

Geometry Pacing Guide 2017-2018

Unit 1: Reasoning & Proof

6 days

I can use reasoning to make and test conjectures and form simple arguments.

- Pattern finding, counterexamples (2.1)
- Conditional & converse statements (2.2)
- Biconditional statements & good definitions (2.2, 2.4)

Pre-Unit 2: Basic Probability

2 days

- Simple probability (probability of drawing green, not drawing red – easy!)
- Experimental vs Theoretical – chips, spinner, dice (2 tosses) – do experiment followed by sample space – jigsaw to share with groups
- Sample space
- $P(\text{event}) = \frac{\text{want}}{\text{possible}}$

Unit 2: All about Lines

7 days

I can reason about lines and their lengths.

- Vocabulary: point, line, plane, line segment, collinear points, coplanar points, ray, opposite rays, intersection of two lines, congruent segments, midpoint, segment bisector
- Parallel, perpendicular, skew lines
- Diagrams and notation (1.1)
- Segments: copy using tracing paper and compass/straightedge
- Segment length: measuring, segment addition postulate, number line, coordinate plane (1.2-1.3)
- Segment bisector: bisect using tracing paper and compass/straightedge
- Segment bisector/midpoint: measuring, lengths given, number line, coordinate plane (1.2-1.3)

Unit 3: All about Angles

10 days

I can reason about angles and their measures (doing).

- Vocabulary: ray, opposite ray, angle, acute, right, obtuse, straight
- Diagrams, notation, classify; measure angles with a protractor (1.4)
- Copy an angle using tracing paper, compass/straightedge
- Find angle measures using protractor, angle measures given (angle addition postulate) (1.4)
- Bisect an angle using tracing paper, compass/straightedge (NM)
- Find angle measures using protractor, measures given (M)
- Perpendicular lines, complementary angles, supplementary angles, linear pairs, vertical angles (1.5, 2.7)
- Use angle pair relationships: complementary, supplementary, adjacent, linear pair, vertical angles (1.5, 2.7)



- Vocabulary: angle pairs created when two lines intersect a transversal (3.1)
- If lines are parallel and cut by a transversal, then angles are congruent or supplementary (3.2) (introduce skew)
- If angles are congruent/supplementary, then lines cut by transversal are parallel (3.3)
- Perpendicular lines theorems (3.6)

Unit 4: Parallel and Perpendicular lines

5 days

I can prove statements about lines and angles.

- Constructions with tracing paper, compass/straightedge
- Slope of parallel, perpendicular lines
- Write equations of parallel and perpendicular lines

Unit 5: Plane figures

11 days

I can reason about 2-dimensional figures in a plane

- Planes: diagrams (1.1, 2.4, 3.1), models, postulates 8-11 (2.4)
- Triangles: classify (by sides and angles), interior angle sum, exterior angle sum (4.1)
- Isosceles and equilateral triangles (4.7)
- Triangle inequality (5.5)
- Classify and describe polygons (1.6)
- Interior and exterior angle sum of polygons (8.1)
- Symmetry (9.6)

Unit 6: Transformations

12 days

I can perform transformations that preserve length and angle measure (isometries).

- Define isometry and justify why the various types of transformations do or do not fall in this category
- Perform translations given a vector (tracing paper, compass/straightedge, coordinate plane) (9.1)
- Perform reflections given a line of reflection (tracing paper, compass/straightedge, coordinate plane) (9.3)
- Perform rotations given a center and angle of rotation (tracing paper, compass/straightedge, coordinate plane) (9.4)
- Perform composition of transformations in space and on coordinate plane (9.5)

Unit 7: Congruent Triangles

12 days

I can prove that figures are (or are not) congruent.

- Prove figures congruent, all corresponding parts (4.2)
- Prove triangles congruent: SSS, SAS, ASA, AAS, HL (4.3-4.5)
- CPCTC (4.6)
- Isosceles and equilateral triangle proofs (4.7)



Unit 8: Similarity

9 days

I can prove that figures are (or are not) similar.

- Dilations on coordinate plane (9.7)
- Ratio and proportion (6.1, 6.2)
- Similar figures (6.3)
- Prove triangles similar by AA, SSS, SAS and use to find missing sides and angles (6.4-6.5)
- Similarity transformations on coordinate plane (6.7)

Unit 9: Special Triangle Relationships

4 days

- Midsegments
- Perpendicular bisectors
- Angle bisectors
- Altitudes
- Medians

End of Semester 1

Unit 10: Right Triangles

11 days

I can reason about and use right triangles.

- Radicals review (simplify, multiply, rationalize, square)
- Pythagorean Theorem (7.1)
- Converse of Pythagorean Theorem (7.2)
- Special right triangles (7.4)
- Trigonometry ratios (7.5, 7.6)
- Find missing sides in right triangles using trigonometry (7.5-7.6)
- Find missing angles in right triangles using trigonometry (7.7)
- Solve right triangles, word problems, applications, angle of elevation/depression (7.7)

Unit 10B: Equation for a circle in the coordinate plane

2 days

- Graph circles in the coordinate plane
- Write equation for circle using the Pythagorean Theorem

Unit 11: Quadrilaterals

10 days

I can prove theorems about quadrilaterals and understand the relationship among different quadrilaterals.

- Parallelograms: properties (8.2)
- Rectangles, rhombuses, squares (8.4)
- Kites, trapezoids (8.5)
- Proof of quadrilateral properties, including coordinate proof
- Quadrilateral hierarchy (8.6)



Unit 12: Circles

9 days

I understand the relationship among chords, tangents, and angles in a circle.

- Tangent line to a circle (10.1)
- Central angles and arc measure (10.2)
- Inscribed angles and inscribed polygons in a circle (10.4)
- Exterior angles formed by two tangents to a circle (10.5)

Unit 13: Length and Area

10 days

I can find the area of a 2-dimensional figure.

- Area of triangles, parallelograms, rectangles, squares (11.1)
- Area of trapezoids, kites, rhombuses (11.2)
- Relationship between length and area when a figure's dimensions are doubled, tripled, etc. (11.3)
- Circumference of a circle, arc length (11.4)
- Area of a circle, sector area (11.5)
- Area of regular polygon (11.6)
- Geometric probability (11.7)
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Unit 14: Volume

8 days

I can find the volume of a 3-dimensional solid.

- Solids: classify, cross sections, rotate 2-D figure about a line (12.1)
- Volume of prisms, cylinders (12.4)
- Volume of pyramids, cones (12.5)
- Volume of spheres (12.6)
- Similarity relationships in 2-D and 3-D figures (11.3, 12.7)

Unit 15: Probability (use Algebra 2, Chapter 10 as guide)

7 days

I can find the probability that an event will (or will not) occur.

- Probability of compound events (overlapping, disjoint, complement, conditional) (10.4)
- Probability of independent and dependent events (10.5)

Additional Post-Testing Topics

Unit 16 – Surface Area

Unit 17 – Conic Sections

Unit 18 – Algebra Review/Exam Review – 7 days

Final Exam



Bexley City School District

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Textbook: Larson, R., Boswell, L., Kanold, T. D., & Stiff, L. (2008). *Geometry*. McDougal Littell: Evanston, IL.