Design & Technology

Manchester Academy
The best in everyone

Year 8 Big Picture – Design & Technology **Money Box**

Year 8 Overview

In Year 8, students continue with the adventure that they started in Year 7.

Following on from health, safety and use of equipment and materials, students will look more closely at developing their ideas to create a specific product then use an element of CAD CAM within the department to help them manufacture the item.

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Aims

Design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others

Design

- use research and exploration, such as the study of different cultures, to identify and understand user needs
- identify and solve their own design problems and understand how to reformulate problems given to them
- develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations
- use a variety of approaches
- to generate creative ideas and avoid stereotypical responses. Students produce sketches, formal drawings and sketch modelling
- develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools

Make

- select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture
- select from and use a wider, more complex range of materials and components taking into account their properties

Evaluate

- investigate new and emerging technologies
- test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups
- understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists

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At KS3 students rotate half yearly

Autumn 01 *2026* *Weeks 1 – 7 (7 weeks)* *OCTOBER HALF TERM*	*Autumn 02* *2026* *Weeks 8 – 15 (7 weeks)* *CHRISTMAS*	*Spring 01* *2027* *Week 16- 21 (6 weeks)* *FEBRUARY HALF TERM*
Content <u>Moneybox project</u> The students will be introduced to the project and the materials they will be using. There will be a particular focus this half term on wood and the basic differences between the classifications given to materials used in joinery. The students will also be introduced to the names of the first tools they will experience. Health and Safety Tools and Equipment Types of materials, Theory on components and their uses The students will begin to think about the designs that could go onto their work. They will draw upon graphic techniques that have been previously learnt to develop designs that can be applied to their products. Scales of production will also be introduced as a manufacturing concept that is a necessary part of the manufacturing process. Drawing in Techsoft 2D using isometric grid Introduction to scales of production Introducing different graphic techniques to enhance their design work. • To understand why we undertake health and safety rules • To be able to describe and identify the uses of tools in project.	**Content** <u>Moneybox project</u> The design development will continue as the students look at deepening their understanding of the materials, tools and equipment they will use to produce their money box. Learning graphic techniques to draw on their moneyboxes Understanding the impact of flat packing on the environment Practice different guideline techniques to have a good finish on their practical work The introduction of isometric drawings to show off their designs to best The students will also be introduced to the idea of sublimation printing as a way of applying their designs to their moneyboxes. (CAD/CAM) Drawing in Techsoft 2D using isometric grid Introduction to CAD CAM including the use of the sublimation printer **Skills:** Correct drawing skills enhanced as well as rendering techniques	**Content** <u>Moneybox project</u> The students will prepare and print the designs onto each of the sides of their moneyboxes using the sublimation process. They will begin to log down the process in detail, recording what processes they have been through as they continue to prepare their materials. Health and Safety Tools and Equipment Types of materials, Theory on components and their uses **Skills** Finishing techniques used on wood and plastics Fabrication skills Evaluation of designs and construction techniques to help inform future work

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• To be able to explain the different types of wood, • The materials and components used in project. • To be able to use hand tools effectively to make their moneybox **Skills**: Understanding health and safety in the workshop. CAD CAM skills enhanced		
Assessment Objectives This is the knowledge, application and skills assessed by the Mini test 1 Class feedback sheets to be completed based on the skills covered during the unit of work. This is to raise and rectify all the misconceptions, so students perform better **Attitude to Learning (ATL) - Data capture**	**Assessment Objectives** This is the knowledge, application and skills assessed by Mini Test 2: Class feedback sheets to be completed based on the skills covered during the unit of work. This is to raise and rectify all the misconceptions, so students perform better **Attitude to Learning (ATL) - Data capture**	**Assessment Objectives** This is the knowledge, application and skills assessed by the Big Test 1 Class feedback sheets to be completed based on the skills covered during the unit of work. This is to raise and rectify all the misconceptions, so students perform better **Attitude to Learning (ATL) & Big test % - Data capture**
Spring 02 ***2027*** ***Weeks 2– 27 (6weeks)*** ***EASTER***	***Summer 01*** ***2027*** ***Weeks 28 – 32 (5 weeks)*** ***WHIT***	***Summer 02*** ***2027*** ***Weeks 33 – 39(7 weeks)***
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