

Weather Fronts: Understanding the Movement of Air

Lesson Plan on types of weather fronts with various conceptual demonstrations

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A. State Standards Addressed

- a. Standard 6.1: The student will demonstrate an understanding of technological design and scientific inquiry, including process skills, mathematical thinking, controlled investigative design and analysis, and problem solving.
 - i. Indicator 6-1.1: Use appropriate tools and instruments (including a spring scale, beam balance, barometer, and sling psychrometer) safely and accurately when conducting a controlled scientific investigation
 - ii. Indicator 6-1.4: Use a technological design process to plan and produce a solution to a problem or a product (including identifying a problem, designing a solution or a product, implementing a design, and evaluating the solution or the product).
 - iii. Indicator 6-1.5: Use appropriate safety procedures when conducting investigations
- b. Standard 6.4: The student will demonstrate an understanding of the relationship between Earth's atmospheric properties and processes and its weather and climate. (Earth Science)
 - i. Indicator 6-4.4: Summarize the relationship of the movement of air masses, high and low pressure systems, and frontal boundaries to storms (including thunderstorms, hurricanes, and tornadoes) and other weather conditions.

B. Objectives

- a. Students will learn about the various types of weather fronts
- b. Students will learn what happens to air of different temperatures when they combine
- c. Students will be asked to draw various weather fronts and depict the movement of air as the fronts meet.
- d. Students will learn about weather patterns associated with each front.
- e. Students will see some laboratory demonstrations to demonstrate the difference between cold versus hot air.

C. Lesson Plan

- a. **Engage.** The lesson will begin with a quick PowerPoint presentation. The PowerPoint presentation will introduce the students to the various types of weather fronts: (1) warm front, (2) cold front, (3) stationary front, and (4) occluded front. A quick video will be shown to demonstrate these types of fronts to the students. The video is extremely helpful because there are conceptual diagrams along with live video representing each front. The video can be found at: <http://videos.howstuffworks.com/hsw/5670-atmosphere-weather-fronts-video.htm>.