



# Why does the SS Great Britain have holes in it?

The SS Great Britain was built in 1843 out of iron, now after sailing more than 32 times around the world it's back in the dry dock where it was built. Become a scientist to discover what's happened to it over time.

## You will need:

- Two paperclips
- Two cups
- Water
- 1/2 teaspoon of salt



## What to do:

1. Place equal amounts of water into each cup, you don't need much, just enough to cover the paper clip.
2. Add the salt to one cup and stir to help it dissolve into the water
3. Place one paperclip into each cup
4. Leave for two days
5. Check to see what's happened to the paper clips

## Why does this happen?

The iron in the paperclips reacts with the oxygen in the water in a process called oxidation. The rust, the reddish-brown substance, is called iron oxide and is the result of a chemical reaction between the iron and oxygen. Rust can only happen if there is water and oxygen.

The paperclip in the salty water gets rustier because the salt in the water speeds up the oxidation process.



The iron plates used to construct the SS Great Britain were covered in a special paint to try and prevent them from rusting but over time due to long exposure to the salty sea water, the ship's hull began to rust, and holes formed. The lower part of the ship is more affected by rust because it spent the most time in the ocean.

To protect the hull, a glass roof and machines called dehumidifiers were added to the Dry Dock in 2005. The dehumidifier removes moisture (water) from the air preventing the hull from rusting further.