Water Fireworks

Special Interest Areas

ADVENTURE & SPORT

ARTS & LITERATURE

CREATING A BETTER WORLD

ENVIRONMENT

GROWTH & DEVELOPMENT

STEM & INNOVATION

Scouts VICTORIA

http://challengecards.scouthack.com/card/28/

Sections

Joey Scouts

Cub Scouts

Scouts

Venturer Scouts

Rover Scouts

SPICES Growth Areas

SOCIAL

PHYSICAL

INTELLECTUAL

CHARACTER

EMOTIONAL

SPIRITUAL

Challenge Areas

COMMUNITY

PERSONAL GROWTH

OUTDOOR

CREATIVE

Scout Method Elements

COMMUNITY INVOLVEMENT

LEARNING BY DOING

NATURE AND THE OUTDOORS

PATROL SYSTEM

PERSONAL PROGRESSION

PROMISE AND LAW

SYMBOLIC FRAMEWORK

YOUTH LEADING, ADULTS SUPPORTING

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.

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. For help understanding some of the reactions that occurred visit: https://www.thebestideasforkids.com/oil-and-water-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.