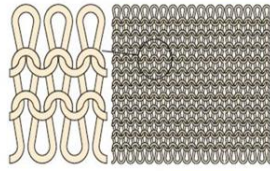


## 1. Knitted Fabrics

- are made from a series of yarn **loops** that interlink together
- can be made by **machine** or by **hand**
- **stretch** easily and lose shape
- are **warm** to wear, as the loops trap air
- can **unravel** if the yarn is cut.



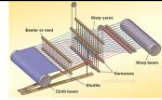
Knitted products include **stretchy** casual clothing, such as T-shirts, vests, leggings, and also **warm** clothing, such as hats and gloves.

**Would this be good for a bag? Why?**

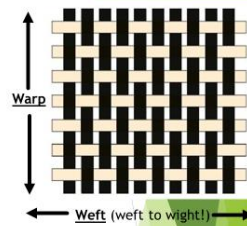
Video: Circular Knitting machine (1 min 20 sec)

## 2. Woven Fabrics

Weaving is done on a loom, with warp and weft yarns:



- **Weft** yarns run across the **width** of the fabric.
- **Warp** yarns run along the **length** of the fabric.
- Weft yarns **interlace** with warp yarns in an 'over-under-over-under' configuration.



Woven fabrics are **strong** and **stable**. They **don't stretch** but will **fray** if cut.

Woven products typically include smart trousers, shirts, dresses, skirts, carriers and bed clothes.

**Would this be good for a bag? Why?**

Video: Commercial Weaving on Loom (2 min 20 sec)



## 3. Bonded Fabrics (non-woven)

Bonded fabrics are made by applying **pressure and heat** directly onto a **web** of fibres, sticking them together. They are:

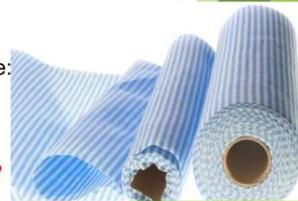
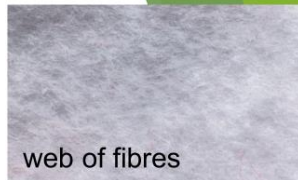
- quite **cheap** to make
- not strong and **easily torn**
- ideal for **disposable** products
- often used to **reinforce** other fabrics.

Products made from bonded fabrics include:

- face masks
- protective suits
- cleaning cloths.

**Would this be good for a bag? Why?**

Video: Non-woven fabric production (30 sec)



# KNOWLEDGE ORGANISER Year 9 TEXTILES - FEATHER FLAG THEORY

## Fibre Properties - What do you know?

Fibre	Source	Properties	Used for
<b>Cotton</b>	cotton plant (natural)	<b>Absorbent</b> ; strong; cool to wear; washable; flammable	Clothing; soft furnishings; bed sheets; sewing threads
<b>Linen</b>	flax plant (natural)	<b>Absorbent</b> ; hard wearing; cool to wear; washable; flammable	Lightweight summer clothing; soft furnishings; table linen
<b>Silk</b>	silk worm cocoon (natural)	Absorbent; <b>shiny</b> ; good handle; comfortable to wear	Luxury clothing and lingerie; knitwear; soft furnishings
<b>Wool</b>	sheep, llama, (natural)	<b>Warm</b> ; absorbent; strong; low flammability; shrinks easily	Coats; jackets; jumpers; socks; blankets; carpets
<b>Polyester</b>	petroleum (synthetic)	<b>Strong</b> ; flame resistant but still melts; poor absorbency	Versatile; used throughout textiles
<b>Nylon</b>	petro-chemicals (synthetic)	Strong; melts as it burns; good <b>elasticity</b> ; not absorbent	Clothing; carpets; rugs; seat belts; ropes; tents
<b>Acrylic</b>	petroleum (synthetic)	Strong when dry; burns and melts; good <b>insulator</b>	Knitwear; knitted fabrics; fake fur; upholstery

**Specifications:**

- \*It must stand upright, remain flat and display its message clearly.
- \*It must be visually appealing, with bright colours and an appropriate shape.
- \*It must include 2 different textile processes, and be suitable for mass production.
- \*It must be safely constructed, taking into account who and how it will be used.

Feather flags, Festival flags, Banners, Pull-up

### Pop Art & Graffiti Art

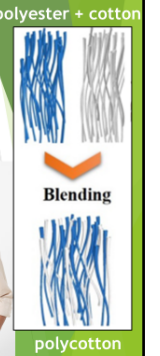
## (Enhancing Fabrics) 1. Blended Fibres

- Fibres (hairs) are the raw materials of textiles and every fibre has its own **characteristics** or **properties**, e.g:
  - cotton fibre is **absorbent** and **cool** to wear
  - polyester fibre is **strong** but **not absorbent**

- **Blending** or mixing fibres combines the best properties of each.

- **Polyester cotton** is a blended fibre which will be **cool** to wear but will **dry** more quickly, because polyester **does not absorb** water.

- Many shirts or bed sheets are made from '**polycotton**'. It is also **cheaper** than 100% cotton.



## (Enhancing Fabrics) 2. Combined Fabrics

Textile **fabrics** can be **combined** to improve their qualities.

**Laminated** (bonded) fabrics are where two or more fabrics are glued together to create a **layered** material.

Compared to plain fabrics, laminated fabrics have **combined** properties (greater **strength**, **durability** and **waterproofing**).

They are great for outdoor clothing, sanitary products like cloth nappies, mattress protectors, bibs, wet bags and tablecloths.

**Can you think of any other products?**



*A neoprene mouse mat. A thin, blue knitted fabric is laminated to a black rubber fabric (neoprene). This feels soft to your hand but is non-slip underneath.*



**What is GORE-TEX?**

## (Enhancing Fabrics) 3. Applied Finishes

**Finishes** are applied to the surfaces of fabrics to improve the **function** or the **aesthetics** (looks). Finishes can be:

- a **mechanical** process
- a **chemical** process

- **Mechanical**: Fabrics can be **brushed** making them **fluffier** in appearance, **softer** and **warmer** to wear.

- **Chemical**: A **resin** applied to fabrics makes them **crease resistant** or **water resistant**, which is ideal for clothing.



*Brushing raises the surface of fabric. Warm air is trapped in the raised fibres keeping the wearer much warmer.*



*A silicone finish applied to fabrics will make them resistant to water. The droplets simply run off.*