

Triangles and Trebuchets

Summary

Students will explore the area of triangles as they are related to trebuchets

Main Core Tie

Mathematics Grade 6

[Strand: GEOMETRY \(6.G\) Standard 6.G.1](#)

Time Frame

1 class periods of 45 minutes each

Group Size

Small Groups

Materials

- Copy of the task sheet
- Paper
- Pencil
- Ruler
- Popsicle Sticks
- Glue

Background for Teachers

Teachers will need an understanding of the design and use of trebuchets.

- [Curriculum Guide for Grade 6 for Geometry Standard 1](#)

Student Prior Knowledge

Students will need a working knowledge of the construction of triangles, techniques for finding area, and the classification of triangles. They will use this knowledge to solve real-world problems related to trebuchets.

Intended Learning Outcomes

Students will be able to find the area of right triangles and other triangles, then draw their own triangles and compute the area of these triangles.

Strategies for Diverse Learners

Teachers can use the following guiding questions to support struggling learners:

Show me a triangle you see.

What type of triangle is it?

How do you know?

Do you see any triangles within a triangle?

Can you remember the formula to discover the area of a triangle?

Can you point to the height of the triangle?

Can you point to the base of the triangle?

What do you do with the base and the height in order to find the area?

For fast finishers: Students will draw their own trebuchets, then trade within their group to compute

the area of those triangles found in other student's drawings.

Extensions

Additional extensions could include:

Researching actual trebuchet design and determining the area of the triangle.

Constructing a trebuchet.

Determining the relationship between the size of the trebuchet and the distance the projectile will travel.

Bibliography

Adapted from: Smith, Margaret Schwan, Victoria Bill, and Elizabeth K. Hughes. "Thinking Through a Lesson Protocol: Successfully Implementing High-Level Tasks." *Mathematics Teaching in the Middle School* 14 (October 2008): 132-138.

Authors

[CYNTHIA PEARSON](#)

[DAVID SMITH](#)

[Patricia Stephens-French](#)