Big Ideas Math: Modeling Real Life ©2019 Grades K-2
Publisher's Response to EdReports Review

Overview

Big Ideas Math: Modeling Real Life for grades K-8 is a high-quality, rigorous math program built on the most current and widely accepted educational research. The data-driven program is effective in ensuring positive student outcomes in mathematics. This newly released math series is building a highly successful user base across a broad range of demographics and school settings.

Gateway 1: Focus and Coherence

On this objective portion of the EdReports review, our high scores reflect that *Big Ideas Math: Modeling Real Life* is a standards-aligned program that fully covers the required content, the major work focus, and the progressions for each grade level. See more about program focus and coherence here.

Gateway 2: Rigor and Mathematical Practices

EdReports' review of this gateway is not consistent across grades, revealing that there is a level of subjectivity to evaluating heavily embedded practices and rigor elements. *Big Ideas Math's* single authorship provides a cohesive structure and scaffolding for rigor and mathematical practices across grade levels.

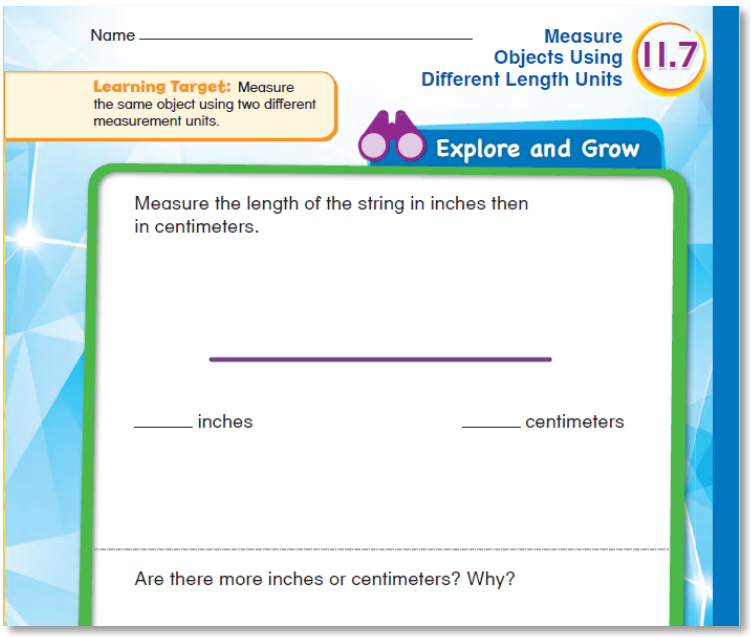
Rigor

A truly rigorous program offers a balance of the three aspects of rigor: conceptual understanding (discovering why), procedural fluency (learning how), and application (knowing when to apply).

Conceptual Understanding

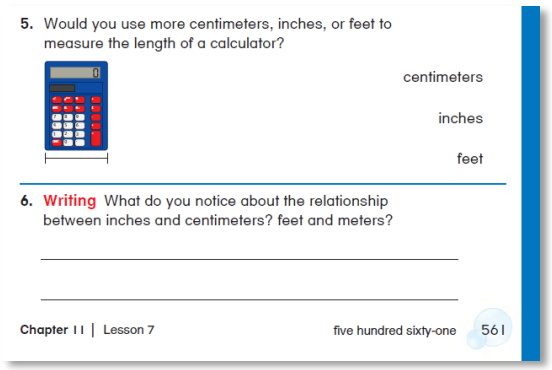
In Gateway 2, the program was reviewed against a narrow expectation of how conceptual understanding should be developed in a curriculum. Big Ideas Learning highly values conceptual development, placing it at the forefront of every section with a discovery Explore and Grow.

In these Explore and Grows, students explore, question, explain, and persevere as they seek to answer questions that encourage concrete to abstract thought. The Explore and Grows provide rich opportunities for students to develop deep conceptual understanding of topics across a grade level. Each Explore and Grow was thoughtfully written to get students thinking conceptually, and while on the surface they may appear quite simple, it is here that students often discover foundational concepts that are central to the learning target of the section.

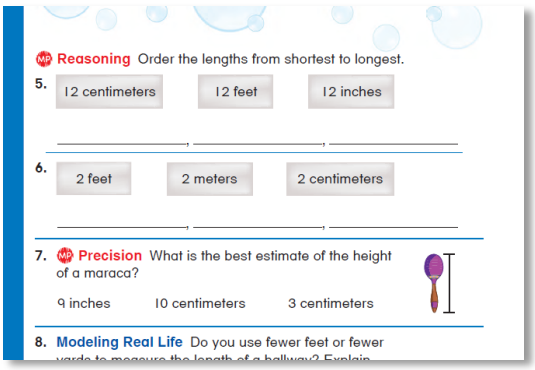


Grade 2 Measure Objects Using Different Length Units: Students explore measuring with different units and discuss why you use more of one unit than another.

As concepts are solidified in the lesson, every section provides opportunities for students to independently demonstrate conceptual understanding, in the in-class Show and Grow and Apply and Grow: Practice exercises, and in the Homework & Practice exercises. Every in-class and homework set intentionally includes conceptual questions to reinforce the learning.



Grade 2 Measure Objects Using Different Length Units: The in-class practice set includes conceptual exercises to gauge student understanding.



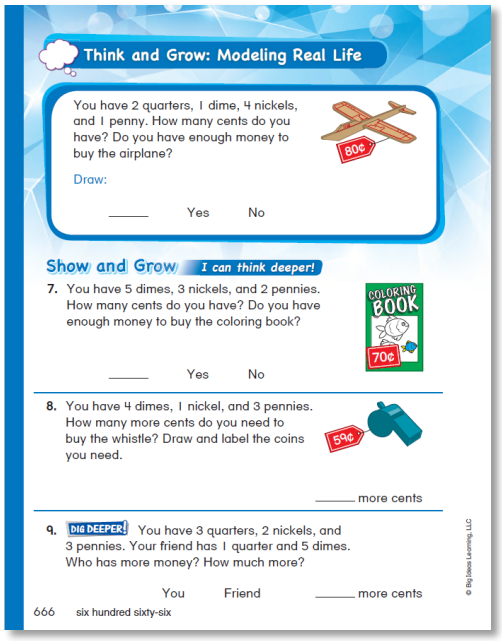
The homework for this same lesson includes exercises (#5 and #6) in which a solid conceptual understanding of measuring with different length units will help students order three lengths.

Procedural Fluency

Every Explore and Grow is followed by a lesson where students are presented with precise definitions, examples, and self-assessment opportunities. Here students begin to shift their conceptual understanding into procedural fluency.

Application

Big Ideas Math exposes students to real-life application examples within every lesson and then follows with additional application problems for in-class problem solving practice. The homework contains a variety of application problems to strengthen and deepen students' problem-solving skills.



Think and Grow: Modeling Real Life

You have 2 quarters, 1 dime, 4 nickels, and 1 penny. How many cents do you have? Do you have enough money to buy the airplane?

80¢

Draw:

_____ Yes No

Show and Grow I can think deeper!

7. You have 5 dimes, 3 nickels, and 2 pennies. How many cents do you have? Do you have enough money to buy the coloring book?

COLORING BOOK 70¢

_____ Yes No

8. You have 4 dimes, 1 nickel, and 3 pennies. How many more cents do you need to buy the whistle? Draw and label the coins you need.

59¢

_____ more cents

9. DIG DEEPER! You have 3 quarters, 2 nickels, and 3 pennies. Your friend has 1 quarter and 5 dimes. Who has more money? How much more?

You Friend _____ more cents

666 six hundred sixty-six

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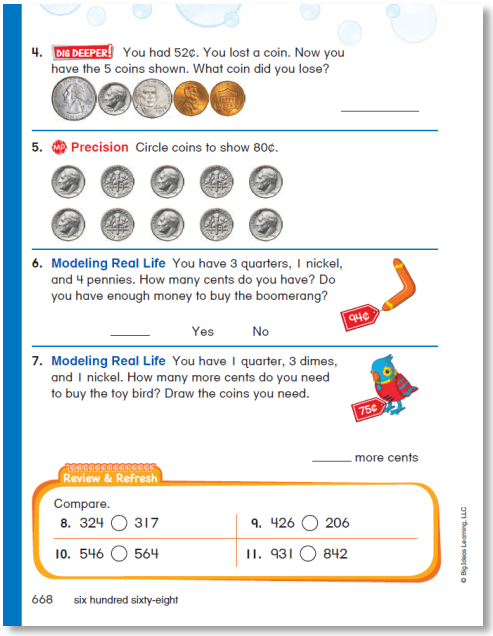

4. DIG DEEPER! You had 52¢. You lost a coin. Now you have the 5 coins shown. What coin did you lose?

_____

5. MP Precision Circle coins to show 80¢.

6. Modeling Real Life You have 3 quarters, 1 nickel, and 4 pennies. How many cents do you have? Do you have enough money to buy the boomerang?

94¢

_____ Yes No

7. Modeling Real Life You have 1 quarter, 3 dimes, and 1 nickel. How many more cents do you need to buy the toy bird? Draw the coins you need.

75¢

_____ more cents

Review & Refresh

Compare.

8. 324 ◯ 317
9. 426 ◯ 206
10. 546 ◯ 564
11. 931 ◯ 842

668 six hundred sixty-eight

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In this Grade 2 example, students decide whether they have enough money to buy a toy. Immediately following are more application problems for students to solve independently, including a Dig Deeper exercise where students solve to answer a bigger question.

The homework for this same lesson includes additional application exercises (#6 and #7) to reinforce students' problem-solving skills.

Exposing students to problem solving in class allows them to move with confidence to deeper problem solving in the homework. While some proficient or advanced learners may move to independent problem solving easily, emerging learners benefit from examples. In either case, our curriculum provides teachers with a versatile program to use with every student. See more about program rigor here.

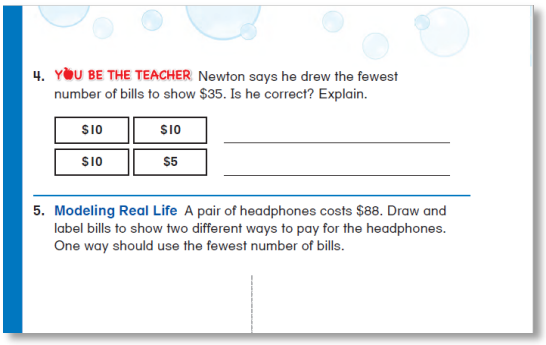
Mathematical Practices

The EdReports review of *Big Ideas Math* discounts explicit teaching instruction as a proven teaching strategy. EdReports' focus maximizes the effect of the materials on students' learning and minimizes the effect of the teacher; Big Ideas Learning believes the opposite.

We believe in the teacher's role in instructing, cultivating, and measuring the math practices within daily instruction. The teacher creates a productive and conducive environment in which students are supported in exploration and discussion with their peers. The teaching edition notes opportunities for teachers to encourage expert mathematical thinking in students during

group work or in-class discussions. Fostering that thinking in class encourages these mindsets in students as they work independently.

The authors thoughtfully considered how students can develop mathematical proficiency throughout the program. The student and teaching editions regularly identify and encourage the mathematical practices throughout the curriculum.

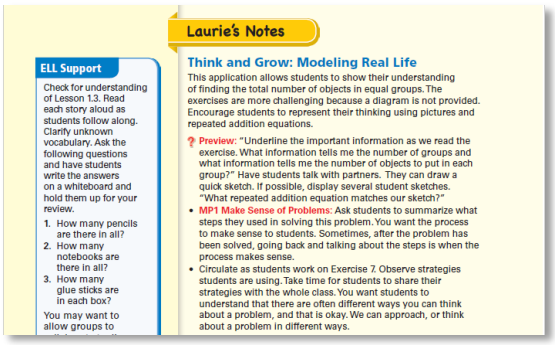


4. YOU BE THE TEACHER Newton says he drew the fewest number of bills to show $35. Is he correct? Explain.

$10	$10
$10	$5

5. **Modeling Real Life** A pair of headphones costs $88. Draw and label bills to show two different ways to pay for the headphones. One way should use the fewest number of bills.

In this Grade 2 exercise (#4), students analyze a friend's drawing. Exercises like this help students develop the ability to construct viable arguments and critique the reasoning of others.



Laurie's Notes

ELL Support

Check for understanding of Lesson 1.3. Read each story aloud as students follow along. Clarify unknown vocabulary. Ask the following questions and have students write the answers on a whiteboard and hold them up for your review.

1. How many pencils are there in all?
2. How many notebooks are there in all?
3. How many glue sticks are in each box?

You may want to allow groups to

Think and Grow: Modeling Real Life

This application allows students to show their understanding of finding the total number of objects in equal groups. The exercises are more challenging because a diagram is not provided. Encourage students to represent their thinking using pictures and repeated addition equations.

Preview: "Underline the important information as we read the exercise. What information tells me the number of groups and what information tells me the number of objects to put in each group?" Have students talk with partners. They can draw a quick sketch. If possible, display several student sketches. "What repeated addition equation matches our sketch?"

- **MP1 Make Sense of Problems:** Ask students to summarize what steps they used in solving this problem. You want the process to make sense to students. Sometimes, after the problem has been solved, going back and talking about the steps is when the process makes sense.
- Circulate as students work on Exercise 7. Observe strategies students are using. Take time for students to share their strategies with the whole class. You want students to understand that there are often different ways you can think about a problem, and that is okay. We can approach, or think about a problem in different ways.

Laurie's Notes regularly encourage teachers to lead discussions with their students to reinforce the math practices. This page from the Grade 2 Teaching Edition encourages discussion of a word problem to help students make sense of problems and persevere in solving them.

To strengthen the connection between the textbook labels and the eight Standards for Mathematical Practice, we have placed a correlation document online at *BigIdeasMath.com*. It can also be found here.

Gateway 3: Usability

Usability is one of the hallmarks of the program that, regretfully, was not even reviewed. Student learning is our highest goal and our student materials are widely known for being clear and understandable. Similarly, the teacher materials are known for their depth and usability. Every component of the versatile teacher package was specifically targeted to help teachers in a practical way as they plan, teach, and assess for student learning. See more about program usability here.

Conclusion

Big Ideas Math: Modeling Real Life was developed from the latest research with students and teachers in mind. This rigorous program strives for positive math outcomes to prepare today's students for the jobs of tomorrow. We invite you to go here to explore the program further.

Big Ideas Learning acknowledges the perceived value of third-party reviews as one of the criteria educational leaders use in their evaluation process. We appreciate the reviewer comments and consider all feedback in future program development. Please send any EdReports evaluation inquiries regarding *Big Ideas Math* to BIMqueries@BigIdeasMath.com.