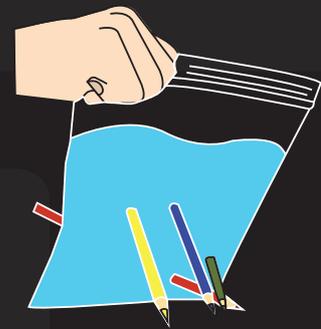


# SCIENCE SHOW OFFS

## PENCIL THROUGH A BAG OF WATER

### RESOURCES NEEDED

- **Clear plastic Ziploc bag**  
Use the ones from your lunch box!
- **Water**
- **Pencils**  
You can also use skewers!



### EXPERIMENT

#### SET-UP

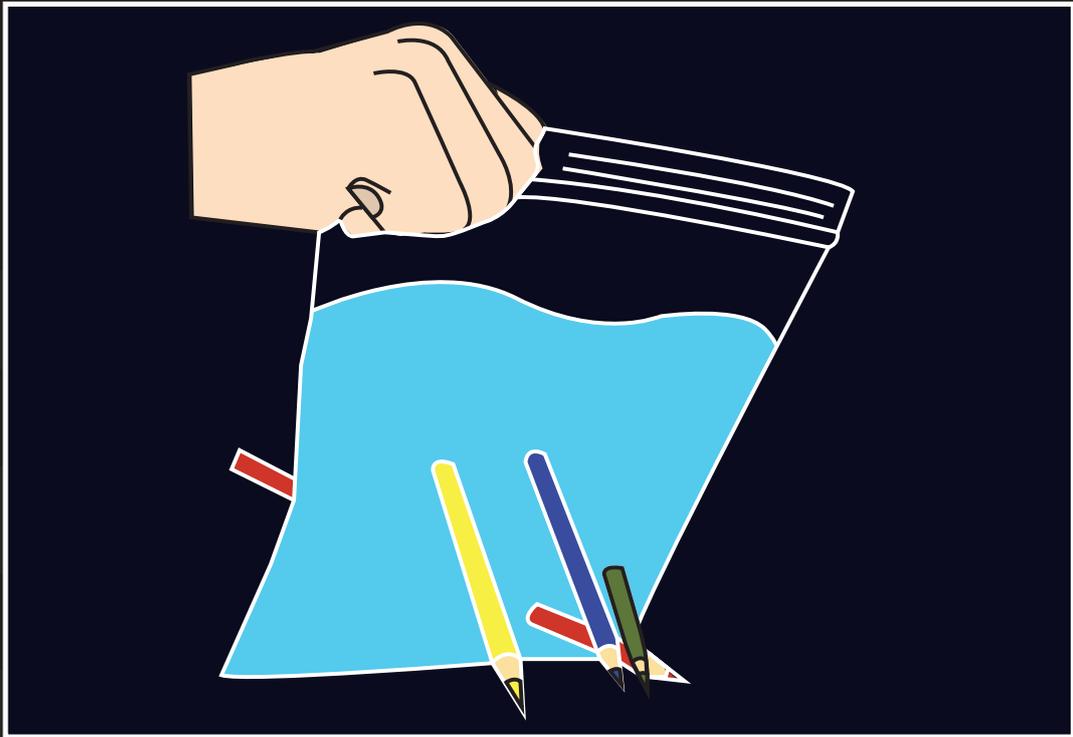
- This Science Show Off is best to be done outdoors as water will probably spill, but you can use a tray that you can spill water into if you are indoors. Fill up a jug of water so that you can fill the bags from the jug when you are doing this Show Off.

## STEP 1

- Fill the bag up with water and close it.

## STEP 2

- Get people to poke pencils right through the bag, so they go from one side to the other!



## DISPOSAL AND CLEAN UP

- Plastic bag litter can harm our wildlife, so please be careful when disposing of these bags and make sure they are thrown into a rubbish bin.

## RISK MANAGEMENT

### RISK

Water spilling.

### MANAGING THE RISK

Do this Show Off over a tray to collect any water spills or outside.

## SCIENCE EXPLAINED

Plastics are a polymer, which just means they are made of many of the same molecules stuck together in a long chain. When you pierce the bag with the pencils, it breaks the chain, but the end molecules of the polymer chain are sticky, and make a seal around the pencil that won't let water out.

## REAL WORLD EXAMPLES

Plastic is an amazing polymer that is useful to us in many ways. Plastic polymer seals are used in many things to make them water tight. Look in your blender, hot water flask, or coffee maker at home – there is probably a plastic seal there!

## PARENTAL GUIDANCE

Science Show Offs should take place with appropriate adult supervision

## COMPETITION

To enter the Science Show Offs Competition, go to;  
[otagomuseum.nz/scienceshowoffs](https://otagomuseum.nz/scienceshowoffs)