

## Year 8 Pencil case knowledge organiser      key learning

Sustainability in design is choosing to use materials and processes that maintain a certain level or number of an item.

Fabrics are constructed from natural resources or man-made resources that are different in their primary form.

Knowledge of a range of materials characteristics can be considered when evaluating ideas and products.

Natural Fibre Products Traditional fibres from plants and animals.	Manmade Fibre Products (synthetic) Modern fibres manufactured using polymers.
<p><b>Wool:</b> Fibres from sheep's wool are spun into yarn and can be woven and knitted. The fibres can also be spun into finer yarn which is turned into cloth. Absorbent, soft or coarse handle, not durable.</p> <p><b>Used in</b> yarn form in knitwear, scarves, gloves, bags, dresses and suits.</p>	<p><b>Nylon:</b> Strong and durable manmade polymer fibre. Has a wide range of applications, as a clothing fabric and in other uses where durability is important. Warm to wear, non-absorbent and good drape. Can be made with soft or coarse handle.</p> <p><b>Used in</b> wide range of clothing in pure and blended form. Waterproof coats, tents.</p>
<p><b>Cotton:</b> Thread is spun from fibres from the cotton plant. Used widely due to its good durability and soft handle. Can be machine washed, but requires ironing as creases easily. Highly-absorbent.</p> <p><b>Used in</b> canvas, muslin, calico and denim, clothing, home furnishings</p>	<p><b>Polyester:</b> Very durable polymer fibre, non-absorbent and cool to wear. Often blended with cotton to produce low cost, breathable fabrics and used widely in place of pure cotton.</p> <p><b>Used in</b> clothing and home furnishings, industrial polyester used for ropes, seat-belts.</p>

We use so **much** and so **many** materials. Many of the products we use daily use materials that are in **scarce** supply and are **non-renewable**.

If everyone in the world used as many resources as we do in the UK, we'd need **3 planets the size earth** to sustain us.



- \* Sustainable resources should be considered and used where possible
- \* The six Rs - Rethink, Reuse, Reduce, Recycle, Repair, Refuse
- \* Challenges of climate change and energy costs inform responsible design
- \* Carbon footprint is the amount of energy used to make and transport an item
- \* The six Rs are six agreed upon principles of sustainability
- \* Silk is made from a natural primary source - silk worm
- \* Polyester is made from a synthetic primary source - petrol and coal
- \* Polyamide (nylon) is made from a synthetic primary source - Petro chemicals

### Keywords

**Sustainability** - The level to which resources can be used without them becoming unavailable.

**Properties** - the characteristics of a specific fabric.

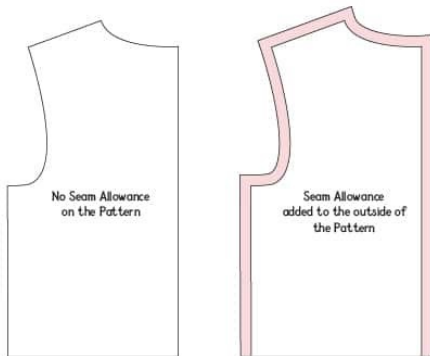
**Natural fibers** - fibers from plants or animals.

**Synthetic fibers** - fibers that are man-made its primary sources are petrol and coal

Demonstrating accuracy and precision in construction improves the functionality and aesthetics of the product

Patterns need to be constructed using the exact measurements and seam allowances as planned for the final product

What is a Seam Allowance?



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\* A design for an end-product is transferred onto paper – this is a pattern

1. What is the meaning of sustainability?
2. What is the source of cotton?
3. What are the 6 R's of sustainability?
4. What is the source of silk?
5. What are the sources of polyester?
6. What is the source of Polyamide (nylon)?

1. The level to which resources can be used without them becoming unavailable.
2. Natural - cotton plant
3. Refuse, rethink, reduce, reuse, recycle and repair.
4. Natural - silkworm
5. Synthetic - petrochemicals.
6. Synthetic - petroleum, coal