Imploding Can

Sections

Joey Scouts | Cub Scouts | **Scouts** | **Venturer Scouts** | **Rover Scouts**

Scouts VICTORIA

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Challenge Areas

COMMUNITY | CREATIVE | OUTDOOR | PERSONAL GROWTH

Scout Method Elements

COMMUNITY INVOLVEMENT | **LEARNING BY DOING** | NATURE AND THE OUTDOORS | PROMISE AND LAW | **PERSONAL PROGRESSION** | PATROL SYSTEM

SYMBOLIC FRAMEWORK | YOUTH LEADING, ADULTS SUPPORTING

SPICES Growth Areas

CHARACTER | EMOTIONAL | **INTELLECTUAL** | PHYSICAL | SOCIAL | SPIRITUAL

The Adventure

With your patrol or unit, learn about how temperature effects air pressure and what happens when there is different air pressure inside something to outside it.

Plan

1. Investigate air pressure and what aspects effect air pressure.
2. Investigate the properties of a can. What is it made out of?
3. Investigate transfer of heat and what types of materials are affected by heat. Do you think the can will heat up easily? What about water? How do things react with rapidly heated or cooled?
4. Read the safety information and discuss with your leaders or another appropriate adult what safety equipment, precautions, and supervision may be required. Ensure that you have these safety measures in place before starting the ‘Do’ section. A risk assessment should also be completed.
5. Collect the materials you need for this experiment. You will need the following: a clear bowl, cold water, ice, a heat source, room temperature water, tongs, and an empty soft drink can.

Do

1. Make sure everyone knows the safety requirements and are wearing correct protective equipment
2. Completely fill a clear bowl with cold water. The colder the water the better so it is best if the water is refrigerated and some ice cubes have been added but water straight from the tap will work.
3. Add about 2 tablespoons of water to an empty soft drink can.
4. Carefully boil the water by holding the can (with tongs) over the flame of the gas burner. You will want to keep holding the can over the flame until you see steam rising from the can. Alternatively, you can heat the can on a frying pan, hot plate, or gas barbeque by placing the can on this heat source.
5. Turn off the heat source and move the can to above the bowl of water. Quickly, turn the can upside down and submerge the can with the opening facing down. The cold water should create a seal with the can.
6. Watch and listen to what happens.

Review

1. Did the can react how you thought it would? Why or why not?
2. What did you enjoy most about this activity and what did you learn?
3. Do you think anything could be done differently to change how the can reacts? How else might you heat the experiment and what do you think would happen if there wasn’t water in the can?
4. Can you think of other areas in your life where air pressure may play a role?

Safety

- Heat risk: This activity requires the use of a gas burner and fire. As such, there is a risk of burns. Care should be taken including using heat-proof gloves to hold the tongs.
- Gas risk: As a gas burner is being used, there is the risk of a gas leak. An adult should ensure that the gas is turned off following use.

Variations

- You could investigate the science behind this further by changing how much water is put in the can. What happens if you put in 1 tablespoon or 8 tablespoons instead? Although be careful if adding more water as you don’t want boiling water to spill out. You can also investigate how different water temperatures effect the experiment.
- This activity can be done with Joey and Cub sections as a demonstration.