D&T YEAR PLANNER (LTP) – YEAR 9

The students will rotate through three modules this year, one per term. Students will study a range of the Learning Content below.

Module title Sept-Feb and Feb-July	Learning content/skills	Assessment Schedule*	Home Learning Support (How students can extend learning in addition to homework)
Catapult Project	**Context – Manufacture parts and assemble the components of a catapult** The Catapult project gives students the opportunity to build on previous skills and knowledge learnt in Y7/8. Students are required to produced parts for a catapult and construct these parts correctly. The project uses predominantly metals, such as mild steel and aluminium. Students are challenged to work to great accuracy at minute tolerances. The project develops students marking out, machining, shaping and finishing skills. Mathematics plays a key part in the marking out and shaping materials and students are challenged to work independently where possible to develop their confidence within the workshops. Testing and Evaluation play a key role in allowing students to self-reflect. Students are tested on their theory knowledge, which includes topics: materials, tools, machine processes, forms of motion, forces and moments.	Formative - Assessment of classwork and homework tasks will be at least once every two weeks. These tasks will be marked on the 0-9 grading system. Students will be awarded a sticker on their front cover if they meet their module target for a particular area of study. This will demonstrate progress since their last module. Reflection time will be given for students to work on their targets which will allow for an improvement in their grades on work which has already been marked. An overall summative assessment will take place at the end of the module (end of term). This will be graded 0-9.	Investigate topics which are discussed in class in further depth. In particular, the properties of materials and how their production, use and disposal can affect planet earth. Investigate different sectors within Engineering so that you are able to understand vast scope of job roles for an engineer. Research examples of forces in action, such as: bending, tension, compression, torsion and shearing.

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Gadget Tidy Project	**Context – Design and manufacture a gadget tidy using a range of materials.** Students will be introduced to the skills of woodturning and brazing during this module. The outcome is mostly a focussed task but allows for some creativity where students can add in their own design features and decide upon sizing. A range of materials will be used which allows for a wide variety of tools and equipment, and various finishing techniques to be applied. Students will also apply a range of drawing skills from exploded views to 3rd Angle Orthographic Projection. Applied Maths will be incorporated as the students are asked to work out calculations such as length, width, circumference, diameter, surface area and volume. Knowledge will be tested at the start of the module and then again at the end to show progress in learning during this project.	Formative - Assessment of classwork and homework tasks will be at least once every two weeks. These tasks will be marked on the 0-9 grading system. Students will be awarded a sticker on their front cover if they meet their module target for a particular area of study. This will demonstrate progress since their last module. Reflection time will be given for students to work on their targets which will allow for an improvement in their grades on work which has already been marked. An overall summative assessment will take place at the end of the module (end of term). This will be graded 0-9. Students will sit a test at the start and end of this module which will help show progress in their knowledge.	Investigate how products at home, which are used for storage, have been made, and what type of materials have been used and how they have been finished, e.g. paint, varnish. Practise drawing in 3D (isometric) and applying tone using coloured pencils. These can be any objects at home which are made from wood/meta/plastic. This will aid in the communications skills required in the folder work. Read over the class theory work on a regular basis. This will help students to develop their knowledge for the assessment at the end of the module.
Studio Book Promotion	**Context - Design and create promotional material for a popular book.** Students will choose a book and consider how this can be successfully promoted in a book store. Tasks will include a book cover illustration, book jacket design, a display	Formative - Assessment of classwork and homework tasks will be at least once every two weeks. These tasks will be marked on the 0-9 grading system.	Investigate topics which are discussed in class in further depth. In particular the promotion and advertisement of products and the moral and social issues related to this.

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	stand and a promotional gift. A prototype for each product will be created exploring a variety of materials. Research will include existing products for both illustration and eye-catching promotional material. The students will use craft knives, glue guns, sewing machines and the heat transfer press in practical work; appropriate health and safety issues will be discussed and demonstrated. Applied Maths: Accurate measuring, conversion of measurements, use of nets to create 3d shapes	Students will be awarded a sticker on their front cover if they meet their module target for a particular area of study. This will demonstrate progress since their last module. Reflection time will be given for students to work on their targets which will allow for an improvement in their grades on work which has already been marked. An overall summative assessment will take place at the end of the module (end of term). This will be graded 0-9.	Practise rendering techniques appropriate for illustration including; pencil crayon, watercolour and gouache paint.
Graphic Design for a Mug (Adobe Photoshop) **Make a design for a Clock (2D Design)** **Design a Camera (Space Claim)** **Skills in producing a range of different graphs (Excel) and complex 'nesting' (2D Design)**	**Context - Design and make a graphic for a Cup, Clock, Camera and different types of graphs and complex 'nesting'** Students will learn a more in depth range of tools using a number of different CAD software packages, including the display of data in numerous graphical forms, and more detail in avoiding wastage of material. Students will also complete, different types of research to support their clock design. Students will at first learn further tools, building on the skills in Year 7/8, required in order to understand the different software and its uses. The output will be written, via a printer or via a Laser Cutter. Lessons, when appropriate will be split into theory, reflection, Mathematics, acquiring software knowledge and practical use of software.	Formative - Assessment of class work and homework tasks will be at least once every two weeks. These tasks will be marked on the 0-9 grading system. Students will be awarded a sticker on their front cover if they meet their module target for a particular area of study. This will demonstrate progress since their last module. Reflection time will be given for students to work on their targets which will allow for an improvement	Practise the use of the type of software being used at the appropriate times in the module. Look at further types of Research beyond that given for homework. Practise drawing on 2D Design and for homework adding good quality tonal shading with coloured pencils. Look up the different types of jobs that require skills in relation to CADCAM.

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	Assessments in each piece of software used will be carried out along with a summative assessment.	in their grades on work which has already been marked. An overall summative assessment will take place at the end of the module (end of term). This will be graded 0-9.	
Cooking & Nutrition: Special diets & food choices **Project 1**	**Project 1 Special Diets & Food choices** **Context :** Students will learn about Special diets and the nutritional needs of a range of target groups. This will be demonstrated through a series of trialling, making and evaluating a variety of modified products that suit a specific target group. Students will also learn about factors that affect people's choice of food and the functional, chemical and nutritional properties of ingredients. Project 1 concentrates on special dietary requirements and how they may vary, depending upon: age, gender, activity, medical conditions and ethical beliefs. Diets to be covered: ➢ Vegetarian/vegan ➢ Coeliac disease ➢ Living with heart disease ➢ Pregnancy ➢ Calorie controlled diet ➢ Diabetic	Formative - Assessment of class work and homework tasks will be at least once every two weeks. These tasks will be marked against the new GCSE 9-1 grading system. Summative assessment will take place every six weeks based on the theory work that has been taught. All practical work will be assessment and marked against the new GCSE 9-1 grading system.	Weekly homework tasks: ➢ Food price & food choice ➢ Factors affecting diet ➢ Case studies – factors affecting our food choice ➢ Definitions key words 1 ➢ Food portion awareness ➢ Definitions key words 2 ➢ Research task 1 ➢ AQA past paper – consumer profile ➢ AQA past paper – traffic light system ➢ Signs and symbols

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Cooking & Nutrition: Best of British & Multicultural cuisine **Project 2**	**Best of British & Multicultural cuisine** **Context:** This work will give students the knowledge of where their food originates from and the benefits of seasonality. Students will then focus on the diets of people living in different parts of the world. The project intends to give students an understanding of how geographical factors may impact on diet. Topics to be covered: **Best of British:** ➢ Use of seasonal ingredients ➢ Sustainable fishing and farming ➢ Reducing food miles and transportation ➢ Organic foods ➢ Importance of buying locally sourced foods ➢ The issues linked to food waste ➢ Farm assured schemes ➢ The environmental issues linked to packaging of foods. ➢ Food provenance – where does our food come from? **Multicultural cuisine:** a flavour of Asia: ➢ Appreciate how different cultures/cuisines influences the food available all over the world ➢ Respect diversity of cultural values and beliefs.	Reflection time will be given for students to work on their targets which will allow for an improvement in their grades on work which has already been marked. An overall summative assessment will take place at the end of the module (end of term). This will be graded based on the new GCSE 9-1 system.	Weekly homework tasks: ➢ Religion and food choice ➢ Diet related disorders ➢ Definition key words 3 ➢ Research task 2 ➢ Research for festivals and sports events

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Graphics / Studio **"Rollercoasters"**	**Context – Learn, understand and demonstrate the ability to design and produce a prototype model of a rollercoaster along with track design and presentation board.** Students will investigate existing designs and structures, as well as understand the purpose and value of product research in materials and manufacturing methods. This knowledge will allow for transference to other D&T subject areas. They will also use various graphic equipment and drawing aids to independently produce and present a series of different solutions/technical drawings. Maths skills will also feature in understanding surface development work and dimensioning. Science skills will see students focus on the impact of aerodynamics and how this effects their design solution. Modelling skills also feature in this project and see students research both paper and plastic materials, understand their make up and properties to allow for selection later in the project. Alongside this they will develop their subject knowledge learning key words and terminology and demonstrate the ability to use them in context correctly. *Tasks include: Colour theory and typography, existing product investigation/analysis, materials research – both paper and plastic based, design & development work inc. modelling, the use and application of CAD CAM methods, 3D isometric drawing, surface development work inc. maths based tasks and the science based understanding of aerodynamics.*	Formative - Assessment of classwork and homework tasks will be at least once every two weeks. These tasks will be marked on the 0-9 grading system. Students will be awarded a sticker on their front cover if they meet their module target for a particular area of study. This will demonstrate progress since their last module. Reflection time will be given for students to work on their targets which will allow for an improvement in their grades on work which has already been marked. An overall summative assessment will take place at the end of the module (end of term). This will be graded 0-9.	Topics studied in class will require further learning, research and completion at home. It will also be expected that students independently develop their own learning by increasing their knowledge and understanding of keywords/terminology. Various tasks will be set in order to achieve this aspect of the module. These tasks will link to classwork and be appropriate to work being covered in lesson. It is the intention that students will increase their understanding of paper based and plastic materials, know the process of selection and understand key properties of them. A maths based input is also crucial in order for the success of aspects of the project. A science based input allows for the application of aerodynamics and understanding how this can effect a design proposal. Students will be set various independent home learning tasks to research, investigate and build on knowledge to apply to lesson structure.

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Textile storage hanging	**Context - Design and make a textile storage hanging to meet a chosen theme.** Students will research and analyse pre-existing storage hangings to help support and develop their chosen theme. Students will produce a moodboard in order to develop and refine the imagery and colour palettes they would like to use within their work. Students will also research a number of different textile artists/designers to support their wider critical and contextual knowledge of the subject. Research will also include investigations into the ethical, social, cultural and moral implications of textile production. Design work will require students to produce a range of annotated design ideas for their textile hanging. Practical work will incorporate health and safety issues when working with textile equipment. The students will incorporate a range of techniques into their work, such as heat transfer printing, strip and sew couching and tie-dye. Students will also refine skills in hand embroidery and bonded appliqué. Students will use sewing machines in the construction of their product.	Formative - Assessment of classwork and homework tasks will be at least once every two weeks. These tasks will be marked on the 0-9 grading system. Work will be assessed through teacher assessment, peer assessment and self-assessment. Students will be awarded a sticker on their front cover if they meet their module target for a particular area of study. This will demonstrate progress since their last module. Reflection time will be given for students to work on their targets which will allow for an improvement in their grades on work which has already been marked. An overall summative assessment will take place at the end of the module (end of term). This will be graded 0-9.	Research a range of existing products to inspire design and decoration choices. Use websites such as Pinterest to research contemporary design ideas and trends. Practise hand embroidery skills to develop a skilful application of stitches. Use YouTube tutorials to extend your knowledge of textile processes and to learn techniques independently. If available, practise threading up and using a sewing machine.