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WE CU VOLUNTEER

Face Masks by 4-H

If you are interested in making face masks for your medical personnel in your community or for your family, we have put together some information and resources to help you make the right decision on what kind of face mask to make. Not every medical facility uses the same kind of mask; so, click on the PDF for more information. After you make masks for people and areas in need, come back and let us know what you are doing in your community. There is a face mask care card for you to print off and include one with each of your masks.

To date, we can report that 27 people from 10 counties have contributed their efforts to make over 1,700 masks to aid in the fight against the spread of the coronavirus! Face masks have been donated to health care systems, tornado relief efforts, a department of mental health, friends, and family so far. We are very proud of this tremendous effort. #SC4Health

Questions can be directed towards Shannon Herndon at sbhrndn@clemson.edu.

LEARN MORE

Update on Statewide Programs:

4-H @ Home
Ongoing
Register and receive weekday emails and activities (ages 5-18)

Ongoing

How do you 4-H?!
Ongoing
Showcase your 4-H skills in this social media video promotion (all ages)

Ongoing

4-H Photography Contest
Ongoing (announced June 1)
Showcase your point-of-view in the photography challenge (ages 5-18)

Submit entries by May 18

Quest 4 a Healthier You
Ongoing
Series of six health lessons for teachers or volunteers to use! (all ages)

Ongoing

CLEMSON COOPERATIVE EXTENSION

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Monthly 4-H Club Activity Idea

By T. Ashley Burns, Ph.D.

Moving Milk Molecules

Objective: To explore properties of a liquid, specifically how soap affects surface tension and interacts with components of the solution.

Age Range: All ages

Hands-on Activity: Visualize the movement of a liquid when soap is applied in a colorful activity.

Life Skills: HEAD – learning to learn, problem solving, decision making;
HANDS – self-motivation;
HEALTH – personal safety, disease prevention.

Introduction

Chemistry is a branch of science that studies the properties of matter and interactions of things at the atomic or molecular level (i.e., things that are much smaller than a cell). Even though chemistry might explain phenomena that occur at the molecular level, the impact of chemistry can be seen in our everyday lives. For instance, if we get oil or grease on our hands, soap will break it up into tiny particles (i.e., emulsify it) that can then be washed away with water. Similarly, we use soap to clean our hands because the molecules in soap react with the lipids (i.e., fats) present in many harmful microbes, which effectively destroys them. Trees use the molecular properties of water to pull moisture from the roots underground all the way up to the leaf canopy. Surface tension is another property of liquids that describes how strongly (or weakly) the molecules at a liquid's edge are bound together. Compared with other liquids, water has a high surface tension, which allows insects to stand on or move across the surface of water, allows you to float a paper clip on the surface of the water, or allows you to add several drops of water to the surface of a penny before it overflows. Soap reduces the surface tension of aqueous solutions. Try to float a paper clip or add drops to a penny after soap has been added to the water and find out for yourself! In the following activity, the movement of the solution when the surface tension is chemically reduced, by the addition of soap, can be visualized with food coloring in milk.

Figure 1. Active movement of liquid as surface tension is reduced.

Materials

- **Paper plate** or small dish
- Small amount of **milk** (water will also work, but the appearance will not be as dramatic)
- **Food coloring** or other way to color parts of the solution (e.g., egg dye, water color paint)
- **Toothpick** or other utensil to dip
- **Dish soap**
- **Paper** (optional)

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Activity Instructions

1. Add just enough milk to the bottom of the container to cover the surface.
2. Add a few drops of food coloring. (Colors will get muddy when a lot of coloring is used.)
3. Dip the toothpick into the dish soap to lightly coat it.
4. Dip the coated toothpick into the milk solution and watch the colors move!
5. Move the toothpick around to see the reaction in different places in the liquid. (Once the solution stabilizes with soap throughout, the movement will stop.)
6. Optional: Place paper in the milk to transfer the color and unique patterns for later art/craft projects!

Reflective Questions

1. What do you think about this activity?
2. Name something that was fun about this activity.
3. What are some different things you would like to try related to this activity?

Conclusion

Adding food coloring allows us to see the dynamic nature of chemistry in everyday items and reactions! Surface tension, fats, and proteins are all affected by the soap. Having fun with chemistry enhances creativity, stimulates learning, and builds an affinity for science. Enjoy!!!

Figure 2. From left to right and from top to bottom, images depict the materials needed, pouring milk, adding food coloring (2 images), adding soapy toothpick to milk solution (3 images), dipping paper, and paper drying.

Additional Resources:

Lesson 7. Milk Rainbow. You be the Chemist® Activity Guide. 92-102. https://www.chemed.org/wp-content/uploads/Milk-Rainbow.pdf

Surface Tension Facts for Kids: Kids Encyclopedia Facts. (2020). Kiddle Encyclopedia. https://kids.kiddle.co/Surface_tension

Color Changing Milk - Science Experiment! - Milk + Food Coloring = Surface Tension Science Trick! (2012). Math and Science YouTube. https://www.youtube.com/watch?v=mc5ljuG4FYE