

LESSON PLANS: ONTARIO

Grade 5: Geometry and Spatial Sense Triangles

 45 MINS

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 Mathletics

Overall Curriculum Expectations:

- Identify and classify two-dimensional shapes by side and angle properties, and compare and sort three-dimensional figures.

Specific Curriculum Expectations:

- Identify triangles (i.e. acute, right, obtuse, scalene, isosceles, equilateral), and classify them according to angle and side properties.
- Construct triangles using a variety of tools (e.g., protractor, compass, dynamic geometry software), given acute or right angles and side measurements.

Introduction to Lesson

 10 MINS

Teacher Background:

Play Dr. Marian Small's "What Triangle Is That?" video to introduce triangles. Log in to

Teacher Console > eBooks > Grade 5 > Marian Small's What Triangle? video. Pause after the questions in the video.

Ask students,

- o What types of triangles are there?
- o Is it possible to have a scalene triangle?
- o What does that tell you about the angles?
- o How do we know a triangle is isosceles? Obtuse? Scalene? etc.
- o Brainstorm everything you know about triangles and angles in a KWL chart.

NOTE:

- You can show additional triangle-related videos in the Teacher Console by clicking on Teacher Toolkit.
- Type "triangles" into the Search bar.
- Click Presentations tab.
- Select any video for added visual for students.

ITEMS NEEDED

- ✓ Interactive whiteboard
- ✓ Mathletics teacher login
- ✓ Marian Small's printed student problem
- ✓ Laptops
- ✓ Geoboards
- ✓ Elastics
- ✓ Dot paper

ASSESSMENTS

- ✓ Observation
- ✓ Group work checklist
- ✓ Journal entries
- ✓ Comment section of interactive word problem

ACCOMMODATIONS/ MODIFICATIONS

- ✓ Modify lesson using flipped classroom approach: Students look up concepts in Mathletics Concept Search at home before lesson.

EXTENSION OF LEARNING

- ✓ Students present a type of triangle to the class using information found in Concept Search within Mathletics.
- ✓ Ask students to create different 2D polygons using various types of angles using dot paper or geoboards.
- ✓ Complete pages 11 and 12 in Grade 5 Geometry eBook "2D Shapes."

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The Lesson


 20 MINS

Centres

- **Teacher Background:** Place students in ability groups. Have students choose their starting centre, or place students in a selected rotation. Teacher will need to set up centres before lesson and print "What Triangle Is That?" word problem for students. If math journals are implemented in your classroom, have students record their learning in a math journal at each centre.
 - **Centre 1: Laptops/Computers**
Students can sign in to their Student Console. At this centre, have students explore **Concept Search**. Students can search for concepts related to classifying triangles. Suggested terms could be isosceles, triangles, equilateral, scalene. Students can click on the square and arrow icon located in the bottom right corner to maximize view and interact with the concept. Have students record what types of angles help to classify different triangles.
 - **Centre 2: Problem Solving**
Students can work on the printed Marian Small word problem, What Triangle is that? To accommodate various learning styles, set up geoboards so students can practice making the triangles with elastics. Dot paper can also be used. Students can then answer the problem on their word problem sheet, recording all the different triangles that would work for the suggested problem.
 - **Centre 3: Interactive Whiteboard**
Use this centre as a reinforcement activity; display the Marian Small interactive problem on the interactive whiteboard. Log in to your **Teacher Console > ebooks > Grade 5 > What Triangle? What Triangle is that?** interactive problem. Have students work through the problem in their groups, using the interactive protractor. Students should include a comment once they have reached a possible solution to the problem.

Extra-time/cross-curriculum activity: Have students create an art project using only triangles. Students need to make a repeating design using only one type of triangle. They should use a protractor to create one type of triangle and then cut the 2d shape out. Use this triangle as a template to flip, slide, and turn to create a design or pattern. Have students colour in the geometric pattern in art.

Consolidating the lesson

 15 MINS

Think, Pair, Share

- Give students 2 minutes to think about something they have learned during this lesson. Have students turn to their elbow partner and share their learning. Prompt with questions like: What types of properties are specific to isosceles triangles? What did you find easy/difficult about constructing triangles?



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