Teacher Edition

MATH 3

Fifth Edition

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Part
1

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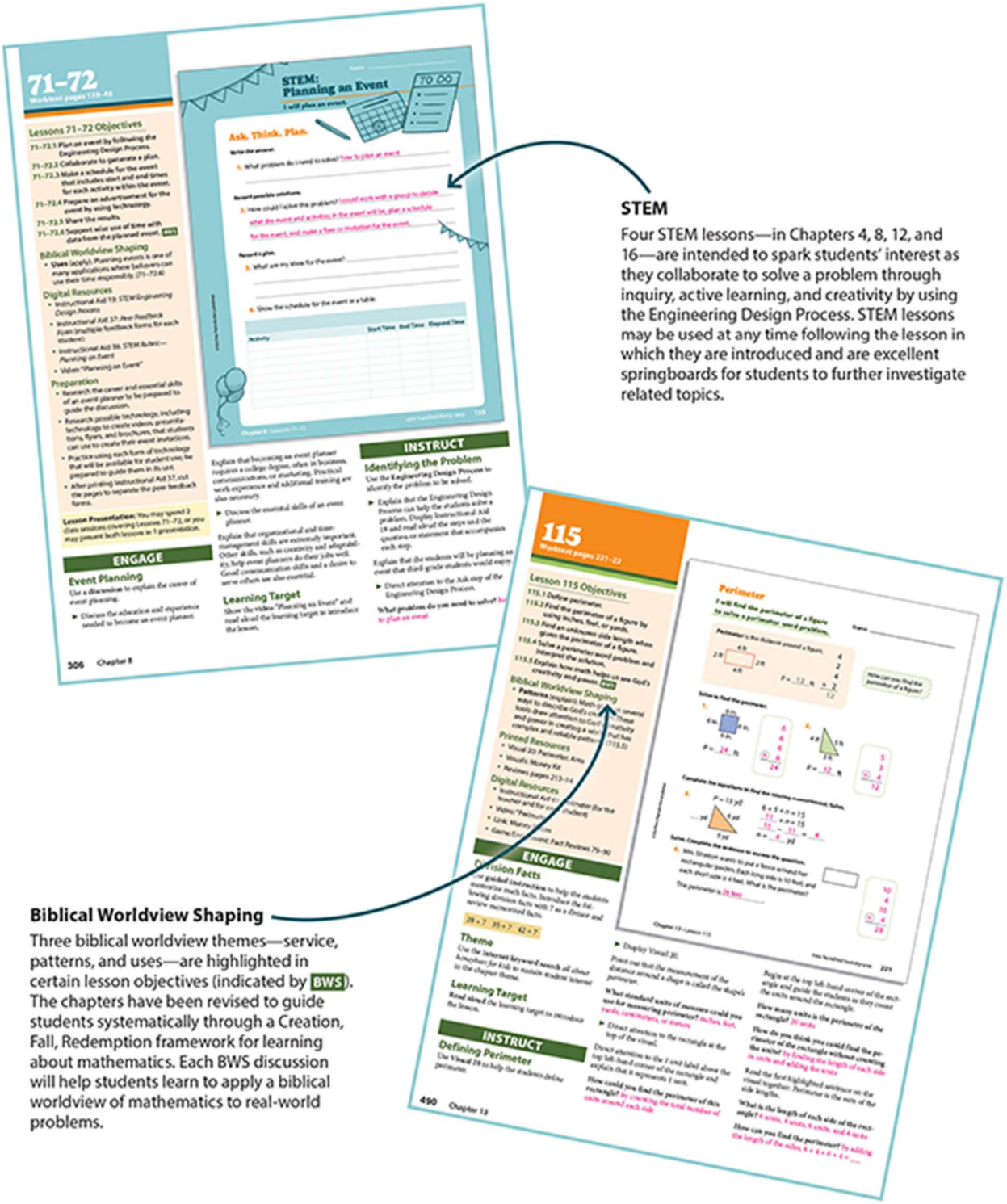
Cumulative Review

Pedagogical Support

Teacher Edition Index

Explaining the Gospel

New to This Edition

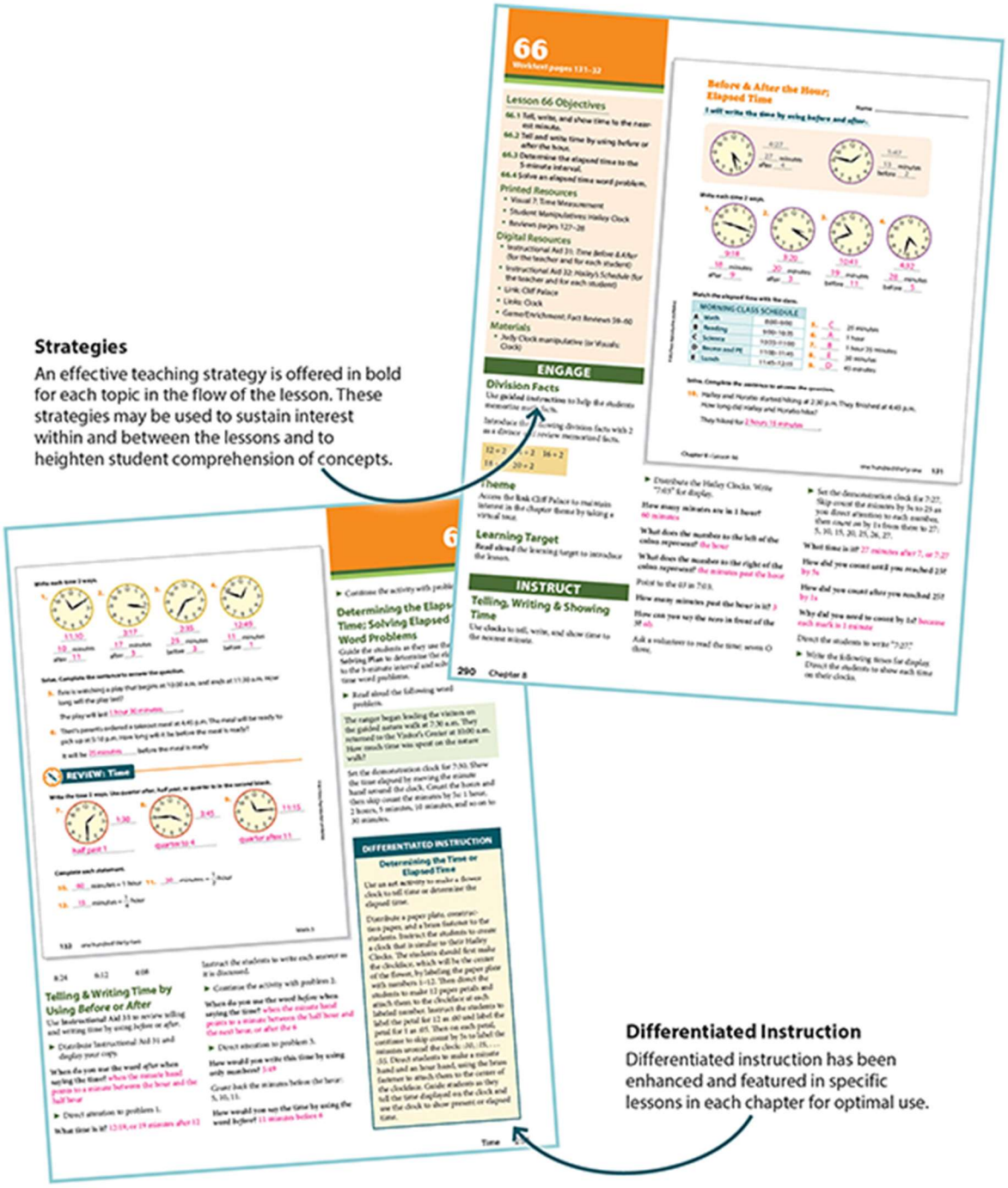


STEM

Four STEM lessons—in Chapters 4, 8, 12, and 16—are intended to spark students' interest as they collaborate to solve a problem through inquiry, active learning, and creativity by using the Engineering Design Process. STEM lessons may be used at any time following the lesson in which they are introduced and are excellent springboards for students to further investigate related topics.

Biblical Worldview Shaping

Three biblical worldview themes—service, patterns, and uses—are highlighted in certain lesson objectives (indicated by BWS). The chapters have been revised to guide students systematically through a Creation, Fall, Redemption framework for learning about mathematics. Each BWS discussion will help students learn to apply a biblical worldview of mathematics to real-world problems.



Strategies

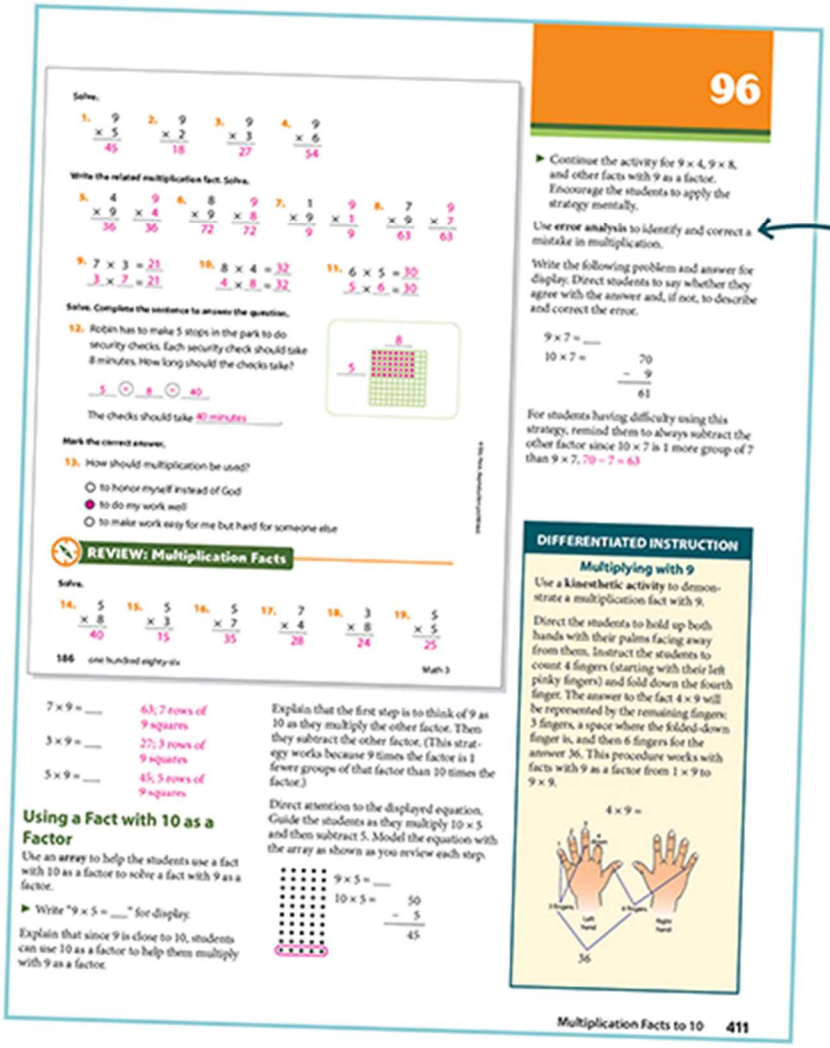
An effective teaching strategy is offered in bold for each topic in the flow of the lesson. These strategies may be used to sustain interest within and between the lessons and to heighten student comprehension of concepts.

Differentiated Instruction

Differentiated instruction has been enhanced and featured in specific lessons in each chapter for optimal use.

Financial Literacy

Financial literacy lessons are included to introduce students to concepts related to spending, saving, and giving.



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Solve.

1. 9 × 5 = 45
2. 9 × 2 = 18
3. 9 × 3 = 27
4. 9 × 6 = 54

Write the related multiplication fact. Solve.

5. 4 × 9 = 36; 9 × 4 = 36
6. 8 × 9 = 72; 9 × 8 = 72
7. 1 × 9 = 9; 9 × 1 = 9
8. 7 × 9 = 63; 9 × 7 = 63

9. 7 × 3 = 21; 3 × 7 = 21
10. 8 × 4 = 32; 4 × 8 = 32
11. 6 × 5 = 30; 5 × 6 = 30

Solve. Complete the sentence to answer the question.

12. Robin has to make 5 stops in the park to do security checks. Each security check should take 8 minutes. How long should the checks take?

5 × 8 = 40

The checks should take 40 minutes.

Mark the correct answer.

13. How should multiplication be used?
- to honor myself instead of God
- to do my work well
- to make work easy for me but hard for someone else

REVIEW: Multiplication Facts

Solve.

14. 5 × 8 = 40
15. 5 × 3 = 15
16. 5 × 7 = 35
17. 7 × 4 = 28
18. 3 × 8 = 24
19. 5 × 5 = 25

186 one hundred eighty-six Math 3

7 × 9 = ___ 63; 7 rows of 9 squares

3 × 9 = ___ 27; 3 rows of 9 squares

5 × 9 = ___ 45; 5 rows of 9 squares

Using a Fact with 10 as a Factor

Use an **array** to help the students use a fact with 10 as a factor to solve a fact with 9 as a factor.

▶ Write "9 × 5 = ___" for display.

Explain that since 9 is close to 10, students can use 10 as a factor to help them multiply with 9 as a factor.

Explain that the first step is to think of 9 as 10 as they multiply the other factor. Then they subtract the other factor. (This strategy works because 9 times the factor is 1 fewer groups of that factor than 10 times the factor.)

Direct attention to the displayed equation. Guide the students as they multiply 10 × 5 and then subtract 5. Model the equation with the array as shown as you review each step.

9 × 5 = ___

10 × 5 = 50 − 5 = 45

▶ Continue the activity for 9 × 4, 9 × 8, and other facts with 9 as a factor. Encourage the students to apply the strategy mentally.

Use **error analysis** to identify and correct a mistake in multiplication.

Write the following problem and answer for display. Direct students to say whether they agree with the answer and, if not, to describe and correct the error.

9 × 7 = ___

10 × 7 = 70 − 9 = 61

For students having difficulty using this strategy, remind them to always subtract the other factor since 10 × 7 is 1 more group of 7 than 9 × 7, 70 − 7 = 63

DIFFERENTIATED INSTRUCTION

Multiplying with 9

Use a **kinesthetic activity** to demonstrate a multiplication fact with 9.

Direct the students to hold up both hands with their palms facing away from them. Instruct the students to count 4 fingers (starting with their left pinky fingers) and fold down the fourth finger. The answer to the fact 4 × 9 will be represented by the remaining fingers: 3 fingers, a space where the folded-down finger is, and then 6 fingers for the answer 36. This procedure works with facts with 9 as a factor from 1 × 9 to 9 × 9.

4 × 9 =

36

Multiplication Facts to 10 411

Error Analysis

Selected chapters include error analysis, a teaching strategy that allows students to identify and correct mistakes in mathematical procedures or computation.

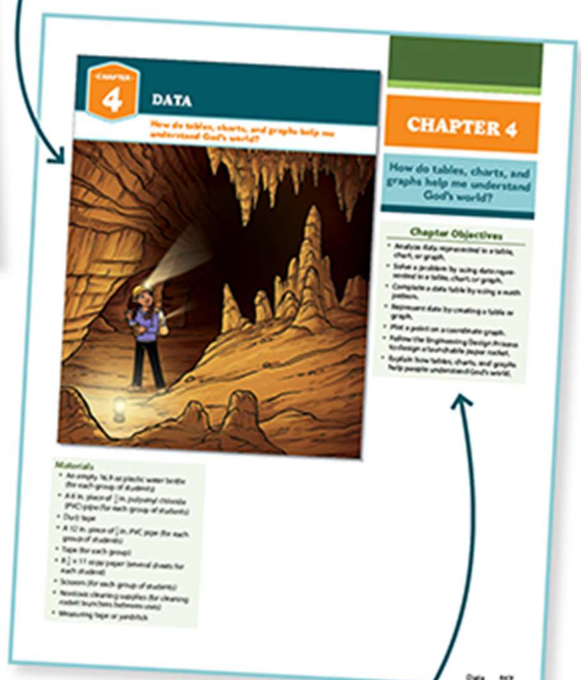
Test Bank

A selection of test questions is available for each of the 19 tests.

Teacher Edition Features

Lesson plan overviews at the beginning of each chapter provide a consolidated view of the schedule, along with objectives, resources, and assessments for that chapter.

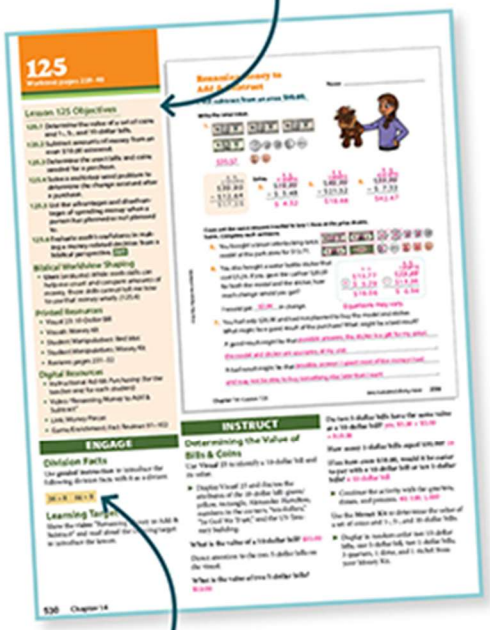
The **chapter opener** presents a chapter essential question and artwork that support the opening scenario and the biblical worldview shaping theme.



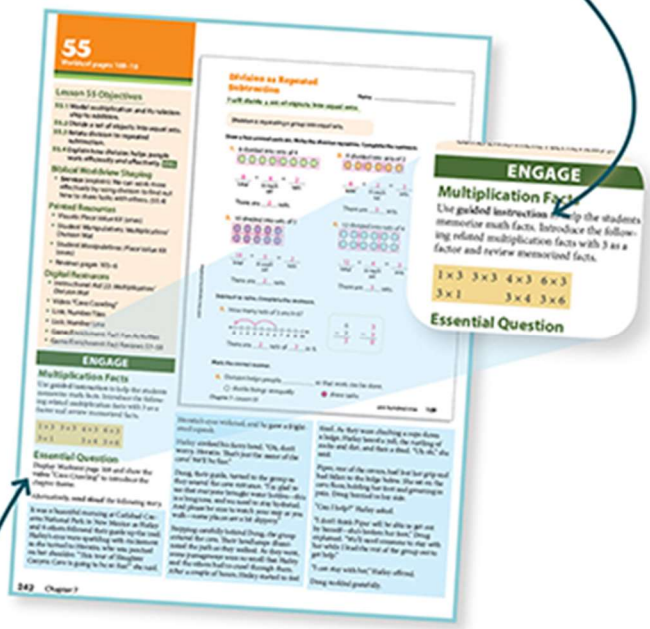
Chapter objectives outline the knowledge and skills students should gain by the end of the chapter.

Four **STEM projects** throughout the course emphasize science, technology, engineering, and math.

Lesson openers provide a snapshot of the lesson's objectives, biblical worldview shaping opportunities, resources, and materials.



Teaching strategies aligned with lesson objectives offer ideas to teach, reinforce, and assess content while promoting engagement and critical thinking.



Most lessons include a **fact review**, which gives guided instruction to help the students memorize and review math facts.

An **essential question** is a question posed to students at the beginning of a chapter to motivate, engage, and demonstrate the relevance of the content in a way that drives the student to persevere through instruction to find the answer.