

Rocks That Fizz

EXPLODING THE MYTH THAT ROCKS ARE INDESTRUCTIBLE

Materials

Note: This experiment is taken with permission from *77 Science Activities for Illustrating Bible Lessons* by Donald B. DeYoung (Baker Books), page 162.

- ☐ Vinegar (the stronger the better), 2 cups per group
- ☐ Clear glass container, 1 per group
- ☐ Any combination of chalk (different sizes), small seashells, eggshells, whole eggs, limestone or cement fragments, candy canes, sand, 1 set per group
- ☐ God Thought of It First cards (11-6-079), pass out 1 thistle card per child at the end of class

Pre-Prep

A few days before class, pour the vinegar into the clear glass container and allow it to sit uncovered until class. This will evaporate the water and leave behind a more concentrated vinegar solution.

Class Time Directions

Today at *Time Lab*, we're learning that Jesus has existed from all eternity. He has never had a beginning and will never have an end! Our God is eternal. Read Isaiah 40:28. What does this tell us about the Creator? Take responses: that he is everlasting; he doesn't have a beginning or end. Let's look at something Jesus said while he was here on earth. Read John 17:5. What does this teach

us about Jesus? Take responses: Jesus is God and he existed even before the world began! Jesus is eternal!

What are some things we might think of as being around from the very beginning? Take responses: rocks, mountains.

Did you know that even rocks aren't eternal, as old as they may seem? In fact, many of the rock layers and mountains we see today were formed during and after the flood of Noah's day, about 4,400 years ago. They haven't even been around since the beginning of time!

Read Habakkuk 3:6. In this verse, the writer is comparing things that we may think of as eternal to the only one who really is eternal: God.

Jesus existed even before the mountains—he made the dirt and water that formed the mountains! Read Colossians 1:17 and Revelation 1:8.

For this experiment, we're going to see what happens when we put items that we may think of as lasting a long time into vinegar.

Allow children to drop the items you've provided into the solution to see how they react. Which ones dissolve quickly? Which ones take longer to dissolve? Some items may take a few minutes; others may take longer (and won't be completely dissolved by the end of class). The listed objects, excluding the candy cane, are all composed of the mineral calcite. A small piece of limestone from outdoors is especially impressive to use since we usually think of rocks as indestructible. Limestone is quite common in most areas and is sometimes used as crushed stone for driveways. If chalk is placed in the vinegar, small pieces will soon break off and the chalk will eventually disappear. Comment to the students that no physical objects on this earth are permanent. We will find out more about what will happen to our current heaven and earth on Day 5 of this week.

Interesting note: Vinegar is a diluted form of acetic acid. When it comes in contact with the mineral calcite, the gas that bubbles off is carbon dioxide. This reaction is regularly used by geologists as a test for detecting the mineral calcite in unknown rock samples. A small amount of acid is placed on the rock sample. If small bubbles appear, the unknown mineral is calcite.

