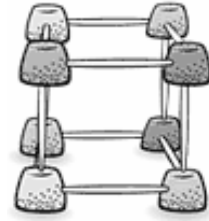


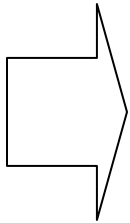
Name \_\_\_\_\_



## Different Minerals

**Background Information:** The earth's crust is made mostly of rocks and soil. The rocks are in turn made of **minerals**. Often these minerals are found by themselves. Minerals are made up of groups of chemical **elements**. Chemists have identified 100 chemical elements which are the building blocks of all matter in the universe. Of these 100 elements, 90 are considered as "naturally occurring." Many of these 90 elements can be found in one or more of the nearly 4,000 known minerals.

Big Science Ideas



- ✿ **Rocks** are made of different combinations of minerals
- ✿ There are more than 100 known elements that combine in many ways to produce compounds.
- ✿ **Atoms** often combine to form a **molecule** (or crystal), the smallest particle of a substance that retains its properties
- ✿ Atoms may be bonded together into molecules; when two or more kinds of atoms bind together chemically, a **compound** is formed.

**Question:** If there are only 90 naturally occurring elements why are there nearly 4,000 different minerals?

**Hypothesis:** I think that

\_\_\_\_\_

because \_\_\_\_\_.

**Materials:**

Toothpicks

20 gum drops (6 different colors)

Map pencils

**Procedure:**

1. 6 of the most common elements are listed in the table below. Decide as a group which element will be represented by which color of gumdrop. Record this color in the table.

Element	Color	Element	Color	Element	Color
Oxygen		Iron		Calcium	
Aluminum		Silicon		Sodium	

2. Make a model of a mineral by connecting 2 or more gum drop elements with the toothpicks.
  - ◆ No two atoms (gum drops) can touch each other
  - ◆ Each model must be a recognizable geometric shape a square, rectangle, triangle, octagon, etc.
3. Have your teacher check your model and initial here:
4. Draw your model in the data section. Label & color each gum drop model.
5. Continue making models until you have run out of gum drops. Draw each model in the data section. Color & label each model.

Teacher Initials:
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**Data:**

