CCCS Design & Technology Curriculum Journey

Year 7

Steady Hand Game

Wood & Manufactured Board
Joining wood
RESEARCH
Wood finishes
SPECIFICATION
DESIGN IDEAS
Health & Safety
FINAL DESIGN
PRACTICAL SKILLS
Measuring & Marking out
Sawing
Assembling & Gluing
Sanding
Applying finishes
Drilling
TESTING & EVALUATING

Bridge Building

RESEARCH
DESIGN IDEAS
FINAL DESIGN
Types of Bridges
Forces
Structures
EVALUATING
Polymers
FINAL DESIGN
Scale of Production
MODELLING
6R's
PRODUCT ANALYSIS
Teamwork
TESTING & EVALUATING

Mobile Phone

Year 8

Year 9

Careers

Research
PRESENTATION

Investigating
ANALYSIS
SPECIFICATION
FINAL DESIGN
Isometric drawing
SCALE MODEL
EVALUATE
COMPARE & CONTRAST
Social & cultural issues
STAR EVALUATION
ACCESS FM

Festival Lea… oSD

Phone Analysis

Modern & smart materials
DEVICE OF THE FUTURE

Year 10

Egg Cup

Modelling, testing & evaluating
Adapting
Final Design
SCAMPER
Design Ideas
3rd angle orthographic projection
2 point perspective
1 point pers…
Isome…
…ATION
Design History
Research

Logo

Drawing T…ni…es

Designers

CAD/CAM
SketchUp
Orthographic drawing

Research
Design ideas
Orthographic drawing
Trophy
INVE… OR…
SPECIFICATION
DESIGN IDEAS
REVIEW OF INITIAL IDEAS
DEVELOPMENT OF DESIGN IDEAS INTO A CHOSEN DESIGN
COMMUNICATION OF DESIGN IDEAS

Trophy

N… A

Year 11

NEA

NEA

REVIEW OF CHOSEN DESIGN
MANUFACTURE OF FINAL PROTOTYPE

Design Styles

Historical design movements & figures
Arts & Crafts
Art Nouveau
Bauhaus
Art Deco
Post Modernism
Streamlining
Memphis
VERBAL PRESENTATION

Research
Applying…
Timbers
Core content
TESTING & EVALUATION
QUALITY & ACCURACY

Year 12

…ar

…kam Prep

NEA

NEA

MANUFACTURE - SELECTION OF MATERIALS
MANUFACTURE - SKILLS & PROCESSES

Furniture

Design ideas
Modelling, testing & evaluating
CAD/C…
Orth… dr…
SketchUp
3D printing
IDENTIFICATION OF DESIGN POSSIBILITY
INVESTIGATION OF NEEDS & RESEARCH
SPECIFICATION
DESIGN IDEAS

Independent Project

Year 13

Pearson

DEVELOPMENT OF DESIGN IDEAS
FINAL DESIGN SOLUTION
REVIEW OF DEVELOPMENT & FINAL IDEA
MANUFACTURE OF FINAL PROTOTYPE

Good Luck !

Safe working practices, potential hazards and risk assessment
Effects of technological developments
Factors influencing the development of products
Digital technologies
Processes, techniques & specialist tools
Performance characteristics of materials
Materials
TESTING & EVALUATION
QUALITY & ACCURACY

Exam Prep

Independent Project

Applying maths in a DT context
Further processes and techniques
Information handling, modelling and forward planning
Current legislation
Designing for maintenance and the cleaner environment
Features of manufacturing industries
TOOLS & EQUIPMENT
COMMUNICATION OF DESIGN IDEAS

CCCS Design & Technology Curriculum Journey Rationale

- The Design & Technology KS3 subject content has been used to help ensure that students complete projects that are challenging and provide them with opportunities to develop their knowledge, skills and understanding across the subject.
- Through reverse engineering of the GCSE specification, the KS3 projects have imbedded core knowledge and skills that are required at GCSE level. These are skills such as; iterative modelling, isometric and orthographic drawing techniques.
- Each KS3 project has an element of theory which also builds and strengthens students subject knowledge.
- KS4 begins with a variety of projects which build upon the previous 3 years of learning and continue to develop the skills required for GCSE.
- There is a greater focus on theoretical knowledge and understanding in preparation for the exam component, consisting of core and timbers knowledge.
- Students do not begin their Non-examined Assessment (NEA) until June of year 10 when Pearson releases the themes and contexts. Students then work on their NEA until the deadline in the spring term of year 11.
- The Autumn term of KS5 consists of a series of small projects which build upon the previous 2 years of learning and continue to develop the skills required for A-level.
- There is a greater focus on theoretical knowledge and understanding in preparation for the exam component, delving deeper into commercial practices and H&S etc.
- The Independent Design & Make Project (IDMP) is launched at the end of the Autumn term in preparation for students starting it in January the following month. Students then work on it until the deadline in the spring term of year 13. This is a much larger project than that of GCSE so gives students more time to complete it.

YEAR 7

Steady Hand Game

- The steady hand game was originally a year 8 project that has been brought down into year 7 to offer more challenge.
- Students get straight into practical, using workshop tools and equipment, something many students have little/no experience of.
- It encourages accuracy when working practically.
- It focuses on the timbers material area, which begins to broaden the students knowledge of materials.
- Students enjoy it and develop a range of practical workshop skills, whilst learning about health & safety.
- Students produce a product they are proud of and that they can take away with them at the end of the rotation.
- The project also allows for differentiation by outcome as there's plenty of scope for games with varying degrees of complexity and challenge.

YEAR 8

Mobile Phone Stand, Bridge & Design Careers

- The mobile phone stand was originally a year 9 project that has been brought down into year 8 to offer more challenge.
- Students learn how to use CAD/CAM in their work in preparation for study at GCSE level.
- It uses another material area, polymers, which broadens the students knowledge of materials.
- Part of the project involves students modelling their chosen stand idea from 3mm foamboard using an iterative process, like that required at GCSE. Also focusing on accuracy and measurements and the documenting of the modelling process.
- The project also allows for differentiation by outcome as there's plenty of scope for stands with varying degrees of complexity and challenge.
- The bridge project involves students working in small groups. Each group becomes a bridge building company, looking at costings of materials etc. The bridges are tested, with the bridge with the best efficiency score winning.
- It also focusses on additional subject knowledge linked to that of the GCSE specification e.g. forces.
- The design careers project was originally a Year 9 project that was moved down to give students an insight into potential career choices, ahead of choosing their options in year 9. This was also due to the old carousel system.
- The design careers involves each student choosing a design career from the list given, researching it and then producing a presentation that they present to the group.

YEAR 9

Festival, Mobile Phone Analysis & Famous Designers

- The festival leaflet and PoSD was first introduced in September 2020, so is still a relatively new project.
- The aim was to take on a more graphics methodology, whilst getting students to approach it in a similar way to the GCSE NEA themes and contextual challenges.
- It uses another material area, papers & boards, which once again broadens the students knowledge of materials.
- Building upon modelling skills from year 8, students also learn new drawing techniques required at GCSE.
- The project also allows for differentiation by outcome as there's plenty of scope for leaflets and PoSD's with varying degrees of complexity and challenge.
- Although the phone analysis project has no practical outcome it still provides students with the opportunity to be creative in designing a 'phone of the future', which concludes with a 'Dragons Den' style activity.
- Also looking at further materials, smart & modern, it links with both the KS3 subject content and GCSE specification.
- The famous designers project involves each student being given, at random, a different designer to research, producing a presentation that they present to the group.
- This increases their awareness of the work of present and past designers linked to that of the GCSE specification.

YEAR 10

- The requirements of the NEA component have been used to create tasks and projects that equip the students with the necessary skills to be successful with their project. These are completed over the autumn, spring and first half of the summer terms.
- The chosen projects build upon the various skills that students have gained throughout KS3. These involve drawing/sketching, modelling and CAD/CAM, in particular.
- Theory lessons run alongside the projects to teach the exam content covered in the core and timbers sections of the component.
- The NEA component is launched to the whole cohort after May half term, once themes and contextual challenges are released by Pearson.

YEAR 11

- In year 11 students continue with their NEA until the end of the spring term.
- Theory lessons continue to run alongside the projects to teach the exam content covered in the core and timbers sections of the component. Those concerning timbers involve some practical tasks.
- With the NEA complete the remaining teaching time is then dedicated to exam revision.

Year 12

- The requirements of the IDMP component have steered the tasks and projects that equip the students with the necessary skills to be successful with their project. These are completed over the autumn term.
- The chosen projects build upon the various skills that students have gained throughout KS3 & 4. These continue to include drawing/sketching, modelling and CAD/CAM with a focus on 3D printing.
- Theory lessons run alongside the projects to teach the increased exam content covered of the exam component. These also include practical tasks to develop students understanding of the manufacturing processes.
- The IDMP is launched to the whole cohort before Christmas , allowing students time to find a number of design possibilities. These are then narrowed down to one, following advice and guidance from the teaching staff.

Year 13

- In year 13 students continue with their IDMP until the end of the spring term.
- Theory lessons continue to run alongside the projects to teach the exam content covered in the twelve sections of the exam component.
- With the IDMP complete the remaining teaching time is then dedicated to exam revision.