DESIGN AND TECHNOLOGY

OUR AIMS

To develop The Gillford Centre student's broad overview of design and technology, students at The Gillford Centre will be encouraged to use creativity and imagination to design and make products within a variety of contexts. Students will learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Following the national curriculum programme of study, students will develop creative and practical expertise, build and apply knowledge and understanding, evaluate and test ideas and products and understand the principles of nutrition while learning how to cook.

Year 1

Term	**Unit of Study**	**Key Skills Learning**
Yearly	- Breath of study: Design and Technology	- These units encourage children to learn through a variety of creative and practical activities – through these activities, children are equipped with knowledge, understanding and skills to engage successfully and with increasing independence in the process of designing and making.
Autumn	Dips and dippers Making bread	Design purposeful, functional, appealing products for themselves and others to use based on design criteria - Explore and evaluate a range of existing products. - Evaluate their ideas and products against design criteria - Use the basic principles of a healthy and varied diet to prepare dishes. - Select from and use a wider range of materials and component, including construction materials, textile and ingredients, according to their characteristics.
Spring	Designing a chocolate bar	Design purposeful, functional, appealing products for themselves and others to use based on design criteria - Generate, develop, model and communicate their ideas through talking, drawing, templates, mockups and, where appropriate, information and communication technology. - Explore and evaluate a range of existing products. - Evaluate their ideas and products against design criteria - Select from and use a wider range of tools and equipment to perform practical tasks.

		- Use the basic principles of a healthy and varied diet to prepare dishes. - Select from and use a wider range of materials and component, including construction materials, textile and ingredients, according to their characteristics.
Summer	Designing a toy	Design purposeful, functional, appealing products for themselves and others to use based on design criteria - Generate, develop, model and communicate their ideas through talking, drawing, templates, mockups and, where appropriate, information and communication technology. - Explore and evaluate a range of existing products. - Evaluate their ideas and products against design criteria - Explore and use mechanisms. - Select from and use a wider range of tools and equipment to perform practical tasks. - Select from and use a wider range of materials and component, including construction materials, textile and ingredients, according to their characteristics.

Year 2

Term	**Unit of Study**	**Key Skills Learning**
Yearly	- Breath of study: Design and Technology	- These units encourage children to learn through a variety of creative and practical activities – through these activities, children are equipped with knowledge, understanding and skills to engage successfully and with increasing independence in the process of designing and making.
Autumn	Moving book	• Design purposeful, functional, appealing products for themselves and others to use based on design criteria • Explore and evaluate a range of existing products. • Evaluate their ideas and products against design criteria • Explore and use mechanisms. • Select from and use a wider range of materials and component, including construction materials, textile and ingredients, according to their characteristics.

Spring	Design a toy car Pirate Paddy's Packed Lunch Problem	• Design purposeful, functional, appealing products for themselves and others to use based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates, mockups and, where appropriate, information and communication technology. • Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria • Explore and use mechanisms • Build structures, exploring how they can be made stronger, stiffer and more stable • Select from and use a wider range of materials and component, including construction materials, textile and ingredients, according to their characteristics. • Design purposeful, functional, appealing products for themselves and others to use based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates, mockups and, where appropriate, information and communication technology. • Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria • Build structures, exploring how they can be made stronger, stiffer and more stable • Select from and use a wider range of materials and component, including construction materials, textile and ingredients, according to their characteristics
Summer	Fabric faces Sensational salads	• Generate, develop, model and communicate their ideas through talking, drawing, templates, mockups and, where appropriate, information and communication technology. • Explore and evaluate a range of existing products • Select from and use a wider range of tools and equipment to perform practical tasks. • Select from and use a wider range of materials and component, including construction materials, textile and ingredients, according to their characteristics • Design purposeful, functional, appealing products for themselves and others to use based on design criteria • Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria • Use the basic principles of a healthy and varied diet to prepare dishes. • Select from and use a wider range of materials and component, including construction materials, textile and ingredients, according to their characteristics

Year 3

Term	Unit of Study	Key Skills Learning
Yearly	- Breath of study: Design and Technology	- These units encourage children to learn through a variety of creative and practical activities – through these activities, children are equipped with knowledge, understanding and skills to engage successfully and with increasing independence in the process of designing and making.
Autumn Term	- Buildings and constructions - Let's go fly a kite	- Pupils will be given the task of designing and making a new bridge for a European Capital city of their choice. They will investigate other bridge structures and materials so that they can decide on what will be best for their bridge. - Generate ideas for an item, considering its purpose and the user/s. - Pupils are going to explore kites so that they can design and make one. They will look at the best shapes used for flying kites in the windy weather, as well as investigating the strongest materials to use to stop their kite from ripping.
Spring Term	- Food Technology	- Can you design and make a new chocolate bar for Easter?

	- Design and Make, Woodwork.	- Demonstrate hygienic food preparation and storage. - Plan the order of their work before starting. - To design and create packaging for the chocolate bar. - Which materials will be most suited to making a Viking U-Boat? - Make drawings with labels. - Measure, mark out, cut, score and assemble components with more accuracy. - Work safely and accurately with a range of simple tools.
Summer Term	- Home economics – sewing and needle work - Making a 3D model.	- Can you design and make a stuffed animal to add to a model food chain. - Evaluate their product against original design criteria *e.g. how well it meets its intended purpose.* - Sew using a range of different stitches, weave and knit. - Can I design and make a model of a natural disaster? - Select tools and techniques for making their product.

Year 4

Term	**Unit of Study**	**Key Skills Learning**
Yearly	- Breath of study: Design and Technology	- These units encourage children to learn through a variety of creative and practical activities – through these activities, children are equipped with knowledge, understanding and skills to engage successfully and with increasing independence in the process of designing and making.
Autumn Term	- North America - Romans	- Build a magnetic / pneumatic Kinex crane to be able to sort magnetic items from non-magnetic items – link to science. - I can persevere and adapt my work when my original ideas do not work - Create a superhero accessory. Examples might include Captain America's shield, Wolverines' claws, Tony Stark's helmet, Thor's hammer etc. - I can produce a plan and explain it

		- Make sure that the colour scheme is appropriate to the character. Thor's hammer should have a metallic appearance and a 'leather' handle. - I can evaluate products for both their purpose and appearance - How can you make a shield rigid? What techniques to make a helmet (balloon, papier mache)? - I can select the most appropriate tools and techniques for a given task
Spring Term	- Rainforests - Crime and Punishment	- Generate ideas, considering the purposes for which they are designing. - Make labelled drawings from different views showing specific features. - Select appropriate tools and techniques for making their product. - Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. - Evaluate their work both during and at the end of the assignment.
Summer Term	- Landscapes of the World - Anglo Saxons	- Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. - Evaluate products and identify criteria that can be used. - Measure, tape or pin, cut and join fabric with some accuracy. - Evaluate their products carrying out appropriate tests.

Year 5

Term	**Unit of Study**	**Key Skills Learning**
Yearly	- Breath of study: Design and Technology	- Generate ideas through brainstorming and identify a purpose for their product. - Draw up a specification for their design. - Develop a clear plan including how to use materials, equipment and processes, and suggestions alternative methods of making if the first attempts fail. - Use results of investigations, information sources, including ICT when developing design ideas. - Select appropriate materials, tools and techniques. - Measure and mark out accurately. - Use skills in using different tools and equipment safely and accurately.

		- Weigh and measure accurately. - Apply the rules for basic food hygiene and other safe practices *e.g. hazards relating to the use of ovens.* - Cut and join with accuracy to ensure a good quality finish to the product. - Evaluate a product against the original design specification. - Evaluate it personally and seek evaluations from others.
Autumn Term	- Structures and Buildings - Building a working model of a Shaduf	- Compare the features of the tallest and longest structures in the world. - To understand how to strengthen, stiffen and reinforce more complex structures. - Children will research, plan and build a shaduf using a model which has been created for them. - Follow step by step instructions, use tools and equipment to plan, prepare and build a working shaduf which will be tested to see if it works.
Spring Term	- Create a 3D mountain range - Super Scrumptious Smoothies	- Using a range of art and design techniques, children will create their very own mountain or mountain range. - These will primarily use papier mâché or mod roc to create their structure before painting and finishing it off with finer details from our topic research. - With healthy living in mind, we will sample several scrumptious smoothies before tasting fragrant, farm-fresh fruits. - With our favourites chosen, children will create their very own Super Scrumptious Smoothie as we prepare for the first ever 'Great Gilly Smoothie-Off'
Summer Term	- Make do and Mend - Greek Painting	- It is December 1942 and the country is in the depth of World War II. With little money and rationing in place, children will embrace the 'Make, Do, Mend' philosophy as they undertake some basic tasks such as sowing buttons, darning clothing, making fabric toys and home-made board games. - Pin, sew and stitch materials together create a product. - Using our research skills, the class will take a look at Greek printing work, traditionally found on pottery such as vases. The children will then create their own design and use some new and

		creative art techniques to have a go at their very own Greek printing.

Year 6

Term	**Unit of Study**	**Key Skills Learning**
Yearly	- Breath of study: Design and Technology	- Generate ideas through brainstorming and identify a purpose for their product. - Draw up a specification for their design. - Develop a clear plan including how to use materials, equipment and processes, and suggestions alternative methods of making if the first attempts fail. - Use results of investigations, information sources, including ICT when developing design ideas. - Select appropriate materials, tools and techniques.

		- Measure and mark out accurately. - Use skills in using different tools and equipment safely and accurately. - Weigh and measure accurately. - Apply the rules for basic food hygiene and other safe practices *e.g. hazards relating to the use of ovens.* - Cut and join with accuracy to ensure a good quality finish to the product. - Evaluate a product against the original design specification. - Evaluate it personally and seek evaluations from others.
Autumn Term	- Making a working model of a river - Create a 3d model of a Mayan temple	- Children will turn into Mayan builders as they design and build a Mayan temple. They will build a layered construction before covering it in mod-roc and painting it to look like an authentic, realistic miniature Mayan temple. - Water pump and water tray at the ready, this term, children will work as a small group on an incredible project to design and build a working model of a river. Pumping water to a source and constructing a path for the river to follow with pipes and other equipment.
Spring Term	- Benin - Carlisle Past and Present	- Communicate their ideas through detailed labelled drawings - Develop a design specification. - Select appropriate tools, materials, components and techniques. - Assemble components make working models. - Achieve a quality product. - Evaluate against their original criteria and suggest ways that their product could be improved.
Summer Term	- World War 2 - Exploring Eastern Europe	- Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways. - Plan the order of their work, choosing appropriate materials, tools and techniques. - Use tools safely and accurately. - Construct products using permanent joining techniques. - Make modifications as they go along. - Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. - Record their evaluations using drawings with labels.

OUR AIMS

CATERING - KS3

The Design Technology curriculum at The Gillford Centre is structured to provide a modern and innovative learning experience that allows students opportunities to learn about contemporary technologies, materials and processes, as well as established practices.

Lessons are designed to enable them to cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet. Students 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]. Catering allows students to understand the source, seasonality and characteristics of a broad range of ingredients whilst enhancing and developing on prior learning.

DESIGN AND TECHNOLOGY

The Design Technology curriculum at The Gillford Centre is structured to provide a modern and innovative learning experience that allows students opportunities to learn about contemporary technologies, materials and processes, as well as established practices.

The Gillford Centre offers students two lessons a week in Design Technology on a half termly carousel system which incorporates one session in Catering and one session in other technologies in Year 7 & 8 and 9. Each carousel is designed to embed knowledge and skills and help students gain awareness and learn from wider influences on Design and Technology including historical, social, cultural, environmental and economic factors. Students will get the opportunity to work creatively when designing and making and apply technical and practical expertise.

Design Technology allows students to study core technical, designing and making principles, including a broad range of design processes, materials techniques and equipment throughout Key stage 3.

Year 7

Term	**Unit of Study**	**Key Skills Learning**
Yearly	- Breath of study: Design and Technology – Catering - Food Preparation & Kitchen Safety	- * Health and Safety in the kitchen * Identification of equipment * Essential Kitchen Hygiene * Understand the principle of the Eatwell guide * Develop accurate measuring and weighing skills * Method writing of basic ingredients & recipes * Understand basic nutrition * Produce a range of practical dishes (Fruit Salad, Flapjack, Fruit Muffins, Pizza, Vegetable Soup)

Autumn Term	- Design History	* Critical studies * Analysis of designers such as Phillippe Starck, Ettore Sottsass and Norman Foster. * Analysis of leading design companies Apple, Under Armour, Dyson and Bauhaus. * Understand how to design inspired by others.
Spring Term	- Timbers	* Understand the principles of health and safety in the workshop. * Identify a range of tools and how to use safely. * Be able to measure and mark materials accurately. * Be able to cut materials and produce a range of interconnecting joints, * Apply quality finishes to products.
Summer Term	- Drawing & Modelling in 2D & 3D (Computer Modelling)	* Use of proportion * Drawing isometric and orthographic projections * Drawing in perspective * Basics of 2D Design and Google Sketch Up

Year 8

Term	**Unit of Study**	**Key Skills Learning**
Yearly	- Breath of study: Design and Technology – Catering - Nutritional Values	* Understanding macro/micro nutrients * Sauce gelatinisation * People's nutritional needs * Eatwell Guide: Comparing nutritional values * Developing understanding of portion size * Produce a range of practical dishes (Savoury Scones, Jam tarts, Roux Sauce: Mac & Cheese/Pasta bake, Bolognaise)

Autumn Term	- CAD/CAM Design (Monster Wrap Project)	* Solving design problems * Understanding packaging purposes and materials * Vacuum Forming process * Design and development * CAD design including use of laser cutter
Spring Term	- Enterprise Design (Board Game Project)	* Critical Analysis of existing products * Identifying market needs * Design solution and creation * Product Assembly * Testing, Evaluating and modification.
Summer Term	- Papers & Boards (Pop Up Mechanisms)	* Visualise and represent 2D and 3D objects * The function of mechanisms to produce different sorts of movement * Drawing and production of nets * Design to a brief and evaluate success/failure * Measure accurately.

Year 9

Term	**Unit of Study**	**Key Skills Learning**
Yearly	- Breath of study: Design and Technology – Catering - Cooking Techniques	- * Baking techniques and methods. * Selection of appropriate preparation, cooking methods and times to achieve desired characteristics * Identify different meats and cuts * Evaluate and analysis of practical cooking methods and techniques used * Understand what food provenance & food miles are * Produce a range of practical dishes (Swiss Roll, Stir Fry, Cheesecake, Frittata).

	- Food Styling: Presentation & Photography	* Understand what food styling is * Explore examples of commercial food photography * Analysis and reflection * Explore how imagery is manipulated to create images * Produce edits that reflect high level food styling using Adobe PS
Autumn Term	- Iteractive Design (3D Lamp)	* The contemporary and potential future use of: automation, computer aided design (CAD) computer aided manufacture (CAM) * Extracting information from technical specifications. * Component names, interaction and operation. * Developing a range of prototypes * Understanding how biomimicry is used in industry.
Spring Term	- Theoretical Studies (Materials)	* Classification of the types of properties of a range of materials. * Selecting appropriate materials. * Analysis and reflection * Ecological issues in the design and manufacture of products.
Summer Term		

ENRICHMENT OPPORTUNITIES

After school cooking workshops

Trips to working kitchens including Pizza Express

HOW TO SUPPORT YOUR CHILD'S LEARNING

Students could begin to support the family at home with food preparation and meal planning. Discuss what is being made, how a balanced diet across a week takes planning and involve them with the cooking process. Encourage them to think about how food is made and where it comes from. Encourage active participation in the preparation of food.

WHERE TO GO:

Restaurants are a great place to see the industry in full working practice.

Encourage your child to help with the food shopping to understand the collection of ingredients and planning.

Farmer's Markets.

Artisan Food Stalls.
High Street Food Shops: traditional bakery, butchers, coffee shops.

WHAT TO WATCH:

The Great British Bake Off
MasterChef
Food specific channels such as the Food network
Salt, Fat, Acid, Heat (Netflix)
Jamie Oliver Shows
The Big Family Cooking Showdown (Netflix)

WHAT TO READ:

Cool Kids Cook by Jenny Chandler
Super Foods for Super Kids by Noelle Martin
Cooking Up a Storm by Sam Stern
Jamie's Food Tube by Jamie Oliver

ONLINE:

Cooking with kids
BBC Good Food
Jamie Oliver
Food network