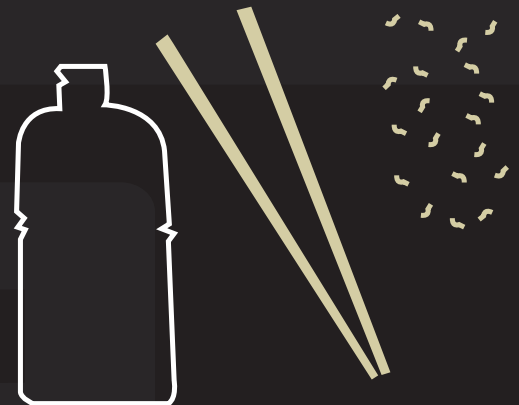


SCIENCE SHOW OFFS

RICE FRICTION

RESOURCES NEEDED

- **Empty bottle**
Plastic bottles are best
- **Rice**
Any kind of rice will do!
- **Chopsticks or skewers**
You can reuse them too



EXPERIMENT

SET-UP

- **Fill a bottle with rice to the very top. Gently tap your bottle of rice on the table until you notice the rice compacting down. Carefully add some more rice to fill up your bottle and repeat this process until it's fully packed. Clear a table, so you can easily clean up any spilt rice.**

STEP 1

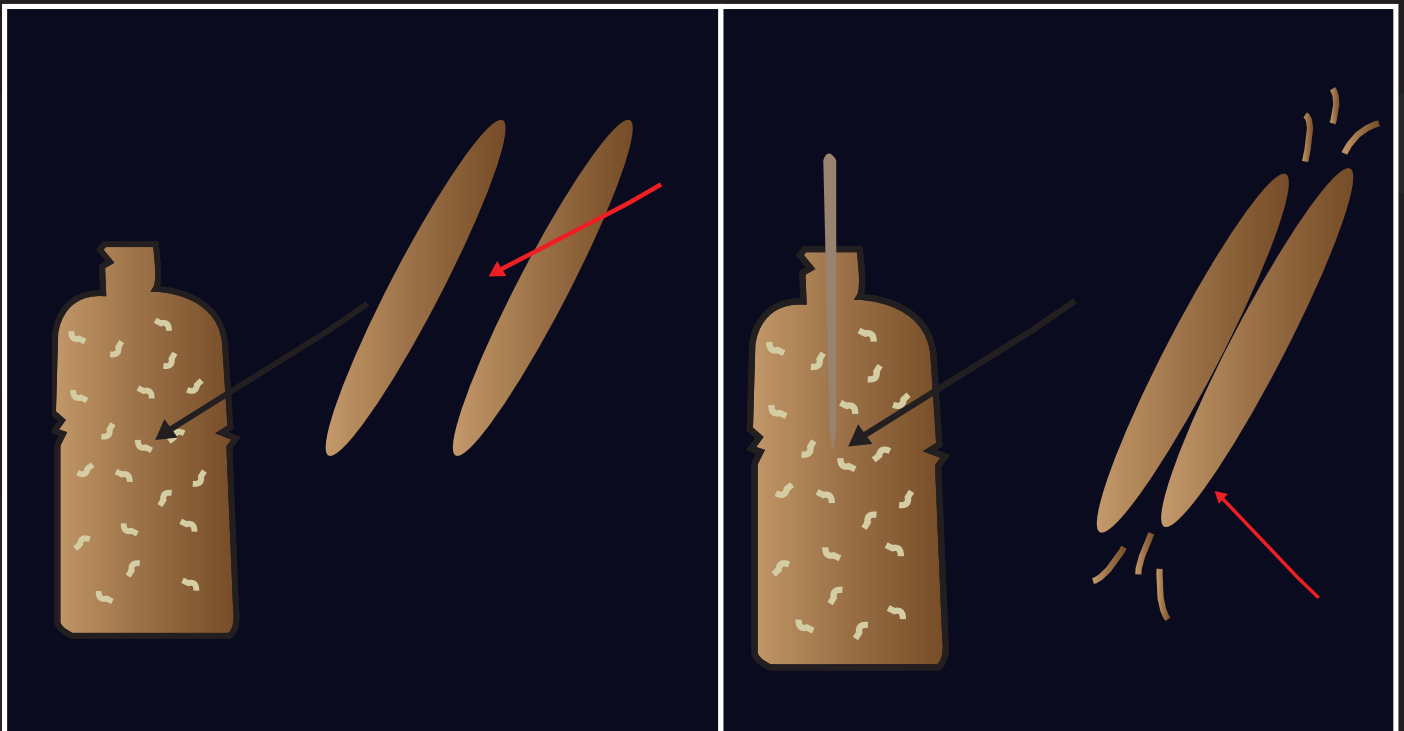
- Place the bottle of rice on the table.

STEP 2

- Put a skewer or chopstick into the bottle until you feel that it is stuck, usually this will be when the skewer is $\frac{3}{4}$ in the bottle of rice.

STEP 3

- Challenge people to lift the bottle up only using the skewer, without touching the bottle!



DISPOSAL AND CLEAN UP

- All materials from this Science Show Off can be reused, so keep them in a box for later!

RISK MANAGEMENT

RISK

Rice can spill if the bottle drops.

MANAGING THE RISK

Put a tray under the bottle to collect the spilt rice.

SCIENCE EXPLAINED

When you start to push the skewer into the bottle, there is a small amount of air in between the grains of rice, but as we push the skewer further into the bottle the grains of rice are squashed together. The grains of rice then rub against each other, and all the friction caused by this is enough to hold the weight of the whole bottle. It is like all the grains of rice get stuck to the skewer and each other, but just using the sticky force of friction!

REAL WORLD EXAMPLES

Friction is all around. Think of how your bicycle or car brakes work, or even how their tyres work. Friction is what allows us to pick things up, and even walk on the ground!

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