Dry Ice Fog

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

Investigate dry ice and changes to states of matter with impressive results.

Plan

1. Investigate dry ice - what is it and what is it made out of, what can it be used for, what state of matter is it in, etc?
2. Investigate states of matter and changes of states of matter - what are they called and what is happening?
3. 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.
4. Gather all the equipment that you need for your dry ice experiments. You will need the following: dry ice (ideally in the form of pellets - a few pellets per experiment should be fine), a small temperature-proof bowl (plastic or pyrex), water (the warmer the better), insulating gloves, non-metal tweezers or spoon, and PPE.

Do

1. Place about 2 cm of water into the temperature-proof.
2. Using the non-metal tweezers or spoon, carefully place around 7 pellets of dry ice into the bowl.
3. Step back and observe what happens.

Review

1. Did the dry ice react as you expected it to? Why or why not?
2. What do you think you can see in the reaction?
3. Do you think that the reaction would differ depending on the temperature of the water? Why or why not? How could you measure what is being produced?
4. What do you think you could do differently to improve this experiment?
5. What did you enjoy most about this experiment? What did you learn?
6. How do you think the experiment may differ if you changed some of the variables such as a different sized container, more or less dry ice, etc?

Safety

- Dry ice is very cold. Ensure you are wearing insulated gloves while handling.
- Avoid intentional excess inhalation when experimenting as there will be higher levels of carbon dioxide present.
- Dry ice sublimates into gaseous carbon dioxide which can be hazardous to your health and lead to asphyxiation. As such, dry ice should never be stored in an enclosed environment including when transporting. Ensure that dry ice is either transported outside of the vehicle hub or windows of the vehicle hub are down. Ensure boxes are opened regularly on longer trips or storage to prevent excess pressure build up.
- Ensure you have consulted the MSDS for dry ice to familarise yourself with all risks present with dry ice.

Variations

- Depending on the Challenge and Special Interest Area, the discussion around this experiment can change. For instance, an Environment Special Interest Area may look more at what carbon dioxide is, how it effects our environment, and what we can do to minimise our production of it.
- This Challenge Card pairs well with other dry ice based Challenge Cards such as Dry Ice in a Film Canister and Inflate a Balloon with Dry Ice.
- This Challenge Card can work well as a demonstration for younger sections.