Sunshine absorbency; investigating how well materials absorb water

Why do this?

Kitchen roll, paper towels and disposable cloths are everyday items in most schools and kitchens. They have a number of uses, but they are especially good at mopping up spills. This practical provides a simple method for children to explore how absorbent different materials are. It can support them to learn about the suitability of different materials for different uses. There are opportunities for independent working, investigative skills and effective teamwork.

Curriculum links: *properties and uses of materials, everyday materials, absorbency, waterproofing*

Suitability

Year 1 and 2

Practical details

Ensure children do not taste or put liquid or materials used in this practical activity near their mouths.

Depending on how much food colouring is used, some temporary staining of fingers may occur if children touch the coloured water. Remind children to wash hands after the practical.

If in doubt, or for further information, contact CLEAPSS.

Equipment per group

- Petri dish/round lid/shallow container
- Strips of material
- Water
- Food colouring
- Plastic tray (optional)
- Paper towels in case of spills
- Stop watch (optional)
- Ruler (optional)

Suggested materials (you can explore other materials):

- Kitchen roll (different types)
- J cloth or equivalent
- Blue paper towel
- Various types of paper e.g. printer paper, filter paper, tissue paper (wet/dry samples)
- Plastic (eg from a plastic bag)
- Aluminium foil
- Sponge
- Cotton material (towel/T shirt)
- Greaseproof paper

Note

1. Prepare the coloured water beforehand by adding food colouring to water and pour into petri dish/lid.
2. If you need to save time prepare the material samples beforehand. Cut the paper/material into strips (2 x 10-12 cm).
3. It is a good idea to use at least one material that does not absorb water e.g. plastic.

Tel: 01895 251496; Fax: 01895 814372; E-mail: science@cleapss.org.uk; Web site: www.cleapss.org.uk

Procedure

1. Place a shallow container of coloured water on each table/group. (You may wish to use a large tray underneath the water to avoid spills on the table.)
2. Allow each child in the group to pick a strip of material to test. (No more than 2 per child)
3. On the count of 3, the children place the end of their strips of material into the coloured water. It is important that all the strips are put into the water at the same time.
4. Watch and see what happens – whose material absorbs the fastest/slowest? What happens if you leave the materials for the whole lesson?
5. Using a stop watch, children could time how quickly the absorbed coloured water travels to the end of each piece of material.

Expected observations and results

The coloured water will be absorbed at different rates by the different materials. Any non-absorbent (waterproof) materials used will not soak up the coloured water.




Possible further activities

Once the children have explored the samples, there is a variety of enquiries they could undertake, including:

- Which kitchen towel product is the best for mopping up spills?
- Which material absorbs the largest volume of water?
- Using a stop watch and rule to find out which material absorbs the quickest?
- Do different coloured J cloths absorb different amounts of water?

Background notes

Absorbency is the ability of a material to soak up a liquid. Materials that are resistant to or repel liquids are called waterproof.

You can make this experiment more quantitative by using measured quantities of water.