Curriculum Overview

Subject: DT and FPN

Year Group: 9

CHASE HIGH
Aspirations, Character & Excellence

Skills are built upon and developed in Year 9. All projects develop a range of design and practical skills in all areas and build on prior knowledge from their primary and Year 7 and 8 education. All projects for Design Technology are based on the National Curriculum requirements to ensure students receive a balanced and broad curriculum within the subject area across Year 7 to 9.

Students complete two projects in DT: Sustainability outdoor furniture and CAD / Casting. This is two lessons over a fortnight. 1 lesson a fortnight is FPN.

TERM 1	**TERM 2**	**TERM 3**
KNOWLEDGE/SKILLS Food Preparation and Nutrition: A wide range of food practical skills: carbohydrate and protein nutritional needs, cottage pie, fats investigation, strawberry and cream tarts, gluten investigation, ragu bread, food functions carbohydrates. Design Technology: Health and safety, research methods, writing a specification, iterative design, Modelling for design, testing methods, planning, six r's, renewable energy.	KNOWLEDGE/SKILLS Food Preparation and Nutrition: A wide range of Food practical skills: pasta bolognaise bake, microorganisms and enzymes, fruit tray bake, bacterial contamination, Chicken chow mien. Design Technology: Health and safety, designer responsibility, carbon footprint, designer research, manufacture of a prototype, finishes to materials. CAD casting, research designing through ideas and scamper, isometric drawing, jigs and formers, Using CAD, understanding CAM, Google sketch up.	KNOWLEDGE/SKILLS Food Preparation and Nutrition: A wide range of food practical skills: factors that influence food choice, meatballs and rice in ragu sauce, packaging influence investigation, vanilla and fruit cookies, environment and sustainability, chickpea curry. Design Technology: Health and safety, harvesting, deforestation and mining, ergonomic and anthropometric, manufacturing and casting with pewter, tolerances, numeracy in DT, finishing metal pewter, scamper.
KEY ASSESSMENTS Half term 1: Half term 2:	KEY ASSESSMENTS Half term 1: Module specific DT test. Food Preparation and Nutrition half year test Half term 2:	KEY ASSESSMENTS Half term 1: Half term 2: Module specific DT test. Food Preparation and Nutrition end of year test
Extended reading suggestions and external resources: www.technologystudent.com Eatwell guidelines – government website BBC bitesize TinkerCAD Google Sketchup		

Design and Technology Year 9 Assessment Criteria

	Bronze 	Silver 	Gold 	Platinum 
Knowledge and Understanding	I know the primary sources of materials for producing natural timbers, manufactured timbers, paper, board and polymers. **I know the name of a range of workshop tools and their uses.** I can identify and explain the advantage of using a wood joint.	I can recognise and characterise the different types of natural, manufactured timbers, paper, board and polymers. **I can describe one school based workshop process including tools required.** I can identify and explain the advantage of two wood joints.	I understand how the physical and working properties of a range of timbers, polymers, paper and board products affect their performance. **I can describe at least one school based workshop process including tools required in each material.** I can identify and explain the comparative advantages of different wood joints.	I can understand about the preparation and application of treatments and finishes to enhance functional and aesthetic properties of materials**.** **I am able to describe school based cutting, forming and processing techniques, tools and equipment.** I can recognise common faults in natural timber and describe the processes of conversion and seasoning.
Research	**I can find images of existing products and other simple information beyond the classroom.** My research shows a link to my brief and gives me some important technical information for my specification e.g. Materials, sizes, components etc. **I can use ideas from other designers to help me in my work.** I am able to explain how the images I have sourced could be used in my design. **I can produce a minimum of one A4 page of analysis that is descriptive and draws helpful conclusions related to the design task.**	**I can show evidence of research from two sources independently e.g. internet, magazines, books, surveys etc.** My research shows evidence of analysis of form and function of similar/familiar products (other designers' work). **My research shows a thorough understanding of physical properties and working characteristics of materials.** I can analyse my research with regard to aesthetic and economic issues and apply this analysis to my design work.	**I can gather user opinions through a simple survey that will provide specific information to improve my design work.** I can apply my understanding of form and function to my own design work. **I can apply the conclusions from my research and analysis to show how my ideas better fit the target market.** I can write a design specification which identifies key aspects needed to develop design ideas.	**My research analysis clearly shows trends and patterns in the design of similar products and of other designers.** I consider primary, secondary and tertiary users in my research. **I can re-interpret others' design ideas/design movements in new contexts, adapting and developing them so they become my own.** I have provided graphical data to support my research using ICT. **I can write a design specification which fully reflects the findings of my research.**

Design Ideas	I can show a variety of different ideas that cater for different people's likes and tastes, with some reference to my research. **I can draw and render to make my designs look 3D.** I can identify and write down good or bad points of a design. **I can annotate my designs to identify a suitable material.**	**I can draw inspiration for creativity from my products research.** I can produce an appropriate model to show some of my design ideas. **My ideas show some technical understanding of materials, components etc. which is drawn from my research and analysis.** I can use simple information found to add detail to my idea e.g. sample sizes, materials etc. **I can explain what is meant by form and function in relation to my design ideas.**	**My ideas are clear, concise and imaginative and directly relate to the brief.** I have trialled other products and taken ideas from them. **I have considered the 'fit for purpose' of my ideas when deciding which idea(s) to take forward for development.** My design work directly connects to my specification. **My research and analysis includes specific work on form and function and is clearly evident in my design work.**	I can produce a variety of 2D and 3D creative ideas/models influenced by my research into other designers. **I have a clear understanding of how my work will be made.** My research and analysis identifies areas that conflict and I resolve the problems in a creative way. **My decision making is based on sound knowledge gained from my research – in particular physical properties and working characteristics.** All primary, secondary and tertiary users are fully catered for in my design.
Making	I can use tools and equipment correctly and safely. **I can produce a product which has a basic level of making.** I have produced a product which is mainly finished and uses two or more skills. **I can identify one quality check for my practical work.**	I can work independently at times during my practical work. **I can use tools correctly and safely.** I have produced a product which has a good level of demand in some parts. **I can identify at least two quality checks for my practical work.**	I can work mainly independently during practical work. **I can produce a product which has a very good level of making and finishing.** I have produced a product which is demanding in its range of skills. **I can apply quality checks to the practical work to make sure that is well made.**	**I can select and use a range of tools and equipment accurately, skillfully and safely.** I have produced a product which is rigorous and demanding in its range of skills. **I can apply quality checks throughout the making process to ensure that a quality product is produced.** I can work independently throughout the practical work.
Evaluation	I can explain the look of my design and with an explanation of why this is the case. **I can say if I was successful or unsuccessful.** I can identify good or bad points about my work. **I can identify a way of making my work look and work better.**	I can reflect upon my design work and show some evidence of evaluation in my writing. **I can identify what is working well and what could be improved.** I can think about and reflect upon my specification and say where my product is successful and not-so-successful. **I can say/document where my product does/does not fit my specification and why.** I have identified major key weaknesses and suggested improvements.	I can identify and document what is working well and what could be improved. **I can comment and compare most of my specification points and say whether it was helpful.** I can test my product in situation and document appropriate comments. **I can explain in my writing about my research and specification points whether it was appropriate to my final product or not.** I have evaluated my product in use and gained user feedback. **I have identified a number of key weaknesses and suggested improvements.**	**I can select appropriate techniques to evaluate how my product performs e.g. customer survey, peer feedback, expert opinion.** I can explain fully in writing how I solved technical problems whilst making my product. **I can clearly relate my evaluation findings to current environmental, ethical, social and cultural issues.** I am capable of producing a broad overview of the entire project.

Food Preparation and Nutrition Year 9 Assessment Criteria

	Bronze	Silver	Gold	Platinum
Knowledge and Understanding	I am able to state some scientific processes that occur within food. **I know how to complete the rubbing technique.** I am able to state what an enzyme is and food they are found in. **I understand what cross contamination is.** My sensory analysis highlights a positive and potential improvement. **I can state the four types of food provenance.**	I can describe some scientific processes and state the type of molecule it occurs in. **I am able to say the ingredients needed for this technique and describe some key stages.** I can explain what they are able to do to foods such as meat, fish, fruits and vegetables. **I am able to recognise to differences between contamination and cross contamination and state some differences of how they occur.** My sensory analysis includes taster feedback with data in a table and positives and improvements suggested. **I can describe the process of each type of provenance**.	I am able to explain the three processes in detail and give examples of food they occur in. **I can explain the ingredients required along with the technique of rubbing and clearly state what it is achieving.** I am able to describe what enzymic browning is what occurs during the process. **I can explain how the danger zone contributes to the contamination of food and the potential hazards linked.** I can analyse a product using the four senses, stating positives, improvements and some nutritional analysis with tables and graphs **I can recognise types of farming and link them to specific types of provenance.**	I can provide detailed explanations of all three processes including finer details such as foods they occur in and key temperatures. **I can justify thoroughly what the rubbing technique adds to a product, state products that it occurs in and give scientific explanations of how it is achieved**. I can state how foods begin the enzymic browning process and explain how oxidation works alongside it. **I'm able to work out the process of binary fission and the conditions required in order for them to do so.** I can show my sensory analysis results via tables and graphs which include positives, potential improvements and the nutritional content of the dish. **I am able to make specific links and explain the advantages and disadvantages between types of farming and provenance.**

Preparation and plaing	I have a clear understanding of the type of ingredients that are suitable for the task. **I know how to write a flow chart and include equipment and ingredients in metric.** I can use my planning to enable me to set myself up ready for making. **Where research has been carried out I can apply this to help select suitable dishes to make.** I know that cost, time available and food value are important when selecting foods to use. **I know about food hygiene and safety.**	I can show that I understand what type of food products would best suit the given target group/situation. **I can plan in advance with some consideration made to the time available to make, the costs of ingredients and whether they meet the needs of the target group/situation.** I include most of my research (if used) when deciding what is appropriate to make.	My planning is clear and precise and contains all the necessary information to enable me to make a quality product. **I apply the conclusions from my research and analysis to show how my ideas better fit the target market, and I can display some of my conclusions using ICT.** I can set myself up ready to make with very little guidance from my teacher. **I can show clear evidence of forward planning taking into consideration the constraints of time, money and nutritional needs of more than one target group.**	Where necessary, I justify my choices using different types of research. **I can set myself up for a practical session without any guidance from my teacher.**
Making: Basic techniques	I am tidy and efficient most of the time whilst carrying out practical tasks. **I use my flow chart to help me make.** I can work as part of a team and I am quite confident when working by myself. **I can slice, dice, simmer, use the oven, hob and grill with some help from my teacher or peers.** I can work efficiently and tidily. **I can work on my own most of the time using my planning.**	I can use most of the equipment in the food room without supervision. **I can carry out basic skills without help from my teacher e.g. rubbing-in, creaming, using the microwave, boiling etc.** I can manage the oven, hob and grill with very little input from my teacher.	I can work independently and as part of a team **I can use the correct techniques to enable me to make a range of dishes successfully e.g. slicing, dicing, steaming, frying.** I can carry out a range of techniques without help of guidance from my teacher.	I can show that I understand why the basic techniques are important to the success of the final product. **I can use all of the main equipment in the room and I am fully competency in the use of the oven, the grill and the hob.**

Making: Adapting to needs	I can make appropriate changes to my dishes to make them healthier with help. **I apply the basic principles of hygiene and safety most of the time whilst cooking and when clearing up.** My product is a good illustration of adapting ingredients. **I ask for help occasionally to help finish my product.** I use my teacher's comments to help me to adapt my recipes to make them healthier/more suitable to the task set.	**I know when to ask for help to make necessary adaptations so that my products are successful.** My product is of a good quality. **I apply the rules of basic hygiene and safety when making.** I understand how to change ingredients to make them healthier and can make suitable substitutions. **I apply the rules of basic hygiene consistently.**	I understand the rules of basic safety whilst working in the food room, and I apply them consistently. **My final product shows that I have carefully selected my ingredients.** I can show that I understand how to adapt recipe ideas through making and discussion. **I can apply basic hygiene and safety requirements as and when needed.** I can see what needs changing and apply these changes when necessary with little effect on the quality of my product. **My product is different and successful.**	I understand the needs of the task and can adapt recipe ideas to meet the needs required, e.g. to make something healthier, unaided. **I can choose recipes to enhance my practical skills.** I can make changes to my methods when things go wrong. **I can apply the correct hygiene procedures whilst carrying out a range of culinary tasks.** I have made and presented an excellent product.
Evaluating	**I can describe my product using comments from other people.** I can compare my product to existing products **I can say what I need to make changes to and how I might implement those changes.** I can explain in writing whether a product has been successful or not.	I can evaluate using sensory analysis or a star profile **I can use other peoples' comments to evaluate my product.** I can comment on the costs of my product.	I can use the nutrition program to cost and produce a nutrition label for a product. **I can select appropriate techniques to evaluate how successful a product is.** I explain fully in writing how a food product can be changed to improve it further. **I can use the nutrition program to enhance my evaluations.** I can identify a broad range of criteria for evaluating my product.	**I can clearly relate my evaluation and findings to current environmental, ethical, social and cultural issues where relevant** I can use the Nutrition Program to justify my choices and confirm their suitability for the designated task. **I can include other peoples' comments when evaluating the success of my product, and make suggestions for change based on their observations.**