Learning Journey Map
For Design Technology

The Holy Family Catholic School

Summer Term — Final Exam

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.

Spring Term — Non Exam Assessment

- The work of others
- Design strategies
- Communication of design ideas
- Prototype development.

Autumn Term — 11

- Investigation, primary and secondary data
- Designing and making principles
- Surface treatments and finishes
- Specialist techniques and processes

Designing and making principles

Summer Term — KS4

- Enterprise
- Forces and stresses
- Ecological issues
- Industry
- Culture

Specialist technical principles

Spring Term — KS4

- Production techniques and systems
- Environment
- How to shape and form using cutting, abrasion and addition
- Selection of materials or components
- Properties of materials

New and emerging technologies

KS4 — 10

Electronics

Modelling in Technology / using CADCAM
The role of virtual modelling when producing circuits

Practical Lesson- Cutting tools and techniques.
Build and develop prior knowledge of correct methods of drilling and cutting

Practical Lesson
Continuation of practical lessons. Recap important Health and Safety points

Practical – Final assembly
Final assembly lesson for all aspects of the project to be completed.

Evaluation
Review the project with the pupils.
Collaborative peer review of completed projects

Plastics

Key knowledge
Planning and making electronic circuits.

Design brief and Initial ideas.
Discuss and develop the correct method of producing briefs and initial ideas

Project 2 – Electronics. Glowing display
Pupils will be introduced to the principles of basic electronics.

Evaluation
Review the project with the pupils. Class discussion with all the completed projects on view.

Practical – Final assembly
Final assembly lesson for all aspects of the project to be completed.

Practical Lesson
Continuation of practical lessons. Recap important Health and Safety points

Practical lesson –Cleaning the materials/ Adding a finish
Discussion about finishes : What is meant by self-finishing

Mechanisms

Introduction to the project
Acrylic phone holder.

Research and materials in Design technology.
The difference between thermoplastics and thermoset plastics

Design brief and Initial ideas.
Discuss the correct method of producing briefs and initial ideas:
3D sketches
Colour
Annotation

Modelling in Technology / using CADCAM
The role of computer modelling and testing.

Workshop rules / Health and Safety
The importance of Health and Safety in the workshop

Practical Lesson– Measuring and marking
Use of rulers – using mm
How to mark properly on acrylic and similar materials.

Practical Lesson
Continuation of practical lessons. Recap important Health and Safety points

Practical lesson – CADCAM
Demo the acrylic line bender and CAD router machine

Plastics — 9

Evaluation
Review the project with the pupils. Class discussion with all the completed projects on view.

Practical –
Final assembly Implement accurate Quality Control

Practical Lesson
Continuation of practical lessons. Recap important Health and Safety points

Metals

Practical lesson – Cleaning the materials/ Adding a finish
Pupils will clean up their materials using sandpaper, wire wool and metal polish.

Practical Lesson
Continuation of practical lessons. Recap important Health and Safety points

Practical – Final assembly
Final assembly. Reminder about Quality Control –

Evaluation
Collaborative peer review of the finished projects

Project 2 – Mechanisms.
Cam display project.
Pupils will be introduced to the principles of Mechanisms

Design brief and Initial ideas.
Developing effective briefs to aid product development

Cams and linkages
Pupils will be introduced to the principles of Cams and Linkages

Modelling in Technology using CADCAM
Producing accurate models in Technology

Practical Lesson Measuring and marking
Pupils implement prior knowledge of measuring and marking techniques

Metals — 8

Practical Lesson
Continuation of practical lessons. Recap important Health and Safety points

Practical Lesson- Cutting tools and techniques.
Build on prior knowledge of correct methods of drilling and cutting

Practical Lesson Measuring and marking
Materials distributed to pupils

Workshop rules / Health and Safety
The importance of Health and Safety

Modelling in Technology / using CADCAM
Producing effective models in Technology

Design brief and Initial ideas.
What is a design brief

Research and materials in design technology.
The difference between ferrous metal and non – ferrous metal

Introduction to the project
Pewter and wood key ring fob.

Graphics

Project 2 – Graphics – Shop identity
Pupils will be introduced to the principles of Graphic Design

Packaging
Pupils will be introduced to the principles of Packaging

Producing initial ideas.
Implement design strategies to produce 2 initial ideas

Modelling in Technology using CADCAM.
Develop prior knowledge of modelling and prototyping

Workshop rules / Health and Safety
The importance of Health and Safety in the workshop.

Practical lesson
Implement prior learning in practical techniques

Practical lesson
Implement prior learning in practical techniques

Evaluation
Collaborative peer review of the finished projects

Woods

Evaluation
Review the project with the pupils. Class discussion with all the completed projects on view.

Practical – Final assembly
Final assembly lesson. Complete all aspects of the work. Note modifications.

Practical Lesson
Continuation of practical lessons. Recap important Health and Safety points.

Applying the design / Adding a finish
Pupils will apply their design using stains and coloured pencils

Practical lesson – CADCAM
Demo the Vac forming and CAD router machine

Practical Lesson- Cutting tools and techniques.
Teacher demo on the correct way to use cutting and shaping tools such as saws, drills and files

Practical Lesson– Measuring and marking
Teacher demo on the correct way to mark and measure the material

7 — Woods

Introduction to Project 1
Hand held Puzzle using Cad Cam.

Research and materials in Design Technology.
The difference between hardwoods and softwoods.

Design brief and Initial ideas.
What is a design brief and why do we use them in design technology

Modelling in Technology / using CADCAM
Why do we use models in Technology

Workshop rules / Health and Safety
The importance of Health and Safety

OUR CORE VIRTUES

Awakening minds · Achieving dreams · Serving others