

Make a rain cloud in a jar



How does rain form?

- As part of the water cycle, water in oceans, lakes, and rivers turns into gaseous water vapor when heated by the sun in a process called evaporation. The evaporated water rises into the air. As it goes higher, it encounters cooler and cooler temperatures, which causes the water vapor to condense back into liquid water droplets. When enough of these liquid water droplets come together, they form a cloud.
- The liquid water droplets that make up a cloud are very, very small – about 1/100 mm. At this size, the water droplets are so small they practically float on air. They are far too small to drop to the ground as rain.
- However, water droplets inside a cloud are always moving and bumping into each other. Sometimes, water droplets collide and join together, forming bigger water droplets. If these droplets reach at least 1/10 mm in size, they are big enough to fall to the ground as rain.

Making a rain cloud in a jar

We decided to model the rain formation process by making a rain cloud in a jar. To do this, we gathered the following materials:

- Shaving cream
- Clear jar or clear cup
- Water
- Container of water dyed blue (you must dye the water so it will be seen when it falls through the rain cloud)
- Pipette (we own these pipettes but I also love the one in this set)



Instruction:

1. Fill the jar/clear cup nearly to the top. Leave about 2" of space between the top of the cup.
2. Fill the rest of the cup space with shaving cream. The shaving cream is our "cloud".



3. Use the pipette to drip blue water onto your rain cloud
4. Keep adding blue water to our cloud, and eventually the cloud became saturated enough to start "raining." We saw beautiful streaks of blue water falling from the cloud into the water below.



And there we had a rainstorm in a jar.
But this rain storm, thankfully, didn't require an umbrella.