Design and Technology - Curriculum Overview - Autumn 2026

Year 7
What are you teaching? Autumn
Year 7 Practical - An introduction to Health & Safety in the workshop including the H&S certificate. Students will be working with woods, metals and polymers focusing on cutting, shaping, drilling and finishing, Year 7 - Graphics - An introduction into basic graphic design and presentation skills. Students will be learning techniques such as colours, gradients, freehand sketching, annotation, design ideas, line weighting. Introduction to CAD and CAM. Groups will then swap after half term.
Why have you chosen to teach this unit, and this time?
Students have been exposed to a limited amount of practical work within a workshop. students will gain a Health & Safety certificate to work safely in the workshop. Students will have an understanding of how to work with different materials learning their properties, how to shape, cut, finish and drill in line with the DT NC. Students will have an understanding of basic graphical techniques and how to implement CAD and CAM in their designs in line with the DT NC.
What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?
• What are the working properties of woods, metal and polymers? • What role does the importance of Health & Safety play with design and technology? • What is CAD and CAM? • What are the main graphical techniques I can use to enhance my design ideas?
Is this topic on the National Curriculum? **Yes** **Will all staff be teaching this unit?** **Yes**

Year 8
What are you teaching? Autumn
Sweet Dispenser Design using Mechanisms. Students will learn the four main areas for moving mechanisms and apply this to a sweet dispenser machine. Students will draw upon previous workshop knowledge from Year 7 and further their skills by using acrylic line benders, forstner bits and advanced finishing techniques. Students will be introduced to graphics illustration using avatars, Ai and advanced graphical techniques through design ideas and design development. Students will swap after each half term.
Why have you chosen to teach this unit, and this time?
Students need to have an understanding of working mechanisms within design and technology in line with the DT NC. Students have skills in Year 7 that are spiralled down to Year 8. Students will learn further advanced workshop skills.
What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?
• What are the four main types of moving mechanisms? • What role does Ai play when designing a product? • How can a product be adapted for a particular target market?
Is this topic on the National Curriculum? **Yes** **Will staff be teaching this unit?** **Yes**

Year 9
What are you teaching? Autumn
Students will learn to identify electronics symbols and basic soldering techniques through designing and making a working LED Anglepoise Lamp. Students will identify the work of others and how cultural patterns can shape design. Students are introduced to further advanced workshop techniques, fabrication and fixtures. Students learn how to adapt their designs to a given target audience through graphical design.
Why have you chosen to teach this unit, and this time?
Students need to have an understanding of electronics and automation within design and technology in line with the DT NC. Students have skills in Year 8 that are spiralled down to Year 9. Students will learn further advanced workshop skills including the work of others.
What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?
• Students can identify a range of electrical components and apply these to a working prototype. • Students understand how to adapt a design through researching the work of others. • Students understand further methods of workshop fabrication, fixtures and finishing techniques.
Is this topic on the National Curriculum? **Yes** **Will staff be teaching this unit?** **Yes**

Year 10
What are you teaching? Autumn
Students are following the AQA Design & Technology curriculum. Students are following a topic of Sketching techniques, an area of weakness for students in the past. These include isometric, perspective, cross section, exploded, freehand sketching and orthographic drawing. Students are following the AQA theory of study units in preparation for the exam. This unit is 1: Industry and Enterprise, Unit 2: Energy Generation
Why have you chosen to teach this unit, and this time?
A requirement for the exam is to follow the given units of the AQA syllabus. We have identified a weakness in past NEA coursework when generating design ideas. The sketching booklet will reinforce this as well as support the drawing questions within the exam.
What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?
• What are the Design and Technology implementation for the Unit 1: Industry and Enterprise, Unit 2: Energy Generation. • How can this unit be applied to exam style questions? • Students will be expected to be proficient in the methods of isometric, perspective, cross section, exploded, freehand sketching and orthographic drawing.
Is this topic on the National Curriculum? **No** AQA SYLLABUS **Will all staff be teaching this unit?** **Yes**

Year 11	
What are you teaching? Autumn 1	**What are you teaching? Autumn 2**
Section A - Research and Investigation of the NEA coursework based on the theme given by the exam board. Section B - Creating a Design Brief and Specification of the NEA coursework based on the theme of Educational Wooden Toys or Supporting or participating in Sports. A bank of Exam questions focusing on exam techniques, misconceptions and areas of weakness identified in the Year 10 mock.	Section C - Generating a range of design ideas for the NEA coursework based on the theme given by the exam board. A bank of Exam questions focusing on exam techniques, misconceptions and areas of weakness identified in the Year 10 mock.
Why have you chosen to teach this unit, and this time?	**Why have you chosen to teach this unit, and this time?**
The NEA coursework is 50% of the GCSE and in line with the theme given by the AQA exam board. Students are working against our NEA timeline. Exam technique is vitally important and it's an area we would like to focus on this year to improve the exam results and exam marks.	The NEA coursework is 50% of the GCSE and in line with the theme given by the AQA exam board. Students are working against our NEA timeline. Exam technique is vitally important and it's an area we would like to focus on this year to improve the exam results and exam marks.
What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?	**What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?**
• What is the best exam technique and how can I learn from my mistakes in the Year 10 mocks. • What does a good Section A NEA coursework look like? • What does a good Section B NEA coursework look like? • Student to draw upon prior knowledge from the mini NEA in Year 10, sketching and modelling techniques.	• What is the best exam technique and how can I learn from my mistakes in the Year 10 mocks. • What does a good Section A NEA coursework look like? • What does a good Section B NEA coursework look like? • Student to draw upon prior knowledge from the mini NEA in Year 10, sketching and modelling techniques.
Is this topic on the National Curriculum? **No** AQA SYLLABUS **Will all staff be teaching this unit?** **Yes**	**Is this topic on the National Curriculum?** **No** AQA SYLLABUS **Will all staff be teaching this unit?** **Yes**

Curriculum Thread Design and Technology

At Kempston Academy, we recognize the importance of Design & Technology and the role it plays in today's rapidly changing world. Creative thinking encourages pupils to make positive changes to their quality of life. The subject helps pupils become autonomous and creative problem solvers, both as individuals and as part of a team. It enables them to identify needs and opportunities and respond by developing ideas for inclusive design, eventually leading them to create high-quality products.

Through their understanding of Design & Technology, pupils combine practical skills with an understanding of aesthetics, social, moral, and spiritual issues, inclusive design for all, environmental concerns, smart materials, and industrial practices. Year 7 students embark on a journey of working with a range of materials and machinery, focusing on Health and Safety. Year 8 enables students to build on their practical skills and knowledge, allowing them to design a range of creative products. Students evaluate and reflect on their design ideas while also studying the work of others, including the history of product design and past and present designers and their impact.

Year 9 focuses on new and emerging technologies and smart materials, while Year 10 and Year 11 follow the exam board's syllabus.

Design & Technology helps and supports students in becoming discriminating and informed consumers and innovators.