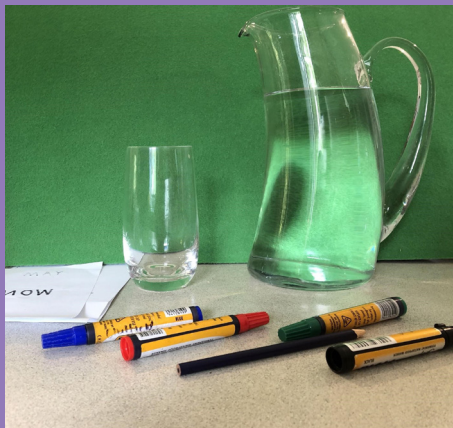


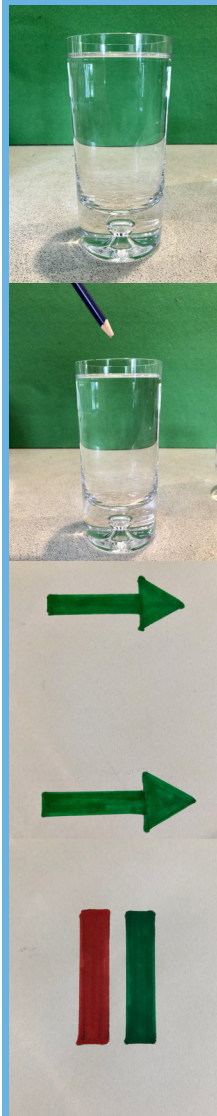
Water Magic

What you need:

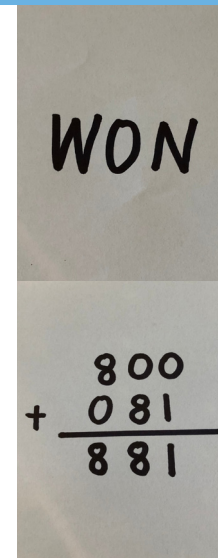


- A glass
- Pen
- Paper
- Pencil
- Coloured pens

Instructions:



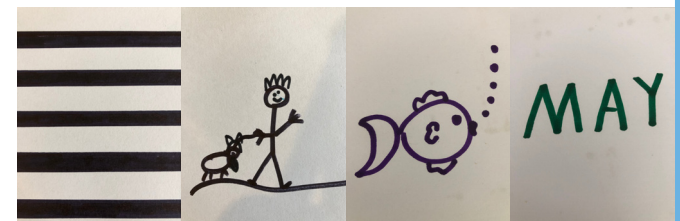
- Fill a glass with water.
- Put a pencil in the glass and then get down at eye level to see how the pencil appears. You should see it as being broken in two.
- Draw two arrows on a piece of paper pointing in the same direction, hold this about 10 cm behind the glass. You may need to move it backwards and forwards a little. Look through the glass at eye level and see which way the bottom arrow is pointing. Then look at the paper without looking through the glass and see if there is any difference.
- Draw two lines in two different colours on a piece of paper. Hold this behind the glass. Look through the glass at eye level and see which colour is on the left and which is on the right. Then look at the paper without looking through the glass to see if there is any difference.



the total and see if it is right or wrong. Keep filling the glass until the equation is covered and now recalculate the equation. What is the answer now? Is it right or wrong?

- Write the word WON on a piece of paper. Place the paper behind the glass and look through to see what it now says. Is there a difference?
- Write this math equation on a piece of paper.
- This time empty the glass and slowly fill it with water until it covers the bottom line. Check

- Other fun drawings / pictures you can try:



Results:

Can you see what is happening?
Describe this to an adult, film your result or write it down in a notebook.
WHY do you think it is doing this?
Check out these crazy results.....



The Science Behind it:

Light travels in waves at different speeds.

When light travels from one transparent medium (air) to another transparent medium (water), the speed of the light slows down and when it hits water it changes its direction slightly. This change in the direction of light is known as refraction of light. Refraction is simply the bending of light.

As the light enters the glass of water, and as it leaves the glass, it changes speed and direction, making the pencil look bent and reversing any writing or drawing on the piece of paper behind the glass.

Another everyday example of refraction is a rainbow. A shower of rain causes the sunlight to bend, forming a rainbow.

Act Like a Scientist:

Repeat this experiment and watch

- What happens if you move the paper closer or further away?
- Does it work the same with different size and shaped glasses?
- Would the same thing happen if you dissolved salt or sugar into the water?

Try 3 Different Shaped Glasses

