

Cloud In A Bottle Teacher Demonstration



Making a Cloud in a Bottle Teacher Demonstration Activity

Materials:

- Clear 2-liter plastic bottle
- Rubbing alcohol
- Unicycle air supply mini pump from www.Unicycle.com or other pump that tightly fits in the top of a 2-liter bottle

Directions:

Step 1: Pour about a half inch of the rubbing alcohol into the 2-liter bottle.

Roll the bottle around to coat the sides.

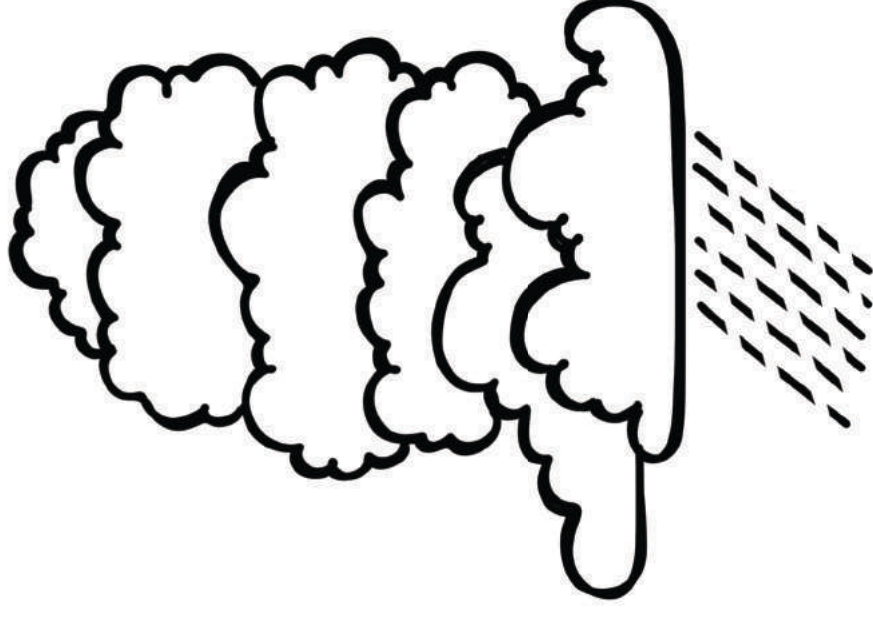
Step 2: Fit the air pump into the top of the bottle. Hold the pump with one hand over the top of the bottle to keep the pump and the top of the bottle steady. Pump the air pump 20-30 times.

Step 3: Quickly remove the pump out of the bottle. A cloud should appear almost instantly.

Step 5: Wait and observe to see what forms at the top of your jar.

Explanation

- As water evaporates it turns into water vapor. The vapor travels up through the atmosphere. As it travels the temperature drops and the air pressure decreases. As the rising air cools and expands the molecules of water vapor condense around tiny particles of dust, smoke, etc. that are in the air. The condensing water droplets create the clouds we see from the ground.



Making a Cloud in a Bottle

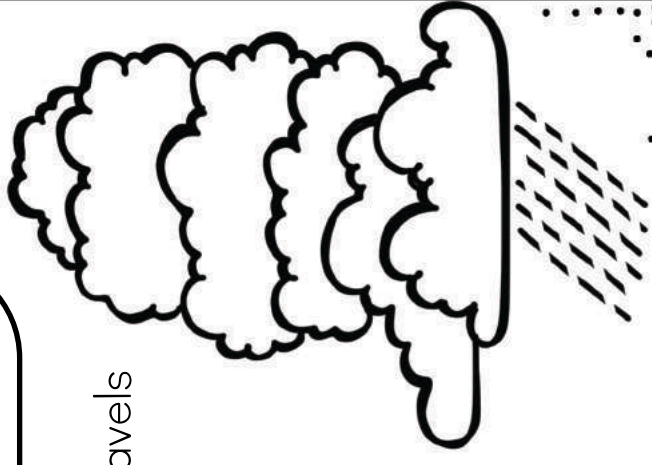
After watching the demonstration, draw what you see in the bottle when it was under pressure and once the pressure was released.

Under Pressure

Pressure Released

How do the air pressure and the temperature change as water vapor travels up into the atmosphere?

The cloud in this demonstration was made of rubbing alcohol because it evaporates quicker than water does. But what are real clouds made of?



Plastic Bag Water Cycle



Name: _____

Plastic Bag Water Cycle

Supplies:

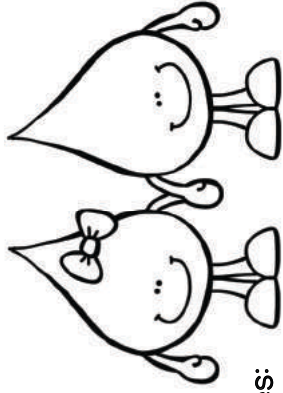
- *gallon size plastic baggie
- *food coloring
- *permanent markers

Directions:

Draw a model of the water cycle on the outside of your baggie. Add about 2 inches of water to the baggie. Seal the bag. Make sure the baggie is totally shut! Tape the bag to a sunny window. Observe the water cycle on the baggie. By day you can use a hair dryer on the baggie.

Observe the water cycle on the baggie.





Name: _____

Plastic Bag Water Cycle

Supplies:

*gallon size plastic bag *food coloring *permanent markers *packing tape *water *hair dryer/sunny window

Directions:

Draw a model of the water cycle on the outside of your baggie. Add about 2 inches of water to the bag. Add a few drops of food coloring to the water. Seal the bag. Make sure it is totally shut! Tape the bag to a sunny window with a strip of packing tape along the top of the baggie. If it is not a sunny day you can use a hair dryer on low to speed things along. Just be sure not to hold the hair dryer too close to the baggie.

Observe what happens and write about it.

Once your bag has been sitting in the sunshine or warmed up with a hairdryer look and see if you notice anything happening. What do you see?

What color were the water drops at the top of your bag?

Why do you think the water drops at the top of your bag were not the same color as the water in the bottom?

How To Use This Weather Log

Complete the weather log by gathering data daily with your class for one week. You will need some simple weather tools: a thermometer, a rain gauge, and a wind vane (or wind sock and compass). Alternatively, you can use a newspaper or an online weather site to complete the log.







This weather log covers one school week. You can simply use the weather log on its own or you can create a booklet by stapling the cover page, blackline posters, and the weather log together. If you would like to record the weather over a longer period simply run additional copies.

Record the date.

Draw a picture to show the type of weather.

Draw a picture to show the type of precipitation. Put an X on days without precipitation.

Record the wind conditions as none, breezy, or windy. You can also record the wind speed.

Weather Log					
	Monday	Tuesday	Wednesday	Thursday	Friday
Type of Weather? 					
Temperature? 					
Type of Precipitation? 					
Amount of Precipitation? 					
Windy? 					
Wind Direction? 					

Record the temperature each day.

Record the amount of precipitation each day.

Use a wind vane or windsock with a compass to find the wind direction. Record the direction.

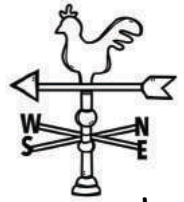
Weather Tools



A **hygrometer** measures the humidity.



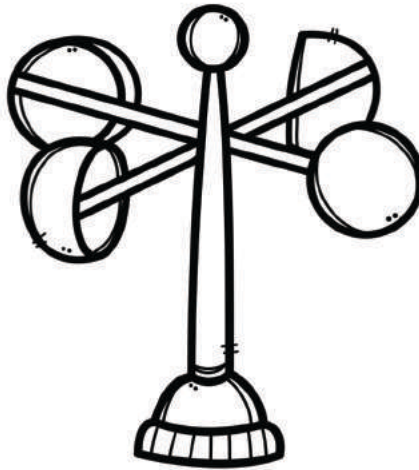
Wind turbines use wind to make electricity.



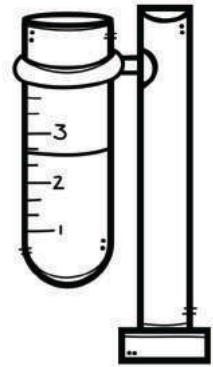
Wind socks and **wind vanes** determine the wind direction.



A **barometer** measures air pressure.



An **anemometer** measures wind speed.



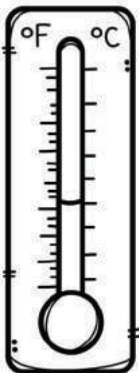
A **rain gauge** measures the amount of rain fall.



A **compass** shows where each direction is.

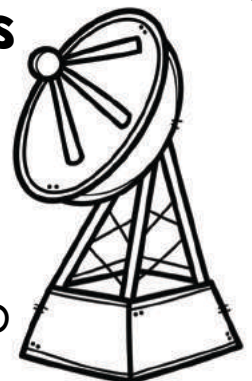


Weather balloons help scientists take measurements high up in the atmosphere.

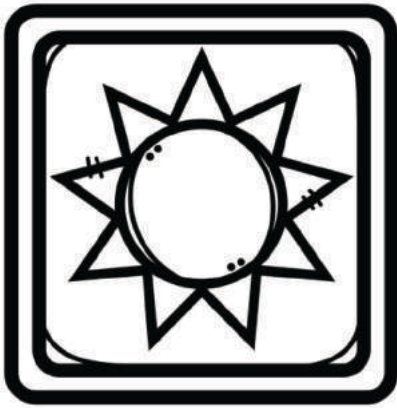


Thermometers measure temperature.

Weather satellites monitor weather from high above the Earth. They send information and images back to Earth.



Weather Symbols



Sunny



Partly Cloudy



Cloudy



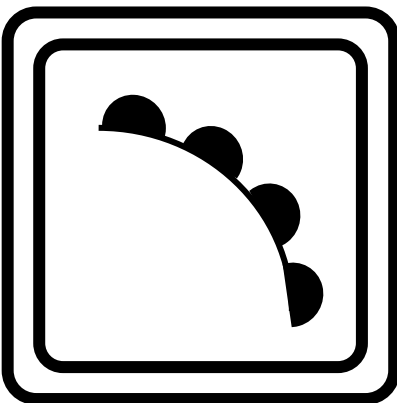
Windy



Rainy



Snowy



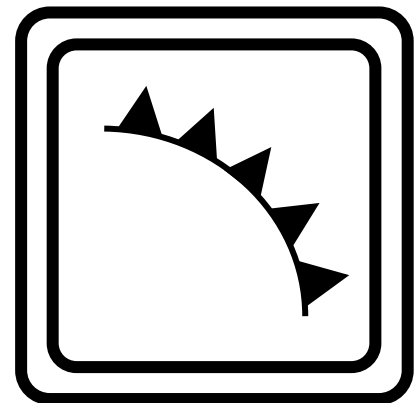
Warm Front



High Pressure



Low Pressure




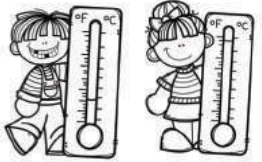




Cold Front

's

Weather Log



Weather Log

	Monday ___/___/___	Tuesday ___/___/___	Wednesday ___/___/___	Thursday ___/___/___	Friday ___/___/___
Type of Weather? 					
Temperature? 					
Type of Precipitation? 					
Amount of Precipitation? 					
Windy Conditions? 					
Wind Direction? 					

Grade School... ...Giggles

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✿ April Nolan ✿

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