

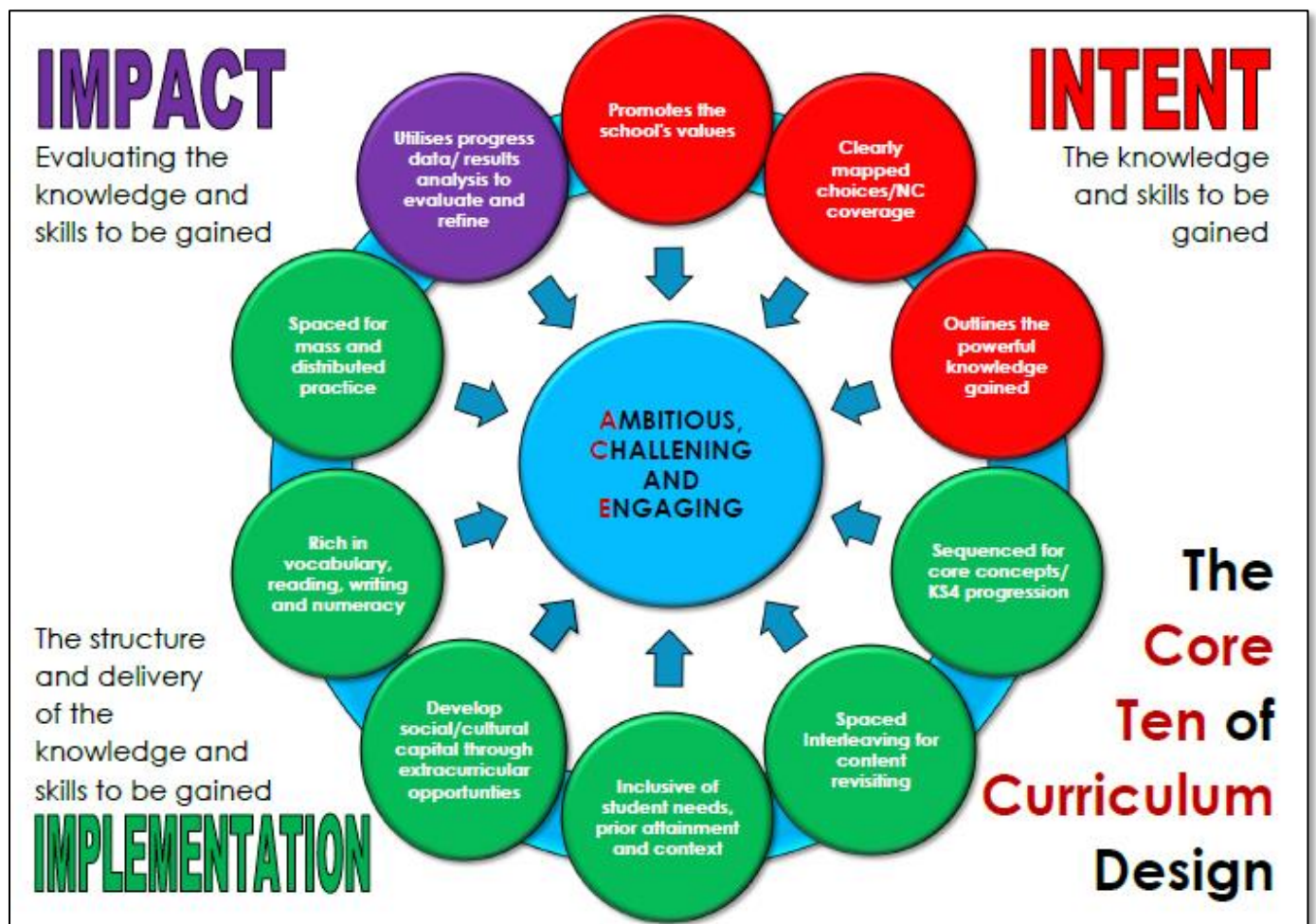
1. CURRICULUM INTENT OVERVIEW PLAN Key Stage 3

Subject: Design & Technology

Author: Duncan Bell

Created: 28/01/20

Updated:



THINKING PROCESS - CURRICULUM INTENT OVERVIEW PLAN (KS3)

Intent Statement – at Landau Forte Amington, we believe learning powerful knowledge helps students achieve and creates a fairer society.

How are you trying to accomplish this, with this Programme of Study (PoS)?

DEFINITION: Powerful Knowledge is described as knowledge which enriches students' lives and creates a fairer society by providing students with intellectual power. It is knowledge which support students in engaging with the world and communicating with people regardless of background or social standing.

Providing a KS3 Curriculum which provides students with essential practical life skills to allow them to develop healthy and creative lifestyles.

The curriculum also prepares students in readiness for studying higher levels of study at KS4.

Aims – what do you want pupils to be able to know and do by the time they finish this Programme of Study (PoS)?

Food – To know the benefits of following a balanced/healthy diet and the consequences of not following a healthy diet at various life stages. To develop a range practical skills which can be adapted to prepare nutritious meals and dishes from raw Ingredients. To understand where food comes from to enable students to make informed choices taking into account social, moral, ethical and sustainability issues. To have the knowledge and skills required to be built upon to complete the GCSE Food Preparation and Nutrition course.

Resistant Materials/Product Design – To develop skills using workshop tools which will enable them to complete basic DIY tasks at home in later life. To gain an understanding of where materials come from and their impact on the world around us and to have an understanding of different materials and their properties to enable them to make appropriate choices when manufacturing products. To gain some understanding of industrial manufacturing processes in the work place. To gain appropriate knowledge required to make choice on future KS4 choices (Design & Technology and Engineering).

Textiles – To develop skills using hand sewing and machine sewing methods to allow them to carry out basic repairs to textiles products/garments at home. To gain an understanding of the industrial manufacturing processes in the work place. To gain an understanding of where textiles materials come from and their impact on the world around us and to have an understanding of different materials and their properties to enable them to make appropriate choices when manufacturing products.

All projects should develop students understanding of careers available in the appropriate sectors relating to Food & Nutrition and Design and Technology.

Academy Values – at Landau Forte Amington, we want students to be ambitious, brave and kind. How are these values promoted in this PoS?

Ambitious – In all projects students are encouraged to strive to produce products/dishes which are of the highest quality and push their creativity and skills.

Brave – Students are required to be brave when undertaking tasks which require the use of new and interesting tools, equipment and processes in the workshop and food room. Students are encouraged to try new foods which they have never tried before.

Kind – Students are required to work in groups and help each other in most projects. The end user of the product being designed is always considered and the impact on the wider community has to be taken into account.

KS3 Curriculum Choices – what topics are taught and does it ensure breadth and depth, as well as meet the legal requirements of the National Curriculum (NC)? (Please note - the sequencing of topics will be explored in the implementation overview, the main purpose at this stage is to know what is taught)

YEAR		Project 1	Project 2	Project 3	Project 4	
7	Unit/Topic	<p><u>Introductory Module studied by all of Y7 at the start of the year</u></p> <p>To introduce the design process, isometric drawing and to build passion for the subject (they use laser cutter, vacuum former and melt chocolate)</p>	<p><u>Wooden Box</u></p> <p>Introduction to practical activities in the workshop. Wood theory, Health and safety, basic hand tools and equipment and wood joining methods.</p>	<p><u>Introduction to Food and hygiene.</u></p> <p>Introduction to practical activities in the food room and safe/healthy preparation of food.</p>	<p><u>Textiles</u></p> <p>Introduction to Textiles practical activities. Production of a decorative wall hanging using hand stitching, machine sewing and tie dying</p>	<p>KS3 D&T projects last for 10 weeks and run on a rotation throughout the year.</p>

	KS3 NC covered	<p>Design 1,2,3 & 5</p> <p>Make Introduction to 1 & 2 but not completed</p> <p>Evaluate Introduction to all aspects of evaluation</p> <p>Technical knowledge Introduction to 1.</p>	<p>Design 1 & 5</p> <p>Make 1</p> <p>Evaluate 1</p> <p>Technical knowledge 1</p>	<p>Cooking and nutrition 1,2,4 & introduction to 3</p>	<p>Design 1,2 & 5</p> <p>Make 1</p> <p>Evaluate 1</p> <p>Technical knowledge 1</p>		
8	Unit/Topic	<p>CAD (Torch Design and manufacture)</p> <p>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.</p>	<p>Electronics – Night Light</p> <p>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.</p>	<p>Food</p> <p>Build upon skills and knowledge learnt in y7. Develop their knowledge of healthy eating and function of ingredients.</p>	<p>Textiles</p> <p>Development of the basic textiles skills to produce a product which meets a brief.</p>		
	KS3 NC covered	<p>Design 1,2,3,5 & introduction to 4</p> <p>Make 1 & 2</p> <p>Evaluate 1,2,3, & 4</p> <p>Technical knowledge 1</p>	<p>Design 1,2,3,4 & 5</p> <p>Make 1 & 2</p> <p>Evaluate 1,2,3, & 4</p> <p>Technical knowledge 1 & introduction to 2</p>	<p>Cooking and nutrition 1,2,3 & 4</p>	<p>Design 1,2,3,4 & 5</p> <p>Make 1 & 2</p> <p>Evaluate 1,2,3, & 4</p> <p>Technical knowledge 1</p>		
9	Unit/Topic	<p>Product Design – USB stick</p> <p>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.</p>	<p>Resistant Materials</p> <p>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.</p>	<p>Food</p> <p>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.</p>	<p>Textiles</p> <p>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.</p>		
	KS3 NC covered	<p>Design 1,2,3,4 & 5</p> <p>Make 1 & 2</p> <p>Evaluate 1,2,3, & 4</p> <p>Technical knowledge 1</p>	<p>Design 1,2,3,4 & 5</p> <p>Make 1 & 2</p> <p>Evaluate 1,2,3, & 4</p> <p>Technical knowledge 1</p>	<p>Cooking and nutrition 1,2,3 & 4</p>	<p>Design 1,2,3,4 & 5</p> <p>Make 1 & 2</p> <p>Evaluate 1,2,3, & 4</p> <p>Technical knowledge 1</p>		

National Curriculum content missing from this PoS and why?	Content taught in addition to the National Curriculum and why?
Use of electrical/electronic systems is touched on but programmable circuits are now used in any practical activities. There are cost implications in providing each student with a circuit which can be programmed. Software is not an issue but the individual hardware for each students is.	

Powerful Knowledge Choices – what powerful knowledge is included in this PoS? Consider what knowledge is it important for our students to know, so that when they leave school they can engage in and lead discussions, with people from the most advantaged backgrounds? (Please note - the sequencing of topics will be explored in the implementation overview, the main purpose at this stage is to know what powerful knowledge is gained)

YEAR		Project 1	Project 2	Project 3	Project 4		
7	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.		
	Why it is important to know	The design process is the basis which most projects are based on. It gives students the background skills required to develop concepts in their wider life with a solid framework. (E.g. Designing the layout of a garden taking in to account the needs of all the family.)	A solid basis for health and safety in any workplace is vital. This could be as simple as keeping themselves when working on DIY projects at home. In an age of increasing concern for the environment and sustainability it is important to know the impact of using different materials.	Healthy eating is vital for all in future life. (Tamworth is the fattest town in Great Britain with 1 in 3 people considered obese according to National Obesity Observatory) Food preparation skills will allow students to take care of themselves and their families with food prepared from raw ingredients being healthier and usually cheaper.	Students will have the knowledge and skills needed to make simple repairs and make products for themselves. In an age of increasing concern for the environment and sustainability it is important to know the impact of using different materials.		
8	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		
	Why it is important to know	Design and manufacture of products is using increasing amounts of automation. A search of CAD Design jobs near Tamworth came up with 975 results within 25 miles.	Provides students with a basis to develop further electrical and electronics knowledge which can lead to careers in all fields of electrical service engineers and manufacturing.	Gives students the knowledge needed to understand what impact the ingredients in food are having on their bodies. They will have the knowledge to adapt their diets according to their different needs at various life stages.	Students will have knowledge needed to allow them to pursue careers in marketing and advertising and gives them a broader scope than just visual advertising		

9	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.		
	Why it is important to know	Gives students alternative ways of presenting designs and communicating them. Students ultimately gain a range of communication techniques which they can select to satisfy specific tasks.	Different materials have different advantages and disadvantages. This allows students to make informed choices	Students will have the skills to adapt/design recipes and dishes according to the ingredients included. Students will be able to independently evaluate foods cooked and adapt them according to what is available to them. They will be able to make choices which could be more cost effective or healthier.	Students gain a sound base to develop knowledge and skills needed to work in the textiles design industry.		

How does the Curriculum Intent 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 Curriculum Intent?

The current curriculum has a very broad base of skills and knowledge and is designed to be accessible and challenge all abilities. It focuses on the needs of our cohort and their backgrounds and provides students with opportunities to broaden their horizons in respect of job/career opportunities.

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

- KS3 Curriculum content changes;
- Powerful knowledge 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.

Powerful knowledge needs to be reinforced in sessions and made more apparent. Opportunities to incorporate programmable circuits need to be investigated.

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.