# Year 7 Big Picture –Design Technology: Construction


## Bookends Project

**Year 7 Overview**

The beginning of an adventure into the world of design and technology.

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

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**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

The unit plans for Year 7 have been developed to enable pupils to acquire a range of practical and drawing skills, increasing in complexity and accuracy, to create a working product range, safely and to apply their knowledge of tools, equipment and materials.

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| ***Autumn 01***<br>***2023***<br>***Weeks 1 – 7 (7 weeks)***<br>***1/9/23 - 22/10/23 - OCTOBER HALF TERM*** | ***Autumn 02***<br>***2023***<br>***Weeks 8 – 15 (7 weeks)***<br>***1/11/23 - 17/12/23 - CHRISTMAS*** | ***Spring 01***<br>***2024***<br>***Week 16- 22 (7 weeks)***<br>***FEBRUARY HALF TERM 3/1/24 - 18/2/24*** |
| The year 7 book end project follow follows the design process allow the students to design, develop and construct their product to a given brief whilst learning about related theory to the materials and equipment relevant to the task at hand<br>The students will use research to help them generate a starting point for their ideas. They should be able to critically analyse other people's work as well as use it to give themselves a starting point to produce designs.<br>Content<br>Base Line Test<br>Life Cycle Assessment | The focus this term will be the refinement of their ideas and the commencement of their practical work. Learning the relevant skills to independently produce their work.<br>Developing the design and focussing on refining a single idea.<br>The students will also be introduced to other drawing concepts used in design and technology to communicate their designs clearly to others. This will include isometric drawing and rendering techniques | Focus will be on the execution of the design ideas and drawing skills which will be developed over this half term. This will include the understanding of different drawing techniques such as isometric and orthographic drawings.<br>**Content**<br>Start of practical work – marking out<br>Understanding the appropriate health and safety in the workshop<br>Using a range of hand tools to help them produce their book end joint<br>The most commonly used tools will be |

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| The six r's of recycling<br>Understanding design tasks<br>Continue with initial ideas<br>Development of designs<br>Understanding isometric drawings<br>Orthographic drawings<br><br>Research related to the task – looking at existing products.<br>Investigating wood joints.<br>Initial ideas<br><br>**Skills:** Understanding sustainability<br><br>Cultural Capital: Researching techniques that is relevant towards their work.<br>Isometric drawings Health and safety and basic tool knowledge towards practical. | **Content**<br>Continue with Practical work – mark and cutting out the wood joints<br>Marking and cutting out the inserts of the bookend<br>Producing an evaluation of the project<br>Development of ideas<br>Isometric drawing<br>Rendering techniques<br>Thick and thin line technique<br><br>**Skills**: Practical skills with basic hand tools<br><br>Cultural Capital: Health and safety and basic tool knowledge towards practical. Being able to evaluate their own work and rectify any mistakes during practical using basic hand tools.<br>Understanding sustainability<br>Researching techniques that is relevant towards their work. | Try squares, tenon saws, files, bench hooks<br>Continue with Practical work – mark and cutting out the wood joints<br>Marking and cutting out the inserts of the bookend<br>Producing an evaluation of the project<br><br>**Skills**: Isometric drawings<br>Practical skills with basic hand tools<br><br>Cultural Capital: Health and safety and basic tool knowledge towards practical. Being able to evaluate their own work and rectify any mistakes during practical using basic hand tools.<br>Health and safety and basic tool knowledge towards practical. |
| **Assessment Objectives**<br>This is the knowledge, application and skills assessed by the mini test 1<br><br>• Reflection on importance of life cycle assessments<br>• Poster of the 6R's of recycling<br>• Analysis of research tasks<br>• Assessment of initial design ideas and drawing skills<br>• Attention will be paid to literacy and presentation in the booklets<br>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<br>**Yr. 7 Attitude to Learning (ATL)** | **Assessment Objectives**<br>This is the knowledge, application and skills assessed by the mini test 2<br>Focus will be on the execution of the design ideas and drawing skills which will be developed over this half term. This will include the understanding of different drawing techniques such as isometric and orthographic drawings. They will also focus their efforts on developing their practical skills by finishing a good quality working product that should be able to support a reading in an upright position.<br><br>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<br>**Yr. 7 Attitude to Learning (ATL)** | **Assessment Objectives**<br>This is the knowledge, application and skills assessed by the Big test<br><br>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<br><br>**Yr. 7 Attitude to Learning (ATL) - Big Test 1 Data capture** |

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| *Spring 02*<br>*Weeks 23 – 27 (5 weeks) – 3 lessons*<br>*EASTER 28 /2/24 - 1/4/24* | *Summer 01*<br>*Weeks 28 – 33 (6 weeks) – 3 lessons*<br>*WHIT – 18/4/24 - 27/5/24* | *Summer 02*<br>*Weeks 34 – 40 (7 weeks) 4 lessons*<br>*6/6/22 - 20/7/24* |
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