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	**Boat Project** ➢ Correctly use marking out tools. ➢ Correct wasting of materials using hand tools, the pillar drill and belt linisher. ➢ Finishing techniques of a piece of timber. ➢ Sketching with the isometric method of sketching. ➢ Correct selection of tools and equipment for the correct purpose. **Clock Design** ➢ Sketching in 1 point and 2-point perspective ➢ 3D Isometric representation of designs ➢ CAD – Solidworks ➢ Use of scissors to produce templates for their clocks **Electronics Module 1** ➢ 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	**Electronics Module 1** ➢ 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 **Boat Project** ➢ Correctly use marking out tools. ➢ Correct wasting of materials using hand tools, the pillar drill and belt linisher. ➢ Finishing techniques of a piece of timber. ➢ Sketching with the isometric method of sketching. ➢ Correct selection of tools and equipment for the correct purpose.	**Clock Design** ➢ Sketching in 1 point and 2-point perspective ➢ 3D Isometric representation of designs ➢ CAD – Solidworks ➢ Use of scissors to produce templates for their clocks **Electronics Module 1** ➢ 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 **Boat Project** ➢ Correctly use marking out tools. ➢ Correct wasting of materials using hand	**USB** ➢ 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 **Clock Manufacture** ➢ 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 **Electronics Module 2** ➢ Tools and equipment familiarisation ➢ Different types of solder joints ➢ Correct soldering techniques ➢ Develop a wider understanding of electronic production	**Electronics Module 2** ➢ Tools and equipment familiarisation ➢ Different types of solder joints ➢ Correct soldering techniques ➢ Develop a wider understanding of electronic production **USB** ➢ 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 **Clock Manufacture** ➢ 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	**Clock Manufacture** ➢ 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 **Electronics Module 2** ➢ Tools and equipment familiarisation ➢ Different types of solder joints ➢ Correct soldering techniques ➢ Develop a wider understanding of electronic production **USB** ➢ 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

	➢ 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	**<u>Clock Design</u>** ➢ Sketching in 1 point and 2-point perspective ➢ 3D Isometric representation of designs ➢ CAD – Solidworks ➢ Use of scissors to produce templates for their clocks	tools, the pillar drill and belt linisher. ➢ Finishing techniques of a piece of timber. ➢ Sketching with the isometric method of sketching. ➢ Correct selection of tools and equipment for the correct purpose.			
	Assessment **Assessment using the Assessment Sticker** **Review of any practical outcomes**		**Assessment** **Assessment using the Assessment Sticker** **Review of any practical outcomes** ** **Year 7 Socrative Interim Assessment at the beginning of Spring 4** **USB use of Assessment sticker** **USB practical outcome** **Clock Manufacture practical Outcome** **Electronics Module 2 use of Assessment sticker** **Electronics Module 2 practical outcome**		**Assessment** **End of Year Examination in Summer 6** **USB use of Assessment sticker** **USB practical outcome** **Clock Manufacture practical Outcome** **Electronics Module 2 use of Assessment sticker** **Electronics Module 2 practical outcome**	
Year 8	**<u>Pendant</u>** ➢ Metal classification, identification and associated processes ➢ Further opportunity to sketch ➢ Further opportunity to use Solidworks to	**<u>Electronics Module 1</u>** ➢ Knowledge of programming ➢ Wider understanding of components and circuits symbols ➢ Designing within a context, to include sketching and CAD	**<u>Vase Project</u>** ➢ Non-Verbal Skills ➢ Translating 2D to 3D images ➢ Sketching ➢ Knowledge of design movements/existing products	**<u>Lamination Project</u>** ➢ Use of templates ➢ Knowledge of the make-up of a lamination ➢ Use of forms during lamination ➢ Consolidation of workshop practices	**<u>Electronics Module 2</u>** ➢ Research into tools and equipment associated with PCB production ➢ Component identification ➢ Designing using 2D Design ➢ Isometric sketching	**<u>Presentation Module</u>** ➢ Sketching and rendering techniques: to include: perspective, isometric and oblique sketching ➢ Development and enrichment of designs using Solidworks

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	produce a developed outcome ➢ Use of traditional methods to create a prototype to inform a final design ➢ Casting process in school ➢ Finishing of metals **Vase Project** ➢ 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 **Electronics Module 1** ➢ Knowledge of programming ➢ Wider understanding of components and circuits symbols ➢ Designing within a context, to include sketching and CAD	**Pendant** ➢ 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 **Vase Project** ➢ 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	➢ Use of tools and equipment to create 3D iterations of designs **Electronics Module 1** ➢ Knowledge of programming ➢ Wider understanding of components and circuits symbols ➢ Designing within a context, to include sketching and CAD **Pendant** ➢ 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	➢ Use of tools and equipment ➢ Finishing of timber **Presentation Module** ➢ 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 **Electronics Module 2** ➢ Research into tools and equipment associated with PCB production ➢ Component identification ➢ Designing using 2D Design ➢ Isometric sketching ➢ Soldering ➢ Programming of a PCB	➢ Soldering ➢ Programming of a PCB **Lamination Project** ➢ 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 **Presentation Module** ➢ 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	➢ Translation of views from Solidworks into 2D Design ➢ Presentation of designs to class **Electronics Module 2** ➢ Research into tools and equipment associated with PCB production ➢ Component identification ➢ Designing using 2D Design ➢ Isometric sketching ➢ Soldering ➢ Programming of a PCB **Lamination Project** ➢ 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
	Assessment		**Assessment**		**Assessment**	

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	Assessment using the Assessment Sticker **Review of any practical outcomes**		**Assessment using the Assessment Sticker** **Review of any practical outcomes** ** **Year 8 Socrative Interim Assessment at the beginning of Spring 4** **Lamination practical Outcome** **Presentation Module Q&A session – Peer Feedback - AFL** **Electronics Module 2 use of Assessment sticker** **Electronics Module 2 practical outcome**		**End of Year 8 Examination** **Assessment using the Assessment Sticker** **Review of any practical outcomes** ** **Year 8 Socrative Interim Assessment at the beginning of Spring 4** **Lamination practical Outcome** **Presentation Module Q&A session – Peer Feedback - AFL** **Electronics Module 2 use of Assessment sticker** **Electronics Module 2 practical outcome**	
Year 9	**Mood lighting** ➢ 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 **Architectural Design – Outdoor Designs** ➢ 2D planning layouts ➢ 3D sketching using perspective ➢ Architectural design considerations ➢ Use of 3D CAD to produce a developed outcome **Handwashing timer** ➢ Investigating context of hand washing and coronavirus ➢ Investigating motors	**Handwashing timer** ➢ Investigating context of hand washing and coronavirus ➢ Investigating motors ➢ Concept designing ➢ Practical assembly of an advanced circuit ➢ Evaluation / Testing – Practical tests are recorded. **Mood lighting** ➢ 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 **Architectural Design – Outdoor Designs** ➢ 2D planning layouts	**Architectural Design – Outdoor Designs** ➢ 2D planning layouts ➢ 3D sketching using perspective ➢ Architectural design considerations ➢ Use of 3D CAD to produce a developed outcome **Handwashing timer** ➢ Investigating context of hand washing and coronavirus ➢ Investigating motors ➢ Concept designing ➢ Practical assembly of an advanced circuit ➢ Evaluation / Testing – Practical tests are recorded. **Mood lighting** ➢ Manipulation of images in 2D Design into	**tbc**	**tbc**	**tbc**

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	➢ Concept designing ➢ Practical assembly of an advanced circuit ➢ Evaluation / Testing – Practical tests are recorded.	➢ 3D sketching using perspective ➢ Architectural design considerations ➢ Use of 3D CAD to produce a developed outcome	workable format using the laser cutter ➢ Modelling of design intentions in card ➢ Laminating of timber ➢ Material manipulation ➢ Finishing Techniques			
	Assessment **AFL** **Verbal** **Continuous** **Students as teachers** **Assessment Stickers**		**Assessment** **AFL** **Verbal** **Continuous** **Students as teachers** **Assessment Stickers** **Year 9 Examination**		**Assessment** **AFL** **Verbal** **Continuous** **Students as teachers**	