

... Milk in Motion ...

AIM: To understand the concept of surface tension.

HYPOTHESIS: Predict what you think will happen when food colouring is added to milk?

Predict what you think will happen when we add dishwashing detergent?

EQUIPMENT:

- Milk
- Saucer
- Food colouring ~ Red, Yellow, Blue & Green
- Dishwashing detergent
- Toothpick or pencil

METHOD:

- Place some milk in the saucer and leave to stand for about 20 seconds.
- Place four separate drops of food colouring on the milk. Space the drops out evenly.
- Watch the milk and colouring for a while. Does anything happen?
- Drop a small amount of detergent to the centre of the milk.
- Try dropping the detergent in a few other spots on the surface of the milk.

OBSERVATIONS/RESULTS:

What happened when you placed the food colouring in the corners of the milk?

What happened when you placed the detergent in the middle of the milk?

CONCLUSION:

My hypothesis was _____.

When we added food colouring to the milk it _____

When we added detergent to the milk it _____

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Highlight or circle the correct answer ...

Question 1 ~ After placing four drops of food colouring on the milk, the drops

- a. remained still
- b. sank to the bottom of the saucer
- c. moved in a swirling motion
- d. evaporated

Question 2 ~ After dropping some detergent in the milk, the drops

- a. remained still
- b. sank to the bottom of the saucer
- c. moved in a swirling motion
- d. evaporated

Question 3 ~ After watching the milk for a while you noticed that

- a. the swirling stopped and the colours separated
- b. the swirling stopped and the colours were mixed together
- c. the detergent made the milk bubbly
- d. the milk started to smell different

Question 4 ~ What would happen if you only used one colour?

- a. there would be no swirling
- b. the detergent would not react with only one colour
- c. the colour would move to the outside of the saucer
- d. the single colour would still swirl

Question 5 ~ The resulting colour after all the food colouring has mixed together is

- a. the same as the darkest colour
- b. the same as the lightest colour
- c. a new colour that contains all the other colours
- d. black

Question 6 ~ Surface tension is:

- a. the cause of many wars
- b. cohesion at the surface of liquids
- c. the force that keeps the moon circling the earth
- d. the fat content of milk

Question 7 ~ Surface tension in a diving pool can be reduced by:

- a. adding detergents to the water
- b. fountains in the water
- c. answers a and b
- d. none of the above