Grade 1 - Unit D - One of These Shapes Is Not Like the Others

Unit Focus

Students build upon their kindergarten understanding to examine, identify, compare, and sort two-dimensional and three-dimensional shapes. They explore largely through play, how to describe the world around them using geometry terms. Attributes are realized through careful analysis as students notice how some are helpful in defining the geometry of a shape, while others are not. They will construct and deconstruct a variety of shapes in order to build both realistic and imagined objects. They will also develop a basic understanding of fractions as they learn that shapes can be divided into equal parts.

Stage 1: Desired Results - Key Understandings

Standard(s)

Standards
- Common Core
  - *Mathematics: 1*
    - Reason with shapes and their attributes.
    - Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes. *(CCSS.MATH.CONTENT.1.G.A.1)*
    - Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. *(CCSS.MATH.CONTENT.1.G.A.2)*
    - Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares. *(CCSS.MATH.CONTENT.1.G.A.3)*
    - Mathematical Practices
    - Construct viable arguments and critique the reasoning of others. *(CCSS.MATH.MP.3)*
    - Model with mathematics. *(CCSS.MATH.MP.4)*
    - Look for and make use of structure. *(CCSS.MATH.MP.7)*

Transfer

Students will be able to independently use their learning to...
T1 Construct viable arguments using clear and appropriate mathematical language and critique the reasoning of others.
T2 Apply models to solve problems.
T3 Identify and generalize patterns and structure in numbers, expressions, data and objects.

Meaning

Understanding(s)

Students will understand that...
U1 Mathematicians construct viable arguments to explain problems, solutions, and mathematical representations.
U2 Mathematicians create or use models to generalize, represent, and solve problems.
U3 Mathematicians see patterns to make generalizations about structures and relationships.
U4 Analyze, compare, create and compose shapes.

Essential Question(s)

Students will keep considering...
Q1 How does geometry help me understand the world around me?
Q2 Have I sufficiently supported my answer and shown my work?
Q3 How can the model created be tested and improved?
Q4 What generalizations can be made from this pattern?

Acquisition of Knowledge and Skill

Knowledge

Students will know...
K1 Defining vs. non-defining attributes
K2 How to create composite shapes
K3 How to sort shapes by attributes

Skill(s)

Students will be skilled at...
S1 Identifying, naming, and locating triangles, squares, rectangles, trapezoids, rhombuses, and hexagons

Stage 1: Desired Results - Key Understandings

Madison Public Schools Profile of a Graduate o Collective Intelligence: Working respectfully and responsibly with others, exchanging and evaluating ideas to achieve a common objective. *(POG.3.1)* o Product Creation: Effectively use a medium to communicate important information. *(POG.3.2)*	**K4** How to describe, compare and locate shapes in their environment **K5** Shapes can be decomposed into halves, fourths, and thirds **K6** How to work respectfully and responsibly with classmates **K7** Vocabulary:(terms with * Word Resource Cards are available) attribute*, compare*, equal*, face*, flat, fourth*, fraction*, half*, identify, parallel lines, quarter (one-fourth), side*, solid, sphere*, third*, vertex*(Exposed to in Kindergarten: square, hexagon*, circle*, cone*, cube*, cylinder*, edge*, pyramid*, rectangle*, rectangular prism*, rhombus*, square*, three-dimensional shape*, trapezoid*, triangle, triangular prism*, two-dimensional shape*, corner)	**S2** Identifying, naming and locating cubes, rectangular prisms, cones, cylinders, spheres, triangular prisms and pyramids **S3** Partitioning circles and rectangles into halves and fourths **S4** Categorizing shapes based on attributes. **S5** Working collaboratively with classmates to complete math tasks