The Surface Tension of Water

Science Film Festival — Knowledge Through Entertainment

FILM

Program with the Mouse – Stone Skipping

KEY OBJECTIVES

1. **To understand how tension works on the surface of an object**
2. **To know how to break the surface tension of water**

INTRODUCTION

Have you ever seen small insects with long legs walking on the surface of water? Have you ever wondered why raindrops are the shape they are? This phenomenon is known as the surface tension of water. It plays an important role in our everyday life that you might not even realize it. Today we are going to learn more about it by doing some easy experiments.

GUIDING QUESTIONS

- Can you make a paper clip float?

MATERIALS / PREPARATION

- Paper clips (2)
- Plastic basin or a large glass (2)
- Water
- Tissue paper or paper towel
- Dish soap or detergent
- Scissors

TOPICS
Surface tension | physics

KEYWORDS
Surface tension | molecules | cohesion | surfactant

LEVEL
Primary School | Secondary School

RESOURCE TYPE
Experiment

INTENDED AUDIENCE SIZE
10 to 100 students in one session

MODE OF DELIVERY
Live online

TIME FOR ACTIVITY
Approximately 5 minutes

The Surface Tension of Water

Science Film Festival — Knowledge Through Entertainment

TASKS/PROCEDURE

PART 1: SURFACE TENSION

1. Fill up the plastic basin or a large water glass until ¾ full
2. Ask students to float the paper clip in the water!
3. If students can't get the paper clip to float at all, instruct them to cut tissue paper or paper towel with scissors slightly bigger than the paper clip.
4. Place the paperclip on top of tissue paper or paper towel that they've just cut.
5. Lay the tissue paper or paper towel and the paperclip on the surface of water gently.
6. The tissue paper or paper towel will sink leaving the paper clip floating.

PART 2: BREAKING SURFACE TENSION

1. Repeat all the steps from Part I in another glass
2. Once a paper clip is floating, add a couple drops of dish soap or detergent to the water. Observe what happens.

FOSTERING DISCUSSIONS

1. Why were we able to get the paper clip to float on water?
2. What did happen to a paperclip after we added a couple drops of dish soap or detergent to the water?

SAFETY INSTRUCTIONS

Remind students not to drink the water. Cleaned up all the spills immediately.

POSSIBLE EXTENSIONS

1. Find out how many paper clips can float!
2. Find any other items that can float!

AUTHORS AND SOURCES

Anette Evifania and Pesta Sigalingging, Indonesia

→ **www.teachengineering.org/activities/view/cub_earth_lesson2_activity4**