



Long Term Mapping 2025 – 26

KS3 – Year 8 – Design and Technology

Subject Intent/ Aims:

The hope is that Design and Technology provides knowledge and builds on the realisation that most of the items or products we interactive with on a daily basis are designed by humans, for humans for a reason. Students should be made aware that Design and Technology provides solutions for human needs and desires. Students are to know that design is there to aid comfort, transport, physical needs, communication, health and also for aesthetic reasons. Real world problems are used to develop the students understanding of the huge, life-changing role and impact a designer can have.

The Design and Technology department has a programme of study the follows the aims of the national curriculum. Within this, pupils are given the opportunity to learn how to understand and apply basic principles of Design and Technology, analyse problems whilst confidently providing solutions, and acquire competency in using the design process.

The overall intention of the Design and Technology department at St Philip Howard to provide the pupils with a safe and engaging learning environment, that will foster a love for learning and acquire a wide range of knowledge and skills that could have a huge benefit on their lives in and out of school.



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Key Concepts - Advent	Key Concepts – Lent	Key Concepts - Pentecost
• Health and Safety Introduction- how to be safe in DT. • The Design Brief – Introduction to the project and design process. • Analysis- 5 concepts – Target market, aesthetics, function, safety and Materials and processes	• Research – existing products, logos, and slogans. • Specification – To learn the specifics and requirements of the brief. • Designing – Incorporate all aspects from research and analysis and design their project.	• Development- Model ideas • Making- Using the required tool, equipment and materials . Make their project from their design ideas. • Assessment and evaluation of project.
National Curriculum Coverage	National Curriculum Coverage	National Curriculum Coverage
Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of domestic and local contexts [for example, the home, health, leisure and culture] and industrial contexts [for example, engineering, manufacturing, construction, food, energy, agriculture (including horticulture) and fashion]. • Analyse the work of past and present professionals and others to develop and broaden their understanding. • 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 by analyzing different areas such as function, safety , aesthetics and materials and processes.	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of domestic and local contexts [for example, the home, health, leisure and culture] and industrial contexts [for example, engineering, manufacturing, construction, food, energy, agriculture (including horticulture) and fashion]. • 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.	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in the manufacturing process. They should work in a range of domestic and local contexts [for example, the home, health, leisure and culture] and industrial contexts [for example, engineering, manufacturing, construction, food, energy, agriculture (including horticulture) and fashion]. •Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups •Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations. Making- Using the required tool, equipment and materials. •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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Components		Components		Components	
Term 1	Term 2	Term 1	Term 2	Term 1	Term 2
- Revision of Health and Safety- workshop, tools and materials. - Graphics and Resistant Materials projects. Steady hand game project. - Develop/ revisit an understanding of the Design Process. - Steps 1-8: - Design brief, Analysis, Research, Specification, Design Ideas, Development, Making and Evaluation.	Pupils understand how to analyse a product. This is where pupils demonstrate an understanding of the design brief. Pupils will conduct existing product research and analysis in the form of a mind map in preparation for designing.	Pupils understand how to research existing products. This is where pupils develop a further understanding of the design brief. Pupils will conduct existing product research. Conduct research and development in preparation for designing.	- Specification - This is where pupils develop an understanding of the design brief and become specific about the outcome they produce. Specifics – Eg. Must have a pine wood base. Must have a bent metal wire. - Designing – Initial, develop and final In relation to CAD - Pupils will take their research and analysis and develop a range of design ideas. This give the pupils the opportunity to Retrieve, Revisit and Recall prior knowledge. Pupils will apply an element of math's to their design by adding dimensions to drawings. This also prepares the pupils for future curricular links to Engineering.	- Modelling - Pupils will develop their design ideas and then create a model of their final idea. This will involve Math and practical hand skills with the use of scissors, a rule and making sure the template or a net is folded correctly. - Final design - Pupils will then take their chosen design and make it. This combines all prior knowledge (RRR). Health and safety, designing and modelling. - Making - Pupils learn and develop a range of new practical skills. Use of machines. Pupils put these skills into practice. Example- using a scroll saw or a pillar drill.	- Production and finishing of a product/project. This is to include an evaluation of the project. - Pupils will peer assess each other's work. Reference to TLJ- a literacy task will be completed where pupils reflect upon their learning and make reference to the design process. This will include RRR all different aspects of the project from start to finish. Mnemonic – reference to design process. Dual coding technique linked to metacognition (thinking emoji) and questioning linked to TLJ.



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HO Knowledge		HO Knowledge		HO Knowledge	
Term 1	Term 2	Term 1	Term 2	Term 1	Term 2
❖ Can evaluate and interpret a design brief. ❖ Can analyze a product using 5 key areas. ❖ Can suggest a range of solutions to potential safety issues.	❖ Can research the most important features of a product. ❖ Can combine multiple skills and knowledge to produce a well-presented presentation.	❖ Can interpret their research and produce a detailed specification. ❖ Can determine the situation of a product and identify their target market.	❖ Can create a range of initial ideas using their research. ❖ Can create a range of designs from their initial ideas. ❖ Can make judgement on how to create a final design idea.	❖ Can create a model from their final design idea. ❖ Can experiment with different graphics materials and media to create an accurate model. ❖ Can effectively use a range of tools and processes to make their final design idea.	❖ Can recognize previous learning to make their final product. ❖ Can carry out quality control when making. ❖ Can include numeracy when making. ❖ Can evaluate in detail and reflect on previous learning.

Composite Skills		Composite Skills		Composite Skills	
Term 1	Term 2	Term 1	Term 2	Term 1	Term 2
➤ The dangers of a DT workshop (recap). ➤ Methods to stay safe in the workshop(recap). ➤ The Design Process- ➤ Pupils need to understand where they are working and how to progress in the subject/topic. • Analysis • Research • Specification • Design ideas. • Development • Making • Evaluation.	➤ Produce a spider diagram: ○ Aesthetics ○ Function ○ Safety ○ Target Market ○ Materials and processes. ➤ Make cross curricular links with English, Math's, Science, Computer Science, Art, History and Engineering. This will be done by including sizes to drawings, researching different materials (metals and polymers), research and analysis of products and different cultures from around the world and designing using different graphics media.	➤ The use of different software (Techsoft and PowerPoint) ➤ Technical knowledge ➤ understand different programs and how to apply them on a computer. This will include PowerPoint to create designs for the Steady Hand Game. The power of a logo and slogan will be researched and investigated.	➤ Understand how to use their research and analysis and create some initial design ideas. ➤ Using initial designs create a range of ideas in more detail with reference to their specification. ➤ Incorporate all design ideas and produce a final idea. Reference to the brief and their research and analysis must be evidenced.	➤ Pupils will make cross curricular links with maths and engineering This will include a practical task of making a model. Pupils understand the link by designing a net and turning a 2D idea into a 3D model. ➤ Pupils get to use the equipment in the Design and Technology building. Laser cutter, scroll saw, different range of hand tools, different graphics media and software.	➤ Pupils will develop an understanding of the design process. This will be complete and end with an evaluation of the stages. ➤ Pupils are to reflect on their work. Emphasis on being a critical thinker as well as being positive. WWW & Presented in an extended writing task. This will include RRR all different aspects of the project from start to finish. Mnemonic – reference to design process. Dual coding technique linked to metacognition links to TLJ.



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Final composition/ Deliberate Practice			Final composition/ Deliberate Practice			Final composition/ Deliberate Practice		
Term 1		Term 2	Term 1		Term 2	Term 1		Term 2
Written skills in analysis and product research.		- Discussion about product analysis and presentation of their findings. - Introduction to logo and slogans of products.	Pupils will complete a PowerPoint and complete research with reference to the design brief.		- Pupils will complete a specification. Pupils will be verbally tested and metacognition RRR techniques will be practiced in class.	Pupils will develop initial design ideas. They will use their initial designs and select a range of ideas to then create a final idea. Pupils will model their ideas with a range of techniques. Simple templates or nets will be used.		- Pupils will manufacture their product. - Pupils will evaluate their product. - Pupil will prepare and complete the end of project assessment
Assessment/s (Formative and Summative)			Assessment/s (Formative and Summative)			Assessment/s (Formative and Summative)		
			Term Dates	Jan/Feb	Feb/Mar/Apr	Term Dates	Apr/May	June/July
Term Dates	Sept/Oct	Nov/Dec	Curriculum content (Ongoing formative assessments)	Week starting 13-1-25	Week starting 3-3-25	Curriculum content (Ongoing formative assessments)	Week starting 28-4-25	Week starting 16-6-25
Curriculum content (Ongoing formative assessments. WWW EBI)	Week starting 23-9-24	Week starting 18-11-24		Week starting 10-2-25	Week starting 31-3-25		Week starting 12-5-25	Week starting 14-7-25
	Week starting 21-10-24	Week starting 16-12-24	Assessment (Summative assessment. Synoptic Quiz)	Week starting 20-1-25	Week starting 10-3-25	Assessment (Summative assessment. Synoptic Quiz)	Week starting 5-5-25	Week starting 30-6-25 (End of year assessment)
Feedback	Week starting 14-10-24	Week starting 9-12-24	Feedback	Week starting 3-2-25	Week starting 24-3-25	Feedback	Week starting 19-5-25	Week starting 7-7-25
*Dates are to be amended for future/new academic years.								

Key Terms	Key Terms	Key Terms
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Term 1		Term 2		Term 1	Term 2		Term 1		Term 2
Health and Safety	Aesthetics	Tenon saw	Design	Research	Initial	Model	Product	Analytical	Dimensions
The Design process:	Function	Coping saw	Age	PowerPoint	Range	Make	Analyse	Feature	Final
Analysis	Safety	Scroll saw	Gender	Software	Final	Process	Existing	Critical	Ergonomics
Research	Target Market	Sanding	Eye catching	Annotate	Specify	Machine	Products	Advantage	Environmental
Product analysis	Materials	smooth	Colour	Design	Quality	Feature	Materials	Disadvantage	Materials
Specification	Processes	Graphics	Form	Shape	Characteristics	Critical	Processes	Explain	Quality checks
Making		Specification	Function	Tools		Transformation	Measure	Describe	Evaluative
Modelling		Target Market	Logo	Customer		Variables	NET	Metal	
Evaluation		Function	Slogan			Explain	3D	Circuit	
						Describe		Electronics	
Literacy/ Numeracy/ Cross-Curricular Links				Literacy/ Numeracy/ Cross-Curricular Links			Literacy/ Numeracy/ Cross-Curricular Links		



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Term 1	Term 2	Term 1	Term 2	Term 1	Term 2
Literacy Opportunity for literacy – written analysis in the form of a spider diagram. Students will be required to answer questions and be successful metacognitive learners. Numeracy There is limited need for numeracy in this topic; there is a need for students understand dimensions and sizes. Cross-Curricular English and math. Literacy tasks in line with the learning journey. Numeracy tasks in line with the learning journey. Research – Literacy task different cultures and products. Cross-Curricular – English (literacy – write up tasks) Math (measuring and application of sizes and dimensions) Science (knowledge of materials such as wood, metals and polymers) Art (designing) Computer Science (use of computers and different programs eg Techsoft)	Literacy Opportunity to write up research and product analysis. Peer assess and self-reflection task Numeracy Numeracy use. Research and explain size of existing products Cross-Curricular English and math. Literacy tasks in line with the learning journey. Numeracy tasks in line with the learning journey. Links to KS4 subject Engineering. Reference made to materials.	Literacy links with English, Maths, Science, Computer Science, Art, History and Engineering. The main literacy will come from the students learning new terms within the topic. Key terms test will help with this. Numeracy – size and dimensions associated with project. Cross curricular This will be done by including sizes to drawings, researching different materials (metals and polymers), the use of different software (Techsoft and PowerPoint), research and analysis of products and different cultures from around the world and designing using different graphics media.	Literacy The main literacy will come from the students learning new terms within the topic. Key terms test will help with this. Numeracy Pupils will touch on numeracy briefly in this topic, as spreadsheets deals with numbers and data. Cross-Curricular Math's as numeracy will be used.	Literacy Evaluation – Literacy task Cross-Curricular – English (literacy – write up tasks) Numeracy size and dimensions associated to project Math (measuring and application of sizes and dimensions) Science (knowledge of materials such as wood, metals and polymers) Cross-Curricular Art (designing) Computer Science (use of computers and different programs eg Techsoft)	Literacy Evaluation task Reflection task linked to metacognition Numeracy Checking sizes QA and QC Cross-Curricular All revisited through revision sessions. Engineering QA and QC references.
SMSC		British Value		RSHE	



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✓ <i>There will be multiple opportunities for students develop spiritually; being creative in their learning with the different ways in which they create a range of research and analysis.</i> ✓ <i>The high expectations placed on the student from the school and department mean that pupils will regularly be made aware of the right and wrong morally; especially through the use of Q and A in the classroom in line with the learning journey .</i> ✓ <i>Pupils are expected to share the views morally on the different topics but also show respect and appreciate others in the classroom.</i> ✓ <i>The majority of topics will give the students an opportunity to develop their social skills, from peer assessment opportunities to working in group tasks.</i> ✓ <i>When researching products from around the world pupils will understand and appreciation of different cultures.</i>	✓ <i>Students will be taught the legal implications of using the internet and social media.</i> ✓ <i>Students will be taught to fully appreciate other students' viewpoints and the importance of being respectful when researching on a computer.</i> ✓ <i>Students will be taught the importance of selecting valid information from reliable sources for any presentation tasks that they do.</i> ✓ <i>Students are taught how to contribute to life in modern Britain by learning about the history of products.</i> ✓ <i>Students will be learning how to display British Values to use the internet and social media positively. The rule of law associated to products that are imported into the country.</i>	✓ <i>The students will be taught about how to be safe online and the dangers.</i> ✓ <i>The students will be made aware of online relationships and the sexual issues that may arise.</i> ✓ <i>The students will be regularly conversed on their physical and mental health when overusing computers.</i> ✓ <i>Working collaboratively in the classroom. Peer assessing and buddy up low ability with higher ability.</i>
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Adaptive Curriculum Content		Adaptive Curriculum Content		Adaptive Curriculum Content	
• Clear instructions on PowerPoint • Adapted handouts • Demo of practical tasks • Extra time given during RRR and mid-term assessments • Homework adapted • The end of topic assessment modified to reflect the topics covered by certain classes and ability levels.		• Clear instructions on PowerPoint • Adapted handouts • Demo of practical tasks • Extra time given during RRR and mid-term assessments • Homework adapted • The end of topic assessment modified to reflect the topics covered by certain classes and ability levels.		• Clear instructions on PowerPoint • Adapted handouts • Demo of practical tasks • Extra time given during RRR and mid-term assessments • Homework adapted • The end of topic assessment modified to reflect the topics covered by certain classes and ability levels.	
Adaptive Implementation Practices Practices used during each unit of work					
Adaptive Instruction: Class instructions adapted to meet the needs of students by providing varied materials, activities, and assessments.		Scaffolded Instruction: Break down complex concepts into smaller, more manageable steps, providing additional support and guidance as students' progress through the material.		Formative Assessment: Use ongoing assessments, such as quizzes, discussions, and peer reviews, to continuously monitor student progress and provide timely feedback.	
				Pace: Time given to students to organise equipment and resources at their own pace.	