Pennies and Water

Sent in by: Katherine of Grapevine, TX

Fill it to the rim, and then some. Test how many pennies a glass of each liquid can hold before spilling.

Materials Needed

- ❑ glass
- ❑ pitcher of water
- ❑ pennies
- ❑ liquids of different thicknesses like oil, syrup or juice
- ❑ paper and pencil

Instructions

1. Check with an adult before you begin.
2. Predict how many pennies you think you can put in a full glass of water without letting any leak over the edges.
3. Make a chart for your predictions and results. Write the names of each liquid you will test in rows on the left side of your paper. Write "predictions" and "results" in columns along the top of your paper. Record your prediction for how many pennies the glass of water will hold.
4. Fill a glass with water to the top. Make sure the rim of the glass is dry, so that water won't drip down.
5. Count the pennies as you add them to the water. See how far you can get the water to bulge over the edge of the glass without leaking down the edges.
6. Record the number of pennies the water could hold before the surface tension was broken.
7. Compare your prediction with your result. Is one number higher than the other? If so, why do you think they are different? Now, use the results from testing the glass of water to make some predictions about the other liquids you are testing.
8. Record your predictions on your chart.
9. Fill a glass with whichever liquid you are testing. Make sure that the rim is dry before you begin.
10. Count the pennies as you add them to the glass. Record how many pennies the glass held before spilling the liquid over the edge.
11. Compare the results you get for each liquid. Do you see a pattern? Do some types of liquid hold more pennies than others?

Can your brain hold the science scoop without overflowing? The pennies take up space in the glass, and the liquid has to get out of the way to make room for the pennies. The only way the liquid can get out of the way is to go up. It doesn't overflow right away because the surface of the liquid sticks together really well. This is called surface tension. Can you think of other ways to experiment with surface tension?