Water Fireworks

Sections

Joey Scouts
Cub Scouts
Scouts
Venturer Scouts
Rover Scouts

Scouts VICTORIA

Last updated: May 15, 2023, 9:39 p.m.

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 mini fireworks in a cup using things you can find in your own kitchen.

Plan

1. Think about why the oil doesn't mix with the water? Use keywords such as density, water and oil.
2. Investigate how molecules dissolve or combine together. Why do some things dissolve and others don't? Does the liquid we are trying to dissolve in impact whether or not something will dissolve?
3. Collect the materials required for the experiments and record your results. Communicate with your patrol and leaders if you need to bring items from home.
4. Develop hypotheses about how you think the fireworks will form.
5. Read the safety requirements and discuss with your leaders/adult supervisors what supervision and safety requirements might be needed.
6. Gather the equipment you will need to make your fireworks. You will need a tall, clear glass, food colouring, oil, a tablespoon, a container, a fork, and water.

Do

1. Set up the experiment and record materials and hypotheses.
2. Make sure everyone is aware of the safety rules.
3. Fill a tall glass to just below the top with water.
4. Pour 2 tablespoons of oil into another glass.
5. Add 2 drops of food colouring to the glass with the oil.
6. Stir the oil and food colouring using a fork. Stop once the food colouring has broken into smaller droplets.
7. Pour the oil and food colouring mixture into the tall glass and watch what happens. You should start to see mini fireworks appearing in your glass!

Review

1. Evaluate your hypotheses. What happened in the glass? Why?
2. What do you think might happen if you didn't use oil? How might the food colouring spread differently?
3. How do you think the oil affects how the food colouring spreads through the water?
4. Can you think of any examples of density having an effect on your day to day life?
5. If you were to do this activity again, what would you do the same? What would you do differently?
6. The Best Ideas for Kids provides a good starting point for what is happening in the experiment.

Safety

- Sharps warning: As we are using a glass for this experiment, you should consider the risk of broken glass. Broken glass may cause cuts and should be handled appropriately with care.

Variations

- Try using two different colours of food colouring and do one drop off each before you mix.
- Try the experiment again without the oil and record how the results are different.
- Try with a larger glass. Does it change the results?
- A larger program can be build using other 'Chemical Properties' or chemistry challenge cards.