Food Races: Viscosity of Food

Scouts VICTORIA

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Sections

Joey Scouts
Cub Scouts
Scouts
Venturer Scouts
Rover Scouts

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 the viscosity of a range of foods.

Plan

1. How do you think the different foods will act differently?
2. How might the thickness of the liquids affect the results?
3. Investigate what viscosity means.
4. Investigate what scientific confounding variables are. What will need to do to make sure each liquid race is fair?
5. Think about why we repeat scientific experiments, Why do we want to do experiments more than once?
6. Collect the materials required for the experiments and recording your results. Communicate with your patrol and leaders if you need to bring items from home. You will require the following items: a ramp, cooking oil, orange juice, milk, chocolate sauce, tomato sauce, a spotwatch, a tape measure, materials for recording your results.
7. Develop hypotheses regarding which liquids will be fastest and why.
8. 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. Set up a ramp track for your liquids to race down.
4. We’re going to test cooking oil, orange juice, milk, chocolate sauce and tomato sauce. Make sure to prepare your liquids to race.
5. Pour the cooking oil down the ramp
6. Time how long it takes for the liquid to reach the bottom of the ramp(some substances may not reach the bottom of the ramp).
7. Repeat this step twice for a total of three repeats.
8. Pour the cooking oil again and measure the how far down the ramp length on the substance travelled in 30 seconds.
9. Repeat this step twice for a total of three repeats.
10. Record your results. You can record your results in any way that you like, however, you may find this record sheet useful.
11. Repeat steps 5-9 for all the liquids.

Review

1. Evaluate your hypotheses. Which liquids were fastest? Why?
2. How did the thickness of the liquids affect the distance they travelled?
3. Why do you think some liquids flow more eagerly than others?
4. Which fluid, do you think, has the highest viscosity based on your results? Which has the least?
5. Think of some other household foods and liquids. Would they travel faster or slower than the liquid you tested?
6. If you were to do this activity again, what would you do the same? What would you do differently?

Safety

- Allergen warning: While participants shouldn’t need to touch the foods or liquids there is still a risk they may come in contact. Individuals with severe allergies to the foods being tested will need to be careful and should make sure they wash their hands thoroughly with soap and water before eating or touching their mouth and face. You may consider wearing gloves if needed.

Variations

- Encourage participants to test other foods and liquids in the race. Before you race the liquid, see if you can predict which foods it will be faster than, and which it will be slower than.
- A larger program can be build using other ‘Chemical Properties’ or chemistry Challenge Cards.