

Playground Design (5.G.3)

Summary

Students will apply their knowledge of geometric shapes to the design of a new playground.

Main Core Tie

Mathematics Grade 5

[Strand: GEOMETRY \(5.G\) Standard 5.G.3](#)

Time Frame

1 class periods of 60 minutes each

Group Size

Individual

Life Skills

Aesthetics, Thinking & Reasoning, Communication

Materials

Student task sheet, pattern blocks, Unifix cubes

Background for Teachers

Teachers will want to introduce students to the attributes of two-dimensional shapes before starting this lesson as well as angles and angle measurement.

Student Prior Knowledge

Students will need a basic understanding of angles, closed figures, and all listed vocabulary words.

Intended Learning Outcomes

Students will be able to correlate the attributes of two-dimensional shapes to categories and sub-categories of the shapes. They will be able to correctly represent the shapes in their drawings. 5.G.3

Strategies for Diverse Learners

Students might benefit from seeing examples of playgrounds and looking at the foundational shape for each piece of equipment. Cut-outs of the various shapes might help clarify the written descriptions and students could then place the cut-outs in the appropriate category. Students could draw the various shapes on colored paper and then place the shapes on their task sheet. Advanced learners should write the names of the shapes on each section.

Extensions

To extend this lesson, student might want to determine the various pieces of playground equipment that the shape might determine. Students could look up the cost of various pieces of playground equipment and calculate the cost of the playground. Students could extend their knowledge of two-dimensional shapes to three-dimensional shapes and determine the shape of the actual piece of equipment.

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.

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