

FUN SCIENCE

Here are four simple science experiments to try at home!

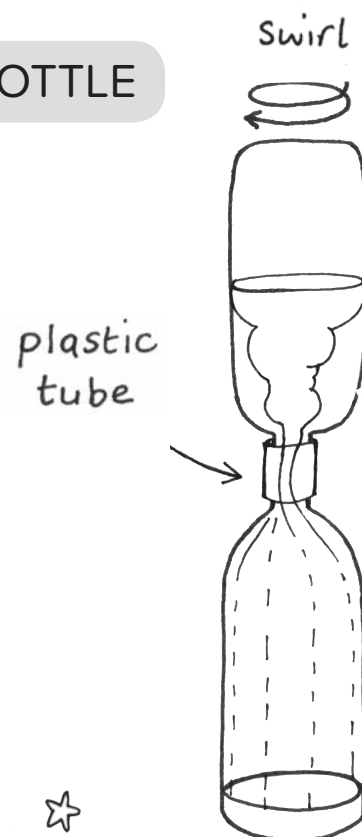
TORNADO IN A BOTTLE

THE SCIENCE

In the boiler of a steam engine, steam rises up into the steam dome to be used and the water sinks to the bottom where it can be heated by the fire.

Similarly, in this experiment, as the water flows into the lower bottle the air is forced up, creating the tornado effect.

Engine designers have to understand how to use this science to make the locomotive work.



food dye

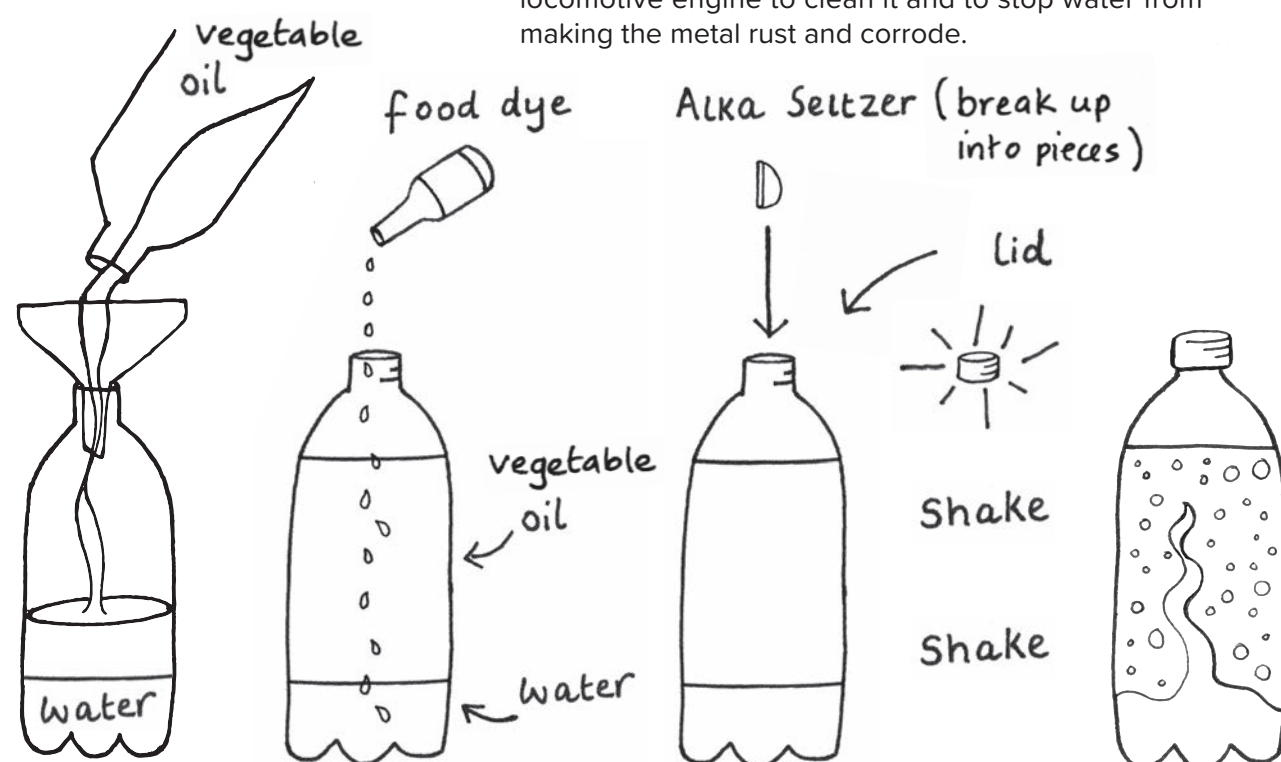
water

- Make sure the two bottles and the tube connecting them is secure and water-tight!

- You can also add glitter, food dye, or lamp oil to the bottle to make the tornado even cooler.

LAVA LAMP

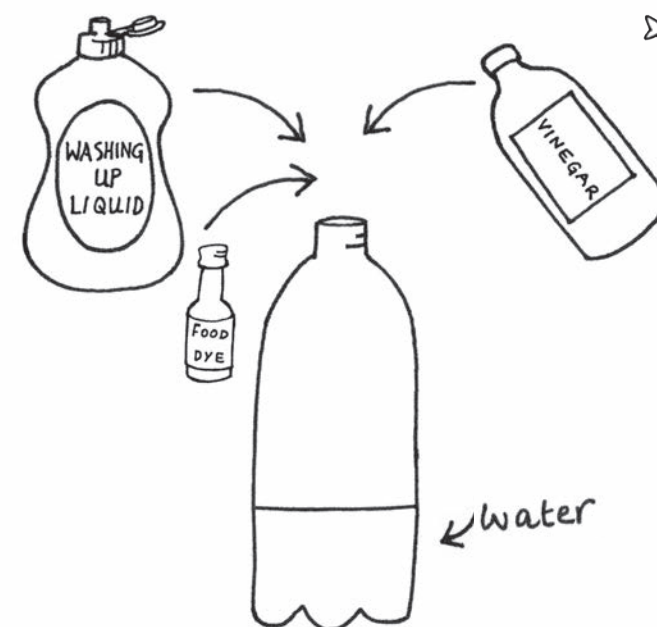
THE SCIENCE Here you will discover that oil and water don't mix. Every day, cleaners brush and rub oil over the locomotive engine to clean it and to stop water from making the metal rust and corrode.



VOLCANO

THE SCIENCE

When liquid becomes gas it expands and needs more space ... just like in the boiler of a steam engine! Only, with the steam engine, we don't let the gas out – we use the extremely high pressure to push the engine along!



- Also works by dropping a few Mentos sweets into a 2 litre bottle of cola.

Only try outside!!



Stand well back!!

BALLOON ROCKET

THE SCIENCE

Did you know that when two things rub together it makes friction, which slows stuff down? That's great if you want to put the brakes on the wheels of the steam engine to make it stop, but not if you want it to move quickly and easily the rest of the time.

- Try filling the balloon with different amounts of air (fuel). How does this effect the distance it travels?

