Year 3

DESIGN TECHNOLOGY

Curriculum Intent

Through studying D&T at Walton Oak, children will create and design projects for a variety of purposes and contexts. Pupils will be able to consider safety and take appropriate risks using specialist tools, materials, mechanisms and equipment. Children will understand the process of planning, refining and modifying whilst considering key design criteria.

Themes:

1. **Designing**
   Researching, disassembly, understanding form and function, planning, sketching, communicating, affordability, management of materials

2. **Making**
   Selecting and using tools safely, measuring with precision, cutting, piercing and joining materials safely, safety in food technology

3. **Evaluating**
   Checking against design criteria, testing, refining and modifying

4. **Technical knowledge**
   Mechanical systems (cams, pulleys, wheels etc), how different materials behave, electrical systems

D&T Knowledge Organiser will all include an image of the 'Research – Design – Make - Evaluate' model. This will be referred to in all projects to help children understand how this process is used in technological design and also across the curriculum and in life.

DESIGN & TECHNOLOGY: CORE STUDY FOR YEAR THREE

1. Designing

Core knowledge	Core skills	Core vocabulary	Taught through
● Understand that design is a process that begins with a purpose and ends in evaluation. ● Plan a sequence of actions to make a product. ● Know how to identify features in existing products that make them effective or appealing. ● Investigate products as a starting point for a design. ● Understand that product design involves planning how parts fit together or move. ● Begin to consider user needs, product function, and aesthetic. ● Use research and develop design criteria to inform the design of functional, appealing products. ● Select the most appropriate tools and techniques for a given task. ● Identify who made the product, when it was made and what its purpose is.	● Research facts about famous inventors/ chefs / designers etc linked to product ● Understand and gather information about what a particular group or people want from a product ● Generate design ideas through labelled sketches and discussion. ● Plan products with clear steps, identifying required materials and tools. ● Explore alternative ideas before deciding on the best solution. ● Annotate drawings with basic dimensions and movement mechanisms. ● Explain how parts of their product works ● Generate realistic ideas that meet the needs of the user. ● Share and discuss ideas with others. ● Choose materials to use based on suitability of their properties. ● Create pattern pieces and prototypes.	● Prototype ● Design ● Function ● Feature ● Plan ● Sketch ● Label ● Criteria ● Mechanism ● Model ● Evaluate	● Designing a moving monster with linkages and levers. ● Planning and sketching marble run layouts for flow and stability. ● Designing a recipe and steps for making Egyptian-style flatbread.

Extended Skills and Vocabulary

- Explain why certain materials or shapes are chosen.
- Use terms such as mock-up, design brief, sequence, and model.
- Use digital tools or software for simple design layouts or diagrams.

DESIGN & TECHNOLOGY: CORE STUDY FOR YEAR THREE

2. Making

Core knowledge	Core skills	Core vocabulary	Taught through
● Know how to use basic tools with accuracy and care. ● Understand that tools and joining methods must be chosen based on the material. ● Read and follow a simple recipe. ● Recognise a broad range of ingredients (cereals, meat, fish). ● Know that food preparation involves correct sequencing and measuring. ● Understand that structures can be strengthened by adjusting shape or support. ● Use their knowledge of mechanical systems to build a structure/moving product.	● Measure and cut materials using templates or marks. ● Measure, mark out, cut, score and assemble components with more accuracy. ● Use paper fasteners, glue, and tabs to join card and paper. ● Shape dough by kneading, rolling and forming. ● Safely use cutting tools, scissors, or knives with support. ● Sieve (a range of ingredients), mix, stir and combine wet and dry ingredients into a bowl (E.g. to form a dough). ● Work safely with a range of simple tools.	● Cut ● Measure ● Join ● Glue ● Fasten ● Reinforce ● Mix ● Knead ● Sequence ● Safe ● Stable	● Building a marble run using cardboard tubes, joining, and folding techniques. ● Making Ancient Egyptian bread using basic ingredients and baking methods. ● Assembling a monster figure that moves using paper linkages and pivots.

Extended Skills and Vocabulary

- Use language like edge alignment, frame, fold line, texture, and shaping.
- Begin working more independently when preparing food.
- Select tools confidently based on material type.

DESIGN & TECHNOLOGY: CORE STUDY FOR YEAR THREE

3. Evaluating

Core knowledge	Core skills	Core vocabulary	Taught through
● Recognize that different users may provide varied feedback based on personal experience. ● Understand the role of testing in improving the function, appearance, and usability of a product. ● Know that evaluation should include whether the final product meets the original design criteria. ● Understand that evaluation happens at different stages of the design process. ● Know that checking functionality, strength, and appearance is part of product review. ● Recognize that feedback helps improve both the product and the process.	● Test a mechanism or structure for function and strength. ● Use peer or self-evaluation to assess success. ● Make changes during making to improve the outcome. ● Compare their product with their initial design plan. ● Use design criteria to evaluate products, including identifying both strengths and areas for development. ● Consider the views of others, including the intended user, whilst evaluating the product.	● Evaluate ● Review ● Test ● Compare ● Fix ● Improve ● Feedback ● Result ● Appearance	● Timing marble run completion and adjusting for smoother flow. ● Discussing how Egyptian bread could be improved (e.g., shape, bake time). ● Testing monster mechanisms to see if the movement works as planned.

Extended Skills and Vocabulary

- Use terms such as performance, working feature, intended purpose, and refine.
- Record changes and reasons for them in simple formats (e.g., bullet notes or diagrams).

4. Technical knowledge

Core knowledge	Core skills	Core vocabulary	Taught through
● Know that mechanical systems use components that move together in controlled ways. ● Understand that materials have properties such as flexibility, strength, and durability that influence product function. ● Know that consistent shaping and measuring improves product accuracy. ● Know how levers and linkages create controlled movement. ● Understand that structure stability comes from weight distribution and shape. ● Know that ingredients change properties when heated or mixed. ● Recognize how to adapt basic mechanisms and materials to suit the purpose. ● Explain their choice of tools and equipment in relation to the skills and techniques they will be using.	● Use linkages or sliders to create movement in a simple product. ● Reinforce or stabilise a structure using folds or internal supports. ● Mix ingredients and prepare dough with correct ratios. ● Explain how a mechanism works using basic vocabulary. ● Select appropriate tools for the making process, providing reasons for their use. ● Apply design criteria throughout the making process.	● Linkage ● Lever ● Stable ● Fold ● Pivot ● Mixture ● Dough ● Reinforce ● Shape ● Property	● Constructing a marble run using materials that reduce friction and promote flow. ● Creating a moving monster with a working lever and linkage system. ● Making Egyptian bread and observing how mixing, kneading and baking affect the outcome.

Extended Skills and Vocabulary

- Use terms such as friction, flow, motion, absorbent, flexible, structure.
- Begin to recognise material limitations and benefits through trial and error.
- Relate basic mechanical concepts to everyday objects (e.g., door hinges, ramps).