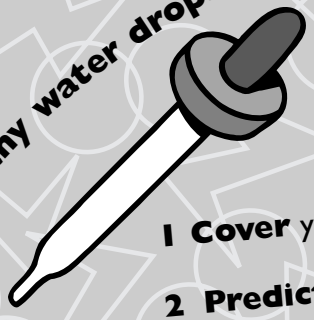
Drops on a Penny

What You Need:
- penny • eyedropper
- cup of water • newspaper

Science Scoop

When you place water drops on a penny, the drops pile up into a small **dome**. Why? Water molecules are **attracted** to each other in all directions, making them "**stick**" together. However, the molecules at the surface "stick" only to molecules **next to** and **below** them. That's because there are none above them. This makes the surface act as if it had a thin "**skin**." This is called **surface tension**. As you add more drops, the force of **gravity** becomes stronger than the force of attraction among the water molecules at the surface. This causes the water to **spill** over the edge of the coin.

How many water drops can you fit on a penny?



Try It Out!

1 **Cover** your work surface with newspaper.

2 **Predict** how many drops of water will fit on the head of a penny before the water **spills** over.

3 **Test it!** Count the number of drops and **compare** it to your prediction.

4 **Try it again!** Repeat the test **three times**. Do you get about the same number of drops each time?

5 If you get a different number for each test, find the **average** number of drops. Here's how: **Add** your results from each test. Then **divide** by **three**.

Sent in by Dan H. of Boston, MA

ZOOM on

Now it's time for you to **experiment**. What happens if you use a **different coin**, like a nickel, a dime, or a quarter? Use what you know about a penny to predict how many drops will fit on a different coin. What happens if you mix **soap** with the water and then add the drops? Choose **one thing** to change (that's the variable) and make a **prediction**. Then **test** it and send your results to ZOOM.

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Send your ideas to ZOOM!

Dear ZOOM,

Here's what happened when I put drops of water on a coin:

	My Prediction	Test 1 Number of Drops	Test 2 Number of Drops	Test 3 Number of Drops	Total Number of Drops	Average Number of Drops
Penny						
Nickel						
Dime						
Quarter						

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