

enVision A|G|A © 2024

Differentiation

Introduction



Hi, **enVision A|G|A** teachers!

Let's look at the variety of resources available for differentiated instruction at both the topic and lesson levels. These resources can help you reach the range of learners in your classroom.


Quick Tip

DIFFERENTIATED INSTRUCTION AND INTERVENTION




Powerful System- and Teacher-Driven Resources

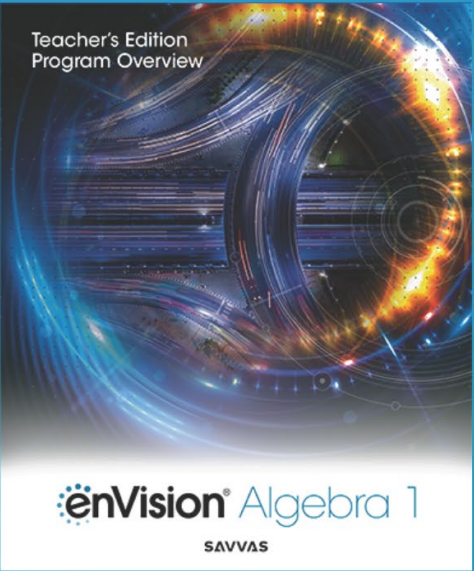
- Use enVision A|G|A resources to provide a comprehensive personalized solution to meet the needs of all levels of learners and provide intervention activities.
- Customize lessons by uploading your own resources.

Built-in resources for supporting all learners!




Includes DOK (Depth of Knowledge)

| | | DIFFERENTIATION RESOURCES | WHERE TO FIND |
|--|--|---|--|
| ONGOING INTERVENTION  | During a LESSON Teacher Driven | <ul style="list-style-type: none"> Adaptations for below- and above-level students Common Errors | Teacher's Edition, print and digital |
| STRATEGIC INTERVENTION  | At the end of a LESSON System and Teacher Driven | <ul style="list-style-type: none"> Differentiation Library Reteach to Build Understanding Mathematical Literacy and Vocabulary Additional Practice Enrichment Activities Online Practice with built-in Learning Aids powered by MathXL® for School Adaptive Practice and Homework powered by Knewton Virtual Nerd Tutorial Videos | Teacher Resource Masters, available as downloadable PDFs and downloadable Word docs, and digital PearsonRealize.com |
| INTENSIVE INTERVENTION  | As needed ANYTIME during a Topic System and Teacher Driven | <ul style="list-style-type: none"> Personalized Study Plans Virtual Nerd Tutorial Videos Online Practice with built-in Learning Aids powered by MathXL for School | PearsonRealize.com |



enVision® Algebra 1
SAVVAS



Check out the Differentiation Resources chart in your *Teacher's Edition Program Overview* for a list of the enVision A|G|A differentiation resources and where to find them in the program materials.

Topic-level Differentiation

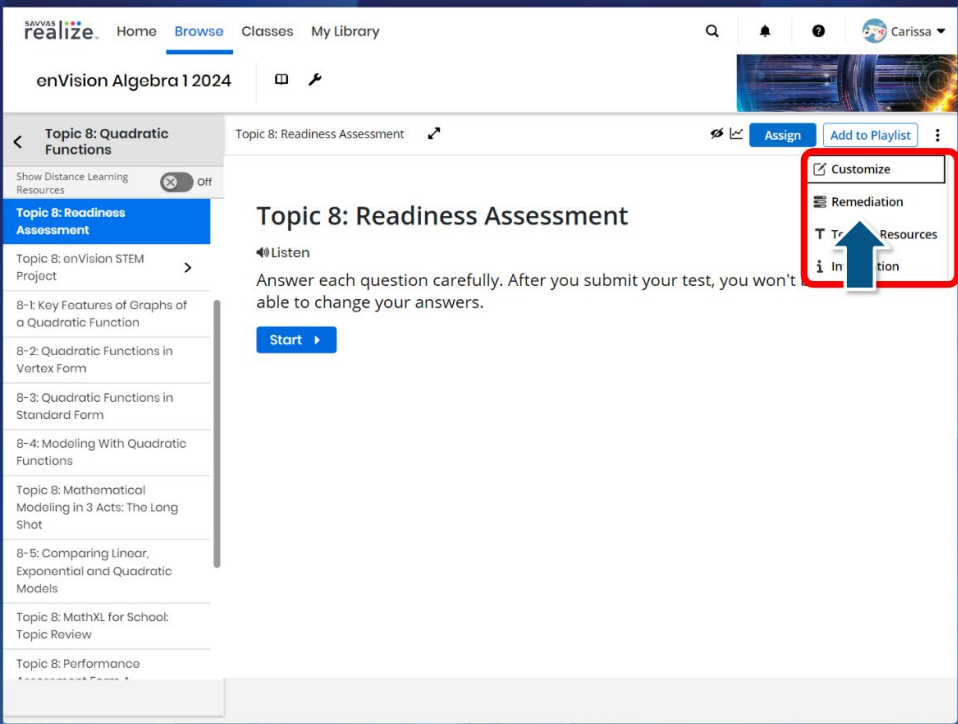
| | | | |
|-------------------|---|-----|--|
| TOPIC 1 | Solving Equations and Inequalities | | enVision™ STEM Project |
| | Topic Overview | 7A | |
| | Topic Overview | 7A | |
| | 1-1 Operations on Real Numbers | 5A | |
| | 1-2 Solving Linear Equations | 11A | |
| | 1-3 Solving Equations With A Variable on Both Sides | 18A | |
| | 1-4 Literal Equations and Formulas | 24A | |
| | 1-5 Solving Inequalities in One Variable | 30A | |
| | 1-6 Compound Inequalities | 37A | |
| | 1-7 Absolute Value Equations and Inequalities | 43A | |
| | Topic Review | 50 | |
| | Topic Assessment | 53A | |
| | Topic Performance Assessment | 53C | |
| | Mathematical Modeling in 3 Acts: Collecting Cans | | Mathematical Modeling in 3 Acts lesson |

There are several topic-level opportunities to differentiate instruction for your students.

The Topic Readiness Assessment determines your students' readiness for the topic content and prescribes interventions as needed. The digital version of the assessment is auto-scored, and a personalized study plan is generated for each student based on his or her score. Students receive practice tasks in their Savvas Realize™ accounts tailored to their specific needs based on the results of the online assessments.

Each topic also includes an enVision™ STEM Project and a Mathematical Modeling in 3 Acts lesson. These activities make math inviting with high-interest, low-entry tasks. Students can choose how they show what they know as they work on these tasks.

Quick Tip



The screenshot shows the SAVVAS realize! interface. The top navigation bar includes 'Home', 'Browse', 'Classes', and 'My Library'. The user is logged in as 'Carissa'. The main content area is titled 'enVision Algebra 1 2024' and 'Topic 8: Readiness Assessment'. A sidebar on the left lists various topics under 'Topic 8: Quadratic Functions'. The main content area displays the assessment title, a 'Listen' icon, and instructions: 'Answer each question carefully. After you submit your test, you won't be able to change your answers.' A 'Start' button is visible. A red box highlights the 'Remediation' option in the top right corner, with a blue arrow pointing to it. The 'Remediation' option is located below the 'Customize' and 'Add to Playlist' buttons.

QUICK TIP

Click the **Remediation** option under online assessments to see a list of the remediation resources you can use to differentiate instruction based on your students' results.

Lesson-level Differentiation



Four-step lesson structure

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

You'll find differentiation resources and tips in each step of a four-step **enVision A|G|A** lesson.

Step 1: Explore

STEP 1 Explore

CRITIQUE & EXPLAIN

INSTRUCTIONAL FOCUS Students use their knowledge of number classification to focus on characteristics that groups of real numbers have in common. They consider sets of real numbers and the relationship between rational and irrational numbers.

STUDENT COMPANION Students can complete the *Critique & Explain* activity on page 1 of their *Student Companion*.

Implement Tasks that Promote Reasoning and Problem Solving **ETP**

Q: What do you notice about the numbers shown on the game cards? [They include whole numbers, decimals, fractions, integers, square roots.]

During **ALL SMALL GROUP**

Support Productive Struggle in Learning Mathematics **ETP**

Q: In what ways are Cindy's numbers similar? Different? [Cindy's numbers are all rational numbers; One number is a decimal, one is a fraction, and one is a whole number.]

Q: In what ways are Victor's numbers similar? Different? [Victor's numbers are also all real numbers; two are irrational and one is rational.]

For Early Finishers

Have students make cards similar to those shown. They can make additional rules and play the game.

Q: Were you successful in getting three in a row? What type of numbers did you use? [Answers will vary.]

After **WHOLE CLASS**

Facilitate Meaningful Mathematical Discourse **ETP**

Facilitate a discussion about the characteristics of types of numbers and how they impact the game.

Q: If you could only win the game with three irrational numbers in a row, how could you use the number cards shown to win the game? [You could replace 1.3 with $\sqrt{8}$.]

HABITS OF MIND Use with **CRITIQUE & EXPLAIN**

Construct Arguments Cindy says that $\frac{1}{2}$ is an irrational number because the decimal form doesn't terminate. Construct an argument to support or refute Cindy's position. [It is true that the decimal form doesn't terminate. However, repeating decimal representations have a rational form.]

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games. The winner must of real number and justify to said she won because numbers on the diagonal, all numbers is a column.

Player 1

Player 2

Player 3

1-1 Operations on Real Numbers

CRITIQUE & EXPLAIN

Cindy and Victor are playing a math game. The winner must get three in a row of the same type of real number and justify how the numbers are alike. Cindy said she won because she was able to get three irrational numbers in a diagonal. Victor said he won with three positive numbers in a column.

A. Can both players say they won for different reasons? Explain.

B. Answer: Can you make other groups using the numbers shown that are all the same kind of real number? In how many ways can you do this?


SAMPLE STUDENT WORK

A. Yes; Cindy used rational numbers as a type of real number meaning to the win.

B. Yes; you could get irrational. The numbers are only limited by the type of think of Example numbers written numbers whose that do not have

Differentiate by letting students solve the problem using any method they choose

- Discuss the different strategies
- Make connections between various approaches
- Deepen conceptual understanding



In Step 1: Explore, differentiate instruction by letting students solve the problem-based learning activity using any method they choose.

As you and your students discuss the different strategies used to solve the problem, students can make connections between various approaches and deepen their conceptual understanding.

The Teacher's Edition provides support to facilitate these conversations before, during, and after the activity.

Step 2: Understand & Apply

Differentiate instruction using the support notes

STEP 2 Understand & Apply

EXAMPLE 4 Operations With Rational and Irrational Numbers

Pose Purposeful Questions **ETP**

ADV Advanced Students

USE WITH EXAMPLE 2 Have students explore creating equations for consecutive even or odd integer problems.

- The sum of three consecutive even integers is 108.
- The sum of three consecutive odd integers is 87.

Q: What expression represents three consecutive even integers?
Three consecutive odd integers?
[$x + (x + 2) + (x + 4)$]

Q: Why are these expressions the same?
[Consecutive even integers and consecutive odd integers both have differences of 2.]

Q: What is the solution to each problem?
[34, 36, 38; 27, 29, 31]

Struggling Students

USE WITH EXAMPLE 4 Help students translate the verbal descriptions of problems into equations.

Carlos is 5 times 3 less than Sofia's age. Carlos is 40 years old. How old is Sofia?

Q: What does the variable represent in this situation?
[Sofia's age]

Q: What operation does *less than* mean? *Times*?
[subtraction; multiplication]

Q: What expression represents Carlos's age?
[$5(x - 3)$]

Q: What equation represents this situation?
[$5(x - 3) = 40$ because each side represents Carlos's age.]

Q: How old is Sofia?
[11]

ELL English Language Learners (Use with EXAMPLE 3)

LISTENING BEGINNING Read Part A of the example, up through the sentence that contains the word *whether*, aloud to students. Repeat the last sentence.

Q: What do you think of when you hear the word *whether*?
[Expect responses related to weather.]

Q: Weather, meaning hot, cold, or rainy has a word with the same sound but a different meaning. Listen to the sentence again. What do you think *whether* means in this context?
[if]

SPEAKING INTERMEDIATE Make sure students understand the everyday use of words in math. Have students talk with a partner about the word cases.

Q: What is a case?
[Answers may vary. Sample: something that you carry or store things in; different situations]

Q: What does it mean to try several different cases in this example?
[To try adding (or multiplying) different rational numbers to see if the idea works: that the sum (or product) of two rational numbers will always be a rational number.]

WRITING ADVANCED Talk about the difference between specific cases and general cases. Have students answer the following questions in their math journals.

Q: Why can't you make a conclusion after testing a few specific cases?
[There could be a case you do not think of that disproves your conclusion.]

Q: How does the use of variables show the general case and help to establish a solid conclusion?
[The variables are defined as integers and they show that no matter what integer is substituted for the variable, the result will follow the same pattern.]

Next, in Step 2: Understand & Apply, check for understanding using Examples, Try It! exercises, and Additional Examples.

Notice the support notes in your Teacher's Edition that can help you differentiate instruction for English language learners, advanced students, and struggling students.

Use the Do You Understand? and Do You Know How? as formative assessment opportunities to help you decide how much and what type of practice to assign students in Step 3.

Step 3: Practice & Problem Solving

1-1: MathXL for School: Practice and Problem Solving

1.1.10

Think About the Process Apply the Distributive Property first to solve the equation below. What operation would you need to use last? If you apply the Distributive Property first, what operation will you need to use last?

$$8\left(\frac{d}{2} - 8\right) = 80$$

☐ Multiplication
☐ Subtraction
☐ Division
☐ Addition

Exercises are **auto-scored** and have **built-in** learning aids

Click to select your answer and then click Check Answer.

1 part remaining

Clear All

Check Answer

Review progress

Question 1 of 36

Go

Back

Next

Question Help

Help Me Solve This

View an Example

Video

Textbook

Glossary

Math Tools

Print

Then, in Step 3: Practice & Problem Solving, assign differentiated practice to solidify student understanding. Use the Assignment Guide and Item Analysis to choose the amount and difficulty level of practice for groups of students.

Alternatively, you can assign the online version of Practice and Problem Solving to differentiate instruction. These exercises are auto-scored and have built-in learning aids to provide support to students.

Quick Tip

SAVVAS realize Home Browse Classes My Library

enVision Algebra 1 2024

Topic 1: Solving Equations and Inequalities

Show Distance Learning Resources ☐ Off

Teacher's Edition: Algebra 1: Topic 1

Student Editions >

Topic 1: Family Engagement

Topic 1: Professional Development Video

Topic 1: Readiness Assessment

Topic 1: enVision STEM Project >

1-1: Operations on Real Numbers


1-2: Solving Linear Equations

1-3: Solving Equations with a Variable on Both Sides


1-4: Literal Equations and Formulas


Step 3: Practice & Problem-Solving

QUICK TIP


1-1: MathXL for School: Practice and Problem-Solving 

You can also assign Mixed Review practice powered by MathXL® for School or Savvy Adaptive Practice. Both of these assignments are differentiated practice options that you can assign during Step 3 or Step 4.

1-1: MathXL for School: Mixed Review 

1-1: Savvy Adaptive Practice 

Step 4: Assess & Differentiate

1-1: Lesson Quiz 

Teacher Resources :

[Printable: 1-1: Lesson Quiz](#)

[Editable: 1-1: Lesson Quiz](#)

[Answer Key: 1-1: Lesson Quiz](#)

Step 4: Assess & Differentiate

The screenshot shows the Savvas Realize interface for the 'enVision Algebra 1 2024' course. The left sidebar lists topics, with '1-1: Operations on Real Numbers' highlighted. The main area displays a list of resources for '1-1: Solving Equations and Inequalities'. The resources include MathXL for School assignments, PDFs, and a video tutorial '1-1: Virtual Nerd™: What's an Irrational Number?' which is highlighted with a red box.

| Resource Type | Resource Name | Action |
|-------------------|--|--------|
| MathXL for School | 1-1: MathXL for School: Reteach to Build Understanding | Assign |
| PDF | 1-1: Reteach to Build Understanding (PDF) | Assign |
| MathXL for School | 1-1: MathXL for School: Additional Practice | Assign |
| PDF | 1-1: Additional Practice (PDF) | Assign |
| MathXL for School | 1-1: MathXL for School: Enrichment | Assign |
| PDF | 1-1: Enrichment (PDF) | Assign |
| PDF | 1-1: Mathematical Literacy and Vocabulary (PDF) | Assign |
| Video | 1-1: Virtual Nerd™: What's an Irrational Number? | Assign |

Finally, in Step 4: Assess & Differentiate, administer the Lesson Quiz and then provide differentiation based on the results. Use the Item Analysis and Rtl information to prescribe differentiated assignments.

You'll find a library of resources on Savvas Realize.

You'll also find digital differentiated assignments powered by MathXL® for School and video tutorials powered by Virtual Nerd.

Quick Tip



You can assign the digital Lesson Quiz and have the system create differentiated assignments. The online version of the quiz is auto-scored, and you can choose to have the system provide auto-assigned intervention or enrichment activities for students based on their results.

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](https://www.pearsonrealize.com). The Lesson Quiz is also available in the *Assessment Resources* book.

Item Analysis

| Item | DOK |
|------|-----|
| 1 | 1 |
| 2 | 2 |
| 3 | 1 |
| 4 | 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 |
|-----------------------|------------|---|
| I Intervention | 0–3 points | <ul style="list-style-type: none"> Reteach to Build Understanding Mathematical Literacy and Vocabulary Additional Practice |
| O On-Level | 4 points | <ul style="list-style-type: none"> Mathematical Literacy and Vocabulary Additional Practice Enrichment |
| A Advanced | 5 points | <ul style="list-style-type: none"> Enrichment |

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1. To which subset of the real number system does the number 1.5 belong?

☐ whole numbers
☐ natural numbers
☐ rational numbers
☐ irrational numbers

ASSESSMENT RESOURCES

Lesson Quiz

Operations on Real Numbers

Which subset of the real number system does the number 1.5 belong?

☐ whole numbers
☐ natural numbers
☐ rational numbers
☐ irrational numbers

1 of the following could be a rational number?

☐ a sum of two irrational numbers
☐ a sum of a rational number and an irrational number
☐ a product of a rational number and an irrational number
☐ numbers in Set A = {–1, –4, 3, 14, 21, 34, 42} are elements of both Set B = {multiples of 3} and Set C = {multiples of 7}

Set A = {–1, –4, 3, 14, 21, 34, 42}

Set B = {multiples of 3}

Set C = {multiples of 7}

Put 42

The numbers from least to greatest:

$2\frac{1}{2}$, $\frac{3}{4}$, $\sqrt{4}$, $-\frac{1}{2}$, 5 , 2.5

5. Without simplifying, determine which of the following represent a rational number. Select all that apply.

☐ $\frac{1}{2} + \frac{1}{3}$
☒ $\frac{1}{2} - \frac{1}{3}$
☐ $\frac{1}{2} \cdot \frac{1}{3}$
☒ $\frac{1}{2} \div \frac{1}{3}$

enVision™ Algebra 1 • Assessment Resources

Closing



Thanks for discovering how **enVision A|G|A** resources can help you differentiate instruction and provide targeted support to all your students.