f(x) = ax^2$ similar to the graph of $f(x) = x^2$? How is it different?
3. **Vocabulary** Make a conjecture about why the term quadratic parent function includes the word "parent."
4. **Error Analysis** Abby graphed the function $f(x) = -13x^2$ by plotting the point $(-2, 52)$. Explain the error Abby made in her graph.

Do You KNOW HOW?

How does the value of a in each function affect its graph when compared to the graph of the quadratic parent function?

5. $g(x) = 4x^2$
6. $h(x) = 0.8x^2$
7. $f(x) = -5x^2$
8. $k(x) = -0.4x^2$
9. Given the function $f(x) = 2.5x^2 + 3$, find the average rate of change over the interval $0 \leq x \leq 4$. What does the average rate of change tell you about the function?

LESSON 8-1 Key Features of a Quadratic Function 319

The Common Error section provides guidance to help you address common student misconceptions as well as suggestions for remediation.

Step 3: Practice & Problem Solving

STEP 3 | Practice & Problem Solving

PRACTICE & PROBLEM SOLVING

Lesson Practice: You may opt to have students complete the automatically scored Practice and Problem Solving items online powered by MathXL for School.

Choose from:

- ☒ Lesson Practice
- ☒ Adaptive Practice

You may also take advantage of the bank of exercises for assigning additional practice.

Assignment Guide

Basic	Advanced
10-21, 23, 25-31	10-13, 16-31

Item Analysis

Example	Items	DOK
1	14-19	1
2	10, 14-19, 30	1
	13	3
3	20, 21	1
	11	3
4	12, 22, 23	1
	24, 25	2
5	26-29	3
	31	4

Answers

- $-1 < a < 0$
- The coordinates used to calculate the slope are incorrect. Use $(-4, 8)$ and $(-2, 2)$. The average rate of change is -3 .
- increasing: $x > 0$; decreasing: $x < 0$
- a. sometimes true
b. always true
c. always true
- The graph is narrower.
- The graph is wider.
- The graph is narrower and opens downward.
- The graph is wider and opens downward.
- The graph is wider.
- The graph is narrower.
- decreasing: $x > 0$; increasing: $x < 0$
- $A(x) = x^2$; 169 units²
- $A(x) = 0.5x^2$; 3.125 units²
- The average rate of change of g , 1.5, is 3 times greater than the average rate of change of f , 0.5.
- The average rate of change of g , 24, is 2 times greater than the average rate of change of f , 12.

Types of problems:

- Conceptual understanding tasks
- Skill practice
- Application exercises
- Assessment practice

In Step 3: Practice and Problem Solving, you'll assign robust and balanced practice exercises to solidify student understanding.

You can use the Assignment Guide and Item Analysis features to help you decide the type and number of problems to assign in the Student Edition. The problems include conceptual understanding exercises and skill practice tasks as well as application exercises and assessment practice.

Additionally, Digital Resources icons identify the tools and practice options available online at Savvas Realize for each lesson.

You may opt to have students complete the Practice and Problem Solving items online, powered by MathXL for School®. These exercises are auto-scored so you can quickly see how students are doing. A Mixed Review assignment with built-in MathXL for School® learning aids is also provided for extra support and practice.

You can also assign Adaptive Practice and Homework powered by Knewton to some or all of your students. Knewton gathers student performance information from assessments and assignments that students complete on Savvas Realize and uses that information to intelligently prescribe tasks and content to meet each student's learning needs.

Step 4: Assess & Differentiate

STEP 4 Assess & Differentiate

LESSON QUIZ

Use the Lesson Quiz to assess students' understanding of the mathematics in the lesson.

Students can take the Lesson Quiz online or you can download a printable copy from PearsonRealize.com. The Lesson Quiz is also available in the Assessment Resources book.

Item Analysis

Item	DOK
1	1
2	1
3	2
4	1
5	2

Use the student scores on the Lesson Quiz to prescribe differentiated assignments.

If students take the Lesson Quiz online, it will be automatically scored and appropriate differentiated practice will be assigned based on student performance.

Intervention	Points	Activities
Intervention	0-3 points	<ul style="list-style-type: none"> Reteach to Build Understanding Mathematical Literacy and Vocabulary Additional Practice
On-Level	4 points	<ul style="list-style-type: none"> Mathematical Literacy and Vocabulary Additional Practice Enrichment
Advanced	5 points	<ul style="list-style-type: none"> Enrichment

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8-1 Lesson Quiz

1. Adam graphs a quadratic function. The vertex of the parabola he graphs is located at (5, 0). Which of the following is the axis of symmetry?

Ⓐ $x = -5$ Ⓑ $x = 5$
Ⓒ $x = 0$ Ⓓ $x = y$

ASSESSMENT RESOURCES

8-1 Lesson Quiz

Key Features of a Quadratic Function

1. Adam graphs a quadratic function. The vertex of the parabola he graphs is located at (5, 0). Which of the following is the axis of symmetry?

Ⓐ $x = -5$ Ⓑ $x = 5$
Ⓒ $x = 0$ Ⓓ $x = y$

2. Match each graph with its function.

I. $f(x) = -2x^2$ II. $g(x) = -x^2$ III. $h(x) = 0.5x^2$ IV. $j(x) = 2x^2$

A. B. C. D.

3. For which function is the average rate of change over the interval $1 < x < 5$ greater than the average rate of change over the same interval for the function $g(x) = 1.8x^2$?

Ⓐ $f(x) = x^2$ Ⓑ $h(x) = 1.5x^2$
Ⓒ $g(x) = 1.2x^2$ Ⓓ $j(x) = 2x^2$

Assign the Lesson Quiz

Assign differentiation

Finally, in Step 4: Assess and Differentiate, you check for understanding of lesson content and provide differentiation.

First, have students take the Lesson Quiz. The quiz is available in print and online, and you can use the results to assign differentiated interventions. The online version is auto-scored and auto-assigns intervention or enrichment based on students' results.

In the Teacher's Edition, the Rtl guidance can help you prescribe differentiated resources to extend intervention, on-level, and advanced support. A library of print and online resources offers opportunities to personalize learning for your students. These resources include Reteach to Build Understanding, Additional Practice, Enrichment, and Mathematical Literacy and Vocabulary.

In addition, you can assign the MathXL for School: Additional Practice and Virtual Nerd™ tutorials for additional differentiated support and to assess your students' understanding.

Closing



Teaching a Lesson: Part 2

- Print and digital planning resources
- Four-step lesson structure

For additional enVision A|G|A tutorials, visit
my SAVVAS Training

In this two-part tutorial, we explored the print and digital planning resources and the program's four-step lesson structure.

To view Part 1 of this tutorial as well as additional **enVision A|G|A** tutorials, visit [MySavvasTraining.com](https://www.mysavvas.com).