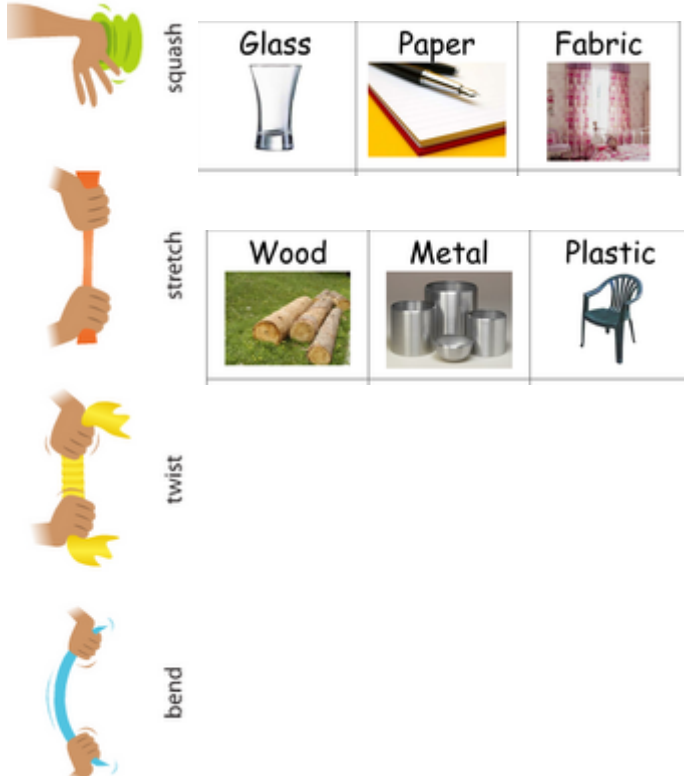


Subject: Science	Year Group: 2																																				
Study Block: Manipulation of everyday materials																																					
<p>What should I know already?</p> <ul style="list-style-type: none"> <li>○ What an object is</li> <li>○ An object is made of material e.g. a spoon is made from metal</li> <li>○ The identity and name everyday materials wood, plastic, glass, metal, water and rock</li> <li>○ The physical properties of materials- hard, soft, shiny, dull, rough, smooth, waterproof, not waterproof, transparent, opaque, stretchy (flexible), absorbent, non-absorbent</li> <li>○ How to sort materials on the basis of their simple properties</li> </ul>	<p>Diagram / Map / Photo etc...</p> 																																				
<p>What will I know by the end of the unit?</p>																																					
<p>I will know that ...</p> <p>Which objects are made from metal? Why? Coins, cans, cars, tables. Metal is hard material (rigid). It is man-made and natural.</p> <p>Which objects are made from wood? Why? Doors, floors, tables and fences. Wood is hard (strong, stiff). It is natural.</p> <p>Which objects are made from plastic? Why? Toys, bottles, pens, rulers, cups and packaging. Plastic is shiny, stretchy, (flexible bendy strong). It is man-made.</p> <p>Which objects are made from glass? Why? Windows, mirrors, glasses and windscreens. Glass is transparent and stiff (brittle/fragile). It is man-made.</p> <p>Which objects are made from brick? Why? Houses and walls. Brick is hard, rough (strong). Is man-made.</p> <p>Which objects are made from rock? Why? Garden walls and old buildings. Rock is hard, rough (strong). It is natural.</p> <p>Which objects are made from paper? Why? Books, envelopes, newspaper, toilet roll and school books. Paper is smooth and flexible. It is man-made.</p>	<table border="1"> <thead> <tr> <th colspan="2" data-bbox="796 1126 1508 1164"><b>Vocabulary</b></th> </tr> <tr> <th data-bbox="796 1164 954 1193"><i>Word</i></th> <th data-bbox="954 1164 1508 1193"><i>Meaning</i></th> </tr> </thead> <tbody> <tr> <td data-bbox="796 1193 954 1227">object</td> <td data-bbox="954 1193 1508 1227">Something that can be seen or touched</td> </tr> <tr> <td data-bbox="796 1227 954 1261">material</td> <td data-bbox="954 1227 1508 1261">What an object is made of</td> </tr> <tr> <td data-bbox="796 1261 954 1294">squash</td> <td data-bbox="954 1261 1508 1294">To squeeze an object so it changes shape</td> </tr> <tr> <td data-bbox="796 1294 954 1328">bend</td> <td data-bbox="954 1294 1508 1328">To make an object curved or crooked</td> </tr> <tr> <td data-bbox="796 1328 954 1361">twist</td> <td data-bbox="954 1328 1508 1361">To turn its ends in opposite directions</td> </tr> <tr> <td data-bbox="796 1361 954 1451">stretch</td> <td data-bbox="954 1361 1508 1451">To pull and object so it becomes longer or wider</td> </tr> <tr> <td data-bbox="796 1451 954 1485">suitable</td> <td data-bbox="954 1451 1508 1485">Something that is or works</td> </tr> <tr> <td data-bbox="796 1485 954 1518">unsuitable</td> <td data-bbox="954 1485 1508 1518">Something that isn't right or doesn't work</td> </tr> <tr> <td data-bbox="796 1518 954 1552">wood</td> <td data-bbox="954 1518 1508 1552">What trees are made of</td> </tr> <tr> <td data-bbox="796 1552 954 1585">plastic</td> <td data-bbox="954 1552 1508 1585">A strong light man-made material</td> </tr> <tr> <td data-bbox="796 1585 954 1675">glass</td> <td data-bbox="954 1585 1508 1675">A material that is hard and lets light through</td> </tr> <tr> <td data-bbox="796 1675 954 1742">metal</td> <td data-bbox="954 1675 1508 1742">a strong material that melts when its heated</td> </tr> <tr> <td data-bbox="796 1742 954 1776">water</td> <td data-bbox="954 1742 1508 1776">A transparent colourless liquid</td> </tr> <tr> <td data-bbox="796 1776 954 1809">rock</td> <td data-bbox="954 1776 1508 1809">made of stone from the Earth</td> </tr> <tr> <td data-bbox="796 1809 954 1843">natural</td> <td data-bbox="954 1809 1508 1843">Already exists, not made a person</td> </tr> <tr> <td data-bbox="796 1843 954 1921">man-made</td> <td data-bbox="954 1843 1508 1921">Made by a person</td> </tr> </tbody> </table> <p><b><u>Link to a famous person</u></b></p>	<b>Vocabulary</b>		<i>Word</i>	<i>Meaning</i>	object	Something that can be seen or touched	material	What an object is made of	squash	To squeeze an object so it changes shape	bend	To make an object curved or crooked	twist	To turn its ends in opposite directions	stretch	To pull and object so it becomes longer or wider	suitable	Something that is or works	unsuitable	Something that isn't right or doesn't work	wood	What trees are made of	plastic	A strong light man-made material	glass	A material that is hard and lets light through	metal	a strong material that melts when its heated	water	A transparent colourless liquid	rock	made of stone from the Earth	natural	Already exists, not made a person	man-made	Made by a person
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Which objects are made from cardboard? Why?

Boxes and packaging,  
Card (rigid and strong).  
It is man-made.

Which objects are made from rubber? Why?

Rubber is stretchy (flexible and strong).  
Tyres, elastic band, balloons, sole of a shoe.  
It is natural.

Which of the above materials can be changed by squashing, bending, twisting and stretching them?

**Let's be scientists (investigation)**

Radcliffe and Tex want to pack some things in a bag to take on holiday. It's tiny!

Which ones are too big can they be bent, twisted etc?

Material	Flexible	Rigid
paper		
plastic		
fabric		
rubber		
wood		
metal		



John Boyd Dunlop was a Scottish veterinary surgeon, born 1840. In 1867 (when he was 27) he moved to Belfast. 20 years after moving to Belfast, John

invented a new design for pneumatic tyres to go on his son's tricycle wheels. Lots of people started making tyres in factories in 1890, just in time for the development of motor vehicles. The features of pneumatic tyres are a tube filled with air on the inside. Covering this tube is a layer of fabric. Over this layer of fabric is a layer of rubber. This is the part where tread patterns are added. Tractor tyres have enormous tread, so they can move easier on slippery mud. How the tyres look depends on what they are needed for. Formula One racing have specially designed tyres for different temperatures and conditions. Pneumatic tyre, they can all be broken by a puncture. A puncture is a hole in the tyre letting the air from the inside out. These tyres do not work.



Some vehicles using pneumatic tyres today are: • Tractors • Lorries • Buses • Aeroplanes • Bicycles • Cars • Formula one cars.

**Let's be scientists. (Fair Test) Radcliffe and Tex want a new raincoat.**

How would you find out if a material is waterproof? – What would you do?

- 1 – Collect a variety of materials and list them in my results table.
- 2- Predict which materials I think will be waterproof
- 3 – Testing one material at a time, add the same number of water drops from a pipette onto the materials.
- 4 – Record data into results table – waterproof materials do not absorb water, non-waterproof materials will absorb the water into them.
- 5 – Use my results to say for certain which materials are waterproof – try to explain why they are waterproof, or how I know this.
- 6 – Suggest improvements or changes to my investigation, or what to investigate next.

Material	Waterproof (tick or x)	Absorbent (tick or x)
glass		
paper		
plastic		
rubber		
cardboard		

**So Silly – materials NOT suited for their purpose**

A chocolate tea pot – Not suitable because tea pots need to hold hot water, and chocolate melts much lower temperatures than hot water!

Newspaper wellies – Not suitable because wellies are used to keep our feet dry. Newspaper is absorbent, so will make our feet wet!

Jelly chair – Not suitable because a chair needs to be rigid, but jelly is soft and too flexible. Think of your own examples of so silly materials.