

ASPIRE – ENDEAVOUR - SUCCEED

### Purpose and aims

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

- understand and apply the principles of nutrition and health
- cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet
- become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]
- understand the source, seasonality and characteristics of a broad range of ingredients

### Threshold concepts

The Design Process

- Analyse - Research purposefully: Using a range of sources showing selectivity and analytical skill.
- Design - Visual Communication: Demonstrate innovation and creativity in recipe design and cooking
- Make - Safe working Practice: Select and use equipment safely and accurately in order to prepare and cook a range of dishes demonstrate a range of skills.
- Evaluate - Critical Reflection: Demonstrate the ability to reflect critically throughout the design process showing an understanding for modification and improvement of dishes and recipes to meet nutritional needs.
- Technical Knowledge
- Mathematical knowledge
- Impact on Society: Understand developments in food and nutrition, their ecological and social footprint with an awareness of the impact on society.
- ACCEESSFMM

### Sequence of learning

Students may begin Yr 7 with some knowledge of food and nutrition from primary cooking experiences. However, this may differ significantly depending on feeder schools.

The topics for this rotation are based on students having minimal experience of cooking in schools or at home.

In line with the faculty guidance students will begin the project with the design process. This provides consistency and helps student link the wider areas of faculty and hopefully allow them to transfer knowledge between faculty areas more easily. Students will also be tested on Word Power in the first lesson to ascertain their current knowledge and understanding of key terms. Students will then be reminded of ACCEESSFMM and introduced the foci words of ACCEESSFMM for the project so that students now what to expect a deeper insight into during the project.

Health and safety in the kitchen is a starting point, with hazard, risk and harm covered in detail to ensure students are aware of potential issues. Explicit teaching of routines in the practical room, along with knowledge of washing up procedures feed into the knowledge taught on cross contamination and food safety.

From this area, students learn about cooking methods, temperature control and using an oven correctly. This is taught in both practical and theory settings to reinforce knowledge procedurally.

Students complete the rotation with nutrition, learning about Macro and micronutrients, which feeds into the Eatwell Guide and function of these foods/nutrients in the body. This is built upon further in Year 8. Where students will begin to analyse and calculate nutritional needs.

Practical lessons are interleaved with theory lessons and cover a range of savoury and sweet dishes to maximise skills and techniques appropriate for the year group.

12 theory lessons  
6 double practical lessons.

### Subject knowledge

<i>Student should know that</i>	<i>Student should know how to</i>
<p>Design is a process that is cyclical/iterative</p> <p>Careers/Employment in the industry are explicitly linked to all or some aspects of the design process.</p> <p>Different careers focus on key areas of the design process. Rotation 1: Architects Rotation 2: Head designer at BMW Rotation 3: Independent fashion designer Rotation 4: Engineers</p>	
<p>The order of the design process</p> <p>What the acronym ACCEESSFMM stands for. A – Aesthetics - The appearance of a product C – Cost - The money paid to cover materials, equipment, labour, buildings and services so a product can be manufactured C – Customer - A single person or a target market group that a product or service is aimed at. E – Environment - The positive or negative impact a product may have on the environment. Including the materials and energy used for manufacturing. E – Ergonomics - the process of designing or arranging workplaces, products and systems so that they fit the people who use them. Body measurement data is used. (Anthropometrics) S – Safety - How safe a product is to manufacture and use S – Size - The physical dimension and measurement of a product and how appropriate it is for the user. F – Function - What a product does and how it works M – Manufacture - Techniques and processes used to manufacture/make a product. M – Materials - A resource used to manufacture a product.</p>	<p>Apply the terminology in several aspects of the design process i.e. product analysis.</p> <p>Describe products in relation to these words/definitions.</p>
<p>Health and Safety in the kitchen.</p> <p>Risk v Hazard v Harm. Hazard = something that can cause you harm</p>	<p>Identify issues, potential hazards in the kitchen in different areas. I.e surfaces, floors, electrical items, pests.</p>

<p>Harm = The physical injury caused.  Risk = the likelihood of the hazard causing harm.  Areas around the room.  Heat  Sharp objects</p> <p>Cross contamination - Where does bacteria come from?</p> <p>Food can become contaminated with bacteria from:</p> <ul style="list-style-type: none"> <li>• raw foods</li> <li>• work surfaces and equipment</li> <li>• food handlers</li> <li>• pests</li> <li>• waste and rubbish</li> </ul> <p>Raw food contamination comes from:</p> <ul style="list-style-type: none"> <li>- Raw meat and poultry – the juices from these are a source of bacteria</li> <li>- Eggs and shellfish – these foods carry bacteria on the inside and outside of the shell.</li> <li>- soil on foods. E.g. bacteria from the soil can contaminate uncooked rice and root vegetables.</li> </ul> <p>Work surfaces and equipment:</p> <ul style="list-style-type: none"> <li>- Dirty tea towels and dish cloths. The warmth and moisture and traces of food can spread bacteria on to surfaces and dishes</li> <li>- Dirty equipment, bacteria can contaminate clean food</li> <li>- Using the same chopping board for raw and cooked foods.</li> </ul> <p>Food handlers:</p> <ul style="list-style-type: none"> <li>- Unclean hands, not using tongs or gloves, bacteria from your hands can spread onto food, surfaces and equipment.</li> <li>- Double dipping when tasting, passes bacteria from your mouth to the food.</li> <li>- Licking fingers and touching mouth. Picking up cups, mugs, cutlery without using handles can pass bacteria from you to food, dishes and equipment.</li> </ul> <p>Pests</p> <ul style="list-style-type: none"> <li>- Include, flies, ants, moths, larvae, mice and rats.</li> <li>- Leaving food uncovered means pests can spread bacteria from their body, urine and droppings onto food.</li> <li>- Letting bins overflow – bacteria can multiply in waste rubbish and food</li> <li>- Allowing crumbs and food waste to remain on the floor or work surfaces can provide food for pets and attract them.</li> <li>- Not cleaning the kitchen after every practical means bacteria can multiply and attract pests.</li> </ul> <p>Waste food and rubbish:</p> <ul style="list-style-type: none"> <li>- Using bins without lids – bins with no lids attract pests</li> <li>- Using thin bin bags which split easily allows food waste to spill, which attracts pests.</li> <li>- letting rubbish overflow for more than one day attracts pests</li> <li>- Allowing the bin to become dirty by not washing it once a week provides a moist area with a food source for pests.</li> </ul>	<p>Link hazards to the potential harm it may cause and assess the likelihood of it happening.</p> <p>Identify cross contamination concerns from images and scenarios.</p> <p>Avoid cross contamination when in A01, including:</p> <ul style="list-style-type: none"> <li>• Storing food correctly</li> <li>• Preparing food using the correct equipment</li> <li>• Using the bins.</li> <li>• Getting rid of waste.</li> <li>• Clearing and cleaning work surfaces</li> <li>• Washing up effectively.</li> <li>• Washing hands between preparing different foods.</li> <li>• Washing foods.</li> </ul>
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<p>Food poisoning often causes symptoms such as, nausea vomiting, diarrhoea and stomach pain.</p> <p>Usually food poisoning lasts a short time and the symptoms are mild. But for some people these symptoms can become very serious.</p>	
<p>Temperature Control</p> <ul style="list-style-type: none"> <li>• Essential when you buy, store, cook and prepare food.</li> <li>• Storing food correctly minimises the risk of food spoilage.</li> </ul> <p>Food spoilage = when food deteriorates so that its quality is reduced or can no longer be eaten.</p> <p>Food poisoning can be caused by when high risk foods are stored in warm conditions for too long. Controlling the temperature of food from the time you buy it, to when it is eaten will help keep food safe.</p> <p>Bacteria are everywhere. They reproduce quickly and some cause food poisoning.</p> <p>Bacteria need a warm temperature, food, moisture and time to grow.</p> <p>Once contaminated with bacteria they reproduce with 'binary fission'. (Splitting in 2)</p> <p>Bacteria can reproduce as quickly as 10 minutes. Bacteria grows best in the 'temperature danger zone' Between 5C – 63C. Below 5 they are dormant they grow very slowly or not at all. Above 63 they are mainly destroyed by the heat.</p> <p>High risk foods like milk, eggs, meat and ham, and other foods you use during practical lessons should be stored in the fridge.</p> <p>Fridge temperature 0-5C.</p> <p>Not all foods are likely to cause food poisoning. Dried foods, tinned foods, breakfast cereals and vegetable oils can be safely stored at room temperature.</p> <p>When cooking you should use a temperature probe to check food has reached the correct temperature.</p> <p>Thermometers can also be put in the fridge or freezer to check they are working at the correct temperature.</p> <p>Freezers – 18C or below.</p> <p><a href="http://www.food.gov.uk">www.food.gov.uk</a> - chilling food.</p>	<p><i>Check the temperature in a fridge</i></p> <p><i>Check the temperature of food using a temperature probe.</i></p> <p><i>Avoid food poisoning by preparing, storing and cooking food correctly (as covered in CC)</i></p> <p><i>Minimise the growth of bacteria through the correct storage of food.</i></p>
<p>Cleaning routines /rules/ mise en place.</p> <p>In A01:</p>	<p><i>Follow the procedures and protocols in A01 to ensure safe handling and cooking of food.</i></p>

<p>Washing up.</p> <ul style="list-style-type: none"> <li>• Washing up correctly is important for food safety,</li> <li>• They provide ideal conditions for bacteria to grow if not washed and dried properly.</li> <li>• This can lead to food poisoning.</li> </ul> <p>There are 5 stages to our washing up process in A01.</p> <ol style="list-style-type: none"> <li>1. Getting ready – Scrape food, stack neatly NOT ON METAL DRAINING BOARD. Rinse the dirtiest things under the tap, soak if necessary before filling the sink to wash up.</li> <li>2. Wash – Run hot water into the sink. Add a small amount of washing up liquid (1-2 pumps) It breaks down the fats and helps to remove the dirt. Wash sharp knives first. DO NOT LET THEM DROP IN THE WATER. Wash the cleanest items first, to keep the water as clean as possible.</li> <li>3. Rinse – rinse as you go with hot water. Do this after you have washed – to remove bubbles. Allow items to drain a little to get rid of excess water on the draining board. If the water becomes too dirty with food pieces in it. Change the water.</li> <li>4. Dry and put away – dry with a clean dry tea towel. Put everything away IN THE CORRECT PLACE – see the image on the cupboards and listen to your teachers. It will be checked.</li> </ol>	<p><i>Wash up correctly</i>  <i>Dry up correctly</i>  <i>Store equipment</i></p> <p><i>Set themselves up ready for a practical lesson in A01.</i></p>
<p>Using the oven</p> <p>The difference between an electric and gas oven.</p> <p>The different parts of the oven</p> <p>Safety issues around the oven – i.e pan handles.</p>	<p><i>How to turn on/light the different areas of the oven/grill/hob.</i></p> <p><i>Both electric and gas.</i></p> <p><i>Avoid risks when cooking.</i></p>
<p>Intro to Cooking methods</p> <p>Food is cooked in different ways – which changes the texture, taste, smell and appearance of foods.</p> <p>Cooking food can also change its nutritional value.</p> <p>Nutrients most affected by cooking are vitamin C and the B group vitamins. These vitamins are easily destroyed in lots of different ways, i.e cooking for too long in water.</p> <p>Three categories in which food is cooked:</p> <ul style="list-style-type: none"> <li>- Dry heat</li> <li>- Water</li> <li>- Fat</li> </ul> <p>Different methods of cookery for each category.</p> <p>How this method of cookery affects the nutrients and sensory qualities of the foods.</p> <p>Boiling, blanching, steaming</p> <p>Shallow frying, deep frying, roasting</p>	<p><i>Cook food using various techniques.</i></p> <ul style="list-style-type: none"> <li>• <i>Shallow frying</i></li> <li>• <i>Boiling</i></li> <li>• <i>Baking</i></li> <li>• <i>Grilling</i></li> <li>• <i>Simmering</i></li> </ul>

<p>Baking</p>		
<p><i>There are two types of nutrients –</i></p> <p><i>Macro – needed in large amounts by the body and are called protein, fats and carbohydrates.</i></p> <p><i>Micro – are needed in small amounts and are called vitamins and minerals.</i></p>	<p><i>Identify foods that contain macronutrients.</i></p> <p><i>Identify parts of the Eatwell guide and explain how the quantities differ and why.</i></p>	
<p>The Eat well Guide – recap image. Macronutrients – proteins</p> <p>Protein is an essential part of the diet. It is needed for growth and repair, maintenance and energy.</p> <p>Some groups of people need more protein than others. Children and pregnant women need more protein for growth and everyone needs more protein after injury – to repair the body.</p> <p>Proteins are made from amino acids. They are linked together in chain.</p> <p>There are about 20 amino acids. These amino acids make up lots of different tyoes of protein, depending on which amino acids are in the chain.</p> <p>Of the 20 amino acids – 10 are essential for children and 8 for adults. They must be provided through diet – as the body DOES NOT MAKE THEM.</p> <p>The 2 extra amino acids children require are needed for growth.</p> <p>The NON – ESSENTIAL Amino acids can be made by the body.</p> <p>HBV ‘v’ LBV</p> <p>High biological proteins – contain all the essential amino acids. Foods mainly from animals. Plant foods that are also HBV include soya beans and quinoa.</p> <p>LBV – low biological value proteins are missing one or more of the essential amino acids. Mainly plant source foods. Peas, beans, nuts, lentils and cereals. Gelatine (animal based product) is LBV.</p> <p>When 2 or more LBV proteins are combined – they can produce a HBV. For example hummus and pitta bread, peas and rice or beans on toast. This is knows as protein complementation. – They provide all 10 essential amino acids.</p>		
<p>Macronutrient s – fats and oils</p> <p><i>Fat is one of the 5 essential nutrients.</i> <i>Too much fat is bad for your health.</i></p> <p><i>Fats may also be called oils and lipids.</i></p>		

*Fats – are normally solid at room temperature – like butter.*

*Oils are liquid at room temperature – like olive oil.*

*Fat is important because:*

- *keeps the body warm*
- *provides energy*
- *it protects and cushions internal organs by covering them with fat*
- *it provides FAT SOLUBLE VITAMINS.*

*Fats are divided into Animal or vegetable fats.*

*Animal fats = saturated fats (examples)*

*Vegetable fats = unsaturated fats (examples)*

*If you eat too much fat it can increase your cholesterol level in the blood.*

*Cholesterol is a fatty substance needed for the body to function properly.*

*There are 2 types of cholesterol – good and bad. Bad can cause health problems.*

*Too much fat in the diet can lead to obesity, higher cholesterol levels and an increased risk of type 2 diabetes and heart disease.*

*Unsaturated fats are thought to be better for your health.*

**Macronutrients – Carbohydrates**

Carbohydrates are one of the 5 essential nutrients.

They can be divided into 3 groups:

- Sugar – Simple sugars or double sugars. Honey, treacle,, syrups, jam, marmalades and raw sugar.
- Starch – potatoes, rice, pasta, bread and yams. These are called complex carbohydrates as they are also made up of simple sugars.
- Dietary fibre – found in the cell walls of fruit, vegetables and cereals. This is also called a complex carbohydrate as it is made up of simple sugars joined together.

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Free sugars = added sugar – more harmful to health.

Fruit sugars = natural sugars in the cell walls of plants.

The main function of carbohydrate is to provide energy for the body.

Eating too many carbohydrates, without burning off the energy they provide can result into them being turned into fat and stored in the body. This can lead to obesity.

If too much sugar is eaten this can lead to tooth decay.

<p>Fibre is important as it keeps the digestive system healthy by helping food waste travel through the body more easily.</p> <p>If you don't eat enough fibre, this can cause constipation. This can eventually lead to cancer of the bowel.</p> <p>Fibre can reduce your chances of getting heart disease and type two diabetes.</p> <p>The recommended amount per day is 30g for adults.</p>	
<p><b>Micronutrients - Vitamins and minerals</b></p> <p>These nutrients are consumed in smaller amounts and are not visible.</p> <p>Vitamins are either fat soluble (ADEK) or water soluble vitamins. (BC)</p> <p>Minerals such as iron, calcium, phosphorus and sodium can be found in a variety of foods.</p> <p>The function of specific vitamins and minerals and what foods they can be found in.</p>	<p><i>Identify foods that contain micronutrients.</i></p>
<p>Sensory test and star profiles are used to evaluate food/recipes. Should be carried out when the dish is ready</p>	<p>Use a star profile to evaluate food dishes.</p> <p>Describe food using appropriate sensory vocabulary</p> <p>Suggest improvements for dishes.</p>
<ol style="list-style-type: none"> <li>1. Fruit salad</li> <li>2. Savoury Scones (baking)</li> <li>3. Tomato pasta bake with pre cooked meat. (boiling, frying, baking)</li> <li>4. Pizza bread and toppings (grilling)</li> <li>5. Stir fry – and rice (boiling, stir frying)</li> <li>6. Fruit Muffins (frying/grilling)</li> <li>7. Beef Burger (frying/baking)</li> </ol>	
<p><b>Curriculum links to careers</b></p> <p>Unit: All – Lesson completed at beginning of each term/rotation.</p> <p>Rotation 1: Architects</p> <p>Rotation 2: Head designer at BMW</p> <p>Rotation 3: Independent fashion designer</p> <p>Rotation 4: Engineers</p>	

Links: How careers across the industry link with the design process. Looking at the daily roles of specific people/careers and how their job is reliant on the iterative design process, an integral part of each project students' study in the rotation of D&T, textiles and food.

Outcome: Students identify links and explain how the employees work individually or as a team to meet the needs of the consumer/target market. Listing skills required for the role.