Math 4 - Act. 12: Quadrilateral Characteristics

Summary

Through exploration students will understand the characteristics quadrilateral.

Materials

Quadrilaterals for sorting (see attached handout)

Background for Teachers

Quadrilaterals are closed, four-sided figures. The quadrilateral family consists of regular figures such as the trapezoid, square, rectangle, rhombus, kite, and parallelogram. This group includes isosceles and right angle trapezoids, as well as concave and convex kites. The second group consists of irregular quadrilaterals, which have endless possibilities.

Intended Learning Outcomes

3. Reason mathematically.
6. Represent mathematical situations.

Instructional Procedures

Invitation to Learn
What do all quadrilaterals have in common?
Instructional Procedures
Lesson 1

- Give students an assortment of quadrilaterals. Tell them that they are all quadrilaterals. Have them look at them and identify the properties that quadrilaterals have.
- Give them an assortment of polygons, but NO quadrilaterals. Tell them these are NOT quadrilaterals. Have them identify why they are not quadrilaterals.
- Give them another more complex assortment of quadrilaterals and identify them as such.
- What is a quadrilateral?
- Identify what a quadrilateral always has, sometimes has, and never has.

Lesson 2

- Sort the following shapes into groups and then label each group by their common attributes (e.g., angles, number of parallel.
- Discuss the different sorting techniques. Give a definition for each group of shapes.
- Identify each of the quadrilaterals and list the attributes of each.
- Choose and complete the enclosed worksheet(s). They are intended to help students distinguish between different quadrilaterals:
    - Quadrilaterals for Sorting
    - Generic Worksheet
    - Quadrilateral, Parallelogram, Trapezoid
    - Quadrilateral Feature Analysis Grid
    - Inductive Reasoning Diagram

Curriculum Integration
Math/Science--Look at different crystal formations to see their similarities to quadrilaterals.

Extensions

Possible Extensions/Adaptations/Integration
The purpose of this activity is to enhance sorting and classifying skills, in addition to adding clarity to

the concept of quadrilaterals. Sorting and classifying skills are necessary when students are classifying animals, kinds of rocks, types of soil, etc.

Homework & Family Connections

Have students look for quadrilaterals outside the classroom, making a list of the different quadrilaterals they can find around the house. Which of the quadrilaterals is the most often used in building? Why?

Assessment Plan

Give a collection of shapes to students to sort and label them for a performance assessment. Give students an assortment of polygons and have them sort into groups. Students who correctly identify quadrilaterals would score assessment points.

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