

Fog in a Jar

Introduction:

Clouds are big, heavy, and usually high in the sky. Use the science of what makes a cloud work and bring one into your own home!

Think About This:

How is fog created?

Materials:

-  A tall glass, cup, or jar, such as a water glass or washed-out sauce jar. **Do NOT use plastic**
- 1 sandwich-sized zipper freezer bag
- 1 rubber band or other elastic band
- 10 ice cubes
- Boiling water
 - Boiling water requires adult supervision and assistance
- Matches
 - Lighting a match requires adult supervision and assistance



Safety Precautions



This activity involves both matches and boiling water. Adult supervision and assistance is required.

Directions:

Use water vapor, smoke, and temperature to create your own fog in a jar using common household items. Adult assistance required.

- 1 Boil 1/2 cup to 3/4 cup of water using a kettle or on the stove.
- 2 Carefully pour the boiling water into a glass or jar a quarter of the way full.
- 3 With adult assistance, light a match above the jar and drop it inside the jar.
- 4 Attach the freezer bag atop the jar with the open side facing upwards and secure with a rubber band.
- 5 Place ice cubes inside of the freezer bag.
- 6 Watch as fog forms in the jar!



Fog in a Jar Continued

What's Happening?

Fog is a type of cloud that forms in certain weather and temperature conditions. Fog forms when there is a lot of water vapor in the air and when the temperature of the Earth's surface is warmer than the air. As water vapor in the air cools, it forms around dust particles in the air and **condenses**, or turns into its liquid form.

In this experiment, the hot water in the jar represents the Earth's surface and provides the water vapor. As the match smoldered after being thrown in the jar, tiny particles joined the water vapor in the jar. The ice represents the cool air above the Earth's surface and caused a temperature difference that let the water vapor condense around the particles from the match, just like water vapor in the sky condenses around dust particles.

