

## Key words:

**Fabric shears/scissors:** large scissors with a flat lower blade edge, used to cut fabric only.

**Pins:** used to hold fabrics together, temporarily while sewing.

**Needles:** used with thread to sew with, they have an 'eye' for the thread to go through.

**Tape measure:** flexible long ruler, used to take measurements of the body/fabric.

**Thread:** Used in a sewing machine or with a needle to sew together fabrics.

**Bobbin:** round reel, that holds thread in the lower 'bobbin case' of the sewing machine.

**Un-picker:** sharp tool to remove unwanted stitches.

**Iron:** used to remove creases from clothes.

**Heat press:** Large, hot flat plate that is used to apply vinyl to fabric/transfer heat dye to fabric.

**Applique:** when one fabric is cut out and applied to another using zig zag stitch.

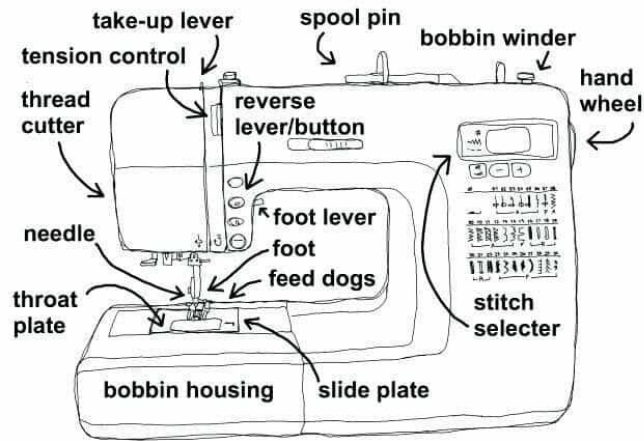
**Hand embroidery:** decorative stitches created by hand.

**Couching:** zig zagging cord/thread/wool onto a background fabric, to create a decorative pattern.

**Smart material:** a material that reacts to its environment, could change colour with heat (thermochromic).

**Modern material:** a material that has been designed and developed to fulfil a particular need such as shape memory polymers (designed for NASA).

**Fabric construction:** how fabric is made, knitted/wove/bonded.



## Health & safety using a sewing machine:

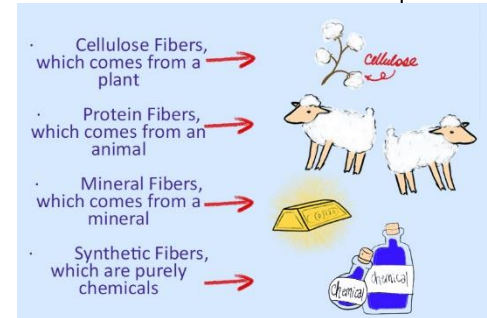
- Do not accept no eating/running/bags under table.
- Turn power off when setting up/threading/finished.
- Only one person per machine
- Put the presser foot down when sewing.
- Keep fingers away from the needle.
- Concentrate-no talking/watch what you are doing.

## Where do fabrics come from?

Natural fibres come from animals and plants, such as wool from a sheep and cotton from a cotton plant.

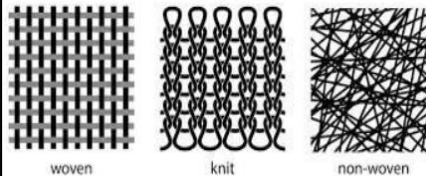
Synthetic fabrics are made from chemicals, like polyester.

Regenerated cellulosic fibres are made from cellulose that is extracted from wood pulp, which is then chemically dissolved and extruded as a continuous filament (very long, fine fibre).



## How are fabrics made?

The images show three ways that fabrics are constructed (made). Woven fabrics are strong, do not stretch and used for items such as jeans and shirts. Knitted fabrics have loops that allow them to stretch, they are comfortable to wear as they stretch as the body moves, so are good for sportswear, underwear and t-shirts. Non-woven or bonded fabrics have no specific structure to them, the fibres are matted together through heat/glue/felting. This results in a weak fabric that will rip apart easily. Bonded fabrics are used for craft materials as well as in some food packaging.



## Smart and modern materials:

Smart materials and structures can be defined as the materials and structures that sense and react to environmental conditions or stimuli, such as those from mechanical, thermal, chemical, electrical, magnetic or other sources.

### Smart Materials include ones that:

- monitor body functions and administer medicines/give warnings;
- maintain a personal micro-climate, eg Stomatex, Outlast;
- can provide buoyancy and support, eg bodysuits for medical/physiotherapy support
- have chromatic properties and change colour in response to specific situations;
- have shape memory, eg Corpo Nove shirt which adjusts to differing temperatures;
- are self-cleaning, eg nano-technology fabrics triggered by sunlight;

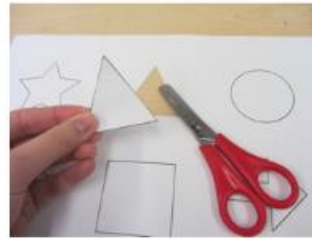


Modern materials are not naturally occurring, and have to have been developed. A modern material is a material that has been engineered to have improved properties.

- Gore-Tex
- Kevlar & Nomex
- Fabrics that wick moisture away from the body, eg Coolmax
- Microencapsulated fibres, eg those which release scents
- Fabrics which protect against bacteria, eg Purista, Chitopoly
- Fabrics with electronics, eg GPS systems,
- Geotextiles



## Appliqué



Cut out your pattern piece using paper scissors.



Use a pin to attach your pattern to the fabric.



Cut around your pattern and once complete remove your pin.



Use a pin to attach your shape to your larger piece of fabric.



Choose your stitch and begin to sew around the edges of your shape.

Remember to knot your thread at the end and start on the back!



When you are finished make sure you are on the back of the fabric and push your needle on and out of the fabric.

Then before you pull tight put your needle through the loop. Repeat this a couple of times and cut the thread.

Embroidery is the craft of decorating fabric or other materials using a needle to apply thread or yarn. Embroidery may also incorporate other materials such as pearls, beads, quills, and sequins.



In embroidery, couching and laid work are techniques in which yarn or other materials are laid across the surface of the ground fabric and fastened in place with small stitches of the same or a different yarn.



Tie-dye is a term used to describe a number of resist dyeing techniques and the resulting dyed products of these processes. The process of tie-dye typically consists of folding, twisting, pleating, or crumpling fabric or a garment, before binding with string or rubber bands, followed by the application of dye or dyes.

