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## GLOBE OBSERVER: CLOUDS

PROVIDED BY NASA & THE GLOBE PROGRAM



### DESCRIPTION:

Galway Library is doing a Steam program on clouds. As part of this program will be doing various Clouds activities over the next few month. Come back regularly for the next activity.

But the most important activity is we are partnering with **Nasa & the Globe Program** through **SciStarter**. We need your help!

SciStarter is an online Citizen Science community dedicated to improving the citizen science experience. Over 3,000 projects and events are searchable by location, scientific topic, and age level, and by joining SciStarter, members can track their contributions and provide valuable feedback.

Learn more about [citizen science](#) and check out these [Ten Principles of Citizen Science](#).

GLOBE Observer is an international citizen science initiative to understand our global environment. Your observations help scientists track changes in clouds in support of climate research. Scientists also use your data to verify NASA satellite data. By having fun and submitting your observations, you can help students of all ages do real scientific research as part of the GLOBE Program.

### TO GET INVOLVED:

- Visit [SciStarter Globe Observer](#) for details and to sign up.
- Photograph clouds, record sky observations and share with NASA

\*\* Made possible by SALS Seed Challenge Grant \*\*

# FUN ACTIVITY 1: CLOUD IN A JAR



**Cloud In A Jar**  
Simple Weather Science

PROVIDED BY LITTLE BINS

## MATERIALS NEEDED:

If you want to learn all about how clouds are formed, let us dig in. Great for kids to set up and do themselves too.

All you need are four things:

- Warm water
- Jar with a lid
- Ice cubes
- Aerosol hairspray

## EXPERIMENT SET UP:

Setting up this cloud experiment is a cinch.

STEP 1: Pour warm water (not boiling) into the jar and swirl it around to warm the inside of the whole jar.

STEP 2: Turn the lid upside down and place several ice cubes on top of it. Place the lid onto the jar.

STEP 3: Quickly remove the lid and give a quick spray of aerosol hairspray. Replace the lid.

STEP 4: Remove the lid and watch the cloud escape!

## OBSERVATIONS:

Wait and watch to see what happens!

Give your kids a chance to ask questions, make observations, and explore. Why not test the 5 senses and encourage them to look, listen, feel, taste, and maybe hear what is happening.

Ask open-ended questions to get kids thinking! What changes could they make to this experiment?

- Could you add color to the water?
- What would happen if you tried a different liquid and compared the results?

Learning how to be a scientist is all about asking questions, testing ideas, and finding solutions!

## **THE SCIENCE BEHIND THE CLOUD EXPERIMENT**

### **FACTS ABOUT MAKING CLOUDS**

Three things are needed to make a cloud. First, you need warm moist air. Next, you need a cooling process. Lastly, you need a cloud condensation nucleus or something to start the cloud. An example of this could be a dust particle!

By pouring warm water into a jar and trapping it, you create the first step which is warm, moist air. This warm air rises and meets with the cool air at the top of the jar which is made by the ice cubes.

The aerosol hairspray provides the cloud condensation nuclei. As the water vapor inside the jar cools down, it begins to form around the hairspray nuclei into many droplets. When you remove the lid, the swirling cloud is released!

### **TEST MORE IDEAS!**

Why not test what happens when you add cold water to the jar instead of hot water. This will help kids to better understand why both warm air and cool air are needed to form the cloud!

Follow up activities:

- Go outside and have the kids look up into the sky at the clouds. Discuss the experiment and what could have formed these clouds.
- Have them look for shapes in the clouds, like animals, characters, mountains, etc.
- Have them draw what they see and post to our website.