

Scheme of work: A-level Fashion and Textiles

This resource is a scheme of work for the A-level Fashion and Textiles specification. It is not exhaustive or prescriptive; it is designed to suggest a method of delivery that you might find useful when planning your delivery of the specification.

The scheme of work assumes a two year course for the teaching of the A-level specification. Teaching and learning is based on four sessions per week. The three components that make up the A-level qualification, Paper 1, Paper 2 and the non-exam assessment (NEA), should be allocated appropriate teaching sessions to reflect their weighting allocations: 50% NEA, 50% written exams. This scheme of work is structured to enable teachers to focus on content that will prepare students for assessment at the end of year 2.

Suggested format – overview planner:

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| **Timescale** | **Exams** | **NEA** |
| Two hours per component, four sessions total per week | Two written examsPaper 1 – 2.5 hours 120 marks, 30% of A-levelPaper 2 – 1.5 hours 80% marks, 20% of A-level | Substantial design and make project. 35 pages100 marks50% of A-level |
| **Year 1** |
| **Term 1.1**  |
| Week 1 | Design methods and processes | Preparation for the NEA.A series of three skills based workshops that take place over terms 1:1, 1:2 and 2:1 to prepare students to apply key processes to the NEA:* Design practice
* Textiles processes
* Garment making processes
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| Week 2 | Enterprise and marketing |
| Week 3 | Enterprise and marketing |
| Week 4 | Enterprise and marketing |
| Week 5 | Design methods and processes |
| Week 6  | Fashion cycles |
| Week 7 | Fashion cycles |
| **Term 1.2**  | **Half term** |
| Week 8 | Design influences |
| Week 9 | Design theory, linked with designers and their work |
| Week 10 | Design theory, linked with designers and their work |
| Week 11 | Design theory, linked with designers and their work |
| Week 12 | Design theory, linked with designers and their work |
| Week 13 | Design theory, linked with designers and their work |
| Week 14 | Socio-economic influences on fashion and textiles |
| **Term 2.1** | **Christmas Break** |
| Week 15 | Classification of materials - natural fibres |
| Week 16 | Classification of materials - manufactured fibres |
| Week 17 | Classification of materials - synthetic fibres |
| Week 18 | Classification of materials - smart materials |
| Week 19 | Classification of materials - modern materials, laminated materials |
| Week 20 | Technical textiles |
| Week 21 | Performance characteristics of fibres |
| **Term 2.2** | **Half term** |
| Week 22  | Yarn production - basic yarns | Start of NEA portfolio**A01 Section A – Identifying and investigating design possibilities (20 marks).** |
| Week 23 | Yarn production - fancy yarns, textured yarns |
| Week 24 | Mixtures and blends |
| Week 25 | Non-woven fabrics |
| Week 26 | Woven fabrics |
| Week 27 | Woven fabrics |
| Week 28 | Knitted fabrics |
| **Term 3.1**  | **Easter Break** |
| Week 29 | Performance characteristics of fabrics | **A01 Section B – Producing a design brief and specification (10 marks).**Produce a clear and challenging design brief and fully detailed design specification reflecting thorough consideration of investigations undertaken. |
| Week 30 | Performance characteristics of fabrics |
| Week 31 | Performance characteristics of fabrics |
| Week 32 | Materials and applications |
| Week 33 | Methods for investigating and testing materials |
| **Term 3.2** | **Half term** |
| Week 34 | Methods of joining and use of components - seams | **A02 Section C – Development of design proposal(s) (25 marks).**Generate design proposals that take full account of the design brief and specification. Design proposals should reflect on first concepts and may use a variety of media in the development of a prototype that can be manufactured by the student. Constant reference to the design brief and design specification should be evident. Modelling is a key element of this assessment criterion.Produce a comprehensive and fully detailed manufacturing specification. |
| Week 35 | The use of fastenings and trims |
| Week 36 | Interfacings, underlinings, linings and interlinings |
| Week 37 | Fabric finishes - mechanical |
| Week 38 | Fabric finishes - chemical |

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| **Year 2** |
| **Term 1.1**  |
| Week 1 | Surface decoration - dyeing | **A02 Section C – Continued.** |
| Week 2 | Surface decoration - printing |
| Week 3 | Embroidery, quilting, threads, fusible fleece |
| Week 4 | Major developments in technology |
| Week 5 | Computer aided design (CAD) and virtual modelling |
| Week 6 | Computer aided manufacturing (CAM) |
| Week 7 | The use of computer systems in modern industrial and commercial practice, Sub-assembly |
| **Term 1.2**  | **Half term** |
| Week 8 | Scales of production | **A02 Section D – Development of design prototype(s) (25 marks).**The manufacture of a prototype using all potential resources, tools machines and equipment to a high level.On-going development and directly related to the design proposals.On-going testing and evaluation. |
| Week 9 | Electronic communication |
| Week 10 | Global production |
| Week 11 | Product lifecycle |
| Week 12 | Social, moral and ethical issues |
| Week 13 | Manufacture, repair, maintenance and disposal |
| Week 14 | Health and safety |
| **Term 2.1** | **Christmas Break** |
| Week 15 | Safety in products and services to the customer | **A02 Section D – Continued.** |
| Week 16 | Care labelling |
| Week 17 | Quality control |
| Week 18 | Quality assurance |
| Week 19 | Protecting designs and intellectual property |
| Week 20 | Critical analysis – existing productsFocus on analysing physical products, or printed images. |
| Week 21 | Critical analysis – existing productsFocus on analysing physical products, or printed images. |
| **Term 2.2**  | **Half term** |
| Week 22  | Critical analysis – existing productsFocus on analysing physical products, or printed images. | **A03 Section E – Analysing and evaluating (20 marks).**On-going analysis and evaluation that has informed the manufacture of the prototype. Testing and fitness for the needs of the client/user. Critical analysis of the final prototype.Modifications and improvements including consideration of levels of production. |
| Week 23 | Critical analysis – existing productsFocus on analysing physical products, or printed images. |
| Week 24 | Critical analysis – existing productsFocus on analysing physical products, or printed images. |
| Week 25 | Critical analysis – existing productsFocus on analysing physical products, or printed images. |
| Week 26 | Review and analysis – design process |
| Week 27 | Review and analysis – designers and design movements |
| Week 28 | Review and analysis – fibres, yarns and fabric construction |
| **Term 3.1**  | **Easter Break** |
| Week 29 | Review and analysis – surface enhancements | NEA Review and Presentation for assessment 15th May – deadline for submitting marks.Internal moderation and submission of NEA centre marks.  |
| Week 30 | Review and analysis – production processes |
| Week 31 | Review and analysis – sustainable issues |
| Week 32 | Review and analysis – quality issues |
| Week 33 | Exam preparation – designing and making principles |
| **Term 3.2** | **Half term** |
| Week 34 | Exam preparation – designing and making principles |  |
| Week 35 | External exams  |  |

The A-level course includes all of the specification content of the AS, but most areas include greater detail or depth if following the A-level course. There are also additional specification items in the A-level that are not included at AS. These are highlighted throughout the scheme of work in the first year, but revisited in the second year to allow for co-teachability where desired by schools and colleges.

Example content

| **Week** | **Specification content** | **Aims** | **Link to Maths and Science** | **Potential learning activity** |
| --- | --- | --- | --- | --- |
| Week 1 | Design methods and processes  | Become familiar with a wide range of specific materials and their uses.The stages of a range of design processes in order to apply personal judgement and relevant criteria in the appraisal of products and systems, including investigations and analysis:* use of inspiration materials, eg mood boards
* ideas generation
* illustration
* modelling
* planning
* evaluating and testing.
 |  | Introduction to the design process, which also links into the practical activities/workshops and then NEA portfolio.Role of the designer and the design process is intrinsic to fashion and textiles - a cycle of investigation, ideas, development, modelling, making and evaluation, informs the designer of success of products.* Using fashion magazines or websites such as Vogue, highlight fashion collections – Students to investigate and identify starting points for fashion and textiles collections. Eg nature, architecture, cultures, graffiti, global events etc. Collections with strong influences include Moschino and Dolce and Gabbana
* The role of the design brief. Set by client, and can be open to interpretation, or can include a detailed specification.
* Outline the concepts of ‘Trickle-down’ and ‘Bubble-up’ with regard to the diffusion of fashion trends
* Conducting of secondary and primary research for the designer
* The role of the mood board, (especially in comparison with a presentation board) for gathering inspiration. Students, in pairs, to collect a range of material – images, photographs, and textile samples, to create a mood board based on a theme set by the teacher. Class evaluation.
* Collection planning – presenting a selection of design ideas that will be suitable to meet the needs of the brief/client. Group work to create a capsule collection based on a theme set by the teacher – work on A3, presenting four pieces that connect together, but also work as individual outfits. Annotate key details.
* Modelling and development provides the designer with an opportunity to evaluate and test the success of the design. Full or small scale sampling of areas of the product can be tested against the brief eg CAD, digital printed fabric, seam sampling, components testing, toile making.

Improvements/changes can be made at this stage to ensure the product meets the needs of the client, and therefore will be a success in terms of sales and the design of future collections.Homework/independent study Teachers may wish to produce a Design process booklet – issue students with information booklet on the design process delivered in term 1:1. Reading of the booklet ahead of each lesson for weeks 1-7. |
| Week 2 | Enterprise and marketing | Have knowledge of a range of comparative workshop tests.Be able to suggest appropriate workshop tests.The importance of marketing and brand identity, including:* customer identification
* labelling
* packaging
* corporate identification.
 | Interpretation of market research data, calculating costs and profit. | Marketing involves identifying a need, or gap, in the market and satisfying the demand, with the goal of generating product sales, increasing market share and creating profit.* Marketing mix – the 4P’s. Investigate the marketing mix: product, place, promotion, and price. Why is it important to ensure appropriate marketing of products?
* Group work to identify a range of target market groups. Students to list the different requirements of these groups. Link to examples of fashion and textile products that illustrate the need. For example, components that are easy to use for the elderly, imagery and colours to attract children to products, design in transgender clothing.
* Teacher to present a range of physical or visual selection of products. Students to identify the intended target market group, and outline the key features of the product that makes it appropriate for the group.
* Labelling is a means of promoting a brand name through a logo or similar. Students to list ways retailers can promote products in this way eg on bags, hangers, swing tickets, quality labels, care labels, promotional stickers etc.
* Group work to identify the various ways products are packaged. Examples may include: logos, plastic bags, swing tickets, posters, labels, boxes, tissue papers, small plastic components etc.Packaging is often damaging to the environment – students to suggest ways packaging could be made more environmentally friendly.
* A band name or logo is a method of identity that sets a product apart from its competitors. Students to list a range of fashion and textiles brand names and logos. Discuss what brand names/logos represent to consumers. Examples could include; Designers Guild, Chanel, Debenhams, Primark. Detailed investigation of one brand of the student’s choice.
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| Week 3 | Enterprise and marketing  | Concept of global marketing: * the promotion and advertisement of products including the use of new technologies, eg social media
* viral marketing
* product costing and profit
* awareness of the role of entrepreneurs.
 | Interpretation of market research data, calculating costs and profit. | Marketing now days can easily reach all corners of the globe, students to research the impact of this type of marketing.* Research and identify brand names that are globally recognised - Important to focus on fashion and textiles brand names. Eg Dior, Nike, Levi etc. Compile a list of these identified brands. How do they reach consumers?
* List ways in which brands can use new technologies to reach and appeal to consumers. Examples may include; international stores, advertising through websites, social media, mentions on blogging sites, digital content etc. Burberry, for example, spends 60% of its budget on digital campaigns.
* Costing of raw materials to be calculated against profit margins. Research business models of key retailers, ascertaining profit margins. Students to calculate examples of cost and profit based on a given mark-up for retail.

Case study: research a range of entrepreneurs in the fashion and textiles industry, outlining the role of the business in the market. Examples could include; Cath Kidston, Tamara Mellon and Jimmy Choo, The Outnet.Detailed analysis of the business, to reference target market, business model, marketing methods, product range and likely profit calculations. |
| Week 4 | Enterprise and marketing  | The collaborative working of designers in the development of new and innovative fashion, clothing and textile products.Factors affecting product price, including:* costs
* profit margin
* target market
* budget.
 | Interpretation of market research data, calculating costs and profit. | Designers do not work alone, and need to collaborate with other professionals in the design, development and marketing of fashion and textile products.Students to research the following roles, considering factors affecting product price.* Fabric/clothing technologist carries out technical, investigative and quality control work on fabric and clothing, ensuring that products perform to specifications.
* Fashion merchandisers analyse market trends, production costs, and sales figures to determine the product direction that the retailers will take each season. Merchandisers set the retail price of a product.
* A buyer decides what items will be stocked in a store. Retail buyers work closely with designers, and attend trade fairs and fashion shows to observe up-coming trends. They may work for large [department stores](http://en.wikipedia.org/wiki/Department_store), chain stores or smaller [boutiques](http://en.wikipedia.org/wiki/Boutique).
* A visual merchandiser creates window and in-store displays in shops and department stores, taking responsibility for ‘the look’ of the store, with the aim of promoting goods in order to maximise sales.

Designers often collaborate with others in the design process, to create innovative ideas and to attract a new or wider market to a retail store. Students to research case studies of such collaborations that may include: New Look and Rhianna, H+M and Marni, Topshop and Kate Moss. |
| Week 5 | Design methods and processes | Iterative design process.Different approaches to user centred design.That in approaching a design challenge there is not a single process, but that good design always addresses many issues, including:* designing to meet a need
* investigations to inform the use of primary and secondary data including market research, interviews, human factors, focus groups, product analysis and evaluation
* the use of anthropometric data and percentiles
* the use of ergonomic data.
 | Representation of data used to inform design decisions and evaluation of outcomes.The use of ergonomic and anthropometric data when designing products for humans and specific applications. | User-centred design (UCD) is a project approach that puts the intended users of a consumer at the centre of its design and development. It does this by **talking directly to the user** at key points in the project to make sure the site will deliver upon their requirements.This topic is very much linked with the research and development of the NEA, and the application of understanding of anthropometric data on the need to design products.* Students to identify and list ways of communicating end-uses of products. Examples may include: focus groups, usability testing, interviews, questionnaires, product analysis, participatory design, polls.
* Evaluations of these methods can be made to highlight their usefulness in students own work, and that of commercial viability.
* Anthropometric data is usually already collated, but will give the designer various type of information on an intended target market, or opportunity for a gap in the market.Examples that are useful in fashion and textiles are: Death rates, birth rates, sizing analysis and income studies. These can determine future trends and opportunity for design possibilities. Eg Death rates: the population is living much longer that we were 20 years ago, which means the older population is growing year on year. What impact does this have on design? More stores catering for the older market, such as Jaeger, Country Casuals, M&S? New design ideas for an expanding market? Opportunity for design? Opportunity for more sales and profit?

Link to niche markets. A niche market refers to a store that focuses its market on a specialist area in fashion and textile retailing. Students to research and identify niche markets, along with detailed analysis of what make them unique to their customers.Examples could include: Knickerbox, Long Tall Sally, Blooming Marvellous, Petit ranges, Tie Rack. |
| Week 6 | Fashion cycles  | The sales and marketing cycles for specific product groups, including:* fad
* classic
* standard.
 |  | The fashion industry is built on the demand for new and innovative products. Within the changing trends of fashion there are three distinct types of fashion cycles, as follows.Fad, classic (iconic) and the standard trend.Students to investigate each of the three trends (fad, classic and the standard)For each trend* Give a detailed definition of the trend.
* Give a timescale for the staying power of the trend.
* Give specific examples of fashion and textile products.
* Draw a graph/scale illustrating the five stages of each fashion cycle: introduction, growth, maturity, decline, obsolescence.
* Discuss the impact these three types of fashion cycles have on the design of products.
* Link to marketing - reference to retailers that subscribe to the different fashion cycles eg Topshop will design and retail all three types of product. The standard trend will represent the twice-yearly trends (spring-summer and autumn-winter) but the store will also capitalise on spikes in novelty fashion, and will also carry stock of classic products such as jeans and t-shirts. How do other retailers compare? Eg Chanel, John Lewis, Boden, Asos etc.

NB- not to be confused with product lifecycle. |
| Week 7 | Fashion cycles  | The impact of fashion on trend and the development of design products, including:* retro
* vintage
* industrial
* traditional.

Industry development cycles, including:* colour trends
* fibre trends
* predictions
* the importance and purpose of trade fairs.

The influence of trend and changes in lifestyle on fashion, clothing and textile products. |  | New fashion trends arise from a mixture of cultures, global, pop, music, celebrity, street, art etc., trends re-appear periodically in fashion and textiles products.* Students to analyse the different types, to include, retro, vintage, industrial, traditional.
* Fashion forecasters are market research specialists who offer illustrated reports to manufacturers for a fee. Predictions are built up from extensive statistical surveys to gauge the future popularity of fabrics, colours, details and features.

Students to report on the type and application of* Colour trends - agencies such as [WSGN.com](https://www.wgsn.com/en/) illustrate a range of predicted colour palettes in image libraries that designers may use for collections. Ref to pantone colours as industry standard.
* Fibre trends - Periodicals such as View publish future fibre and fabric trends.

How do designers use these resources in the design process?* Trade fairs. Can take the form of fibre and fabric fairs such as Premier Vision in Paris, and fashion shows linked with catwalk collections. Research into the different types of trade fair, and the reasons for holding these fairs to the industry.

Students to outline the importance and purpose of trade fairs to:* the designer
* the retailer.
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| **Autumn half term** |
| Week 8 | Design influences | Introduction to design styles and movements, linked with influential designers of the era, and influences on fashion of today.Introduce students to fashion history, dating from 1890s, through to 1990s. This timeframe references the content of the specification.How key historical design styles, design movements and influential designers that helped to shape fashion and textile design and manufacture. |   | * Group work - Dates match. Present students with colour printed images of examples of fashion and textiles products from each of the eras in the specified timeframe, two from each era works well (10 in total). Also supply cut strips of paper printed with key dates/eras. Students to:
1. match the images with the correct dates/eras
2. present them as a timeline from 1890 – 1990
3. An extension of this activity is to introduce images of key designers, students can attempt to name the designers/design house. To go further, correct placement of the designers in the timeline.
* Poster/information sheet. Students to work in pairs to create resource for all in the class. Pairs to focus on one design movement, outlining features such as dates, designers and key elements of the era.

Homework/independent studyDesign influences – Movements and designers’ booklet – issue students with information booklet on the design process delivered in term 1:2. Reading of the booklet ahead of each lesson for weeks 8-14. |
| Week 9 | Design theory, linked with designers and their work | Design styles and movements.Key design styles and movements and their principles of design. Art NouveauThe work of influential designers and how their work represents the principles of different design movements, including:* Paul Poiret,
* William Morris.
 |  | Focus on the Art Nouveau movement - Late Victorian era, 1890 to Edwardian period. * Starter: present each student with a printed image of a fashion or textiles product from the Art Nouveau era. Students to critically analyse the product by annotating key features eg colour, pattern, shape, imagery, design, components, fabric type etc.
* Students/teacher to compile a PowerPoint presentation, illustrating key fashions from the late Victorian era through to the Edwardian period, presented in a timeline order, with key dates. This can be used to share with the class.

Areas of focus may include –Overview of key fashions:* attitudes to/roles of women in society
* corsets to create/change shape of the female figure
* decoration, colour and fabrics to portray wealth and status.

Influential designers of the era:* William Morris: textiles, wallpaper, decorative arts
* Paul Poiret: abolishment of corset, hobble skirt and change of silhouette.

Movement/context:* Art Nouveau – colours, imagery, ethos, return to crafts/nature, hand printing
* Suffragettes – votes for women
* WW1, 1914-1918: functional clothing, women and the war effort, the Trench coat, liberation after the war.

Students to reference the design process booklet, other sources of printed information and video clips available online.Further investigations may include:* the influence of the era on contemporary design
* critical product analysis, annotate key features of key garments and textiles
* technological developments of the era.

Research into other fashion and textile designers. |
| Week 10 | Design theory, linked with designers and their work | Design styles and movements.Key design styles and movements and their principles of design. Art NouveauThe work of influential designers and how their work represents the principles of different design movements, including:* Paul Poiret
* William Morris.
 |  | Focus on the Art Deco era, 1920s, into the 1930s. * Starter: Many short clips of interest are available on YouTube. Students to watch a clip of your choice, while focusing on the visual and audio information. At the end, each student to list three memorable details from the clip. Share with others in groups, or with the class.
* Students/teacher to compile a PowerPoint presentation, illustrating key fashions from the Art Deco era, presented in a timeline order, with key dates. This can be used to share with the class.

Areas of focus may include – Overview of key fashions:* changing roles of women, garconne look
* abolishment of corsets, practical clothing, influence of sport
* decoration, embellishment, symmetry, hemlines, masculinity.

Influential designers of the era:* Paul Poiret: abolishment of corset, lampshade tunic, drapery, Harem pants
* Chanel: jersey, LBD, perfume, twinsets, wool tweed, boucle, costume jewellery, cloche hats, practicality.

Movement/context:* Art Deco: Egypt, Russian ballet, orientalism, jazz, Hollywood, travel

Students to reference the design process booklet, other sources of printed information and video clips available online.Further investigations may include:* the influence of the era on contemporary design
* critical product analysis, annotate key features of key garments and textiles
* technological developments of the era
* research into other fashion and textile designers.
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| Week 11 | Design theory, linked with designers and their work  | Design styles and movements. Key design styles and movements and their principles of design.1940s designThe work of influential designers and how their work represents the principles of different design movements, that may include:* Dior
* Schiaparelli
 |  | Focus on the 1940s and WW2 era. * Starter: Present students with a list of key dates and terms relating to the period of 1939 – 1947. Students to use the design process booklet and other source of information (books, internet, printed handouts) to research the event/significance of the dates and terms.
* Students/teacher to compile a PowerPoint presentation, illustrating key fashions from the 1940s, presented in a timeline order, with key dates. This can be used to share with the class.

Areas of focus may include –Overview of key fashions:* changing roles of women
* masculine/functional clothing, two piece suits, pencil skirts, siren suit
* post-war opulence, waspie corset, Parisian fashion.

Influential designers of the era:* Schiaparelli: knitwear, trompe l’oeil, Lobster/tear dress, surrealism
* Dior: New Look, 1947 Bar dress, opulent, Zemire, feminine, elegance.

Movement/context:* austerity regulations, rationing, make do and mend, CC41, trousers for women, demob suit, military influence
* re-emergence of Chanel in 1955. 2.55 bag, boucle/tweed skirt suit.

Students to reference the design process booklet, other sources of printed information and video clips available online.Further investigations may include:* the influence of the era on contemporary design
* critical product analysis, annotate key features of key garments and textiles
* technological developments of the era.

Research into other fashion and textile designers. |
| Week 12 | Design theory, linked with designers and their work  | Design styles and movements. Key design styles and movements and their principles of design.Pop-artThe work of influential designers and how their work represents the principles of different design movements, that may include:* Mary Quant
* Pierre Cardin
* YSL.
 |  | Focus on the 1960s Pop Art era * Starter: Paired task: present students with a clean sheet of A4 paper. Task is to draw a memorable fashion or textiles product from the pre-reading of the design process booklet. Extend the task by critically annotating all key features of the product, to include details such as; colour, pattern, shape, imagery, design features, components, fabric type, print etc.
* Students/teacher to compile a PowerPoint presentation, illustrating key fashions from the 1960s, presented in a timeline order, with key dates. This can be used to share with the class.

Areas of focus may include –Overview of key fashions:* birth of the teenager/youth, Twiggy
* mass manufacture, short hemlines, bright colour, experimental designs

Influential designers of the era:* Mary Quant – miniskirt, Bazaar, block colours, hessian dress, hot pants, pvc
* Pierre Cardin – monochrome, A line, geometric, avant-garde
* YSL – Mondrian dress, primary colours, eclectic ranges, safari suit, Dior.

Movement/context:* Space race – pvc/plastics, new materials, futuristic design
* Pop art – commercial design, Andy Warhol, Roy Lichtenstein, Campbell’s soup can, posters, comic strip images, popular culture.

Students to reference the design process booklet, other sources of printed information and video clips available online.Further investigations may include:* the influence of the era on contemporary design
* critical product analysis, annotate key features of key garments and textiles
* technological developments of the era
* research into other fashion and textile designers.
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| Week 13 | Design theory, linked with designers and their work | Design theory, linked with designers and their work.Design styles and movements. Key design styles and movements and their principles of design.PunkThe work of influential designers and how their work represents the principles of different design movements, that may include Vivienne Westwood,MinimalismThe work of influential designers and how their work represents the principles of different design movements, that may include:* Yamamoto
* Calvin Klein
* Armani.
 |  | Focus on the 1970s Punk movement* Starter: Visual comparison. Present students with two differing images of fashion garments from the 1970s era eg Ozzie Clark maxi dress, compared with Vivienne Westwood’s bondage trousers and ripped t-shirt. Task is to research the context and influences of the two products, using the design process booklet, other printed sources of material or internet.
* Students/teacher to create a presentation, illustrating key fashions from the 1970s, presented in a timeline order, with key dates. This can be used to share with the class.

Areas of focus may include –Overview of key fashions:* hippies, flower power, reaction to the mini skirt through maxi dresses
* disco, flares, jeans, platform shoes
* Punk, Malcolm McLaren, anarchy, rebellion, new youth.

Influential designers of the era:* Westwood – tartan, bondage trousers, printed t-shirts, safety pins, ripped fabrics, Dr marten footwear, leather.

Movement/context:* Punk – gender neutral clothing, music, biker influence, Mohican hair styles
* New Romantic 1980s – Pirates collection, softer pop influences, power dressing for women, Madonna, JP Gaultier.

Students to reference the design process booklet, other sources of printed information and video clips available online.Further investigations may include:* the influence of the era on contemporary design
* critical product analysis, annotate key features of key garments and textiles
* technological developments of the era.

Research into other fashion and textile designers.Focus on the 1980s – 1990s minimalist era. * Starter: Word cloud. Present students with a word cloud of key terms from the Minimalist era, reference designers, design houses, influences eg tv programmes, films, patterns, silhouettes etc. from the period – students to annotate on the printed sheet by expanding/explaining the context of the key terms in relation to the era.
* Students/teacher to compile a PowerPoint presentation, illustrating key fashions from the 1980/90s, presented in a timeline order, with key dates. This can be used to share with the class.

Areas of focus may include –Overview of key fashions:* Sophisticated, workplace led design, monochrome colours, simple shapes, clean lines.

Influential designers of the era:* Yamamoto – innovative, tailoring, Y clothing line, Adidas connection
* Calvin Klein – jeans, soft cut suits, perfume, advertising, underwear
* Armani – masculine shapes for women, monochrome

Movement/context* Minimalism – Japanese influence, ideas from architecture, geometric abstract images.

Students to reference the design process booklet, other sources of printed information and video clips available online.Further investigations may include:* the influence of the era on contemporary design
* critical product analysis, annotate key features of key garments and textiles
* technological developments of the era.

Research into other fashion and textile designers. |
| Week 14 | Socio-economic influences on fashion and textiles | Influences have helped to shape product design and manufacture, including:* trends
* street culture music and media
* world events WW1, WW2
* the rise of youth culture and anti-authoritarian attitudes
* the influence of workwear on fashion
* the role of women
* sport and leisure
* technological developments
* music, film, royalty and celebrities.
 | Determining quantities of materials.Calculations of sides and angles of products.Use of geometry to create templates for designs. | There are many influences that shape trends in fashion and textiles. Much of the specification content for this section can be integrated into teaching for weeks 8-13. However, it is useful to look at the development of design and social influence as a whole.Suggested delivery here is to use these influences as a starting point for research over the fashion period of 1890 – 1990. Students to investigate the role of the following key areas in the changing shape of fashion:* street culture, music, film, tv, celebrity
* WW1 and WW2
* youth culture
* workwear
* role of women
* technological developments
* sport and leisure

Students to reference the design process booklet, other sources of printed information and video clips available online.Link to the design process eg bubble up, trickle down theories. Celebrity culture and their influence of fashion and collaborations in design and retail of special collections. Comparison between early C20 technological developments with the advances made in the past twenty years or so.  |
| **Christmas break** |
| Week 15 | Classification of materials: Natural fibres  | Students to know the classifications of the following fibres, and describe their performance characteristics:Natural fibres* natural plant/cellulosic fibres – cotton,
* linen, ramie
* natural animal/protein fibres – wool, silk
* hair fibres – cashmere, mohair, angora
 | Understand physical and working characteristics of fibres.Calculation of quantities of materials sizes and costs. | Investigation into natural plant and animal fibres, students need to understand properties and performance characteristics, as well as recognising longitudal and cross sectional shapes of fibres.* What do students already know? Paired notes to determine initial knowledge of the three groups of **natural fibres** (plant, animal, hair)
* Mind map: origin, characteristics, end-uses/products.
* Fibre and fabric samples for students to handle.
* In groups, create a fibre properties table, focusing on five key properties: strength, absorbency, warmth, comfort and handle, care.
* Printed/PP images of products – students to suggest suitable fibres, with reasons for choice
* Recognise how fibre shape affects properties and performance. Study the visual characteristics of key fibres, compare the differences in lustre, warmth, texture and comfort depending of the cross-sectional fibre shape.

Homework/independent study – Fibres/fabric booklet – issue students with information booklet on the classification and properties of fibres delivered in term 2:1. Reading of the booklet ahead of each lesson for weeks 15-21. |
| Week 16 | Classification of materials: Manufactured fibres | Students to know the classifications of the following fibres, and describe their performance characteristics: * Manufactured fibres
* regenerated fibres – viscose, acetate
* new generation Lyocells – Modal, Tencel, Lyocell.

Students to demonstrate knowledge and describe the process of **wet spinning** when making regenerated fibres.  | Understand physical and working characteristics of fibres.Calculation of quantities of materials sizes and costs.Understand how fibre production can affect the fibre formation | Investigation into natural plant and animal fibres, students need to understand properties and performance characteristics, as well as recognising longitudal and cross sectional shapes of fibres.* Production of manufactured fibres –. Students need to understand how manufactured fibres are produced via wet spinning, from the raw material to filaments. Create a flowchart of the process.
* In groups, create a fibre properties table, focusing on five key areas for each manufactured fibre: strength, absorbency, warmth, comfort and handle, care. Refer to the fibres booklet for completion, and other sources of printed material/internet.
* Introduction of trade mark names of the generic fibres, reference to fibre logos/swing ticketing.

Create a summary of the general characteristics of this fibre group. |
| Week 17 | Classification of materials: Synthetic fibres  | Students to know the classifications of thefollowing fibres, and describe their performance characteristics:Synthetic fibres:* polyamide (nylon), polyester, acrylic, elastomeric
* chlorofibres (polyvinyl), fluorofibres (PTFE)
* aramid fibres (Kevlar, Nomex)
* inorganic fibres including glass, carbon, metallic, ceramic.

Students must demonstrate knowledge and describe the process of **melt spinning** when making synthetic fibres.  | Understand physical and working characteristics of fibres.Calculation of quantities of materials sizes and costs.Understand how fibre production can affect the fibre formation | Investigation into natural plant and animal fibres, students need to understand properties and performance characteristics, as well as recognising longitudal and cross sectional shapes of fibres.* Fibre/fabric samples of four key synthetic fibres for students to handle. (nylon, polyester, elastomeric, acrylic) Comparison of the handle and visual characteristics.
* In groups, create a fibre properties table, focusing on five key property areas: strength, absorbency, warmth, comfort and handle, care. Complete the table with the four synthetic fibres.
* Extend the table to explore end-uses for the fibres for fashion and textiles products.
* Fibre production
* Polymer/Spinneret/extrusion – melt spinning. Many video clips of fibre production are available online – students could create a flow chart of the fibre making process. Highlight key terms.
* Chlorofibres: polyvinyl chloride (PVC) and fluorofibres (PTFE).
* Mainly coated fabrics, creating a ‘plastic’ effect fabric surface. Students to be aware of the process of coating on a woven/knitted base, with a petrochemical solution to create the fabric. List applications for fabric use, and key properties.
* Aramid fibres - Kevlar, Nomex: Students to identify the working properties of these two fibres, and to research/suggest end applications. These should focus on high performance uses and industrial products, due to the specialist qualities of these fibres.

Inorganic fibres: glass, carbon, metal, ceramic. Research into these four different fibre types, outlining properties of each. Students to suggest end-uses for each of the four fibre types, focusing on their protective qualities. Metal fibres are the only example here that are usually used in products for fashion purposes – as metallic fibres add decoration when woven/knitted into products. |
| Week 18 | Classification of materials: Smart materials  | Students should know and understand the term **smart material.**The effects that can be created by a range of smart materials and have knowledge of specific applications, eg in relation to fabrics for safety and novelty products.Students should be able to explain the suitability of smart materials for given applications making reference to how the material responds to external stimuli, including:* changes in temperature
* changes in light levels
* changes in pressure (force).

Smart materials* reactive materials
* photochromic dyes
* phase changing materials
 | Understand physical and working characteristics of fibres.Calculation of quantities of materials sizes and costs. | Investigation into natural plant and animal fibres, students need to understand properties and performance characteristics, especially with reference to fashion and textiles applications.* Definition of Smart - ‘Materials that Respond to external stimuli’. NB: materials such as Fast skin and Gore-Tex are **not** smart materials – smarts appearance/properties change in response to their environment.
* Use fibres/fabrics booklet to investigate each materials’ characteristic.
* Fabric samples, if possible. Outlast can be bought by the metre, ‘baby glow’ sleepsuits available online, impregnated tights pack (micro-encapsulated) with aloe vera, caffeine etc. on high street/supermarket.
* Reactive – thermochromics, respond to heat eg Global hyper colour, Stomatex
* Photochromic dyes - respond to UV light with colour indicator eg Solar dry
* Phase change – eg Outlast, respond to heat, particles in fibres turn from solid to liquid
* Changes in pressure – micro-encapsulated fabrics eg Purista, Amicor. Many fibres/fabrics are impregnated/coated with scents or moisturisers to benefit the wearer

Task – Students to identify suitable smart materials for:* novelty
* safety applications.

Highlight characteristics that make the suggested material suitable. Give a full explanation how the material works. Where possible, draw and annotate the material for visual clarity.  |
| Week 19 | Classification of materials: Modern materials, laminated materials  | Students to know the classifications of the following fibres, and describe their performance characteristics:Modern materials* microfibres
* nano-fibres
* microencapsulated fibres and fabric.

Laminated materialsStudents should be able to describe the membrane system and the principles behind how laminated fabrics work.* Gore-Tex
* Sympatex
* bonded fabrics, eg fake leather backed by a woven fabric to give stability.
 | Understand physical and working characteristics of fibres.Calculation of quantities of materials sizes and costs. | Investigation into natural plant and animal fibres, students need to understand properties and performance characteristics, especially with reference to fashion and textiles applications.Definition of:* Modern materials – ‘man-made for performance’ (they do not respond to external stimulus, unlike Smart materials)
* Microfibres – a high number of fine synthetic filaments in one yarn, that are finer that one denier or tex (decitex). eg Kevlar, Polartec
* Nano-fibres – finer than microfibers, unique for high porosity and specialist, biological applications
* Microencaplulated – release scent/oils etc. when pressure is applied. Eg Purista, Amicor, Microban.
* Group work to research and discuss fibre effects and applications – supply students with printed material, set up a ‘jigsaw’ for sharing information.

Laminated materials, definition of:* Laminated fabrics combine two or more layers of different fabrics, bonded together by **adhesive** or by the **thermoplastic qualities** of one, or both of the fabrics.
* Gore-Tex and Sympatex. Students to investigate the properties of these two fabrics from the booklet, or printer material.
* Supply all students with a printed image of Gore-Tex (internet images with no annotations). Students to critically analyse the fabric by annotating; highlighting 3-layer structure, role of microporous holes, benefits to the wearer.

Bonded fabric; research bonding and suggested applications. |
| Week 20 | Technical textiles  | Students should understand the term technical textiles, and explain their suitability for given applications, to include:* phosphorescent materials, micro-encapsulated fibres and fabrics
* ceramic and carbon fibres used in the production of Nano-fibres
* ceramic fibres to give a fabric UV protection

Commercial names of fibres and fabrics.Students to name and describe popular names of natural, man-made and synthetic fibres and fabrics, including:* Tactel
* Lyocell
* Modal
* Tencel
* Lycra
* Polar fleece.
 | Understand physical and working characteristics of fibres.Calculation of quantities of materials sizes and costs. | Investigation into natural plant and animal fibres, students need to understand properties and performance characteristics, especially with reference to fashion and textiles applications.* Review of technical textiles – ‘designed for performance or enhanced safety’

eg Fast skin, phosphorescent, micro-encapsulated, Gore-Tex.* Why are Ceramic and carbon fibres for Nano-production?
* Why are Ceramic fibres for UV protection?

Students to research and answer the questions.Commercial names of fibres and fabrics:* Definition of Popular/commercial fabric names – ‘modified generic fibres’

Eg Tactel, Lyocell, Modal, Tencel, Lycra, polar fleece.Q: What are the reasons for creating these fibres? Students to use the fibres/fabrics booklet to research the six fibre types, discuss responses.Internet research, or teacher to open webpages of the companies/fibres for discussion with the class.Question linked with marketing and promotion:Discuss the ways in which retailers promote new fibres in fashion and textile garments.* Group work to discuss fibre effects and applications – set up a ‘Jigsaw’ in the class for sharing information.
* Logos – PP of the logo that accompanies each of the named TM fibres.

Samples for handing if possible – microencapsulated tights, Tactel body wear, Polar fleece zip-up. Swing tickets from textile products.Task: For each of the six fibres students to explain the benefits of each one for performance wear. |
| Week 21 | Performance characteristics of fibres  | Review of the performance characteristics of the main types of fibre groups, eg* plant/cellulose fibres: very absorbent, little elasticity
* animal/protein fibres: very absorbent, insulating
* regenerated fibres: poor strength, soft, absorbent
* new Lyocells: with improved performance characteristics
* synthetics: good strength, non-absorbent, smooth, heat set.

Study of the shape and formation of fibres. Different cross-sectional and linear formation that can occur in natural form, and those that can be engineered during synthetic and manmade fibre production.  | Understand physical and working characteristics of fibres.Calculation of quantities of materials sizes and costs.Understand how the physical shape and formation of fibres can affect their performance | An overview of the performance characteristics of the main groups of fibres. Review the fibre groups. * Mind-map: paired work to create a mind-map focusing on the fibre types and properties.
* Word cloud: present a range of key fibre terms on a word cloud format (approx. 10 terms) – students to define/draw the given terms.
* PP quiz: Slides on a PowerPoint presentation, a question per slide. Questions relate to fibre properties and classification.
* PP: visual images of cross sectional and longitudal sections of fibres. Students to identify and discuss.
* Exam questions: Give relevant questions from the Sample Question paper.
* Possible exam questions: Create possible exam questions that relate to the specification. This can be done by the teacher, or the students, working in pairs or small groups.
* Sorting table: Present a printed table, with the key fibre headings. Supply a list of a range of fibre names and properties. Students to place the fibre/properties under the correct heading.
* Focus on plant/cellulose, animal/protein, regenerated fibres, new Lyocells, synthetics, smart, modern, laminated, inorganic, trade mark fibres.
 |
| **Spring half term** |
| Week 22 | Yarn production: basic yarns  | Basic yarns* staple
* filament
* single
* plied yarns.

Students should be able to explain the performance characteristics of yarns, including:* the importance of twist in relation to strength and bulk of the yarn: the importance of this in the making of crêpe yarns and fabrics
* technical terms relating to yarns: systems for numbering yarns, eg tex and denier staple and filament yarns.
 | Ensure products are designed to take account of potential corrosion due to environmental factors.  | Students need to know that fibres are made into yarns before they can be manufactured into woven and knitted fabrics.* Review staple and filament fibres as a starting point.
* Effect of making fabric with staple v filament fibres: Staple = fuzzy, textured, matte, warm as air trapped in upstanding fibre ends.
* Filament = cool as little or no gaps for air to be trapped, smooth, lustrous.
* All fibres are made to products in the same way (fibre > spinning > yarn > fabric > product). Natural fibres are combed/carded before the spinning stage, Manufactured fibres are wet spun, Synthetic fibres are melt spun.
* Twist: Outline the importance of twist. High twist: strong yarn, cool, more lustrous. Low twist: bulky, warm, weak yarn, textured.
* Crepe yarns: made with a high number of twists in the yarn, that create a crimped and textured appearance. The fabric drapes well, due to the extra weight of the yarns.
* Yarns: Different yarn types: staple, filament, single, plied, core-spun
* Denier and tex (decitex) – units of measurement for fibres. Hosiery/tights use the denier system to describe the opacity of the fabric eg 15 denier refers to fine yarns, creating a sheer effect. While 70 denier are many yarns together, creating a much thicker yarn, resulting in a more solid effect.

Microfibres have a high number of fine synthetic filaments in one yarn, that are finer that one denier or tex (decitex). eg Kevlar, PolartecHomework/independent study – Yarns/fabric construction booklet – issue students with information booklet on the topics delivered in term 2:1. Reading of the booklet ahead of each lesson for weeks 22-28. |
| Week 23 | Yarn production: Fancy yarns, textured yarns | Students should be aware of, and be able to describe, the manufacture of:Fancy yarns* bouclé (loop)
* slub
* chenille
* metallised.

Textured yarns* false twist
* air jet texturing
* effects created using fibres and yarns.

Students should be aware of, and be able to describe the effects that can be created, including:* bouclé and crêpe fabrics
* crinkle and permanent creasing
* metallic fibres
* use of dyes to give multi-coloured fabric.
 | Determining quantities of materials. | StarterGroup discussion: Explore the base knowledge around the topic of Scales of There are many yarn effects that can be created, students should be aware of the different variations, and how they can be used in fashion and textiles fabrics.* Fancy yarns: Effects created during the twisting process, usually for decoration.Examples include: boucle (loop), slub, chenille, metallised yarns.
* Textured yarns: Synthetics are modified as they leave the spinneret to create textured effects, making use of use of thermoplastic qualities. Examples include: False twist, air-jet texturing.

Students should be familiar with the two groups of yarns above, and in particular:* be able to draw and label each yarn, along with annotations to highlight core yarn, binder yarn, and effect, as appropriate.
* Be able to name/identify fabrics made with these yarns eg looped yarns create a bouclé fabric, false twisted yarns create a crimped/crepe effect.
* Dyeing for effect

Space dyeing is used to give yarn a unique, multi-coloured effect. While yarn is usually the same colour throughout, space dyed yarn is two or more different colours that repeat themselves throughout the length of the yarn.Yarn dyeing is essential for achieving special effects such as, stripes, checks and shot fabrics* Metallised yarns such as Lurex are coated, and spun with other fibres/yarns for decorative effects.

Yarns made from CF fibres are more lustrous than staple fibresFine fibres provide a greater number of reflecting surface than few coarse fibres, therefore fine fibres produce a softer sheen than coarse fibres. |
| Week 24 | Mixtures and blends | Students should know of the need to blend fibres to create aesthetic effects, performance fabrics and improved care and maintenance.Students should be aware of, and be able to describe, the production processes associated with mixtures and blends, including:* the mechanics of blending different fibres together
* how fibres are combined together to make yarns, eg stable fibre blends and multi-filament yarns
* yarns made from mixes of staple fibres and filament fibres cut down to staple form
* the different methods of core-spinning yarns which include elastomeric fibres
* fibre content of typical blends.
 | Use of datum points and geometry when setting out design drawings.The use of tolerances in dimensioning.Calculating speeds and times for machining. | Students should know of the need to blend fibres to create aesthetic effects, performance fabrics and improved care and maintenance.Students should be aware of, and be able to describe, the production processes associated with mixtures and blends, including:* the mechanics of blending different fibres together
* how fibres are combined together to make yarns, eg stable fibre blends and multi-filament yarns
* yarns made from mixes of staple fibres and filament fibres cut down to staple form
* the different methods of core-spinning yarns which include elastomeric fibres
* fibre content of typical blends.
 |
| Week 25 | Non-woven fabrics | Students should be able to understand and explain that non-woven fabrics are produced directly from fibres and have knowledge of typical end uses of non-woven fabrics.Students should be able to describe the production processes associated with non-woven fabrics, including:* felts, adhesive and heat bonded
* needle-felt
 |  | Non-woven fabrics are made directly from the fibres, and do not involve twisting fibres to make yarns, or complex weaving or knitting processes. * Practical learning: Demonstration/students to create small scale samples of non-woven fabrics to understand the process of fabric manufacture. 1. Felts – two methods. Needle felting and wet felting.

2. Heat bonded – ironing Angelina fibres to form a fabric.Non-woven fabrics can be made at home and commercially. Students to be aware of all production methods. (felt, heat bonding and adhesive) Handout/dvd. Refer to yarns/fabric construction booklet for information. * Group work to discuss properties of non-wovens. Eg Lack strength, not durable, no elasticity, have no grain, can be easily cut in any direction, do not fray, easily biodegrade, inexpensive. **They are not recycled**.
* Students to list end-products that are made from non-woven fabrics. Note: commercial non-wovens are usually designed for **disposable** products.
* Wool felting – reference must be made to detergent, hot water and friction to make a dense fabric where the scales on wool fibres interlock.

Reference to Vilene, interfacing. If possible, have examples of these fabrics to illustrate the random direction of the fibres in the bonding process. |
| Week 26 | Woven fabrics | Students should be able to explain the main fabric structures of woven fabrics and be able to recognise these structures and typical end uses for a range of woven fabrics, including.Plain (tabby) weave fabrics: * broderie anglaise
* calico
* canvas
* chambray
* chiffon
* flannel
* muslin
* organdie
* poplin
* sheeting
* shirting
* taffeta
* voile
* winceyette.

Twill weave fabrics: * cavalry twill
* denim
* dog-tooth check
* drill
* gabardine
* herringbone tweeds
* serge
* tartan.

Satin weave fabrics: * satin
* sateen
* duchesse satin
* heavy bridal satins
* lighter weight satins for linings and lingerie.
 |  | Introduction to the three basic types of woven fabric.* Introduce three weaves – plain, twill and satin. Plain is the simplest of all weaves – students could deconstruct a calico sample from fabric > yarn > untwist to reveal fibres.
* Draw and label all three weaves. Important for students to ensure direction of **warp** and **weft** yarns travel in the correct direction on the fabric. It is more effective to draw plain and twill weaves in a ‘grid/end and pick’ format. Twill and satin weaves should be drawn as a weave. Students need only draw four rows, to show how the pattern repeats along each row.Nb. Warp (down the fabric **length**, not ‘up and down’) and weft (across the fabric **width**, not ‘left to right’)
* Paired work: Supply small fabric samples of all three weaves for students to handle, and deconstruct.

Analyse properties of each weave. Through fabric handling and web/book research, list the visual characteristics and individual properties of each fabric. This will include an evaluation eg twill weave is strong, but can fray easily.* List suitable end products for the three weaves, using the fibre names as inspiration.
* Evaluate the general properties of weaves, such as; relatively good strength and stability, have a grain, generally little stretch, fray when cut etc.

Students should be aware of the variations of the weaves and specific fabric names, as outlined in the specification (to the left). Where possible, students to create a fabric library made of small swatches of as many of the listed fabrics as possible.Students to create a glossary of terms, by researching the many fabric names, highlighting individual fabric qualities. |
| Week 27 | Woven fabrics | Brocades and Jacquardthree yarn system weaves: * cut pile fabrics, (velvet, needlecord, corduroy)
* loop pile fabrics (terry towelling)
* special woven effects.

Students to describe, the production processes associated with woven effects with coloured yarns, including:* checks and stripes including gingham
* tartan
* madras.
 |  | Continuation of study into more complex woven fabrics* Introduce **three yarn system** fabrics, cut and loop pile.

Fabric samples of as many of the weaves as possible for students to handle.* Draw and label all weaves. Important for students to ensure direction of warp and weft yarns travel in the correct direction on the fabric.
* Paired work:Analyse properties of each weave. Through fabric handling and web/book research, list the visual characteristics and individual properties of each fabric. This will include an evaluation eg loop pile is warm, but snags easily.
* List suitable end products for the weaves.

Special woven effects: * Special effects created with weaves include checks, gingham, stripes, tartan, madras. Students to draw and label these effects, using coloured pens. These effects use regular or irregular different coloured yarns on the warp and/or the weft.

Pile/nap. A pile is the effect of fibres that stick up from the fabric’s surface (loop). A nap is a pile effect, where the fibres run in a specific direction (velvet, can be smooth/rough or dark/light in appearance) |
| Week 28 | Knitted fabrics | Students should be able to explain the two main structures of knitted fabrics and be able to recognise these structures and typical end uses for a range of knitted fabrics, including:Weft knits: * hand and machine knits
* plain knit
* single jersey
* double jersey
* rib knits
* jacquard knits.

Warp knits: * net
* lace.

Students to describe, the production processes associated with hand and machine knitting, including:* panel knitting
* fully fashioned panels
* whole garment knitting.
 |  | Students to be aware of the two types of knitted structures, and be able to identify fashion and textile products made from each.* Introduce two knits - warp and weft.
* Draw and label both knitted fabrics. Important for students to ensure direction of wale and course yarns travel in the correct direction on the fabric. Nb. Labelling – wale and course. Wale yarns travel down the fabric length. Courses run across the fabric width.
* Fabric samples of knits for students to handle.
* Paired work -Analyse properties of each knit. Through fabric handling and web/book research, list the visual characteristics and individual properties of each fabric. This will include an evaluation eg weft knits stretch, but can curl at the edges.
* Analyse suitable end products for the different knits. Teacher to supply printed images or images on the screen as a starting point.
* Outline the general properties of knits: they have fluidity and stretch, provide comfort, can be warm if enough air space, usually good drape.
* Compare the characteristics of Warp against Weft knitted fabric
* Students to investigate the difference between:
	+ fully fashioned
	+ whole garment
	+ cut and sew

when referring to knitted fabrics for garment making.Research should include reference to end products eg fully fashioned may relate to bespoke manufacturing, whereas cut and sew is more effective for mass production. Reference to new technologies in whole garment knitting (3D knitting). |
| Easter |
| Week 29 | Performance characteristics of fabrics | Students should be able to explain the performance characteristics of fabrics, including:* strength
* durability
* elasticity
* flammability
* thermal qualities
* absorption
* water-resistance
* stretch
* formability
* handle
* drape
* weight
* rip-proof.
 | Understand how the physical structure of fabrics affects performance.Understand that environmental factors can cause potential degradation of fabrics, eg with reference to colour fastness, weakening by sunlight and chlorine, inappropriate care routines. | The main focus here is to revisit the key properties of the different fabric types, to include fibre content and fabric construction. Much of the specification content here can be delivered through the different fibres and fabric construction. It is also necessary to analyse fabrics through their working properties.A suggested selection of activities to use. * Mind-map: paired work to create a mind-map, in response to key terms/three groups of fabric constructions.
* Word cloud: present a range of key terms on a word cloud format – students to define/draw the given terms.
* PP quiz: Slides on a PowerPoint presentation, a question per slide.
* Product analysis: Present students with printed images, or physical products, utilising the different fabric constructions. Analysis of the construction methods in relation to the product.

Possible exam questions: Students/teacher to create a range of possible exam questions. Plan and/or respond to these questions. |
| Week 30 | Performance characteristics of fabrics | Students should be able to explain the following terms, and how they relate to particular fabrics:* pattern repeat
* directional pile
* nap
* texture
* lustre.
 | Understand how the physical structure of fabrics affects performance.Understand that environmental factors can cause potential degradation of fabrics, eg with reference to colour fastness, weakening by sunlight and chlorine, inappropriate care routines. | Investigation into the Performance characteristics of fabrics: * pattern repeat
* directional pile
* nap
* texture
* lustre

Students to create a glossary, using the five terms above. Development may include linking the terms to fibres and fabrics learning. For example, directional pile refers to both velvet and corduroy fabrics – what are the advantages/disadvantages of a directional pile? How do designers consider pattern repeat when creating new fashion collections? How would tartan fabrics affect pattern repeat? |
| Week 31 | Performance characteristics of fabrics | Students should be able to describe and explain the following, and how they relate to particular fabrics and their uses:* woven fabrics have relatively good strength and stability
* non-woven fabrics lack strength and have no grain
* knitted fabrics have fluidity and stretch
* a nap, or pile, reflects light in different ways
* size of pattern repeat in relation to the appearance of a product.
 | Understand how the physical structure of fabrics affects performance.Understand that environmental factors can cause potential degradation of fabrics, eg with reference to colour fastness, weakening by sunlight and chlorine, inappropriate care routines. | Focus on the general characteristics of fabric constructions, and their physical effectsCreate a table for a critical comparison of non-woven, woven and knitted fabrics.Characteristics to include:strength* applications
* elasticity
* issues for manufacturing
* drape

Pile/nap. A pile is the effect of fibres that stick up from the fabric’s surface. A nap is a pile effect, where the fibres run in a specific direction (eg velvet, can be smooth/rough or dark/light in appearance)What are the issues of nap or pile fabrics for manufacturers?Pattern repeat: Consideration of repeated patterns of a fabric’s surface, and the scale of designs during product development. It is easier to match a small-scale motif, and it may be in keeping with the design. Large scale motifs need to be considered for the chosen product, for example, it may not be visually appealing for children’s wear, but more suitable for home furnishings such as curtains. |
| Week 32 | Materials and applications | Students are expected to be able to name specific materials for a wide range of applications.They must also be able to provide detailed and justified explanations of why specific materials and combinations of materials are suitable for given applications with reference to:* physical and mechanical properties and working characteristics
* product function
* aesthetics
* cost
* manufacture and disposal.
 | Calculation of quantities of materials sizes and costs. | The main focus here is to revisit key aspects of a range of products, and to justify and evaluate their use/selection. This will allow students to consider the whole design and making process; including reasons for selecting raw materials, through to disposal of a product.* Printed images - present printed images of fashion or textile products on A4. Students to annotate the products in terms of:
	+ physical and mechanical properties and working characteristics
	+ product function
	+ aesthetics
	+ cost
	+ manufacture and disposal.
* Product analysis - Present students with physical products, utilising a range of different fibre types, fabric construction, components and surface effects. Analysis of these elements in relation to the product.
* Comparison - present two different types of product, students to compare their suitability for a specific end use. For example a polyester quilted coat, compared with a woven wool coat for winter wear.

Possible exam questions: Create possible exam questions that relate to materials and applications. |
| Week 33 | Methods for investigating and testing materials | Students must understand how workshop and industrial tests are set up and what will be tested, measured and compared, including:* flammability
* crease resistance
* shrink resistance
* colour fastness
* strength
* pilling.
 | Analysis of data obtained from testing. | Testing a range of fabrics in an industrial setting and a classroom setting will enable designers to select the appropriate fabric for the intended use.* Theory: understanding of fabric testing in industry. Six methods on specification (to the left). Knowledge needed of types of tests, reasons for testing and comparison/analysis of results, especially to a control sample.Many videos of industrial testing are available online.

Classroom testing: Group work. Crease resistance and pilling can easily be tested in the classroom. A selection of different fabrics eg linen, wool and polyester can be crushed in the hand for a length of time, and then released to compare creasing effects. **Pilling** can be replicated by rubbing the same two fabrics together to determine any breaking and bobbling of fibres on the fabric surface – a selection of different fibre types can be tested.**Flammability** can be tested, but should be carried out in lab conditions. Fabric strips can be clamped to a stand, touched with a flame and the time of burning/effect recorded – a selection of different fibre types can be tested. |
| **Summer half term** |
| Week 34 | Methods of joining and use of components - seams | Different seam types and their selection and use on different products taking into account the fabric type, effect to be achieved, efficiency of manufacture and after care of product.Students should have knowledge of the specific techniques required when working with different fabric types, eg knitted, checked, stretch, directional, sheer and patterned fabrics. |  | Seam construction very much links to the NEA, practical investigations and sampling are essential to the development of practical skills, students should also be aware of the type of seam appropriate to the fabric or end product.* Practical sampling – students to create small scale samples of three seam types:
	+ plain seam
	+ flat felled seam
	+ French seam
* Finishing of raw/cut edges: Demonstrate different types of finishes for the raw edge of the seam allowance, where possible, students to create small scale samples of:
	+ pinked edge
	+ zig-zagged edge
	+ overlocking
	+ single hem edge
	+ bound edge

Discuss the types of fabrics/garments that these finishes would be suitable.* Importance of the seam allowance: reasons for a standard 1.5cm seam allowance.
* Quality for manufacturing seams: Checks for seam quality through strength tests and seam slippage. How can these issues be overcome?
* Fabric types: Investigate a range of fabric weights and types, see specification content left. List as many fabrics as possible (see also named fabrics linked to woven fabrics on specification, weeks 22-28) students to suggest suitable seams and seam finishes, and justify the reasons for their choice.
 |
| Week 35 | The use of fastenings and trims | The use of fastenings including buttons and buttonholes and loops, zips, poppers, clips, buckles, clasps, Velcro, D-rings, hooks and eyes, fabric and ribbon ties.Selection and application of fastenings for a range of fashion, clothing and textile products taking account of the intended use, fabric type, the effect to be achieved, efficiency of manufacture and after care of product.Students should have an awareness of the different types of fastening within each category, eg open-ended and invisible zips, flat and domed buttons. |  | Components are an important element of textile manufacturing, fashion garments and textiles products need to be held together with components.* Samples of different types of components (trims and fastenings) would be useful for handling and analysis. Paired discussing in relation to selection and application for fashion, clothing and textile products.
* Students should have an awareness of the different types of fastening within each category, eg open-ended and invisible zips, flat and domed buttons.
* Product analysis – present students with a colour printed image of a fashion or textile product that illustrates a number of different types of components. Examples may include: sports jacket, decorative cushion, children’s toy, a bag, a work uniform:
	+ students to identify and annotate all relevant components.
	+ students to go further and justify reasons for use on the products illustrated.
* Present a list of fabric types eg denim, chiffon, satin weave, tartan, knitted. Students to suggests suitable components, with reasons.

Present a range of target markets eg children, the elderly. Students to suggests suitable components, with reasons. |
| Week 36 | Interfacings, underlinings, linings and interlinings | Types and applications in relation to fabric weight and construction, and end use of product.Students should have knowledge of the different fabrics used and the reasons for choice in relation to specific products. |  | * Introduce the four types of fabrics - Interfacing, underlining, lining and interlining. Physical product samples would be useful, or images on PP – a tailored shirt will have **interfacing** in the cuff and collar, a formal jacket is usually **lined**, a winter coat can be **interlined**, a sheer summer top might be **underlined**.Students need to be aware of types and applications in relation to fabric weight, construction and end use. Possible questions for discussion/completion:
* Paired work -Analyse each of the four methods. Through fabric handling and web/book research, note the function and uses of each fabric.
* Explain the reasons for lining (a jacket, curtains, summer dress).
* Explain the differences between (an underlining and an interfacing).

Link to NEA, eg Vilene, different weights and colours of interfacing. |
| Week 37 | Fabric finishes - mechanical | The effects of finishes and the reasons they are needed in relation to:* the fibre/fabric properties
* end use of the product.

A range of mechanical finishes, including:* brushing/raising
* calendaring
* embossing
* heat setting using thermoplastic fibres to give permanent pleats or crinkles and make fabric non-crease and non-shrink
* stone and sand washing.
 | Understand how the physical characteristics of fabrics can be modified by using mechanical finishes, eg trapped air acts as an insulator, air supports combustion, smooth fabric reflect light better than those with texture. | Awareness of the different methods of modifying the surface of a fabric for improved visual characteristics or working properties.* Paired work: Through fabric handling and web/book research, list the characteristics and individual properties of each mechanical fabric finish.
* Finishes are designed to enhance a fabric’s properties or appearance. Especially designed to counterbalance natural properties eg cotton can be cool to wear, by applying a brushed finish, the fibres are raised from the surface of the fabric, trapping air, and acting as an insulator.
* Fabric/product samples available to students to handle.

Give a list of end uses/products eg domestic curtains, school uniform, tie, jeans. Students to suggest:* a suitable finish
* justify reasons for use, outlining the advantages to the consumer.

Link to environmental issues/health and safetyFinishes can be temporary or permanentThe effect of mechanical finishes can usually be seen. |
| Week 38 | Fabric finishes - chemical | A range of chemical finishes, including:* mercerisation
* flame retardancy, eg Proban,
* Pytovatex used on cotton fabrics
* water resistance
* non-iron/crease resistance, eg Teflon
* shrink resistance and anti-felting
* moth proofing
* anti-pilling
* hygienic

Detailed knowledge of the chemicals involved and methods of application is not expected. | Understand how the physical characteristics of fabrics can be modified by applying chemical finishes. | * Awareness of the different methods of modifying the surface of a fabric for improved visual characteristics or working properties.
* Paired work: Through fabric handling and web/book research, list the characteristics and individual properties of each fabric finish.
* Finishes are designed to enhance a fabric’s properties or appearance. Especially designed to counterbalance natural properties eg cotton burns easily, ‘Proban’ will stabilise the fabric, and prevent the spread of flames.
* What types of fashion and textile products would benefit from these finishes? Group work to suggest a range of products suitable for each of the finished listed in the specification content, left.
* Students to justify the reasons for selecting the finish and the product.

Link to environmental issues/health and safety.Finishes can be temporary or permanent.The effect of chemical finishes cannot be seen. |

| **Year 2** |
| --- |
| **Week** | **Specification content** | **Aims** | **Link to Maths and Science** | **Potential learning activity** |
| Week 1 | Surface decoration - dyeing | Students should be aware of, and be able to describe, dyeing as a surface decoration, including:* vat, discharge and resist, eg tie-dye, batik
* when dye is applied in relation to fibres, yarns, fabrics and finished products
* the different types of dye fastness required in fashion clothing and textile products, eg fastness to washing, light, perspiration, rubbing and chlorine
* dyeing in response to consumer demand and seasonal trends.
 | Understand the principles behind discharge and resist dyeing.Understand the degradation of fabrics in relation to colour fastness. | Students to be aware of a range of ways of applying colour and pattern to fabrics.Stages at which dye can be applied: Natural fibres – colour can be added at the fibre, yarn, fabric or garment stageSynthetic fibres – colour is added at the polymer stage, as absorbency of man-made fibres is very low. * Students to research the stages at which dye can be applied to textiles. Task: outline the benefits of/reasons for adding the dye at each of the five stages, above.
* Research the following dyeing methods:
* vat
* dischargeresist eg batik, tie-dye.
* Video clips are available online to illustrate specific processes.
* Demonstration: many of these processes can be demonstrated in the classroom, and/or carried out through the NEA.
* Colourfastness is the resistance to the loss of colour during the manufacturing process, and during the care and wearing of the product. Students to be aware of colour transfer and fastness in relation to fashion and textile products, as specified, left.

Dyeing at the garment stage offers many advantages to the manufacturer/retailer. Students to outline the benefits of garment dyeing. |
| Week 2 | Surface decoration - printing | Students should be aware of, and be able to describe, the steps that need to be taken in preparing a fabric for printing, including:* desizing
* scouring
* bleaching.

Students should be aware of, and be able to describe, printing as a surface decoration, including:* direct
* discharge
* hand (block and stencil)
* rotary/flatbed screen printing
* transfer
* digital printing
* dye sublimation.
 |  | Students to be aware of a range of ways of applying colour and pattern to fabrics.All fabric must be prepared for dyeing, to remove any impurities such as natural oils, fragments of seeds, and provide a general cleaning up of the fibres to remove any soiling or staining developed during harvest or transportation.* Scouring is a washing treatment to remove natural impurities in the fabric. Removal of these impurities greatly improves absorbency of the fibre.
* Desizing is a chemical or enzyme process used to stabilise fabric ready for dyeing.
* Shrinking is a treatment used to stabilise the fabric to stop shrink in later processes. The fabric is washed and steamed, then heat set before it can be dyed.
* Bleaching is a process applied to cellulose fabrics to destroy the natural colour to make the fabric pure white. This makes dyeing lighter colours more effective.Students to use booklet and other printed material to be aware of the processes involved of the following printing methods:
	+ direct,
	+ discharge,
	+ hand (block and stencil),
	+ rotary/flatbed screen printing,
	+ transfer,
	+ digital printing,
	+ dye sublimation.
* Online video clips to illustrate specific processes.
* Demonstration: many of these processes can be demonstrated in the classroom, and/or carried out through the NEA.

Task: Students to outline the advances in new technology for applying colour and pattern to fabric.Evaluation of the benefits of all/a selected number of printing methods. |
| Week 3 | Embroidery, quilting, threads, fusible fleece | EmbroideryStudents should be aware of, and be able to describe, a range of hand and machine embroidery stitches.QuiltingStudents should be aware of, and be able to describe, the construction of quilted fabrics and reasons for their use.ThreadsIncluding sewing threads, embroidery threads, and special effect threads.Sewing threads: * polyester and cotton machine thread
* buttonhole thread.

Embroidery threads: * stranded embroidery
* madeira/viscose machine embroidery.

Special effect threads: * metallic
* glow-in-the-dark
* multi-coloured.

Fusible fleeceThe use of heat-sensitive fleece such as Bondaweb when joining layers of fabric, eg in applique work. | Understand the effects of trapped air on insulation. | **Embroidery**: Students need to be aware of a range of hand and machine embroidery stitches. Students to draw and label specific methods, eg chain stitch, blanket, French knots (hand) and straight, zig-zag, overlocking (machine).What is the advantage of adding decorative stitching to textile products?**Quilting**: Small samples can be made in the classroom. Reference can be made to classic products eg, Chanel’s 2.55 bag, quilted pumps.* Online video clips to illustrate specific processes.
* Demonstration: many of these processes can be demonstrated in the classroom, and/or carried out through the NEA. Students should make a small-scale sample, and add to a technical/sampling file.

Quilting – three layers, held together with stitching (not patchwork quilting)Technical knowledge – thermal insulation. Product types that make use of quilting, eg Winter coats.**Threads**: These are important components in the making of all textile products, while some threads are decorative, others are essential for seams etc. in product construction.Students to be aware of types of thread for different applications/end-uses.It is important to match thread to the weight and fibre/fabric, so care requirements for both are similar.**Fusible fleece:** Link to NEA. Students to make small samples of appliquéd textiles, using Bondaweb as a means of fusing the fabrics together. What are the reasons for using Bondaweb? |
| Week 4 | Major developments in technology | How major developments in technology are shaping product design and manufacture, including:* the introduction of regenerated and synthetic fibres during the 20th century
* fabric finishes, e-textiles and smart materials
* new methods of manufacturing, including mass production as opposed to bespoke, automated manufacturing including CAD and CAM
* new decorative techniques such as laser printing
* care of textiles.
 | An awareness of scientific advancements/discoveries and their potential development. | Many changes and developments have taken place over the last few years to improve the design and manufacture of textiles products. It would be useful to approach this topic by following a timeline of the development in textiles, from the late Victorian era, through to present day, 1890 – 2010. (this could be easily linked to Design movements and fashion design from term 1:2).Some areas of focus.* Victorian industrial age, the Great Exhibition of 1851, bespoke production.
* The Arts and Crafts movement of late Victorian era/Wm Morris.
* Availability of Natural fibres and fabrics only in the Victorian era.
* Artificial silk, viscose in early 1900.
* Acetate in 1920s impact on design of flapper type dresses, mass production after WW1.
* Introduction of Nylon as a synthetic fibre, 1939. 1950s acrylics.
* Space race fabrics 1960s – PVC, Gore-Tex, polyesters. Rise of youth culture reflected in garment production.
* Popularity of elastomeric fibres in 1980s, CAD, CAM.
* Development of Lyocells and sustainable issues in 1990s.
* 2000 saw global brands and production. Development of new materials; Smarts, digital printing, e-textiles. Sustainability awareness.

Group work to create a detailed timeline based on the main issues highlighted above. Specific examples to illustrate points made. |
| Week 5 | CAD and virtual modelling | The advantages and disadvantages of using CAD compared to manually generated alternative.* the use of CAD to develop and present ideas for products
* how CAD is used in industrial applications.

Students should be aware of, and be able to describe, how virtual modelling/testing is used in industry prior to product production.Specific processes to include:* simulation
* pattern design systems
* computer controlled printing to produce sample fabric lengths.
 | Use of datum points and geometry when setting out design drawings. The use of tolerances in dimensioning. | Definition of CAD. Teacher to differentiate between CAD and CAM.* Knowledge of Computer Aided Design. Students to research/work from design process booklet. Paired work to discuss and make notes how CAD is used in product design and development. Examples include:
	+ libraries of garment templates for design ideas
	+ changing colourways
	+ creating fabric effects eg pattern and texture
	+ Adapting designs
	+ 3d modelling
	+ client presentation
* Group work: Students to list advantages of CAD, especially in comparison with manually generated alternatives. Provide a table format, for direct comparison in note form.
* Product Simulation – 3d virtual simulation clips available online. List key features of product simulation for the designer and client.
* PDS – a CAD based system used to adapt and create pattern templatesWhat are the benefits of using a PDS?
 |
| Week 6 | CAM | Students should be aware of, and be able to describe, how CAM is used in the manufacture of products.Specific processes to include:* fabric manufacture
* fabric printing
* lay planning and computer controlled cutting
* automated buttonholing
* making and sewing of pockets
* seam stitching
* pressing
* computer controlled decorative processes
* laser cutting.
 | Calculating speeds and times for machining. | * Definition of CAM. Teacher to differentiate between CAD and CAM.
* Knowledge of the different CAM systems. Students to research/work from design process booklet. Paired work to discuss and make notes how CAM is used in product design and development. Examples include:
	+ fabric manufacture
	+ fabric printing
	+ lay planning and cutting
	+ automated buttonholing
	+ making and sewing of pockets
	+ seam stitching
	+ pressing
	+ decorative processes
	+ laser cutting.

Group work: Students to list advantages of CAM, especially in comparison with manually generated alternatives. Provide a table format, for direct comparison in note form.CAM is a system that relies on human management - CAM is not run by robots. Examples of CAM in the classroom – laser cutting, sublimation printing, automatic buttonhole machine. |
| Week 7 | The use of computer systems in modern industrial and commercial practice, sub-assembly | The use of computer systems. Students should be aware of how computer systems are used to plan and control manufacturing, reduce waste and respond quickly to changes in consumer demand.Students should be able to explain the use of computer controlled systems in production, distribution and storage.Students should be able to explain the use of standardised and bought-in components made by specialist manufacturers.Sub-assemblySub-assembly as a separate line of manufacture for certain parts of a product. |  | Review the use of a range of ICT systems for product manufacture.* **QRM** – Quick Response Manufacture. Systems that allow manufacturers/retailers to meet changes in fashion quickly. Batch production is a flexible system that allows for quick changes in production. JIT and EPOS help to speed up the production process. CIM, Computer Integrated Manufacture, is an umbrella term for automated systems that are time and cost efficient.
* **JIT** – advantageous for the manufacturer, as components ‘arrive when needed’, so no storage costs, and fewer wastage. Changes to orders can be made easily, according to demand. Components arrive already quality checked and can be pre-made, saving time in the factory.There are no real disadvantages to this system. For retailers, stock arrives ‘when needed’, saving stockroom space and receiving the right type of stock according to sales.
* **EPOS** can aid JIT. Sales figures are sent to retailer/manufacturer, so products are made to demand.
* **PPC** – Production, Planning and Control. Use of computer systems to control the flow of planning and garment production
* **Sub-assembly** – Parts of a garment/product are made separately to the main assembly line, either off-site or on a sub-line, parts are then joined together at the end. This system saves manufacturing time and labour costs. It can make use of specialist equipment elsewhere, saving factory costs.

Students need to know how the above systems play a role in ensuring manufacturers can meet consumer demand for textile products.Task: Analyse the benefits of using the above systems to respond quickly to changes in consumer tastes and demands. |
| **Half term** |
| Week 8 | Scales of production  | Students should be aware of, and be able to describe, the different scales of production giving example products and specific manufacturing methods.Specific scales of production to include:* one-off, bespoke
* batch production
* mass/line production
* unit production systems (UPS)
* quick response manufacturing (QRM)
* section
* vertical in-house production.
 |  | Students to be able to identify the three systems, including advantages and dis-advantages of each system, and relate to end products and level of quality.* Scales of production match (group work). Create three key headings: Bespoke, Batch and Mass/Line. Print and cut out definitions/key features of the three production systems. Students to place these under the three correct headings, this will assess prior knowledge. Discuss the systems and swap/move information as relevant, so all groups have three correct system features.
* Group work: Three students per group. Each group to receive printed information on each of the three production systems. Each student to research and make notes on three key areas:
	+ advantages of the system
	+ disadvantages of the system
	+ product examples made through the system.
* Group to then share this information with each other.
* Information can be shared with other groups or the class.
* Online video clips are useful in illustration these production systems at work.

Case study: Vertical or in-house production systems. Many retailers use this system of integrating design, manufacturing and distribution from one factory, saving time and costs – see American Apparel as an example. |
| Week 9 | Electronic communication | Students should be aware of, and able to describe, the use of electronic point of sales (EPOS) for marketing and the collection of market research data.Students should be aware of, and able to describe, the role of PPC systems in the planning and controlling of all aspects of manufacturing, including:* availability of materials
* scheduling of machines and people
* coordinating suppliers and customers.
 |  | Communication between designer, retailer and manufacturer are key to responding to the needs of the consumer. * **EPOS** can aid JIT. Sales figures are sent to retailer/manufacturer, so products can be made to consumer demand.Information from EPOS data tells the designer/retailer how well products are selling, so planning new collections can use this data to ensure the success of future collections.
* **PPC** – Production, planning and control. Use of computer systems to control the flow of planning and garment production, including:
	+ availability of materials
	+ scheduling of machines and people
	+ coordinating suppliers and customers.

Q: How can electronic communication systems help respond to consumer demand for up to date fashion and textiles products?Q: Explain ways in which the designer uses market research to plan new collections. |
| Week 10 | Global production | Students should be aware of and able to explain the positive and negative impacts of global production, including:* offshore production
* imports and exports
* branded goods
* contracted goods.
 |  | Fashion and textiles products are made across many areas of the globe, students to be aware of the benefits and drawbacks of globalised production.Globalised manufacture is driven by competition and the need for efficiency by reducing costs of labour and materials. It is heavily supported by ICT and fast electronic communication. Specialised machinery and expert workers offer advantages for manufacturers, whilst increased employment, improved living standards and the development of skills benefit workers.However, there are environmental, health and safety and exploitation issues for offshore workers, and the possible lack of investment and industry in the UK.Students to research examples of the issues outlined above, to present a balanced evaluation of global production. |
| Week 11 | Product lifecycle | The stages of the product life cycle, including:* design introduction
* evolution
* growth
* maturity
* decline
* replacement.

Students should be able illustrate their understanding with examples of how, with reference to specific products, designers have refined and redeveloped products. |  | A product lifecycle analysis reviews all stages of the lifespan of fashion garments of textile products. Commonly known as ‘cradle to grave’ – this type of analysis offers an insight into the cycle of concept through to disposal.Areas to focus on include:* selection and sourcing of fibres
* design and product development
* processing of fabrics during manufacture
* packaging and distribution
* disposal of products at the end of life

Write key issues as a poster on six sheets of paper, one issue per sheet. Create a product lifecycle in a circle format, (not linear) on pin board or similar. This should demonstrate how each element can impact on the other, and importantly how design and fibre/fabrics selection can have either a positive or negative impact on the sustainability and disposal of products.Note- not to be confused with fashion cycles. |
| Week 12 | Social, moral and ethical issues | Products are made using sustainable materials and ethical production methods.* The development of products that are culturally acceptable, not offensive to people of different race, gender or religious belief.
* The development of products that are inclusive.
* The design and manufacture of products that could assist with social problems, eg poverty, health and wellbeing, migration and housing.
* The impact of Fairtrade on design and consumer demand.
* Designing products to consider the six R’s of sustainability.
* The concept of upcycling.
 |  | The responsibilities of designers and manufacturers, for the development and manufacture of textiles products.* Group work: Each group to work from printed material reporting on social, moral and ethical issues.

Make notes on:* Key issues
* Impact on local communities and individuals
* Alternative solutions

Information can be shared with other groups or the class. * Areas that could be investigated include:
	+ child labour
	+ slave labour
	+ low pay
	+ poor health
	+ safety procedures.
* Students to suggest ways these can be overcome, for examples, buying classic products so less garments are made, buying Fairtrade products, buy locally made goods, designing with diverse cultures in mind, sourcing organic fibres or naturally coloured cotton.

Case studies could be made of: People tree, Katherine Hamnet, Tom’s shoes, Monsoon, Seasalt, Stella McCartney, Hand M, Patagonia, Chinti and Parker, Junky Styling etc.Different student groups, or a Jigsaw set up in class, could be a good way of sharing information on these brands. |
| Week 13 | Manufacture, repair, maintenance and disposal | The need to modify designs to make them more efficient to manufacture, including:* reducing the number of manufacturing processes
* how the choice of materials affects the use, care and disposal of products: advisory labelling to encourage responsible use and care of textile products
* application of the six R’s of sustainability: reduce the quantity of materials, of toxic materials, of damaging materials and associated energy use, reuse components and parts, rethink by using eco-friendly alternative materials, recycle materials and/or components into new products
* maintenance: temporary and integral fixings, use of standardised parts, allowing for service and repair/replacement of parts, ability to upgrade with software downloads, selection of fabrics and components that can be cared for without the need for special treatments, advisory labelling to encourage responsible washing and drying of textile products.
 |  | Awareness of a range of sustainability issues in the design, manufacture and disposal of products.* Students to list 6 Rs. Use of mini whiteboards/paper. Class discussion on the relevant R’s. Can students put them in order? Is there an order? Reference to cradle to grave principles.
* Reduce – materials/packaging
* Reuse – upcycle/hand-me-downs
* Rethink – designing for the environment
* Recycle – charity/fibre recovery
* Repair – to extend product’s life
* Refuse – consumer choice not to buy

Group work: Each group to investigate the six key issues. Make notes on:* key issues
* impact on the environment
* alternative solutions that are eco-friendly

Information can be shared with other groups or the class. * Care and maintenance- Labelling for environmental concerns. Ways advice presented on care labels eg Wash on low temperatures “Wash at 30” (Persil), “care for our planet” (Levis)Students to list actions consumers can take after purchase to keep the quality of the product, and extend its life.especially in relation to the five standard care symbolsAreas may include:
	+ wash only when needed
	+ wash in cold water/low temperatures
	+ line dry
	+ hand wash
	+ store according to fibre type, etc.
* If product cannot be worn, perhaps are too small or damaged – what can the consumer do with these product types?Students to investigate options for fibre recovery, components recovery, charity donations, re-selling, hand-me-downs, re-purposing, up-cycling, unravelling yarns to re-use etc.
* Product analysis – present students with a physical product or a printed image of a product (or range of products) Students to re-evaluate product in terms of the 6 Rs – how could the product be designed and made to meet the requirements of the 6 Rs?
 |
| Week 14 | Health and safety | Safe working practices:* knowledge of the Health and Safety at Work Act (1974), and how it influences the safe manufacture of textile products
* control of Substances Hazardous to Health (COSHH) and safety precautions that should be taken with relevant materials
* safe working practices and identifying potential hazards for the school or college workshop and industrial contexts
* safety precautions that should be taken with specific manufacturing processes
* the concept of risk assessment and its application to given manufacturing processes.
 | Understand why some materials, adhesives and finishes are hazards | Awareness of health and safety in relation to the workplace and classroom.* Paired work: web/book research. Health and safety at Work Act (1974) What is the impact of this on manufacturing today?
* COSHH in relation to workplace practice.

Identify key stages where HandS is important in the workplace: * working environment
* training of workforce
* protective clothing
* equipment and maintenance
* responsibility to employee

Define COSHH – designed to minimise risk, not eliminate risk.Paired work: Identify steps taken in the classroom to minimise HandS hazards.Importance of HandS practices, COSHH, link to NEA.Quality in fashion and textiles products. Implementing health and safety strategies to improve quality in own work. Link to safe practices for the NEA.Students to recognise processes in the classroom that are identified as health and safety concerns. How is the risk minimised/manages in the classroom? |
| **Christmas break** |
| Week 15 | Safety in products and services to the customer  | Students should be aware of, and able to explain, how designers and manufacturers ensure products are safe for consumers to use:* legislation used to protect consumers and its impact on product design, eg Consumer Rights Act (2015), Sales of Goods Act (1979), specifically including the requirements that relate to children’s clothing
* the British Standards Institute (BSI), and how specific products might be tested to meet safety standards
* measures to ensure the safety of toys, eg Lion Mark
* the European eco label
* ISO.
 |  | * Students to be aware of the Consumer Rights Act (2015) and Sale of Goods Act (1979) for consumer protection. Especially in relation to target markets eg Children’s textiles and specific product groups eg furnishings in a commercial environment.
* BSI: British Standards Institute.Students to investigate role in relation to fashion and textile products.(Care to be taken with the role of the BSI – they do not set laws or inspect quality procedures, the BSI will set standards that companies can choose to follow if they want their products to meet the expected quality from the product).

Key BSI standards relating to textile products:* no cords or drawstrings on children’s’ hoods
* children’s nightwear must meet flammability performance requirements and have a sewn-in label warning of a flammability danger
* no components that resemble food
* no small components that may be a choking hazard
* no sharp components
* upholstery must meet flammability regulations.

Safety as related to the consumer. Students to:* identify logos related to quality/safety marks. (BSI kite mark, Lion mark, CE, care labelling, suchas flammability logos) and their individual importance for ensuring safety standards for the consumer
* research the role of ISO standards, as compared with the BSI
* identify the European eco label logo, awareness of its role for textiles in Europe.
 |
| Week 16 | Care labelling  | Students should be aware of, and able to explain, the different ways in which a product can be cared for and maintained, including care labels, their use and what they mean.The four areas to be considered when labelling a garment: * fibre content
* country of origin
* care instructions safety instructions/flammability.
 | Understand the relationship between care recommendations and fibre/fabric properties, eg the thermoplastic nature of synthetic fibres and wash/iron temperatures, shrinkage of wool fibres when washed at high temperatures and with excessive mechanical action. | * Students need to be aware of the five standard care symbols and their meaning.

Design process booklet to provide this information – symbols (with variants) can be presented on screen as a quiz.* Link care requirements to fibre/fabric properties.

Paired work: students to make notes, using ‘Fibres booklet’ on the general care requirements of the three main groups – natural, manufactured and synthetic.* Advice for specific fibres, for example: the thermoplastic nature of synthetic fibres, shrinkage and felting of wool, reasons for dry cleaning and hand wash for silk.
* Students can interpret care labels from own clothing.
* Students could create a care label from the fibre content of a fashion or textile product.

Reference: Labelling for environmental concerns. Ways advice presented on care labels eg Wash on low temperatures “Wash at 30” (Persil), line dry, wash only when needed, “care for our planet” (Levis).HLCC and their role in devising the care label system. |
| Week 17 | Quality control | The monitoring, checking and testing of materials, components, equipment and products throughout production to ensure they conform to acceptable tolerances. Product sampling. Quick response manufacturing teams and quality circles.Automated equipment to check for faults in fabrics. Labelling and quality assurance symbols, eg wool mark, 100% cotton logo, Tencel logo, Teflon logo.Fabric finish logo. Quality control standards as laid down by BSI and voluntary codes of practice. |  | Outline the key points in relation to Quality control – not to be confused with quality assurance.Definition: a system of maintaining standards in manufactured products by throughout production and testing samples of the output against the specification.Questions to research: Why test for quality? When test for quality? Quality and testing is carried out throughout the design and making process, and is to ensure the products meet all aspects of the specification. Making checks are completed on a regular basis, usually at each key stage of making. Quality testing is also carried out at random intervals on completed garments – often noted with self-adhesive quality labels on the inside of clothing. Often 1 in every 100 garments may be checked.Q: outline the quality checks that would take place in the making of a men’s tailored shirt.Q: Discuss the systems in place in an industry setting for ensuring that quality standards are maintained.Reference to the BSI and ISO to help ensure quality of fashion and textiles products are appropriate for the end-product or the target market.Q: what types of quality checks a will a large chain of fashion retailers make in production as compares with a bespoke product?Link to industry testing of products, such as, colourfastness, strength, abrasion resistance, flammability to ensure safety.Knowledge of specific testing methods and the reasons for carrying them out. |
| Week 18 | Quality assurance | Planning for accuracy and efficiency. The importance when making prototypes for small, medium and large scale production.The procedures and policies put in place to reduce waste and ensure manufactured products are produced accurately and within acceptable tolerances, including quality assurance systems, including, Total Quality Management (TQM), and how they are applied to specific examples in fashion, clothing and textiles manufacture, including critical path analysis, scrum or six sigma. | * Calculations based on economies of scale.
* The impact of one way designs, nap and pattern on fabric layouts.
 | Outline the key points in relation to Quality assurance – not to be confused with quality control.Definition: the maintenance of a desired level of quality in a service or product, especially by means of attention to every stage of the process of delivery or production.* PPC in manufacturing. The use of ICT to effectively control the flow of production in an industrial setting
* TQM – Total Quality Management. The ethos of a whole company approach to quality to achieve productivity by identifying and eliminating problems. All members of the organisation, from management to machinists, make changes to practices to speed up production and save costs.

Q: How are consumers made aware if the quality of products? Give specific examples of quality marks for customer satisfaction.Link to the NEA: Implementing health and safety strategies to improve quality in own products. |
| Week 19 | Protecting designs and intellectual property | Copyright and design rights:* patents
* registered designs
* trademarks
* logos.
 |  | Students should be aware of, and able to explain, the importance of the following to the designer and retailer. Students to understand each of the points listed in the specification content to the left. Reasons for the use of copyright, and the benefit for the designer/company.Importance of trademarks and logos, especially in brand recognition and marketing of fashion and textile products. Students could identify examples of brand names/logos and explain their role in promoting the image of the company. Reference to brand identity. |
| Week 20 | Critical analysis – existing productsFocus on analysing physical products, or printed images. | Focus on analysing physical products, or printed images. Analysis should be made of several aspects of the suggested items and should include critical evaluations. |  | Product analysis allow individuals to evaluate many aspects of own or commercial products. Present a range of physical or visual images of products to paired students or small groups. Products should include among others:* women’s clothing
* menswear
* gender neutral products
* children’s wear
* fashion accessories
* home accessories
* home furnishings
* sports/performance wear
* commercial textiles
* soft toys.

Students to analyse the products, and as appropriate, comment on:* identify the intended target market group
* outline the key features of the product that makes it appropriate for the group
* fibre type and suitability
* fabric construction
* suitability of components
* effects of decorative techniques/surfaces
* quality issues in relation to the type/cost of product
* care label/instructions as relevant to fibre content.
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| Week 21 | Critical analysis – existing productsFocus on analysing physical products, or printed images. |  |  |
| **Half term** |
| Week 22 | Critical analysis – existing productsFocus on analysing physical products, or printed images. |  |  |
| Week 23 | Critical analysis – existing productsFocus on analysing physical products, or printed images. |  |  |
| Week 24 | Critical analysis – existing productsFocus on analysing physical products, or printed images. |  |  |
| Week 25 | Critical analysis – existing productsFocus on analysing physical products, or printed images. |  |  |
| Week 26 | Review and analysis – design process | The main focus here is to revisit the different elements of the specification content, and to understand the process and application in relation to a range of fashion and textile products in preparation for the written exams. A suggested selection of activities to use:* Word cloud: present a range of key terms on a word cloud format – students to define/draw/explain the given terms.
* PP quiz: Slides on a PowerPoint presentation, a question per slide. Images of different fabric constructions, fibre shapes, brand logos, yarn types etc. students to correctly identify.
* Product analysis: Present students with printed images, or physical products, with different elements of design and making processes. Analyse these processes in relation to the product.
* Possible exam questions: Create possible exam questions that relate to the specification. This could be done by the teacher, or presented as a challenge to student groups.
* Sorting table: Present a printed table, with key fibre/construction types. Supply a list of fabric names/types, students to place under the correct heading. This also applies to elements within design movements and specific attributes to designer collections and brands.Dates match: In reference to fashion history or major technological developments. Students to match dates with specific events/garments/ designers/fabrics/materials.
* Technical file: present a range of small (4x4cm) samples to create a library of samples. These can be staples to card sheets or numbered for reference. Students to identify the fabric name, fibre type, construction method, give specific properties, printed effect, and suitable end uses.
* Printed images: present a printed image of a fashion or textile product. Students to critically annotate the product in terms of: fibre, fabric, components, surface decoration, effect, reasons for choice as appropriate.
* Comparison: present two different types of product, students to compare their suitability for a specific end use. Eg a polyester quilted coat, compared with a woven wool coat for winter wear.
* True/false: Supply a list of statements in relation to specification content. Students to indicate whether statement is true or false.
* Evaluation: group work to identify the advantages and disadvantages of a variety of textiles related issues.
* Command words: definition of command words in exam questions.
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| Week 27 | Review and analysis – designers and design movements |
| Week 28 | Review and analysis – fibres, yarns and fabric construction  |
| **Easter break** |
| Week 29 | Review and analysis – surface enhancements |
| Week 30 | Review and analysis – production processes |
| Week 31 | Review and analysis – sustainable issues |
| Week 32 | Review and analysis – quality issues |
| Week 33 | Exam preparation – designing and making principles |
| Week 34 | Exam preparation – designing and making principles |
| **Summer half term** |
| **External exams** |