

Name Make-up Lab (5 pts)

Period _____

MATTER INVESTIGATION 4

- Objectives:
- 1) To develop and express observations about various forms of matter;
 - 2) To identify various characteristics/properties of different forms of matter
 - 3) To categorize matter according to characteristics/properties

Part I - Pre-Investigation Questions: (3 pts)

- use notes!*
- 1) What is the difference between a chemical/physical property
 - 2) What do we mean when we use the term "characteristic?"
 - 3) Give four examples of various characteristics that can be used to describe something.

Part II - Identifying Characteristics/Properties: (15 pts)

(Use Definition page to answer Q's)

Station A: List the names of the objects. Make observations about the objects located at this station.

magnets, metal nail, paper clip

- 4) What characteristic do these objects have in common?
- 5) If this characteristic will allow the object to change, describe what type of change might occur?

Physical or Chemical Change? (Circle one)

Station B: List the names of the objects. Make observations about the objects located at this station.

rusted nail, rusted pipe, rusted steel wool

- 6) What characteristic do these objects have in common?
- 7) If this characteristic will allow the object to change, describe what type of change might occur?

Physical or Chemical Change (Circle one)

Station C: List the names of the objects. Make observations about the objects located at this station.

rubber band, elastic band, balloon

8) What characteristic do these objects have in common?

9) If this characteristic will allow the object to change, describe what type of change might occur?

Physical or Chemical Change (Circle one)

Station D: List the names of the objects. Make observations about the objects located at this station.

Battery, electricity tester, copper, Aluminum

10) What characteristic do these objects have in common?

11) If this characteristic will allow the object to change, describe what type of change might occur?

Physical or Chemical Change (Circle one)

Station E: List the names of the objects. Make observations about the objects located at this station.

water, syrup, oil (how they flow)

12) What characteristic do these objects have in common?

13) If this characteristic will allow the object to change, describe what type of change might occur?

Physical or Chemical Change
(Circle one)

Station F: List the names of the objects. Make observations about the objects located at this station.

metal bowl, ring, key, wire

14) What characteristic do these objects have in common?

malleability/ductility

15) If this characteristic will allow the object to change, describe what type of change might occur?

Physical change!

Station G: List the names of the objects. Make observations about the objects located at this station.

ball floating, oil floating on syrup

16) What characteristic do these objects have in common?

17) If this characteristic will allow the object to change, describe what type of change might occur?

Physical or Chemical change
(Circle one)

Station H: List the names of the objects. Make observations about the objects located at this station.

heavy rock, small rock, cotton ball

18) What characteristic do these objects have in common?

hardness

19) If this characteristic will allow the object to change, describe what type of change might occur?

Physical change

Station I: List the names of the objects. Make observations about the objects located at this station.

sugar dissolving in H_2O , salt dissolving in H_2O

20) What characteristic do these objects have in common?

~~HA~~

21) If this characteristic will allow the object to change, describe what type of change might occur?

Physical or chemical change
(Circle one)

Station J: List the names of the objects. Make observations about the objects located at this station.

hair spray, nail polish remover

22) What characteristic do these objects have in common?

23) If this characteristic will allow the object to change, describe what type of change might occur?

Physical or chemical change
(Circle one)

Part III – Conclusion: (2 pts)

A) All of the characteristics you identified and listed are called properties. Define and describe what is meant by a **property** without using the word characteristic.

B) Select one of the properties demonstrated at the stations above. Describe an example of where you find this property in something important in your life.

Properties of Matter Instructor Notes

A **property** is some quality (trait or characteristic) of an object that describes how it might change. It may also describe how an object could be used.

Magnetic – the property of a substance where it can place an attractive or repulsive force on another object. A simple magnet is used to determine whether or not another object has a magnetic property.

Oxidation – the property of a substance where it undergoes a chemical change by reacting with oxygen to produce some new substance (examples are rust and tarnish).

Elasticity – the property of a substance where it can be stretched and then return to its original shape.

Conductivity – the property of a substance where it is able to transmit electricity and/or heat.

Viscosity – the property of a substance that determines how easily it can flow (applies to liquids and gases).

Malleability/Ductility – the property of a substance where it can be molded into shapes (malleability) or stretched into wires (ductility)

Buoyancy – the property of a substance where it can “float” on top of another substance (applies to solids, liquids, and gases)

Hardness – the property of a substance that makes it resistant to damage by physical forces (pounding, tearing, bending)

Solubility – the property of a substance where it can be dissolved into some other substance – solid, liquid, or gas (water will be used for this investigation)

Volatile – the property of a substance where it can evaporate quickly at room temperatures (most substances that are extremely volatile are flammable)

