

# LEARNING RESOURCE



## SKITTLES RAINBOW

### MATERIALS

- A white plate or a petri dish on a white piece of paper
- A bag of skittles
- Tap water
- A pipette (optional)

### PREPERATION

- None required.

### INSTRUCTIONS

1. Take a clean white plate or a clear dish on a white background and pipette water into the plate until there is a layer across the whole surface. Water can just be poured into the plate if a pipette is not available!
2. PREDICT what you think may happen if you add the skittles into the water? Take some skittles and place them into the water around the edge of the plate/dish in a repeating pattern.
3. Wait and watch what happens!
4. Repeat as many times as you like using different patterns, you could try placing one skittle in the centre of your dish to see what happens then?

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## EXTENSION

- What temperature water did you use? Do you think changing the temperature of the water will make a difference to your experiment? Try it.
- Can you set up an experiment to test placing the skittles in different liquids? How would you make this a fair test?

## THE SCIENCE BEHIND THE RAINBOW

Skittles sweets are made of sugar (mainly) covered with food colourings – therefore when you eat them your tongue changes colour! When we place skittles in water the outer shell dissolves into the water and we see lovely bright colours.

The interesting thing is that if you leave the dish undisturbed the colours do not mix together, and you get a rainbow effect – this is called **stratification**. Liquid molecules move around **by diffusion**, this means that molecules move from a **high concentration to a low concentration** until the concentration of molecules **is the same** in the mixture. The coloured water all has the **same concentration** of sugar in it, so the molecules don't mix together, the only difference is the colour of the molecules which we can then see very clearly.