

Geometry 2: Polygons and Circles

Week 1: Polygons

Concepts:

- Definition
- Types of polygons
- Concave vs. convex

Activity: Look at images of each polygon, practice looking at shapes and determining if they are a polygon or not

Optional Homework: <https://www.mathworksheets4kids.com/polygon/identifying-1.pdf>

Week 2: Triangles

Concepts:

- Triangles
- Triangle sum theorem
- Exterior angle theorem

Activity: <https://www.mathsisfun.com/geometry/triangle-exterior-angle-theorem.html>
<https://www.youtube.com/watch?v=1k0G-Y41jRA>

Optional Homework: <https://www.youtube.com/watch?v=ndqxxAUDF5Y>

Week 3: Triangle inequalities

Concepts:

- Triangle inequalities
- Triangle word problems

Activity:

<https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-geometry/cc-7th-constructing-geometric-shapes/v/triangle-inequality-theorem>

Optional Homework:

https://www.coppinacademy.org/ourpages/auto/2019/10/19/28859957/Oct_%2023_%202019%20Classwork%20%20Triangle%20Inequalities.pdf

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Week 4: Isosceles triangles

Concepts:

- Properties of isosceles triangle
- Isosceles triangle theorem
- Converse

Activity: <https://www.mathsisfun.com/definitions/isosceles-triangle.html>

Proof: https://www.varsitytutors.com/hotmath/hotmath_help/topics/isosceles-triangle-theorem

Optional homework:

<https://www.khanacademy.org/math/basic-geo/basic-geometry-shapes/triangle-angles/e/find-angles-in-isosceles-triangles>

This practice, also can look at other practices in this module.

Week 5: Congruent triangles

Concepts:

- Review Congruent angles
 - Congruent supplements theorem
 - Congruent complements theorem
- Congruent triangles definition
- Proving triangles congruent by SSA, ASA, SAS

Activity:

review : <https://www.mathsisfun.com/geometry/congruent-angles.html>

Video:

<https://www.khanacademy.org/math/geometry/hs-geo-congruence/xff63fac4:hs-geo-congruent-triangles/v/other-triangle-congruence-postulates>

Optional Homework: Khan Academy Practice: Determine triangles congruent & prove triangle congruence <https://www.khanacademy.org/math/geometry/hs-geo-congruence>

Week 6: Congruent Triangles continued

Concepts:

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- Proving triangles congruent by AAS
- Proving triangles congruent by HL
- CPCTC

Optional Homework:

<https://quizizz.com/admin/quiz/5a332e393b3f8d12001809c9/cpctc-practice>

Week 7: Triangle proportionality

Concepts:

- Triangle proportionality theorem
- Triangle Angle Bisector theorem

Activity: <https://www.youtube.com/watch?v=GnRp9zBtW-k>

Longer video: <https://www.youtube.com/watch?v=EQpguitDfGU>

Optional Homework: <https://www.ixl.com/math/geometry/triangle-proportionality-theorem>

Week 8: Parallelograms

Concepts:

- Properties of parallelograms
- Proving a quadrilateral is a parallelogram (theorems)

Optional Homework:

<https://www.ck12.org/c/geometry/parallelogram-proofs/lesson/Quadrilaterals-that-are-Parallelograms-BSC-GEOM/>

Week 9: Quadrilaterals

Concepts:

- Definitions and properties of :
 - Rectangles
 - Squares
 - Rhombuses
 - Trapezoids

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Optional Homework:

<https://www.dummies.com/education/math/geometry/properties-of-rhombuses-rectangles-and-squares/>

Week 10: Ratios

Concepts:

- Ratio
- Proportions-
- Cross product property

Activity: <https://www.ixl.com/math/geometry/ratios-and-proportions>

<https://www.ck12.org/book/ck-12-middle-school-math-grade-7/section/5.5/>

Optional homework: <https://mathsnacks.com/scale-ella.html>

Week 11: Scale

Concepts:

- Scale
- Scale drawings
- Scale factor
- Word problems

Activity:

<https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-geometry/cc-7th-scale-drawings/v/scale-drawings-example>

<https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-geometry/cc-7th-scale-drawings/v/creating-scale-drawings>

Optional Homework: Start scale project if you want, or pick object

Week 12: Review of scale

Activity: scale project- decide on an object and a scale factor and create the scaled version of the object physically if you have resources at home or draw it.

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Resources

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- https://www.coppinacademy.org/ourpages/auto/2019/10/19/28859957/Oct_2023_202019%20Classwork%20%20Triangle%20Inequalities.pdf
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- <https://www.khanacademy.org/math/geometry/hs-geo-congruence>
- <https://quizizz.com/admin/quiz/5a332e393b3f8d12001809c9/cpctc-practice>
- <https://www.youtube.com/watch?v=GnRp9zBtW-k>
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- <https://www.ck12.org/book/ck-12-middle-school-math-grade-7/section/5.5/>
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