

Design and Technology is an inspiring, rigorous and practical subject. Technology encourages students to learn to think innovatively to solve problems both as individuals and as members of a team. At SMHS, we encourage students to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. We aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art. Students are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers.

Each rotation may be	Autumn 1a Aut		umn 1b	Spring 2a	Spring 2b	Sumi	mer 3a	Summer 3b
completed at different times of the year, and not necessarily in the following order.	Rotation 1 wks 1-10		Rotation 2 wks 11-20		Rotation 3 wks 21	1-30	Rota	ion 4 wks 31-40
CONTENT								
Declarative / core / powerful Knowledae – 'Know	Hospitality and Catering		Text Draw	ile Design string bags	Engineering	5	(CAD/CAM
What'	What'Students will develop their knowledge and understanding about the importance of nutrients. They will develop skills in a range of cooking techniques. Students will also understand ingredient sources and seasonality. They will learn how to adapt recipes to allow for dietary requirements as well as: Planning well-balanced dishes Creating sauces		Students will be designing and making draw string bags using the artist Sophie Standing as their inspiration. In order to create a drawstring bag, students will use prior knowledge to refine the design process and create a range of designs that meet their design brief.		Students will design and make an Acrylic clock that is inspired by the Alessi or Memphis design groups. Students are required to conduct research into both design movements and apply this knowledge within their design work. Students will investigate into how to manufacture a product using Acrylic is also conducted, and students will need to apply this knowledge to their design and manufacture stages.		Students will develop their knowledge of CAD/CAM technology.	



Skills	Making yeast-based products Good usage of the cooker and hob Students need to be able to:	Students need to be able to:	Students need to be able to:	Students need to be able to:
Procedural Knowledge – 'Know How'	 Adapt a recipe to allow for dietary requirements Plan a well-balanced dish Create a roux sauce Use yeast Understand nutrition Explain safe cooking temperatures Explain the function of eggs 	 Understand the design process. Create a range of designs that meets the design brief. Assess existing products. Experiment with a range of different textile techniques' such as tie dye, batik and applique, beading and sequins. Further develop their designs based on the results from their experimentation. Research into textile artist Sophie Standing and using her as inspiration to further develop the designs. Construct a drawstring bag to a high standard. 	 Creating a clock Understand the properties of Acrylic, and thermoset and thermos plastics Understand and apply their knowledge of a range of design movements Analyse existing products Create a design that links to the design brief Develop workshop skills using the following hand tools; Belt sander, Sand paper, Wet and Dry paper, Files, Coping Saw, Solvent cement, Heat gun and Strip/Line bender. To show high standards of outcome. Identifying where problems may occur in order to avoid them 	 Understand how to use CAD software To learn how to use both sketch up and 2D Design software To be able to create a drawing of an isometric ruler using CAD To export CAD design to CAM equipment (laser cutter)
Key Questions	• What role does the yeast play in bread making?	 What is the purpose of your product? How will you make sure the product is fit for purpose? 	 How did you ensure your egg stand was of a high quality when making your egg stand? 	 Identify the best tool to draw a curve How can you duplicate parts of your drawing?



	 How does kneading effect the gluten in bread making? Which ingredient helps the quiche "set"? Which ingredient is high risk? What does nutritional value mean? What is Hydration? Compare and contrast 2 pizzas from a supermarket. How could you adapt the recipe for a Coeliac? 	 What will your product look like? Why will this suit your target audience? What type of materials will you use? What will make these suitable for the product? How many will you make? How much will it cost? How could you keep the costs of materials down? What could you improve the product to meet the needs for current trends? 	 Analyse an existing clock using ACCESS FM. Does this product follow form or function? Explain your statement. Explain how you think this clock is made, support your statement by explaining why you think this. Explain how my designs reflect Alessi or Memphis 	 How can you export your drawing to CAM equipment? How can you create an isometric cube?
Assessment	Students will be assessed 3	Students will be assessed 4		Students will be assessed 3
	times during this rotation,	times during this rotation,	Design - To clarify ideas	times during this rotation,
	demonstrating the following	demonstrating the following	through sketching discussion	demonstrating the following
	learning objectives;	learning objectives;	and evaluation.	learning objectives;
	Assessment 1 - Bread	Assessment 1	To use your research and	Assessment 1
	• To prepare and cook a dish	Research and analyse	opinions of others to make	Demonstrate learnt skills using
	using yeast dough	material for inspiration.	informed decisions.	2D design by replicating the
	 To demonstrate the skills 	Ability to critically analyse	To improve communication	diagram using the tools you
	of preparing, kneading,	existing products	skills.	deem appropriate.
	shaping and finishing yeast	meaningfully and		Assessment 2
	dough	purposefully against set	Make - To understand how to	Design a ruler that can aid your
	Assessment 2- Quiche	criteria.	create a clock from acrylic	learning in all your lessons and
	• To demonstrate the skills	Assessment 2	To be able to work with some	enable you to improve your
	of rolling pastry and lining a	Using Marine life in the	precision and to pay attention	presentation skills.
	flan tin, preparing filling	zoo as inspiration to	to function & quality of finish.	Assessment 3
	ingredients, using a variety	design a range of initial		
		designs that meet the		



of small equipment, using	objectives of the brief.	Evaluate - To learn how to test	Export your design to the laser
the oven.	Further develop the ideas	and critically evaluate your	cutter and add a post-
 To demonstrate the 	into a final design	work using the views of others	production finish
function of egg in cooking	reflecting on the	and suggesting improvements	
(setting)	experimentations from		
 To demonstrate and apply 	batik, applique and hand	Subject Knowledge - To be able	
the principles of food safety	embroidery.	to analyse an existing product,	
and hygiene when cooking.	Assessment 3	to show an understanding of	
Assessment 3 – Pizza Design	 Construct a fully 	purpose, form & function.	
 To investigate the dietary 	functional drawstring bag,		
needs of young adolescents,	that include plain seams		
including the importance of	and a fastening. The		
hydration.	decoration and design of		
 To analyse the pizza from 	the final outcome has		
the school canteen.	been reflected on from		
 To design a pizza suitable 	experimentations and		
for a hot school lunch to	other artists		
help meet the nutritional	Assessment 4		
needs of young adolescents.	• Evaluate the quality of		
 To create a nutritional 	your manufacture, making		
analysis to be placed on the	suggestions of how it can		
pizza box	be improved.		