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**UCDAVIS**

Tahoe Environmental  
Research Center



# Science Expo 2019



**UCDAVIS**

Tahoe Environmental  
Research Center

## Physical Science

— Participants —



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

**Want more science?**

**Join us for our public events!**

**Free and family friendly!**

**Wednesday**  
**Mar. 20**  
**4:00-6:00 pm**

**North Lake Tahoe Family Night**

UC Davis Tahoe Science Center  
291 Country Club Drive, Incline Village, NV

**Thursday**  
**Apr. 4**  
**4:30-6:30 pm**

**South Lake Tahoe Family Night**

Lake Tahoe Community College Gymnasium  
One College Drive, South Lake Tahoe, CA

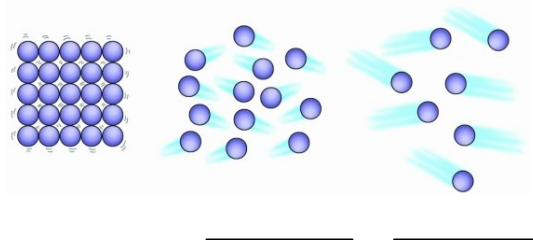
— Donors —



# 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

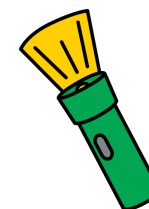
**Separation Anxiety:** Are mixtures separated by chemical or physical means?

Chemical or Physical (Circle one)



# Energy

## Light



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

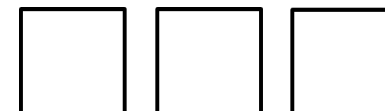
### Colored Shadows:

Color-in the 3 primary colors of light



### Three Little Pigments:

Color-in the 3 secondary colors



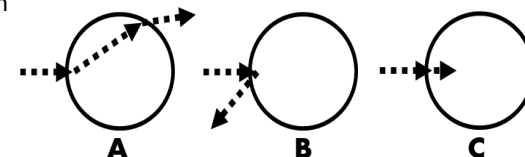
**The Sky is Purple?:** What gives the sky its color?



**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?



# 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)



## Heat

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

- 1)
- 2)
- 3)

## Sound

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

Solid Liquid Gas (Circle one)

**Seeing Sound:** What creates sound?



## Fuel

**US Fire Service:** \_\_\_\_\_ and \_\_\_\_\_  
are two ways foresters clear excess fuels to improve forest health and help prevent catastrophic or dangerous fires.



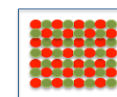
# Properties of Matter

## Density

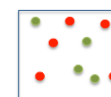
**Mystery Box:** What is the definition of density?

**Floating Golf Ball:** Which is more dense?

Freshwater or Saltwater (Circle one)



High Density



Low Density

**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?

## 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.)

# 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)

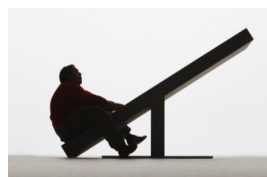


## Gravity

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

**Strike a Balance:** What physics concept keeps objects balanced?

The \_\_\_\_\_ of \_\_\_\_\_ of an object.



**Friction Frenzy:**

What is an example of friction in every day life?

## 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:** All metals are magnetic. True or False? (circle one)

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

Copper tube or Plastic tube? (Circle one)



## Properties of Water

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

\_\_\_\_\_ OR \_\_\_\_\_

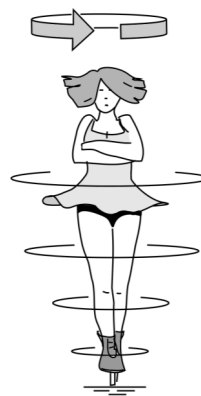
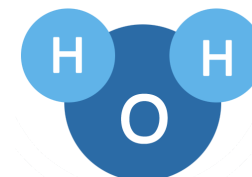
**H<sub>2</sub>Olympics:**

\_\_\_\_\_ is the attraction between water molecules.

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

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

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



## Momentum

**Momentum Machine:**

Match the type of momentum to the photo.

**Angular**

**Linear**

