Fizzy Lemonade

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

Learn how to make your own fizzy lemonade at home or with your unit or patrol. Learn how it works and what makes it fizz. All you need is four simple ingredients.

Plan

1. Investigate lemonade and other carbonated drinks. What makes them fizzy and how are they made?
2. Investigate some of the properties of the ingredients including their pH, how they react with each other, and what they might contribute to the lemonade.
3. Read the instructions and determine what safety risks may be present.
4. Gather the materials and ingredients that you will need to make your lemonade. You will need the following: sugar, water, a stove, a saucepan, a lemon, a lemon juicer, bicarbonate of soda, and a glass.

Do

1. Boil a few cups of water on the stove and add two tablespoons of sugar per glass of lemonade being made, stirring until the sugar is dissolved. Depending on the age group, this is something that should either be done by adults prior or under careful adult supervision.
2. Let the sugar mixture cool once the sugar is dissolved.
3. Squeeze one average lemon (or two small lemons) into a glass.
4. Add the sugar water to the glass and stir to mix in.
5. Add ¼ of a teaspoon of bicarbonate of soda to the glass and watch what happens.
6. Record your observations – sight, smell, taste, hearing, and touch.
7. Experiment with how heat affects the fizziness by creating lemonade in a cup the has been chilled with ice, a room temperature cup, and a cup that has been warmed with water. What effect does this have and why?

Review

1. Did the bicarbonate of soda react with the lemon and sugar mixture as you expected? Why or why not?
2. What did you enjoy the most from this experiment? What did you learn?
3. If you were to do this activity again, what would you do the same? What would you do differently?
4. What do you think would happen if you added more or less bicarbonate of soda? Why?
5. How does your lemonade compare to shop-bought lemonade? Why do you think they may or may not taste different?

Safety

- Temperature risk: The first step of this experiment requires boiling water over a stove. This should be done by an adult for Joeys and Cubs and/or under strict supervision for Scouts.
- Acid risk: Lemon is acidic and whilst the risk of burns from this is low, care should be taken to avoid sunlight and to avoid getting lemon juice in cuts – as this would be quite painful. Make sure to avoid contact of lemon juice with eyes.
- Allergen risk: As this is a food-based experiment, care should be taken to consider dietary requirements and food hygiene practices – such as hand washing – should occur.

Variations

- To experiment with how the amount of bicarbonate of soda will affect the drink, try making more lemonade with a different amount of bicarbonate of soda. Does this make the juice better or worse? Compare with your patrol as to what everyone thinks the ideal amount of bicarbonate of soda is.
- Get creative and try different colours of lemonade by either using food colouring or other juices – such as raspberry or strawberry juice for pink lemonade. How does this effect the flavour and fizz?
- This challenge card can pair well in a program with the Discover Dairy: Ice Cream challenge card to make spiders or with the Sherbet challenge card for more fizzy fun.