

## Optional Science Activities

# Have some fun with these optional Science Experiments!

Please remember- These experiments are optional! Please don't purchase materials to complete.

## Water Cycle in a Bag

### Optional Experiment

- This is an easy, optional activity for you to do at home to review the stages of the water cycle. All you will need is a Ziploc bag, a marker, and water! (Please don't purchase items! This is optional!)
- Once you have completed, take a picture and send it to me in Remind!
- *Again-Please don't go buy any materials. This is an optional activity if you have these things at home. J(You can use plain water if you don't have blue food coloring)*

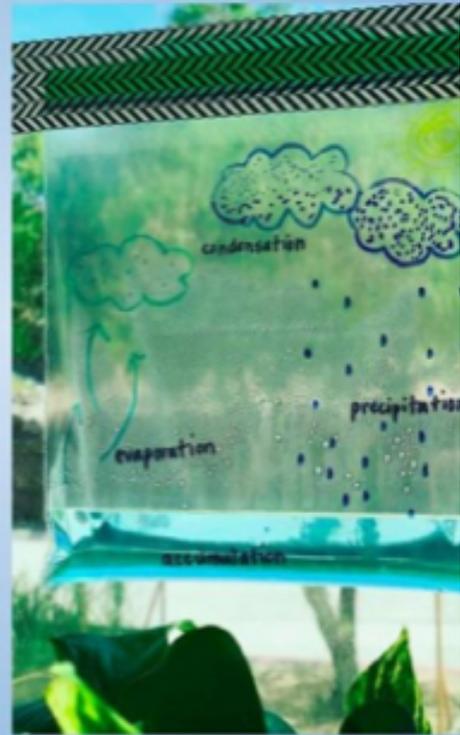
## WATER CYCLE EXPERIMENT - INSTRUCTION

### You will need:

- 1 rectangular zip lock bag
- 1 black vivid (between two)
- Water
- Blue dye

### Procedure:

- ★ Get a ziplock bag, and find a buddy to share a vivid with
- ★ Look together as a class at Mrs H's example
- ★ Draw on your ocean, clouds, and rain drops
- ★ Write your 3 key words in the correct place Evaporation, Condensation, Precipitation, and your name
- ★ Add 1/2 cm of water at the bottom of your bag
- ★ Add two drops of dye, seal tightly
- ★ Attach your bag to the window (in a sunny spot) with tape and observe!



## LAND BREEZES! Optional Review

- Break out your art supplies!!
- Draw and label a land breeze! Be sure to identify the warm air rising and which direction it is moving.

- Remember: These breezes happen at night. The moon is out, and the ocean water is warmer because water holds heat longer than the land.



## Why washing hands helps kill germs!

Let's have some fun with milk and food coloring! (Optional activity!!)

You will need a bowl of milk, some food coloring, a Q-tip, and dish soap.

Here's what you will need to do:

- You'll need a bowl of milk, food coloring, a Q-tip or paper towel, and dish soap.
- Place small droplets of food coloring into the bowl of milk like the image. (A little more won't hurt.)
- Place the dish soap on the tip of the Q-tip or paper towel.
- Place the Q-tip and soap in the center of the bowl.
- Watch as the colors move. Take a picture and send it to me through remind.

- ***Please don't go buy any materials. This is an optional activity if you have these things at home.***



**SEA BREEZES-**

# Optional activity

- Draw and label a land breeze!
- Be sure to identify the warm air rising and which direction it is moving.
- Remember: These breezes happen during the day. The sun is out, and the ocean water is cooler because water takes longer to heat up.
- This is an optional activity to help you review the different convection currents.



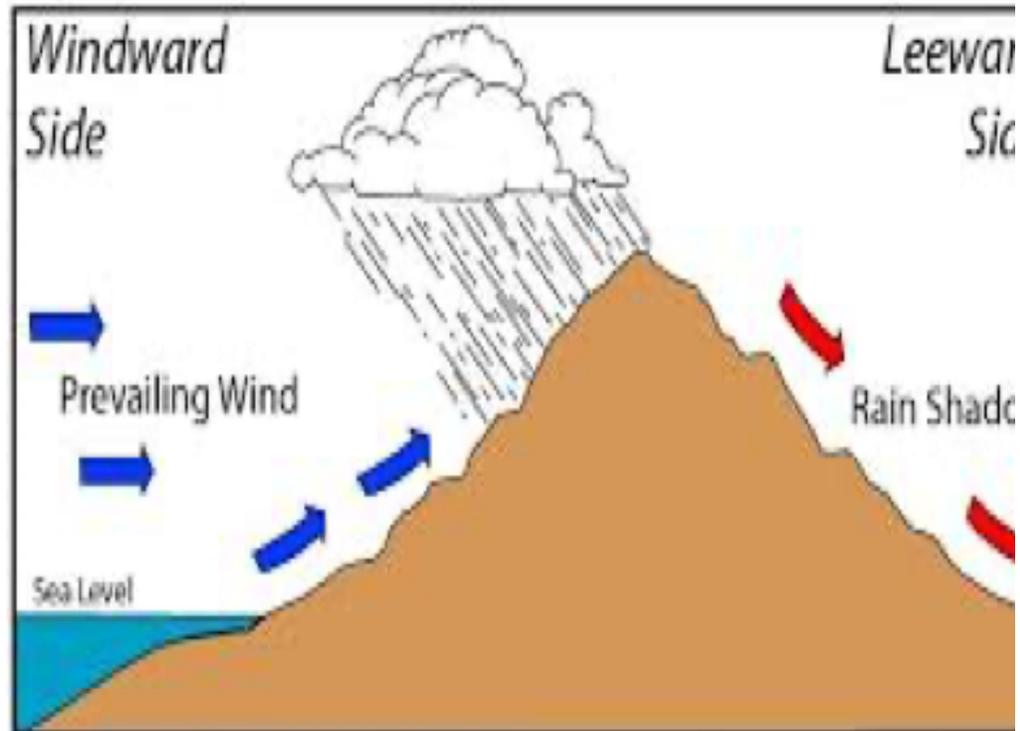
# Make a Tower of Cups Contest! Optional

- Use your engineering skills to build the tallest tower you can using plastic cups! Build those towers high!! Be creative!!
- Be sure to take a picture and send it to me in Remind so I can announce the winner of the tallest tower!
- **Please don't go buy any materials. This is an optional activity if you have these things at home.**



## RAIN SHADOW- Optional

- Break out your art supplies!
- Draw and label the key parts to a rain shadow.
- Be sure to have a mountain, a desert, the ocean, and show how the clouds drop the water on the jungle side of the mountain.
- Remember- this is an optional activity that will help you review what you've learned in science this year.



## Density in Salt Water Optional Experiment

Here is what you will need to do:

- Fill one of the drinking glasses almost to the top with plain tap water.
- Gently drop one of the eggs into the water-filled glass. It sinks right to the bottom!
- Fill the second drinking glass half-full with

water.

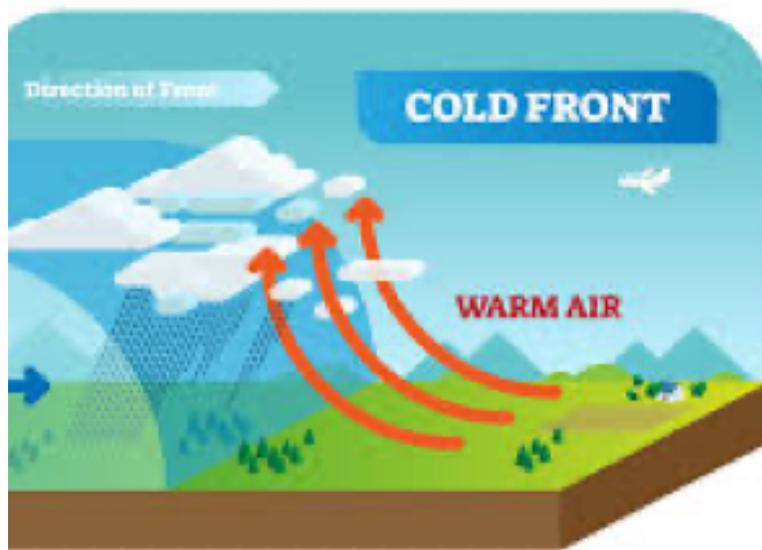
- Add four tablespoons of table salt to the water, and stir.
- Fill the rest of the cup with water, almost to the top.
- Gently place the second egg into the salt water solution... it floats!
- Please don't go buy any materials. This is an optional activity if you have these things at home.
- Adding **salt** to the **water** increases the density of the solution because the **salt** increases the mass without changing the volume very much. When enough **salt** is added to the **water**, the **saltwater** solution's density becomes higher than the **egg's**, so the **egg** will then float!



# What is a Front?

## Optional Review

- Time to break out your art supplies again. J
- Use what you've learned to draw a front. (that line where a cold air mass and a warm air mass met)
- When you are done, take a picture and send it to me through remind. I'll share some of the pictures I receive later tonight.
- Please remember- this is an optional activity to help you review what you've learned this year.



# Make your own Playdough!

## Optional fun!

### **WHAT YOU WILL NEED?**

- 2 Cups Corn Starch, 1 Cup Hair Conditioner, Food Coloring

### **HOW TO MAKE IT?**

- Place hair conditioner into a medium bowl and add a few drops of food coloring.
- With a spoon, mix the coloring through the conditioner.
- Add 1 cup of corn starch and stir. Then add the last cup of corn starch to the mixture.
- Constantly stir the mixture until it begins to form a thick blob.
- Turn the play dough out onto a clean surface and knead into a smooth ball with your hands. Add more corn starch if the play dough is sticky.
- Store in a plastic zip lock bag or air-tight container.
- Please remember- **do not go buy ingredients**. This is an **optional**

**activity.** Take pictures and send to me through remind if you make play dough!



## Weather Review- Let's Make a Tornado in a Jar!

(Optional activity for review!)

- To create your own mini tornado, you'll need a clean mason jar and our ingredients: 3 cups of tap water, 1 teaspoon of dish soap, 1 teaspoon vinegar, and Glitter or other small objects {optional}
- Fill the mason jar with water – making sure to leave about an inch of space at the top. Then pour in the dish soap and vinegar. Close the lid tightly. Twirl your jar around to create your tornado inside.
- Remember- Please do go buy materials.

These are just fun ways to review our science skills. See how many facts you can remember about tornados: Where do they form? Why do they form? What can of damage can they cause? What should you do during a tornado?



## Make your own cloud! (Optional activity)

- You will need a parent to help you with this activity.
- Items you will need: Glass Jar with a Lid (we used a pint mason jar), 1 cup Hot Boiling Water, Blue Food Coloring (optional), Aerosol Hairspray, and 3-5 cubes of Ice
- **Step 1** – Pour 1 cup of hot boiling water into a glass jar.
- **Step 2** – Quickly spray hairspray into the jar.

- **Step 3** – Immediately put the lid onto the jar.
- **Step 4** – Place a 3-5 pieces of ice on top of the lid of the jar.
- **Step 5** – Watch the top of the jar carefully and you will see a cloud begin to form.
- **Step 6** – After observing the cloud in the jar, remove the lid and watch the cloud move out of the jar.
- Remember- this is an **optional activity**. Please do not purchase items and only complete if you want to review cloud formation.

Can you remember how clouds are formed? Do you remember the names of the different kinds of clouds?



Make it Float?

# An fun, optional experiment with convection currents!

Can you control a ping pong ball/paper as it floats above a hair dryer? Put your hand-eye coordination skills to the test while learning the important role that forces such as gravity and air pressure play in this simple experiment for kids.

## **What you'll need:**

- At least 1 ping pong ball (2 or 3 would be great) or a piece of paper
- A hair dryer

## **Instructions:**

1. Plug in the hair dryer and turn it on.
2. Put it on the highest setting and point it straight up.
3. Place your ping pong ball or paper above the hair dryer and watch what happens.
4. Illustrate the effect the air had on the object.
5. Label the cause -High pressure or low pressure
6. Draw how the particles looked above the blow dryer before you turned on the blow dryer and then after you turned on the blow dryer.



## Make an Easy Lava Lamp

Learn how to make an easy lava lamp with this fun science experiment for kids. Use simple household items such as vegetable oil, food coloring, Alka-Seltzer and a bottle to create chemical reactions and funky balls of color that move around like a real lava lamp.

### What you'll need:

- Water
- A clear plastic bottle
- Vegetable oil
- Food coloring
- Alka-Seltzer (or other tablets that fizz)

## Instructions:

- . Pour water into the plastic bottle until it is around one quarter full (you might want to use a funnel when filling the bottle so you don't spill anything).
- . Pour in vegetable oil until the bottle is nearly full.
- . Wait until the oil and water have separated.
- . Add around a dozen drops of food coloring to the bottle (choose any color you like).
- . Watch as the food coloring falls through the oil and mixes with the water.
- . Cut an Alka-Seltzer tablet into smaller pieces (around 5 or 6) and drop one of them into the bottle, things should start getting a little crazy, just like a real lava lamp!
- . When the bubbling stops, add another piece of Alka-Seltzer and enjoy the show!

Draw an illustration and explain what happened to each ingredient as you added it to the water. Why did the oil and water not mix? Why did the Alka-Seltzer cause a change?



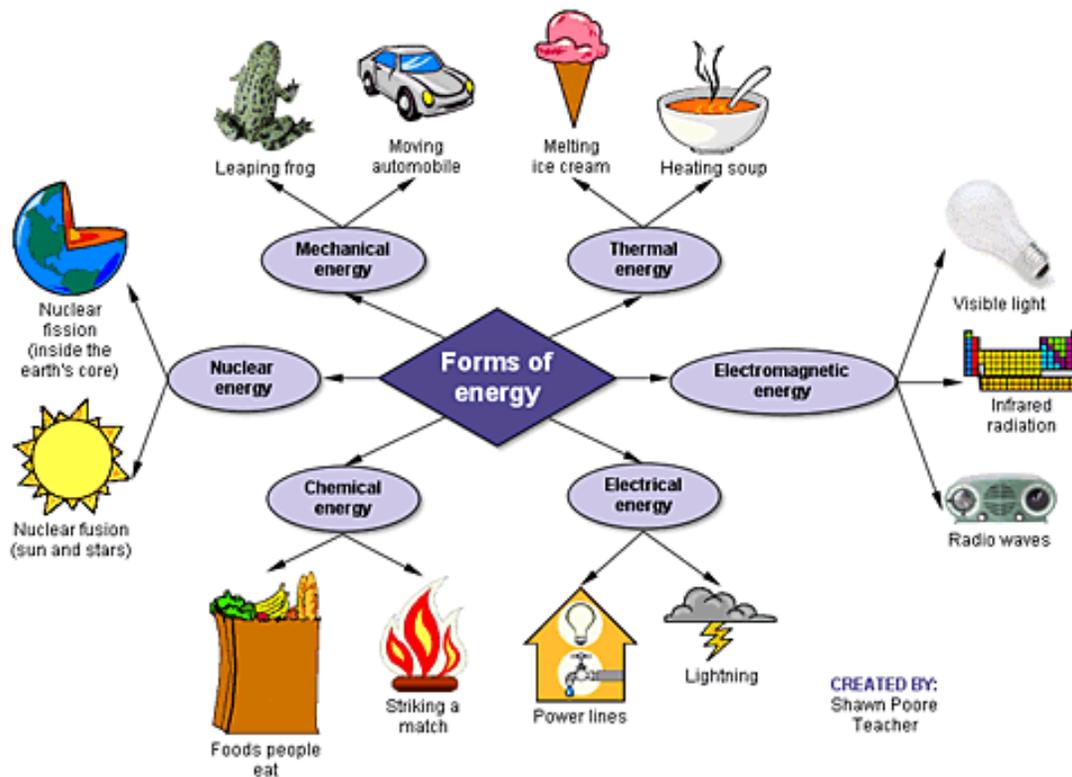
# Let's go on a Scavenger Hunt!

(Fun optional activity to review forms of Energy!)

Search your home and see if you can find an example of each one of these forms of energy.

Pick one example and chart the transfer of energy.

Illustrate and send me a picture!



## Get out of the kitchen with a SOLAR OVEN

### Another Fun, Optional Experiment with Heat Transfer!

#### **Materials:**

- Shoebox
- Aluminum foil
- Tape
- Clear plastic wrap
- Food that is easy to heat (Try melting cheese on chips, chocolate on graham crackers, etc.)
- Pot holders • Sunglasses

Take a picture of your solar oven at work and attach the answers to the questions below.

#### **Procedure:**

1. Line the shoebox with aluminum foil and tape in place if necessary.
2. Place food on aluminum foil.
3. Cover the shoebox with plastic wrap and tape in place.
4. Set box in the sun.

Experiment and make changes as needed to create your solar oven.

Is solar energy renewable or nonrenewable?

Explain the transfer of energy in each step of cooking your food.

How well does the cooker work on cloudy days?

- What effect does outside temperature have on the cooking rate?
- Is there any difference when the cooker is used in December than when it is used in June?
- Would a bigger box, more reflectors, or different types of insulation improve the effectiveness of the cooker?



Sample Solar Box

(Be creative and come up with your own idea!)

## TIME FOR ROCK CANDY!

Make a treat and review chemical changes!

Remember- Please don't purchase any materials for these experiments.

They are all optional.



What you will need:

A wooden skewer (you can also use a clean wooden chopstick)

A clothespin

1 cup of water

2-3 cups of sugar

A tall narrow glass or jar

Instructions:

1. Clip the wooden skewer into the clothespin so that it hangs down inside the glass and is about 1 inch (2.5 cm) from the bottom of the glass. (as shown)
2. Remove the skewer and clothespin and put them aside for now.
3. Get a helpful adult! Pour the water into a pan and bring it to boil.
4. Pour about 1/4 cup of sugar into the boiling water, stirring until it dissolves.
5. Keep adding more and more sugar, each time stirring it until it dissolves, until no more will dissolve. This will take time and patience and it will take longer for the sugar to dissolve each time. Be sure you don't give up too soon. Once no more sugar will dissolve, remove it from heat and allow it to cool for at least 20 minutes.

NOTE: While it is cooling, some people like to dip half of the skewer in the sugar solution and then roll it in some sugar to help jump start the crystal growth. If you do this, be sure to let the skewer cool completely so that sugar crystals do not fall off when you place it back in the glass. Have your friendly ADULT carefully pour the sugar solution into the jar almost to the top. Then submerge the skewer back into the glass making sure that it is hanging straight down the middle without touching the sides. (See picture on next page)



- 6.. Allow the jar to fully cool and put it someplace where it will not be disturbed.
7. Now just wait. The sugar crystals will grow over the next 3-7 days.
8. Want colored rock candy? Add food coloring to your sugar water and make sure sure that it is pretty dark in color for the best result.

## **BUILD A BALLOON ROCKET**

Oh, the fun you can have with Sir Isaac Newton, a balloon, a straw, and some string. Explore Newton's Third Law of Motion when you design a balloon rocket. Have races, conduct experiments, and explore physics while you play.

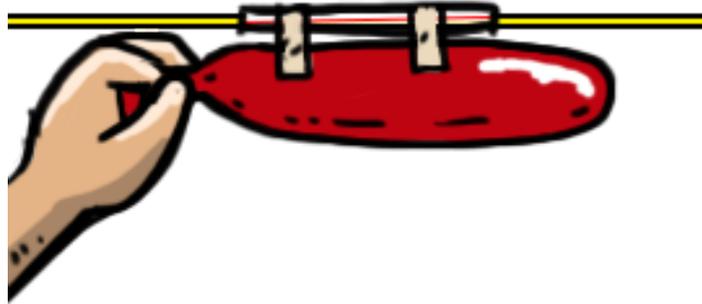
### **What you'll need:**

A balloon

A long piece of string

A straw

- . Tie one end of the string to a chair, door knob, or other support.
- . Put the other end of the string through the straw.
- . Pull the string tight and tie it to another support in the room.
- . Blow up the balloon (but don't tie it.) Pinch the end of the balloon and tape the balloon to the straw as shown above. You're ready for launch.
- . Let go and watch the rocket fly!



If you make a balloon rocket, I'd love to see it! Be sure to take a picture and send it to me through Remind!