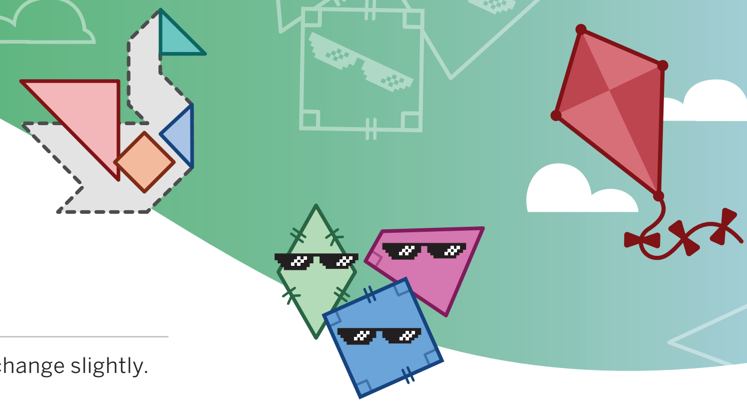
Unit 1 Constructions and Rigid Transformations

Students use a variety of tools to construct geometric figures. Students then extend what they learned about rigid transformations in Grade 8 by constructing the transformations precisely.

*This course is in development, so the goals and number of lessons per sub-unit may change slightly.

Unit 2 Congruence

Students use rigid transformations to explore and prove congruent relationships in angles, triangles, and quadrilaterals.



*This course is in development, so the goals and number of lessons per sub-unit may change slightly.

Unit 4 Similarity in Right Triangles

Students explore relationships between the sides and angles of right triangles to build an understanding of ratios, leading to the naming of sine, cosine, and tangent as trigonometric ratios. They use similarity to estimate angles and sides using trigonometric ratios before they use the calculator to support reasoning quantitatively. Students also explore ways to solve design problems and model the world using right triangles.

*This course is in development, so the goals and number of lessons per sub-unit may change slightly.

Unit 5 Coordinate Geometry

Students use the coordinate plane to explore and extend their understanding of concepts such as transformations, parallel and perpendicular lines, circles, parabolas, and polygons.

Standards: HSA.SSE.A.1.A, HSA.SSE.A.2, HSG.CO.A.2, HSG.CO.A.3, HSG.CO.A.5, HSG.CO.C.10, HSG.GPE.A.1, HSG.GPE.A.2, HSG.GPE.B.4, HSG.GPE.B.5, HSG.GPE.B.6, HSG.GPE.B.7, HSG.MG.A.3

*This course is in development, so the goals and number of lessons per sub-unit may change slightly.

Unit 6 Circles

Students deepen their understanding of circles, exploring angle relationships, proportions of a circle (arcs and sectors), and inscribing, circumscribing, and modeling with circles.

Standards: HSG.C.A.2, HSG.C.A.3, HSG.C.B.5, HSG.CO.A.1, HSG.GMD.A.1, HSG.GPE.B.7, HSG.MG.A.2

*This course is in development, so the goals and number of lessons per sub-unit may change slightly.

Pre-Unit Check (Optional)

Sub-Unit 1 Lines, Angles, and Circles (8 lessons)

- Generate and explore patterns in the relationships among the radiuses, arcs, and angles in a circle.
- Explain and use the relationship between radians and degrees.
- Describe angle properties created by chords within circles and tangent lines to circles.

Practice Day 1

Sub-Unit Quiz

Sub-Unit 2 Circles and Polygons (4 lessons)

- Prove properties of angles for a quadrilateral inscribed in a circle.
- Construct the inscribed and circumscribed circles of a triangle.
- Create and analyze mathematical models using the properties of circles

Practice Day 2

End-of-Unit Assessment

Unit 7 Solid Geometry

Students extend their geometric thinking into three-dimensional space to explore a variety of solids (prisms, cylinders, pyramids, and cones). They also discuss why volume formulas are true for different solids and develop mathematical models of three-dimensional figures.

Standards: HSG.GMD.A.1, HSG.GMD.A.3, HSG.GMD.B.4, HSG.GMD.B.5, HSG.MG.A.1, HSG.MG.A.2, HSG.MG.A.3, HSN.Q.A.1

*This course is in development, so the goals and number of lessons per sub-unit may change slightly.

Pre-Unit Check (Optional)

Sub-Unit 1 Introduction to Three-Dimensional Figures (5 Lessons + 1 Optional Lesson)

- Identify the three-dimensional solid created by rotating a two-dimensional figure around an axis.
- Visualize and draw cross-sections of three-dimensional figures.
- Calculate volumes of right and oblique prisms and cylinders, and figures composed of prisms and cylinders.
- Justify volume formulas for prisms and cylinders.
- Analyze solids using their two-dimensional cross-sections.

Practice Day 1

Sub-Unit Quiz

Sub-Unit 2 Cones, Pyramids, and Modeling (7 lessons)

- Show that the volume for any pyramid or cone is one-third the volume of a prism or cylinder with equal height and base.
- Calculate the volume of solids.
- Represent objects with three-dimensional geometric figures.
- Know that when figures are dilated by a scale factor of k, their areas are multiplied by k^2 and their volumes are multiplied by k^3.
- Use scaling, surface area, volume, and density concepts to model a context and solve design problems.

Practice Day 2

End-of-Unit Assessment

Unit 8 Conditional Probability

Students use conditional probability and independence to model and explore real situations in everyday life.

Standards: HSS.CP.A.1, HSS.CP.A.2, HSS.CP.A.3, HSS.CP.A.4, HSS.CP.A.5, HSS.CP.B.6, HSS.CP.B.7(+), HSS.CP.B.8(+), HSS.ID.B.5

*This course is in development, so the goals and number of lessons per sub-unit may change slightly.

Pre-Unit Check (Optional)

Sub-Unit 1 Probability and Chance (6 lessons)

- Estimate or calculate probabilities using data from a simulation or experiment.
- Use Venn diagrams and two-way tables to represent events and calculate probabilities.
- Apply the addition rule and interpret the answer.

Practice Day 1

Sub-Unit Quiz

Sub-Unit 2 Independence and Conditional Probability

(5 Lessons + 1 Optional Lesson)

- Distinguish between independent and dependent events.
- Apply concepts of conditional probability to justify whether events are independent or dependent.
- Apply probability concepts to investigate claims and mathematical models.

Practice Day 2

End-of-Unit Assessment