Stage 3 Subject Timeline Year 7 and 8
Subject: Design and Technology

Year 7 – 10 week rotation (2022 – 2023)		
Weeks 1 - 2	**Weeks 3-4**	**Weeks 5 – 6**
Key concept/Skill	**Key concept/Skill**	**Key concept/Skill**
To create a design brief and design specification Students will recognise and use the 5 key stages of design to create user centred designed products which solve a variety of problems. Students will recognise the importance of ergonomics and aesthetics when designing products.	Students will develop their ability to comprehend and represent their ideas in both a creative and logical format in a way that is comfortable to them. Students will develop their understanding of modern materials and their working properties and identify how this must be considered in the deigning of their project. Students will learn to use a variety of fundamental sketching techniques and comprehend what is meant by the term Universal language.	Students will create their final deigns for their products that work to solve their individual problems. They will work with their peers to create more complete finalised solutions. Students will begin processing their products through cutting material using a variety tools and machines such as chisels, tenon saw, coping saw, pillar drill and scroll saw.
End Point	End Point	End Point
Students will have created a variety of design aids such as mind maps and mood boards using PowerPoint and other CAD softwares to help in design ideation. Students will have created a specification for their product they intend on creating that will solve a problem that is relevant to them.	Students will have created a variety of sketches that utilises fundamental sketching techniques which also provides a challenge to each of the individuals skills. Students will work in teams to conduct a variety of experiments that test the properties of a variety of materials in order to understand their uses in the modern design world.	Students will have used aforementioned sketching techniques and feedback from their peers to create a their fully realised product. To be able to accurately cut materials to create the individual parts for their products using the scroll saw and coping saw.

Use of Technology Cultural Capital Inclusiveness Diversity

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Assessment	Assessment	Assessment
Formative assessment Summative assessment Verbal feedback	Formative assessment Summative assessment Verbal feedback	Formative assessment Summative assessment Verbal feedback
Year 7 – 10 week rotation (2022 – 2023)		
Weeks 7-10		
Key concept/Skill		
Students will assemble their products using a variety different adhesive. They will then apply a finish to improve on working properties and aesthetics. Students will conduct a self-evaluation of their product outlining what they did well and what they could improve on in future.		
End Point		
Students will have created a project which they will have evaluated.		
Assessment		
Formative assessment Summative assessment Verbal feedback		

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Year 8 – 10 week rotation (2022 – 2023)		
Weeks 1 - 2	**Weeks 3-4**	**Weeks 5 – 6**
Key concept/Skill	**Key concept/Skill**	**Key concept/Skill**
To identify the key areas that influence the speed of a race car going around a track as well as the cultural impact motorsport racing has had on society since its early iterations, which they will display in a visual format using a graphical aid such as canva. Create Onhsape accounts and follow along the beginner tutorial on how to use the basic tools of Onshape such as sketch, extrude, cut, fillet	Students will analyse the 3 types of cars that they have available to them. They will work in pairs to discuss which one of the 3 will be fastest and why. They will create an orthographic drawing of the slot car they wish to create. Students will use the aid of the teacher provided tutorials to complete the Onshape model of their chosen car. Once completed they will save as a STL file and print their car bodies	Students will assemble their final car, connecting the chassis to their printed car body. They will then test their car by racing it around the track in a tournament against the teachers designed car. Students will record and document their results and times. Students will discuss as a class why certain cars were better than others through analysing any errors in the car design or printing. Students will then go back and suggest how they can modify their car and improve it for another race.
End Point	End Point	End Point
Students will have created a design sheet discussing the factors that influence the speed and performance of a race car. Students will have completed a tutorial on the use of basic Onshape tools and commands building their confidence in using thesoftware.	Students will have analysed and evaluated the different designs available to them and justified why they chose their specific car. Students will have created the Onshape model and printed the final physical model of their slot car.	Students will have conducted tests of the performance of their cars against the teachers lap car. They will have recorded their results.
Assessment	Assessment	Assessment

Use of Technology Cultural Capital Inclusiveness Diversity

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Formative assessment Summative assessment Verbal feedback	Formative assessment Summative assessment Verbal feedback	Formative assessment Summative assessment Verbal feedback
Year 8 – 10 week rotation (2022 – 2023)		
Weeks 7-10		
Key concept/Skill		
Students will use their new knowledge of On shape with aid from the teacher will modify their models of the cars to improve their performance. Resources will be available to the students to help with this however, if students are comfortable in their ability they can continue to design their own car body or modifications. Students will reprint their modified cars and will race them again around the track and document whether or not the modifications made any improvements to the overall performance.		
End Point		
Students will have created a project which they will have evaluated.		
Assessment		
Formative assessment Summative assessment Verbal feedback		

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