LESSON PLANS: ONTARIO

Grade 6: Geometry and Spatial Sense

Angles

45 MINS

powered by Mathletics

Overall Curriculum Expectations:

- Classify and construct polygons and angles.

Specific Curriculum Expectations:

- Measure and construct angles up to 180° using a protractor, and classify them as acute, right, obtuse, or straight angles.
- Construct polygons using a variety of tools, given angle and side measurements.

Introduction to Lesson — 10 MINS

Teacher Background:

Log in to Mathletics and go to

Demonstrations > Concept Search.

Search "protractor" in the Search bar. Have students interact with the protractor to measure angles. Ask students to draw a shape that has this type of angle included in it. Have students use their arms for the sides of the angle.

Ask students,

- Can you make a 90° angle with your arms?
- Can you construct an angle greater than 90°?
- What happened to your arms?
- What do we call and angle that is larger than 90°?
- What about when it is less?
- How do we properly measure an angle?

ITEMS NEEDED

- ✔ Interactive whiteboard
- ✔ Mathletics teacher login
- ✔ Mathletics Grade 6 eBook ("Lines and Angles" section) printed for each student
- ✔ Markers
- ✔ Protractor

ASSESSMENTS

- ✔ Have students use self and peer assessment for the Hand It Over Activity.

ACCOMMODATIONS/ MODIFICATIONS

- ✔ Have students work with leveled groups or partners.
- ✔ Use this activity as a rotation.
  1st station: measuring angles on the Interactive whiteboard.
  2nd Station: Hand It Over activity in eBooks
  3rd Station: Constructing Polygons

EXTENSION OF LEARNING

- ✔ Have students complete the paper-folding activity in **eBook > Grade 6 > Geometry "Lines and Angles," question 1**

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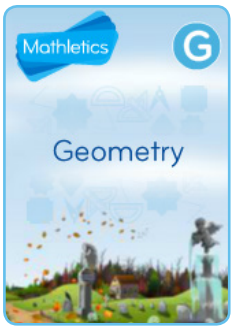
The Lesson

20 MINS

Hand it Over Activity

- Display Hand it Over Activity on interactive whiteboard In the Teacher Console, go to Mathletics **Teacher Console > eBooks > Grade 6 > Geometry.** Click on "Lines and Angles." Scroll to "Hand it over" activity on the last page.
- Have students work in pairs or groups to trace their hands in different positions. Then have students estimate the sizes of the angles in between their fingers. Have partners/groups exchange tracings with another group and measure the angles between the fingers. Label the fingers with the type of angle (ex., acute, right, straight, obtuse).
  Discussion Questions: How did your finger angles differ from another groups? Did you have more acute, obtuse, or right angles? How would the position of your fingers affect the angles?
- Generate a hand with the class in the designated box on the interactive whiteboard that has one right angle and one obtuse angle. How would this hand have to look? What other types of angles are in your hand? How do you know?



Constructing Polygons

- Search polygons in Concept Search. In the Mathletics Teacher Console, go to **Demonstrations > Concept Search.** Click the Concept Search icon. Type polygon into Search bar.
- Review what makes a shape a polygon Discuss what types of angles are present in different polygons. Review acute, obtuse, straight, and right angles again.

  Ask students:
  - What polygon could you draw with one 90° angle?
  - What polygon could you draw with one acute angle?
  - What polygon could you draw with two different types of angles?

Students can draw these independently, in small groups, or collaboratively on the interactive whiteboard.

Consolidating the lesson

15 MINS

Discuss with students real-life examples of where we find angles.
Ask students: What jobs/sports would require you to know how to measure an angle? (soccer, architects, designers, construction workers, fitness instructors, etc.) Where do we see angles in the classroom? At home? (clocks, desks, walls, rugs, rooms, etc.)