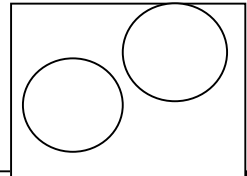


**Analytical
Thinking
Kindergarten**

Shoe Sort


Objectives

Identify attributes
Create classification systems that work

Materials

Two hula hoops, shoes, assortment
of magnetic shapes

Time

30 to 40 minutes

Intro: Teacher led (3 minutes)

Place the magnetic shapes on a white board or other magnetic surface. You should have 2 different shape types, 4 of each shape. Each shape should be in 2 colors but both shapes should have the same colors. For example, you may have 4 triangles – 2 blue, 2 green and 4 squares – 2 blue and 2 green. Ask students how they would sort this jumble of shapes into separate groups. Group shapes according to suggestions (shape type, color). Talk about attributes – they are noticing an attribute and sorting by that. They may also have noticed it could be sorted in different ways (color or shape).

Lesson: Student led (20-25 minutes)

Have students sit in a circle and place a hula hoop in the center of the circle. Ask every student to take off one shoe. Tell them we are going to put some of the shoes into the hula hoop. Pair Share- have students discuss with person next to them what attribute they want to sort by. (E.g., color, and all shoes with that color go in the hula hoop.) Do not provide attribute examples, let them suggest. Have students share ideas with the group. There will probably be many different ideas. Discuss and select one attribute. Place shoes with that attribute into the hoop. Bring out a second hula hoop and ask how they might sort the remaining shoes. Move those shoes into the second circle. Any shoes that don't fit a category stay outside the circles.

If someone notices that a shoe fits into both groups, ask how they might show that. If no one notices, you could prompt students to consider what to do with a shoe that fits both categories.

Do not lead the group to overlap the hula hoops, but let them figure out how to sort for more than one attribute.

Closure: Whole Group Discussion (5-10minutes)

Talk about the observations the kids made, and the classifications they came up with.

Where else in your world do you see things sorted or grouped by attribute?

How is the grocery store organized, and why? What about the classroom?

Scientists sort things by attributes all the time. Why?

Why do scientists sort animals into groups?

Key thoughts—organization by attribute allows for more efficient thinking, and also helps scientists make educated guesses when information is missing.

Vocabulary~

Attribute: n. Quality, characteristic, or property

Category: n. Division or class

Characteristic: n. Distinguishing feature or quality

Classification: n. Group, set, class or category

Venn diagram: n. A diagram that uses circle to represent sets and their relationships