



Keep It Clean Description:

Explore how chemicals are used to keep microchips clean! Computer chips are made up of tiny components that are so small that a human hair or speck of dust would be huge in comparison. Let's check out how engineers keep wafers clean as they are made. Grab some dirty pennies and a couple of household liquids (lemon juice, vinegar, and soapy water) to simulate how we can use chemicals to keep our microchips clean.

Lesson Plan. Keep it Clean! Exploring how chemicals are used to keep wafers clean

Grade Level: 6th-8th

Subject: Science and Technology

Materials:

- Pennies (preferably aged with similar color tone)
- 5 small cups
- 5 household liquids (like lemon juice, vinegar, soapy water, etc.)
- Paper towel cut into 5 pieces
- Masking tape
- Timer
- Spoon

Essential Question:

1. How can chemicals keep wafers clean?



Before viewing:

Introduction:

1. Explain to students that they will be exploring the role of chemicals in keeping the components of a wafer clean.

Diffusion Experiment

Materials needed: 5 Pennies (preferably aged with similar color tone), 5 small cups, 5 household liquids (like lemon juice, vinegar, soapy water, etc.), paper towel cut into 5 pieces, marker, masking tape, timer, spoon

Set- up Instructions:

1. Distribute materials: Collect 5 household liquids for cleaning pennies, like lemon juice, vinegar, and soapy water. Be creative in choosing your final 2 liquids!
2. Ask students to predict what liquid will best clean the penny?

Conduct Experiment:

1. Place the liquids in each of the 5 cups and label with tape and a marker.
2. Set a piece of paper towel in front of each cup.
3. Draw a star on the cup you think will win!
4. Place a penny in each of the cups. The penny should be submerged in the liquid.
5. Set a timer for 5 minutes.
6. Observe the pennies. Do you notice anything happening in any of the solutions?
7. After 5 minutes, remove each penny with a spoon, and place on the paper towel in front



of each cup.

8. Observe which liquid made the penny the cleanest and shiniest.

Reflective Discussion:

1. Were the results what you predicted?
2. Were there any unexpected results?