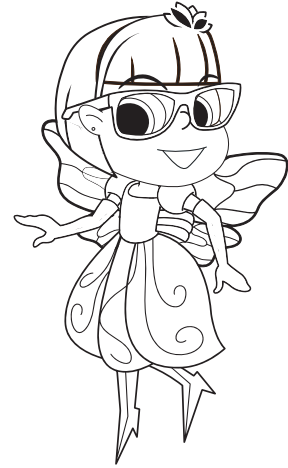


AN EGGSPERIMENT

This experiment shows how teeth can become weak if they are exposed to acids (such as those in everyday foods), and how fluoride toothpaste helps protect teeth. This experiment uses eggs to represent teeth and vinegar to represent acids made by plaque bacteria, which may cause tooth decay and cavities. Teeth can be weakened by acid, which is why good dental hygiene is so important.

Materials needed

- 1 large tube of fluoride toothpaste (with the active ingredient: sodium fluoride)
- Glass measuring cups
- Three fresh eggs without cracks, marked with the numbers: 1, 2 and 3
- Two cups of vinegar
- Spoon
- Plastic wrap
- Permanent marker
- Clear nail polish
- Paper towels



Preparation

To conduct the experiment in one session, complete the following preparation 5 days prior to experiment:

1. Put enough toothpaste into a measuring cup to cover half the egg. Pat the toothpaste with a teaspoon to level it and to remove air bubbles.
2. Draw a line all the way around half the egg and write "P3" (protected egg #3) and cover the writing with clear nail polish.
3. After the polish dries, place the egg into the measuring cup, marked side down, so the toothpaste covers half the egg. Make sure the egg does not touch the bottom of the cup.
4. Cover the cup with plastic wrap and leave it at room temperature for at least 4 days.
5. After 4 days, rinse off the toothpaste with warm tap water and dry with paper towels.
6. Pour enough vinegar into a clean, measuring cup to cover the whole egg, about 1 cup, then place the egg into the vinegar with a spoon. Rest the spoon on top of the egg to keep it entirely submerged and cover the cup with plastic wrap.
7. Leave the egg in the vinegar for 7 to 13 hours.
8. After 7 to 13 hours, remove the egg and check if the unprotected side has softened by tapping it lightly. If the egg is soft, go to step 9. Leave the softened egg out of the vinegar until class time so the egg remains soft, but does not disintegrate.
9. If the untreated side is still hard, put the egg back in the vinegar. Check the egg every hour or two until the untreated shell has softened.
10. Once soft, remove the egg and wash it with warm tap water. The egg is fragile now, so be careful!