



## Cotton/Polyester comparison chart - supporting notes.

### *There is one test, simple, that has not been listed here:*

**Colourfastness.** This quick test can only be done on fabrics that are dyed but might be good to do on the dye experiments?

- Take a piece of clean cotton or even folded good quality kitchen roll.
- Wipe 10 times in the same direction on the cloth, more times if required.
- Does the dye come off?

Colourfastness is impacted by the dye stuffs and methods of dyeing. Dye stuffs have to be secured in place by chemical mordants, which are not organic. If a fabric is not colour fast it can cost a retailer a lot of money because it can dye other garments when worn, in the wash, come off on a car seat etc.

## Materials needed for the tests:

### For each test:

- Cut strips of Cotton and Polyester fabric, 15cm x 20cm will do.

### Stretch recovery:

- Pins and a board into which the pins can go easily and securely.

### Absorbency:

- **Two glasses of water and two retort stands is possible or somewhere the fabrics can be secured while absorbency takes place. The fabrics have to be dipped into the water equally and timed.**

### Heat:

- Ironing board, iron. Silicone paper for either side if you are concerned pupils will melt the polyester.

### Insulation:

- Two glass containers, elastic bands. Access to hot water and a timer.

### Strength in wear:

- Two hand held blocks of wood. Fine sandpaper fixed to the inside of one block.

Characteristic	Cotton	Polyester
<ul style="list-style-type: none"> <li>• <b>Stretch recovery.</b></li> <li>• How far do the fabrics stretch and do they recover?</li> <li>• Why might they be different to one another?</li> <li>• Cut an equal strip of each fabric and pin to a board. Have a measuring tape or ruler beside the fabric. Measure it, pull the fabric as hard as you can, let it relax for a few minutes and measure it again.</li> </ul>	<p>Original length</p> <p>Length after stretch</p>	<p>Original length</p> <p>Length after stretch</p>
<ul style="list-style-type: none"> <li>• <b>Absorbency.</b></li> <li>• Cut two equal strips of each cloth and weigh them if possible.</li> <li>• Mark .5cm on the bottom of each cloth strip. Dip this much fabric into a glass of water for 2-3 minutes. Timed exactly.</li> <li>• Either weigh again and compare or draw a line on the cloth where the water reached.</li> </ul>	<p>Original weight:</p> <p>Weight after water:</p> <p>Water absorbency measured in mm.</p>	<p>Original weight:</p> <p>Weight after water:</p> <p>Water absorbency measured in mm.</p>
<ul style="list-style-type: none"> <li>• <b>Response to high heat.</b></li> <li>• Iron a crease into the fabric then iron out again, is the crease permanent? Cotton should iron more or less flat. What happens to the polyester?</li> <li>• Why do these fibres respond differently to heat?</li> </ul>		
<ul style="list-style-type: none"> <li>• <b>Insulation</b>, how does the fibre insulate?</li> <li>• Fill two glasses of hot water and wrap each in a different fabric, tightened with elastic bands. Take the temperature of the water initially and then again after 10 minutes or so. Is one better at insulating than the other?</li> <li>• Why might the fibres be different to each other?</li> </ul>	<p>Temperature of water after 10 mins 30 mins</p>	<p>Temperature of water after 10 mins 30 mins</p>
<p><b>Strength in wear.</b></p> <ul style="list-style-type: none"> <li>• Cut an equal sample of both cloths. Prepare two equal hand held blocks of wood, on one Block attach fine sandpaper.</li> <li>• Wrap the cloth tightly round the plain wooden block and rub the sandpaper block against the cloth, in ONE direction for 10-20 rubs.</li> <li>• Do the same experiment for both cloths.</li> </ul>	<p>How does the fabric change?</p>	<p>How does the fabric change?</p>