Discover Dairy - Ice Cream

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

Find out more about dairy products while making your own ice-cream.

Plan

1. Investigate sources, components, and products of diary including discussion around what sorts of animals produce milk. As a challenge, try to find the most obscure diary product you can – for instance yak butter or camel milk. What is the most obscure type (or flavour) of ice cream you can find?
2. Investigate what is required to make ice-cream considering both ingredients and processes, including discussion around where these can be sourced from on both an industrial and homemade scale.
3. Investigate melting points and the effect of additions – such as salt – to the states of matter of water. Based on this, hypothesis the effect of adding salt to the ice and how this may help make your ice cream.
4. Investigate what effects the texture of ice cream and hypothesis what texture your ice cream might have.
5. Collect the materials required for the experiments and recording your results. You will need the following: milk, thickened cream, sugar, vanilla essence or other flavouring, a small zip-lock bag, a large zip-lock bag, ice, salt, measuring cups, a spoon, ice cream toppings (optional).
6. Read the safety requirements and discuss with your leaders/adult supervisors what supervision and safety requirements might be needed.

Do

1. Set up the experiment and record initial observations of the ingredients. Note: This challenge works best when the milk and cream are cold.
2. Make sure everyone is aware of the safety rules.
3. In a small zip-lock bag, combine 60 mL thickened cream, 60 mL milk, 1 teaspoon sugar, and a few drops of vanilla essence or other flavouring.
4. Make sure that the small zip-lock bag is tightly sealed (leaders in younger sections should double check the seal before progressing to the next step) and place the small zip-lock bag in a larger zip-lock bag with 2 cups of ice and 6 teaspoons of salt before sealing the large zip-lock bag.
5. Gently shake the zip-lock bags to move the ice around the small zip-lock bag for even freezing until frozen. This step is best done outside to minimise mess in the hall. If it is not possible to do it outside, consider having towels or a tarpaulin available.
6. Taste your ice-cream with desired toppings.
7. Depending on time, you can experiment with different amounts of salt.

Review

1. Evaluate your hypotheses. Did the salt aid in the freezing of your ice cream? Was your ice cream the texture that you expected?
2. Consider if your ice cream tastes and feels like ice cream from the shops. If not, why not? What is present in shop ice cream that isn't in your ice cream?
3. Consider what other utensils or methods could be used to make ice cream? Consider how this might affect the texture of your ice cream?

Safety

- Allergen warning: This challenge card involves the use of diary and may not be suitable for individuals who are lactose or milk protein intolerant, especially during the tasting section. Non-dairy milk substitutes can be used but caution should be used to avoid other allergens.
- Temperature warning: This activity involves ice and extreme temperatures. Care should be taken to avoid prolonged, direct skin contact.

Variations

- Recipe can be doubled, etc for a larger serve of ice cream.
- Try making ice cream with other types of milk. How does this affect the product?
- Consider measuring some of the ingredients for younger sections.
- Larger programs can be built around and with other 'Discover Dairy' challenge cards or in patrols, have a dairy based cooking competition.
- Combine with the 'Fizzy Lemonade' challenge card to make a spider.