Co-op Academy Walkden

# Design Technology and Construction Learning Journey

## Year 11

### Eduqas Level 1/2 Constructing the Built Environment Qualification

Intensive theory recap from last two years of learning on all topics within the built environment

Students will sit Unit 1 exam papers covering all aspects of the Construction environment- 40% of overall grade

Be able to calculate resources to for construction projects

Develop an understanding of material and labour costing.

Understand how to plan out a practical construction task and outline a timescale

Students will continue their NEA coursework on three key skills within construction - 60% of their overall grade including their practical exams

Develop an understanding of building types, structures and material properties

Ability to identify hazards within the workplace / construction sites

Intensive practical trade skills that you would use on site including Joinery, Electrical, Tiling, Bricklaying, Plastering and Painting & Decorating

PPE and how to stay safe in a professional environment

### Constructing the Built Environment

### OCR Design Technology Qualification

Students will complete modelling, prototypes, research and evaluate their work continually to improve their designs, finalising their ideas

Pupils will sit 50% exam covering core D&T principles. 15% of which is Maths, 10% science.

Pupils will work independently on their NEA planning, designing, making and evaluating throughout the project

Combine knowledge and understanding with individual creativity to design a product or concept

NEA Begins - Completion of Design Brief, Initial Thoughts, Stakeholder Needs and Wants and Initial Research sheets

Understand the effects of design on people/stakeholder and the environment

Gain an understanding of industrial processes across all materials

Prepare pupils for the NEA using the iterative design process

Understand British standard conventions

Gain an understanding of structures and mechanisms

Develop drawing skills for design ideas and technical drawings

Students will recap on knowledge gained at KS3 and explore new materials and technologies

### Design and Technology

## Year 10

Understanding Health & Safety legislation in the UK and how it applies to the Construction Industry

Understanding industry roles and career pathways

Understanding processes and design methods and how they apply to the different industries

Work with shaping plastics and timbers

Exploring health and safety in a workshop and how to meet industry standards

Develop an understanding of each Key Stage 4 option choice - DT and Construction,

Surface print design work using textiles printing process, both digital and traditional

Develop joinery skills using hand tools and learning how to achieve accurate outcomes

## Year 9

Exploring interior design principles and how this might apply to the chosen project

Develop an understanding of processes, materials and skills

Explore materials properties to better understand how they work

Explore sustainable products and the use of textiles materials

Build on the CAD skills explored at Year 7/8 . Challenge thinking and be able to produce design ideas on CAD programmes

Basic Sketching principles developed to show design ideas

Developing knowledge of architecture, building design, style and how this impacts the design

Producing branding and logos and branding - working inside a clear brief

Understand how to complete a design brief

Investigating how electronic control systems work

## Year 8

Developing modelling skills, taking concept ideas and created scaled models from different materials

Developing skills with Computer Aided Design - using TinkerCAD

Developing branding technique for commercial use

Testing materials to develop concept ideas and improve them

Exploring careers within the industry

Isometric and Oblique graphic drawing skills

Understanding materials - origin, properties, use

Exploring a range of design methods, ways of communicating and how design evolves

Developing practical skills in product finishes

Understanding health and safety in the workshop and industry

Use of basic construction tools

## Year 7

Developing sketching & shading techniques

Understanding how an idea is developed into a final product

Developing practical skills using Timbers, Papers and Textiles

Exploring research techniques to improve design ideas

Use a range of tools and equipment to perform practical tasks

Generate ideas, model and communicate them using a range of methods

Understanding electronic systems and control, soldering and shaping

Experimenting with materials to create structures

Investigating & Analysing products

## Primary School

Using the views of others to make changes to their designs.

Sustainability - Looking at eco-friendly design and materials

Understand how technology has shaped the world

Evaluate their designs

Begin to look at CAD