



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences –particularly students of color and girls – by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

You will observe the water cycle in action and create a model. You will explore how water moves around our planet.



Supplies Required:

Kindergarten through 4th Graders

Clean used milk jug (quart or gallon)
Scissors
Measuring cup
Heavy object (suggestion: rock)
Journal and pen
Ziploc bag
Sharpie
Food dye
Tape
Water

5th through 8th Graders

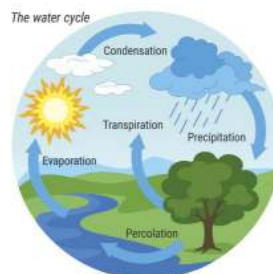
Clean used milk jug (quart or gallon)
Scissors
Measuring cup
Heavy object (suggestion: rock)
Journal and pen
Glass jar or mug
Ceramic plate
Ice
Tape
Boiled Water

Video

Watch Ms. Baunee create her own water cycle: <https://tinyurl.com/t4q4yuw>

Overview

The water cycle describes how water goes from the air to our oceans and lakes, to our ground, and back up again! We are going to observe the water cycle on a large and small scale. On a large scale, we will collect rain, also known as *precipitation*, in used milk jugs. On a smaller scale, we will see water *evaporate*, *condense*, and *precipitate*! The sun heats up liquid water and turns it into a gas, or water vapor, through a process called evaporation. When this warm water vapor, gas, hits cold air it turns back to liquid, a process called condensation. Clouds are just cooled droplets of water vapor! Once the clouds get too heavy with vapor, the water is released, as precipitation, from the clouds in the form of rain, snow, and hail. Take a look at this diagram to see how our water cycle works!



Instructions

Kindergarten through 5th Graders

1. Use scissors to cut out the spout for a larger mouth to catch rain.
2. Place the heavy object into the jug as so that wind cannot blow it away!
3. Pour a cup of water into the jug. Use a sharpie to indicate where the water line is and label it as "1 Cup." Repeat with increasing amounts of cups. Do not pour water out in between steps. Pour water out at the end.
4. Place rain collector in your yard in a safe spot.
5. Observe rain collector over the course of the week. Record the water level day by day. Does it increase by the same amount every day? How much water have you collected in one week?
6. Draw the sky on a Ziploc bag.
8. Pour 1/4 cup of water into the bag.
9. Drop 1-2 drops of food dye into water. Seal bag.
10. Tape bag to a window.
11. Observe bag over the course of several days. You should see the water in the bag turn into vapor (evaporation), then turn back into liquid on the window (condensation), and fall down once it gets too heavy (precipitation)!

5th through 8th Graders

1. Repeat steps 1-6 on left side.
2. Boil 1 cup of water. Be careful, use parental guidance!
3. Pour boiled water into glass jar. Don't cover it!
4. Wait 3 minutes before continuing.
5. "Place ceramic plate on top of jar. Place ice on top of plate
6. Observe model over next 5 minutes. You should see water condensing on the bottom of the plate and sides of the glass. Soon, the condensation on the bottom of the plate will fall, demonstrating precipitation!"
of the plate will fall, demonstrating precipitation!"

Additional Resources

1. Extra directions for the water cycle in a bag activity: <https://tinyurl.com/ya8g8crz>
2. If you don't have food coloring at home, use these fun alternatives: <https://tinyurl.com/yx49edlx>
3. Additional directions for the jar activity: <https://tinyurl.com/vgx2ebk>

Share It Out

Share on social media: take videos of your water cycle demonstrations! Name each stage of the water cycle as you go along. How many different ways can you use the rainwater you collect? Try using it water plants or wash the car! Share your way of using the water!

Use hashtags:

#WaterCycle
#ProjectExploration
#StemAtHome

Share via PE's website: Students who complete STEM@home activities and share what they learned with the PE team via our website will earn points which can be traded in for cash prizes at the Explore Store. Your project number is 207. Learn more at www.projectexploration.org/explore-store

Join PE's character contest!

Design a STEM character who will lead kids through activities and be featured on our website and in our STEMbooks. Cash prizes will be awarded to the top 3 finalists. Learn more at www.projectexploration.org/character-contest.



Call or text us for help: 312-772-6634

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