

Name \_\_\_\_\_ Date \_\_\_\_\_

Making a Home-to-School Connection

Family Science Night

# Science in Soap: Colorful Surprises!

Science can be fun for the whole family!

From time to time, Family Science Night Activities like this will go home with your child. It can be challenging to come up with new and interesting evening activities. These experiments are designed to involve the whole family and get parents and children communicating. Rated in difficulty from fairly simple to difficult, some of these activities are more challenging than others, but all of them should be fun and get your whole family to start asking questions about the world around them. By reinforcing science at home, you are showing your child that you support their education and efforts at school. Plus, students who participate and return this packet completely filled out and signed by a parent can get up to \_\_\_\_\_ points extra credit!

## MATERIALS:

- Three 12-16 oz. small plastic containers (they must be the same size and shape)
- 1 cup half & half, 2% milk, and non-fat milk
- 1 cup measuring cup
- Red, blue, or green food coloring (any bright color will work, avoid yellow)
- Liquid dish soap
- Toothpick
- Marker for labeling containers

COST OF THIS EXPERIMENT:

Less than \$10

CHALLENGE LEVEL: ○ ● ○ ○ ○

TIME OF COMPLETE: 30 minutes

## Questions To Be Answered:

How does the fat content of milk effect the reaction of a common experiment, involving milk, food dye, and liquid dish soap?

**Hypothesis:** (The hypothesis is your guess to the question asked above. It is o.k. to have a different guess than your family members.)

1. How will the food dye react when a drop of soap is added to the non-fat milk? Why?

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2. How will the food dye react when a drop of soap is added to the 2% milk? Why?

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3. How will the food dye react when a drop of soap is added to the half & half? Why?

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**Procedures:**

1. Carefully label each of the four bowls: half & half, 2% milk, and non-fat milk.
2. Measure 1 cup of each type of milk into their individual bowls.
3. Add 1 drop of the food dye to the middle of the non-fat milk bowl.
4. In the area provided, document what you see by completing the appropriate section below.
5. Dip the toothpick into the liquid soap, only a small amount is required.
6. Next, touch the toothpick with soap to the center of the non-fat milk bowl.
7. Watch the reaction that occurs. In the appropriate area, document what you see.
8. Repeat this same process for the other two milk bowls.

## Observations:

Pre-Soap Milk Observations	Draw each milk bowl. Use color and add labels	Describe what happened when you added a drop of food dye to each milk bowl?
Non-Fat Milk Bowl		
2% Milk Bowl		
Half & Half Milk Bowl		

## Observations:

Post-Soap Milk Observations	Draw each milk bowl. Use color and add labels	Describe what happened when you touched the toothpick with soap to the center of each bowl?
Non-Fat Milk Bowl		
2% Milk Bowl		
Half & Half Milk Bowl		

# **Analysis of Results:**

## **Bowl #1: Non-fat Milk**

1. Summarize what happened in the non-fat milk bowl.

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2. Was this the same as your hypothesis or different? Why do you think this happened for this type of milk?

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## **Bowl #2: 2% Milk**

1. Summarize what happened in the 2% milk bowl.

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2. Was this the same as your hypothesis or different? Why do you think this happened for this type of milk?

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## **Analysis of Results:**

### **Bowl #3: Half & Half**

1. Summarize what happened in the half & half bowl.

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2. Was this the same as your hypothesis or different? Why do you think this happened for this type of milk?

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### **FINDING ADDITIONAL RESEARCH:**

What additional questions would you like answered about milk and soap?

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Who participated in this Family Science Night Activity with you?

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Parent Signature \_\_\_\_\_ Date \_\_\_\_\_