

GCSE Textiles Knowledge Organiser

Designing Skills

You should be able to:

- design products to meet the needs of clients and consumers;
- understand the design principles of form, function and fitness for purpose;
- understand the role that designers and product developers have, and the impact and responsibility they have on and to society;
- analyse and evaluate existing products, including those from professional designers;
- develop and use design briefs and specifications for product development;
- consider the conflicting demands that moral, cultural, economic, and social values and needs can make in the planning and in the designing of products;
- consider environmental and sustainability issues in designing products;
- consider health and safety in all its aspects;
- design for manufacturing in quantity and to be aware of commercial/industrial processes;
- Use a range of graphic techniques and ICT, including CAD, to generate, develop, model and communicate design proposals;
- investigate and select appropriate materials and components;
- check and improve on the quality of their work at critical/key points during development,
- test and evaluate the final design proposal against the design specification;
- evaluate the work of other designers to inform their own practice;
- understand the need to protect design ideas

Making Skills

Making Skills

Candidates should be taught to:

- select and use tools/equipment and processes to produce quality products;
- use tools and equipment safely with regard to themselves and others;
- work accurately and efficiently in terms of time, materials and components;
- manufacture products applying quality control procedures;
- have knowledge of Computer Aided Manufacture (CAM) and to use as appropriate;
- Use testing, modification and evaluation to ensure that the quality of their products is suitable for intended users and devise modifications where necessary;

Fibres and Fabrics

Properties and characteristics

- have a knowledge of the basic composition (structure), physical and aesthetic (appearance) characteristics of a range of different fibres to include the natural fibres cotton and wool; the regenerated fibre viscose, and the synthetic fibres polyester and elastomeric;
- have a knowledge of combining, constructing and use of textiles fibres and fabrics;
- understand the need to combine fibres, to include polyester/cotton and combinations including elastomeric;
- investigate woven fabrics (plain weave, twill weave and satin weave), knitted fabrics and one non-woven fabric. Through disassembly investigate how they are constructed. Know that modern microfibres can be used to construct woven, knitted, laminated and micro-encapsulated 'Smart' fabrics;
- be aware of technological advances in textiles materials and their use in a wide range of industries;
- assess and evaluate the working properties of fibres and fabrics and how they can impact on fabric choices for products.

Fibres and Fabrics continued

Product maintenance, suitability and fitness for purpose:

- know and design for the maintenance needs of textile products including typical/popular fabrics made from them and implement current textile labelling, including statutory legislation;
- understand the factors which constitute suitability/fitness for purpose, i.e. wearability, warmth, comfort, absorbency, durability, after care, safety, flammability, stain resistance, aesthetic qualities.

Finishing Processes

Dyeing and printing

- have a knowledge and understanding of one basic commercial method and one hand method of dyeing and printing fabric.

Decoration and enhancement

- select and know how to use a variety of appropriate surface decorative techniques in order to improve the aesthetic qualities of textiles, fabrics and products.

Finishes

- have a working knowledge of finishes (to include stain resistance, water resistance, flame retardancy, crease resistance) applied to fabrics in order to improve their performance; evaluate the effects of these fabric finishes paying attention to use, comfort, safety, maintenance, manufacturing costs and retail price;
- have knowledge of at least one modern 'Smart' finish to fabrics (to include thermochromatic printing);
- have knowledge of emerging technologies: nano materials and integrated electronics within textiles designs.

Manufactured Components

- select, use and evaluate the function, suitability and safety of manufactured components in design and make tasks; identify and have a working knowledge of components including fastenings (to include zips, buttons and Velcro), threads, trimmings, interfacing, motifs, labels and electronic components;
- be aware of the technological advancements in component design.

Social, Cultural, Moral, Health and Safety and Environment Issues

Social and cultural influences on the consumer market

- understand the role of the designer and consider the impact of design proposals on society;
- identify developments in technologies, social and cultural ideas, fashion trends and economic factors that influence consumer choice and product design.

Consumer choice and ethical issues

- understand the influence of ethical trading and the consumers' role in social and environmentally sustainable design.

Moral and environmental issues

- understand the moral and environmental issues associated with textiles production;
- understand what is meant by the recycling of textiles, waste reduction, organic and Fair Trade cotton, bio fibres, biodegradable fibres/fabrics.

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Environmental effects

Health and Safety issues

- understand that the health and safety of both consumers and the work force is important.

As designers and consumers:

- select the appropriate materials and components;
- consider safety in terms of function;
- be aware of consumer rights and safety warnings on textile products.

As manufacturers be aware of and understand Risk Assessments in relation to:

- the correct and safe use of tools and equipment;
- the correct and safe usage of materials, chemicals, solvents, flammable and toxic substances used in textile manufacture;
- the need for correct protective clothing and safe working practices.

Product analysis

Product Design

- understand the influence of trend forecasts when designing textiles products;
- analyse past and present textile designs and products in order to evaluate shape, style, aesthetics, choice of materials and components, construction techniques, decorative techniques, fitness for purpose, marketability; and use the findings of this research to generate new and original design ideas.

Evaluation Techniques

- check of design proposals against design criteria;
- use disassembly to make critical judgements about the design, manufacture and performance of existing products;
- list design criteria that influence textile product design and use this to test and evaluate the final design proposal;
- understand the purpose and value of a design specification to guide design thinking;
- quality assurance through testing and evaluation of quality and fitness for purpose;
- use ongoing evaluation to make judgements and to suggest improvements during design development and making activities;
- consider other peoples' views when selecting and refining product designs, to include user trials.

Evaluation of quality of own product compared with market alternatives

- compare design proposal to a similar commercial product in order to review and modify design;
- evaluate the appeal, quality and fitness for purpose of the design proposal against consumer expectations.

Processes and manufacture

Techniques And Processes

- select and use appropriate textile tools and equipment;
- know and understand how to use tools, machinery and equipment, including an overlocker, accurately and safely to produce own quality products.

Range of processes used for textile production and manufacture

- understand various industrial systems used to produce products, including mass, batch and one-off production and procedures including Just In Time, line and sub-assembly;
- select and use the most appropriate technique(s), process(es) and equipment

Production Planning

Planning the development and manufacture of a product

Produce plans to ensure efficient production and successful completion, to include —

- a flow chart to show logical and efficient sequences of work;
- a detailed working drawing;
- a manufacturing specification;
- costs of production, including the constraints of budget and time scale.

Quality Assurance

- produce prototypes of own design(s) and test against the design and manufacturing specification and modify the product, where appropriate, to ensure that it meets the specifications;
- incorporate modifications as necessary during manufacture to ensure quality products.

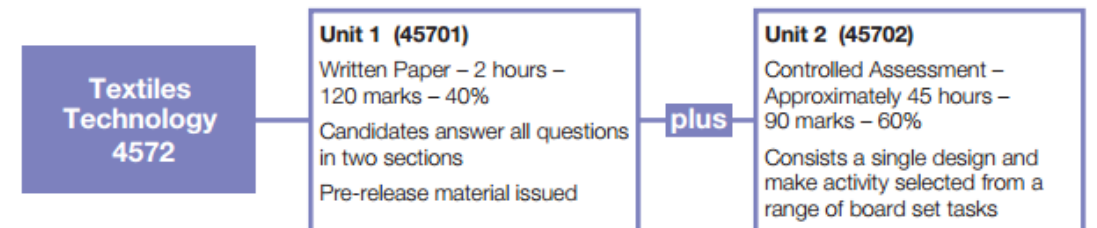
Information and Communication Technology

Computer Technology and Communication

- use ICT as appropriate to research, collect, sort and present information;
- use graphic techniques, as appropriate, including CAD and CAM to design, develop, modify, enhance, model and communicate ideas.

Use of CAD and CAM

- know and understand the importance and benefits of using CAD/CAM in textile production in a global industry;
- know and understand that CAD/CAM can be used to aid planning, to enhance accuracy and efficiency of production and assure aesthetic quality;
- know and understand that CAD/CAM can be important in the reduction of manufacturing costs.



During this course you will learn about various aspects of the textiles industry. This learning will include both practical and written elements, preparing you to complete your coursework and GCSE Examination. You can use this list to keep track of what you have learnt . You will also be able to use it as a revision list prior to your written exam.

You could use a traffic light system, where you indicate how confident you feel in each area.

- I feel confident I understand this area well
- I have some understanding of this area
- I do not feel confident in this area

By keeping track of what you are learning, you can identify strengths and weaknesses, and use these to help you focus when revising.

GCSE Bitesize

<http://www.bbc.co.uk/schools/gcsebitesize/design/textiles/>



TEXTILES4U

<https://textiles4u.wikispaces.com/>

AQA
Realising potential

<http://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-textiles-technology-4570/past-papers-and-mark-schemes>

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