

Make a Thunderstorm

Grade Level: 6th Grade

Title of Lesson: Make a Thunderstorm

Unit Title: Meteorology

Performance Standard(s) Covered: S6E4. Students will understand how the distribution of land and oceans affects climate and weather.

- a. Demonstrate that land and water absorb and lose heat at different rates and explain the resulting effects on weather patterns.
- b. Relate unequal heating of land and water surfaces to form large global wind systems and weather events such as tornadoes and thunderstorms

Essential Question: How do winds form a thunderstorm?

Objective: Students will visually see how warm air mass and cool air mass interact to form the foundation for a thunderstorm.

Key Words and Terms: Thunderstorm, cool air mass, warm air mass, convection currents,

Learning Activity

Abstract (limit 100 characters): Students will use their knowledge of warm and cool air mass to make a thunderstorm using hot and cold water.

Materials Needed:

Clear container the size of a shoebox (one per 3-4 students)

Red food coloring

Blue food coloring

Ice cubes (three per student group)

Hot water (enough to fill 2/3 of container)

Safety Concerns: Caution- hot water will be hot. Please use caution when handling hot water

Procedure:

1. Prepare ice cubes the day before the experiment. Fill ice cube tray with water and add 2-3 drops of blue food color per ice cube. Let it freeze overnight to form blue ice cubes.
2. On the day of the experiment, have students in groups of 3-4 students.

3. Assign each student with the following tasks: Have one student fill the clear container with 2/3 of hot water, have one student get three ice cubes for their clear container, and have the last student be the “red food coloring dropper.” If there is a fourth student, he or she will be in charge of clean up.
4. Have the student who is in charge of ice cubes place them on side of the container and have the student in charge of red food coloring drop 3-4 drops on the opposite side of the container.
5. As the blue ice cubes melt the cool blue water should flow to the bottom and the warm red water should flow to the top.

Notes and Tips: Have the students explain what convection currents are and how to form a thunderstorm before the experiment. After they see the experiment, have someone explain again how warm and cool air masses interact to form a thunderstorm.

References: <http://www.weatherwizkids.com/experiments-make-thunderstorm.htm>
<https://www.youtube.com/watch?v=7xWWowXtuvA>

