Polishing Pennles How can you make an old penny shine again?

old penny shine again?

What You Need

- 6 old, dull pennies
- 5 paper cups
- lemon juice
- milk
- cola
- apple juice
- water
- 5 plastic spoons
- paper towel

Engineering Scoop

A new penny is partly made from bright, shiny **copper**. But after a while, it loses its shine. Why? Because the **copper** mixes with oxygen in the air and makes a coating of **copper oxide**. When you put a penny in **lemon juice**, the dull coating of copper oxide goes away. That's because lemon juice is an acid. Acids can dissolve copper oxide. Which other liquids did you find make a penny shiny?

I Put a penny in each cup.

- 2 Pour some lemon juice into the first cup.
- Make sure that the penny is completely **covered**.

3 Wait a few minutes. Then use a spoon to remove the penny. What does it **look** like? Record your observations on the chart in the box under "lemon juice."

4 Rub the penny on a paper towel. What happens? 5 Try it again using the other liquids! To one cup add

milk. To the next cup add cola. To the next cup add apple juice, and to the last cup add water. Use the same amount of each liquid.

6 Wait about 5 minutes. Then take a look. Which pennies are **shiny?** Which liquids make the pennies shine the most?

Sent in by Adriana F. of Prescott, AZ



Engineering

Keep experimenting to find the best way to polish a penny! What happens if you use a different liquid, like soap or vinegar? (Ask an adult to help you choose a liquid to test.) Or, what happens if you put a penny in a liquid for a longer period of time, like a day or a week? Choose one thing to change (that's the **variable**) and make a **prediction**. Then test it and send your results to ZOOM at pbskids.org/zoom/sendit

OBSERVATIONS

Lemon juice	Milk	Cola	Apple juice	Water
	•		•	•
	•		• • •	•
	•		• • •	•



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