

SCIENCE INVESTIGATORS

Science Investigations

Y5 Summer 2 Wk 6

Science



DANCING RAISINS



DANCING RAISINS

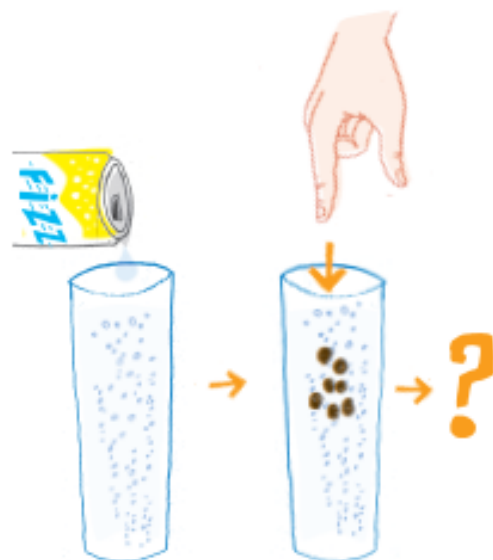
Designed by Danya,
James Dyson
Foundation executive

The brief

Make raisins dance up and down in a glass of fizzy drink.

The method

1. Pour the can of drink into the tall glass.
2. Notice the bubbles coming up from the bottom of the glass. The bubbles are carbon dioxide gas released from the liquid.
3. Drop a few raisins into the glass. Watch the raisins for a few seconds. Describe what is happening to the raisins.
4. Do they sink or float? Keep watching, what happens?



Materials

A can of clear, fizzy drink (e.g. lemonade)

A tall, clear glass

A handful of raisins



How does it work?

Raisins have a higher density than the liquid in the glass, so they sink to the bottom. Carbon dioxide bubbles attach themselves to the raisins increasing their volume while adding very little to their mass. With greater volume, the raisin displaces more fluid. This causes the water to exert greater buoyant force, pushing the raisins upwards. Once the raisins reach the top of the glass the carbon dioxide escapes and the raisins sink again.

INVISIBLE INK



hello

INVISIBLE INK

Designed by Jack,
Design engineer at Dyson

The brief

Write your own secret message in an invisible ink solution.

The method

1. Squeeze lemon juice into the bowl and add a few drops of water. Stir with the spoon.
2. Dip the paint brush into the juice mixture and write a message on the paper.
3. Allow the paper to dry completely. Your message should become invisible.
4. Hold the paper very close to the light bulb to heat up the message area (adult supervision required). Watch your message appear.

Materials

.....
A lemon
.....
A bowl
.....
Water
.....
A spoon
.....
A paint brush
.....
A lamp, or other
light bulb



How does it work?

The lemon juice is an organic substance which reacts with oxygen in the surrounding air, oxidises and turns brown. By placing the paper right next to the lamp, we speed up the oxidation process. The heat from the lamp causes the chemical bonds to break down.

Did you know?

Oxidisation affects lots of different surfaces, from metal to living tissue. A freshly-cut apple that turns brown, a bicycle that becomes rusty or a copper penny that turns green. Not all oxidation is bad – but think about choosing the right materials when designing a product for a particular use.

