

LEARNING RESOURCE

DANCING STICK MAN

MATERIALS

- A dry wipe marker
- A permanent marker (optional)
- A white plate
- Some room temperature water
- A straw (optional)

PREPERATION

- None required.

INSTRUCTIONS

1. Take a dry wipe marker and draw a simple design of a stick man onto a white plate.
2. Use your finger to wipe the design off the plate – showing how easy it is to remove - then redraw your drawing and leave for a few minutes.
3. Now take a cup of room temperature water and slowly pour onto the plate, try to pour from the edge of the plate and not straight on top of the design.
4. If you gently rock the plate from side to side you should see your design slowly lift off of the plate and float on top of the water! (Don't worry if your drawing breaks or screws up – sometimes it can take a few attempts to get this right!)

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5. If you have a straw to hand you can use this to blow the stick man around the plate making him dance

EXTENSION

- If you have permission and you have access to a permanent marker pen you could draw a design in permanent marker on your plate too – notice how this drawing stays on the plate when the water is added and is impossible to make float! To remove permanent marker from your plate at the end just use a splash of alcohol to wipe it off.
- Can you use a combination of permanent pen and dry wipe pen to make a mini animation of your stick man dancing or playing football?

THE SCIENCE BEHIND THE DANCING STICK MAN

The science here is all in the ink mixture that the pens use. Dry wipe pens contain a special polymer mixed with the ink which stops the ink from binding to surfaces, therefore when we add water to our plate, the water can run between the plate and the ink and the ink just lifts off. The reason that the picture then floats on the water surface is because the ink is lighter than water. Permanent pens do not contain the extra polymer so they bind to the plates surface and need a special solvent (alcohol) to disrupt this strong bond.