Ask children to sort themselves. Have them count and compare the numbers in each group. Have children sort themselves into groups by gender and count off to find the total in each group. Write the totals on the board and have children write them. As a class, compare the numbers using language such as *more than*, *fewer than*, *the same as*, and *equal*. Repeat, having the class sort themselves by hair color and by shoe type.
Have children determine the categories used to sort. Invite 5 children in dark-colored tops and 6 in light-colored tops to the front. Have children name the categories used to sort and find the total in each group. Children color the first row of shirts to show the number in the group of dark-colored tops and the second row to show the number in the group of light-colored tops. Then children write each total and compare the numbers.
Prepare for Sorting and Counting Objects

Have children show the meaning of the word sort. Have children fill in each of the boxes to show the meaning of the word sort. Tell children that they can use words, numbers, and pictures. Encourage them to show as many ideas as they can.
Have children sort a group of socks. Give children 8 socks, some red and some blue (or a different pair of colors). Have children sort the socks by color. Then have children color one sock red for every red sock and one sock blue for every blue sock (or the colors of the socks they have). Then have children color one small sock red and one blue, count how many of each they have colored, and then write each total and compare the numbers.
Have children sort objects based on color, size, or feature. Ask probing questions, such as: How many bubbles are big? How many are small? Have children circle the striped fish and then count the number of striped and not-striped fish.

Discuss It: Describe two different ways you could sort the rocks.
Have children sort by size, color, or feature. Have children describe how they could sort the fish. Ask: How many big fish are there? How many small fish? Point to the plant. Ask: How many fish are swimming toward the plant? Have children circle them and count.

Discuss It

How do you find out which group has more? What other ways can you sort them? How would you describe the whole group?
Have children color the striped fish red and the rest of the fish yellow. Then have children color the big rocks one color and the small rocks a different color. Have children color the rest of the picture.
Have children sort objects based on feature. Discuss with children how the objects shown are similar and different. Prompt children to see that some objects can be eaten while others cannot. Have children color all the objects that can be eaten. Then have children count the objects they colored and compare that number to the number of objects that are not colored.
Try It

Have children sort pictures of objects into two groups. Have children choose a way to sort and then circle the objects that fit their rule. Count and compare the numbers in each group. Children explain their rule to a partner or swap papers and try to guess the rule.

Discuss It

How can you tell which group has fewer objects? How can using cubes help you sort the groups and find which group has more?
Ask children to name one object that does not belong with the others. Explain that there is more than one correct answer. Have children cross out one object they see as different. Have children share their answers and the reasons for each.

Discuss It: How did you decide which object to cross out?
Practice Sorting and Counting Objects

Example

Ask children to name one object that does not belong with the others. Explain that there may be more than one correct answer. Have children cross out one object they see as different. Then have children share the reasons for crossing out each object.
Ask children to name one object that does not belong with the others. Explain that there may be more than one correct answer. Have children cross out one object they see as different. Then have children share the reasons for crossing out each object.
Refine Sorting and Counting Objects

Have children sort and count objects and compare groups. Give children 10 objects, such as buttons or attribute blocks. Have children sort the objects into two groups, for example, by size or by color. Ask children to count each group and say which has fewer.

Discuss It
How can you tell how many are in each group? How can you tell which group has fewer? What other ways can the objects be sorted?
Ask children to sort the objects. Prompt children to realize that the two given groups are big objects and small objects. Have children circle the objects at the bottom of the page with a blue or green crayon to show which group they belong to.

Discuss It: What are some other objects that could go in the blue box? How did you decide?
Ask children to sort the objects. Prompt children to realize that the two given groups are balls and other sports items. Have children draw a line from each object at the bottom of the page to the group to which it belongs.
**Have children sort the animals.** Prompt children to realize that the two given groups are big animals and small animals. Have children draw a line from each animal at the bottom of the page to the group to which it belongs.
Refine Sorting and Counting Objects

Have children sort and count objects and then compare groups. Give children 10–15 objects, such as attribute blocks or buttons, and have them sort into three groups by color, size, shape, or other feature. Have children write the number of objects in each group.

Which group has more? Which group has fewer? What is another way you could sort these objects?

Discuss It

Math Toolkit
- attribute blocks
- buttons
Have children sort the buttons by color. Have children count the number of buttons of each color and write the number in the box of the same color. Have children compare the number of buttons in the yellow group with the number in each of the other groups.

Discuss It: Which groups have more? Which groups have fewer? What is another way you could sort these buttons?
LESSON 12
Explore Naming Shapes

Try It

- Correctly name shapes regardless of their orientations or overall size.
- Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

Learning Targets

Math Toolkit

- flat shape cards
- solid shape cards

SESSION 1
Explore Naming Shapes

Have children differentiate three-dimensional (solid) shapes from two-dimensional (flat) shapes and informally describe shapes. Display each shape pictured. Name each shape and have children repeat it. Have them informally describe each shape, including if it is flat or solid. Then name a shape and have children point to that shape above and tell if it is solid or flat. Then tell children to count and write the number of shapes shown.

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Have children identify shapes as flat or solid and name the shapes. Have pairs of children sort flat shape cards and solid shape cards and then name each of the shapes. Tell children to count the shapes they sorted and write the number of shapes in each group. Children then use a flat hand or a fist to identify objects they are shown as flat or solid.
Prepare for Naming Shapes

Have children show the meaning of the word *shapes*. Have children fill in each of the boxes to show the meaning of the word *shapes*. Tell children that they can use words, numbers, and pictures. Encourage them to show as many ideas as they can.
Have children identify shapes as flat or solid and name the shapes. Have children find objects with shapes they recognize and sort them into flat shapes and solid shapes and then name each of the shapes. Tell children to count the shapes they sorted and write the number of shapes in each group.
Encourage children to describe the two- and three-dimensional shapes in the picture including squares, rectangles, circles, triangles, hexagons, spheres, cubes, cones, and cylinders. Have children ring (circle) one example of each solid shape.

Discuss It

Which shapes are the easiest to find? Which shapes are the most difficult to find?
Have children sort the shapes. For the top row, have children ring (circle) the flat shapes. For the middle row, have them ring the solid shapes. For the bottom row, have them ring the cylinders.

Discuss It
How can you tell which shapes are flat? How can you tell which shapes are solid?
Observe as you ask children to color different shapes on the page. Have children color a square, a rectangle, a circle, a triangle, and a hexagon. Then have children color a sphere, a cube, a cone, and a cylinder. Have children color the rest of the picture.
Ask children to identify and sort shapes into categories. Have children color all the flat shapes in the top row and all the solid shapes in the middle row. Then have children color all the triangles in the bottom row.
Have children identify flat shapes. Have children point to the shapes on the page as you name them: circle, triangle, rectangle, hexagon, and square. Then have them color the triangle yellow, hexagon red, square green, rectangle orange, and circle blue.

Discuss It: How can you tell what a shape is by looking at it? Why has one shape not been colored?
Ask children to distinguish flat shapes from solid shapes and then identify the flat shapes. Have children mark all the solid shapes with an X. Then have them ring (circle) the triangles purple, squares green, rectangles red, circles orange, and hexagons yellow.

Discuss It: How would you describe a square to someone?
Ask children to distinguish flat shapes from solid shapes and then identify the flat shapes. Have children mark all the solid shapes with an X.

Then have children ring (circle) the triangles red, the squares green, and the circles orange.
Ask children to distinguish flat shapes from solid shapes and then identify the flat shapes. Have children mark all the solid shapes with an X.

Then have children ring (circle) the triangles red, the squares green, the rectangles purple, the circles orange, and the hexagons yellow.
Have children name and identify solid shapes. Ask children what shape the orange is and have them place counters on the other spheres. Repeat with the party hat, can of paint, and tissue box. Then have children count and write the number of objects shown.

Discuss It: How can you tell the different solid shapes apart?
Ask children to distinguish flat shapes from solid shapes and then identify the solid shapes. Have children mark all the flat shapes with an X. Then have them ring (circle) the cubes purple, cones red, spheres green, and cylinders orange.

Discuss It: What shape makes the top of a cube?
Ask children to distinguish flat shapes from solid shapes and then identify the solid shapes. Have children mark all the flat shapes with an X. Then have children ring (circle) the cubes purple, the cones red, the spheres green, and the cylinders orange.
Ask children to distinguish flat shapes from solid shapes and then identify the solid shapes. Have children mark all the flat shapes with an X.

Then have children ring (circle) the cubes purple, the cones red, the spheres green, and the cylinders orange.
Have children match flat and solid shapes to a description. Prepare a bag of shapes with a circle, square, rectangle, triangle, hexagon, cube, cone, cylinder, and sphere. Ask a child to take a shape from the bag and describe it. Children ring that shape. Repeat.

Discuss It What objects could you put in the bag instead of shape blocks to match the shapes on the page?
Have children color the shapes in the picture using the colors at the side of the page. Remind children to look for different kinds of rectangles and triangles.

Discuss It: How many of each shape did you find?
Try It

• Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.

Learning Target

• Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.

SMP 1, 2, 3, 4, 5, 6

Math Toolkit

• counters

Children are introduced to position words and place objects in different positions. Introduce children to position words by pointing to different objects in the room and describing them as above, below, beside, in front of, behind, or next to another object. Ask children to use position words to describe the position of one child relative to another child. Then have children place a counter in a position as described relative to Snargg.
Children draw pictures positioned as described relative to the camper and act out position words. Have children draw pictures positioned relative to the camper as described. Say: *Draw a star below the camper.* Then play

**Teacher Says,** a variation of Simon Says, as a class to act out positions. Say: *Teacher says, place your hand above your head.* Occasionally omit the phrase “Teacher says” before the instruction.
Have children complete as many boxes as they can. Have children draw pictures to show the meaning of the word *above*. Then have children draw or write examples and non-examples of the word *above*.
Have children practice position words. Have children draw pictures positioned relative to the house as described, such as: Draw a sun above the house. Draw a flower below a window.
Encourage children to describe shapes and the position of objects. Have children use words such as above, below, beside, in front of, behind, and next to. Have children ring (circle) an object next to the dog.

Discuss It

What shapes do you see in the picture?
Have children find objects based on their position. Have children draw a ring (circle) around the object above the jackets, draw a line under the object in front of the red bowl, and mark with an X two objects behind the table.

**Discuss It** How can you describe where the backpack is in the picture? How can you describe where the yellow jacket is?
Observe as you ask children to color different objects on the page. Have children color the child with the book, the child in front of him, and a window above the child with the book. Then have children color the child next to the squirrel, the leaves below the safety cone, and one object above the bus. Tell children to color the rest of the picture.
Ask children to ring (circle) the flowers beside the bench and color the flower below the tree purple. Have children color the object in front of the bench red and the boat behind the sailboat blue. You may then wish to allow children to color the rest of the picture.
### Try It

Have children find similar shapes in the classroom. Hold up a cylinder. Ask children to find another object in the classroom that has a similar shape, use a position word to describe its position, and draw it underneath the can. Repeat with a circle and a rectangle.

### Discuss It

Look again at the object you found. How is its shape similar to the object on the page?
Have children match the shapes with the same name. Have children draw lines to connect the objects with the same shape and then name the shape. Use real objects to help children recognize that orientation and size do not change the name used to describe the shape.

Discuss It: How did you decide which objects match?
Practice Seeing Position and Shape

Example

Have children match shapes with the same name. Have children draw lines to connect the objects with the same shape and then name the shapes.

Use real objects to prompt children to recognize that position and size do not change the name used to describe the shape.
Have children match shapes with the same name. Have children draw lines to connect the objects with the same shape and then name the shapes.

Use real objects to prompt children to recognize that position and size do not change the name used to describe the shape.
Apply It

Have children draw objects in positions related to a sheet of paper. Have them place a sheet of paper on the desk. Have them put objects in the following places and then draw them: pencil next to, crayon below, eraser above, marker beside, and scissors in front of.

Discuss It

Place a glue stick behind the paper. Why are you unable to see the glue stick?
Ask children to identify objects that are below, behind, beside, or above. Have children ring (circle) the pictures where the leaf is below the can and the ball is behind the dog. Then have them ring the person beside the dog and the object above the bus.

Discuss It What shapes can you see in these pictures?
Practice Seeing Position and Shape

Example

Ask children to identify objects that are next to, above, behind, or below. Have children ring (circle) the object that is next to the apple and the trash can with the leaf above it. Then have children ring (circle) the animal that is behind the dog and the acorn that is below the bench.
Ask children to identify objects that are above, behind, in front of, or beside. Have children ring (circle) the animal above the squirrel and the object behind the milk. Then have children ring (circle) the object in front of the bus and the object beside the tree.
Have children sit in chairs and follow directions to place objects. Direct children to take an object, name its shape, and hold it in different positions. For example: *Place the box below your chair.* Have children paste their shapes on the page to show what they acted out.

**Discuss It** How do you know where to paste the shapes on the page?
Have children draw shapes and objects from verbal instructions. Have children draw a cloud above the house, a flower in front of the house, a boy next to the house, a window beside the door, a circle above the door, a rock below the window, and a tree behind the dog.

Discuss It

Work with a partner. Are the locations of the objects in your drawings the same? How are they different?