SCIENCE WORLD

Summer Activity Pack

CHROMATOGRAPHY CAPER

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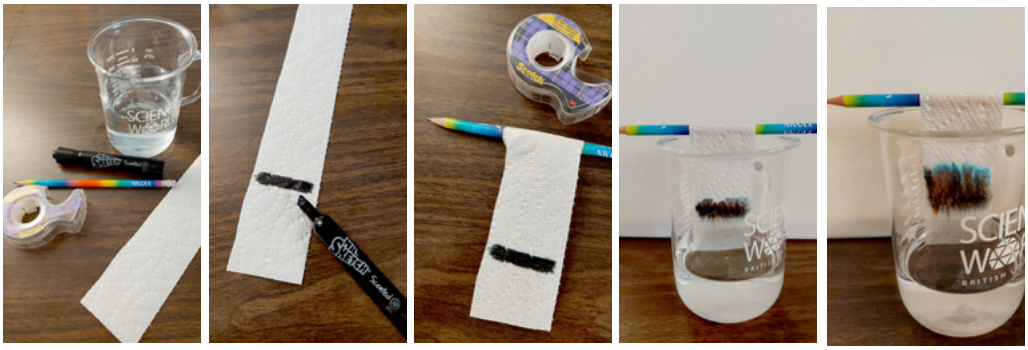
BACKGROUND SCIENCE:

Inks, paints, and dyes consist of particles of colour that are dissolved or suspended in a liquid base. When you write, the liquid part dries and leaves just the colour behind. Different colours are made of different sized molecules that dissolve differently into water; some get carried further and faster than others. Chromatography is the process that separates a mixture by passing it in a solution or suspending it through a medium in which the components move at different rates. We can do this with the help of capillary action in filter paper: when water creeps up filter paper on which a note has been written in felt marker, it contacts the dried colour. The colour molecules are dissolved and wicked up the strip with the water.

FUN FACT: Capillary action is what allows giant old growth trees to get water hundreds of meters up into their leaves.

MATERIALS:

- Paper towel or coffee filters cut into strips
- Different coloured markers
- Clear cup with water
- Pencil
- Tape



WHAT TO DO:

Draw a line using one of the coloured markers towards one end of a strip of paper towel or coffee filter. While the ink is drying, make a prediction about what colours are contained in the marker you've used. Tape the opposite end of the strip to a pencil and dip the end of your strip with the ink line into the water just before the coloured line. The pencil will rest on the edge of the glass and support your strip as it hangs in the water. Watch as the water climbs up using capillary action, dissolving the colour molecules in the ink, and carrying them up the strip. Was your colour prediction correct?

Video: https://youtu.be/LbZvnTdkgR4

WONDERINGS:

- What do you notice if you use the same colour marker, but a different brand?
- Which colours make up the marker you chose to use?
- What colours travelled further? Faster?
- Do all the same colours travel equal distances?