

2. CURRICULUM IMPLEMENTATION OVERVIEW PLAN

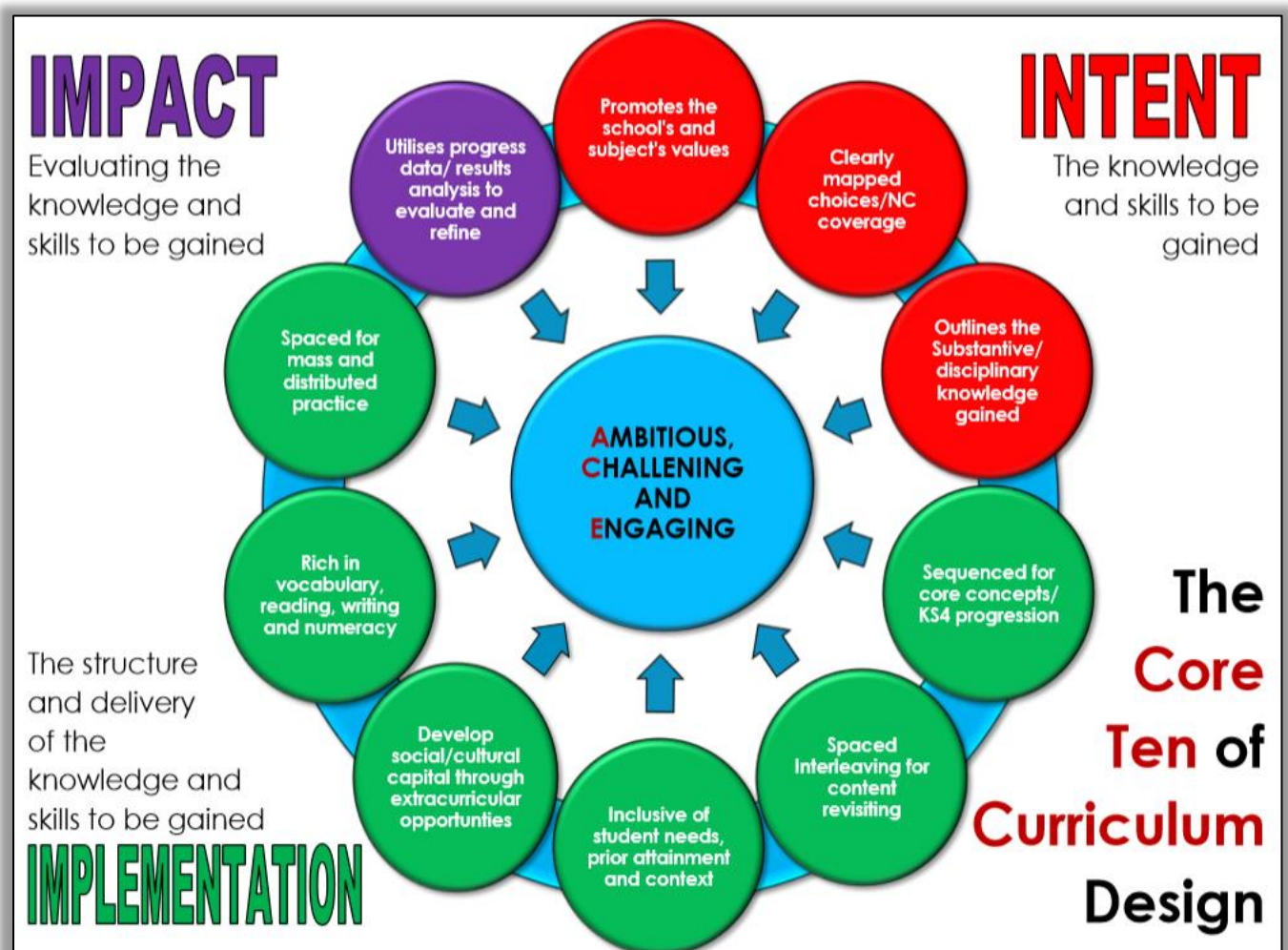
Key Stage 3

Subject: Design & Technology

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Document(s) which inform this Curriculum Implementation are:

1. Curriculum Intent Overview Plan (KS3)

THINKING PROCESS - CURRICULUM IMPLEMENTATION OVERVIEW PLAN – KS3

IMPLEMENTATION – SEQUENCING AND PRACTICE

How are your topics sequenced below so as to ensure the following:

- key concepts are ordered and taught, so as to support progression to more challenging material
- content and concepts ordered to support progression from KS2 and to KS4
- topics are spaced between unrelated topics, to allow thinking time; then revisited and furthered
- mass practice (end of topic assessments)are used to evaluate the knowledge and skills gained
- distributed practice (mini assessments) are used where content/topics are reassessed in shortened versions, at later spaced out intervals

YEAR	Project 1	Project 2	Project 3	Project 4			
7	Unit/Topic <u>Introductory Module studied by all of Y7 at the start of the year</u> To introduce the design process, isometric drawing and to build passion for the subject (they use laser cutter, vacuum former and melt chocolate). Plastics theory is introduced alongside the design process and communication of designs. This project will be used as a baseline test for students to identify primary schools which will benefit from increased engagement.	<u>Wooden Box (Resistant Materials)</u> Introduction to practical activities in the workshop. Wood theory and environmental impact of using wood, health and safety, basic hand tools and equipment and wood joining methods.	<u>Introduction to Food and hygiene.</u> Introduction to practical activities in the food room and safe/healthy preparation of food.	<u>Textiles</u> Introduction to Textiles practical activities. Production of a decorative wall hanging using hand stitching, machine sewing and tie dying	KS3 D&T projects last for 10 weeks and run on a rotation throughout the year.		
	KS3 NC covered <u>Design</u> 1,2,3 & 5 <u>Make</u> Introduction to 1 & 2 but not completed <u>Evaluate</u> Introduction to all aspects of evaluation <u>Technical knowledge</u> Introduction to 1.	<u>Design</u> 1 & 5 <u>Make</u> 1 <u>Evaluate</u> 1 <u>Technical knowledge</u> 1	<u>Cooking and nutrition</u> 1,2,4 & introduction to 3	<u>Design</u> 1,2 & 5 <u>Make</u> 1 <u>Evaluate</u> 1 <u>Technical knowledge</u> 1			
	Powerful Knowledge Learning the design process.	Health and safety in a workshop. Knowledge of different types of wood, their origins and uses.	The basic government guidelines for healthy eating. The knowledge and skill require to prepare foods.	The ability to use and explain textiles manufacturing techniques. Knowledge of different types of textiles materials and their origins.			

Mass Practice	Currently students have 3 assessment points during the year. Assessment point 1 - all students complete an assessment covering the key concepts covered in the introductory module. Questioning focuses on plastics properties and their environmental impact, use of ACCESSFMM when analysing products and communicating packaging ideas through sketches and annotation.	Assessment 2 covers the common questions plus questions on properties of woods and their environmental impact, health & safety in the workshop and hand tools.	Assessment 2 covers the common questions plus questions on heat transfer methods, the eatwell guide, food hygiene and food miles.	Assessment 2 covers the common questions plus questions on properties of textiles materials, textiles processes (stitch types and tie dyeing) and health & safety.	Assessment point includes a section which is common to all students and again reinforces the practice of the key concepts covered in the introductory module and a second section which focuses on the module they have recently completed. The common questions focus on communicating design ideas for a charity box and evaluation of the designs.	Assessment 3 is common to all students at the end of the year and covers questions on communication of design ideas for food packaging, evaluation of designs, food hygiene, hand tools in the workshop, properties of woods & textiles materials and textiles production processes.
Distributed Practice	Exit tickets are used to practice knowledge gained on writing design criteria (use of ACCESSFMM), isometric drawing and use of plastics on the vacuum former.	Exit tickets are used to practice knowledge gained on health and safety in the workshop, properties and uses of woods and applying finishes to woods	Exit tickets are used to practice knowledge gained on health and hygiene, heat transfer methods in cooking and gelatinisation when making starch based sauces.	Exit tickets are used to practice knowledge gained on decorative techniques, material choices, health & safety and annotation of ideas.		
What are the key concepts to be covered?	Introductory module – Application of the design process, communicating ideas, designing for a market, use of maths in designing (Nets), environmental impact of materials (Plastics), considering others beliefs/opinions. Wooden Box (Resistant Materials) – Accuracy in marking out cutting and shaping (avoiding waste), environmental impacts of materials (Wood) Food and hygiene – What makes a healthy diet, how heat affects food/ingredients. Textiles – environmental impact of materials (Fabrics), designing for a market, considering others beliefs/opinions.					
What prior knowledge, at KS2, are you assuming they have?	Basic understanding of 3D drawing, some knowledge of cultural beliefs and festivals, basic use of tools and equipment used in D&T.					
What knowledge do they need to have a successful start to Year 8?	<ul style="list-style-type: none"> • The design process and application of ACCESSFMM • An understanding of the environmental impact of a range of materials and ingredients • How to draw accurately in isometric • How to use a range of tools in the workshop and kitchen • What constitutes a healthy and balanced diet • Simple hand stitching techniques • The difference between natural and synthetic fibres 					
How are topics spaced between unrelated topics?	Each module is based around the design process and revisits this frequently while focusing on the individual material area. Each project focuses on investigating a design brief, includes analysis of a relevant product using ACCESSFMM, communication of design ideas through 2D drawing techniques & annotation and evaluation of final products. All projects have strands of environmental impacts running through them which allows for topics to be revisited frequently.					

8	Unit/Topic	<u>CAD (Torch Design and manufacture)</u> This builds upon the drawing skills learnt in Y7 and the design process. It introduces the independent use of CAD software and use of CAM. Introduction to smart materials.	<u>Electronics – Night Light</u> Developing further drawing and presentation techniques (2-point perspective). Introduction to soldering circuits. Electronic components and the systems approach to electronics. Practical ability to solder a circuit.	<u>Food</u> Build upon skills and knowledge learnt in y7. Develop their knowledge of healthy eating and function of ingredients.	<u>Textiles</u> Development of the basic textiles skills to produce a product which meets a brief.			
	KS3 NC covered	<u>Design</u> 1,2,3,5 & introduction to 4 <u>Make</u> 1 & 2 <u>Evaluate</u> 1,2,3, & 4 <u>Technical knowledge</u> 1	<u>Design</u> 1,2,3,4 & 5 <u>Make</u> 1 & 2 <u>Evaluate</u> 1,2,3, & 4 <u>Technical knowledge</u> 1 & introduction to 2	<u>Cooking and nutrition</u> 1,2,3 & 4	<u>Design</u> 1,2,3,4 & 5 <u>Make</u> 1 & 2 <u>Evaluate</u> 1,2,3, & 4 <u>Technical knowledge</u> 1			
	Powerful Knowledge	The ability to use CAD software and use CAM manufacturing techniques.	Knowledge of how electrical and electronic circuits works	Detailed knowledge of the main nutrients in the diet.	Designing to meet a specific target market and using branding			
	Mass Practice	Currently we follow the academy policy of 2 assessment points during the academic year which cover the knowledge gained during y7 modules and incorporate the new and expanded knowledge gained during the y8 modules. Assessment 1 covers food hygiene, food miles, sensory analysis of foods, properties of woods, hand tools in the workshop, creating design criteria for a designs and communication of these designs Assessment 2 covers production processes used in the workshop (those covered in Y7), quality control during manufacture, properties of materials and communication of design ideas for packaging.						
		End of module test covering use of CAD/CAM, smart materials and anthropometric data & ergonomics in design.	End of module test on soldering, electronic components and modelling.	End of module test on raising agents, macro nutrients and food poisoning.	End of module test on properties of fabrics and decorative techniques.			
	Distributed Practice	Exit tickets are used to practice knowledge gained on use of CAM in industry, properties and uses of plastics and smart materials	Exit tickets are used to practice knowledge gained on electronic components (symbols and uses), product evaluation and modelling and prototyping.	Exit tickets are used to practice knowledge gained on fats in the diet, food packaging regulations and proteins in the diet.	Exit tickets are used to practice knowledge gained on using flowcharts as production plans, machine and decorative techniques and specifications.			
	What are the key concepts to be covered?	CAD – how production techniques in school link to the industrial production of products, how everyday products have gone through the design process to reach the consumer. Electronics – How simple electronic circuits function (link to science), how a simple idea can have many different outcomes, how modelling and prototyping influences design solutions Food – how simple ingredients can have different functions in cooking and can drastically alter the outcome of a dish, how a balanced diet can have a dramatic effect on future health Textiles – how similar outcomes can be achieved using different techniques, how textiles is more than fashion designing						

What knowledge do they need to have a successful start to Year 9?		<ul style="list-style-type: none"> • Proficient in the use of 2D Design software • Understand how to use the laser cutter (some independently) • How to use a range of presentation techniques (isometric, 2 point perspective) • How to solder a circuit • The effects of fats, carbohydrates and proteins in the body • How to use the sewing machine 					
How are topics spaced between unrelated topics?		Each module is based around the design process and revisits this frequently while focusing on the individual material area. Each topic revisits an aspect of the y7 modules (CAD – plastics theory, Electronics – drawing techniques, Food – healthy diet, Textiles – natural and synthetic fibres).					
9	Unit/Topic	<u>Product Design – USB stick</u> To build on the knowledge and skills introduced in the y8 CAD (torch) project. Skills in using Solidworks software. Independent use of the laser cutter to model and test designs.	<u>Resistant Materials</u> Introduction to a range of practical skills which build on the skills introduced in Y7. Combining a range of manufacturing processes to design and make independently design product.	<u>Food</u> Builds on the knowledge and skills learnt in y7 & 8. Functional properties of ingredients and how they impact on the success of a product. Food choices made by individuals.	<u>Textiles</u> Build on and develop skills introduced in the Y8 textiles project. A range of more complex manufacturing skills (hand and machine based). How to design products to meet a particular design style.		
	KS3 NC covered	<u>Design</u> 1,2,3,4 & 5 <u>Make</u> 1 & 2 <u>Evaluate</u> 1,2,3, & 4 <u>Technical knowledge</u> 1	<u>Design</u> 1,2,3,4 & 5 <u>Make</u> 1 & 2 <u>Evaluate</u> 1,2,3, & 4 <u>Technical knowledge</u> 1	<u>Cooking and nutrition</u> 1,2,3 & 4	<u>Design</u> 1,2,3,4 & 5 <u>Make</u> 1 & 2 <u>Evaluate</u> 1,2,3, & 4 <u>Technical knowledge</u> 1		
	Powerful Knowledge	Use of 3D CAD software.	The knowledge to combine a range of different materials to satisfy a problem	Chemical and functional properties of ingredients when used in cooking	Industrial techniques used in the textiles industry. How to create designs using influences from past designers.		
	Mass Practice	Currently we follow the academy policy of 2 assessment points during the academic year which cover the knowledge gained during y7 & 8 modules and incorporate the new and expanded knowledge gained during the y9 modules.	End of module test on casting, manufacturing techniques used in the workshop and environmental impact of using wood to manufacture products.	End of module test on SMES in food production, chemical and functional properties of egg proteins and nutritional needs at different life stages.	End of module test on environmental impact of different fabrics, production processes in textiles manufacture and analysis of products.		
		End of module test on 3D CAD software, branding and environmental impact of plastics					

Distributed Practice	Exit tickets are used to practice knowledge gained on annotation of design ideas, branding and industrial plastic forming processes.	Exit tickets are used to practice knowledge gained on pewter casting, manufacturing tools and product analysis.	Exit tickets are used to practice knowledge gained on properties/uses of eggs, packaging & the environment and special dietary needs.	Exit tickets are used to practice knowledge gained on creating design ideas, use of fabrics and sampling techniques.		
What are the key concepts to be covered?	Product Design – Virtual modelling of prototypes and products, branding of products. Resistant Materials – how different materials are combined to manufacture products, iterative design in products Food – How ingredients can be versatile in the properties they display depending how they are used Textiles – Designing does not have to be done from scratch, we can use past designing as an influence					
What knowledge do they need to have a successful start to Year 10?	<ul style="list-style-type: none"> • A thorough grasp of the design process and how to apply it • An understanding of materials, their properties and environmental impact • An understanding of the industrial processes and their links to processes used in school • What constitutes a balanced diet • Properties of key ingredients 					
How are topics spaced between unrelated topics?	Each module is based around the design process and revisits this frequently while focusing on the individual material area. Each topic revisits an aspect of the y7&8 modules (Product design – CAD/CAM, Resistant Materials – materials properties, Food – healthy diet and properties of ingredients, Textiles – Hand and machine sewing techniques).					

IMPLEMENTATION – STUDENT NEEDS AND SUPPORT

How is student learning supported below so as to ensure the following:

- extracurricular/career opportunities which develop social and cultural capital
- key vocabulary, reading, writing and numeracy opportunities
- support for SEND and students with Low Prior Attainment, as well as challenge for students with High Prior Attainment

YEAR	Project 1	Project 2	Project 3	Project 4		
7	Social/Cultural Capital		Extra-curricular practical sessions available for 6 weeks in rotation with other KS3 year groups.	Textiles club available for all KS3 students for a 6 week project.		
	Tier 2/3 Vocabulary	Tier 2 – Design, Process, Analysis, Evaluate, Net. Tier 3 - Aesthetics, Ergonomics, Function, Manufacture, Isometric, Specification, Annotation, Crating, Rendering, Thermoplastic, Polymer, Vacuum.	Tier 2 – Risk, Analysis, Template, Grain, Renewable, Parallel, Perpendicular Tier 3 – Tenon saw, Coping saw, Coniferous, Deciduous, Veneers, Lamination, Sustainability	Tier 2 – Hygiene, Seasonal, Environmental, Ingredients, Tier 3 – Contamination, Bacteria, Aroma, Sauté, Simmer, Profile, Convection, Conduction, Radiation, Carbohydrates, Protein, Hydration, Shortening, Starch, Gelatinisation	Tier 2 – Consumer, Decorative, Audience, Natural Tier 3 – Aesthetics, Applique, Hem, Manufacture, Synthetic, Biodegradable, Renewable, Embroidery	

	Reading	Student guide, Knowledge organiser and Design Brief. Knowledge book entries for design process, product analysis, isometric drawing, plastics theory. Exit tickets are taken from GCSE papers to develop students understanding of key vocabulary and command words.	Student guide, Knowledge organiser and Design Brief. Knowledge book entries for properties of woods. Exit tickets are taken from GCSE papers to develop students understanding of key vocabulary and command words.	Student guide, Recipe ingredients & instructions and Knowledge organiser. Knowledge book entries for heat transfer methods, gelatinisation and cross contamination. Exit tickets are taken from GCSE papers to develop students understanding of key vocabulary and command words.	Student guide, Knowledge organiser and Design Brief. Knowledge book entries on natural and synthetic fibres. Exit tickets are taken from GCSE papers to develop students understanding of key vocabulary and command words.		
	Writing	Extended writing opportunities are included in product analysis, annotation of designs and evaluations. Example responses are modelled by teachers.	This is a very practical/hands on based module so there are few opportunities for extended writing apart from in a product analysis recap homework.	Extended writing opportunities are included in sensory analysis tasks and evaluation of dishes. Example responses are modelled by teachers.	Extended writing opportunities are included in product analysis, annotation of designs and evaluations. Example responses are modelled by teachers.		
	Numeracy	Drawing and production of box nets including dimensions.	Accurate measurement and calculating spacing of finger joints.	Weighing & measuring and calculating timings.	Accurate measurement in production of hem.		
	How does the PoS support students with SEND needs?		Learning screens and lesson notes are printed (on appropriate coloured paper) for those students that require them. Dyslexic students are provided with appropriate coloured exercise books. Seating plans take into account student needs, whether that is grouping SEND students to gain support from an LSA or seating students with an appropriate student who can offer support. Where SEND students do not have an LSA in lessons technician support is provided during practical activities.				
	How does the PoS support students with low prior attainment/challenge those with high prior attainment?		<p>LPA - Writing frames and templates are provided for written activities. Introductory module – Pre manufactured nets and formers are provided where necessary Resistant Materials – Templates for marking out finger joints provided Food – Recipes are aimed at the lower students with opportunities for more able to adapt and develop recipes Textiles – Templates for marking out are provided and the range of embellishments to be included are differentiated by ability.</p> <p>HPA – Stretch/Challenge activities are provided in all lessons. Introductory module – Opportunity for students to develop their own packaging net. Resistant materials – Students provided with the opportunity to use more advanced marking tools (marking gauges) to mark out finger joints. Food – Recipes allow for students to adapt and develop the dishes Textiles – The range of embellishments allows HPA students to incorporate a wider range of techniques in their finished product.</p>				
	How does the PoS offer contextual content appropriate to Amington students?		With a boy heavy cohort the practical nature of the content provides more student engagement. A high proportion of PPG students is catered for by providing students with the skills required to feed themselves and their families with healthy balanced meals which when cooked from raw/fresh ingredients can be more economical. HPA students are provided with the opportunities to stretch and challenge themselves in order to reach their potential.				
8	Social/Cultural Capital	Drayton Manor roller coaster design trip.		Extra-curricular practical sessions available for 6 weeks in rotation with other KS3 year groups.	Textiles club available for all KS3 students for a 6 week project.		

Tier 2/3 Vocabulary	Tier 2 - Design, Process, Analysis, Evaluate. Tier 3 - Aesthetics, Ergonomics, Anthropometric, Function, Manufacture, Perspective, Specification, Annotation, Rendering, Extrude	Tier 2 – Design, Process, Analysis, Evaluate, Template Tier 3 – Electronic, System, Transistor, Capacitor, Solder, Component, Resistor	Tier 2 – Hygiene, Environmental, Ingredients Tier 3 – Contamination, Bacteria, Simmer, Profile, Convection, Conduction, Radiation, Carbohydrates, Protein, Macronutrient, Micronutrient, Kneading, Proving, Pathogen	Tier 2 – Consumer, Decorative, Audience, Natural Tier 3 – Aesthetics, Applique, Manufacture, Synthetic, Biodegradable, Renewable, Embroidery, Merchandising,		
Reading	Student guide and design brief. Exit tickets are taken from GCSE papers to develop students understanding of key vocabulary and command words.	Student guide and design brief. Exit tickets are taken from GCSE papers to develop students understanding of key vocabulary and command words.	Student guide, Recipe ingredients & instructions. Exit tickets are taken from GCSE papers to develop students understanding of key vocabulary and command words.	Student guide and design brief. Materials research pages focuselearning. Exit tickets are taken from GCSE papers to develop students understanding of key vocabulary and command words.		
Writing	Extended writing opportunities are included in product analysis, annotation of designs and evaluations. Example responses are modelled by teachers.	This is a very practical/hands on based module so there are few opportunities for extended writing apart from in a product analysis.	Extended writing opportunities are included in sensory analysis tasks and evaluation of dishes. Example responses are modelled by teachers.	Extended writing opportunities are included in product analysis, annotation of designs and evaluations. Example responses are modelled by teachers.		
Numeracy	Numeracy is included in the dimensioning of the product on 2D Design software and modelling of the prototype. Anthropometric data/statistics are collected and analysed.	Dimensioning of prototype and product parts. Calculating resistor values.	Weighing & measuring and calculating timings. Calculating spread of food poisoning pathogens.	Dimensioning of prototype and product parts.		
How does the PoS support students with SEND needs?	Learning screens and lesson notes are printed (on appropriate coloured paper) for those students that require them. Dyslexic students are provided with appropriate coloured exercise books. Seating plans take into account student needs, whether that is grouping SEND students to gain support from an LSA or seating students with an appropriate student who can offer support. Where SEND students do not have an LSA in lessons technician support is provided during practical activities.					
How does the PoS support students with low prior attainment/challenge those with high prior attainment?	<p>LPA - Writing frames and templates are provided for written activities. CAD – Template parts provided on 2D Design to be adapted Electronics – Casing for the night light can be manufactured from an adapted/developed 2D Design template. Food – Recipes are aimed at the lower students with opportunities for more able to adapt and develop recipes Textiles – Templates for marking out are provided and the range of embellishments to be included are differentiated by ability.</p> <p>HPA – Stretch/Challenge activities are provided in all lessons. CAD – The CAD design parts can be designed from scratch and the product is expected to include independently designed shapes and layers of plastic Electronics – The design of the finished products is expected to use a wider range of techniques and components. Extended modelling and evaluation of prototypes is expected. Students are expected to go through the iterative process several times to develop their idea. Food – Recipes allow for students to adapt and develop the dishes Textiles – The range of embellishments allows HPA students to incorporate a wider range of techniques in their finished product.</p>					

How does the PoS offer contextual content appropriate to Amington students?		With a boy heavy cohort the practical nature of the content provides more student engagement. A high proportion of PPG students is catered for by providing students with the skills required to feed themselves and their families with healthy balanced meals which when cooked from raw/fresh ingredients can be more economical. HPA students are provided with the opportunities to stretch and challenge themselves in order to reach their potential.				
9	Social/Cultural Capital			Extra-curricular practical sessions available for 6 weeks in rotation with other KS3 year groups.	Textiles club available for all KS3 students for a 6 week project.	
	Tier 2/3 Vocabulary	Tier 2 - Design, Process, Analysis, Evaluate, Industry, Branding Tier 3 - Aesthetics, Ergonomics, Anthropometric, Function, Manufacture, Perspective, Specification, Annotation, Rendering, Extrude, Profile, Sustainability	Tier 2 – Risk, Analysis, Template, Grain, Renewable Tier 3 – Tenon saw, Coping saw, Perpendicular, Parallel, Coniferous, Deciduous, Veneers, Lamination, Sustainability, Casting, Pewter, Tolerance, Embellishment	Tier 2 – Hygiene, Environmental, Ingredients Tier 3 – Contamination, Bacteria, Simmer, Profile, Convection, Conduction, Radiation, Carbohydrates, Protein, Macronutrient, Micronutrient, Pathogen, Pesticide, Gluten, Coeliac, Coagulation.	Tier 2 – Consumer, Decorative, Audience, Natural Tier 3 – Aesthetics, Applique, Manufacture, Synthetic, Biodegradable, Renewable, Embroidery, Merchandising,	
	Reading	Student guide and design brief. Researching a chosen designer. Exit tickets are taken from GCSE papers to develop students understanding of key vocabulary and command words.	Student guide and design brief. Exit tickets are taken from GCSE papers to develop students understanding of key vocabulary and command words.	Student guide, Recipe ingredients & instructions. Exit tickets are taken from GCSE papers to develop students understanding of key vocabulary and command words.	Student guide and design brief. Exit tickets are taken from GCSE papers to develop students understanding of key vocabulary and command words.	
	Writing	Extended writing opportunities are included in product analysis, specifications, annotation of designs and evaluations. Example responses are modelled by teachers. Students produce a report on a designer/design style of their choice.	This is a very practical/hands on based module so there are few opportunities for extended writing apart from in a product analysis and writing specifications.	Extended writing opportunities are included in sensory analysis tasks and evaluation of dishes. Example responses are modelled by teachers.	Extended writing opportunities are included in product analysis, specifications, annotation of designs and evaluations. Example responses are modelled by teachers.	
	Numeracy	Numeracy is included in the dimensioning of the product on 2D Design software and modelling of the prototype.	Accurate measurement and calculating proportions for their product.	Weighing & measuring and calculating timings.	Dimensioning of prototype and product parts.	
How does the PoS support students with SEND needs?		Learning screens and lesson notes are printed (on appropriate coloured paper) for those students that require them. Dyslexic students are provided with appropriate coloured exercise books. Seating plans take into account student needs, whether that is grouping SEND students to gain support from an LSA or seating students with an appropriate student who can offer support. Where SEND students do not have an LSA in lessons technician support is provided during practical activities.				

How does the PoS support students with low prior attainment/challenge those with high prior attainment?	<p>LPA - Writing frames and templates are provided for written activities. CAD – Template parts provided on 2D Design to be adapted Resistant Materials– Standard dimensions can be used for the picture frame with instruction sheets to follow to create a standard frame. Food – Recipes are aimed at the lower students with opportunities for more able to adapt and develop recipes Textiles – Templates for marking out are provided and the range of embellishments to be included are differentiated by ability.</p> <p>HPA – Stretch/Challenge activities are provided in all lessons. CAD – The CAD design parts can be designed from scratch and the product is expected to include independently designed shapes and layers of plastic Resistant Materials – The design of the finished products is expected to use a wider range of techniques and components. HPA students can independently use the laser cutter to create parts. Students are expected to go through the iterative process several times to develop their idea. Food – Recipes allow for students to adapt and develop the dishes Textiles – The range of embellishments allows HPA students to incorporate a wider range of techniques in their finished product.</p>
How does the PoS offer contextual content appropriate to Amington students?	<p>With a boy heavy cohort the practical nature of the content provides more student engagement. A high proportion of PPG students is catered for by providing students with the skills required to feed themselves and their families with healthy balanced meals which when cooked from raw/fresh ingredients can be more economical. HPA students are provided with the opportunities to stretch and challenge themselves in order to reach their potential.</p>

How does the Implementation Plan meet the ACE curriculum design?

Ambitious	All projects are set up to push students thinking outside the box. Projects are career centred and allow students to investigate use of technology and skills which they may not be aware of and open their eyes to opportunities which they may have never expected to be within their grasp.
Challenging	All projects allow students to stretch their knowledge and more importantly practical abilities to master skills which they may not have been aware of let alone tried. Students are encouraged to utilise hand tools and modern manufacturing techniques in the workshop and are taught how prepare food from raw ingredients using a range of complex skills rather than pre-manufactured component ingredients.
Engaging	If D&T is not engaging then the curriculum has been set up poorly. It incorporates a wide range of activities, skills and knowledge which will reach out to all students. Most projects allow students to focus designs to their own style and all result in a manufactured product.

What are the current strengths of the Implementation Plan?

All D&T material areas are covered giving a solid foundation for KS4 studies.
Projects build year on year (Skills and knowledge) allowing frequent opportunities to revisit content over the 3 years.

What specific actions have to be taken in response to the above? Please consider:

- Core concept changes;
- Space interleaving changes;
- Modifications to ensure an ACE curriculum design;
- CPD for teachers in your subject area;
- Additional research you have to consider as part of this review.

More opportunities have been identified for students to participate in extra-curricular activities. More social and cultural opportunities need to be investigated to be incorporated into session.

Design and Technology National Curriculum

Design

1. Use research and exploration, such as the study of different cultures, to identify and understand user needs
2. Identify and solve their own design problems and understand how to reformulate problems given to them
3. Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations
4. Use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses
5. Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools

Make

1. Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture
2. Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties

Evaluate

1. Analyse the work of past and present professionals and others to develop and broaden their understanding
2. Investigate new and emerging technologies
3. Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups
4. Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists

Technical knowledge

1. Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions
2. Understand how more advanced mechanical systems used in their products enable changes in movement and force
3. Understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs
4. Apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using programmable components [for example, microcontrollers].

Cooking and Nutrition

1. Understand and apply the principles of nutrition and health
2. Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet
3. 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]
4. Understand the source, seasonality and characteristics of a broad range of ingredients.