The Science of a Cloud

The Vocabulary of Weather

To make this a true science lesson, introduce these three "Big Weather" terms:

- Evaporation: The warm water in the jar turns into invisible gas called water vapor.
- Condensation: When that warm gas hits the cold lid (from the ice), it cools down and turns back into tiny liquid droplets.
- Cloud Seeds (Aerosols): In the real world, water vapor needs something to "grab onto"—like dust, smoke, or sea salt. In our jar, the hairspray acts as these "seeds."

Advanced Procedure & Variables

To turn this from a demonstration into a true experiment, try changing one thing (a variable) to see what happens:

- The Particle Test: Try the experiment once with hairspray and once without.
- Result: Without the spray, a cloud usually won't form because the water vapor has nothing to cling to!
- The Temperature Test: Use lukewarm water instead of very hot water.
- Result: The cloud will be much thinner because there is less evaporation happening.

Name:_____

Questions

1. What happened to the air inside the jar right after the hairspray was added?

a) It turned into ice.

b) It became foggy and swirled around.

c) It turned bright blue.

d) Nothing changed at all.

2. What is the "job" of the ice cubes on top of the lid?

a) To keep the glass from breaking.

b) To make the water vapor cool down and condense.

c) To provide water for the cloud.

d) To freeze the hairspray.

3. Cause and Effect: If we removed the ice from the lid, what would happen to the cloud?

a) The cloud would grow bigger and turn into a storm.

b) The cloud would disappear because the air would warm up.

c) The jar would fill with rain immediately.

d) The cloud would stay exactly the same.