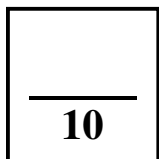


Science 9-Chemistry

Meet The Elements



Name _____

Due Date _____

Show Me Hand In **Correct and Hand In Again By** _____

Purpose:

In this experiment you will observe samples of various elements and discover some of their properties.

Materials and Equipment

several stations around the lab, each with:
 4 or 5 elements
 a magnet
 steel wool
 a conductivity apparatus
 any other available equipment a student may ask for

Procedure:

1. Your teacher will explain any possible hazards with the element samples in the lab. Listen carefully to any special instructions given. (eg. iodine will stain skin or clothing.) Also, read along as the teacher goes through and explains this procedure.
2. Go to the nearest station with this handout.
3. For each element, copy the **name** of the element (or **symbol** if that is given) in the appropriate place on the data table starting on the next page of this handout. Later on, you can look up the symbol or name on the periodic table.
4. Observe and record all the **properties** you can for each sample. Look for properties like colour, shininess (luster), relative hardness, malleability, magnetism (does it stick to a magnet?), and electrical conductivity (your teacher will explain how to use the conductivity apparatus.) and any special properties the element may have (eg. *the staining ability of iodine*)
 If you have any ideas for testing other properties that require additional equipment, ask the teacher about it!

Questions:

1. Elements which are **metals** are usually (but not always) shiny, silvery, grey or gold colour, hard to malleable but not usually brittle, and good conductors of electricity. Not all metals are magnetic (only a few actually). List the symbols (names aren't necessary) here for all the elements you observed in the lab or demonstration which you *think* could be **metals**.

2. Look up the symbols you listed in question 1 on the periodic table. Are they mostly on the **right** side or on the **left** side of the “staircase” on the periodic table?

3. Elements which are **non-metals** are usually (but not always) dull and not silver or gold in colour (there are some exceptions!), more brittle than metals, non-magnetic and non-conductors of electricity. List the symbols here for all the elements you observed in the lab or demonstration which you think are **non-metals**.

4. Are the elements you listed in question 3 mostly on the **left** side or on the **right side** of the “staircase” on the periodic table?

5. List here the symbols of any elements which you really **cannot decide** are metals or non-metals.

6. Are elements always **easy** to classify as metals or non-metals? _____

7. Why was mercury (Hg) considered unsafe for students to use directly? _____

8. Why is the symbol for mercury so strange? (Hg) _____

9. **Iodine** crystals are a shiny grey colour. Is iodine a **metal** or a non-metal? _____
Give a reason for your answer. _____
10. Does carbon *look* like a metal or a non-metal? _____
Does **carbon** conduct a current? _____. What would you classify carbon as, a metal or a non-metal? _____.
11. What is a special property of **phosphorus** which requires it to be stored in water? _____

12. What special property of **oxygen** makes it useful but dangerous at the same time? _____

13. Why is **oxygen** important to animals? _____
