



Design Technology at Kingsway Primary School

Intent

The Design and Technology creative curriculum at Kingsway aims to inspire Positive Outcomes for All. Through practical and ambitious D&T activities, we aim to encourage all pupils to have high aspirations of their work. '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.' NC D&T PoS

The value of D&T at Kingsway is regarded very highly, where all children are creative, problem-solvers and learn practical skills for life. Our curriculum is structured so that skills and knowledge build from phase to phase, embedding and extending key ideas. We ensure the skills covered are everyday life skills that focus on transforming pupil's perspectives. This will hopefully build a future where pupils learn about designing solutions to improve people's lives. Teachers use existing products to inspire and support their investigations and establish real contexts for their work. Furthermore, where appropriate, trips and visits are planned in, to strengthen the links to the world around them and further enhance the learning experience.

Implementation

All children will start with researching their focus product, exploring the context and existing products. They will then move onto considering the design criteria, thinking about and understanding their intended users and their own product. Next, children will plan their creation, by communicating their ideas and creating prototypes for their product. The following session will lead onto making their product; by selecting the tools and applying the practical skills and techniques needed and demonstrating the technical knowledge required. Finally, the children will evaluate their product, referring back to their planning, initial ideas and design criteria. We believe that a good Design Technology activity has to have sufficient depth and breadth to enable children to learn practical skills and provide them with the knowledge to make products that move/ light up, are structurally sound and don't collapse / are safe. Pupils need to be able to test, refine and develop the products they design and make to check that they work and improve them if they don't.

In EYFS: Children will have plenty of opportunities for designing and making their own

models using a variety of construction and junk modelling / art materials.

In Year 1: Research-Children will understand a product; how it works, how it's used and where you might find it.

Design Criteria- Explain their product; who will use it and describing it.

Planning- Discuss what their steps for making could be through talking and drawing.

Making- Use materials, use suitable tools, measure out, mark and cut out pieces. Join, assemble and combine materials and components.

Evaluation- Talk about their design ideas and what they have made, make simple judgements of how their product met the design ideas.

Technical Knowledge- Build structures, exploring how they can be made stronger, stiffer or more stable. Explore and use mechanisms, e.g levers, sliders, wheels and axels, in their products.

In Year 2: Research- As in Year 1 and identify the materials used and express an opinion.

Design Criteria- Use own experiences and existing products to develop ideas. Explain what product they will be designing and making, who will use the product, what it will be used for and why it is suitable for purpose.

Planning- As Year 1 and choose materials based on properties, create templates/ pattern pieces and explore materials.

Making- As Year 1 and choose tools and explain why they are suitable, use finishing techniques, including art skills.

Evaluation- As Year 1 and suggest how their product could be improved.

Technical Knowledge- As Year 1.

In Year 3: Research- Identify who made the product, when, what it is made out of and for what purpose. Evaluate the product on design.

Design Criteria- Understand and gather information about what a certain group or people want from a product, describe the purpose of the product and how it will work. Identify design features and explain how their product will work, generating realistic ideas.

Planning- Share and discuss their ideas with others, ordering the main stages of making and choosing materials based on suitability. Represent ideas in diagrams, annotated sketches and computer based (where appropriate). Create pattern pieces and prototypes.

Making- (As Year 2)

Evaluation- Use design criteria to evaluate product, identifying both strengths and weaknesses and areas for development. Consider the views of others, including the intended user, whilst evaluating the product.

Technical Knowledge- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products e.g levers and linkages. Understand and use electrical systems in their products e.g series circuits, incorporating switches, bulbs, buzzers and motors.

In Year 4: Research- As Year 3

Design Criteria- Develop own design criteria and use for planning ideas, generate realistic ideas that meet the needs of the user and take into account resources.

Planning- As Year 3.

Making- As Year 3.

Evaluation- As Year 3.

Technical Knowledge- As Year 3.

In Year 5: Research- As Year 3 / 4 and discuss environmentally friendly materials, and identify the cost to make the product.

Design Criteria- As Year 3 / 4 and use surveys and questionnaires to find out information. Generate innovative ideas that meet users needs.

Planning- As Year 3 / 4 and record a step by step plan for making, producing lists for the tools, materials and equipment they will need. Consider aesthetic qualities.

Making- As Year 3 / 4 and demonstrate problem solving skills when encountering a mistake or practical problem.

Evaluation- As Year 3 / 4.

Technical Knowledge- As Year 3 / 4 and understand and use mechanical systems in their products e.g gears, pulleys, cams. Apply their understanding of computing to program, monitor and control their products.

In Year 6: Research- As Year 3 / 4/ 5 and discuss whether the product has any other purposes, e.g trend setting.

Design Criteria- As Year 3 / 4/ 5 and Create a description for their product, highlighting the impact of time, resources and cost within their design ideas.

Planning- As Year 3 / 4/ 5.

Making- As Year 3 / 4/ 5 and use finishing techniques that involve a number of steps.

Evaluation- As year 3 / 4/ 5 and use design criteria to evaluate end product- looking at quality and whether it is fit for its intended purpose.

Technical Knowledge- As Year 3 / 4/ 5

Across KS2 -Key Events and Individuals- Pupils should know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.

Impact

Good achievement and challenge are evident when children demonstrate a secure understanding of who they are designing and making the product for, the purpose of the product, how it will work and the specific design criteria that their product must meet to be successful. When children communicate their innovative ideas and plans clearly and modify their designs and prototypes in light of testing and evaluating. When children develop technical competence, measuring and using tools with increasing accuracy. When children use their scientific understanding and knowledge of mechanisms, structures, forces and the effects of heat to explain how their product works. When children use an increasingly technical vocabulary when talking or writing about their product and what they might change.

Our overall aspiration for Kingsway pupils, is for the children to become enthusiastic and confident in designing and making; using a wide variety of resources, including everyday life skills; such as sewing and using a saw / hammer.