Dream Reach Achieve

Whittington Green School – Design and Technology (Textiles)

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CURRICULUM INTENT: The Whittington Green Design and Technology department aims to provide a high quality education which develops lifelong learners who demonstrate a curiosity, creativity and the skills and knowledge required to understand the role of design and technology in industry and in everyday lives. Pupils are given the skills and knowledge to design and make products that solve real and relevant problems within a variety of contexts, considering the needs of potential clients, wants and values. Pupils learn how to take creative risks,

Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

The national curriculum for design and technology aims to ensure that all pupils:

♣ develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world

♣ build and apply a repertoire of knowledge, understanding and skills to design and make high-quality prototypes and products for a wide range of users

♣ critique, evaluate and test their ideas and products and the work of others

♣ understand and apply the principles of nutrition and learn how to cook.

Subject Content

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should 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].

Attainment targets

By the end of key stage 3, pupils are expected to know, apply and understand the matters, skills and processes specified in the programme of study.

Design

Through the content across all three disciplines, pupils should be taught:

- 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 [for example, biomimicry and user-centred design], 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

Pupils should be taught to:

- 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

Pupils should be taught to:

- 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

Technical Knowledge

Pupils should be taught to:

- understand and use the properties of materials and the performance of structural elements to achieve functioning solutions
- understand how more advanced mechanical systems used in their products enable changes in movement and force
- 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]
- 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].

Year 7	
By the end of key stage 3, pupils are expected to know, apply and understand the matters, skills and processes specified in the programme of study. **Design** Pupils should be taught to: • develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools Make Pupils should be taught to: • select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.	Evaluate Pupils should be taught to: • test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups Technical Knowledge Pupils should be taught about: • understand and use the properties of materials and the performance of structural elements to achieve functioning solutions
Cultural capital	Careers links will be covered to give context to all lessons that are delivered. Wider curriculum opportunities will be taken where appropriate to broaden student experiences i.e. trips etc.
Adaptations for SEND	A broad and relevant curriculum will be taught to all students in design and technology, this will be appropriately scaffolded by LSA's and teachers to ensure every student can access the curriculum.

Term/Unit	Topic Overview / Content	Learning Expectation / Concepts and Skills	Recall and review of past learning	National Curriculum target	Key Vocab / Concepts
Health and safety	Form understanding of the routines and rules of the classroom in terms of Health and Safety and behaviour.	• Understand the reasons for certain safety rules and routines. • Understand how to use machines in a safe manner to both the user and others in the room	Recall previous knowledge from primary schools with regard to Health and Safety of sewing if done in KS2.	• select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.	• Irons • Heat • Needles • Space • Tidy • Hair • Loose clothing
Design	Form understanding of the design process. Practise producing a range of design ideas.	• Understand how to present design ideas creatively • Understand the process of designing for a function. • Practise sketching techniques to reach a desired outcome.	Recall knowledge of the design/drawing skills from KS2	• develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools	• Brief • Annotation • Design fixation • Client • Needs • Sketching • Rendering • Function • Aesthetics
Making	Form understanding of Machine sewing and identify the equipment demonstrated and used. Observe how to use equipment and practise using themselves with accuracy.	• Understand and practise the following different Techniques: o Construction of a functional item o The basic parts of the sewing machine o Setting the sewing machine up	Recalling the importance of using equipment accurately and safely from the Health and Safety unit Recalling the names of individual equipment used in the making process.	• select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.	• Construction • Top stich • Hem • Double turned Hem • Seam allowance • Pattern • Pin • Press • Iron

		○ Safe use of sewing machines to create a basic stich.		• understand and use the properties of materials and the performance of structural elements to achieve functioning solutions	• Attach • Applique • Embroidery • Accuracy
Evaluating	Understanding how to Critically evaluate their own work effectively	• Describe how the work they have produced works well and how it could be improved. • Critically evaluate their work on whether the product meets the intended purpose	Recall use of the following that they have done throughout the project: • Design prosses • Manufacturing/stitching techniques • Finishing techniques	• test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups	• Evaluate • Reflect • Improve • Assess • Client • Critique