



Activity: Waterproof Shoes

What You'll Need:

Included in the kit:

- 1 Candle (have an adult help you remove the tealight candle casing, so you are left with just the waxy candle)

Not included in the kit:

- Old pair of canvas shoes (adults permission required)
- 1 Hairdryer
- 1 Pitcher of water
- 1 Large plastic tub

Procedure:

Waterproof Shoes, Inspired by Nature
Step 1 Rub the candle back and forth all over the surface of one shoe.
Step 2 Have an adult help you use a hairdryer to melt the candle wax into the shoe.
Step 3 For best results repeat this process one or two more times.
Step 4 Hold the treated shoe over a shallow container and pour water gently on it.
Step 5 Next take the untreated shoe and pour water on it to see the difference.

And that is how you make a shoe waterproof using an idea from nature!

SOURCE: Generation Genius

This STEAM Expo activity was inspired by the [Inspired by Nature activity by Generation Genius](#).



OPTIONS

Check out Generation Genius' [video](#) online for instructions on how to use a candle to make a pair of canvas shoes waterproof.

The Science Behind It:

The treated shoe has a special coating of wax that protects it from getting wet. This is similar to the nasturtium plant in the [video](#) or the feathers of a duck. When you poured water on the treated shoe, the water just slid off. The untreated shoe got wet when you poured water on it. Being inspired by nature to solve a problem is called biomimicry.