LOUISIANA DEPARTMENT OF EDUCATION

Teaching and Learning

Family Roadmap to Math Success in Louisiana

Grade 7 Overview

In Grade 7, students deepen their understanding of relationships between quantities as they work with proportional relationships, percentages, and rational numbers. They use mathematical reasoning to solve real-world problems involving ratios, scale, and financial contexts. Students extend their work with algebraic expressions and equations to represent and solve more complex situations. They also analyze probability and use data to make predictions and draw conclusions about real-world events.

By the end of the grade, your child will be able to:

- Understand and represent proportional relationships using tables, graphs, equations, and verbal descriptions.
- Use proportional reasoning to solve real-world problems involving scale, percent, and unit rates.
- Apply operations with rational numbers to solve problems in real-world and mathematical contexts.
- Write, simplify, and interpret algebraic expressions.
- Solve multi-step equations and inequalities and explain what solutions mean in context.
- Analyze and solve problems involving scale drawings and geometric relationships.
- Use probability to model situations and make predictions about outcomes.
- Draw inferences from data and compare populations.

How can families help at home?

- Ask your student to explain how two quantities are related and whether the relationship is proportional.
- Use real-life situations like shopping, discounts, tips, or taxes to discuss percentages.
- Encourage your student to explain their thinking and justify their answers.
- Ask your student to describe patterns they see in tables, graphs, or everyday situations.
- Have your student compare two situations and explain which represents a better value or rate.
- Ask your student to estimate answers and explain whether their solutions are reasonable.
- Have your student write and explain expressions or equations to represent real-world situations.
- Ask your student to explain how positive and negative numbers behave in real-world situations (for example, gains and losses or temperature changes).

Building reasoning and problem-solving through word problems

Working through word problems helps students develop both their mathematical vocabulary and their reasoning abilities. Word problems support critical thinking, improve problem-solving strategies, and help students apply math concepts to real-world situations. Here are example word problems that Grade 7 students might work on:

- A store is offering 20% off all items. What is the sale price of a $45 jacket? How much money do you save?
- A recipe calls for 4 cups of flour to make 24 cookies. How many cookies can be made with 10 cups of flour? Explain your reasoning.
- Solve: $3(x - 4)=18$. What does the solution represent in a real-world situation?
- A map has a scale of 1 inch to 8 miles. If two cities are 3.5 inches apart on the map, how far apart are they in real life?
- A spinner has 4 equal sections labeled A, B, C, and D. What is the probability of landing on a vowel? How would the probability change if the spinner had 8 equal sections with 2 vowels?
- Two stores sell the same product. Store A sells 3 items for $12, and Store B sells 5 items for $18. Which is the better buy? Explain your reasoning.

Family Engagement Tips

- Talk positively about math and encourage your child to maintain a growth mindset.
- Encourage your child to share/show you a different way to solve a math problem than you are familiar with and explain the reasoning for their approach.
- Celebrate mistakes as learning opportunities. Remind your child that making mistakes is part of learning and praise their efforts.
- Stay in touch with your child's teacher to learn what your child is learning and how to support it at home.
- Create a learning space for your child with supplies such as paper, pencils, rulers, calculators, and age-appropriate math manipulatives.

How does grade 7 math build on grade 6?

Grade 7 builds on students' understanding of ratios and expressions from Grade 6 by extending these ideas to proportional relationships, percent problems, and more complex equations. Students deepen their understanding of rational numbers and apply them in a variety of real-world contexts. They also begin using probability and data to make predictions and draw conclusions.

Math Conversations

Communicate with your child about math using open-ended questions:

- What strategy did you use to solve the problem?
- Why do you think your answer makes sense?
- If your answer was wrong, how could you check your work?
- How did you solve that problem?

Online Resources

- Family Math Resources
- Family Literacy Resources
- School System Parent and Family Engagement Resources