

LESSON 6

Objective

Sort groups of objects by two attributes.

Common Core State Standards

- **K.MD.3** Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Measurement and Data

Sort by Two Attributes

When sorting by two attributes, children must be able to group and regroup the objects by different attributes—color, shape, or size. Sorting objects by two attributes lays the foundation for types of classification that will be useful in recognizing and describing complex algebraic patterns.

Try It! Perform the Try It! activity on the next page.

Talk About It

Discuss the Try It! activity.

- **Say:** Look at the Attribute Blocks in your Sorting Circles. Tell what the blocks in each circle look like. (Point to the upper-left Sorting Circle.)
Ask: What color are the blocks in this circle? What size are they? (Repeat these questions as you point to the blocks in each Sorting Circle.)
- Display an assortment of blocks. **Ask:** How could you sort this set of blocks? Could you sort them by color? By shape? By size?

Solve It

With children, reread the problem. Have children draw four large circles on a sheet of paper. Then ask children to use red and blue crayons to draw the chairs to show how they should be sorted into different groups. Remind children that they are sorting the chairs by size as well as by color.

More Ideas

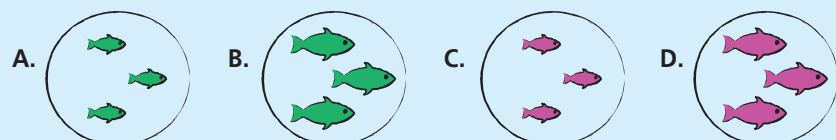
For other ways to teach about sorting by two attributes—

- Have children sort Three Bear Family® Counters by two attributes such as size and color.
- Tell children that they are going on a “Frog Hunt.” First distribute piles of assorted Frog Counters around the classroom. Then divide the class into six groups and assign a different color of frog to each group. Have children from each group collect all of the frogs that match their color. Then have the children in each group work together to sort each color of frog into five groups, based on the shapes of the frogs.

Formative Assessment

Have children try the following problem.

Which group does a  belong in?



Try It! 30 minutes | Groups of 6

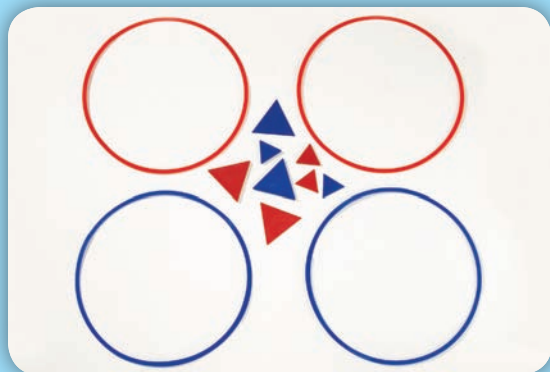
Here is a problem involving sorting groups of objects by two attributes.

Ms. Lopez needs her class to help organize the chairs in the classroom. There are small chairs that are red and small chairs that are blue. There are large chairs that are red and large chairs that are blue. How can she make a group of chairs that are small and red? How can she make a group of chairs that are small and blue? How can she make a group of chairs that are large and red? How can she make a group of chairs that are large and blue?

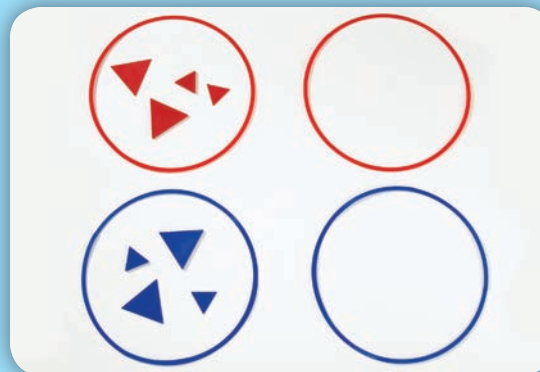
Introduce the problem. Then have children do the activity to solve the problem. Distribute Attribute Blocks and Sorting Circles to each group.

Materials

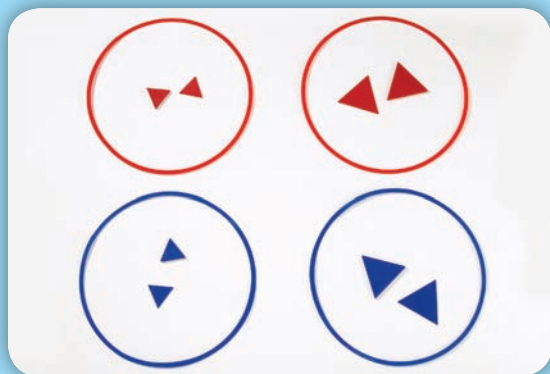
- Attribute Blocks (2 sizes of red and blue blocks of 1 shape per group)
- Attribute Sorting Circles (4 per group)



1. Have children examine their sets of blocks. Ask them to explain how the blocks in their set are alike and how they are different. Guide children to the conclusion that the blocks are all the same shape, but they are two different colors and two different sizes.



2. Have children set out their Sorting Circles in two rows of two. Have them sort the red shapes in the first circle in the top row and the blue shapes in the first circle in the bottom row. Ask children how the blocks in each circle are different now. (They are two different sizes.)



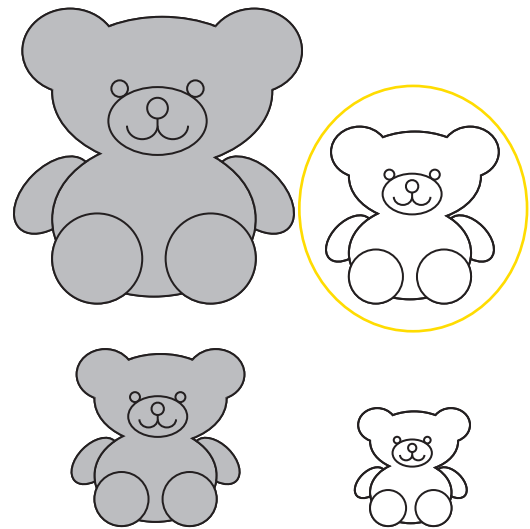
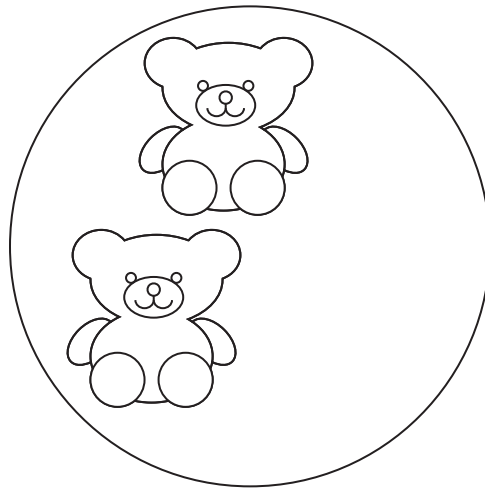
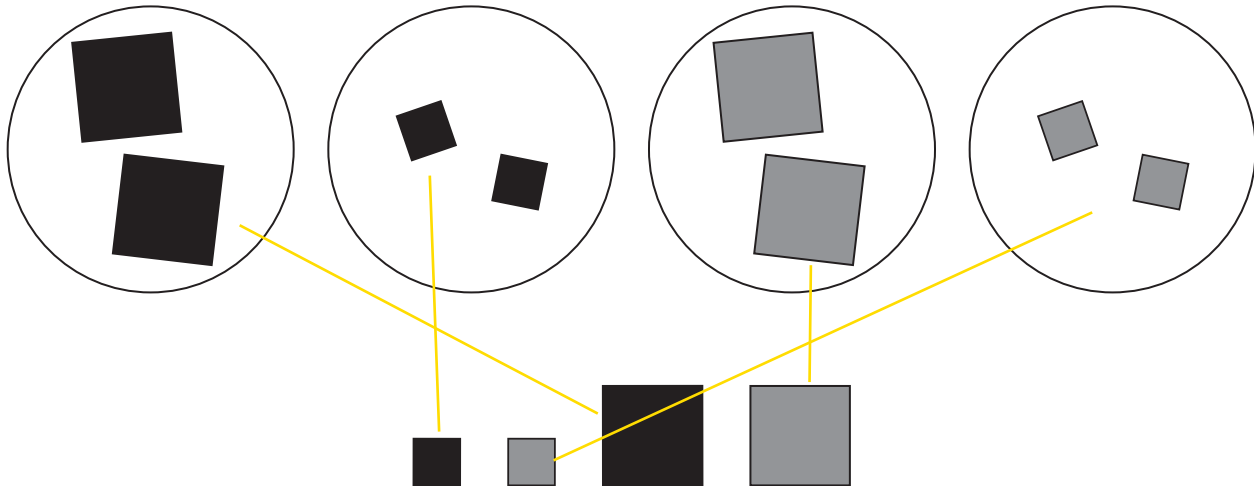
3. Have children sort all of the large shapes and move them to the second circle in each row. Then ask children to compare the blocks in each circle. (All of the shapes in each circle are exactly alike.)

Look Out!

Children may be confused by the different thicknesses of the blocks. Either remove the thick or thin blocks from the sets, or introduce thickness as another attribute and encourage children to sort their shapes one additional step by moving thin shapes to the left of each Sorting Circle and thick shapes to the right of each Sorting Circle.



Check children's work.

Answer Key**1.****2.****Directions**

- 1.** Circle the bear that belongs inside the Sorting Circle. **2.** Sort the squares by size and color (shading). Draw a line from each square to the Sorting Circle it belongs in.



Answer Key

Check children's work.

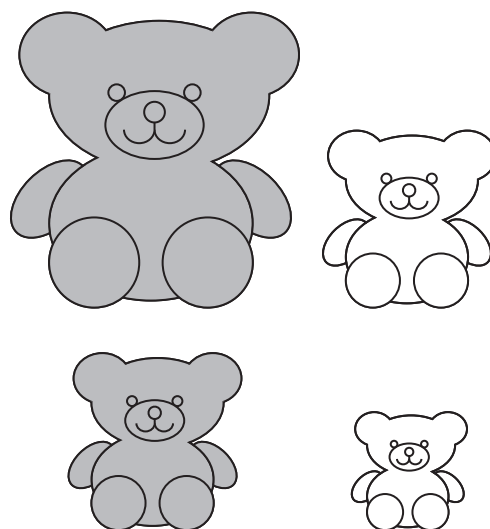
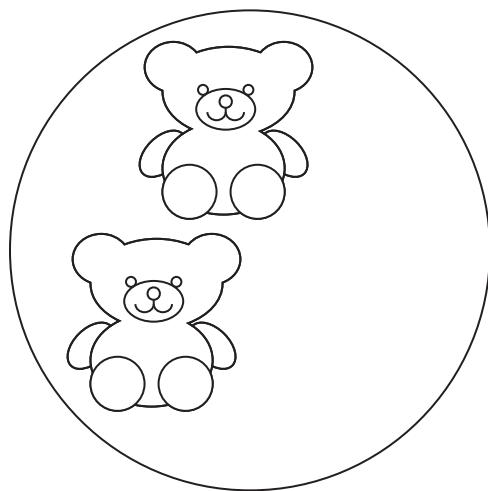
Challenge

Use Attribute Blocks. Sort the blocks by shape and color. Draw four large Sorting Circles on your paper. Draw and color the blocks you sorted.

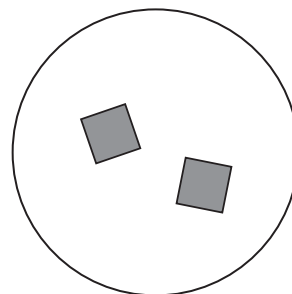
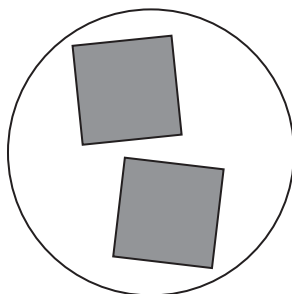
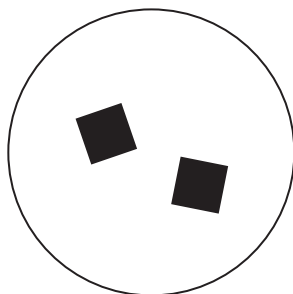
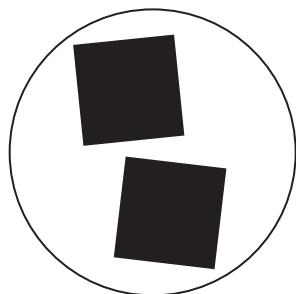
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1.

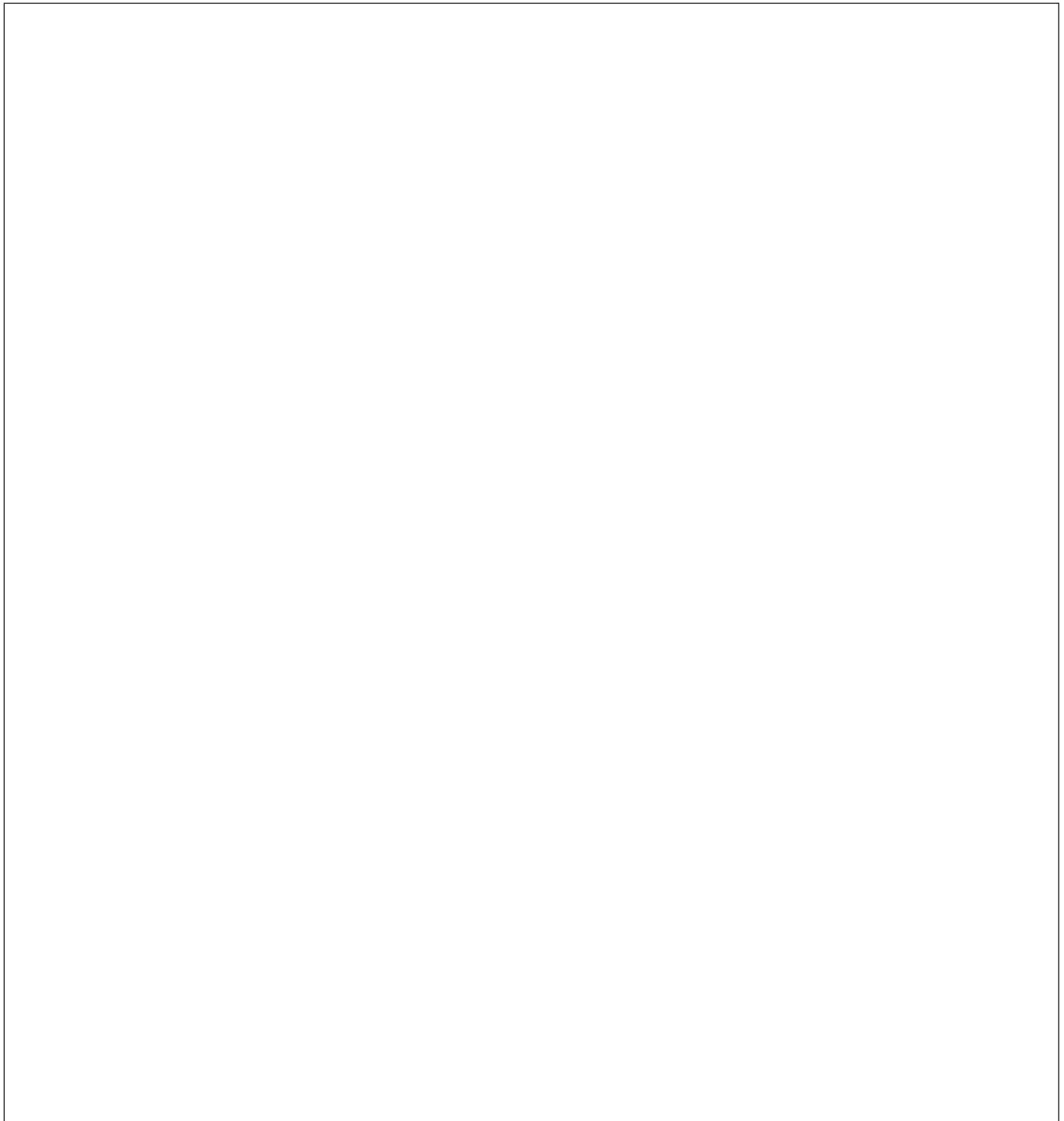


2.

**Directions**

- 1.** Circle the bear that belongs inside the Sorting Circle. **2.** Sort the squares by size and color (shading). Draw a line from each square to the Sorting Circle it belongs in.

Name _____



Challenge

Use Attribute Blocks. Sort the blocks by shape and color. Draw four large Sorting Circles on your paper. Draw and color the blocks you sorted.