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# **SLT Science Expo 2016**



## **Physical Science**

Name: \_\_\_\_\_

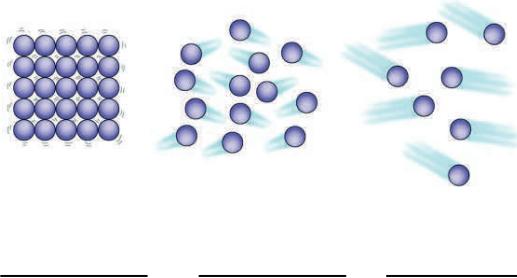
Date: \_\_\_\_\_

School: \_\_\_\_\_

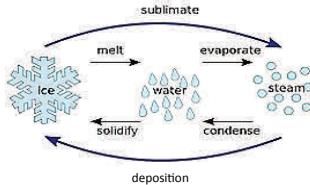
# Properties of Matter

## Physical Properties

**Matter on the Move:** What are the three states of matter?



**Phase Change Poppers:** What is the phase change called when a solid changes directly into a gas?



**Invisible Mass:** Air has mass.

True or False (Circle one)

**It's a Gas:** When citric acid and baking soda react, what gas bubbles out of the solution?



**Slime Time:** What type of fluid acts like both a liquid and a solid?

## Mixtures

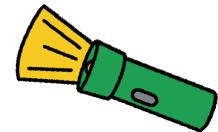
**Separation Anxiety:** Are mixtures separated by chemical or physical means?

Chemical or Physical (Circle one)



# Energy

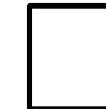
## Light



**Color Combination:** When you combine red, green, and blue light, what color light do you get?

### Colored Shadows:

Write-in the 3 primary colors of light



### Three Little Pigments:

Write-in the 3 secondary colors

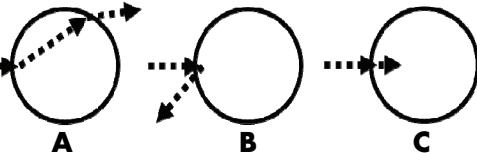


**The Sky is Purple?:** What gives the sky its color?



**Great Wall of Color:** Did you see colors reflected in the bubble film? Yes or No (Circle one)

**Laser Light Show:** Which image represents reflection? (Circle one)



**Refraction Action:** The bending of light is called \_\_\_\_\_

**Super Spectroscopes:** A spectroscope is a tool used for observing a spectrum of \_\_\_\_\_.

**It's a Mirror-cle:** Why does it look like you are flying?



## Heat

**Some Like it Hot:** Name 3 methods of heat transfer and an example of each

- 1)
- 2)
- 3)

## Energy

### Mechanical

**Give it a Ride:** \_\_\_\_\_ energy is stored energy.



\_\_\_\_\_ energy is energy in motion.



**Keep Your Eye on the Ball:** Energy cannot be created nor destroyed but can change into different forms.

True or False (Circle one)

## Sound

**Musical Coat Hangers:** Which is the best medium for sound waves to travel?

Solid or Gas (Circle one)



**Good Vibrations:** What creates sound?

## Electricity

**Sizzling Static Electricity:** Uncharged objects become charged by gaining or losing \_\_\_\_\_

**Human Battery:** Which pair of metals produced the most current:  
(Circle one)

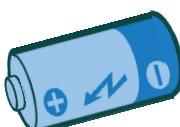
Copper + Brass

Copper + Aluminum

Copper + Zinc

**Electricity, Simply Magnet-ificent:** In this activity you observed  
(Circle One)

- A compass needle move when you connect a battery to copper wire
- Copper wire rotating on a battery and magnet
- An electromagnet picking up a paper clip
- All of the above



**Currently Working:** A solution with ions is able to conduct electricity.

True or False (Circle one)

## Properties of Matter

### Density

**Mystery Box:** What is the definition of density?

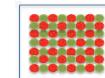


**Floating Golf Ball:** Which is more dense, Freshwater or Saltwater? (Circle one)

**Stacking Colors:** Which is less dense?  
Oil or Water (Circle one)

**Hot and Cold Density:** How can you change the density of water?

**Changing the Density of an Object:** Can two objects have the same volume but different densities? Why?



High Density



Low Density

### Chemical Reaction

**Gassy Lava Lamp:** What is a chemical reaction?

**Shake it Up!**: An indicator, like cabbage juice, is used to demonstrate that a chemical reaction has taken place.

True or False (Circle one)

### Exothermic vs. Endothermic:

\_\_\_\_\_ reactions release energy in the form of heat.  
(For example, Calcium chloride mixed with water feels warm and can be used to melt ice.)

\_\_\_\_\_ reactions absorb energy in the form of heat. (For example, Urea mixed with water feels cold.)



**Fire Starters:** What is needed for a fire to burn?

## Forces & Motion

### Air Pressure



**Automatic Balloon Inflator:** Which takes up more space:

Hot air or Cold air? (Circle one)

**Mystery Candle:** Is the pressure higher or lower inside the flask:

Higher or Lower? (Circle one)

**Balloon in a Bottle:** How do you know air takes up space?



### Gravity

**Gravity keeps you down:** \_\_\_\_\_ causes falling objects to slow down.

**Strike a Balance:** What physics concept keeps objects from falling over? The \_\_\_\_\_ of \_\_\_\_\_ of an object.



### Physics of Animal Flight

**Flight:** What are two things that help animals fly?



## Forces & Motion

### Magnetism



**Magnet Magic:** Magnetic fields cause magnetic

\_\_\_\_\_ and \_\_\_\_\_

**Magnet Mania:** True or False (circle one): All metals are magnetic.

**Eddy Currents:** Does a magnet fall faster in:

Copper tube or Plastic tube? (Circle one)



### Properties of Water

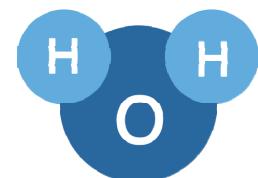
**Magic Playing Card:** What bond is breaking when the water spills out?

**H2Olympics:** \_\_\_\_\_ is the attraction between water molecules.

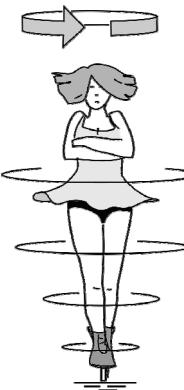
\_\_\_\_\_ is the attraction between water molecules and other materials.

\_\_\_\_\_ is the strong bond formed between water at the surface.

\_\_\_\_\_ is the movement of water molecules within materials.



### Momentum



Match the type of momentum to the photo.

**Angular**

**Linear**

