

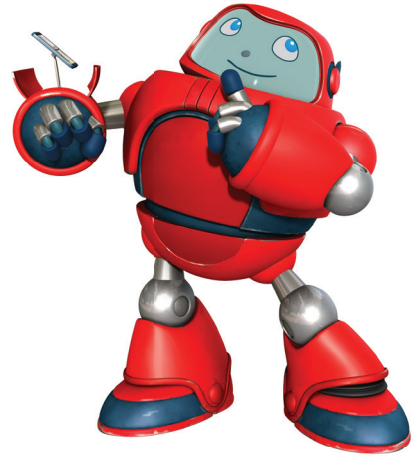
STEM ACTIVITY

PAUL AND BARNABAS

Total Time: Approx 20 minutes
In Class Time: 10 minutes

You will need:

- Baking soda
- Vinegar
- Empty water bottles (one per student)
- Balloons (one per student)
- Measuring spoons
- Funnel



Note to teachers: Before class, fill each water bottle halfway with vinegar.

STEP 1: Hand each child a balloon and have them stretch it out or blow it up to stretch it out.

STEP 2: Using a funnel, add one teaspoon of baking soda to each balloon.

STEP 3: TEACH: When God made each one of us, He gave us skills, abilities, and passions. Those gifts and abilities rest inside of you, just like the baking soda rests inside of your balloon.

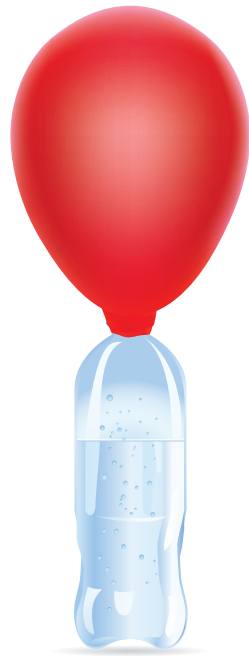
STEP 4: Give each child a water bottle filled halfway with vinegar. Explain that the bottle has vinegar, a powerful and acidic liquid, inside.

STEP 5: Help children attach the end of their balloon to the mouth of the water bottle, without spilling the baking soda into the bottle.

STEP 6: TEACH: God is always with us, just like this water bottle is with the balloon. In fact, Jesus promises to always be with us. Next, we will watch what happens when the baking soda and vinegar mix.

STEP 7: Instruct children to lift their balloons and dump the baking soda into the bottles. Have them gently swirl the bottles to mix the vinegar and baking soda.

STEP 8: TEACH: The baking soda reacts with the vinegar to fill the balloon. Just like these two elements react, when we give our gifts and abilities to the Lord and allow His power to work in our lives, we can do amazing things! He did great works through Paul and Barnabas, and He can do great things through us as well. Psalm 138:7 says, “The Lord will work out **His plans** for my life.”



EXPLAINING THE SCIENCE:

Carbon Dioxide Gas: When baking soda, also known as sodium bicarbonate, combines with vinegar, a chemical reaction occurs. This reaction produces carbon dioxide. **Carbon dioxide** is a colorless and odorless gas that is naturally present in air, is absorbed by plants, and is also produced when we breathe. The carbon dioxide escapes as bubbles, and because bubbles are heavier than air, the carbon dioxide collects at the surface of the container and overflows, filling the balloon with gas.