

Activity: Precipitation Lab

Name: _____

Materials needed:

- A heat source to boil water
- A Pyrex or other container with a handle
- A pie pan or other container
- A pot in which to boil water
- Ice cubes

Name: _____

Name: _____

Pre-Lab Discussion Questions

1. Prior to the activities discuss the following questions:
 - What is rain? How does rain happen?
 - What is snow? How does snow happen?
 - What is hail? How does hail happen?
 - Ask students immediately before activity: What do you think will happen to the bowl of ice? To the steam? To the bottom of the bowl?
2. Tell the students they need to focus on these questions during the activity.
 - What do you see happening on the bottom of the bowl?
 - What do you see happening in the pie tin?
 - How does the water get on the bowl?
 - Are the water drops on the side of the bowl the same size? Why?
 - Which drops are falling from the bowl? Why?
 - Which drops look like rain?
 - Which drops look like a cloud?
 - How are the big drops formed?

Procedure:

1. Set up this activity where students can gather around you and see all components of the experiment.
2. Place a pot of water on the heat source until it comes to a boil.
3. Fill the Pyrex pot with ice.
4. Once the water is boiling, hold the bowl of ice over the steam.
5. Place the pie tin so that the water which drips from the bottom of the bowl will collect in the tin.
6. Continue to hold the pot of ice over the boiling water until all the students have had a clear view of what is happening on the surface of the pot with the ice.

Post-Lab Discussion Questions

1. After the activity have students answer the following questions with a partner:
 - What did you see happening on the bottom of the bowl?
 - What do you see happening in the pie tin?
 - How did the water get on the bowl?
 - Were the water drops on the side of the bowl the same size? Why?
 - Which drops were falling from the bowl? Why?
 - Which drops looked like rain?
 - Which drops looked like a cloud?
 - How were the big drops formed?

Explanation:

The small misty drops which have condensed onto the side of the bowl of ice represent a cloud. The winds in a cloud blow the small drops around so that they collide with one another. During these collisions, some drops will combine with others making bigger drops. When the drops become so large that the upward motion of the air cannot keep them in the sky, the drops fall as precipitation. If the temperature is cold enough the drops will freeze as crystals, making snow. If the drops get together first and then freeze the precipitation will be hail.

