

STEM ACTIVITY

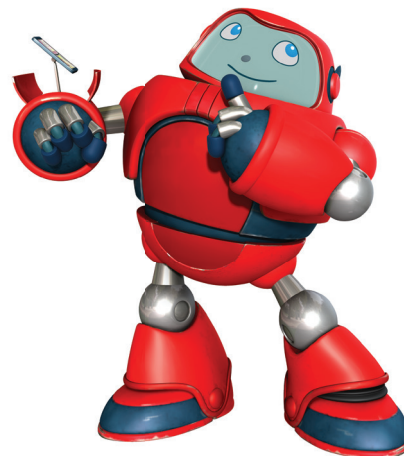
ZACCHAEUS

Total Time: Approx. 15 minutes
In-Class Time: 5-10 minutes

You will need:

- Pennies—one per student
- Small cups of water—one per two students
- Droppers—one per student, or one per two students

NOTE: Be sure to test this project out at home in advance.



STEP 1: TEACH: In the video, we learned that Zacchaeus was a tax collector and dealt with money. Today, we are going to do some testing on our own money. Each one of you will have a penny to test. We are going to see how many droplets of water a penny can hold.

Can you guess? Allow children to make guesses. You may want to award a prize to the student who gets closest.

STEP 2: Give each student a penny and a dropper and have them share a cup of water with the person next to them.

STEP 3: TEACH: I would like you to gently squeeze one drop of water at a time onto the center of your penny, making sure you count your drops carefully. Be careful not to shake the table or move your penny so the water will stay on.

STEP 4: Allow the students to reveal the number of droplets they were able to get on their pennies and discuss the science behind surface tension.

EXPLAINING THE SCIENCE:

Surface Tension: Surface tension occurs because water molecules are attracted to one another. We call this *cohesion*. This cohesion causes the top of the water, or surface, to be strong. Because the water molecules at the surface of the puddle are attracted more to one another than the air molecules above them, they cling together to form a dome shape on top of the penny. Eventually, the amount of water becomes too much for the size of the penny, and the surface tension of the water is broken.