

The Beacon Centre

Design and Technology (DT)

Through a variety of creative and practical activities, pupils will be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. Students work in a range of domestic and local contexts for example, the home, health, leisure and culture, and industrial contexts for example, engineering, manufacturing, construction, food, energy, agriculture including horticulture and fashion.

When designing and making, pupils will be taught to: Use research and exploration, such as the study of different cultures, to identify and understand user needs, identify and solve their own design problems and understand how to reformulate problems given to them, develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations, use a variety of approaches to generate creative ideas and avoid stereotypical responses, develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.

Make students will select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties

Evaluate students will analyse the work of past and present professionals and others to develop and broaden their understanding, investigate new and emerging technologies, test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups, understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.

Long Term overview of the topics that each class will study

during each half term.	
Key Stage 3	
Autumn 1	Graphics - Magazine Project Understand how to design a front cover for a Magazine of a popular theme. Students will need to understand basic photography skills to produce their own photographic cover and then develop skills in Photoshop to produce a magazine cover.
Autumn 2	D&T Materials Understand basic tools and machinery, how to use them correctly and safely Pupils manufacture and assemble wooden Christmas product assessed on their accuracy and health and safety skills in the workshop. Pupils will also be introduced to the basic differences between woods, hard, soft and man-made.
Spring 1	Textiles Apron. Students will design and make a textile piece/pieces based on the theme of fashion. They will develop their ability to sketch a working plan and understand how to select fabrics, techniques and components that are fit for purpose. They will make their item using a range of surface decoration / embellishment techniques including the use of sewing machines and other appropriate and suitable techniques and equipment.
Spring 2	What makes an effective design? Paper Mache. Students will explore and experiment with a range of different materials, techniques and processes.
Summer 1	What do I need to consider when designing for a target market? A project which develops the students' skills using traditional drawing techniques as well as developing an understanding of branding and industry graphics.
Summer 2	Structures of the world. Using the "Around the World" theme they will have the opportunity to create an item for the home and to make a simple garment as well creating designs to decorate a handmade item.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview of Topics.	<p>Communication Traditional drawing techniques (hand drawing) Layout designs Computer Aided Design is used as a creative tool that uses Photoshop/Illustrator software for digital representation of design and development of ideas. Colour balance, clipping masks, blending layers, typography. Branding-redesign of masthead. Digital photography Composition rules, rule of thirds, balance, framing, leading line, symmetry</p>	<p>Health and safety of tools and machines. Measuring and precision are important when constructing products. Hand tools, including tenon saw, ruler, tri-square, bench-hook, ball pen hammer. MDF and pine are versatile materials that can be used to construct products. Features of a good design, including layout and shape. Health and Safety. Health and safety- how well the pupil has worked with the tools and machinery Accuracy-</p>	<p>Basic sewing techniques, including hand stitching (tack stitching and back stitch) Use of components inc beads and sequins. Hand embroidery stitches. Machine sewing accurately Layout and design, Using colour. Properties of fabrics, their selection and use. Decorative surface techniques including paint Use of simple Applique. Uses of Textiles and fabrics in daily life Properties of fabrics. Basic understanding of</p>	<p>Students will be able to understand the importance of Design and Technology as a means of communication, health & safety and personal growth. To understand the value of Design and Technology in a society of different cultures and professions . To recognise that Design and Technology helps us to understand and negotiate our emotions and place within our evolving technological world. To enable students to experience a range of</p>	<p>Innovation Project Analysing a context Researching a context Designing for users Specification Final design Smart Materials Environmental issues Inclusive design. Learning how to work independently and as a group. Understanding traditional and graphic design methods using a paper and board. To understand and apply knowledge of a design specification To experiment with nets and 3D shapes</p>	<p>Make a range of products Learn new skills such as colouring fabrics, surface embellishment, joining fabrics, fabric manipulation and construction techniques. Use different equipment Carry out market research. Students are given support and materials are provided. Layout of the final product and design. Product should be manufactured with none or few errors. Students will receive verbal feedback</p>

	<p>and depth of field.</p> <p>Application of knowledge: Produce relevant research to support designing. Designs of Brand and cover layouts should be finished to a good quality. For manufacturing, technical skills should be evident. Product should be manufactured with none or few errors. Students will receive verbal feedback throughout the module.</p> <p>Careers in the creative industry in particular Graphic Design, Advertising & Architecture and CAD based design such as Gaming Graphics.</p>	<p>how well the pupil has used the tools to create an accurate piece Layout – how the pupil has presented their work using their new skills Product should be manufactured with none or few errors. Students will receive verbal feedback throughout the module.</p> <p>Careers in the creative industry in particular Graphic Design, Advertising & Architecture and CAD based design such as Gaming Graphics.</p>	<p>trends and fashion.</p> <p>Students are given support and materials are provided. Layout of the final product and design. Product should be manufactured with none or few errors. Students will receive verbal feedback throughout the module.</p> <p>Careers in the textile and fashion industry. Marketing, buying, advertising & interior design/architecture.</p>	<p>skills in different materials areas to help them solve challenges in the real world. To give young people an awareness of social, moral, global and environmental impact.</p> <p>English: Opportunities for extended writing within Product Analysis, evaluations, justifying their decisions orally and through annotation. Maths: Measuring, ratio, scale, angles and technical drawing. Science: Investigating material properties and functions.</p>	<p>To create an effective working drawing To understand the importance of branding and use this to apply branding to designs. To manufacture a packaging solution using knowledge of nets, branding and graphics.</p>	<p>throughout the module.</p>
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