PROGRAM OVERVIEW

A new vision for High School Mathematics

enVision® A|G|A

Algebra 1 Geometry Algebra 2

SAVVAS

enVision® A|G|A

Algebra 1 Geometry Algebra 2

enVision A|G|A is a high school mathematics program designed to help students look at math in new ways, with engaging, relevant, and adaptive content.

ENGAGE

Pages 4-11

Mathematics takes on new meaning and becomes personal through relevance, engagement, and individualized learning pathways.

UNDERSTAND

Pages 12-15

Mathematics becomes a lifelong tool when curriculum balances conceptual understanding, procedural fluency, and application.

EMPOWER

Pages 16-19

Gain meaningful insights and leverage the powerful technology to make every lesson and assignment perfect for you.

Authors

The **enVision A|G|A** authorship team powerfully combines practical classroom experience with deep expertise in the latest mathematical research to create a new vision for high school mathematics. Our team includes authors from **enVision Mathematics** Grades 6-8 and more advanced titles to ensure vertical alignment.

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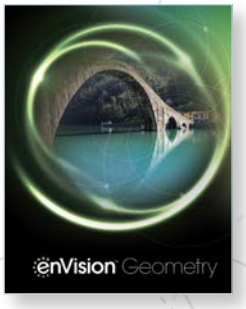
A Program for Any Classroom: Blended, Print, or Digital

Algebra 1

Also available in Spanish.

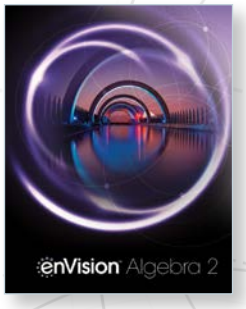
1. Solving Equations and Inequalities
2. Linear Functions
3. Linear Models
4. Systems of Linear Equations and Inequalities
5. Introduction to Nonlinear Functions
6. Exponents and Exponential Functions
7. Polynomials and Factoring
8. Quadratic Functions
9. Solving Quadratic Equations
10. Radical Functions
11. Statistics

Geometry



1. Foundations of Geometry
2. Parallel and Perpendicular Lines
3. Transformations
4. Triangle Congruence
5. Relationships in Triangles
6. Quadrilaterals
7. Similarity
8. Right Triangles and Trigonometry
9. Coordinate Geometry
10. Circles
11. Two- and Three-Dimensional Models
12. Probability

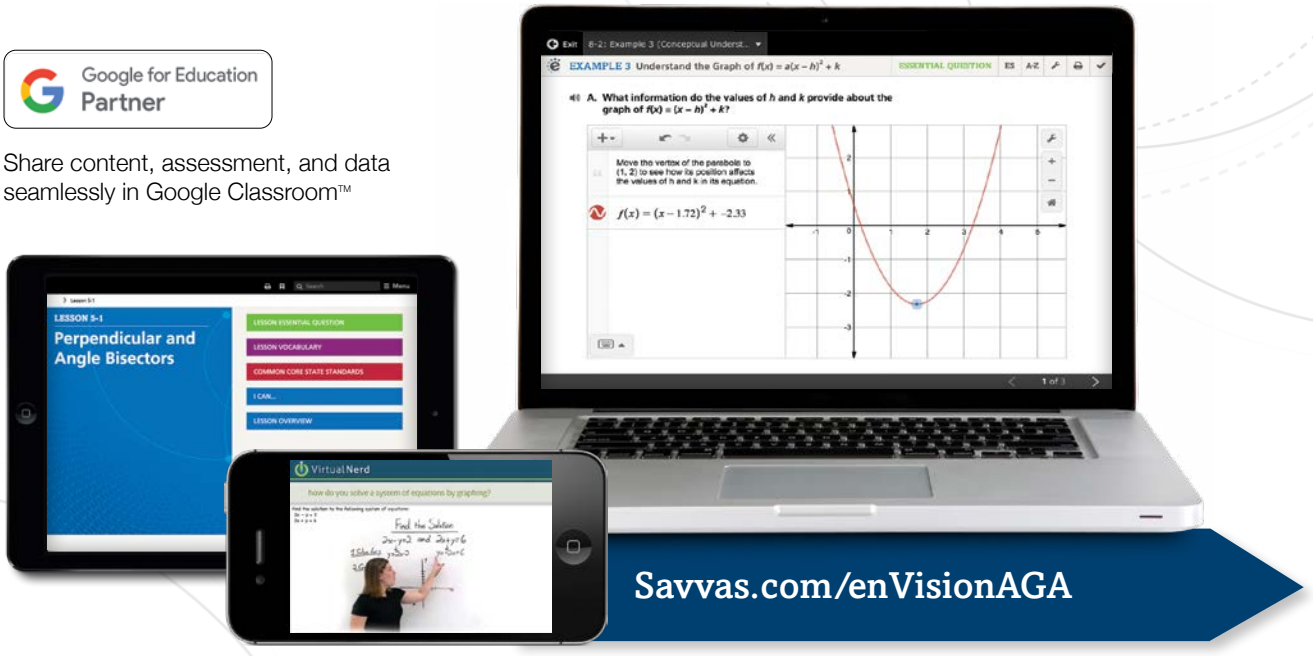
Algebra 2



1. Linear Functions and Systems
2. Quadratic Functions and Equations
3. Polynomial Functions
4. Rational Functions
5. Rational Exponents and Radical Functions
6. Exponential and Logarithmic Functions
7. Trigonometric Functions
8. Trigonometric Equations and Identities
9. Conic Sections
10. Matrices
11. Data Analysis and Statistics
12. Probability

Google for Education Partner

Share content, assessment, and data seamlessly in Google Classroom™



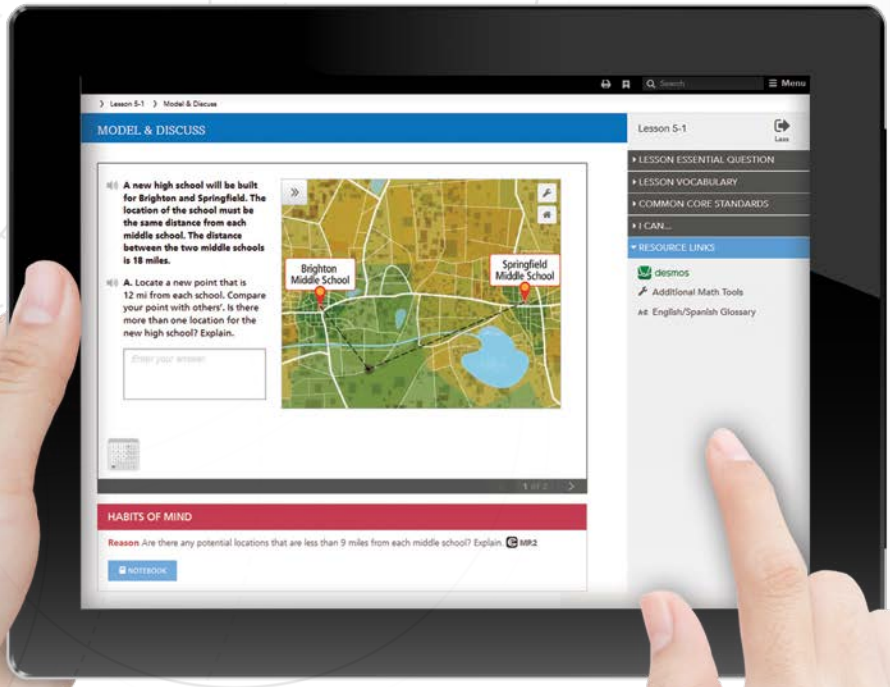
Savvas.com/enVisionAGA

Mathematics takes on new meaning and becomes personal through relevance, engagement, and individualized learning pathways.

Anytime Interactive Learning

enVision A|G|A provides a groundbreaking digital experience built for today's student with anytime online and offline access to instructional content. Interactive and highly visual examples powered by Desmos™ support active learning by students.

Geometry Anytime interactive instruction available online or offline

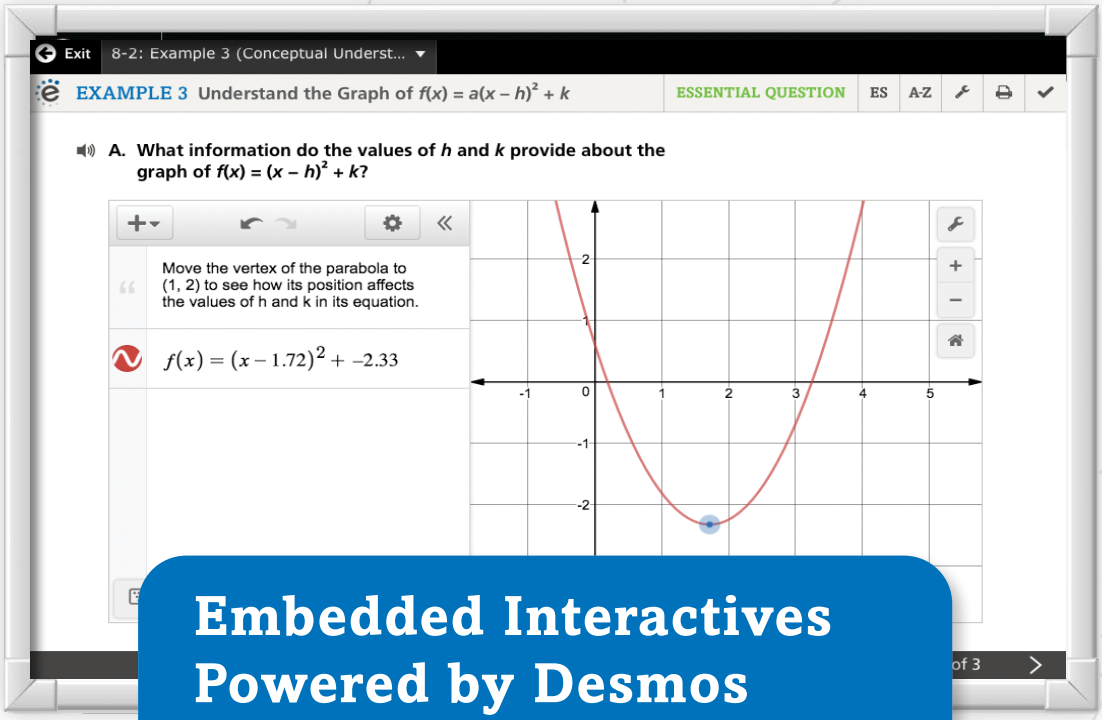


Anytime, Anywhere Learning

enVision A|G|A instructional content is available to interact with offline or online via the next-generation Realize Reader™:

- Complete and submit lesson launches and formative assessments
- Work through interactive examples
- Access embedded interactives powered by Desmos
- Available on a wide array of devices

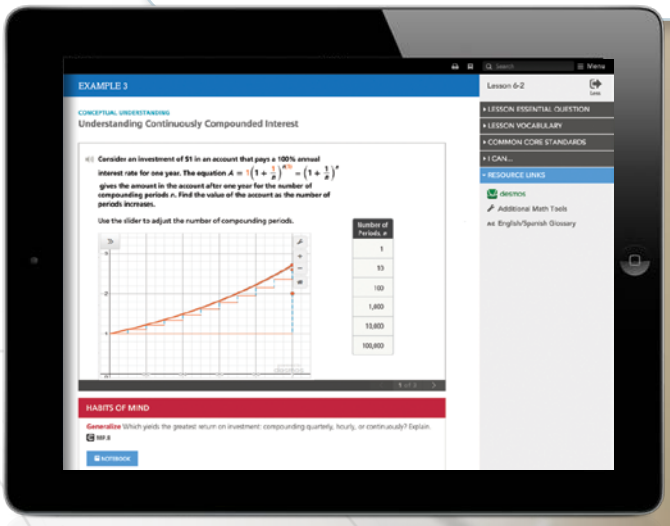
desmos



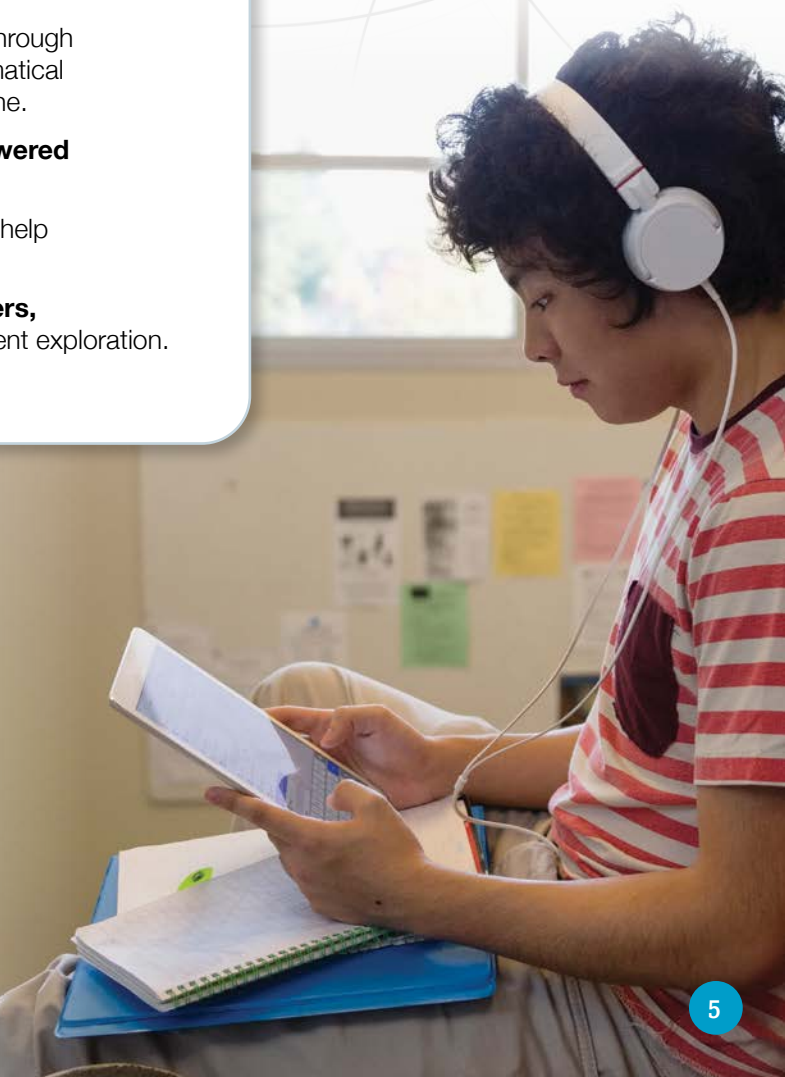
Algebra 1 interactive experience embedded at point of use

Embedded Interactives Powered by Desmos

- **Develop conceptual understanding** through ready-to-go examples that bring mathematical concepts to life, available online and offline.
- Extend learning with **Anytime Tools powered by Desmos.**
- **Save time** with prebuilt interactives that help students focus on the math not the tool.
- **Exclusive to enVision, switches, sliders, and buttons** enable more focused student exploration.



Algebra 2 interactive Student Edition



Mathematical Modeling

enVision A|G|A makes mathematics relevant for students by emphasizing mathematical modeling in reality-based mathematics instruction.

- **Mathematical Modeling in 3 Acts** lessons are available for every topic and engage students in the complete modeling cycle.
- **Model & Discuss** lesson-opening explorations give students an opportunity to develop proficiency with aspects of the modeling process.

Mathematical Modeling in 3 Acts, Act 1

Act 1: The Hook

Students watch a video that prompts them to ask questions—in this case, "Should you choose the express lane or the regular lane?"

- Students actively generate the word problem they are going to solve.
- Provides an entry point for every student, no matter their level of mathematical proficiency.
- Creates an inclusive classroom for all students.

Mathematical Modeling in 3 Acts, Act 2

Act 2: Model with Math

In the second act, students determine the information they need to solve the problem and how to get that data. Here, students figure out how they can determine which line will move faster. Students:

- Apply mathematical concepts learned earlier in the chapter and select the appropriate tools to solve the problem they defined in the first act.
- Engage in reality-based mathematical modeling that is more challenging and closely mirrors the work of STEM professionals.

Act 3: The Solution

In the final act, the video reveals the answer to the problem.

- Students root for their conjectures and analyze their results, as they actively engage with the Standards for Mathematical Practice.
- A **Sequel** problem is provided to extend the learning.

Mathematical Modeling in 3 Acts, Act 3

enVision® STEM Projects

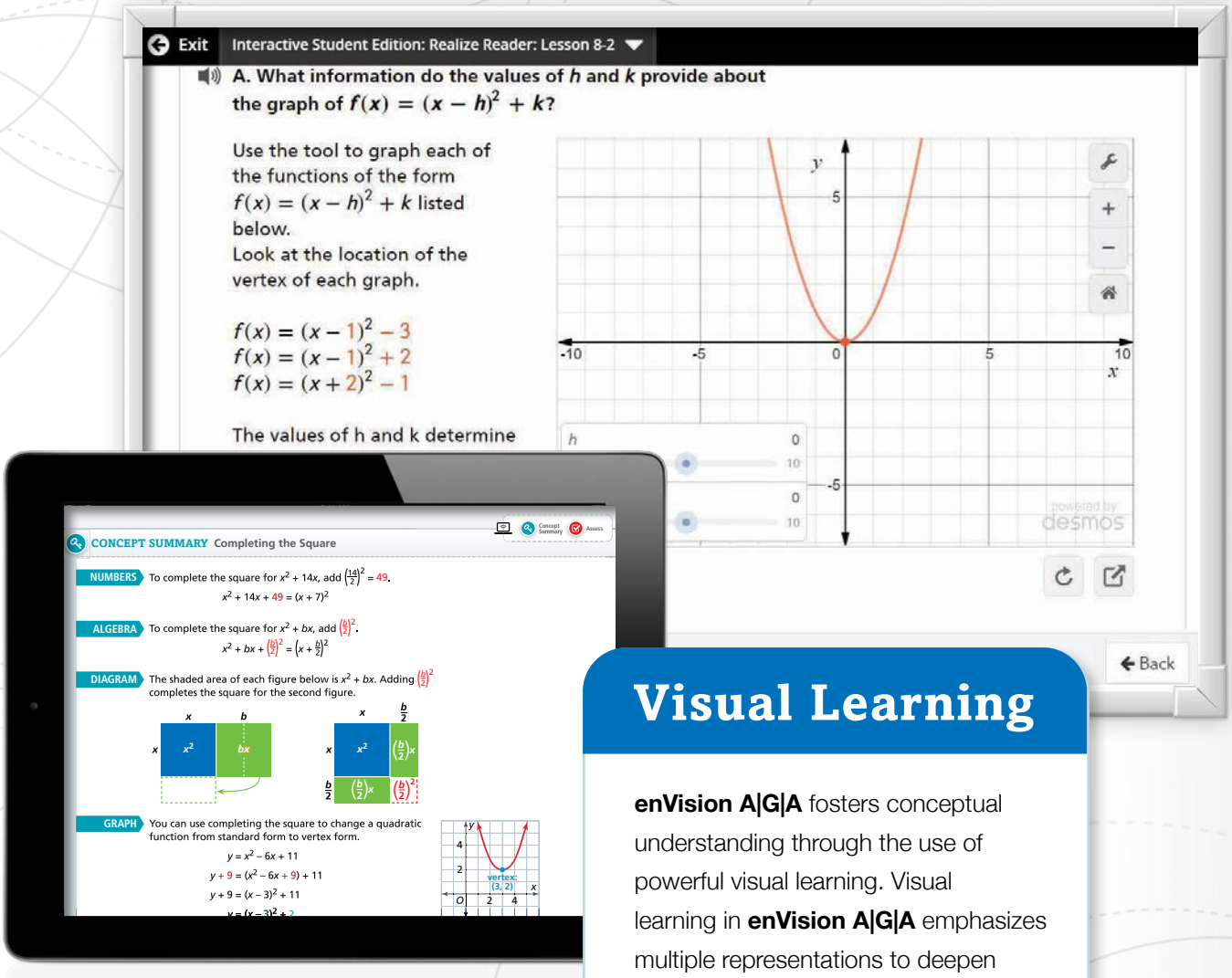
enVision® STEM

STEM Projects provide opportunities for students to explore situations that address real social, economic, and environmental issues that foster mathematical connections across topics.

Active Learning

enVision A|G|A engages students through a focus on different learning styles. The digital interactive experience powered by Desmos™ fosters conceptual understanding with a deep emphasis on visual learning and multiple representations. The student companion provides a worktext option that increases students' ownership of their instruction.

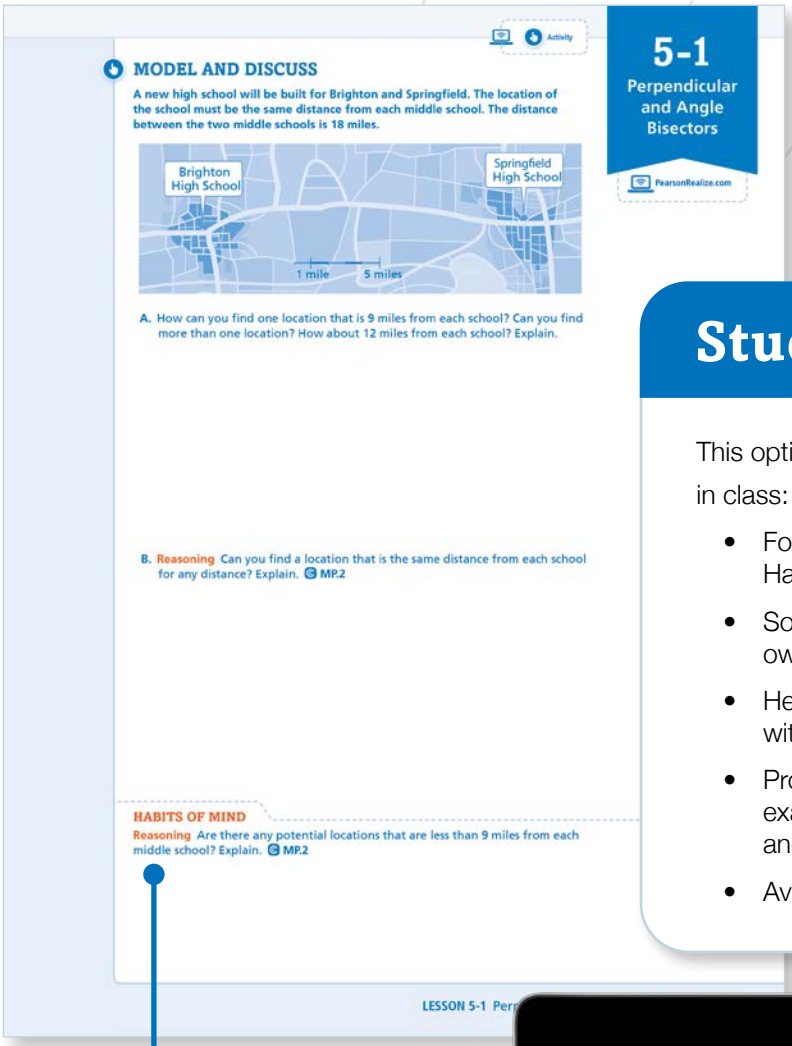
Algebra 1 interactive experience embedded at point of use



Algebra 1 Completing the Square Concept Summary

Visual Learning

enVision A|G|A fosters conceptual understanding through the use of powerful visual learning. Visual learning in **enVision A|G|A** emphasizes multiple representations to deepen student understanding.



Print Student Companion
lesson exploration support

Student Companion

This optional worktext actively engages students in class:

- Fosters conceptual understanding with Habits of Mind questions.
- Solidifies understanding and increases students' ownership with problems to try on their own.
- Helps consolidate students' understanding with sections for note taking.
- Provides support for lesson explorations, example problems, formative assessment, and math modeling lessons.
- Available in Spanish for Algebra 1.

Habits of Mind

enVision A|G|A emphasizes the development of students' mathematical habits of mind. Probing questions throughout instruction require students to develop the thought processes and skills used by proficient mathematical thinkers.

Realize Reader
Interactive Student Edition
Habits of Mind question

The Realize Reader™ Interactive Student Edition provides all Student Companion questions in a seamless interactive digital experience.

Individualized Learning Pathways

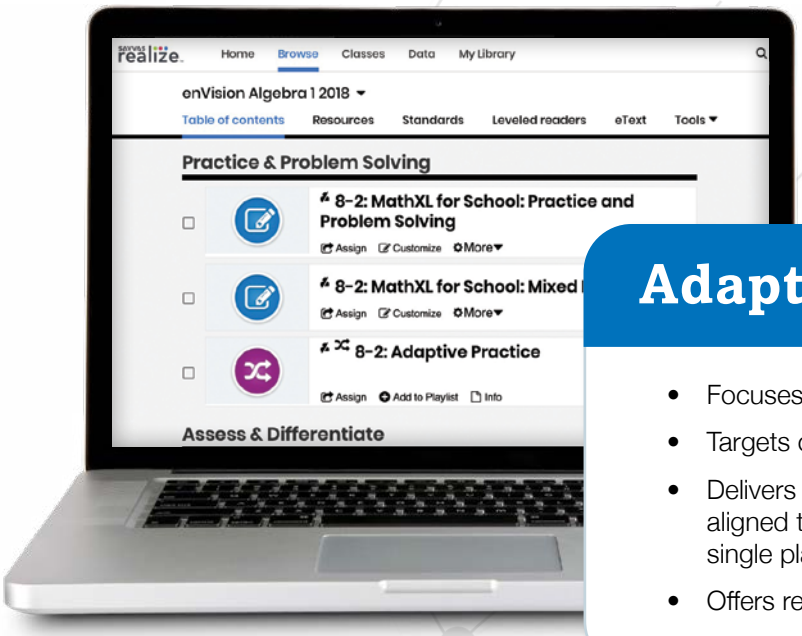
enVision A|G|A offers every student a truly individualized learning pathway. Individual study plans fill in gaps on prerequisite knowledge and help students focus where they need to focus to experience success in high school mathematics. Unlimited digital practice and daily adaptive practice provide teachers with options to support struggling students.

Interactive digital intervention lesson example

Interactive digital intervention lesson exercise

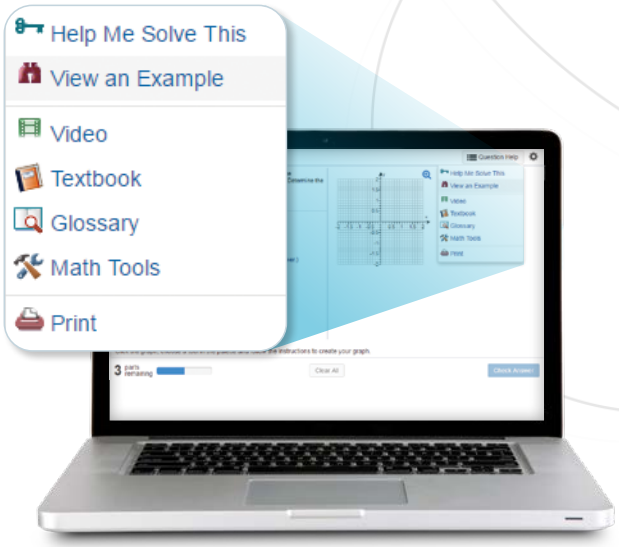
Individual Study Plans

- Available for every topic
- Automatically prescribed digital intervention provides scaffolding to help students master prerequisite skills
- Interactive instruction with explicit examples
- Powerful learning aids in multiple modalities



Adaptive Practice

- Focuses on progress to mastery
- Targets crucial prerequisite skills
- Delivers both instruction and practice aligned to each lesson and on one, single platform
- Offers real-time snapshot of progress



MathXL® for School graphing problem

Powerful Learning Aids in MathXL® for School

Personalized learning aids act as a 24-7, always available tutor. High school students pick the learning aid that helps them the most.

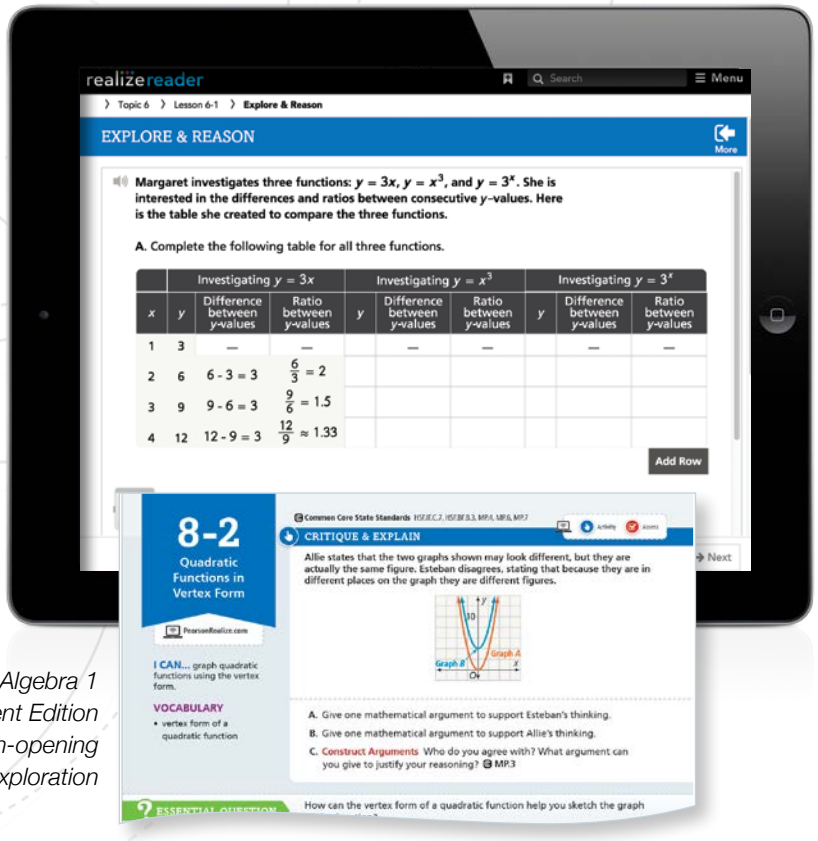
- *Help Me Solve This* walks students through how to solve a problem while providing feedback at every step of the problem.
- *View an Example* lets students view a similar worked-out solution with different numbers.

UNDERSTAND

Mathematics becomes a lifelong tool when curriculum balances conceptual understanding, procedural fluency, and application.

Explore

Lesson-opening explorations foster the development of conceptual understanding through a problem-solving experience. There are three types: Explore & Reason, Model & Discuss, and Critique & Explain.



Algebra 1 Student Edition lesson-opening exploration

Algebra 2 Explore & Reason lesson exploration

Explore & Reason

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

Model & Discuss

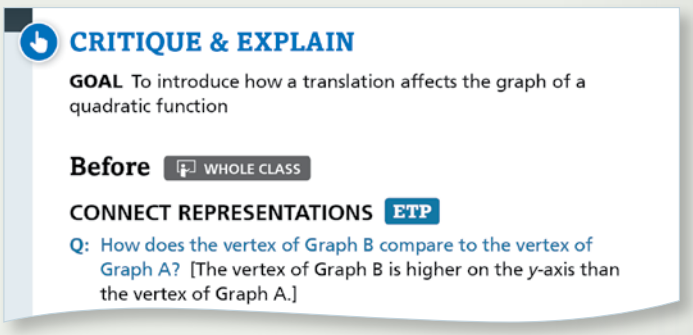
Students develop proficiency with the full modeling cycle by focusing deeply on an aspect of the modeling cycle.

Critique & Explain

Students are required to construct mathematical arguments. They may also be asked to evaluate examples of mathematical reasoning and correct the reasoning if necessary.

Research-Based Teaching Practices

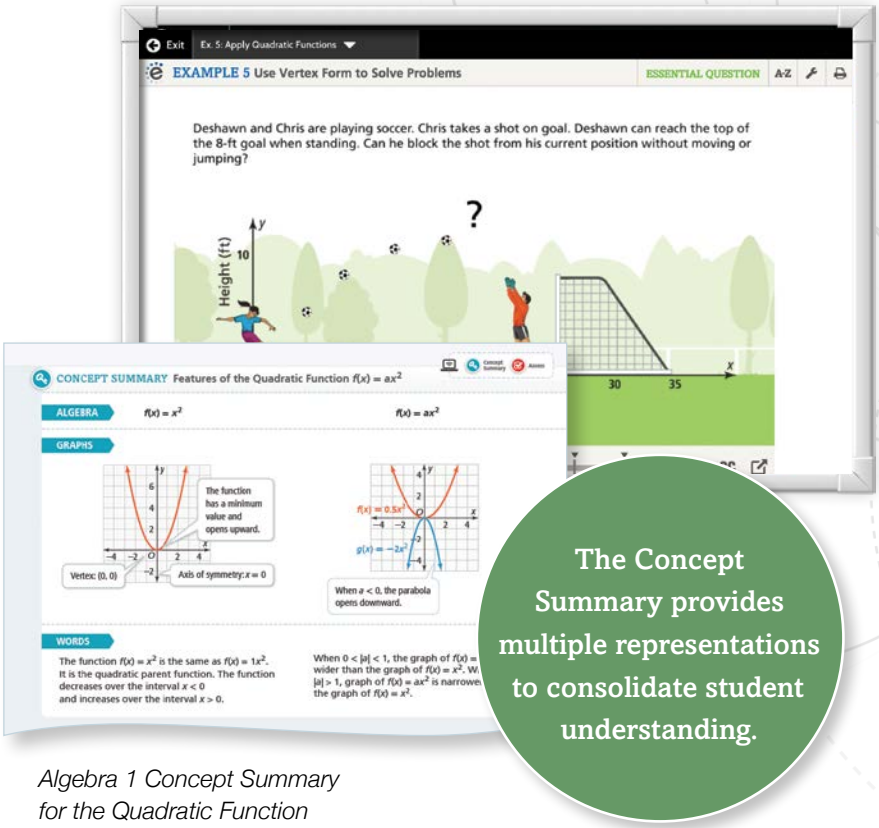
- **Effective Teaching Practices (ETP)** are probing questions based on NCTM's Principles to Action.
- **Professional Development Videos** give the author's perspectives on math concepts in each topic.
- **Classroom Videos** show a classroom in action. Interviews with the teacher cover planning and reflection.



Algebra 1 Teacher's Edition with Effective Teaching Practices (ETP)

Understand and Apply

enVision A|G|A helps you teach mathematics through problem solving. Three types of examples support a balanced pedagogy: Conceptual Understanding, Skill, and Application.



Algebra 1 Concept Summary for the Quadratic Function

The Concept Summary provides multiple representations to consolidate student understanding.

Algebra 1 application example

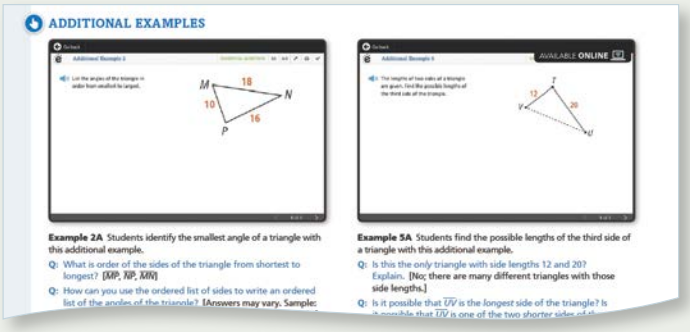
Conceptual Understanding

examples are designed to help students focus deeply on mathematical understanding of lesson content.

Proof examples teach students how to construct formal mathematical proofs in **enVision Geometry**.

Skill examples help students build fluency with the lesson content.

Application examples show students how the lesson's mathematical content can be applied to solve real-world problems.



Geometry Teacher's Edition Additional Examples and instructional support

Additional Examples

- Additional explicit instruction assists teachers in meeting their classroom needs.
- The "Try Another" feature, which algorithmically generates new problem statements, allows for endless classroom instruction and practice opportunities.

Enrichment Examples

These digital examples extend the learning to enhance students' understanding and application of Algebra 2 lesson concepts.

Practice & Problem Solving

enVision A|G|A features a uniquely balanced exercise set to ensure students have ample opportunity to develop conceptual understanding and procedural fluency, as well as apply math to solve problems.

UNDERSTAND

Develops conceptual understanding of lesson content by explaining reasoning, constructing arguments, and analyzing errors

APPLY

Requires students to apply math to solve real-world problems

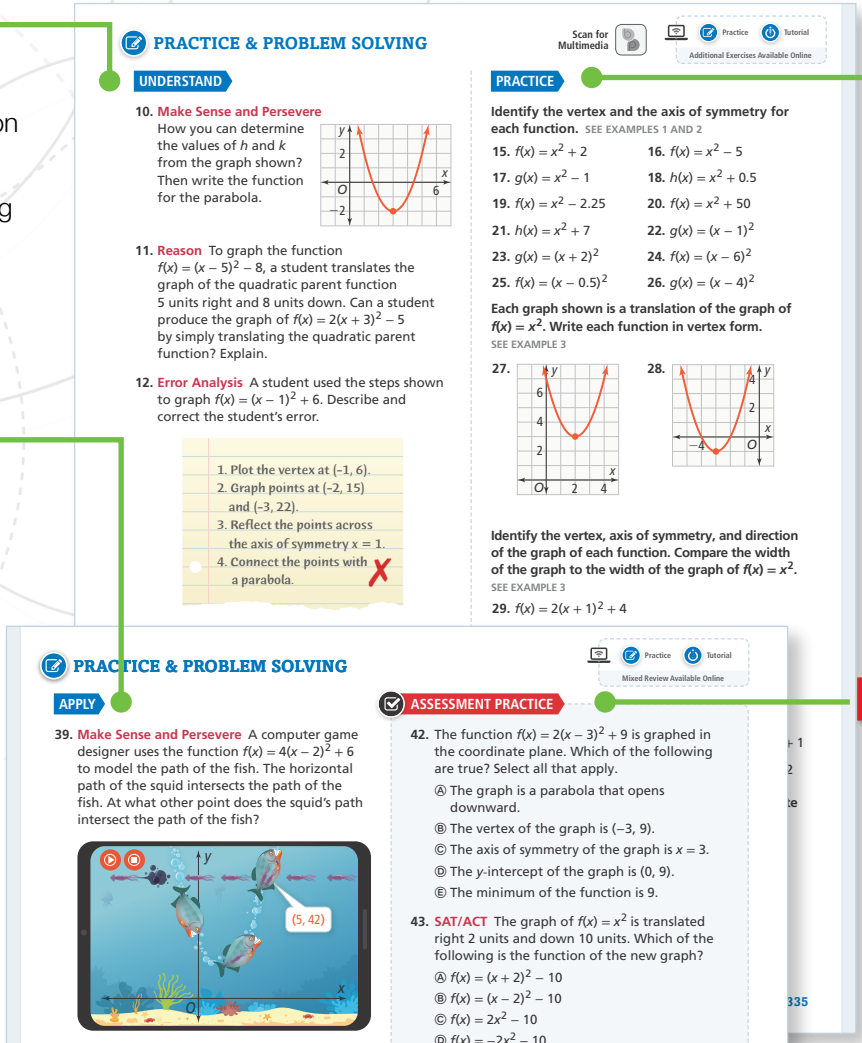
PRACTICE

Builds procedural fluency with lesson content

ASSESSMENT PRACTICE

Every lesson includes:

- Next Generation Assessment Practice
- SAT®/ACT® Practice
- Performance Task



PRACTICE & PROBLEM SOLVING

Scan for Multimedia

Practice Tutorial

Additional Exercises Available Online

UNDERSTAND

10. **Make Sense and Perseve**re How you can determine the values of h and k from the graph shown? Then write the function for the parabola.

11. **Reason** To graph the function $f(x) = (x - 5)^2 - 8$, a student translates the graph of the quadratic parent function 5 units right and 8 units down. Can a student produce the graph of $f(x) = 2(x + 3)^2 - 5$ by simply translating the quadratic parent function? Explain.

12. **Error Analysis** A student used the steps shown to graph $f(x) = (x - 1)^2 + 6$. Describe and correct the student's error.

1. Plot the vertex at (–1, 6).
2. Graph points at (–2, 15) and (–3, 22).
3. Reflect the points across the axis of symmetry $x = 1$.
4. Connect the points with a parabola.

PRACTICE

Identify the vertex and the axis of symmetry for each function. SEE EXAMPLES 1 AND 2

15. $f(x) = x^2 + 2$
16. $f(x) = x^2 - 5$
17. $g(x) = x^2 - 1$
18. $h(x) = x^2 + 0.5$
19. $f(x) = x^2 - 2.25$
20. $f(x) = x^2 + 50$
21. $h(x) = x^2 + 7$
22. $g(x) = (x - 1)^2$
23. $g(x) = (x + 2)^2$
24. $f(x) = (x - 6)^2$
25. $f(x) = (x - 0.5)^2$
26. $g(x) = (x - 4)^2$

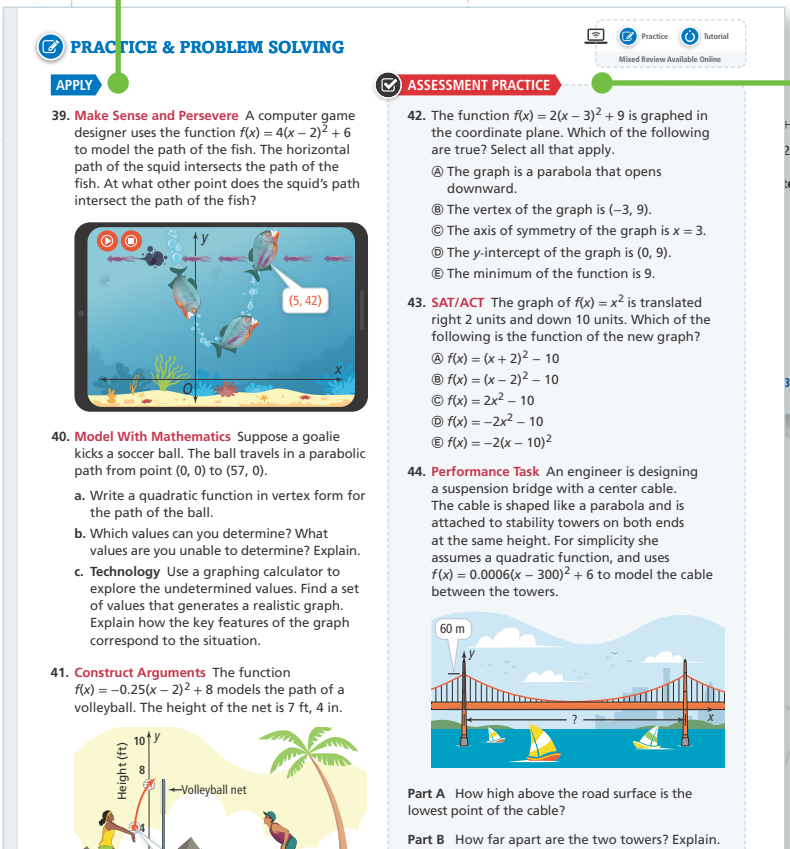
Each graph shown is a translation of the graph of $f(x) = x^2$. Write each function in vertex form. SEE EXAMPLE 3

27.

28.

Identify the vertex, axis of symmetry, and direction of the graph of each function. Compare the width of the graph to the width of the graph of $f(x) = x^2$. SEE EXAMPLE 3

29. $f(x) = 2(x + 1)^2 + 4$



PRACTICE & PROBLEM SOLVING

Practice Tutorial

Mixed Review Available Online

APPLY

39. **Make Sense and Perseve**re A computer game designer uses the function $f(x) = 4(x - 2)^2 + 6$ to model the path of the fish. The horizontal path of the squid intersects the path of the fish. At what other point does the squid's path intersect the path of the fish?

(5, 42)

40. **Model With Mathematics** Suppose a goalie kicks a soccer ball. The ball travels in a parabolic path from point (0, 0) to (57, 0).
   a. Write a quadratic function in vertex form for the path of the ball.
   b. Which values can you determine? What values are you unable to determine? Explain.
   c. **Technology** Use a graphing calculator to explore the undetermined values. Find a set of values that generates a realistic graph. Explain how the key features of the graph correspond to the situation.

41. **Construct Arguments** The function $f(x) = -0.25(x - 2)^2 + 8$ models the path of a volleyball. The height of the net is 7 ft, 4 in.

Height (ft)

Volleyball net

ASSESSMENT PRACTICE

42. The function $f(x) = 2(x - 3)^2 + 9$ is graphed in the coordinate plane. Which of the following are true? Select all that apply.
   Ⓐ The graph is a parabola that opens downward.
   Ⓑ The vertex of the graph is (–3, 9).
   Ⓒ The axis of symmetry of the graph is $x = 3$.
   Ⓓ The y-intercept of the graph is (0, 9).
   Ⓔ The minimum of the function is 9.

43. **SAT/ACT** The graph of $f(x) = x^2$ is translated right 2 units and down 10 units. Which of the following is the function of the new graph?
   Ⓐ $f(x) = (x + 2)^2 - 10$
   Ⓑ $f(x) = (x - 2)^2 - 10$
   Ⓒ $f(x) = 2x^2 - 10$
   Ⓓ $f(x) = -2x^2 - 10$
   Ⓔ $f(x) = -2(x - 10)^2$

44. **Performance Task** An engineer is designing a suspension bridge with a center cable. The cable is shaped like a parabola and is attached to stability towers on both ends at the same height. For simplicity she assumes a quadratic function, and uses $f(x) = 0.0006(x - 300)^2 + 6$ to model the cable between the towers.

60 m

Part A How high above the road surface is the lowest point of the cable?

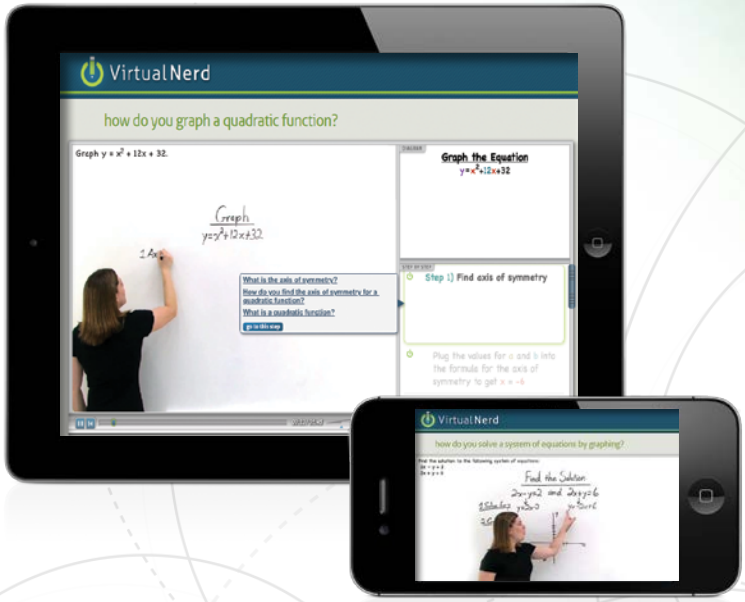
Part B How far apart are the two towers? Explain.

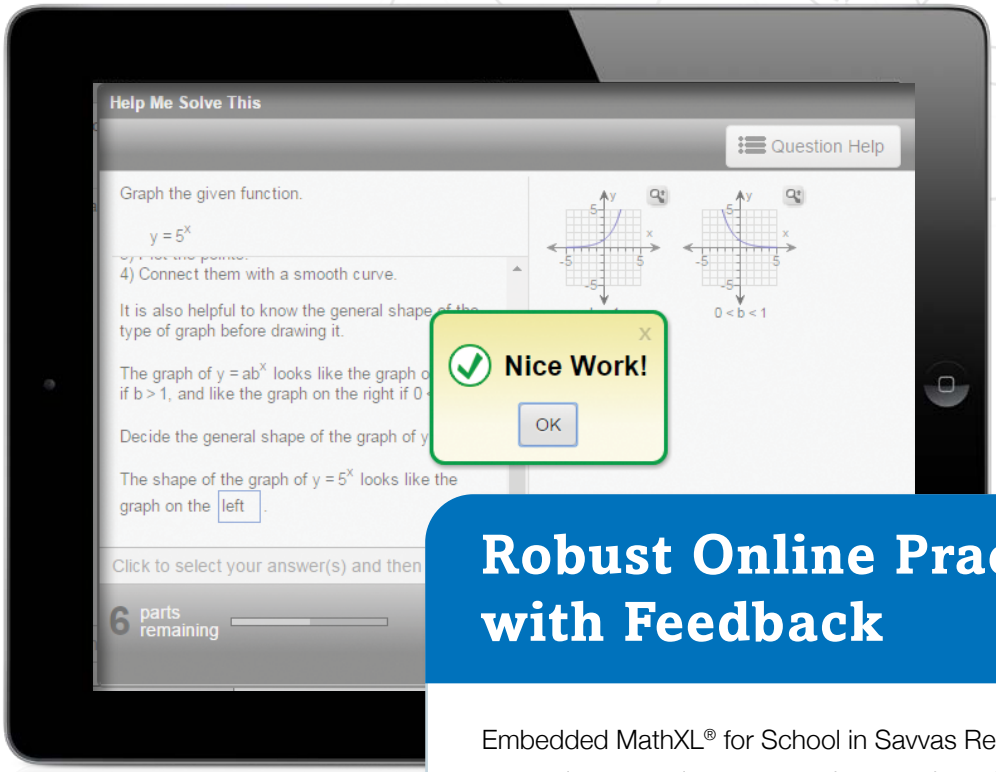
Algebra 1 Student Edition
Practice & Problem Solving

Virtual Nerd® Tutorial Videos

- Tutorial videos for **every** lesson in the program
- Three different viewing windows let students review math concepts in the visual way that best helps them learn
- Students can easily drill down to another video to review prerequisite content
- Launch 3-Act Math videos from the student page with BouncePages.SavvasRealize.com
- Algebra 1 available with Spanish closed captioning!

Virtual Nerd Tutorial Video





MathXL® for School feedback

Robust Online Practice with Feedback

Embedded MathXL® for School in Savvas Realize provides a seamless experience for students and teachers with powerful interactive learning aids and ready-to-go, auto-graded assignments, including:

- Daily Homework and Practice
- Mixed Review
- Differentiated Learning for remediation, additional practice, and enrichment
- Online Practice & Problem Solving assignment available in Spanish for Algebra 1

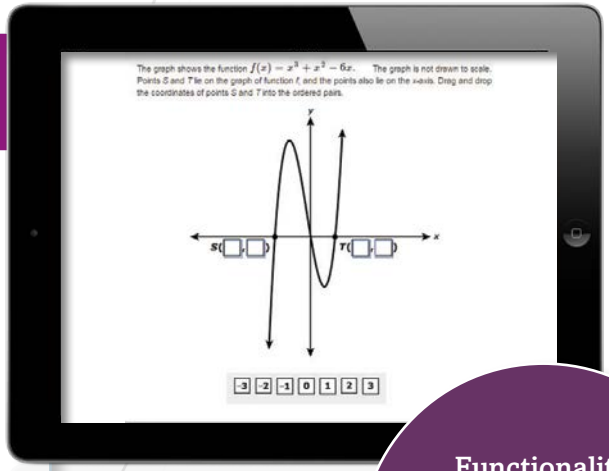
Assess and Differentiate

enVision A|G|A provides a library of assessments including formative, summative, and next generation assessment items. Practice closely resembles the academic rigor and technology embedded in the newest high-stakes assessments.

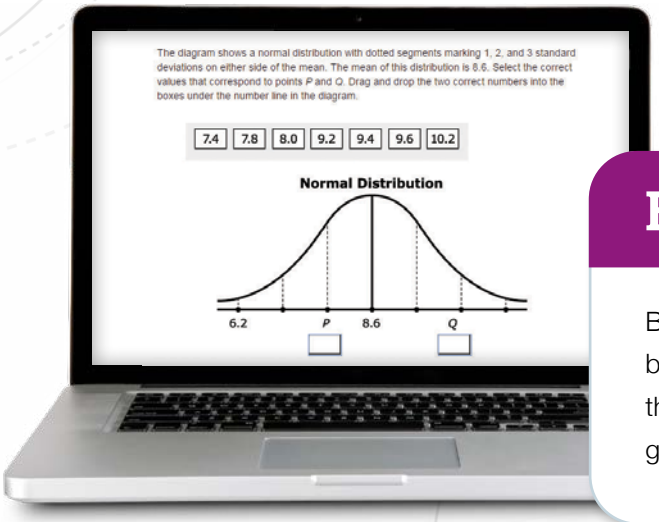
Assessment Suite

A suite of ready-to-use diagnostic, formative, and summative assessments are provided:

- Course- and Topic-Level Diagnostic Assessments
- Lesson Checks and Quizzes
- Topic Assessments and Performance Tasks
- End-of-Course Assessment
- Next Generation Practice Assessment



Functionality mimics what students will encounter on next generation digital assessments.

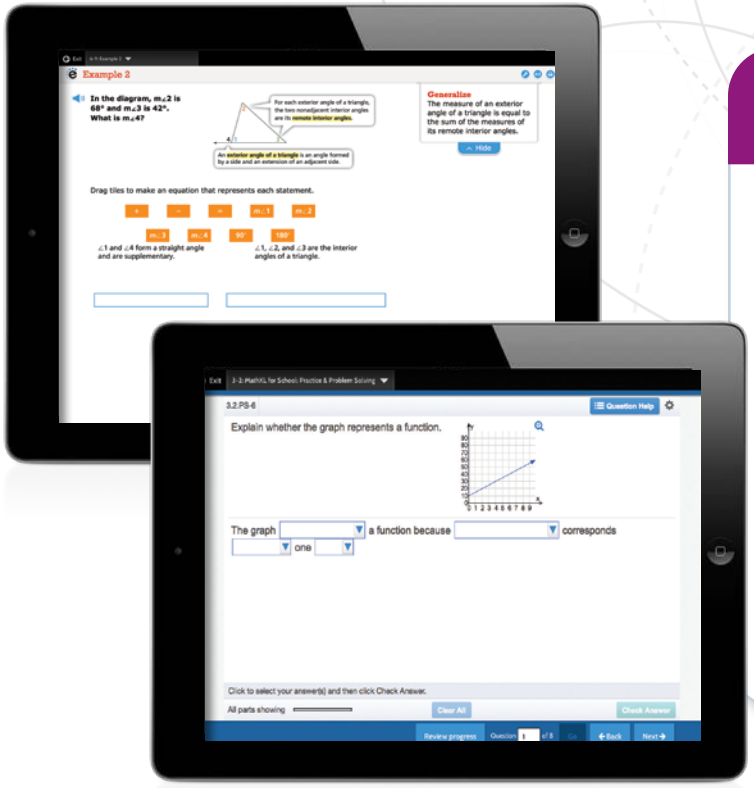


Build Your Own

Build your own assignment or assessment based on standard or objective using thousands of items, including next generation assessment tasks.

enVision A|G|A provides both a fully adaptive system for Response to Intervention and a library of resources for teachers in supporting a wide range of students.

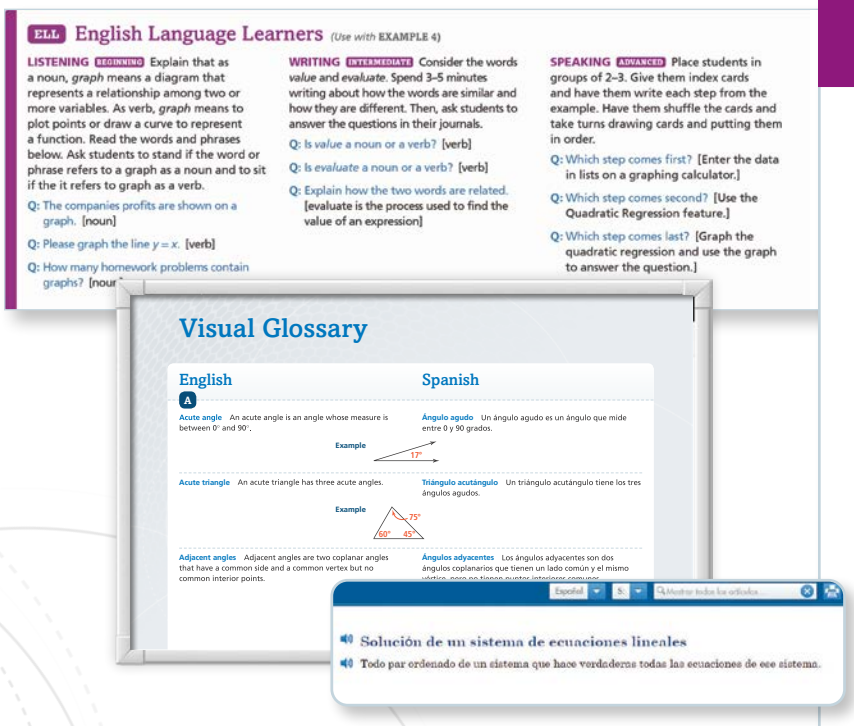
Digital Intervention Instruction example



Digital Intervention Practice exercise

Adaptive RTI

- Lesson Quizzes offer daily auto-assignment of differentiated support including **Remediation, Additional Practice,** or **Enrichment**.
- Adaptive Practice is a daily option to support students on prerequisite skills not yet mastered or to move advanced students through the skill more efficiently.
- Individualized Study Plans provide an individualized learning pathway based on the results of each Topic Readiness Assessment.



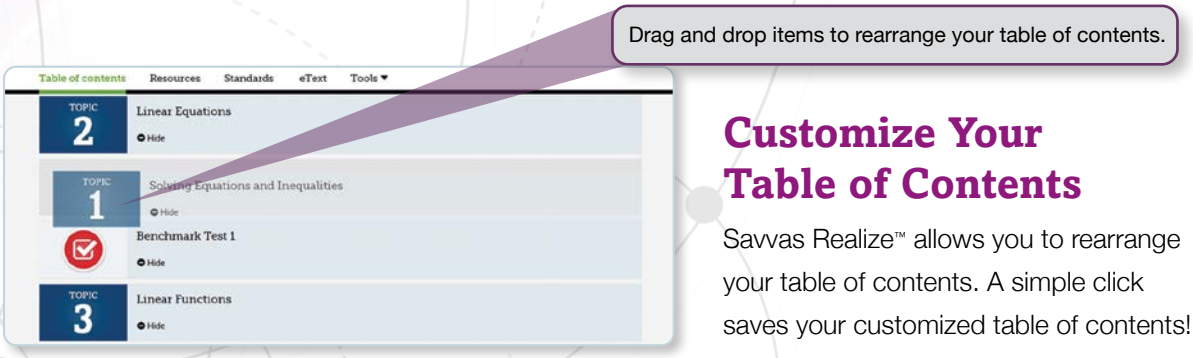
English Language Learners

A complete library of resources supports teachers in their Response to Intervention planning and in assisting English Language Learners. Resources for English learners include:

- Point-of-use differentiation support in the Teacher's Edition
- Spanish student edition and assessment resources available for Algebra 1
- Spanish closed captioning for video tutorials
- Multilingual Handbook
- Spanish text and audio for Algebra 1 problem statements
- English/Spanish Visual Glossary

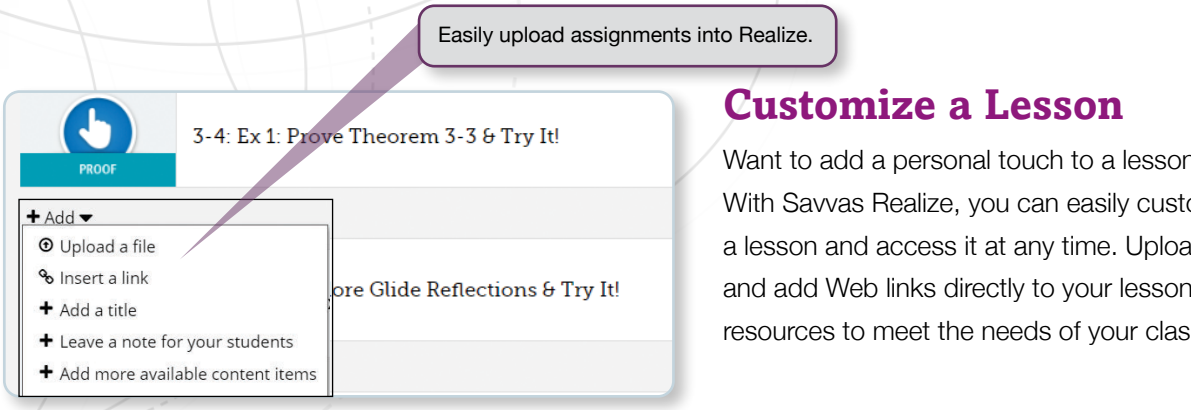
Customize Instruction

enVision A|G|A empowers teachers by providing the confidence of a coherent scope and sequence with the flexibility to customize the program at every level.



Customize Your Table of Contents

Savvas Realize™ allows you to rearrange your table of contents. A simple click saves your customized table of contents!



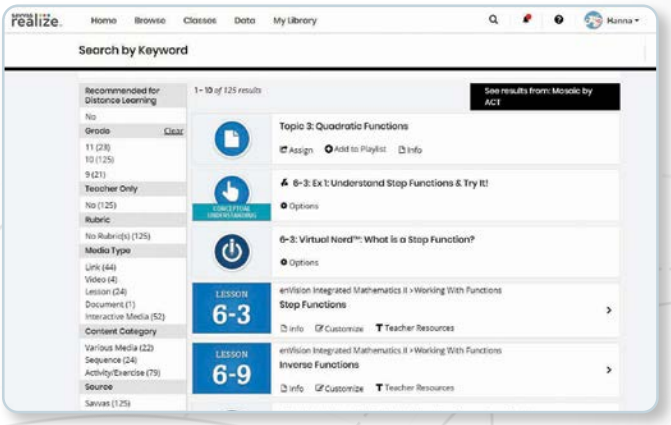
Customize a Lesson

Want to add a personal touch to a lesson? With Savvas Realize, you can easily customize a lesson and access it at any time. Upload content and add Web links directly to your lesson. Edit resources to meet the needs of your classroom.

Make every lesson perfect for you.

Access all digital content, assessments, and management tools at SavvasRealize.com.

- Search by keyword or standards
- Customize lessons
- Reorder lessons and topics
- Align to your district framework
- Assign to Google Classroom™
- Add Google Drive™ files
- Integrate Microsoft® OneDrive®
- Integrate with Canvas® and Schoology®
- Upload your own content
- See results from Mosaic™ by ACT® for additional open resources
- Use online discussion boards



However you want to teach, **enVision A|G|A** has you covered. The program can be taught completely digitally, in print, or anywhere in between. The program is designed to grow with you.

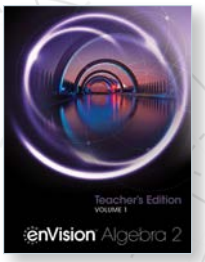
Available in Print AND Digital Formats!

Student Edition

Student Edition includes all instructional content. Available digitally with the Student Companion at point of use through the Realize Reader. Available in Spanish for Algebra 1.

Student Companion two-color consumable student worktext offers in-class instructional enhancement to foster conceptual understanding. Available in Spanish for Algebra 1.

Student Assessment Readiness Workbook provides standards based practice and tests to help students prepare for high-stakes assessments.



Teacher's Edition

Teacher's Edition two volumes include all support for teaching the program in print or digitally.

Teacher's Edition Program Overview provides a program overview and tips for teaching the program in the high school math classroom.

Teacher's Assessment Resource Book provides all diagnostic and summative assessment masters in one convenient place. Available in Spanish for Algebra 1.

Digital Courseware

- **Robust suite of digital math tools powered by Desmos™** include a graphing calculator, scientific calculator, and geometry tools available online and offline.
- **Author Professional Development videos** with practical tips on implementing the program in a high school math classroom
- **Classroom Videos** show a classroom in action. Interviews with the teacher cover planning and reflection.
- **Interactive digital lessons**—easily customized, easily projected
- **Ready-to-go, easily customizable auto-scored MathXL® for School assignments** for daily practice, mixed review, remediation, additional practice, and enrichment
- **Adaptive Practice** automatically adjusts to student performance and intervenes with instructional support as needed.
- **Technology-enhanced items** throughout the program to prepare for new assessments
- **Ready-made, auto-graded assessments provide** auto-assigned remediation
- **Wealth of reporting options** include Mastery, Progress, and Usage.
- **Additional Examples** for students in need of more instruction
- **Enrichment Examples** enhance student understanding of lesson concepts and applications in Algebra 2.
- **Editable Teacher Resource Masters** for vocabulary support, remediation, additional practice, enrichment, graphing calculator activities, assessments, and more!
- **Mathematical Modeling in 3 Acts lesson videos** to accompany Mathematical Modeling in 3 Acts lessons
- **enVision STEM® Projects** videos and blackline masters.
- **Answers and Solutions** software application provides answers and solutions to textbook problems.
- **ExamView®** desktop test generator software includes test banks with thousands of additional questions.
- **Editable Lesson Plans** for every lesson.

View samples online!
Savvas.com/enVisionAGA

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