

Grade 6 Mathematics TEKS

Overview

In Grade 6 mathematics, students focus on using ratios to describe proportional relationships with number, geometry, measurement, and probability. Students also focus on adding and subtracting decimals and fractions. Students use a variety of mathematical processes and tools to develop conceptual understanding and solve problems as they do mathematics.

Number, operation, and quantitative reasoning: Students will

- Compare and order positive fractions, decimals, and whole numbers.
- Generate equivalent forms of whole numbers, fractions, and decimals.
- Use integers to describe real-life situations.
- Write the prime factorization of numbers using exponents.
- Identify factors and multiples, including common factors and multiples.
- Model addition and subtraction situations involving fractions with objects, pictures, words, and numbers.
- Add and subtract to solve problems using decimals and fractions.
- Multiply and divide whole numbers to solve problems, including situations involving equivalent ratios and rates.
- Estimate and round to produce reasonable results where exact answers are not required in problem situations.

Patterns, relationships, and algebraic thinking: Students will

- Use ratios to describe proportional situations and make predictions in proportional situations.
- Represent ratios and percents with physical models, fractions, and decimals.
- Use tables and symbols to describe and represent proportional and other relationships (measurement conversions, sequences, perimeter, area, etc.).
- Use patterns found in a table of data to develop formulas to represent relationships involving perimeter, area, and volume.
- Use letters to represent unknowns in forming equations from a problem situation.

Geometry and spatial reasoning: Students will

- Use angle measurements to classify angles as acute, obtuse, or right.
- Identify relationships using angles in triangles and quadrilaterals (patterns of angle-sum measurements).
- Describe the relationship between radius, diameter, and circumference of a circle.
- Locate and identify points on a coordinate graph using ordered pairs of positive fractions, decimals, and whole numbers.

Measurement: Students will

- Estimate measurements and evaluate reasonableness of results.
- Select and use appropriate units, tools, or formulas to measure and to solve problems involving length, perimeter, circumference, area, time, temperature, capacity, weight, and angles.
- Convert measures within the same measurement system (customary or metric).

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Probability and statistics: Students will

- Find all possible outcomes using lists, tree diagrams, and combinations.
- Find probabilities of a simple event occurring and not occurring (complement).
- Draw and compare different graphical representations of the same data (circle graphs, bar graphs, line graphs, etc.).
- Use median, mode, and range to describe a set of data.
- Solve problems by collecting, organizing, displaying, and interpreting data.

Underlying processes and mathematical tools: Students will

- Identify and apply mathematics to everyday experiences in and outside of school.
- Use a problem-solving model that includes understanding the problem, making a plan, carrying out the plan, and checking the solution for reasonableness.
- Select or develop problem-solving strategies such as drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve problems.
- Select tools such as real objects, manipulatives, paper/pencil, and technology to solve problems.
- Use techniques such as mental math, estimation, and number sense to solve problems.
- Communicate mathematical ideas using language, efficient tools, appropriate units of measure, and models (graphical, numerical, physical, algebraic).
- Evaluate the effectiveness of different representations to communicate ideas.
- Make conjectures from patterns or sets of examples and non-examples.
- Validate conclusions using mathematical properties and relationships.

Tips for Parents

- When dealing with price reductions, have your child estimate the value of sale items after discounts (1/3 off, 20% off, etc).
- When dining out, ask your child to calculate and/or estimate the total bill, the cost per person, the tip, and the change.
- Ask your child to describe any fractional amounts found in their everyday setting: “What part of the pizza did you eat?” or “What part of distance have we covered?” (1/3 of the total amount). “Can you describe that part in another way?” (about 33% or 2/6, etc.)
- When grocery shopping, have your child estimate the total cost of the bill.
- Review and practice multiplication and division facts with your child when driving, during commercials, or other down times.
- Be a strong role model by valuing mathematics. The world of mathematics has expanded to encompass not only computation but also a need for deeper, more powerful thinking and reasoning abilities for all students to navigate through future problem-solving situations. Instill in your child the confidence to trust their problem-solving abilities.