SUBJECT ON A PAGE: Design and Technology

At Spring Grove Primary School, we believe that the development of Design and Technology capability is important in preparing all children for citizenship in an ever increasing technological world.

SPRING GROVE PRIMARY SCHOOL

Intent - We aim to...

- Deliver a purposeful, engaging and rich curriculum which allows our children to feel they can contribute ideas to an ever-evolving world of invention.
- Introduce a broad and rich DT curriculum, through cross-curricular links. To ensure that the learning is always reinforced and embedded.
- Ensure the ability to use technological skills is a vital life skill in modern society.
- Explicitly plan the use of materials and tools during the teaching of Design and Technology. To ensure that children have key knowledge and practical skills to be able to succeed.
- Develop in children an understanding of how environmental issues and societal factors (e.g. cost-effectiveness) impact design.
- Encourage children to become independent, creative problem -solvers, identifying needs and developing ideas for products that are fit for purpose and user.

Implementation - How do we achieve our aims?

Our Curriculum

At Spring Grove, teachers plan creative and practical Design and Technology (DT) activities linked to class topics. The organisation of our DT curriculum enables our children to **build** and **apply** their **knowledge, understanding** and **skills** in order to design and make high-quality prototypes and products for a wide range of users. Children **critique, evaluate** and test their ideas and products and the work of others throughout all DT units of work. In Key Stage One (KS1) and Key Stage Two (KS2), **lessons** follow the **same structure** as *Projects on a Page*, although we make the content more bespoke. We believe, that these links support children to make a greater connection and understanding of the world around us. **Assessment** is at the core of all Design and Technology projects. Our cyclical approach enables children to return to key areas again and again which allows for accurate assessment of key skills such as chopping, sawing and stitching; teachers observe and assess these skills to inform future planning.

Lesson Structure

Investigate and Evaluate → Focused Task → Planning → Making → Evaluating

- Investigate and Evaluate: Exploring Key inventors, inventions and existing products.
- Planning: Carrying out risk assessments and engaging in a skills-based task

A Consistent Approach

In KS1 & KS2, the curriculum is taught through **6 key areas of D&T**, which are outlined in the Design and Technology Association's '***Projects On a Page***' scheme. In KS1, each area is taught, except electrical systems (electricity not taught in Science), and CAD (more appropriate for KS2). The basic skills of D&T taught in EYFS & KS1 are then enhanced in KS2. In lower KS2, each area of D&T is taught and these are **revisited** in more depth in upper KS2.

Strong Foundations

In the Early Years Foundation Stage (EYFS), DT is all around the children. Children are constantly and continuously, **building** and **creating**. Throughout this process teachers **use a range of strategies** to support and challenge children's thoughts. This enables children to create and discuss their creation with their peers and teachers. We ensure that the key foundational knowledge required for our Key Stage One D&T curriculum is fed into our Early Years environment and learning activities.

Development of Key Skills

Design and Technology activities at Spring Grove Primary school, enables children to develop new skills from the Early Years Foundation Stage through to Key Stage Two. For example, in the EYFS, DT is embedded in all aspects of the children's learning journey and environment. Children are introduced to scissors and joining materials when constructing their own models and are encouraged to talk about their designs before creating them. Those cutting and joining skills are deepened as the children get older and they gain more independence when using scissors for cutting materials. In upper Key Stage Two, children are given opportunities to use knives to chop different foods further developing their cutting and chopping skills.

Implementation (continued)

Allocated Time

At Spring Grove Primary School, children are taught Design and Technology once a term and units of work link to other subject areas. The children complete 3 projects per year.

Progression in Working With Tools

In KS1 and 2, children are given opportunities to develop their skills in using a range of tools as part of their DT unit.

In the **EYFS** children use scissors, brushes and cutlery for a range of different activities as part of the **continuous environment** and during **adult led activities**; the children are also introduced to how to use plastic needles to join materials.

In **Years One and Two**, children are given the opportunity to **develop** their **skills** in using specific tools and are taught how to use them **safely** as part of the following topics:

Sliders and Levers: drills and scissors

Free standing structures: scissors, hole-punchers and staplers

Textiles: pins, needles, staplers and fabric glue

Wheels and Axels: hand drills, hole-punchers, hacksaws, vice and scissors.

In **Years Three and Four**, children **widen** their knowledge of tools and use a greater range of tools to support **designing** and **constructing** products as part of the following topics:

Shell Structures: CAD- computer aided design software, printers, and scissors

Simple Circuits: buzzers, circuits, paper fasteners

Textiles: needles, scissors and measuring tapes.

In **Years Five and Six**, children learn about tool safety and **apply** their knowledge of tools to design and create products more **independently,** showing greater awareness of the **environment** as part of the following topics:

Pulleys & Gears: hacksaws, bench hooks, G-clamps, hand drills and automatic wire strippers

Textiles: Needles, scissors, pinking shears and sewing machines

Electrical Systems: micro switches, reed switches and magnets, LEDs & LDRs, computer control software and wire strippers.

Food Technology

Children throughout the school have opportunities to prepare a meal and all children have the opportunity to join a **cooking club** which is run every week for KS1 and KS2. Children are given opportunities to learn about **different foods** from **different cultures**, and in the EYFS teachers link cooking opportunities to their current themes. For example, in Year Five, children look at breads from around the world and identify different spices as part of their Tudor Explorers history Topic. Also in Years Five and Six, children work with an educational company to design, create and evaluate a pizza. To prepare children for **future life** the children are taught how to use a range of age appropriate tools, **safely**, as they progress through the school (as shown below)

Tools in KS1: knives, peelers, graters, skewers and blenders

Tools in LKS2: scales, knives, measuring jugs, blenders.

Tools in UKS2: ovens, scales, knives, whisk (electrical), blenders

Cross- Curricular Links

DT at Spring Grove Primary cross-curricular links are evident throughout our topics, and our children are given opportunities to **apply knowledge and skills learnt in other subjects** like Maths, English and History. For example, in Year One the children make castles, learning to use tools safely and joining materials as part of their Castle Topic, and they learn to make a knight with moving parts as part of their Victorian Topic. In Year Six, children learn how to design and construct 3D Anderson Shelters as part of their Britain will never surrender Topic. Also in Year Five, children learn to join different materials to make a suitable space suit.

Reading in DT Lessons

Children are given opportunities to read literature in D&T lessons. Teachers utilize the services of Hounslow Library Service to provide text to incorporate into lessons to **launch** units of work, **inspire** children, or to support children's investigation. For example, children in Key Stage One as part of their regular cooking sessions use recipe books to follow and create their own recipes.

Strong Vocabulary Development

Children are exposed to technical language at the start of a unit and key vocabulary is **modelled** throughout the topic by teachers. Children have opportunities to use and apply key vocabulary during lessons. **Technical vocabulary** in KS1 and KS2 is taken from the *Projects on a Page* planning sheet.

Impact - How will we know we achieved our aims?

- Children will be ready to make an essential contribution to the creativity, culture, wealth and well-being of our community.
- Children produce high-quality work that is designed and evaluated. These products are fit for the required purpose or use.
- Children remember more and can do more in D&T and this is demonstrated through the work they produce and their discussions.
- Children evaluate the work of other designers and inventors and have a developed understanding of how their work contributed to the wider world.
- Children can design products showing greater awareness of their environmental footprints.
- Children are aware of the topics their DT projects links to and the purpose of the products they are designing and making.