

DAY 4 EXPERIMENT

Polishing Pennies

Discover What Takes the Grime Off Pennies

Materials (per group)

- ☐ Dirty pennies, amount varies depending on the number of liquids used
- ☐ Shiny penny
- ☐ Choose a variety from the following: ketchup, mustard, water, milk, vinegar with salt, lemon juice, orange juice, lime juice, dark carbonated beverage
- ☐ Small containers, 1 for each substance
- ☐ Craft stick if using vinegar with salt
- ☐ Small clothespins
- ☐ World map
- ☐ Babel Legend cards (11-7-070), 1 per child

Pre-prep

Put each substance in its own individual small container, enough to cover the bottom of the container and half of the penny when it is standing up. Or, children can pour the liquids into the containers during class.

Class Time Directions

Today at *The Incredible Race*, we're learning that there is only one human race but two spiritual races. All people, no matter what shade of skin they have or where they live, are part of Adam and Eve's family. We are all part of the human race. But not everyone who is part of Adam and Eve's family is a child of God. Those who don't know about or don't believe in Jesus

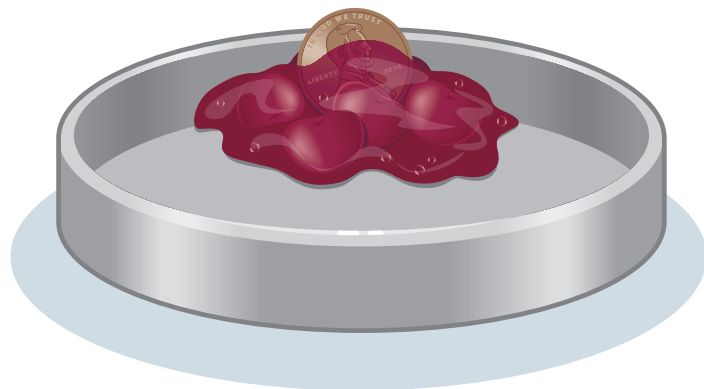
are racing toward an eternal destiny in a terrible place called hell. Those who repent of their sins and believe in Jesus for eternal life become children of God and will spend forever with him in heaven!

The continent we are learning about today is Europe. According to the Joshua Project, there are over 450 people groups, with over 25 million individuals, who have not heard how they can become children of God. Jesus wants us to go into all the world and tell people about him. Read and discuss Matthew 28:19-20.

When we believe in Jesus, he removes all our sin from us, taking it on himself, and washing our hearts clean. And he gives us his righteousness.

Today, we are going to do an experiment with these dirty pennies. Today, pennies are made from a combination of zinc and copper. When they are first made, they are very shiny, thanks to the copper. Show the shiny penny. Over time, the copper metal reacts with the air and develops copper oxide, which gives the penny a dirty look. Sometimes, dirt and grime get on the penny, too.

Jesus washes our hearts clean from sin when we trust in him for eternal life. Let's find out how we can clean up these pennies. What do you think will clean the pennies the best? Who thinks that ketchup will clean this penny? What about soda? What about water? Wait for responses after each. Okay, let's find out which of these cleans these pennies the best.



Pass out the pennies, small clothespins, and the containers. Children can add small amounts of each liquid to the containers, if you haven't already done that. Have children examine the pennies to see how dirty they are, and then they can place one in each container, covering it with the substance. They could also add another penny and only partially cover it, using a small clothespin to hold it up. Check the pennies every few minutes to see what is happening. Which substance cleaned the penny the best?

Some of these substances have a type of acid in them. (The fruits have citric acid.) The acid reacts with the copper oxide and removes it from the penny but doesn't damage the copper or zinc in the penny. It also washes away the dirt and grime from the penny. The substances with more acid will clean the pennies better and faster. There is only one who can clean our hearts from sin and that is Jesus Christ. He is the Savior for every people group and tribe and nation!

Pass out the Babel Legend cards, 1 per child.

Tip Corner

- One test church chose three substances—the dark carbonated beverage, the lemon juice, and vinegar with salt. They placed the dirty pennies in the carbonated beverage and the lemon juice at the beginning of class and checked them with about 10 minutes left in the rotation to see what happened. The carbonated beverage showed little change, and the lemon juice showed some change. Then they put a penny in the final container with the vinegar and salt mixture. They used the craft stick to stir until the salt mostly dissolved. This had a rapid change. (This mixture needed to be reset after each rotation.)
- It also works to put the pennies in first and then add the liquids.