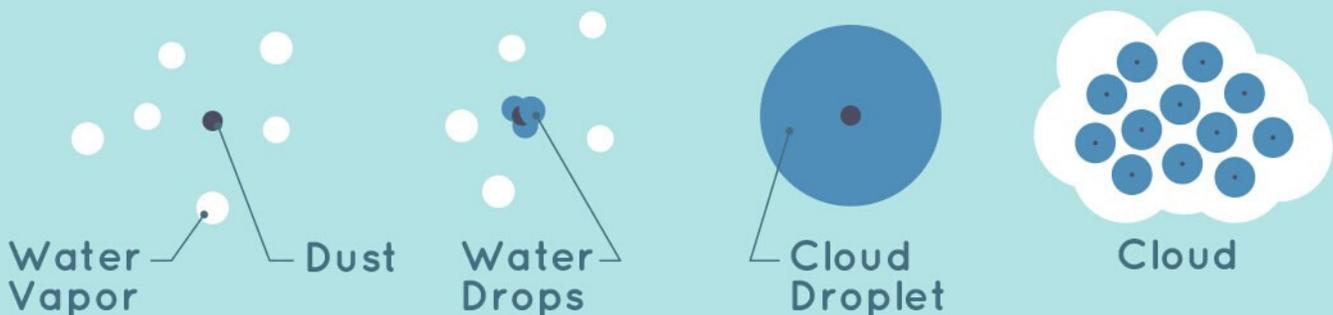


Wacky Weather with Winona Public Library

We've been having some pretty wacky weather lately: fog, rain, snow! Try these activities at home to talk about what makes that weather happen.

What makes a cloud? Clouds are created when water vapor, an invisible gas, turns into liquid water droplets. These water droplets form on tiny particles, like dust, that are floating in the air. The process of water changing from a gas to a liquid is called "condensation," and when gas changes directly into a solid, it is called "deposition." These two processes are how clouds form. (climatekids.nasa.gov)



Have you ever seen fog? It usually hangs around Sugar Loaf, but sometimes you can even walk through fog! If you've ever done that, you've walked through a cloud! Now, let's see if we can make our own clouds. Follow the steps on the next page to make clouds at home!

Cloud in a Jar (adapted from researchparent.com)

Materials:

- Hot water (Hot water from the sink is great!)
- A match
- 3 or 4 ice cubes
- A jar (we used a mason jar)
- A lid
- Optional: A small cutting board, pot holder, or other insulating surface if you'll be doing the experiment on something cold, like granite.



Instructions:

- Fill your container about 1/4 to 1/3 full of hot water. The water does not need to be boiling.
- Have a grown up light a match and place it inside the container. Hold it there for a second or two. Don't burn your fingers!
- Drop the match into the jar.
- Place the lid on the jar (it doesn't need to screw on, just keep the water vapor from escaping). Then place ice cubes on top of the lid.
- Wait for 1 to 2 minutes.
- Observe the cloud inside your jar. If there ISN'T a cloud inside your jar, it probably means you don't have enough water vapor or smoke. Try again, but this time, go a little faster. Try not to give your water time to cool off before you light the match. Put the lid on right away after you drop the match, so the smoke doesn't have time to escape. If you're doing the experiment on a cool surface, you may want to use a pot holder or trivet to keep heat from escaping through the bottom.
- Take the lid off the jar and watch the clouds rise!
- If you don't want to use a match, you can try using hair spray. The water vapor can condense onto the particulates of hairspray instead of the smoke. Just remember to be fast when putting on the lid and adding ice after spraying a little hairspray inside the jar.



What is rainfall?

We learned above how water droplets form clouds. If those clouds are too full of water droplets, they get too heavy and start to get rid of some of them. This is what we call rain! To make your own rain clouds, follow the instructions below.

Rain in a Cloud

Materials:

- Clear container
- Water
- Shaving cream
- Food coloring (or watercolor paint)
- Dropper (or anything else you have at home that will allow you to let go one drop at a time)



Instructions:

- Fill the container halfway with water
- Spray a bit of shaving cream until it reaches just above the top of the container
- Take your dropper (or straw or whatever else you can find!) and suck up some of the food coloring.
- Start dropping the food coloring on the shaving cream one drop at a time.
- Count how many drops it takes before your “rain” starts leaking through the “cloud.”
- Watch the rains fall!



Make your own weather wheel!

Use paper, crayons, and whatever other craft supplies you'd like to make your own weather wheel like the one below! Be sure to make an arrow so you can point to what the weather looks like that day. What is the weather like today? Have fun!



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