

# From Chaos to Order

8<sup>th</sup> Grade Science

Student Name \_\_\_\_\_

Date \_\_\_\_\_

### Activity 1: Forming Categories Based on Physical Properties

*Examine the items in your “Bag of Chaos”. Using what you know about the physical properties of elements, try to group the items according to the elements of which they are made.*

Category of Element	Items	Reasons for Placing Items in This Category
<b>Metals</b>		
<b>Nonmetals</b>		
<b>Metalloids</b>		



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## Activity 2: Assessing Physical Properties

Follow the directions below to assess each of the items' physical properties. Record your results in the table.

**Color:** Describe the color of each item.

**Luster:** Describe the luster (shininess) of each item. You can do so by ranking the luster of the items. (For example, "This item has the greatest luster.")

**Conductivity:** For this test, prepare a circuit by following these steps:

1. Connect one end of a wire to a battery. Temporarily leave the other end of the wire loose.
2. Connect a second wire between the other end of the battery and the light bulb.
3. Connect a third wire to the light bulb. Temporarily leave the other end of the wire loose.
4. Now connect the item between the two loose ends of wire: one from the battery and one from the light bulb.

If the bulb lights (even faintly), then the item is conductive. You may want to double-check each item for this test. You can describe the items' conductivity like you did for *luster* by ranking them.

**Malleable:** Try to bend or flatten each item. If the item bends or flattens, then the item is malleable. If the item breaks or does not change, then it is not malleable. Describe each item's malleability.

Item	Color	Luster	Conductivity	Malleable



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### Activity 3: Drawing Conclusions about Physical Properties and Elements

Review your responses in Activity 1 but do not change anything. Explain how you can use what you learned in Activity 2 to better categorize the items in the “Bag of Chaos”.

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### Activity 4: Considering Chemical Properties

In this activity, we examined only physical properties. Explain what **chemical** properties you could investigate to further assist you in placing these items in the proper category.

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