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Teaching a Lesson: Part 2

Disclaimer

Introduction

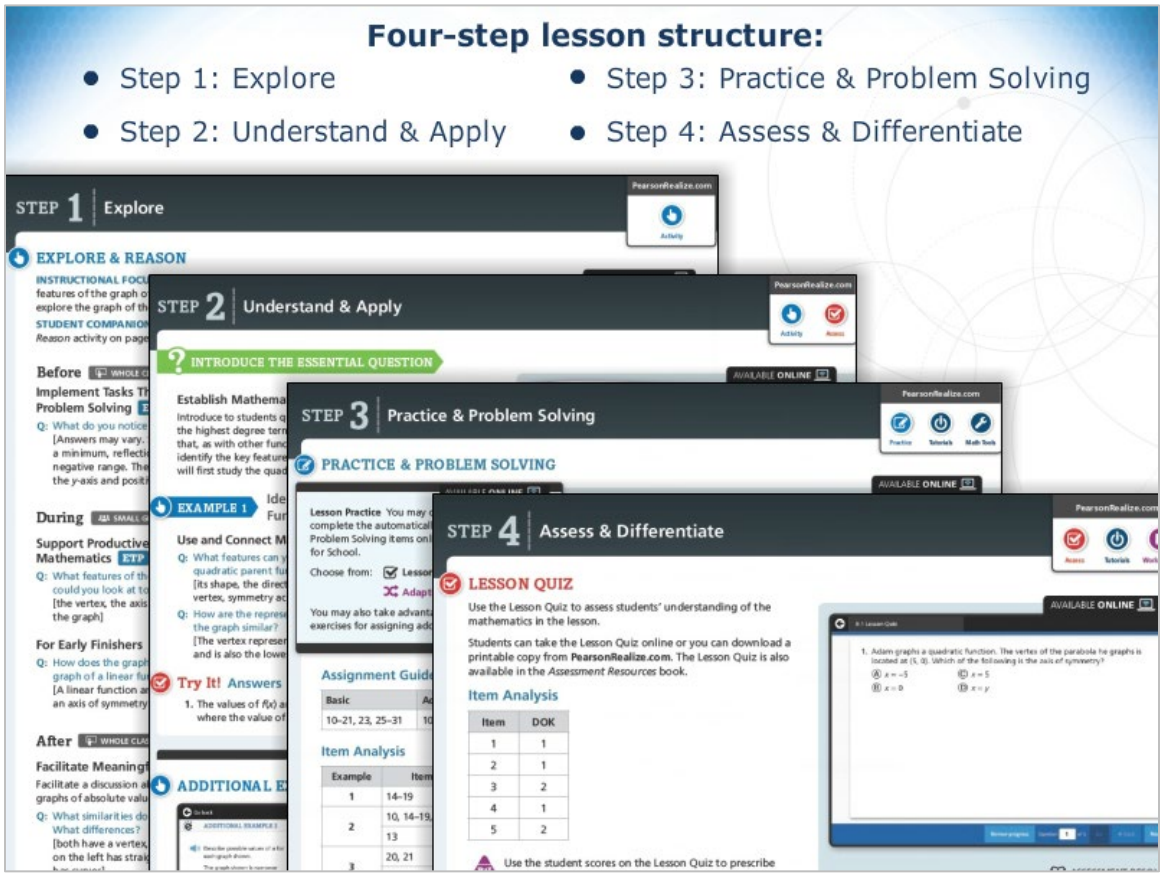
In this two-part tutorial, we will explore how to teach a lesson using **enVision A|G|A**.

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.

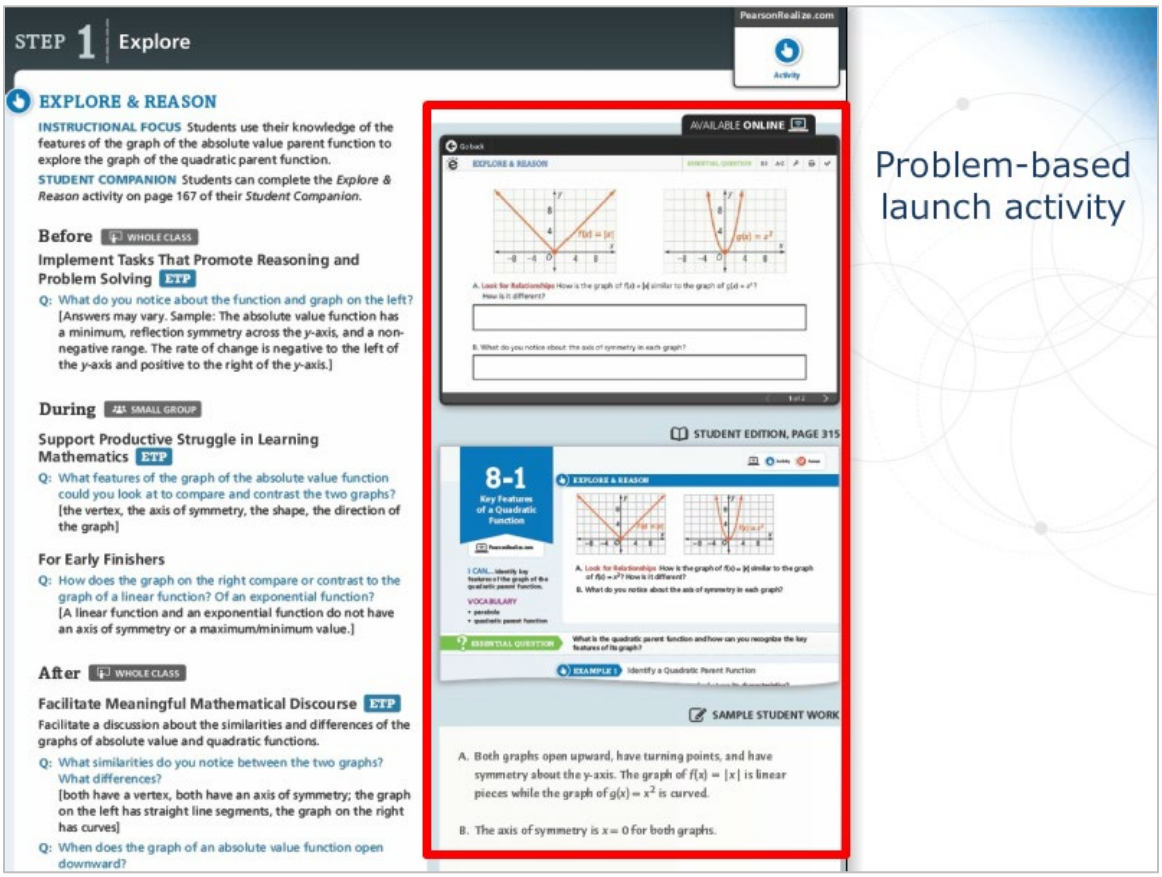
Instructional Design



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



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.

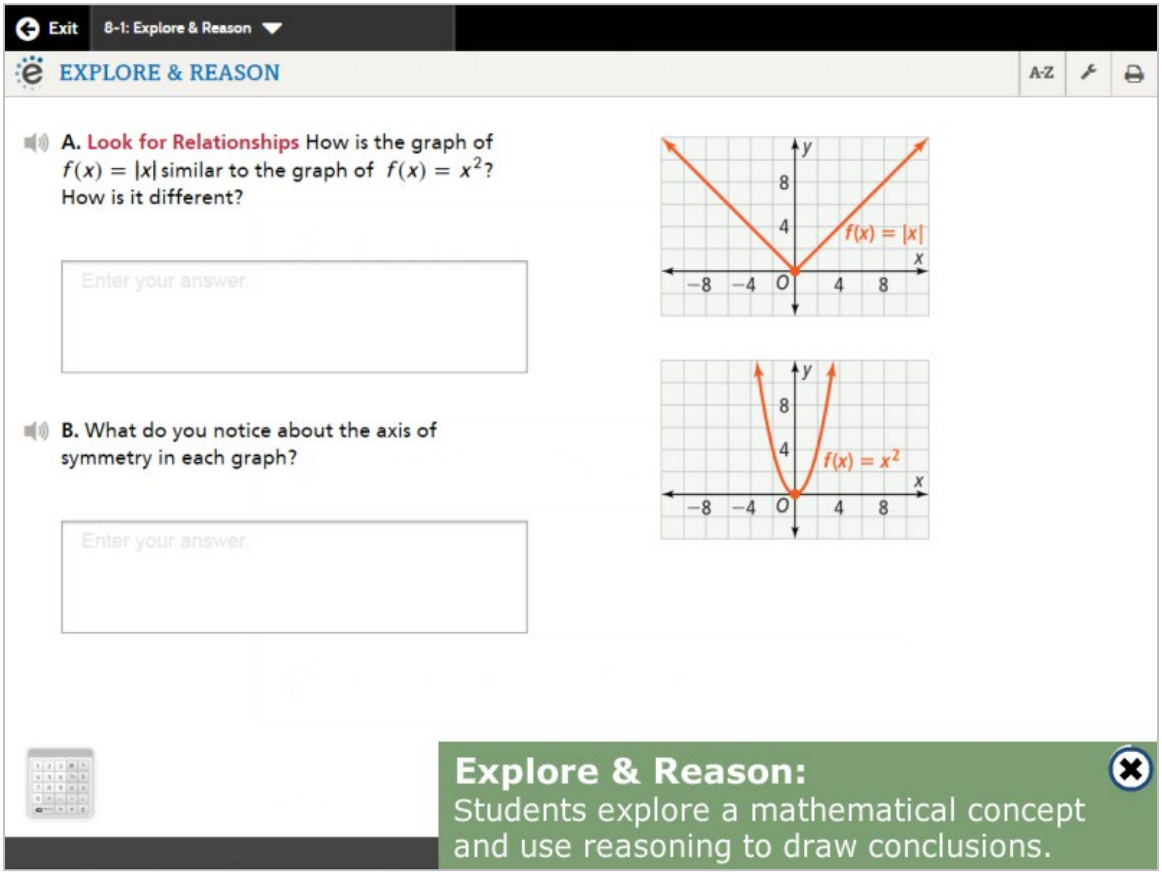
Encourage your students to talk to each other about their methods and to evaluate the problem-solving process. Consider presenting some of the sample student work examples as additional strategies.

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

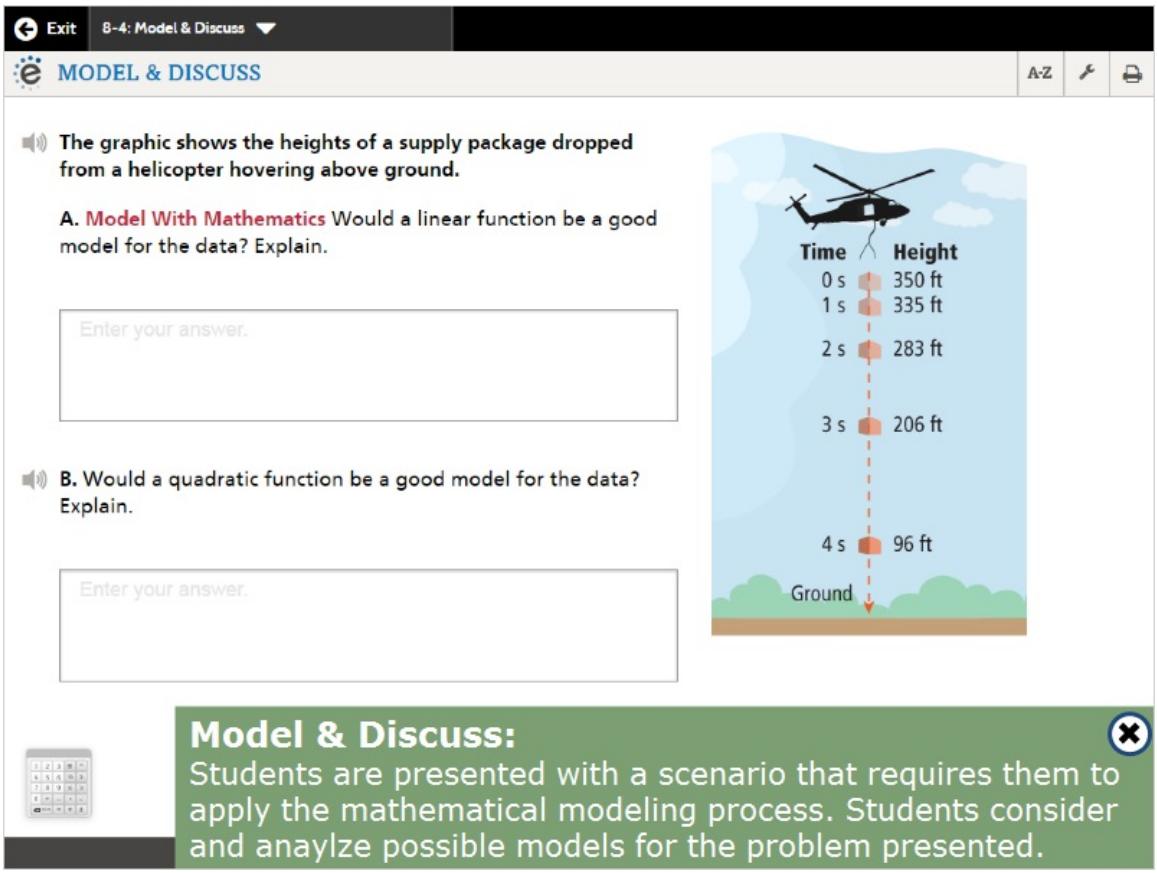
There are three different types of opening activities that your students will encounter in Step 1: Explore and Reason, Model and Discuss, and Critique and Explain. Take a minute to read about each type of activity.

Explore & Reason



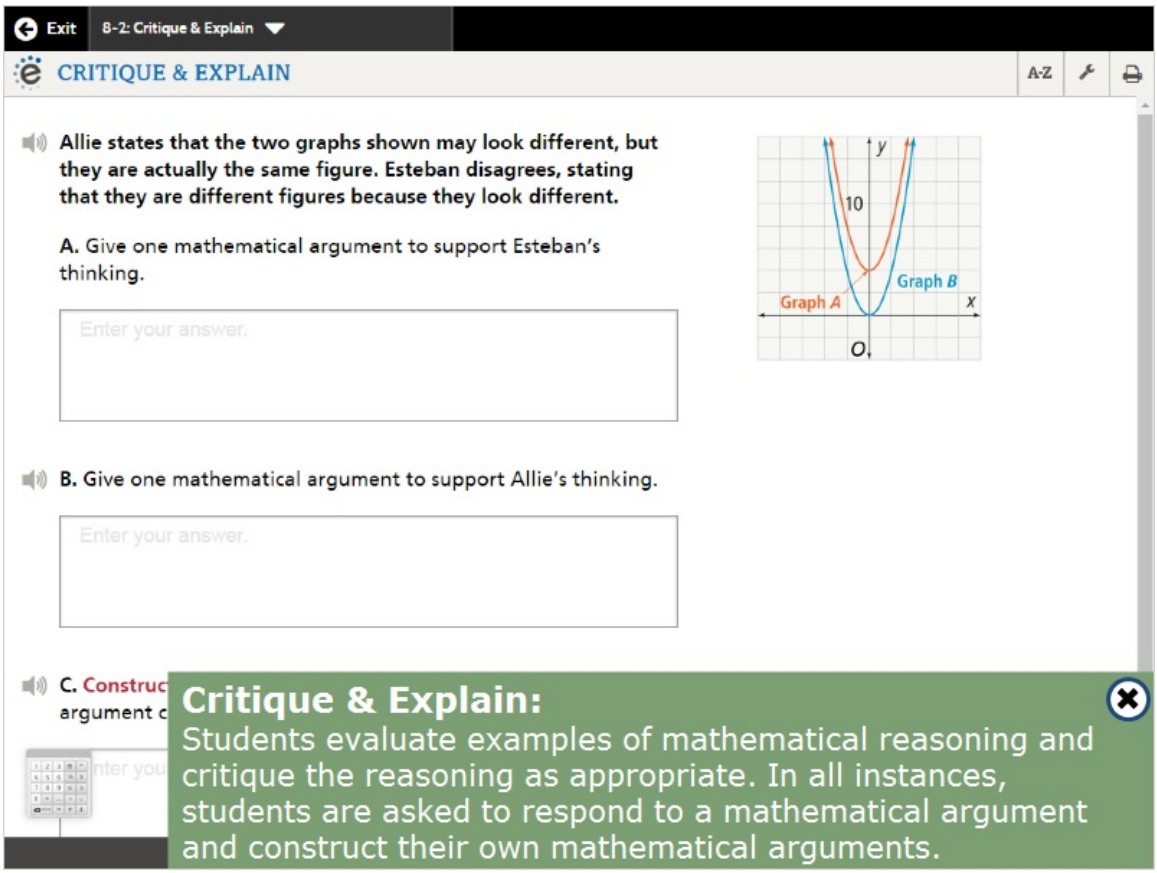
Students explore a mathematical concept and use reasoning to draw conclusions.

Model & Discuss



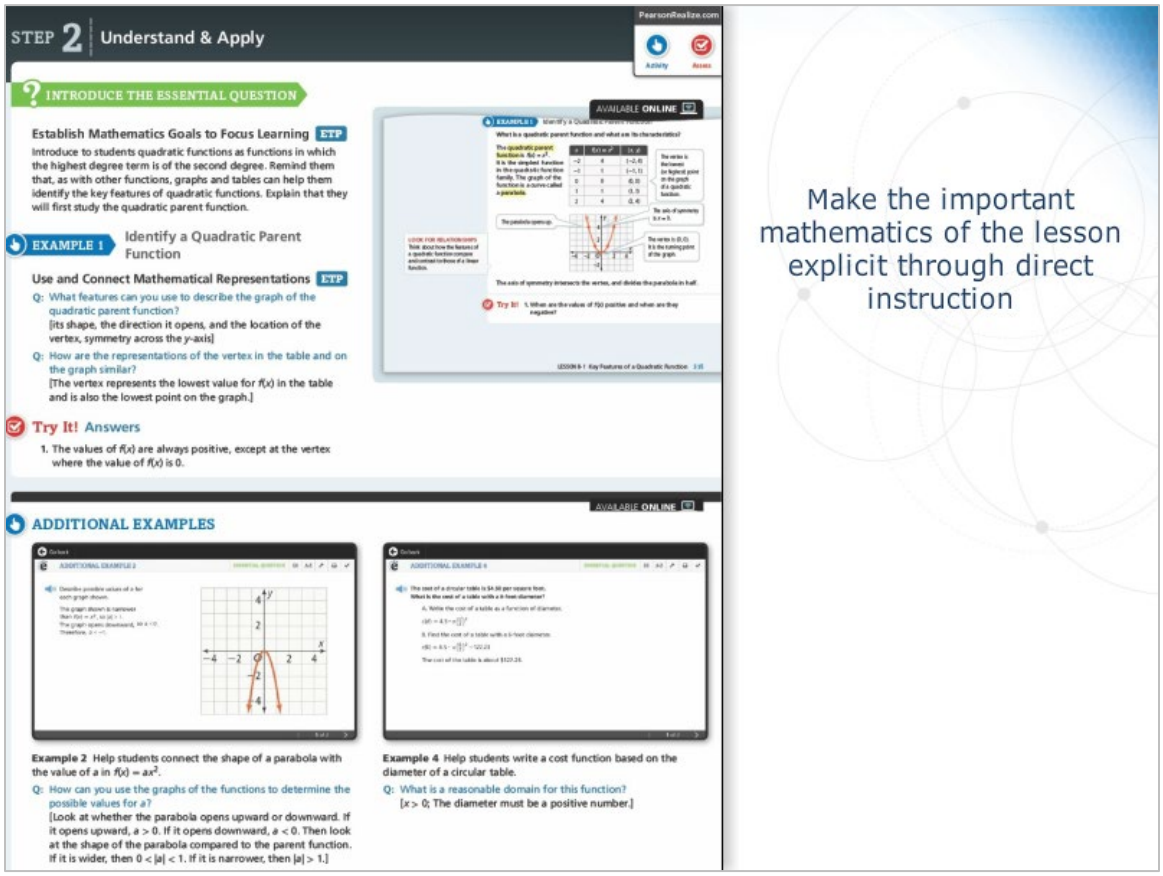
Students are presented with a scenario that requires them to apply the mathematical modeling process. Students consider and analyze possible models for the problem presented.

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.

Step 2: Understand & Apply



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.

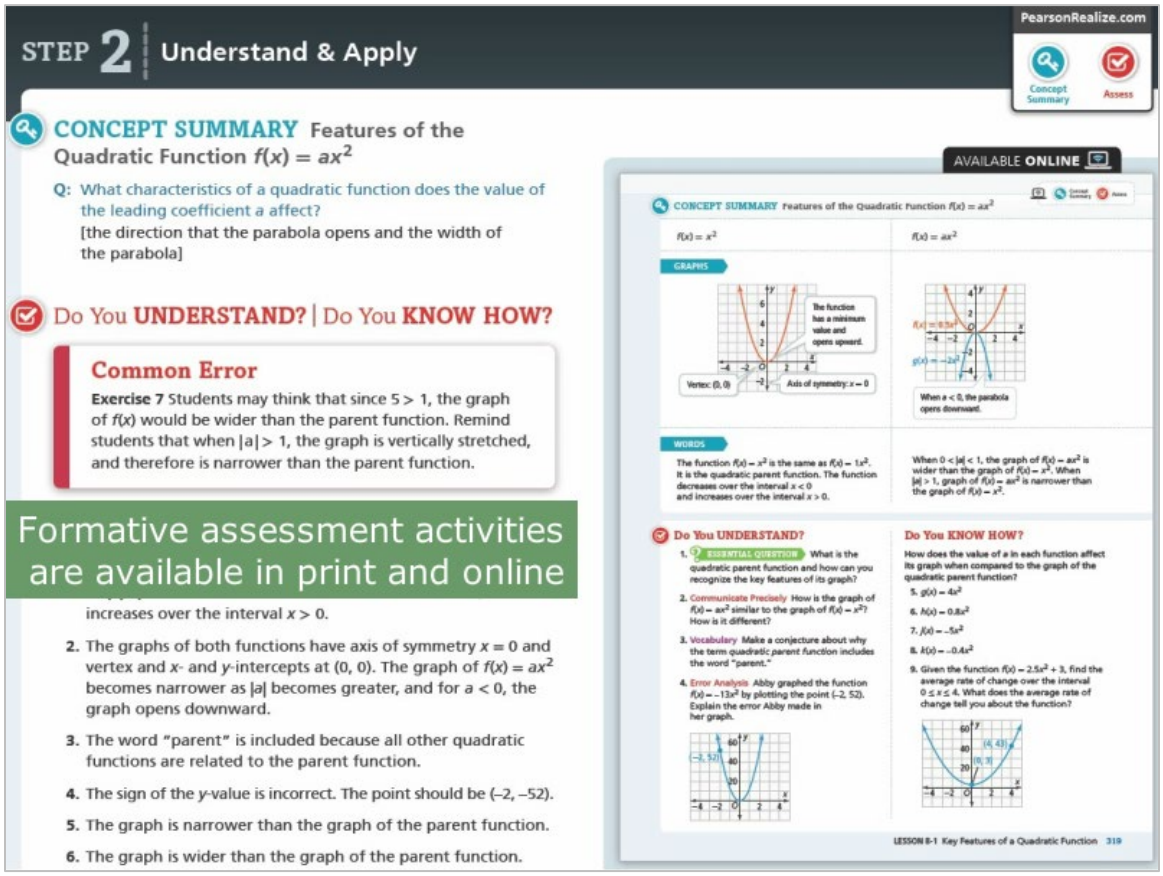
The English Language Learners section provides strategies to support the development of your students' English language proficiency. Here you'll find specific guidance for the three levels of English language proficiency: Beginning, Intermediate, and Advanced.

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.

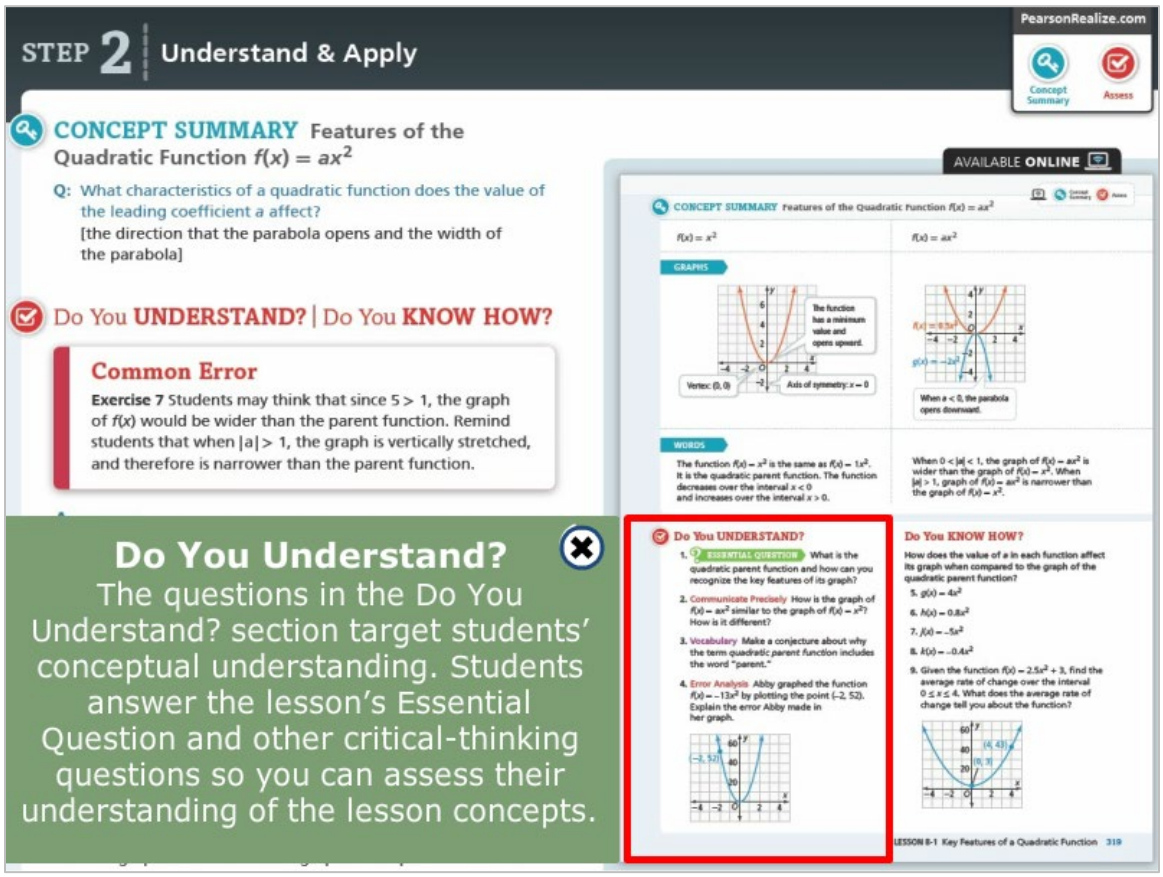
Note that **enVision A|G|A** lessons are designed to span two days of instruction, and have natural breaks that occur at different places within the lesson. These breaks will not be in the same place for every lesson, but before or after the Step 2 Concept Summary may be a good stopping point.

Formative Assessment Opportunities



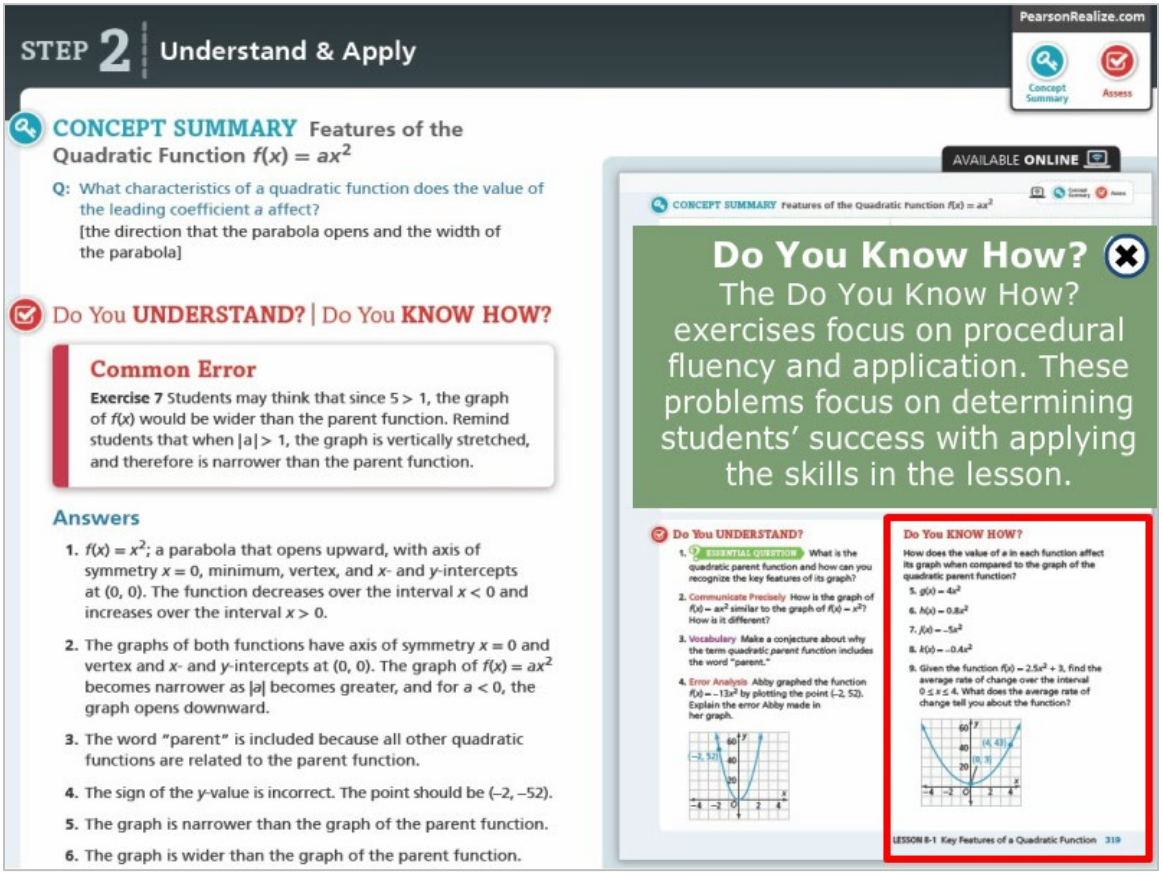
Each lesson contains formative assessment activities after the Concept Summary. These activities-called Do You Understand? and Do You Know How?-are available in print and online. Explore each area of the page to learn more.

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 Know How?



STEP 2 Understand & Apply

PearsonRealize.com

Concept Summary | Assess

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

1. $f(x) = x^2$; 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 $x > 0$.
2. 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.
3. The word "parent" is included because all other quadratic 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.

AVAILABLE ONLINE

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?

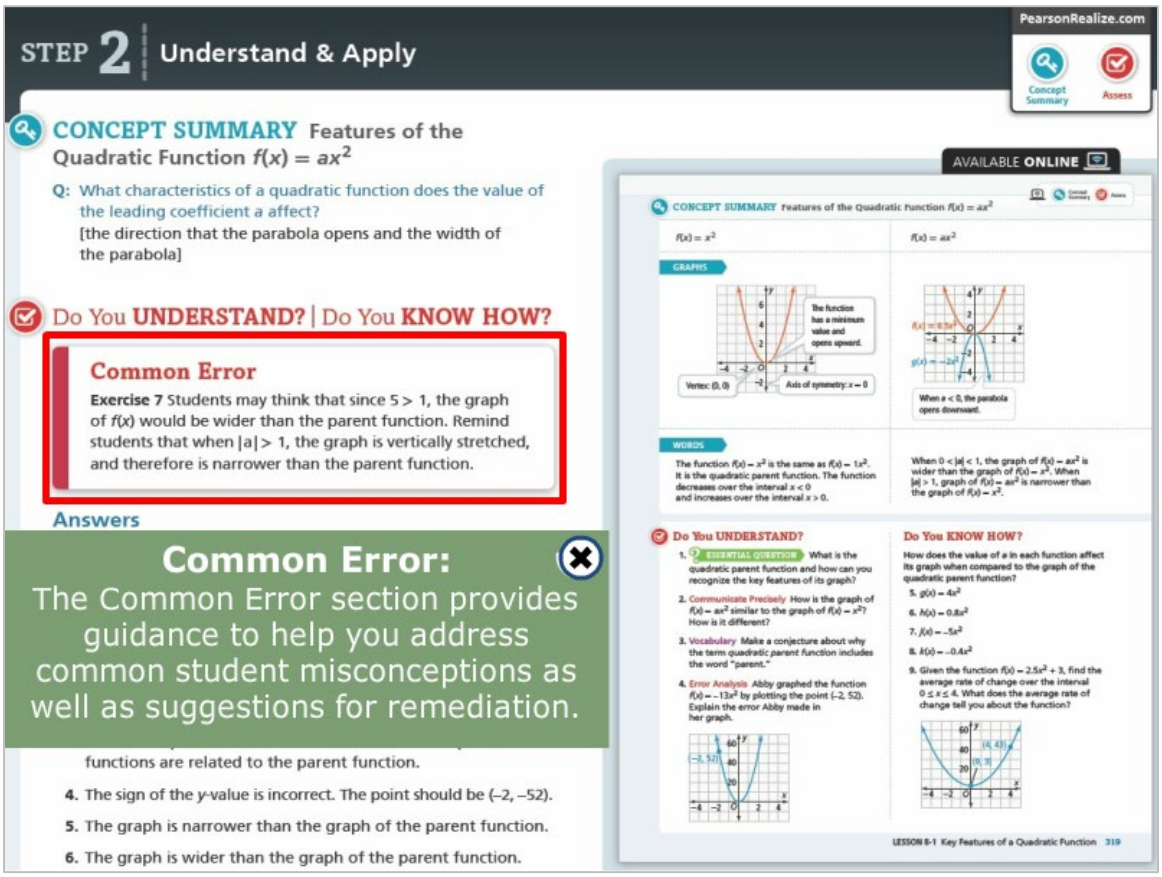
Do You KNOW HOW?

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

LESSON 8-1 Key Features of a Quadratic Function 319

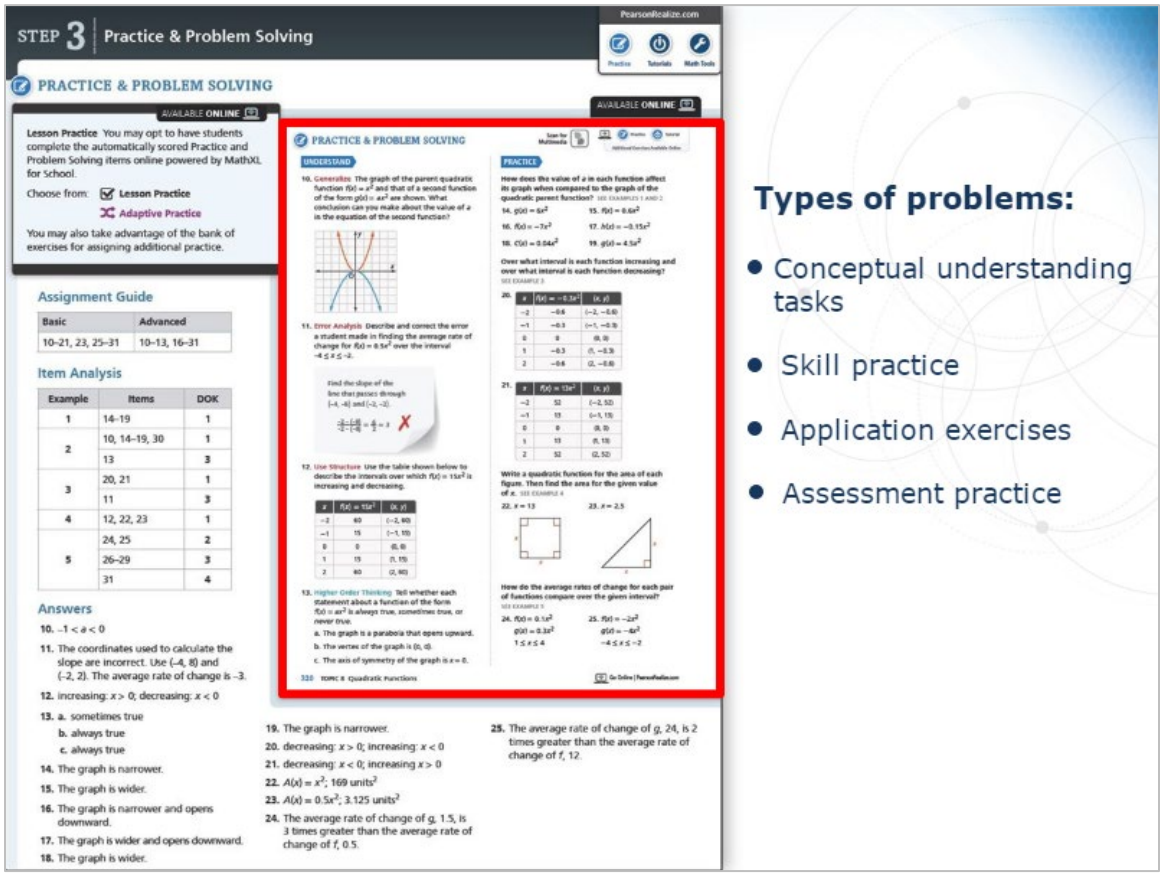
The Do You Know How? exercises focus on procedural fluency and application. These problems focus on determining students' success with applying the skills in the lesson.

Common Error



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

Step 3: Practice & Problem Solving



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

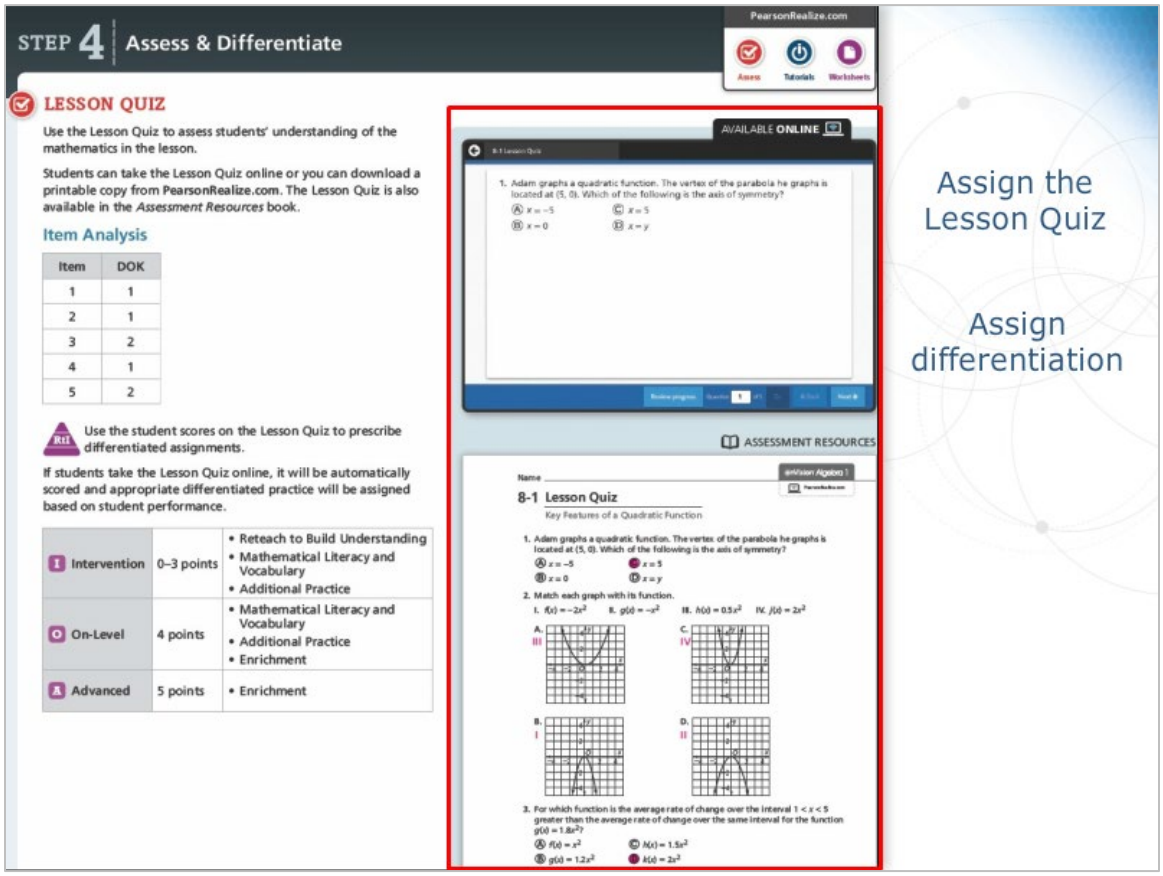
You can use the Assignment Guide and Item Analysis features to help you decide the type and number of problems to assign in the Student Edition. The problems include conceptual understanding exercises and skill practice tasks as well as application exercises and assessment practice.

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



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 RtI 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

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.

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