Year 11

Textiles

Revision Booklet 2017

KEY WORDS

Fabrics	
Fabric Construction	
Components	
Electronic + Modern components	
Smart Materials	
Modern Materials	
CAM	
Care Labels	
Just-in-time	
Recycled Materials	
Trend Forecast	

Properties of Fabrics

	Classification	Origin	Strength	Elasticity	Absorbency	Crease Resistance	Durability	Warmth	Flammability	General Description	
Cotton	Natural / vegetable	Seed bolls of the cotton plant	★★★★	★	★★★★	★	★★★★	★★	★	A cheap, strong but cooling fabric, which creases fairly easily. Used for denim, damask, piqué, gabardine, etc.	
Wool	Natural / animal	Fleece from various animals, e.g. sheep	★★	★★★★	★★★★★	★★★★	★★	★★★★★	★★★	A soft, hardwearing fabric that is unlikely to crease much. Used for flannel, jersey, serge, shetland and tweed.	
Silk	Natural / animal	Cocoon produced by silk worm	★★★★	★★★★	★★★★★	★★★	★★★★	★★★★	★★★	An expensive fabric that is smooth to the touch and drapes well. Cooling. Used for chiffon, satin, taffeta.	
Linen	Natural / vegetable	The stems of flax plants	★★★★	★	★★★★	★	★★★★	★	★	Even stronger when wet, linen is very cooling but creases easily.	
Viscose	Manufactured / regenerated	Cellulose extracted from wood pulp	★★	★	★★★★★	★★	★★	★★	★★	A cheap light material though not particularly strong. Very versatile and used in all sorts of clothing from lingerie to suits.	
Acetate	Manufactured / regenerated	Cellulose extracted from wood pulp	★	★★	★★	★★	★	★★	★★	Like viscose, it is resistant to biological breakdown and very versatile.	
Rayon	Manufactured / regenerated	Cellulose extracted from wood pulp	★★★	★	★★★★	★★★	★★	★	★	Referred to as synthetic silk, used for lightweight clothing.	
Polyester	Manufactured / synthetic	Chemicals from oil are polymerised, i.e. chemically joined.	★★★★	★★★★	★	★★★★	★★★★	★★	★★	A good all round synthetic, which is often blended with cotton to add crease resistance.	
Nylon	Manufactured / synthetic	Chemicals from oil are polymerised	★★★★	★★★★	★	★★★★	★★★★	★★	★★	Like polyester it is strong and crease resistant. Its toughness makes it suitable for carpets.	
Acrylic	Manufactured / synthetic	Manmade fibres derived from synthetic polymers	★★★	★★★★	★	★★★	★★★	★★★★	★	A warm fabric used for jumpers and bedding.	
Elastane, e.g. lycra	Manufactured / elastomeric / synthetic	Synthetic polymer (85% polyurethane)	★★★	★★★★★	★	★★★★★	★★★★	★★	★	A durable fibre used in sportswear, leggings and jeans	
Microfibres	Manufactured / synthetic	Chemicals from oil are polymerised	★★★★	★★★★	★★★	★★★	★★★	★★★	★★	These tiny fibres can be woven so closely that they can prevent penetration by water, whilst allowing the fabric to 'breathe'.	

Key:
★★★★★ = excellent
★ = poor

Other properties or factors to be considered when looking at fibres and their properties are:

- Wearability – How does the fabric feel when it is worn? Does it drape well?
- Comfort – How comfortable is the fabric when worn next to the skin?
- Launderability – How well it can be washed, maintained and cared for? You need to know fibre origins in order to know how to care for the product once it is made.
- Safety – Are there any safety issues to be considered when using this fabric?

Other attributes to be considered are the visual impact (how it looks) and the aesthetic quality (the design) of the fabrics.

FABRIC CONSTRUCTION

Knitted fabrics: A knitted fabric is made of interlocking loops, using one or more yarns. If the loops are broken the fabric will come apart easily. There are two types of knitted fabric: weft knit and warp knit. Research the two types and draw diagrams.

Weft-knitted fabrics:

- A single yarn can be used. Knitting can be done by hand or machine.
- The fabric is made by forming interlocking loops of yarn across the width or on a round
- Have horizontal (left to right) rows of knitted yarn

Characteristics:

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Types of weft-knit fabric: single jersey (t-shirts, sweaters, jumpers,

Warp-knitted fabrics:

- Have interlocking loops or chains that run vertically (up and down) down the fabric
- Can only be machine made

Characteristics:

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Types of warp-knit fabric: includes lightweight fabrics like nets and lace and heavy weight fabrics like terry towelling and velour

The main qualities of knitwear are stretch, comfort and warmth. Most garments can be made from knitted fabrics.

MODERN AND SMART MATERIALS

Modern materials are…

Smart materials are…

Give examples of modern materials/fabrics, their uses and advantages of their properties:

Give examples of smart materials/fabrics and their uses and advantages of their properties:

RECYCLED MATERIALS

Recycling textiles is important because…

Ethical goods……

How can recycled materials be used?

Trend Forecasting is…

Companies collect information and data about…

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TOOLS AND EQUIPMENT

It is important to select the correct equipment and know how to use them correctly.

Sewing Machines	Uses
Standard sewing machine	

Industrial Machinery	Uses – advantages & disadvantages
Laser cutter/Cam cutter	
Band saw	

Non-machine based equipment	Uses
Scissors	

COMPONENTS – TEXTILE, MODERN AND ELECTRONIC

Fastenings	Uses

Textile components	Uses

Modern components are…

Examples of modern components:

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Electronic components are…

Examples of electronic components:

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PRODUCTION METHODS

One-off production:

Advantages:

Disadvantages:

Batch production:

Advantages:

Disadvantages:

Mass production:

Advantages:

Disadvantages:

Just-in-time production:

Advantages:

Disadvantages

Risk assessment for factory working – list the health and safety considerations to keep workers safe in textiles factories:

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LABELLING

Products must be labelled with a range of information to inform the customer about the care, safety, quality standard, size, fibre content and where it came from.

Care symbol	Definition
	
	
	
	
	
	
	
	

A typical Textiles label will include:

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BSI Kitemark:

CE mark:

Flammability:

MOOD BOARDS

Mood boards are a popular tool for designers. They help to communicate the overall style or 'feel' they want to capture in their design.

A mood board can be used…

- **To provide a focus when developing new design ideas**
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A mood board can…

- **Brings together a range of inspirational images, textures, patterns, colours**
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Use the ideas from the 60's inspired mood board to develop the product from the product analysis.

DEVELOPING IDEAS

Use your findings from the product analysis and the mood board to develop the product. Improve it by considering:
The aesthetics
The fabrics used – how suited to the purpose are they? Consider the use of smart or modern materials
Components – are they practical? Could there be less used?
Embellishment – could the design be better? What different techniques could be used?
Add annotations to your sketches to show the decisions you have made and explain the reasons.

Other revision topics to cover:

- Decorative techniques - printing, hand embroidery, dying
- Manufacturing processes – e.g. CAD, CAM
- Fabric finishes – e.g. crease resistant etc.
- Fabric properties - Advantages and disadvantages
- Developing sketches and using annotation – e.g. what sort of annotation should be included