

Sort It Out



Objectives

Students develop logic skills by investigating various ways to sort by attribute. At the same time, they are exposed to the principles of scientific classification.

Materials

- students' own shoes
- copies of Sort It Out animal sorting cards (one set per cooperative learning group)
- large sheets of paper (one per group)

Background

About 1.4 million species of plants and animals have been identified by scientists. More than 2,000 years ago the Greek philosopher Aristotle devised the first classification system with two kingdoms (plants and animals.) In the eighteenth century, the Swedish botanist Carolus Linnaeus created a classification system based on similarities and differences among organisms that separates them into categories. Each category includes organisms that share similar characteristics. For instance, all vertebrate animals belong in one of these groups: mammals, birds, reptiles, amphibians, or fishes.

Action

(Note: This exercise works best in cooperative learning groups.)

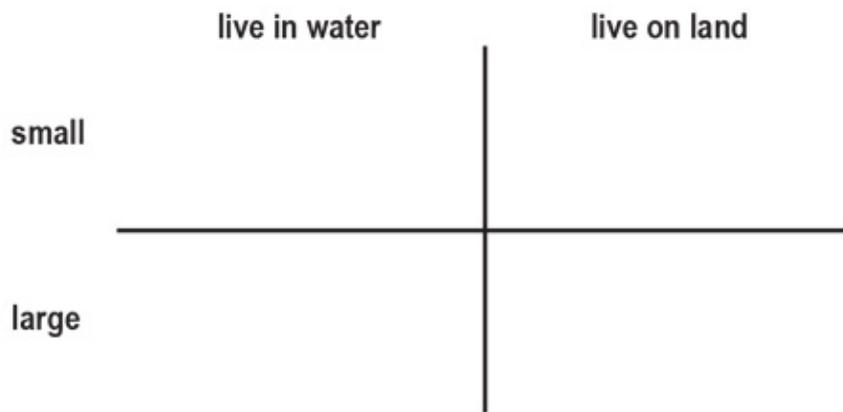
1. First, ask students to remove one shoe each. Within their groups, students sort their shoes into two groups, based on any characteristic they choose. (For example, they may choose one group of shoes with laces and one group without laces. A different way to sort would be tennis shoes and other shoes. Yet another way to sort would be brown shoes and shoes of other colors.)
2. When they are done, have a representative from each group share with the rest of the class how his or her group sorted their shoes. Once all groups have had a chance to share, discuss whether there may be other ways the shoes could have been sorted. Students put shoes on again.
3. Next, distribute a piece of large-size paper to each group. Have one student from each group draw a vertical line down the middle of the paper from top to bottom.
4. Distribute a set of animal sorting cards to each learning group.
5. Ask students to sort again. This time they will sort the animals into two groups. They choose a characteristic that differentiates the animals into two groups. (For example, they may choose animals that have fur and animals that don't have fur. Another way to sort would be animals bigger than a first-grader or animals smaller than a first-grader.)
6. A representative from each student group shares the way his or her group sorted the animals with the rest of the class. Once all groups have had a chance to share, discuss whether there may be other ways the animals could have been sorted.

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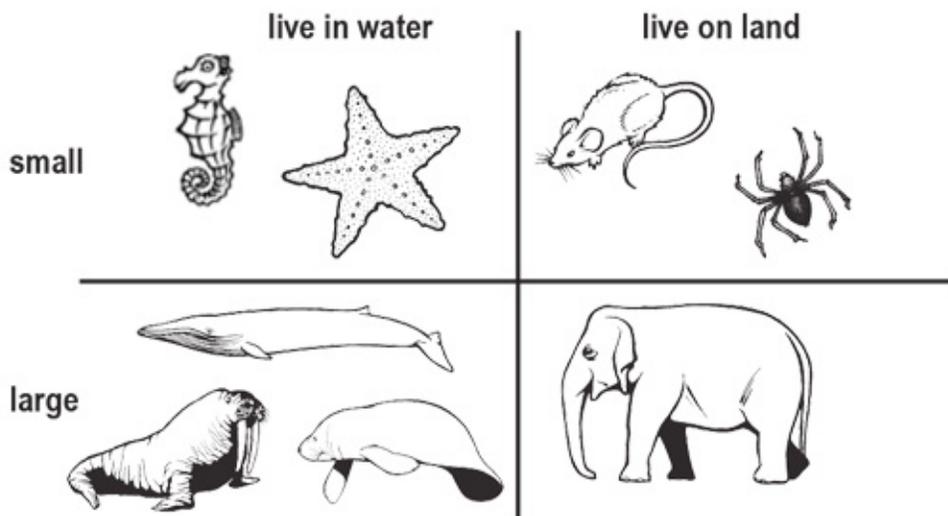
Action

7. (For grades 2-3) Using the same large sheet of paper, students draw another line in the middle of the paper (perpendicular to the first) across the page, dividing the paper into four quadrants. Sketch and illustrate the diagram below onto the chalkboard and ask students to label their papers the same way:



8. Ask students to sort animals again. This time the animals should fit into the correct category both top or bottom and left or right. Each animal should fall into the quadrant that best describes it.
9. Ask representatives from each group to explain how their group sorted the animals. Are there other ways the animals could have been sorted?

EXAMPLE OF SORTING MATRIX FOR #8



Sort It Out



sea star



mouse



blue whale



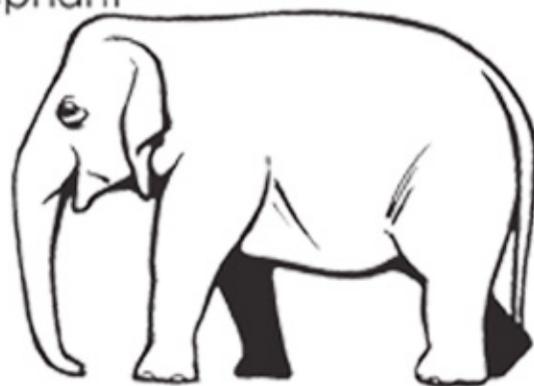
walrus



spider



elephant



manatee



seahorse

