My revision card

AQA

Topic: QUALITY CONTROL

Why, where and how are they done?
For example you always check materials when they arrive at the factory. You check the colour, is it the right quantity, look for faults, but also fabric width and dimensional stability.
You spot or randomly check in the production process according to the manufacturing specification. Is the seam allowance the right width, are the correct components used etc.
You check at the end against a sample to make sure it looks right.

My revision card

AQA

Topic: QUALITY ASSURANCE

What is it and why is it important?
This isn't about the seam allowance checks but **the bigger picture.** Here the customer is assured that the product is the same every time it is made! Sometimes the question is how quality can be assured and your answer has to be through quality control measures. The checks are obvious but what they **also like to hear is a reference to prototyping, sampling or modelling as well.** All are part of the quality control processes.

My revision card

AQA

Topic: COMPONENTS

Components are everything but the fabric (thread, buttons, zips, interfacing etc). You should be able to understand how and where they are used. You also need to know why products often have a lining (makes it look luxurious, hides seams, adds texture, if a dress material will not stick to tights for example). The most asked for component is always the iron on interfacing, also called Vilene or the double sided interfacing Bondaweb, which is used for craft purposes like appliqué. Iron on interfacing is put into cuffs and collars to stiffen them and add stability that makes the sewing easier and the product will look better.

My revision card

AQA

Topic: SMART/ MODERN FABRICS

Know the difference. Smart reacts to heat, light and pressure. Modern doesn't it stays the same.
Thermochromic (heat, t-shirts, medical textiles), photo chromic (light, t-shirts) & pressure (scratch and sniff toys) all of these are either sprayed on as a finish or added as a smart pigment to fabric paint or dye. Those finishes will wear off with washing. All of them are 'microencapsulated' which means micro=very small capsule= very small round container. It looks like the tiniest invisible droplet that cling to the fabric and absorbs and releases energy. An example for sportswear is 'fastskin' (mimics shark skin and helps the swimmer go faster) & outlast (keeps you warm and cool e.g. releases and absorbs energy).

My revision card

Topic: QUALITY CONTROL

<u>Quality control</u> is a way of making sure that the product is fit for the purpose it was made. The product should meet the **criteria** set down in the **specification.**
To make sure the product meets that specification tests and checks are carried out throughout the making of the product.

My revision card

Topic: QUALITY CONTROL

In a **production plan** there will be **critical points** to see if the product is good enough e.g. once the product is cut out you will check it is the correct size.

<u>Each stage of production can be graded:</u>
Acceptable quality - the product matches the specification
Rework - the product does not meet the specification but can be redone e.g. a hem can be re-machined
Reject - the product cannot be corrected e.g. the fabric is torn - this is where many **'second'** products come from.

My revision card

Topic: CONSUMER PROTECTION

Any body that buys a product is protected by law to ensure that the item they have bought is **fit for the purpose it was bought.** A waterproof mac that did not keep you dry would be unacceptable and you could return it to the shop you bought it for a refund
We are protected by the **Trade Descriptions Act, Consumer Safety Act, Furniture** and **Furnishings** regulations (products must pass **fire tests**), **Sale of Goods Act**
Items for children should be labelled as indicated by **Children's Clothing Regulations 1994- 'Keep away from fire'**

My revision card

Topic: THE QUALITY CONTROLLER

When producing a product in large quantities it is very easy to make mistakes!!!!!

In a factory a person is employed to make sure that the quality of the product is a high standard. These checks are made when the product is finished and before it is sent to the shops.

If the product is a poor quality it is either thrown away or sent back to be corrected. This costs the factory extra time and money.

My revision card

Topic: FIBRES

You need to LEARN about the fibres and what their properties are:

Natural fibres – Cotton, linen, wool, silk
Synthetic fibres – polyester, polyamide, elastane
Regenerated fibres – viscose, acetate

My revision card

Topic: NATURAL FIBRES

Natural animal: very absorbent, warm, NOT EASY CARE (wool shrinks, silk gets brittle when washed), durable, can be itchy (clothing, jumpers, coats, scarf's

WOOL
COTTON
SILK
LINEN
FLAX

My revision card

Topic: SYNTHETIC FIBRES

Non absorbent, durable, easy care (fashion clothing, sportswear Lycra and nylon make swim suit material, lining)
Natural cellulose: Absorbent, hot washable, crease easily, comfortable to wear, breathable (fashion clothing, sportswear, and nappy filling)

My revision card

Topic: YARNS

- ***Yarns***
- **Staple (short):** All natural fibres except silk which is a filament BUT synthetic . Fibres can be cut into staples of cause.
- **Filament (endless):** All synthetic fibres and silk. You must understand that synthetic fibres are thermoplastic and can be heat set into different shapes. Acrylic can be crimped so it looks just like wool.

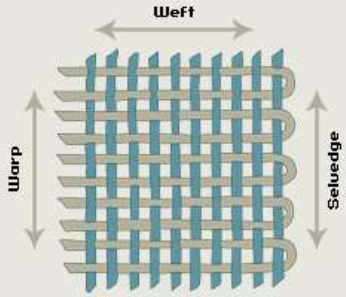
My revision card

AQA

Topic: CONSTRUCTION - PLAIN WEAVE

Plain-weave fabric

Plain weave fabric is strong and hardwearing. It is used for fashion and furnishing fabrics.



WOVEN FABRICS

Main characteristics:

Fray

Have a selvedge

Do not stretch

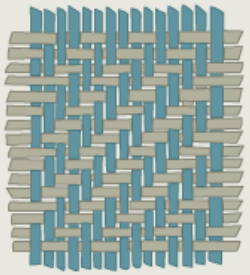
My revision card

AQA

Topic: CONSTRUCTION - TWILL WEAVE

Twill-weave

Twill weave has a diagonal pattern on the fabric surface. Twill weave is strong and drapes well. It is used for jeans, jackets and curtains.



WOVEN FABRICS

Main characteristics:

Fray

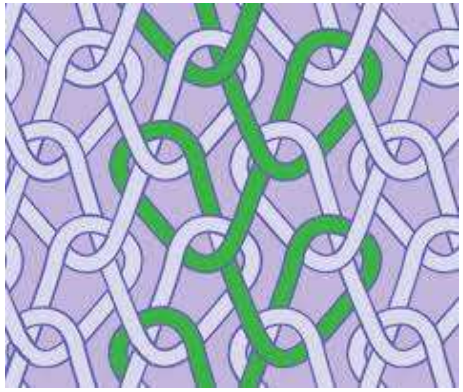
Have a selvedge

Do not stretch

My revision card

AQA

Topic: CONSTRUCTION WARP KNITTING



KNITTED FABRICS

Main characteristics:

Do not fray

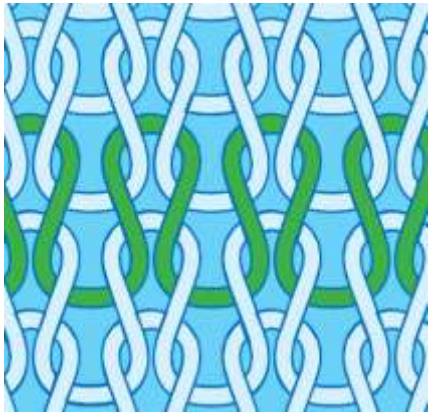
Stretch

Do not crease

My revision card

AQA

Topic: CONSTRUCTION WEFT KNITTING



KNITTED FABRICS

Main characteristics:

Do not fray

Stretch

Do not crease

My revision card

AQA

Topic: BONDED FABRICS (GLUED)

1: Random-laid (air laid) web

NON WOVEN FABRICS

Main characteristics

No grain

No yarn

Does not stretch

Weak (tears easily)

My revision card

AQA

Topic: SEAMS

Seams need to be **strong**, and suitable for the material you are using e.g. if using a fine fabric then a French seam would be suitable, if heavy weight denim is used a run and fell seam would be suitable
A **plain seam** with an **over-locked edge** may be suitable with a **1.5 cm seam allowance**
Stitch length will be about 2mm for straight stitching a longer stitch would be quicker but would not be as strong.
The seam could be neatened at the same time as it is sewn using a **four thread over-locker** (much quicker to use and so will save money)

My revision card

AQA

Topic: COMPONENTS

Components are all the items you need to make your design but **not the equipment** or **main material**. You will need material for appliqué if you use that technique. Dyes, fabric paints. You will need **some pre manufactured components such as,** Velcro, buttons or poppers, zips.
Thread, Bondaweb, stranded embroidery thread (made from cotton), ribbon

My revision card

AQA

Topic: MARKETING & SELLING

Where are products sold? It may be good to sell on the internet, in a high street store or to sell at craft fairs where the type of client you are targeting may go.

The product samples will be taken to **buyers** by the **sales team** - they will be complete items that meet a specification - they will be packaged to make their **presentation** look good.
Advertising can be done in many ways, some more expensive than others - these costs will be added to the overall cost o f the product. e.g. **magazines, radio, cinema, television, radio posters, billboards, yellow pages, e-mail, Internet**
Packaging - **P**rotects, **I**nforms and **P**romotes (**PIP**)

My revision card

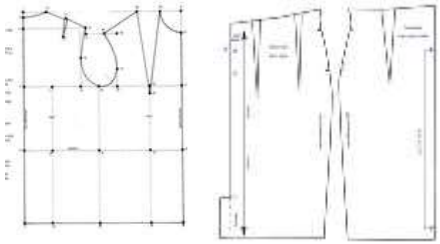
Topic: MAKING PATTERNS

You would use the measurements from your designs - add **1.5 cm** for **seam allowance**, draw accurately on paper, **add information** to pattern such as **name of pattern piece, size, design number, number to cut out, straight of grain, matching/balance notches**

My revision card

Topic: BLOCK PATTERNS

These are basic shapes for garments and all other patterns are made from them. You do not have to keep making the pattern from scratch, and you can be sure that the sizes will always be the same giving **quality assurance.**



My revision card

Topic: COTTON

Durable, strong, not very elastic, absorbent, not a good insulator, inexpensive, easy to care for but creases easily

My revision card

Topic: POLYESTER

Very strong, very durable (hard wearing), high elasticity (stretches and returns to shape), good insulation, very cheap, easy to care for, very creases resistant

My revision card

AQA

Topic: BLENDED YARNS/FIBRES

Fibres are often mixed together to improve their properties & to make them cheaper. When fibres are mixed in a yarn it's called blending. Example core spun polyester and cotton in school shirts (Polyester=Easy care Cotton=breathable and comfortable).When different yarns are put on a loom to make a fabric it is called mixing. Example: Doupion silk (warp is often fine silk or viscose, weft is thicker)

My revision card

AQA

Topic: WOVEN FABRICS

• ***Plain or tabby weave*** (weft goes over one warp and under one warp thread)
Stable cloth, not a good insulator, cheap, good for printing on. Examples: Gingham, calico, organza, taffeta etc.
Also the basis for pile weaves which have an extra loose weft which forms loops (terry towelling)or if cut (velvet). Velvet has a nap (direction of the cloth smooth with the warp, rough against it).

My revision card

AQA

Topic: KNITTED FABRICS

Two types of knit (Vertical loops are called the wale, horizontal loops are called the course)
Weft knit (literally all knitwear, jumpers etc. Horizontal loops, ladders, stretches width and lengthwise. Example: Jersey, single jersey, rib knit
Warp knit (Only swimwear and high quality fashion & sportswear. Stretches only widthways).....Example: Tricot

My revision card

AQA

Topic: PROTECTING THE ENVIRONMENT

Manufacturers need to be aware of the damage that the textile industry can have on the environment.
The main principles of conserving the environment are:
• Avoid using materials that damage the environment e.g. some dyes and bleach etc... Chemicals are used in many aspects of production e.g. fertilizers are used when cotton is grown
• reduce the consumption of materials
• recycle materials
• use fabrics that are biodegradable
Some manufacturers now use **Eco-labelling**. If you buy a product with such a label you can guarantee it has been manufactured in such a way to safe the environment. These items will cost more money just as it costs more to produce organic foods

My revision card

Topic: WOVEN FABRICS

- ***Satin weave*** (Weft goes under 4 warp threads and over one. The warp floats on top so to speak)

Weakest weave, drapes very well, reasonable insulator depending on the fibre content, suitable for lining, lingerie, bias cut products.
Example: Duchess Satin (thicker variety) Satin (that's easy...)

My revision card

Topic: WOVEN FABRICS

- ***Twill weave*** (Weft goes over 2 and under 1 warp thread, looks like diagonal steps)

Strongest weave, durable, good insulator (can trap more air), textured. Examples: Tartan, Tweed, Denim

My revision card

Topic: BLENDED FIBRES

To enhance aesthetics and functional properties eg mixed colours of fabrics and also to make fabrics easy care.
Polyester/cotton is very common (look at your school shirts!) – very easy care, strong, doesn't crease.
Polyamide/elastane mix is common in sporting products. The polyamide is strong, doesn't crease, easy care; the elastane makes the fabric stretch and fit closely to the wearer.

My revision card

Topic: CELL PRODUCTION

Cell production or section systems - the workers operate in small teams, they do different jobs to lessen boredom of the job but need to be highly skilled

My revision card

AQA

Topic: SUSTAINABILITY

When the environment is not harmed through manufacture of products. Sustainable resources are those that can be re-placed at the same rate as they are used up. Environmental aspects in cotton harvest: use of pesticides causing cancer other diseases, ultimately death. Land is made infertile, excessive use of water. The 6 R's of sustainability are: Re-use, reduce, recycle, re-think, refuse & repair. Transport & packaging are using up a lot of energy. Dying uses lots of water and chemicals end up in drinking water. Organic means no pesticides were used at all. The ground has to pesticide free for three years before it can be called organic.

My revision card

AQA

Topic: FAIRTRADE

means workers are paid a living wage (afford to live on their own) have a regulated work day, get paid overtime, are paid bonuses when the company does well. Fair trade projects have helped whole communities in the third world. Schools, hospitals are built from profit, instead of it benefitting just the owners of the factories. If you are asked what can be done to produce sustainable cotton you can also mention the Californian cotton project. Farmers grow buffer crops and use a minimal amount of pesticide if necessary. Buffer crops attract the lygus bug which destroys the cotton and also other bugs who feed on the lygus bug. So, no pesticides necessary. Not quite organic but cheaper and just as good.

My revision card

AQA

Topic: FABRIC FINISHES

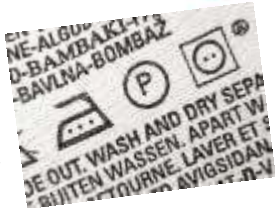
Physical = Brushing,calendaring, embossing, stonewashing
Chemical= waterproofing, flame retardant, bleaching
Biological= Bio stoning, enzyme treatment
Smart= microencapsulation reacting to heat, light and pressure

Chemical Finishes	Physical Finish
Anti-Allergen	Brushing
Shrink Resistant	Embossing
Flame Resistant	Calendering
Crease Resistant	Pressing
Stain Resistant	Shrinkage
Water Repellent	Permanent Creases

My revision card

AQA

Topic: LABELLING



By European law you must say what fibres your item is made from. Other information should include wash care symbols, name of manufacturer and country of origin
50% cotton 50% polyester would be for main fabric. The wash instructions used are for the fibres that take the **lowest settings. Cotton** can take a **higher wash** and **heat** but **polyester cannot.**
Reduced action wash and spin
Warm iron, Tumble dry (hot), Dry cleanable.
Made in Britain (Country of origin)

My revision card

AQA

Topic: BESPOKE/ONE OFF

- One-off or individual production, is used to manufacture one-off products.
- Wedding dresses, haute couture and custom made pieces use this type of manufacture.
- This is the most expensive type of manufacture
- Only top quality fabric will be used
- Highly skilled pattern cutters and dress makers will be used, and will work on one job at a time. This means that it is extremely expensive.
- Boutiques will also use this method with some of their products

DIOR

Christian Lacroix

CHANEL

CHANEL

My revision card

AQA

Topic: SPECIFICATIONS

Must **not** be to do with the fabric (e.g. lightweight fabric). Good examples related to your theme would be:

- Big enough to fit ……..
- Have compartments suitable to store ……..
- Be suitable for / appeal to age …….
- Suitable for males/females/unisex.
- Be adjustable to fit a variety of different sized people.
- Be comfortable for the wearer.
- Colour which will not look dirty quickly.

My revision card

AQA

Topic: TECHNIQUES

Appliqué: what do you already know??
Screen printing: Can be done by hand with a simple stencil and a screen. Also done with rollers on a larger scale
Embroidery: this can be done by hand or by computerise machinery. Can be expensive to do. Chain stitch, running stitch, French knots, bullion knot, lazy daisy stitch
Others – Quilting, Patchwork, Beading, Stencil print, Pinch pleats, Batik….

My revision card

AQA

Topic: CAD

CAD stands for **C**omputer **A**ided **D**esign. **CAD** can be used in many fields such as engineering, textiles, graphic design, jewellery design, interior design, product design…the list is endless. **CAD** enables **accuracy**, **speed** and **innovation** in design, without **CAD** some designs wouldn't even be possible!

My revision card

AQA

Topic: CAM

CAM is CAD's best friend and you'll often find the two side by side. **CAM** stands for **C**omputer **A**ided **M**anufacture; it is used most often on a large scale as the machinery can be very expensive. **CAM** can take a wide range of forms from **embroidery machines** to **3D wax printers**, from **laser cutters** to **milling machines** and **water jet cutters**.

CAM improves **speed**, **worker safety**, **cost** and **efficiency**.

My revision card

AQA

Topic: APPLIQU'E

Pattern / decoration is applied to the fabric by cutting out pieces of coloured fabric and stitching them onto the background. The edges of the fabric are usually neatened with a satin stitch (zig-zag with a very small length, 0.2 – 0.5mm, the width can be as wide as is needed for optimum effect, most average about 4mm). Some fabrics such as felt do not need neatening as they do not fray, but a satin stitch may still be used to add to the effect.

My revision card

AQA

Topic: BATCH PRODUCTION

- Batch production is used to manufacture a fixed number of products.
- For small to medium size companies
- More likely to be used for seasonal goods
- Batch production will be used by high-street retailers as fashion changes so frequently
- More likely to manufacture products in their hundreds, not thousands
- Things like: Home interior products (inspired by a trend), decorated dresses and fashion items

Cath Kidston

- **Used by companies like these:**

new look

TOPSHOP M&S

My revision card

AQA

Topic: MASS PRODUCTION

- Mass products are produced in HIGH volume
- Mass products will include things like; School uniform, basic T-shirts, tights, socks, black trousers, basic cushions and throws.
- Mass production will be used for textile items that are needed all year round.
- Mass products are produced on a continual, 24 hour basis
- It is a cheap method of production because materials can be bought in large numbers and a large number can be made quickly.
- Shops that have a large amount of stores or are on an international basis will use this method of production.

Shops that are more likely to use this method of production are:

PRIMARK IKEA

My revision card

AQA

Topic: MACHINERY COMPARISONS

At school	In industry
domestic sewing machine	high speed sewing machine,
scissors	over lockers to neaten raw edges
pins	
3 or 4 Thread Over-locker	Band knife cutting machine or laser cut
	not used, patterns are drawn around or a computer lay is used
	Same in industry but much faster. Sews the seam and trims at the same time

My revision card

AQA

Topic: MAKING A PRODUCT CHEAPER

- Making in larger numbers will automatically cost less because better prices can be negotiated for materials
- Make the product in a less expensive fabric e.g. polyester satin instead of silk satin
- Make the product smaller in some way e.g. if a top has frills put less fullness in them or make a sleeve a bit shorter
- Use less decoration on the product
- Change method of decoration e.g. print design instead of appliqué (a cheaper and quicker technique)
- Have some parts manufactured abroad e.g. beading, can be much cheaper made in another country where labour costs less

My revision card

AQA

Topic: USING ICT for DESIGN

Design Phase

- Research design ideas on the Internet, present mood boards etc... using graphic programs
- First ideas using graphic packages
- Design fabric using CAD (computer aided design) software
- Put fabric onto designs using 2D mapping or 3D image draping system

My revision card

AQA

Topic: USING ICT for PRODUCTION

Production Phase

- Test relevant parts of item e.g. seam strength
- Using PDM software (Product Data Management) costing's of items can be done. PDM systems track materials and components before production starts.
- Product specification is sent to Pattern making who will create pattern using pattern generation software
- Computerized lay plan is created - calculates the best way of laying pattern pieces for the least wastage
- Fabrics are cut out using a specialized cutting table

My revision card

Topic: JOBS

***Designer* – designs products.** *Pattern cutter* – works out the pattern templates. *Sample machinist* – makes prototype. *Cutter* – cuts fabric. *Machinists* – sew product together. *Presser* – presses & irons product. *Quality controller* – checks product matches specification & is up to standard.
Quality Assurance – Procedures set up to prevent problems from occurring.
Quality Control – Checks product is OK.
CAM – Computer aided manufacture. Machines can be programmed to sew, e.g. computerized embroidery machines. CNC (computerized numerical control) machines can sew pieces together – item is put into a frame & the machine is programmed using coordinates to sew specific sections.
CAD – Computer Aided Design. Can try different colourways, adaptations of a design, e.g. try with long sleeves, short sleeves etc., designers have the opportunity to use 'virtual catwalk' can see the product from all angles, being worn by a virtual model.
Other uses of ICT in textiles industry – office type ICT, costing, deliveries, wages etc. Email to show clients possible ideas, Websites to attract custom.

My revision card

Topic: SPECIALIST MACHINES

Spreading machines – spread fabric flat onto tables.
Vacuum tables – fabric is spread on tables, and the air sucked out to squash the fabric together.
Die cutters – (like biscuit cutters) metal shapes which are pressed through the layers of fabric to cut out product.
Band saws – cut through many layers of fabric at a time. Operators wear metal chain gloves to protect them from getting cut.
Computer driven knives / saws – cutter is programmed to cut through the fabric.
Hot notcher – Makes notches in the side of a stack of cut out pattern piece. The notches help to match up which pieces go together.
Thread marker – shoots a bright thread through the stack of cut out pattern pieces – it is used in place of tailor's tacks, e.g. for marking dart points.

My revision card

Topic: PRODUCTION

Job production / one off – Only one item is made, e.g. individually designed wedding dress, costume for a theatre show.
Batch production – Many identical items are made, e.g. school uniform.
Mass production – Very many identical items are made, e.g. shirt sold at M&S.
Continual flow – Production is non-stop, machines work 24/7. Used for simple products like making bandages. Unusual in textiles manufacture.
Costs – Fabrics, components (e.g. thread, buttons), labour (not just machinists, office staff, designers, cutters etc.), power (electricity), rent.
Standard minutes – How long it takes for a product to be manufactured, this helps to work out costs (labour).

My revision card

Topic: INDUSTRIAL SEWING MACHINES

Most look like normal sewing machines, but may be specially designed or have attachments which make it easier and more accurate to perform the same repetitive task, e.g. it may have an attachment which feeds elastic through at a certain rate as the item is being stitched. The machines are very fast, many have automatic thread cutters, so the machinist doesn't have to cut the thread at the end of the task. Some machines are very specialized and cannot be used for anything other than 1 function, e.g. overlocker, buttonhole machine (stitches and slits the buttonhole to the correct size), bar tack machine (stitches a really strong, close together 'bar', often used at the top of jeans pockets). See notes above on CNC machines.

My revision card

AQA

Topic: SPECIALIST MACHINES

Computerised embroidery machines – very fast, there is a needle for each colour of thread. Some have attachments to fit odd shapes, e.g. baseball caps.

Flat bed press – looks like a photocopier, item is placed on the press, the lid is lowered and it presses flat with heat.

Steam dolly – a bit like a metal stick-man, the item is put on the steam dolly, then steam is forced from the dolly so it steams the whole item from the inside out.

My revision card

AQA

Topic: SOCIAL & ENVIRONMENTAL ISSUES

Proper leather and suede involve removing the skin from animals, therefore morally it may be seen as unkind to animals. Even silk involves killing a caterpillar! Synthetic fibres use oils & chemicals, again not very good for the environment. However, pesticides are used on large cotton plantations and these are also bad for the environment. Wool would seem a good idea as no sheep are harmed – however some people (like me) are allergic to it! Dyes are also harmful to the environment, particularly is unscrupulous manufacturers dispose of excess dyes in rivers. Transfer printing is environmentally friendly as it doesn't involve washing away dyes. Fibres such as Synchilla (made from fizzy pop bottles) would be excellent as it means the bottles which would fill landfills are recycled. It is also possible to buy 'Organic Cotton' which doesn't use pesticides.

My revision card

AQA

Topic: LAY PLANNING

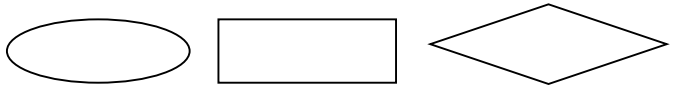
A **computer lay** could also be used. The fabric would be laid in multiple layers and a laser cutter would cut the fabric controlled by the computer. A much more efficient and money saving method, although this equipment would be expensive.

My revision card

AQA

Topic: PRODUCTION PLAN/PLAN of MAKING

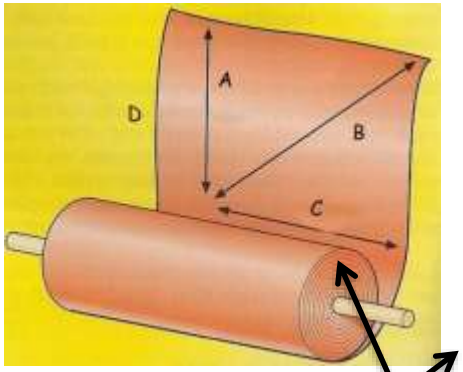
Manufacturers need to have Production Plans to ensure the smooth running of their factories. A Production Plan saves time and money by ensuring all workers know what has to be done and when. It allows the correct materials and components to be ordered for products, it also enables the manufacturer to check that he has the correct machines and workers know how to use them.



My revision card

AQA

Topic: FABRIC CONSTRUCTION



A - Warp = Run along the length of the fabric

B - Bias = Diagonal

C - Weft = Runs right to left

D - Selvedge = Edge of itself

An easy way to remember

My revision card

AQA

Topic: WOOL

Source of fibre: sheep/ silkworm/oil → Fibre spun into **yarns** and put into rolls → Yarns woven/ knitted into fabrics → Finish may be applied to fabric

My revision card

AQA

Topic: SYNTHETIC/MANMADE

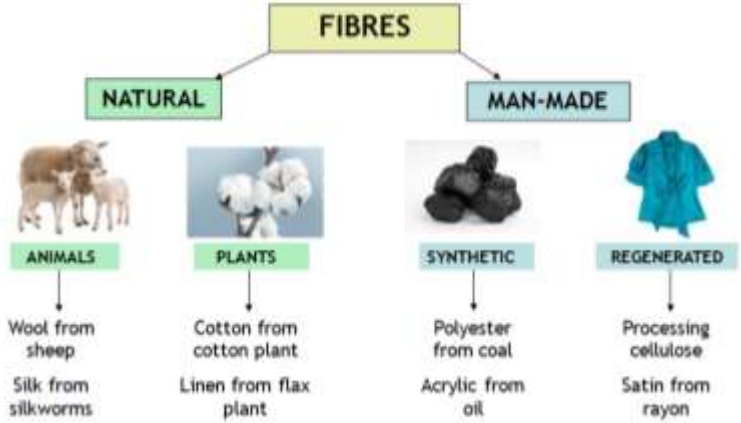
Man-made fibres

Come from natural products, which have gone through chemical processes.

My revision card

AQA

Topic: FIBRES & FABRICS



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Topic: CAD/CAM & LAYPLANNING

All manufacturers know the importance of lay planning to make the most of their fabric and minimise wastage.

Lay planning and pattern design using CAD CAM has many advantages such as....

- Quick and easy adjustments to patterns (different dress sizes etc)
- Lay planning onscreen allows for accuracy and minimal wastage when cut
- The pattern and lay plan can be saved and repeated in the future with no effort

EuroCAD pattern design and lay planning software

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Topic: CUTTING

A plotter is used to print the lay plan onto a large sheet of paper to be laid over the fabric ready for cutting.

The process of cutting the fabric can also be done using CAM minimising human error and allowing the pattern pieces to be closer as the cuts have a tolerance of as little as 1mm

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Topic: PRINTNG

Perhaps one of the most common CAD processes in the production of textiles is the printing of computer generated patterns onto fabrics.

Large industrial printers feed fabric through in much the same way as a standard inkjet printer would, using colour fast inks the patterns are created so as not to fade in the wash.

Most fabrics can be decorated using this process. Whether you're a large fashion retailer such as New Look or an independent designer the technology to print your own custom patterned fabric is widely available and cost effective.

In many cases programmes such as Photoshop or Illustrator can be used in conjunction with the printing technology to create the desired designs.

What do you think the advantages of this process are?

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Topic: CAD KNITTING

CAD knitting uses a knitting machine to receive computer files in order to build pieces of knitted fabric to specific shapes, patterns and sizes ready to sew together to create a garment.

The main advantage to this process is the lack of waste, because the fabric is knitted to the correct shape and size there is no cutting. Other advantages include the ability to knit two colour patterns simply and quickly and the consistent size and quality of the stitching. Due to the speed and small error margin this is a cheap, cost effective way of creating mass produced products.

What kind of company would benefit most from this type of technology?

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Topic: FABRIC FINISHES

- Water Repellent
  - Using silicone sprays
- Stain Resistance
  - Teflon coating
- Crease Resistance
  - Using resins
- Flame Retardant
  - Chemicals applied to yarn or fabric
- Shrink Resistance
  - Removal of fibre scales on wool with chlorine or resins
- Anti Allergens
  - Chitosan used on underwear

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Topic: SYMBOLS

You are producing children's clothing. Which safety symbol would you choose?		Lion Mark
You are producing fridges , toys or plugs. Which safety symbol would you choose?		British Standards Institute
You are producing textile goods for sale throughout Europe. Which safety symbol would you choose?	CE	European Safety Standard

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Topic: LABELLING A PRODUCT

Care label	How to care for a product. The label must also include: •Country of origin •Fibre Content	
BSI Kitemark	British Standards Institute	
CE Mark	European safety standard	CE
Lion Mark	Children's safety standards	

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Topic: WOOL & SILK

Animal fibers: Wool

Goats, alpacas, camels and even rabbits can all be sheared for wool.

The main property of wool is that it is very warm. However, it can shrink when washed and it is not as durable as other natural fabrics like cotton and silk.

Products made from wool include warm clothing (e.g. jumpers and coats), suits, blankets and furniture upholstery.

Animal fibers: Silk

Silk is made from the cocoon larvae of the silkworm, and was first developed in China.

Silk has a smooth texture and is one of the strongest natural fibres. It is also warm and crease resistant. However, it can be static and needs to be dry cleaned.

Products made from silk include evening wear, ties and scarves.

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Topic: LINEN & COTTON

Plant fibres: Linen

Linen is made from the inner bark of the flax plant.

Linen is strong and cool to wear, but not very crease resistant.

Products made from linen include tea towels, table cloths and summer clothing.

Plant fibres: Cotton

Cotton grows in hot climates, on bushes. The seeds of the bush ripen, and split open to reveal fluffy white cotton.

Like linen, cotton is strong and cool to wear, but not very crease resistant.

Products made from cotton include jeans, blouses, T-shirts, sheets and towels.

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Topic: POLYESTER & NYLON

Synthetic fibres: Polyester

Polyester is made from petroleum.

Polyester tends to feel slippery and silky. It can be blended with other fabrics, for example cotton, to provide more stretch or to reduce skin irritation.

Polyester is used to make all sorts of clothing, often as part of a blended fabric.

Synthetic fibres: Nylon

Nylon is made by combining chemicals from coal, water, air, petroleum, natural gas and agricultural by-products.

Nylon is lightweight, strong, durable and resistant to damage. It takes dye easily and so is available in a wide range of colours.

Products made from nylon include swimwear, tights and outdoor clothing and equipment such as tents.

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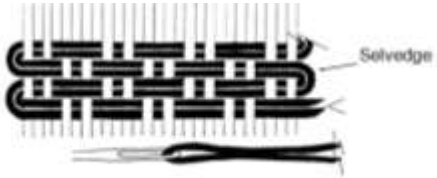
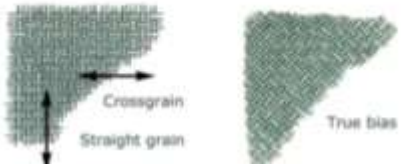
Topic: SELVEDGE & BIAS GRAIN



At the edge of a woven piece of fabric the weft yarns wrap around the warp yarns to make a neat edge. This is called the **selvedge**.

If you place a ruler or tape measure diagonally across the fabric this is called the **bias grain**. Most woven fabrics stretch a little across the bias grain.



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Topic: BSI

BSI Group, also known in its home market as the British Standards Institution, is a multinational business services provider whose principal activity is the production of **standards and the supply of standards-related services**

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Topic: SPECIALIST MACHINERY

Die cutters – (like biscuit cutters) metal shapes which are pressed through the layers of fabric to cut out product.

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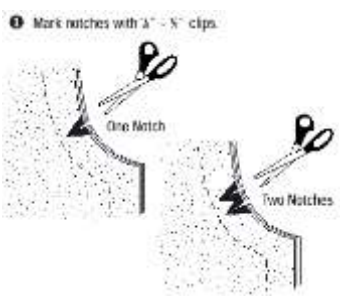
Topic: POLYESTER & NYLON

Hot notcher – Makes notches in the side of a stack of cut out pattern piece. The notches help to match up which pieces go together.



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Topic: BAND SAW & CHAINMAIL GLOVE

Band saws – cut through many layers of fabric at a time. Operators wear metal chain gloves to protect them from getting cut.