

DIY Library Program

Mason Jar Experiment: Cloud in a Jar

Recommended for Adults

Mason jars aren't just for canning anymore! These common household staples have become one of the most popular items for DIY projects and home décor ideas, ranging from growing miniature gardens to containing festive lighting. Another creative avenue is using them for fun science experiments, such as forming a cloud in a jar.

We've all looked up at clouds passing overhead and seen familiar objects in their shapes, but what exactly are clouds and how do they form? The easiest answer is that clouds form when water vapor, a gas, turns into liquid water droplets due to condensation. For a bit more detail, the process begins when moist warm air, also known as a thermal or updraft, rises from the surface of the earth. As the thermal continues to rise, it begins to cool and expand through convection, or the transfer of heat. When it reaches the saturation point where relative humidity is 100 percent, condensation occurs, and the water droplets begin to form into clouds.¹

Here's a fun fact: If you have ever walked through fog, you have really walked through a type of cloud that has formed closer to land!

In this DIY Library Program, we'll show you how to create the same effect, but in the confined space of a mason jar!

Questions for Discussion

- Why do you think there are different types of clouds? What forces affect their shapes?
- The thickness of fog can vary, causing differences in visibility. What variables alter the thickness of fog?
- Clouds are a very common literary symbol in poetry (think of the poem "I Wandered Lonely as a Cloud" by William Wordsworth, for example). What are some things that clouds can symbolize?

Materials Needed

- Mason jar
- Ice cubes
- Hairspray
- Hot water

¹ "Clouds and how they form" UCAR Center for Science Education. Accessed 05/12/2020. URL: <https://scied.ucar.edu/learning-zone/clouds/how-clouds-form>

Instructions



Step 1: Pour a small amount of hot water into the jar and tighten the lid. Swish the water around so it coats the inside. Note: The water needs to be hot, but not to the point of boiling.



Step 2: Remove the lid and place it upside down on the jar. Add a few ice cubes inside the lid.



Step 3: Lift the lid off and add a small amount of hair spray. Quickly place the lid back on. (Note: the hairspray gives the water vapor something to condense onto and helps the cloud form more quickly and visibly).

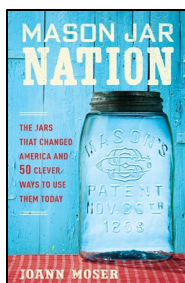


Step 4: Let the jar sit for several minutes and you should start to see a cloud forming inside. Remove the lid and watch your cloud float out!

DIGITAL RESOURCES AVAILABLE THROUGH LA COUNTY LIBRARY

eBooks & Audiobooks

LA County Library offers numerous resources that can help you learn more about buoyancy and science. Here are just a few, all of which are available as eBooks on [OverDrive and Libby](#), and through our other digital content providers:



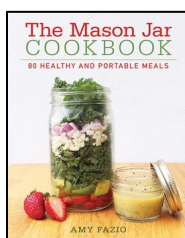
Mason Jar Nation: The Jars that Changed America and 50 Clever Ways to Use Them Today by JoAnn Moser on Hoopla tinyurl.com/yakh4nns



The Mason Jar Scientist: 30 Jarring STEAM-Based Projects by Brenda Priddy on Hoopla tinyurl.com/y6wwptbm



Mason Jar Crafts for Kids: More than 25 Cool, Crafty Projects to Make Your Friends, Your Family, and Yourself! By Linda Z. Braden on Overdrive tinyurl.com/ybbvjy6e



The Mason Jar Cookbook: 80 Healthy and Portable Meals for Breakfast, Lunch and Dinner by Amy Fazio on Hoopla tinyurl.com/y77h7vz6



Mason Jars for Preppers: A Beginner's Guide to Using Mason Jars for Quick and Easy Survival Situations by Evelyn Scott on Hoopla tinyurl.com/y94gvroe