Design and Technology

At Green Ridge, we believe that Design and Technology helps to prepare children for the developing world and encourages them to become curious and creative problem-solvers, both as individuals and as part of a team.

Intent – what we aim to doc

- To develop imaginative thinking in children.
- To enable children to problem solve and evaluate what they are designing and making.
- To enable children to talk about how things work.
- To encourage children to select appropriate tools and techniques for making a product.
- To foster enjoyment, satisfaction and purpose in designing and making.
- To use ICT software to assist designing and learning.
- To introduce pupils to the language and vocabulary of Design and Technology.

Implementation – how do we achieve our aims?

The Reach2 scheme of work teaches practical approaches to Design and Technology in a fun and purposeful way. At the same time, it provides teachers with all the guidance they need to plan and deliver a high-quality Design and Technology education. The scheme of learning provides full coverage of the National Curriculum for Design and Technology. Each year group will complete three Design and Technology units over the course of the year. These will be taught each term in rotation with Art. Lessons will be taught weekly by the class teacher and will last one hour.

Planning/ Sequencing

Lessons are sequenced using the Reach2 scheme of work. The scheme provides a series of units to cover across the year including structures, mechanisms, cooking and nutrition, electrical systems and textiles. These units will not be covered in every year however, there are opportunities for children to build on prior knowledge and skills they have developed.

For example, throughout the school structures will be taught in Year 1 in their Bridges unit, in Year 2 as part of the Terrific Towers topic, in Year 3 for You've Been Framed, in Year 5 for their Marble Runs and in Year 6 for Hats off to You. Within these units, children will work with different materials and develop different skills linked to the four strands of Design and Technology.

Four strands of Design and Technology

Throughout the school year, pupils are taught lessons to embed the four areas of Design and Technology : design, make, evaluate and technical knowledge.

Design:
- Pupils design innovative, functional and appealing products
- Pupils can communicate their ideas

Make:
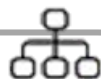- Pupils can select from and use a wide range of tools and materials

Evaluate:
- Pupils evaluate against a criteria and suggest ways to improve their work

Implementation – (continued)

Structure of a lesson

Design and Technology is taught weekly and lasts for one hour. Each lesson begins by revisiting knowledge from the previous lesson and the previous unit. Pupils are also given a problem-solving or evaluation starter to ensure these skills are practiced regularly. The key vocabulary for the lesson is then taught allowing time for children to revisit previous vocabulary too. The new learning is then presented, followed by a modelled task and guided practice, before the children then independently apply the new learning.

Enrichment

Our 11B411 challenges help enrich our curriculum. In Year 4, for our Wildlife Warriors challenge, children make wooden birdboxes and insect houses. In Year 2, as part of our Seeds to Supper challenge, the children grow vegetables in our school garden to create a meal with.

DT in EYFS

Design and Technology can be seen within the strand of Expressive Arts and Design in our EYFS classrooms. The children will have the chance to:
- Explore media and materials and begin to use their senses to investigate them
- Use their imagination to consider what they can do with different materials and make simple models which express their ideas
- Use drawings to represent ideas like movement or loud noises
- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function
- Join different materials and explore different textures
- Create collaboratively sharing ideas, resources and skills

These areas are developed through continuous provision throughout the year along with key vocabulary.

10 min – next steps/review

5 min – Hook

15 min – Teaching input inc vocabulary

10 min – Guided practice

15 min – Independent application

5 min – Review of learning

Assessment

In each unit studied, teachers will use assessment for learning throughout the unit to ensure retrieval practise allows knowledge to move to the long-term memory. The daily and weekly reviews of learning will allow teachers to assess the children's key technical knowledge during a unit. The final practical outcome will also allow teachers an opportunity to assess the skills that have been taught. Teachers and the subject leader will also use pupil voice to assess pupil's technical knowledge and understanding of the key skills.

SMSC + British Values

In Design and Technology, we aim to promote British Values and SMSC by:
- Encouraging pupils use of imagination and creativity in their learning
- Ensuring pupils having a sense of enjoyment and fascination in learning the way things work
- By looking at the achievements of key designers and creators, pupils develop an awareness of how they have influenced and shaped the country in which we live. This includes an appreciation of their work.
- We teach pupils to respect and value diversity through showing respect for different viewpoints and ideas as well as in the ability to work effectively together both individually and in groups.
- Enabling pupils to reflect on the ways that products and designs can affect society and the environment

Implementation – (continued)

Sustainability

Through our chosen curriculum, we would like children to develop an understanding of how certain products can have an impact on the local and wider environment. We encourage children to evaluate products based on their sustainability . Our cooking and nutrition units include questions that cover sustainability too. Sustainability also impacts our resourcing for our units. We try to recycle, upcycle or reuse where we can, and we take consideration to ensure we are limiting food waste.

Retrieval Practice

Through lesson starters and the progression design of our curriculum, pupils are given opportunities to encounter technical knowledge and develop skills repeatedly throughout their time at our school. When a unit is revisited, teachers will employ retrieval practice strategies to support children in transferring knowledge to the long-term memory.

Adaptive Teaching

In line with our teaching and learning framework, adaptive teaching is used to ensure all learners can apply their knowledge, make progress and apply their knowledge to independent application.

Adaptations in Design and Technology may include:
- Adapted resources
- Providing additional models/demonstrations
- Vocabulary prompts

Lesson Starters

Our problem-solving starters, aim to give children the opportunity to think like "a designer" to design solutions to a problem for a certain user. Teachers can use the bank of problem-solving starters or use gaps they identify from their assessment to create their own. Our evaluation starters aim to encourage children to relate their evaluative skills to real life products. As part of this, children could be asked to evaluate the materials of the chairs in the classroom. Children will do only one of these in each lesson but will cover them equally over a unit.

Impact – how will we know we achieved our aims?

| Children will demonstrate imagination when designing and making | Children will think critically about their products and evaluate to suggest improvements | Children show curiosity about the world around them and ask questions about how things work | Children will select appropriate tools and techniques for making a product | Children have a love of Design and Technology and can articulate their interests | Children can successfully use ICT software to assist designing and learning | Pupils can accurately use the language and vocabulary of Design and Technology |

Whole School Overview 2023-2024

	Autumn	Spring	Summer
Year 1	Super Smoothies (Food)	Bridges (Structures)	Under My Umbrella (Textiles)
Year 2	Terrific Towers (Structures)	Wonderful World of Wool (Textiles)	I'm In Love With My Car (Mechanisms)
Year 3	Ready to Pop (Mechanical Systems)	You've Been Framed (Structures)	Dynamic Drawbridges (Mechanical Systems)
Year 4	On A Roll (Food)	Quizzical Quilting (Textiles)	Create a Buzz (Electrical Systems)
Year 5	Marble Run (Structures)	Pinball Wizards (Mechanical Systems)	Roving Robots (Electrical Systems)
Year 6	Take A Seat (Textiles)	Hats Off To You (Structures)	Great British Menu (Food)