



Atmosphere: Teacher Tips & Helpful Hints

N.C.S.S: 7.E.1 Understand how the cycling of matter (water and gases) in and out of the atmosphere relates to Earth’s atmosphere, weather, and climate and the effects of the atmosphere on humans.

- The activity is broken up into three different parts:
 - **Part 1: Layers of the Atmosphere** (7.E.1.1)
 - **Part 2: Properties of Air** (7.E.1.1, & 7.E.1.3)
 - **Part 3: Cycling of Water** (7.E.1.2)

Part 1: Layers of the Atmosphere

- There are 10 Earth’s Interior Event Cards.
- Resources that students may use to rearrange cards:
 - <https://www.nationalgeographic.org/encyclopedia/atmosphere/#:~:text=1%2F17-,We%20live%20at%20the%20bottom%20of%20an%20invisible%20ocean%20called,also%20part%20of%20Earth's%20atmosphere.>
 - <https://scied.ucar.edu/atmosphere-layers>
- There is a *Layers of the Atmosphere: Student Activity Sheet* available.

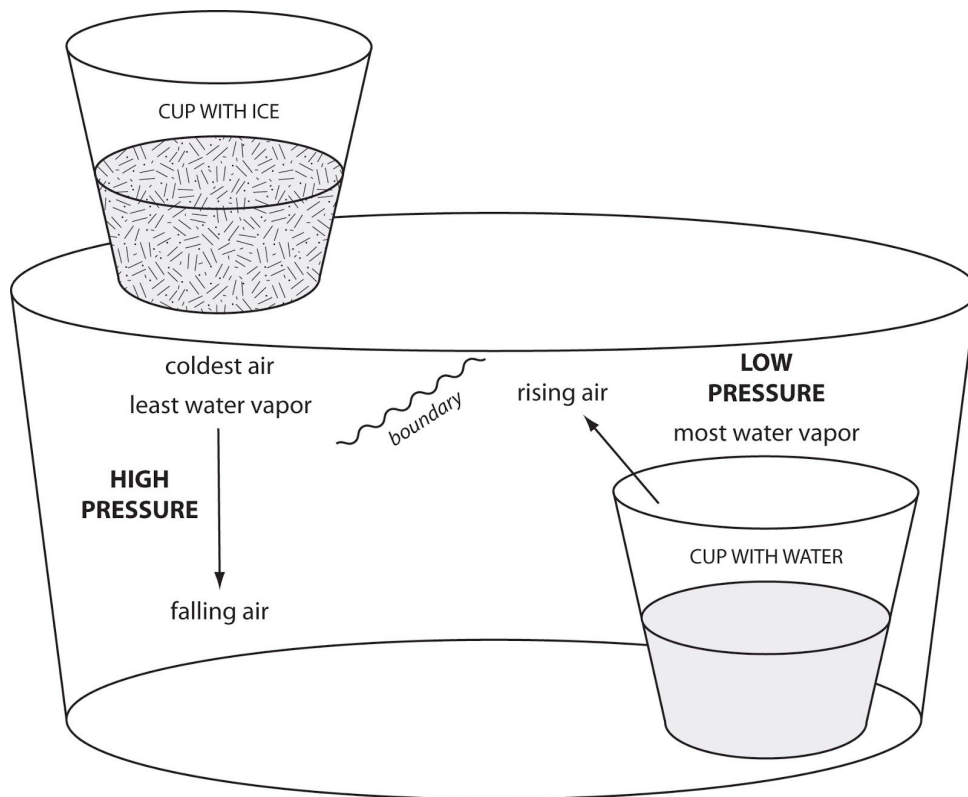
Part 2: Properties of Air

- Students have four chances to complete **Part 1: Keep the Cotton Dry - Engineering Challenge**.
- To keep the cotton ball dry, the cotton ball should be stuck to the bottom of the 1oz. Cup with a piece of double-stick tape. The 1 oz. cup needs to be turned upside down when placed into the 9 oz. cup of water. The popsicle stick and rubber band create a “handle” to submerge the cup into the water. See photo.
- Students need 1 can of clear non-diet soda for **Part 2: The Rise and Fall of Raisins!**
- There is a *Properties of Air: Student Activity Sheet* available.



Part 3: Cycling of Water

- This activity needs to be done on a clear day when the sun is shining.
- Students will use 1oz. cups to make ice.
- Water should collect inside the lid directly below the ice.
- For **Part 2: Challenge** designs that work well absorb and trap more heat
- **Part 3: Model the Atmosphere** answer key on page 2.



N.C.S.S Clarifying Objectives

- 7.E.1.1 Compare the composition, properties and structure of Earth's atmosphere to include mixtures of gases and differences in temperature and pressure within layers.
- 7.E.1.2 Explain how the cycling of water in and out of the atmosphere and atmospheric conditions relate to the weather patterns on earth
- 7.E.1.3 Explain the relationship between the movement of air masses, high and low pressure systems, and frontal boundaries to storms (including thunderstorms, hurricanes, and tornadoes) and other weather conditions that may result.