

AirCap

Assembly Instructions

The CPO Science AirCap shows that air has mass. With the AirCap, students see that the mass of a given volume of air changes with pressure when temperature is constant. With a pressure gauge attached you can also show that pressure is reduced with decreasing temperature. Below are critical safety instructions for using the AirCap.

Parts Checklist

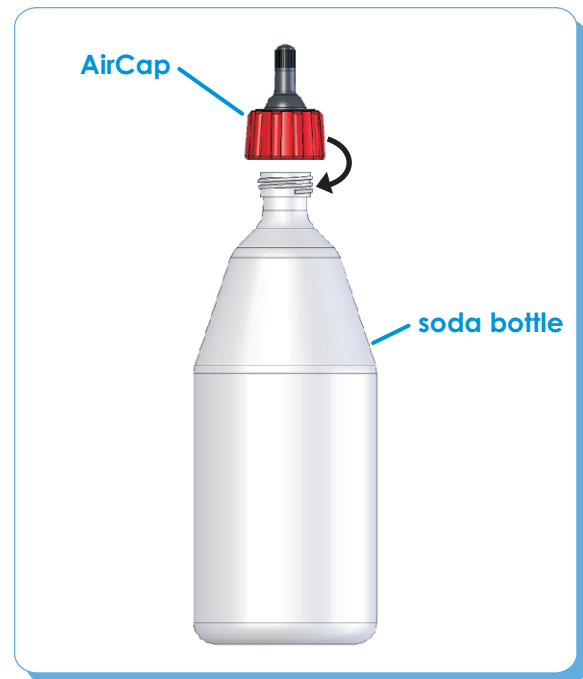
The following items are required to perform the AirCap investigation:

- AirCap
- one-liter carbonated soda bottle
- bicycle pump with pressure gauge
- mass balance

Assembling the AirCap

To assemble the AirCap, thread the AirCap onto the top of a one-liter plastic carbonated-soda bottle. Make sure that the plastic ring around the bottleneck has been removed prior to assembly. The AirCap will not fully tighten if the plastic ring is intact.

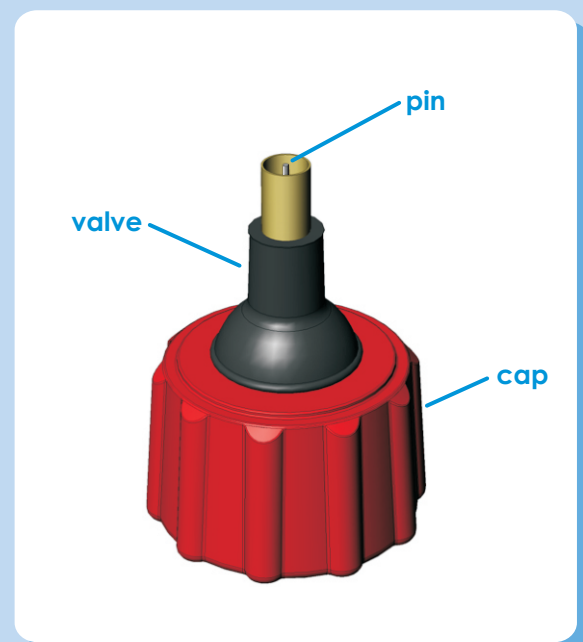
NOTE: It is imperative that a plastic carbonated-soda bottle is used. DO NOT use a water bottle. The thin plastic wall of a water bottle will not withstand the pressure required to perform the investigation.



Safety Guidelines

ALWAYS follow the safety guidelines listed below:

1. Use low pressure, and NEVER exceed 70 PSI (480kPa).
2. Always wear safety goggles when working with gasses and liquids under pressure.
3. Make sure that the valve stem is securely seated before pumping.
4. Always de-pressurize the container BEFORE attempting to remove the cap from the bottle.
5. To de-pressurize the container, depress the pin inside the top of the valve stem until no more air is released when the pin is depressed.



For activities, consult your *Teacher's Guide*.