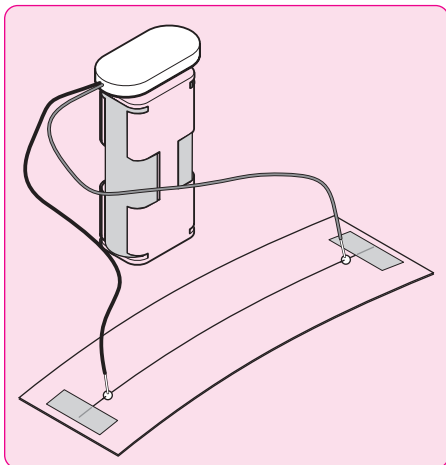


# Materials - dumb, modern and smart

**A**s part of its contribution to the DATA Millennium conference, TEP ran a series of seminars featuring new and smart materials. It was suggested that some materials are now far smarter than others and that future consumers will increasingly expect intelligent behaviour from the things they buy and use. Many familiar materials are not too clever e.g., in their responsiveness



to environmental changes. But other materials, such as shape memory alloys, are now routinely programmed for use in textiles so that garments change shape at a pre-determined temperature. The seminars contrasted the design potential of relatively materials such as stones (e.g. ballast in concrete) with examples of modern materials including Polymorph, thermochromic sheet, lenticular polypropylene, electroluminescent film, and smart wire. Polymorph, a low temperature polymer, facilitates hand moulding of complex forms to provide

commercial strength plastic prototypes.

This has already been used widely in schools, for example in making customised products such as handles and controls for those with specific disabilities. The three modern sheet materials are also finding many innovative uses: thermochromic sheet responds to temperature changes and offers huge opportunities for visual displays as well as temperature monitoring. Polypropylene, already manufactured in a range of fantastic colours, is now available as an embossed (lenticular) sheet creating the remarkable optical illusion of much greater thickness providing the basis for short sharp practical tasks. Electroluminescent film is increasingly used for specialised lighting applications. Its thickness (less than 0.5mm), flexibility, and the fact that it can be cut into practically any shape offers great potential for designing and making. (See the article on Bright Ideas from the RSA).

The national curriculum now mentions smart materials for the first time, and it is therefore timely that TEP can offer a range of new and exciting materials. If you know of a material with potential, but cannot obtain it easily, please let Kate at Teaching Resources know.

