

Mathematics:



'A Story of Units'

Parent Handbook

**Grade K
Module 2**

Two-Dimensional and Three-Dimensional Shapes

OVERVIEW

Students began the year observing their world. What is exactly the same? What is the same but...? They matched and sorted according to criteria sequenced from simple to complex. Their perceptions evolved into observations about numbers to 10. “4 is missing 1 to make 5.” “4 plus 1 more is 5.” “There is the same number of dogs and flowers, 6!”

Now, students will seek out flat and solid shapes in their world. Empowered by this lens, they begin to make connections between the wheel of a bicycle, the moon, and the top of an ice cream cone. Just as the number 4 allowed them to quantify 4 mountains and 4 mice as equal numbers, learning their flats and solids allows them to see the relationship of the simple to the complex, a mountain’s top to a plastic triangle and cone sitting on their desk.

To open Topic A, students find and name shapes in their environment using informal language, describing flat shapes without naming them. In Lesson 2, they classify the shapes, juxtaposing them with various examples and non-examples. This process further refines their ability to talk about the shapes, for example, as closed or having straight sides. The naming of the flat shape as a triangle or hexagon is part of that process, not the focus of it.

The same process is then repeated with rectangles in Lesson 3 and hexagons and circles in Lesson 4. In Lesson 5, they manipulate all the flat shapes using position words as the teacher gives directives such as, “Move the closed shape with three straight sides behind the shape with six straight sides.” These positioning words are subsequently woven into the instructional program, at times in math fluency activities, but also throughout the entire school day.

The lessons of Topic B reiterate those of Topic A but with solid shapes. In addition, students recognize the presence of the flats within the solids. The module closes in Topic C with discrimination between flats and solids and a culminating task wherein students create displays of a given flat shape with counter-examples and show related solid shapes.

The fluency components in the lessons of Module 1 included activities wherein students used a variety of triangles and rectangles to practice their decompositions of 3 and 4. Flats and solids will continue to be included in fluency activities all through the year so that students have repeated experiences with shapes, their attributes, and their names. Daily number fluency practice in this new module is critical. There are two main goals of consistent fluency practice: (1) to solidify the numbers of Module 1 and (2) to anticipate the numbers of Modules 3, 4, and 5. Therefore, students continue to work extensively with numbers to 10 and fluency with addition and subtraction to 5.

The kindergarten year closes with another geometry unit. By that time much more familiar with flats and solids, the students will be composing new flat shapes (“Can you make a rectangle from these two triangles?”) and building solid shapes from components (“Let’s use these straws to be the edges and these balls of clay to be the corners of a cube!”). This module will allow them to bring together all that they have learned throughout the year as they manipulate shapes and their components.

Terminology

New or Recently Introduced Terms

Above, below, beside, in front of, next to, behind (position words)

Circle

Cube (three-dimensional shape)

Cylinder (three-dimensional shape)

Face (flat side of a solid)

Flat (two-dimensional shape)

Hexagon (flat figure enclosed by six straight sides)

Rectangle (flat figure enclosed by four straight sides)

Solid (three-dimensional shape)

Cone (three-dimensional shape)

Sphere (three-dimensional shape)

Square (flat figure enclosed by four straight, equal sides)

Triangle (flat figure enclosed by three straight sides)

Familiar Terms and Symbols

Match (group items that are the same or that have the same given attribute)

Sort

Suggested Tools and Representations

Three-dimensional shapes: cone, sphere, cylinder, and cube

Two-dimensional shapes: circle, hexagon, rectangle, square, and triangle

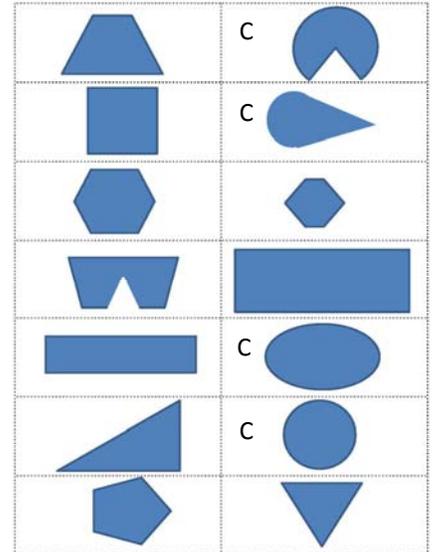
Lesson 1

Objective: Find and describe flat triangles, squares, rectangles, hexagons and circles using informal language without naming.

Sort.

Shapes with a curve

Shapes without a curve

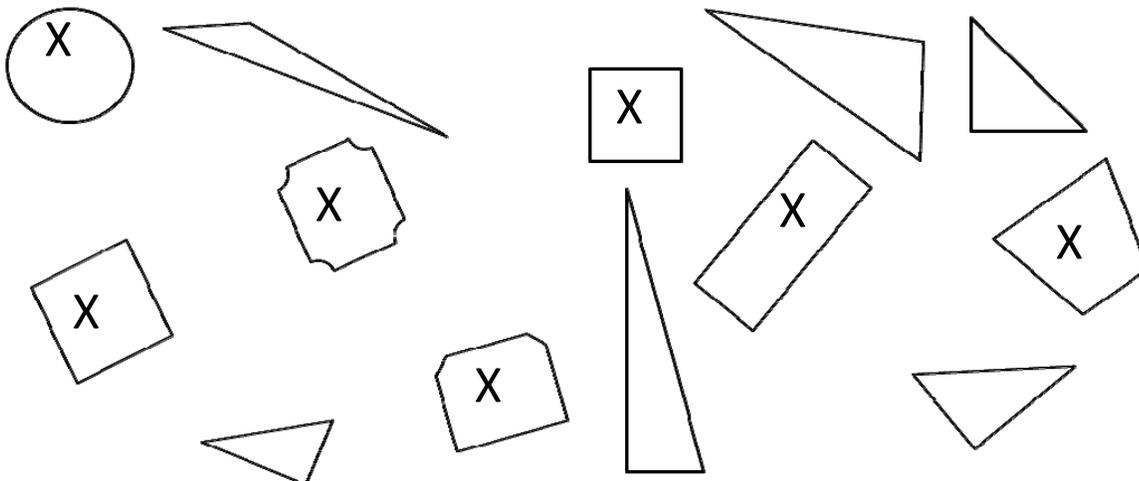


I have marked the shapes with curved lines with a C.

Lesson 2

Objective: Explain decisions about classifications of triangles into categories using variants and non-examples. Identify shapes as triangles.

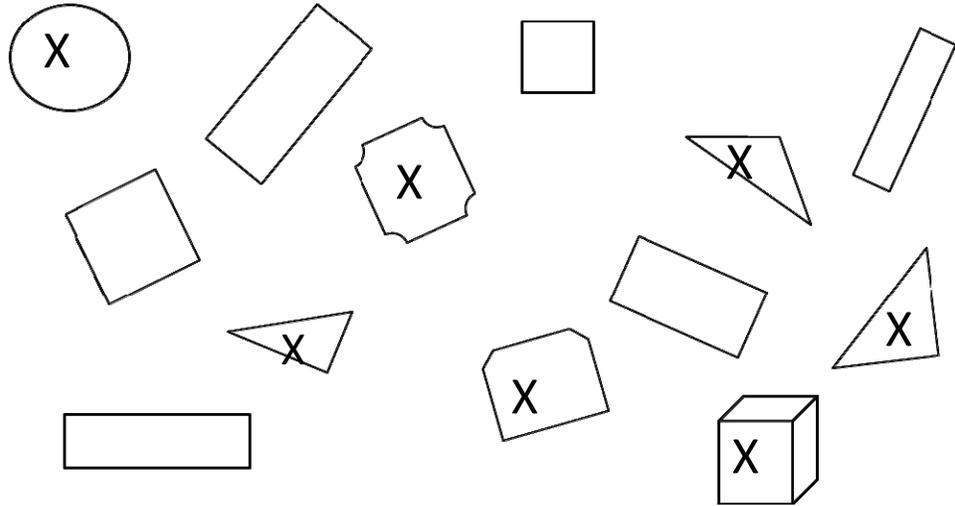
Find the triangles and color them blue. Put an X on shapes that are not triangles.



Lesson 3

Objective: Explain decisions about classifications of rectangles into categories using variants and non-examples. Identify shapes as rectangles.

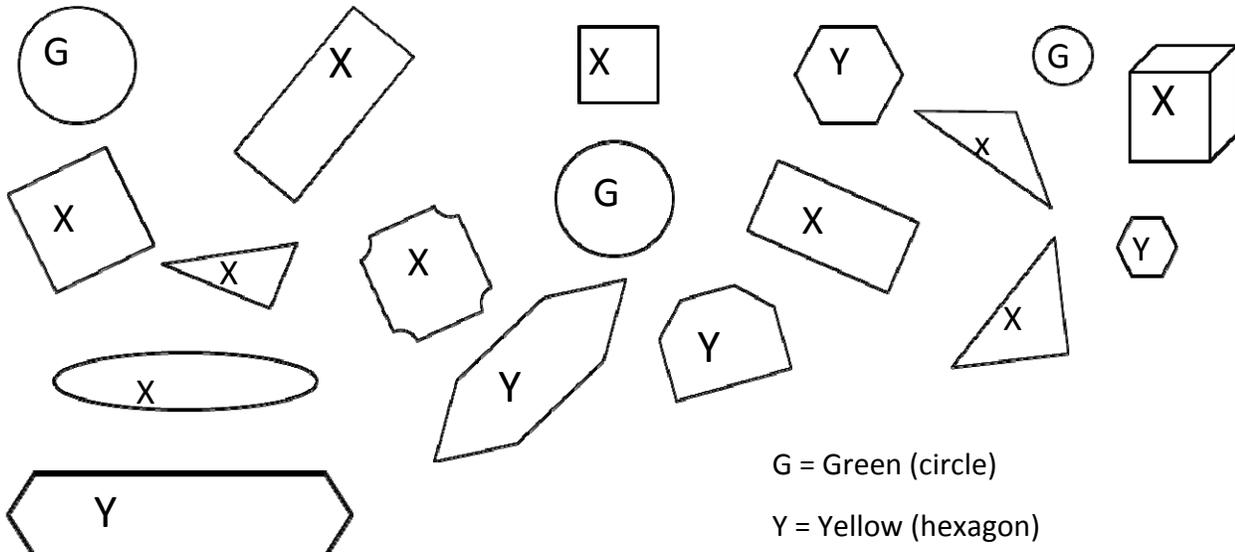
Find the rectangles and color them red. Put an X on shapes that are not rectangles.



Lesson 4

Objective: Explain decisions about classifications of hexagons and circles and identify them by name. Make observations using variants and non-examples.

Find the circles and color them green. Find the hexagons and color them yellow. Put an X on shapes that are not hexagons or circles.



G = Green (circle)

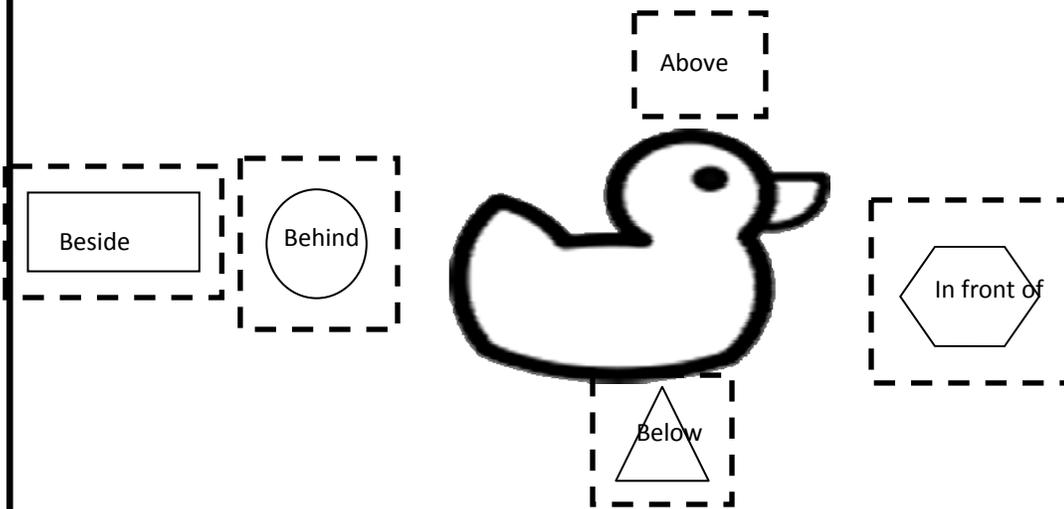
Y = Yellow (hexagon)

Lesson 5

Objective: Describe and communicate positions of all flat shapes using words *above*, *below*, *beside*, *in front of*, *next to*, and *behind*.

Cut out all of the shapes and put them next to your paper with the duck.

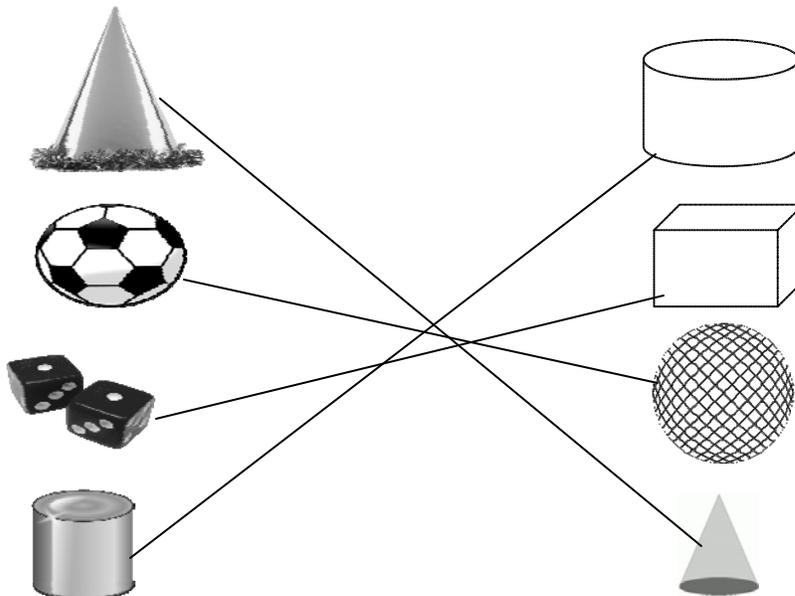
Listen to the directions and glue the objects onto your paper.



Lesson 6

Objective: Find and describe solid shapes using informal language without naming.

Match these objects and shapes by drawing a line with your ruler from the object to the shape.



Lesson 7

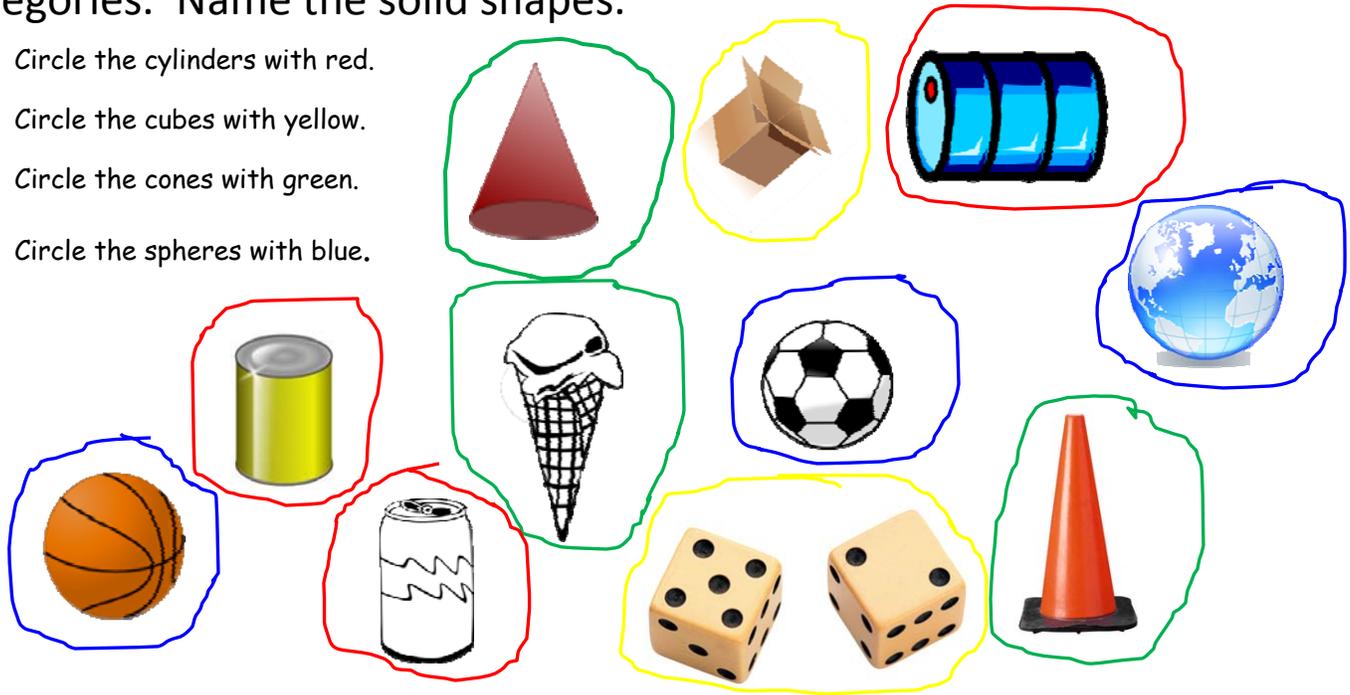
Objective: Explain decisions about classification of solid shapes into categories. Name the solid shapes.

Circle the cylinders with red.

Circle the cubes with yellow.

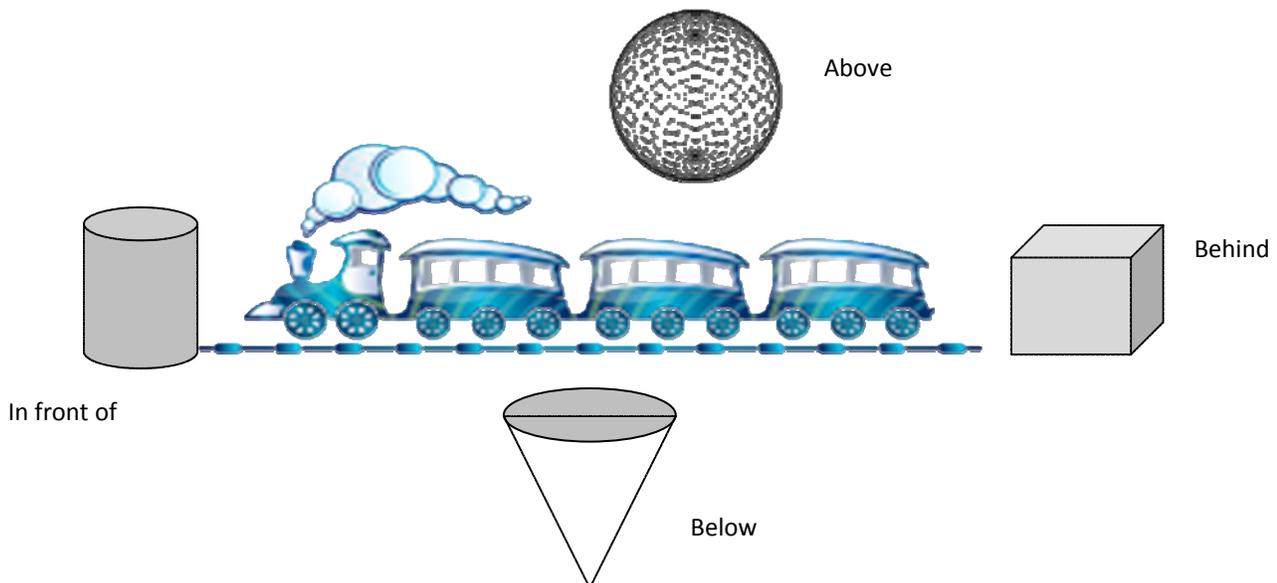
Circle the cones with green.

Circle the spheres with blue.



Lesson 8

Objective: Describe and communicate positions of all solid shapes using the words *above*, *below*, *beside*, *in front of*, *next to*, and *behind*.

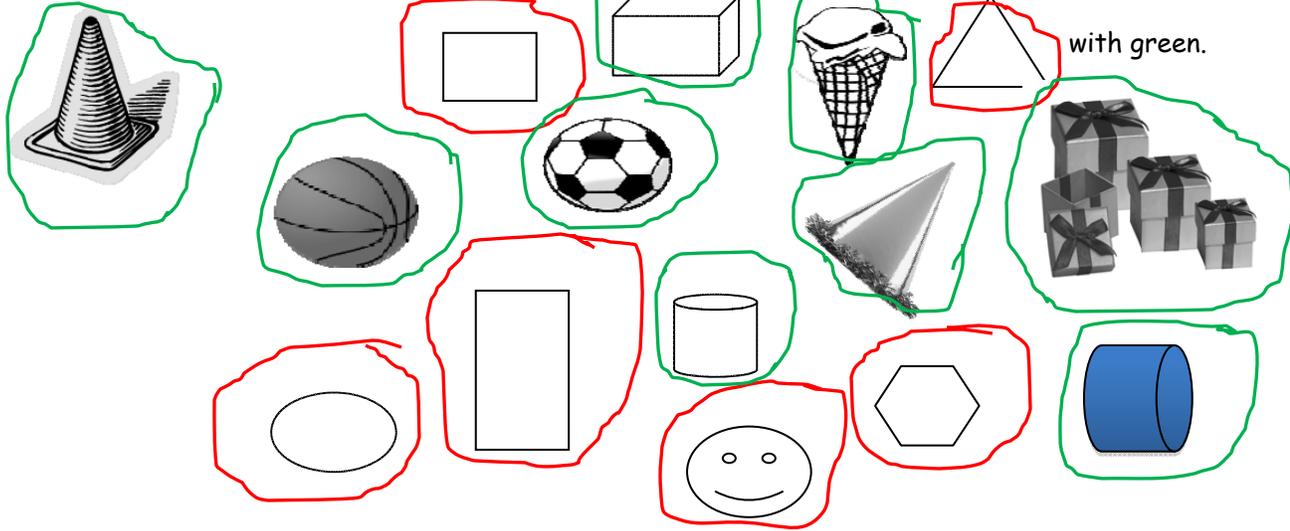


Lesson 9

Objective: Identify and sort shapes as two-dimensional or three-dimensional and recognize two-dimensional and three-dimensional shapes in different orientations and sizes.

Circle the pictures of the flat shapes with red.

Circle the pictures of the solid shapes with green.



Lesson 10

Objective: Culminating Task—collaborative groups create displays of different flat shapes with examples, non-examples, and a corresponding solid shape.

These are	These are not

Students will choose a flat or solid shape and put examples of that shape on the “these are” side. They will put other shapes on the “these are not” side.