Which Paper Absorbs Best

Activity

CLASS LEVEL	Fourth - Sixth classes
SKILLS	**Investigating, Experimenting, Designing & making**
CONTENT	**Materials – properties and characteristics of materials** **Environmental Awareness and Care**
CROSS - CURRICULAR LINKS	Maths, Geography, Art
EQUIPMENT	Three different types of paper (e.g. serviette, kitchen paper, tissue paper), scissors, water, butter cartons, red food colouring and either a metre stick & blu-tack *or:* string and clothes pegs *or:* (for older classes): strips of wood, junior hacksaws, bench-hook, glue-gun, plasticine or blu-tack
PREPARATION	Collection of materials
BACKGROUND INFORMATION	Materials absorb water through capillary action. This means that water is attracted to the surface of the fibres and is drawn up into the spaces between them. The coarser the fibres the more easily the material absorbs water because there are more air spaces for the water to go into.
TRIGGER QUESTIONS	**Here are some questions to ask the children to set the scene for the activity** If you spilt your drink what sort of material would you use to mop it up? Would you use an old plastic bag? Would you use a cotton rag? Would you use kitchen roll? Would you use a piece of rubber? What clothes dry the quickest on a washing line? Are those materials that absorb water the best? **You are going to be investigating -** What do you want to find out? (which paper absorbs the best) What will you change? (the paper) What will you keep the same? (size of piece of paper, amount of water, time) You are then experimenting, and observing. What do you see? What does this tell you about absorbing?

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ACTIVITY	Give the children 3 different kinds of paper and ask them to investigate scientifically which is the most absorbent. Show them what equipment is available to do it. Encourage the children to think of various ways in which this could be done with the available equipment. They need to design and make a support for their fair test. Then they need to see which paper absorbs the best. **A suggested way is as follows** Design a support for the fair test Use a (metre) stick as a 'crossbar'. **OR** stretch string between two objects. **OR For older classes:** Cut the wood into three strips using the bench-hook and junior hacksaw and stick them together using the glue-gun to form a goal-post shape (or guillotine as some children call it!). See the note below on Design and make a support. Hang the three pieces of paper from the 'crossbar' or the string using blu-tack or plasticine. Put water into the butter carton (and a few drops of food colouring, which helps to show up the water) and hang the three pieces of paper so that they are just dipping into the water. Watch what happens. Display against the light for the best effect. How will the children decide which is the best absorber? (a discussion on what we mean by 'best' could follow, e.g. is it the paper which absorbs the fastest? Is it the paper which the water travelled furthest up? Encourage open-ended discussion, without right and wrong, etc.
SAFETY	**Care with water.** **Care with the hacksaw and glue-gun (See 'Be Safe' booklet for safe use of these in the primary classroom). Adult supervision of these is essential.**
FOLLOW-UP ACTIVITIES	**Discuss what we use to absorb things –** paper vs cloths and their effect on the environment, hygiene. What should you use in your classroom? Children could try the activity with oil instead of water. Absorbing activities for younger children can be found at http://content.scholastic.com/browse/article.jsp?id=3370 **Additional Note:** *Design and make a support* *Take a strip of wood 30cm long and either 8mm x 8mm or 10 x 10mm in diameter. (These can be purchased from many wood suppliers as 60cm lengths, or in packs of 30cm lengths by science suppliers).* *The object is to make a 'goalpost' shape from the strip of wood.* *The width of the goalpost needs to be greater than the length of the butter carton, say 20 cm* *Measure and mark a length of 20cm from one end of the strip; then measure and mark the remaining 40 cm into two equal lengths for the uprights.* *Place the wood into the bench-hook and carefully saw the wood into three pieces.* *Using a low-temperature glue gun stick the three pieces together to form a goalpost shape.* *Leave it to settle for a few minutes to give it time to stick.* *The support can be made to stay in a vertical position by putting small pieces of blu-tak or plasticine under each 'leg'.*