

Geometry

Mathematical Practices

Make sense of problems and persevere in solving them.

Reason abstractly and quantitatively.

Construct viable arguments and critique the reasoning of others.

Model with mathematics.

Use appropriate tools strategically.

Attend to precision.

Look for and make use of structure.

Look for and express regularity in repeated reasoning.

Unit 1 Congruence, Proof, and Constructions

- Experiment with transformations in the plane.
- Understand congruence in terms of rigid motions.
- Prove geometric theorems.
- Make geometric constructions.

Unit 2 Similarity, Proof, and Trigonometry

- Understand similarity in terms of similarity transformations.
- Prove theorems involving similarity.
- Define trigonometric ratios and solve problems involving right triangles.
- Apply geometric concepts in modeling situations.
- Apply trigonometry to general triangles.

Unit 3 Extending to Three Dimensions

- Explain volume formulas and use them to solve problems.
- Visualize the relation between two-dimensional and three-dimensional objects.
- Apply geometric concepts in modeling situations.

Unit 4 Connecting Algebra and Geometry through Coordinates

- Use coordinates to prove simple geometric theorems algebraically.
- Translate between the geometric description and the equation for a conic section.

Unit 5 Circles With and Without Coordinates

- Understand and apply theorems about circles.
- Find arc lengths and areas of sectors of circles.
- Translate between the geometric description and the equation for a conic section.
- Use coordinates to prove simple geometric theorems algebraically.
- Apply geometric concepts in modeling situations.

Unit 6 Applications of Probability

- Understand independence and conditional probability and use them to interpret data.
- Use the rules of probability to compute probabilities of compound events in a uniform probability model.
- Use probability to evaluate outcomes of decisions.