



What Is a System?

Matter is classified into four spheres: life, rock, water, and air. Considered together, these four spheres form a system. In this activity, you will define *system* by exploring how objects interact between spheres.

INQUIRY FOCUS Form an Operational Definition

Procedure

-  Examine the objects in each of your jars.
- Sort the jars into groups, according to the object each jar contains: Group 1: Plant or Animal, Group 2: Rock or Mineral, Group 3: Water, Group 4: Air.
- On a separate sheet of paper, write a list of objects that fall into each of the four groups.
-  Have someone in your group slowly empty the jar that contains soil into the jar that contains earthworms. How do the earthworms interact with the soil?

- Have another group member empty the jar of water into the jar of sand. What happens?

Materials

several plastic jars
containing a variety
of objects (one object
per jar), as follows:
ordinary soil
chunk of granite
sand
quartz crystals
water
ice
ladybugs
earthworms
grass
small twig with leaves
dandelions (or any
type of weed)
violets

Think It Over

- What sphere do earthworms belong to? What sphere does soil belong to?
- What might happen to the earthworms if all the soil on Earth disappeared?
- Consider what you have learned about how individual objects of one sphere interact with objects in other spheres. Then, write a definition of a “system.”
