Mathematics
Grade 8 Math Public Overview

1st 9 Weeks

Assessments

MAP Growth Math: September 2, 2026 – September 3, 2026

What are we learning?
How can I help at home?

Module 1: Transforming Geometric Objects

In *Transforming Geometric Objects*, students develop a strong understanding of how shapes behave when they are moved, resized, and analyzed on the coordinate plane. They explore how transformations—such as sliding, flipping, and rotating—affect figures and learn that these movements preserve size and shape, leading to an understanding of congruence. Building on this, students investigate how shapes can be enlarged or reduced using scale factors, recognizing that figures can maintain the same shape while changing size (similarity) and identifying proportional relationships between corresponding parts. Throughout the module, students apply these ideas to explain geometric relationships, including angle relationships in triangles and when lines intersect or run parallel. Emphasis is placed on hands-on exploration, visual reasoning, and using algebraic rules to describe changes, allowing students to justify and connect geometric concepts to both mathematical reasoning and real-world situations.

Essential Question:

How can we describe, use, and apply transformations to understand how shapes are related and how geometric relationships are formed?

Timeline: August 11 – October 7
Essential Standards: 8.3C, 8.10C

Link to TEKS/Parent Guide:

- Texas Essential Knowledge and Skills for Mathematic Grade 8
- Topic Family Guides aligned to the module are available through your students' digital access and can be found in Student Topic Resources.

Content: Students …

- Apply and describe transformations (slide, flip, turn) to move shapes on a coordinate plane, including algebraic representations.
- Identify and justify when figures are congruent and explain how one figure maps onto another.
- Use scale factors to resize figures and determine when shapes are similar.
- Analyze relationships between side lengths and angles to solve geometric problems.
- Use mathematical reasoning and algebraic representations to explain patterns and relationships in geometry.

At-Home Connection:

- **Explore movement of objects:** Have your child describe how an object moves when you slide it across a table, flip it over, or rotate it (like turning a book). Ask them what stays the same.
- **Resize something at home:** Ask your child to compare a picture on a phone to a printed version or zoom in/out on an image. Talk about how it changes size but keeps the same shape (similarity and scale factor).
- **Look for angles and lines in the real world:** While driving or walking, look at streets or intersections. Ask your child to identify parallel lines or angles (like corners of signs or buildings) and describe how they are related.

Module 2: Developing Function Foundations *(Continues in 2nd 9 Weeks)*

In *Developing Function Foundations*, students learn how different quantities are related and how those relationships can be shown using tables, graphs, and equations. They begin by connecting what they know about ratios and proportions to lines on a graph, helping them understand how one quantity changes compared to another. Students then explore linear relationships more deeply, including how to find and explain the rate of change (slope) and starting value in real-world situations. By the end of the module, students can recognize patterns, write equations for relationships, and understand how these ideas connect to functions they will study in future math courses.

Essential Question:

How can we represent and use relationships between two quantities to understand and predict real-world situations?

Timeline: October 8 – December 7
Essential Standards: 8.3C, 8.4B, 8.4C, 8.5G, 8.5I, 8.10C
Link to TEKS/Parent Guide:

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Content: Students …

- Connect proportional relationships to lines and linear equations.
- Understand slope as a rate of change and explain why it is constant using models like similar triangles.
- Write and interpret linear equations representing mathematical and real-world situations.
- Analyze and compare linear relationships using tables, graphs, and equations.
- Identify and describe functions and determine whether a relationship has one output for each input.

At-Home Connection:

- **Compare shopping options:** Have your child compare two pricing options (like online vs. in-store) and decide which is a better deal by looking at cost patterns.
- **Track real-life rates:** Ask your child to measure something like distance over time (walking, biking, driving) and describe how fast it is changing.
- **Analyze starting amounts:** Look at situations like savings accounts or phone plans and discuss how the starting amount and change over time affect the total.

2nd 9 Weeks

Assessments

PSAT October 27, 2026

What are we learning?
How can I help at home?

Module 2: Developing Function Foundations *(Continued)*

See 1st 9 weeks for details

Module 3 Part A: Data Data Everywhere *(Continues in 3rd 9 Weeks)*

In *Data Data Everywhere*, students learn how to look at relationships between two sets of data (for example, hours studied and test scores). They use graphs called scatterplots to spot patterns and draw trend lines (lines of best fit) to make predictions. Students learn how to describe how spread out data is and how to compare different data sets. They also explore how to select small groups (samples) from a larger group (population) and use those samples to make reasonable conclusions.

Essential Question:

How can we use data to identify patterns and make reliable predictions about real-world situations?

Timeline: December 8 – January 28
Essential Standards: 8.5D, 8.5I
Link to TEKS/Parent Guide:

- Texas Essential Knowledge and Skills for Mathematic Grade 8
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Content: Students …

- Analyze relationships between two sets of data using graphs (scatterplots)
- Identify patterns and describe how variables are related
- Use trend lines and equations to model data and make predictions
- Compare data sets using measures of center and variability
- Use samples of data to make reasonable conclusions about larger groups

At-Home Connection:

- **Analyze Sports or Game Data:** Look at sports statistics (points scored vs. playing time) and talk about whether more practice or time leads to better performance.
- **Make Predictions from Data:** Use real-life situations like weather trends or spending habits to make predictions (e.g., "If this pattern continues, what might happen next week?").
- **Survey Your Household:** Have your child ask a small group of family members (a *sample*) a question like "What is your favorite snack?" or "How many hours of TV do you watch?" Then compare the results to what they think the whole neighborhood or school might prefer. Discuss whether the small group gives a fair picture and how choosing different people might change the results.

3rd 9 Weeks

Assessments

MAP Growth Math: January 20, 2027 – January 21, 2027

Module 3: Data Data Everywhere *(Continued)*
See 2nd 9 weeks for details

Module 4: Modeling Linear Equations

In *Modeling Linear Equations*, students build on prior knowledge equations to represent and solve real-life problems using more complex equations and inequalities.

Essential Question:
How can equations and systems of equations be used to model and solve real-world problems?

Timeline: January 29 – February 19
Essential Standards: 8.5I, 8.8C
Link to TEKS/Parent Guide:

- Texas Essential Knowledge and Skills for Mathematic Grade 8
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Content: Students …

- Write equations and inequalities to represent real-world situations.
- Solve equations using multiple strategies.
- Describe the meaning of solutions in real-world situations.
- Use graphs of systems of equations to determine and interpret the meaning of the intersection of the two graphed lines.

At-Home Connection:

- **Compare Costs:** Have your child compare two shopping options (like two stores or plans) by writing simple equations to determine when the total cost would be the same
- **Solve Real-Life Scenarios:** Ask your child to create and solve an equation from a real situation at home (such as budgeting allowance or splitting costs)
- **Find "Break-Even" Points:** Work with your child to compare two options (like buying vs. renting) and determine when they cost the same using a graph.

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Module 5: Applying Powers *(Continues in 4th 9 weeks)*

In *Applying Powers*, students learn how to use mathematical tools—especially powers and formulas—to solve real-world problems. They work with large and small numbers, estimate and compare values, and perform calculations that help them make sense of everyday situations. Students apply these skills in several important contexts. They use the Pythagorean Theorem to find distances and solve geometric problems, explore how money grows over time through interest, and calculate the volume and surface area of three-dimensional objects like cylinders, cones, and spheres.

Essential Question:

Timeline: February 22 – May 27
Essential Standards: 8.2D, 8.7A, 8.7B, 8.7C, 8.12D

Link to TEKS/Parent Guide:

- Texas Essential Knowledge and Skills for Mathematic Grade 8
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Content: Students …

- Estimate and compare numbers, including placing them on a number line
- Solve equations involving squares and square roots
- Read, write, and compare numbers in scientific notation
- Use the Pythagorean Theorem to find distances and solve problems
- Apply the Pythagorean Theorem on the coordinate plane
- Calculate and compare simple and compound interest
- Analyze how interest rates and time impact financial decisions
- Calculate volume and surface area of cylinders, cones, and spheres in real-world contexts

At-Home Connection:

- **Compare savings options:** Have your child compare two savings accounts—one with simple interest and one with compound interest—and decide which grows money faster over time.
- **Measure and calculate at home:** Ask your child to measure a cylindrical object (like a can or water bottle) and calculate how much it can hold using volume.
- **Find distances around you:** Have your child use the Pythagorean Theorem to estimate distances (such as the diagonal across a room or a rectangular space).

4th 9 Weeks
Assessments STAAR (April 26 – April 28) MAP Growth Math: May 5, 2027 – May 6, 2027
Module 5: Applying Powers *(Continued)* *See 3rd 9 weeks for details*