



# KITCHEN SCIENCE

## *Chemical Reactions*

### GREEN PENNIES

Pennies are largely made from a type of metal called copper. When the copper comes into contact with some other chemicals, oxidation occurs. This means that the copper changes its appearance and will appear green in colour.

When you add salt and vinegar to copper, the top layer of copper oxide dissolves on the penny and the chemicals work together creating a green dusty layer known as malachite.

This is kitchen science and chemistry in action!

Adult supervision required!

#### You will need

- Salt
- Vinegar
- Shallow dish or bowl
- Paper towels
- About a dozen dull pennies

#### Instructions

1. Fill 2 small bowls with about 1/4 cup of vinegar and a teaspoon of salt in each and mix thoroughly.
2. Take one penny and dip it halfway into the bowl and hold it in the liquid for 15 seconds and look at it carefully to see what is happening. Lift it out the penny carefully to observe the changes. The salt and vinegar mixture appears to have dissolved the copper oxide and now the pennies are shiny again.
3. Add 5 more pennies to the mixture and let them sit for a few minutes. Remember to add 6 pennies to the other dish too.
4. Take the pennies from one bowl and rinse them under running water. Place them onto a paper towel and let them dry.
5. Take the other pennies from the other bowl and put them straight onto another paper towel without rinsing them.
6. Wait and watch to see what happens.

**Top Tip:** You may have to leave them for an hour or so to get the best effect!

