INVESTIGATE

THE SKITTLE RAINBOW

5-12 yrs I 20 min I Stage 1 to 3

Can you make a Skittle Rainbow flow backwards?

? Wonder & Predict

What do you think will happen when you place a sugar cube in the middle of the rainbow?

- ☐ The colours will move back towards the Skittles.
- ☐ The colours will keep moving inward..
- ☐ The colours will stop moving.
- ☐ Something else: _____

WHY DO YOU THINK THAT?

_____

_____

_____

_____

What you will need

- Skittles (at least 2 of each colour: red, orange, yellow, green, purple)

- Flat white plate with a rim

- Room-temperature water

- 1 sugar cube (or 1 teaspoon of loose sugar)

M&Ms or Smarties to compare

Investigate

Follow the steps carefully while observing.

1 Build the circle

- Sort your Skittles by colour.
- Arrange them in a circle around the rim of the plate in rainbow order: red → orange → yellow → green → purple.

2 Predict before adding water.

- ☐ The colours will mix together.
- ☐ The colours will form streams.
- ☐ The colours will not move much.

3 Add the water

- Slowly pour room-temperature water into the centre of the plate.
- Stop when the base is just covered (about 4–5 mm deep).
- Try not to disturb the Skittles. Step back and watch.

4 Watch the colour streams

- Observe how the colours flow inwards from each Skittle.
- Look closely at the place where two different colours meet.
- Do they blend, blur, or hold a sharp line?

5 Predict what the sugar will do

- The rainbow has stopped changing.
- You are about to place a sugar cube in the centre.
- What do you think will happen next?

- ☐ The colours will move back outwards.
- ☐ The colours will keep moving inward.
- ☐ Nothing will change.

6 Add the sugar cube

- Carefully place the sugar cube in the exact centre of the plate.
- Watch what happens to the colour boundaries.
- Do the colours move? In which direction?

Observe & Record

Draw the path you observed.

What clues did you discover?

- ☐ The colours flowed inward
- ☐ The colours stayed near the Skittles
- ☐ The colours formed clear streams
- ☐ The colours moved quickly
- ☐ The colours changed direction
- ☐ The sugar cube changed the pattern

What did you observe?

Write or draw what happened.

_____

_____

_____

_____

_____

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What happened?

Fill in the sentences using words from the box.

sugar | streams | Skittles | water | backwards | flows | sugar | line

1 When water touches the Skittles, the coloured coating dissolves and makes a _____solution.

2 The coloured liquid is slightly heavier than plain _____, so it sinks and _____ along the plate towards the centre in narrow streams.

3 When two colour _____ meet, they form a sharp _____.

4 When the sugar cube dissolves in the middle, it adds extra _____ to the water. Some of the colours are carried _____ towards the edges.

The science behind it

When water touches a Skittle, some of the sugar and food colouring dissolve into the water. The coloured water is slightly heavier than plain water, so it flows along the bottom of the plate towards the middle.

The colours travel in narrow streams from each Skittle. When two streams meet, they often stay in separate lines instead of mixing straight away.

When you place a sugar cube in the middle, it creates very sugary water. This sugary water spreads outwards and carries some of the colour with it. That is why the rainbow can appear to move backwards towards the Skittles.

Take it further - Professor Pickelbottom's Question

Change the candy

Do all rainbow candies behave the same way?

Try:
Skittles
M&Ms
Smarties

My prediction:

_____

_____

What happened?

_____

_____

INVESTIGATE