Knowledge and Skill Map

Year 3 DT

1

Cook well, Eatwell.

Autumn 2B

Innovate Challenge

Making a new school meal

Skills:

- Describe how key events in design and technology have shaped the world.
- Develop design criteria to inform a design.
- Explain how an existing product benefits the user.
- Identify and name foods that are produced in different places.

- Identify the main food groups (carbohydrates, protein, dairy, fruits and vegetables, fats and sugars).
- Prepare and cook a simple savoury dish.
- Suggest improvements to their products and describe how to implement them, beginning to take the views of others into account.
- Use appliances safely with adult supervision.
- Use tools safely for cutting and joining materials and components.
- Explain the importance and characteristics of a healthy, balanced diet.
- Identify the main food groups (carbohydrates, protein, dairy, fruits and vegetables, fats and sugars).

Core Knowledge:

- Design criteria are the exact goals a project must achieve to be successful.
- These criteria might include the product's use, appearance, cost and target user.
- There are five main food groups: fruit and vegetables; carbohydrates (potatoes, bread, rice and pasta); proteins (beans, pulses, fish, eggs and meat); dairy and alternatives (milk, cheese and yoghurt) and fats (oils and spreads).
- Foods high in fat, salt and sugar should only be eaten occasionally as part of a healthy, balanced diet
- Preparation techniques for savoury dishes include peeling, chopping, deseeding, slicing, dicing, grating, mixing and skinning.
- Safety rules must be followed when using electricity. Fingers and other objects must not be put into electrical outlets, anything with a cord or plug should never be used around water and a plug should never be pulled out by its cord.
- Humans get nutrition from what they eat.
- It is important to have a balanced diet made up of the main food groups, including: proteins, carbohydrates, fruit and vegetables, dairy products and alternatives, and fats and spreads.
- Humans stay hydrated by drinking water.
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- **Depth**

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

Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.

2

Making it Move

Spring 4B

Innovate Challenge

Designing and making an automaton toy

Skills:

- Develop design criteria to inform a design.
- Explain how an existing product benefits the user.
- Explore and use a range of mechanisms (levers, sliders, axles, wheels and cams) in models or products.
- Plan which materials will be needed for a task and explain why.
- Suggest improvements to their products and describe how to implement them, beginning to take the views of others into account.
- Use tools safely for cutting and joining materials and components.
- Make working models with simple mechanisms or electrical circuits.

Core Knowledge:

- Design criteria are the exact goals a project must achieve to be successful.
- These criteria might include the product's use, appearance, cost and target user.
- Cams are devices that can convert circular motion into up-and-down motion.
- The cam is fixed to the axle and the follower sits on the cam. When the axle is rotated, the follower moves up and down, following the shape of the cam.
- Different shaped cams produce different patterns of movement in the follower.
- Materials for a specific task must be selected on the basis of their properties. For example greenhouses need transparent or translucent materials. Availability and cost have also got to be considered.
- Asking questions can help others to evaluate their products. For example, asking someone whether the materials selected helped achieve the purpose of the model.

Depth:

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

3

Greenhouse

Summer 6B

Innovate Challenge

Planning and making a mini greenhouse.

Skills:

- Create shell or frame structures using diagonal struts to strengthen.
- Diagonal struts create triangular shapes within a frame structure.
- Adding diagonal struts to a frame structure adds strength and stability.
- Develop design criteria to inform a design.
- Explain how an existing product benefits the user.
- Explain the similarities and difference between the work of two designers.
- Plan which materials will be needed for a task and explain why.
- Suggest improvements to their products and describe how to implement them, beginning to take the views of others into account.
- Use tools safely for cutting and joining materials and components.
- Compare artists, architects and designers and identify significant characteristics of the same style of artwork, structures and products through time.

Core Knowledge:

- Diagonal struts create triangular shapes within a frame structure.
- Adding diagonal struts to a frame structure adds strength and stability.
- Design criteria are the exact goals a project must achieve to be successful.
- These criteria might include the product's use, appearance, cost and target user.
- Particular products are designed for specific tasks. For example, designing a product to help grow plants will require certain materials.
- Work from different designers can be compared by assessing specific criteria, such as their visual impact, fitness for purpose and target market.
- Materials for a specific task must be selected on the basis of their properties. For example, greenhouses need transparent or translucent materials. Availability and cost have also got to be considered.
- Asking questions can help others to evaluate their products. For example, asking someone whether the materials selected helped achieve the purpose of the model.

Depth:

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