

# How Hail Forms

Demonstrate how hail forms and how it eventually falls to the ground.

## Difficulty / Time Commitment:

7 out of 10

## Coolness Factor:

5 out of 10

## Materials:

- blow dryer
- any blue object lighter than a ping-pong ball
- ping-pong ball painted blue
- tennis ball wrapped with white tape

## Instructions:

1. Turn on the blow dryer to a speed that will just hold the ping-pong ball at the same level.
2. Demonstrate how the upward wind from the blow dryer will blow away the lightest blue object (tiny raindrop), hold up the ping-pong ball (raindrop), but not hold the white tennis ball (hail).

## What Happened?

Some imagination is needed here. The blow dryer represented the upward motion of air associated with strong updrafts that can exist in thunderstorms. The lightest blue object represented a tiny raindrop that the updraft carries to the top of the cloud. The ping-pong ball represented a raindrop that has grown from its previous state as water collects on it. The raindrop is now suspended at the same elevation high in the cloud. Remember, the raindrop got to the top of the cloud because it used to be lighter. As the raindrop is suspended at the top of the cloud, it begins to freeze because temperatures are quite cold high up in the thunderstorm cloud. As it freezes, it grows and becomes heavier, eventually so heavy that it falls to the ground as hail (white tennis ball).

## **Basic Concepts Learned**

- Hail forms in strong updrafts that can keep a raindrop suspended for a long time as it grows in the top of the cumulonimbus (thunderstorm) cloud.