SUNNYDOWN SCHOOL

DT CURRICULUM PLAN

Subject	**DT**	**Year group**	**Y7**
Subject Intent	At the start of year 7 students are introduced to the subject at Sunnydown with little to no experience of DT from primary schools. The first few weeks are based around understanding the layout of the room, what personal safety equipment students are required to wear during practical work, health and safety and tutorials on the main tools and machines in the workshop. Each student is given a Health and Safety passport where they can record what they have used and be signed off by a member of staff when they have demonstrated safe practice independently. Students are introduced to a selection of materials and develop their practical skills using plastics and woods. Through a variety of inclusive, creative and practical projects in year 7, students are taught the knowledge, understanding and skills needed to engage in the design and making process, as well as developing evaluative and reflective qualities. By the end of Year 7 students will have gained experience in a number of different material areas, tools and machines.		

Term	Topic	Core learning	Key concepts	Sequencing
Autumn 1	Health and safety. Baseline. Acrylic keyrings	**Technical knowledge:** Names of tools and machines. Safety in the workshop. Name one wood (MDF) and one plastic (Acrylic) **Design:** Being able to create a simple design on paper. **Making:** Safe use of three main machines (belt sander, pillar drill, scroll saw)	• MDF • Acrylic • Design • Specific material • Health and safety • Pillar drill • Belt Sander • Scroll saw	**Building on…..** Students have varied and some limited experience of D&T as a subject from Primary school but will have engaged in making and craft work typically in a cross-curricular nature. We start by developing a knowledge of the scope of D&T and its disciplines. We build on skills students have gained from other areas of the curriculum such as drawing in art and measuring in maths. **Building towards…** Students building confidence in the workshop with a good understanding of health and safety and

		Evaluate: Photograph and describe a finished product using Google docs.		risk. Independence with practical work and evidencing in google docs.
Autumn 2	Acrylic picture frames. Pine bird feeders.	**Technical knowledge:** Specific plastics and where they come from. Sustainability of plastics. Understanding properties of acrylic and pine. **Design:** Creating a design with coloured detail. Measurements (mm) **Make:** Use of plastic adhesives. Detailed use of three drills. (hand drill, pillar drill, bit and brace) **Evaluate:** List tools and materials used. Look for possible improvements.	• Acrylic • Plastic weld • Source of material • Strip heater • Polisher • Pillar drill • Electric hand drill • Bit and brace • Pine • Sustainability	**Building on…..** Introduction work with acrylic in Autumn 1. Students are encouraged to look more in depth into materials and consider their source. This half term continues to develop confidence using machines with a targeted focus on drills. Simple designs from Autumn 1 are now encouraged to include colour and more detail. Pine introduced to expand students experience of different materials. **Building towards…** Students develop fine motor skills by creating plastic components for picture frames. Increased fine motor skills helps students' practical abilities across the disciplines in DT, so aids progress in later projects. Students gain a base knowledge of plastics and polymers which will build towards an understanding of environmental impact of materials.
Spring 1	Lap jointed bookends	**Technical knowledge:** Timber and Woods Safety in the workshop. Wood joints **Design:** Creating a selection of designs Isometric drawing, CAD: introduction to Sketchup **Make:**	• Timber • Hardwoods • Softwoods • Lap joint • Tenon saw • Coping saw • File • Chisel • Pillar drill • Belt sander • Isometric	**Building on…..** Design work from Autumn 1 and 2 expanded to include two different designs so that students can evaluate and pick a design to take forward. Students will develop their descriptive skills by explaining the making process and be able to peer assess each other's work in a constructive way. **Building towards…** This project gives students the experience of working in the workshop independently. They gain

		Hand tools for woodwork, Pillar drill, Belt sander. Measure, mark, cut, shape, finish **Evaluation:** Describe the making process, listing materials and tools used. Evaluate their product, reflect on improvements. Peer assessment of finished products.	• PPE • Hazards • Risks	knowledge on aspects of health and safety, knowing the potential hazards and risks. Students will become familiar with tools to measure, mark out and cut. Skills which underpin work across the different areas. Students also gain a foundational knowledge of timber and wood joints which they build on each year through KS3.
Spring 2	Playing card boxes	**Technical knowledge:** Using multiple materials. Quality finish. Wood joints. **Design:** Creating two detailed designs with colour. Justifying design choice. Investigating different playing cards to decide measurements. **Make:** Measuring and marking with accuracy. Use of try square. Components made within tolerances. Creating aesthetic and neat finishes using paint. **Evaluation:** Describe the making process, listing materials and tools used with some explanation of the process. Evaluate their product, explaining	• MDF • Plywood • Hardboard • Manufactured board • Dust masks (PPE) • Lap joints • Butt joints • Chisel • Measurement • Tolerances • Finish • Acrylic paint	**Building on…..** emphasis on creating a choice of designs (2 minimum) and selecting and justifying the best one. Measuring marking and cutting accurately is demonstrated again and students develop their own abilities to cut out accurate size pieces. Lap joint construction from Spring 1 revisited to embed the skill. **Building towards...** students being more creative and confident in their own ideas. Health and safety passports are continued with the target of all students being confident and safe in the workshop. Simple wood joints are now being constructed independently. Students are working towards being able to create a neat and attractive finish to products. CAD (sketchup) introduced to create 3D computer images of work.

		at least one improvement. Scale CAD drawing of finished product.		
Summer 1	Steady hand games	**Technical knowledge:** Introduction to basic electrical circuits. Input and outputs of a device. Use of Smart materials **Design:** Creating two different 3D designs in colour. Isometric drawing. Design evaluation. Considering usability. **Make:** Measuring and marking with accuracy. Use of try square. Components made within tolerances. Creating aesthetic and neat finishes using paint. Assembling a circuit using block connectors. Using Smart materials to create ergonomic grips. **Evaluation:** Describe the making process, listing materials and tools used with more details explanation of the process. Evaluate their product, explaining at least one improvement. Peer assessment of finished product.	• MDF • Hardboard • Manufactured board • Lap joints • Measurement • Tolerances • Electric circuits • Polymorph • Ergonomics • Maintenance • Input and output • Design for the user • Finish • Acrylic paint	**Building on…..** students continue to gain confidence in the workshop and are encouraged to create more detailed 3D designs. Multiple designs from Spring term are now evaluated and the best option taken forward. Material use is expanded with the introduction of Smart materials and the use of polymorph to create ergonomic features. Continued development of fine motor skills. **Building towards...** students will begin to understand new terms such as maintenance, input and output of a system and smart materials. Understanding of electric circuits will help build towards more complicated future electronic projects. By considering the user when designing students are working towards developing a focused specification for their designs.

		Scale CAD drawing of finished product.		
Summer 2	Mechanical grabbers	**Technical knowledge:** Introduction to mechanisms and levers. Ergonomics and the user. **Design:** Creating a selection of designs (at least 2) Scale drawings for specific parts. Investigating measurements of the human hand. **Make:** Creating a detailed design using wood and following scale drawings. Iterative design to improve the ergonomics of handles. Assembling mechanisms to create moving parts. **Evaluation:** Describe the making process, listing materials and tools used with a more detailed explanation of the process. Testing and improvements of products. Evaluate their product, explaining at least one improvement.	• MDF • Adhesive • Manufactured board • Mechanisms • Measurements • Levers • Ergonomics • Aesthetics • Iterative design • Scale drawings • Function • Testing • Improvements	**Building on…..** Students using a variety of tools, equipment and materials safely. Now able to create 2 designs using colour. Students should have a good understanding of measuring and cutting wood. Understanding of aesthetics and how to make a product look more appealing to the consumer. **Building towards...** students independently selecting materials and tools correctly. Basic understanding of mechanisms and levers. Creating a design considering ergonomics. Testing and improving a design through the making process. (Iterative design)