

Design and Technology Key Stage Three Curriculum Map – Carre’s Grammar School

Subject	Autumn 1	Autumn 2	Spring 3	Spring 4	Summer 5	Summer 6
Year 7	<p>Boat Project</p> <ul style="list-style-type: none"> ➤ Correctly use marking out tools. ➤ Correct wasting of materials using hand tools, the pillar drill and belt finisher. ➤ Finishing techniques of a piece of timber. ➤ Sketching with the isometric method of sketching. ➤ Correct selection of tools and equipment for the correct purpose. <p>Clock Design</p> <ul style="list-style-type: none"> ➤ Sketching in 1 point and 2-point perspective ➤ 3D Isometric representation of designs ➤ CAD – Solidworks ➤ Use of scissors to produce templates for their clocks <p>Electronics Module 1</p> <ul style="list-style-type: none"> ➤ Introduction to procedures when working practically in room 29. ➤ Components, circuit symbols and function. ➤ Resistor colour bands ➤ Circuit design software and use of gallery’s 	<p>Electronics Module 1</p> <ul style="list-style-type: none"> ➤ Introduction to procedures when working practically in room 29. ➤ Components, circuit symbols and function. ➤ Resistor colour bands ➤ Circuit design software and use of gallery’s ➤ Use of basic tools and equipment in electronics ➤ Use of Solidworks to communicate design ideas ➤ Breadboarding and its purpose ➤ Health and safety when working practically <p>Boat Project</p> <ul style="list-style-type: none"> ➤ Correctly use marking out tools. ➤ Correct wasting of materials using hand tools, the pillar drill and belt finisher. ➤ Finishing techniques of a piece of timber. ➤ Sketching with the isometric method of sketching. ➤ Correct selection of tools and equipment for the correct purpose. 	<p>Clock Design</p> <ul style="list-style-type: none"> ➤ Sketching in 1 point and 2-point perspective ➤ 3D Isometric representation of designs ➤ CAD – Solidworks ➤ Use of scissors to produce templates for their clocks <p>Electronics Module 1</p> <ul style="list-style-type: none"> ➤ Introduction to procedures when working practically in room 29. ➤ Components, circuit symbols and function. ➤ Resistor colour bands ➤ Circuit design software and use of gallery’s ➤ Use of basic tools and equipment in electronics ➤ Use of Solidworks to communicate design ideas ➤ Breadboarding and its purpose ➤ Health and safety when working practically <p>Boat Project</p> <ul style="list-style-type: none"> ➤ Correctly use marking out tools. ➤ Correct wasting of materials using hand tools ➤ Correct finishing techniques on acrylic ➤ Understand the purpose of files ➤ Correct wasting of materials using hand 	<p>USB</p> <ul style="list-style-type: none"> ➤ Image Vectorisation and editing of images in 2D Design ➤ Designing to size and scale using 2D Design as a result of constraints ➤ Assembly of acrylic to create prototypes <p>Clock Manufacture</p> <ul style="list-style-type: none"> ➤ Understand workshop procedures ➤ Correct selection of tools and equipment when working with acrylic ➤ Correct finishing techniques on acrylic ➤ Understand the purpose of files ➤ Use of adhesive to join pieces of acrylic <p>Electronics Module 2</p> <ul style="list-style-type: none"> ➤ Tools and equipment familiarisation ➤ Different types of solder joints ➤ Correct soldering techniques ➤ Develop a wider understanding of electronic production 	<p>Electronics Module 2</p> <ul style="list-style-type: none"> ➤ Tools and equipment familiarisation ➤ Different types of solder joints ➤ Correct soldering techniques ➤ Develop a wider understanding of electronic production <p>USB</p> <ul style="list-style-type: none"> ➤ Image Vectorisation and editing of images in 2D Design ➤ Designing to size and scale using 2D Design as a result of constraints ➤ Assembly of acrylic to create prototypes <p>Clock Manufacture</p> <ul style="list-style-type: none"> ➤ Understand workshop procedures ➤ Correct selection of tools and equipment when working with acrylic ➤ Correct finishing techniques on acrylic ➤ Understand the purpose of files ➤ Use of adhesive to join pieces of acrylic 	<p>Clock Manufacture</p> <ul style="list-style-type: none"> ➤ Understand workshop procedures ➤ Correct selection of tools and equipment when working with acrylic ➤ Correct finishing techniques on acrylic ➤ Understand the purpose of files ➤ Use of adhesive to join pieces of acrylic <p>Electronics Module 2</p> <ul style="list-style-type: none"> ➤ Tools and equipment familiarisation ➤ Different types of solder joints ➤ Correct soldering techniques ➤ Develop a wider understanding of electronic production <p>USB</p> <ul style="list-style-type: none"> ➤ Image Vectorisation and editing of images in 2D Design ➤ Designing to size and scale using 2D Design as a result of constraints ➤ Assembly of acrylic to create prototypes

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	<ul style="list-style-type: none"> ➤ Use of basic tools and equipment in electronics ➤ Use of Solidworks to communicate design ideas ➤ Breadboarding and its purpose ➤ Health and safety when working practically 	<p><u>Clock Design</u></p> <ul style="list-style-type: none"> ➤ Sketching in 1 point and 2-point perspective ➤ 3D Isometric representation of designs ➤ CAD – Solidworks ➤ Use of scissors to produce templates for their clocks 	<p>tools, the pillar drill and belt finisher.</p> <ul style="list-style-type: none"> ➤ Finishing techniques of a piece of timber. ➤ Sketching with the isometric method of sketching. ➤ Correct selection of tools and equipment for the correct purpose. 				
<p>Assessment</p> <p>Assessment using the Assessment Sticker Review of any practical outcomes</p>		<p>Assessment</p> <p>Assessment using the Assessment Sticker Review of any practical outcomes</p> <p>*****</p> <p>Year 7 Socrative Interim Assessment at the beginning of Spring 4</p> <p>USB use of Assessment sticker USB practical outcome</p> <p>Clock Manufacture practical Outcome</p> <p>Electronics Module 2 use of Assessment sticker Electronics Module 2 practical outcome</p>		<p>Assessment</p> <p>End of Year Examination in Summer 6</p> <p>USB use of Assessment sticker USB practical outcome</p> <p>Clock Manufacture practical Outcome</p> <p>Electronics Module 2 use of Assessment sticker Electronics Module 2 practical outcome</p>			
<p>Year 8</p>	<p><u>Pendant</u></p> <ul style="list-style-type: none"> ➤ Metal classification, identification and associated processes ➤ Further opportunity to sketch ➤ Further opportunity to use Solidworks to 	<p><u>Electronics Module 1</u></p> <ul style="list-style-type: none"> ➤ Knowledge of programming ➤ Wider understanding of components and circuits symbols ➤ Designing within a context, to include sketching and CAD 	<p><u>Vase Project</u></p> <ul style="list-style-type: none"> ➤ Non-Verbal Skills ➤ Translating 2D to 3D images ➤ Sketching ➤ Knowledge of design movements/existing products 	<p><u>Lamination Project</u></p> <ul style="list-style-type: none"> ➤ Use of templates ➤ Knowledge of the make-up of a lamination ➤ Use of forms during lamination ➤ Consolidation of workshop practices 	<p><u>Electronics Module 2</u></p> <ul style="list-style-type: none"> ➤ Research into tools and equipment associated with PCB production ➤ Component identification ➤ Designing using 2D Design ➤ Isometric sketching 	<p><u>Presentation Module</u></p> <ul style="list-style-type: none"> ➤ Sketching and rendering techniques: to include: perspective, isometric and oblique sketching ➤ Development and enrichment of designs using Solidworks 	

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<p>produce a developed outcome</p> <ul style="list-style-type: none"> ➤ Use of traditional methods to create a prototype to inform a final design ➤ Casting process in school ➤ Finishing of metals <p><u>Vase Project</u></p> <ul style="list-style-type: none"> ➤ Non-Verbal Skills ➤ Translating 2D to 3D images ➤ Sketching ➤ Knowledge of design movements/existing products ➤ Use of tools and equipment to create 3D iterations of designs <p><u>Electronics Module 1</u></p> <ul style="list-style-type: none"> ➤ Knowledge of programming ➤ Wider understanding of components and circuits symbols ➤ Designing within a context, to include sketching and CAD 	<p><u>Pendant</u></p> <ul style="list-style-type: none"> ➤ Metal classification, identification and associated processes ➤ Further opportunity to sketch ➤ Further opportunity to use Solidworks to produce a developed outcome ➤ Use of traditional methods to create a prototype to inform a final design ➤ Casting process in school ➤ Finishing of metals <p><u>Vase Project</u></p> <ul style="list-style-type: none"> ➤ Non-Verbal Skills ➤ Translating 2D to 3D images ➤ Sketching ➤ Knowledge of design movements/existing products ➤ Use of tools and equipment to create 3D iterations of designs 	<ul style="list-style-type: none"> ➤ Use of tools and equipment to create 3D iterations of designs <p><u>Electronics Module 1</u></p> <ul style="list-style-type: none"> ➤ Knowledge of programming ➤ Wider understanding of components and circuits symbols ➤ Designing within a context, to include sketching and CAD <p><u>Pendant</u></p> <ul style="list-style-type: none"> ➤ Metal classification, identification and associated processes ➤ Further opportunity to sketch ➤ Further opportunity to use Solidworks to produce a developed outcome ➤ Use of traditional methods to create a prototype to inform a final design 	<ul style="list-style-type: none"> ➤ Use of tools and equipment ➤ Finishing of timber <p><u>Presentation Module</u></p> <ul style="list-style-type: none"> ➤ Sketching and rendering techniques: to include: perspective, isometric and oblique sketching ➤ Development and enrichment of designs using Solidworks ➤ Translation of views from Solidworks into 2D Design ➤ Presentation of designs to class <p><u>Electronics Module 2</u></p> <ul style="list-style-type: none"> ➤ Research into tools and equipment associated with PCB production ➤ Component identification ➤ Designing using 2D Design ➤ Isometric sketching ➤ Soldering ➤ Programming of a PCB 	<ul style="list-style-type: none"> ➤ Soldering ➤ Programming of a PCB <p><u>Lamination Project</u></p> <ul style="list-style-type: none"> ➤ Use of templates ➤ Knowledge of the make-up of a lamination ➤ Use of forms during lamination ➤ Consolidation of workshop practices ➤ Use of tools and equipment ➤ Finishing of timber <p><u>Presentation Module</u></p> <ul style="list-style-type: none"> ➤ Sketching and rendering techniques: to include: perspective, isometric and oblique sketching ➤ Development and enrichment of designs using Solidworks ➤ Translation of views from Solidworks into 2D Design ➤ Presentation of designs to class 	<ul style="list-style-type: none"> ➤ Translation of views from Solidworks into 2D Design ➤ Presentation of designs to class <p><u>Electronics Module 2</u></p> <ul style="list-style-type: none"> ➤ Research into tools and equipment associated with PCB production ➤ Component identification ➤ Designing using 2D Design ➤ Isometric sketching ➤ Soldering ➤ Programming of a PCB <p><u>Lamination Project</u></p> <ul style="list-style-type: none"> ➤ Use of templates ➤ Knowledge of the make-up of a lamination ➤ Use of forms during lamination ➤ Consolidation of workshop practices ➤ Use of tools and equipment ➤ Finishing of timber
<p>Assessment</p>		<p>Assessment</p>		<p>Assessment</p>	

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	<p>Assessment using the Assessment Sticker Review of any practical outcomes</p>	<p>Assessment using the Assessment Sticker Review of any practical outcomes</p> <p style="text-align: center;">*****</p> <hr/> <p>Year 8 Socratic Interim Assessment at the beginning of Spring 4</p> <p>Lamination practical Outcome</p> <p>Presentation Module Q&A session – Peer Feedback - AFL</p> <p>Electronics Module 2 use of Assessment sticker Electronics Module 2 practical outcome</p>	<p>End of Year 8 Examination Assessment using the Assessment Sticker Review of any practical outcomes</p> <p style="text-align: center;">*****</p> <hr/> <p>Year 8 Socratic Interim Assessment at the beginning of Spring 4</p> <p>Lamination practical Outcome</p> <p>Presentation Module Q&A session – Peer Feedback - AFL</p> <p>Electronics Module 2 use of Assessment sticker Electronics Module 2 practical outcome</p>			
Year 9	<p>Mood lighting</p> <ul style="list-style-type: none"> ➤ Manipulation of images in 2D Design into workable format using the laser cutter ➤ Modelling of design intentions in card ➤ Laminating of timber ➤ Material manipulation ➤ Finishing Techniques <p>Architectural Design – Outdoor Designs</p> <ul style="list-style-type: none"> ➤ 2D planning layouts ➤ 3D sketching using perspective ➤ Architectural design considerations ➤ Use of 3D CAD to produce a developed outcome <p>Handwashing timer</p> <ul style="list-style-type: none"> ➤ Investigating context of hand washing and coronavirus 	<p>Handwashing timer</p> <ul style="list-style-type: none"> ➤ Investigating context of hand washing and coronavirus ➤ Investigating motors ➤ Concept designing ➤ Practical assembly of an advanced circuit ➤ Evaluation / Testing – Practical tests are recorded. <p>Mood lighting</p> <ul style="list-style-type: none"> ➤ Manipulation of images in 2D Design into workable format using the laser cutter ➤ Modelling of design intentions in card ➤ Laminating of timber ➤ Material manipulation ➤ Finishing Techniques <p>Architectural Design – Outdoor Designs</p> <ul style="list-style-type: none"> ➤ 2D planning layouts 	<p>Architectural Design – Outdoor Designs</p> <ul style="list-style-type: none"> ➤ 2D planning layouts ➤ 3D sketching using perspective ➤ Architectural design considerations ➤ Use of 3D CAD to produce a developed outcome <p>Handwashing timer</p> <ul style="list-style-type: none"> ➤ Investigating context of hand washing and coronavirus ➤ Investigating motors ➤ Concept designing ➤ Practical assembly of an advanced circuit ➤ Evaluation / Testing – Practical tests are recorded. <p>Mood lighting</p> <ul style="list-style-type: none"> ➤ Manipulation of images in 2D Design into 	<p>Product Design and Investigation</p> <ul style="list-style-type: none"> ➤ Looking at products and investigating materials, form & Function ➤ 2D & 3D Sketches looking at simplifying and developing presentation skills ➤ Cross section diagrams to look at product assembly/disassembly ➤ Design of a Concept product ➤ Use of CAD to model a concept product ➤ (Lockdown Variation) To model or sculpt from materials available at home <p>Electronic Dice</p> <ul style="list-style-type: none"> ➤ Research context of board games. ➤ Research ‘EVIL CRAB’. ➤ Concept designing and generating aesthetic 	<p>Product Design and Investigation</p> <ul style="list-style-type: none"> ➤ Looking at products and investigating materials, form & Function ➤ 2D & 3D Sketches looking at simplifying and developing presentation skills ➤ Cross section diagrams to look at product assembly/disassembly ➤ Design of a Concept product ➤ Use of CAD to model a concept product ➤ (Lockdown Variation) To model or sculpt from materials available at home <p>Electronic Dice</p> <ul style="list-style-type: none"> ➤ Research context of board games. ➤ Research ‘EVIL CRAB’. ➤ Concept designing and generating aesthetic 	<p>Product Design and Investigation</p> <ul style="list-style-type: none"> ➤ Looking at products and investigating materials, form & Function ➤ 2D & 3D Sketches looking at simplifying and developing presentation skills ➤ Cross section diagrams to look at product assembly/disassembly ➤ Design of a Concept product ➤ Use of CAD to model a concept product ➤ (Lockdown Variation) To model or sculpt from materials available at home <p>Electronic Dice</p> <ul style="list-style-type: none"> ➤ Research context of board games. ➤ Research ‘EVIL CRAB’. ➤ Concept designing and generating aesthetic

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	<ul style="list-style-type: none"> ➤ Concept designing ➤ Practical assembly of an advanced circuit ➤ Evaluation / Testing – Practical tests are recorded. 	<ul style="list-style-type: none"> ➤ 3D sketching using perspective ➤ Architectural design considerations ➤ Use of 3D CAD to produce a developed outcome 	<p>workable format using the laser cutter</p> <ul style="list-style-type: none"> ➤ Modelling of design intentions in card ➤ Laminating of timber ➤ Material manipulation ➤ Finishing Techniques 	<p>features for manufacture.</p> <ul style="list-style-type: none"> ➤ Practical assembly of an advanced circuit. ➤ Practical demonstration of vacuum forming. ➤ Evaluation / Testing. <p>Mechanisms/Movement</p> <ul style="list-style-type: none"> ➤ Identification of the 4 types of movement. Sketched examples. Real world examples. ➤ Classification of Levers Sketched examples. Real world examples. ➤ Identification of simple Cams and Followers. Real world examples. ➤ Sketches of movement. ➤ Simple models of movement. Effort, Load, Fulcrum, Pivot points. ➤ Design/manufacture (depending on covid restrictions) of a simple Automata. 	<p>features for manufacture.</p> <ul style="list-style-type: none"> ➤ Practical assembly of an advanced circuit. ➤ Practical demonstration of vacuum forming. ➤ Evaluation / Testing. <p>Mechanisms/Movement</p> <ul style="list-style-type: none"> ➤ Identification of the 4 types of movement. Sketched examples. Real world examples. ➤ Classification of Levers Sketched examples. Real world examples. ➤ Identification of simple Cams and Followers. Real world examples. ➤ Sketches of movement. ➤ Simple models of movement. Effort, Load, Fulcrum, Pivot points. ➤ Design/manufacture (depending on covid restrictions) of a simple Automata. 	<p>features for manufacture.</p> <ul style="list-style-type: none"> ➤ Practical assembly of an advanced circuit. ➤ Practical demonstration of vacuum forming. ➤ Evaluation / Testing. <p>Mechanisms/Movement</p> <ul style="list-style-type: none"> ➤ Identification of the 4 types of movement. Sketched examples. Real world examples. ➤ Classification of Levers Sketched examples. Real world examples. ➤ Identification of simple Cams and Followers. Real world examples. ➤ Sketches of movement. ➤ Simple models of movement. Effort, Load, Fulcrum, Pivot points. ➤ Design/manufacture (depending on covid restrictions) of a simple Automata.
	<p>Assessment</p> <p>AFL Verbal Continuous Students as teachers Assessment Stickers</p>		<p>Assessment</p> <p>AFL Verbal Continuous Students as teachers Assessment Stickers Year 9 Examination</p>		<p>Assessment</p> <p>AFL Verbal Continuous Students as teachers</p>	

Additional explanation if required.