D&T and Computer Science Department Curriculum Map

Post 16

Edexcel A-Level Art & Design – 3D Design and Textiles Design COMPONENT 1

COMPONENT 1 – 60% OF THE FINAL QUALIFICATION

This component allows students opportunities to generate and **develop ideas, research primary and contextual sources, record practical and written observations, experiment with media and processes, and refine ideas towards producing personal resolved outcome(s).** This will require students to address each of the **Assessment Objectives**. Students must work within one of the following titles: Art, Craft and Design, Textile Design or Three-dimensional Design. Incorporates three major elements: **supporting studies, practical work, and a personal study**. Supporting studies and practical work will comprise a **portfolio of development work and outcomes** based on themes and ideas developed from personal starting points. The personal study will be evidenced through **critical written communication** showing **contextual research** and understanding in a **minimum 1000 words of continuous prose**, which may contain integrated images. The personal study comprises **12%** of the total qualification and is marked out of **18**. **Total Marks available 90**

Edexcel A-Level Art & Design – 3D Design and Textiles Design COMPONENT 2

COMPONENT 2 – 40% OF THE FINAL QUALIFICATION

This component allows students opportunities to **generate and develop ideas, research primary and contextual sources, record practical and written observations, experiment with media and processes, and refine ideas towards producing personal resolved outcome(s) in response to an externally set theme.** This component **incorporates two major elements: preparatory studies and the 15–hour period of sustained focus**. Preparatory studies will comprise a **portfolio of practical and written development work** based on the **Externally Set Assignment**. During the 15–hour period of sustained focus under examination conditions, students will produce final outcome(s) extending from their preparatory studies in response to the Externally Set Assignment. **The Externally Set Assignment is released on 1 February and contains a theme and suggested starting points.** Students have from 1 February until the commencement of the final 15–hour period of sustained focus to develop preparatory studies. The 15–hour period of sustained focus under examination conditions may take place over multiple sessions (a maximum of five, within three consecutive weeks) **Total Marks available 72**

WRITTEN EXAMINATION PREPARATION

On completion of the NEA design and manufacture in April. Year 11 will then focus on the theory element of the course for their written paper in June. Revision will be focussed and cover the relevant topics that were taught in Y10. Recall and Retrieval tasks, mock papers and targeted questions will feature in the thorough preparation for the written paper that is worth 50% of the final GCSE Design and Technology grade.

SPECIALIST TECHNICAL PRINCIPLES – EXAMINATION 50%

In addition to the core technical principles, all students should develop an in-depth knowledge and understanding of the following specialist technical principles: Selection of materials or components, Forces and Stresses, Ecological and social footprint, Sources and origins, Using and working with materials, Stock forms, types and sizes, Scales of production
specialist techniques and processes
surface treatments and finishes.
Each specialist technical principle should be delivered through **at least one** material category **or** system. Not all of the principles outlined above relate to every material category or system, but all must be taught.
The categories through which the principles can be delivered are:
papers and boards, timber based materials metal based materials, polymers, textile based materials, electronic and mechanical systems

D&T – Product Design or Textiles EXAMINATION

D&T – Product Design or Textiles THEORY

CORE TECHNICAL PRINCIPLES – EXAMINATION 50%

In order to make effective design choices students will need a breadth of core technical knowledge and understanding that consists of:

- **1.1 - new and emerging technologies**
- **1.2 - energy generation and storage**
- **1.3 - developments in new materials**
- **1.4 - systems approach to designing**
- **1.5 - mechanical devices**
- **1.6 - materials and their working properties.**

All of this section must be taught and all will be assessed.

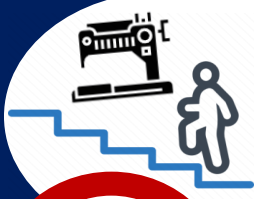
NON-EXAMINED ASSESSMENT 50%

The Non-exam assessment will contribute towards 50% of the students overall mark. The NEA project in its entirety should take between 30-35 hours to complete and consist of a working prototype and a concise portfolio of approximately 20 pages of A3 paper, equivalent A4 paper or the digital equivalent.
Students' work should consist of an investigation into a contextual challenge, defining the needs and wants of the user and include relevant research to produce a design brief and specification. Students should generate design ideas with flair and creativity and develop these to create a final design solution (including modelling). A manufacturing specification should be produced to conclude your design findings leading into the realisation of a final prototype that is fit for purpose and a final evaluation. Students should investigate, analyse and evaluate throughout the portfolio and evidence all decisions made.

D&T – Product Design or Textiles THEORY

D&T – Product Design or Textiles NEA

Year 11



ZIPPED COSMETICS/STATIONARY BAG

This project also focusses on transferring the CAD skills already acquired in a previous project and applying them in a textiles context. The design and manufacture of a zipped bag gives students the opportunity to use block printing to transfer their image onto the fabric as well as additional surface decoration techniques to embellish their design. Students will also gain confidence in the use of the sewing machine to construct the bag and fitting a zip to their product

FRAGRANCE DIFFUSER AND PACKAGING

This project looks at the work of the Pop Art design movement and working in the style of already established designers of that time period. Students learn how to utilise already established CAD files from their pocket mirror and apply them to the design of a fragrance diffuser for use in the home or car. This diffuser can be manufactured from acrylic or plywood and then professionally blister packaged ready for sale.

POCKET MIRROR AND FELT POUCH

This introductory project focusses on the design and manufacture of laser plywood pocket mirror and a polyester felt pouch. The two products are introduced in the first term of D&T to allow Y9 students to make a more informed choice about whether they would like to study Product Design or Textiles at KS4. This project allows them to experience both material areas before the deadline of their option forms in February.

Year 10

Textiles ZIPPED COSMETICS/STATIONARY BAG

Product Design FRAGRANCE DIFFUSER and PACKAGING

D&T POCKET MIRROR and FELT POUCH

CULTURAL DOLL

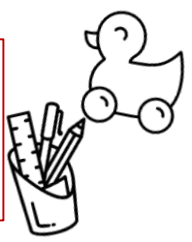
This project focusses on the Design and Manufacture of felt doll/character that has been inspired a culture of the learner's choice. The doll will be manufactured using a combination of CAD/CAM and hand embroidery techniques with the application of E-Textiles. Learners will take inspiration from a culture and use imagery and symbolism associated with the chosen culture to enhance and embellish a doll or character of their choosing. Learners will be introduced to Techsoft 2D Design software to enable development of skills using CAD/CAM to assist in the production of pattern pieces as well as produce adornments and features that can be laser cut to create their cultural doll.

Textiles/Product Design Cultural Doll

Year 9

DESKTOP TOY

This project focuses on the Design and Manufacture of a Pine Desktop Toy. The toy is made from a softwood so students learn about the properties of softwoods and the shaping and finishing techniques used to create a desired result. The manufacture of the toy allows students to gain confidence using a range of hand tools and machines. They then apply a finish to the toy and embellish with a range of decorative techniques.



CUSHION COVER

This project focuses on the Design and Manufacture of a Cotton Cushion Cover. The cushion cover is 100% cotton so students learn about and apply the resistance technique of Tie-Dye to their fabric. The construction of the cushion cover then allows students to decorate the fabric of the cushion cover using the block print surface embellishment technique. Students then use the technique of applique to enhance the front panel of cushion cover.

D&T – Product Design DESKTOP TOY

D&T – Textiles CUSHION COVER

Year 8

Welcome to Design & Technology

In **Design** & **Technology** we aim to **develop** in our students the **creative** and **technical** skills alongside the **practical** expertise needed to perform in a world full of **ever changing** technology. To develop in our students the ability to **embed** a wide range of **knowledge** and the skills to apply this knowledge to **real world** situations. To develop in our students the ability to grow an **understanding** of **processes** and **skills** needed to design and make **high-quality** prototypes and **products** for a **wide range** of users. To develop in our students the ability to **evaluate** and **test** their **ideas** and **products** and the **work of others**. To develop in our students the ability to understand and **apply** the **principles** of **nutrition** and learn how to **cook**. To highlight the importance of **STEM** and **STEM careers** so students can make **informed decisions** and gain access to the next stage of **work life** after education.

Year 7

Design & Technology Curriculum Map 2022

Bishop Chadwick Catholic Education Trust