



Design and Technology Guidance

Homerswood Primary and
Nursery School

Written: December 2022

Review: December 2024

Design and Technology Guidance

Aims of the guidance

- To establish an agreed approach to what constitutes quality teaching and learning in Design and Technology,
- To enable staff to identify key features of effective teaching and learning and help ensure they match the abilities, attainments, interests and experiences of pupils
- To provide an agreed focus for the monitoring and evaluation of teaching and learning in Design and Technology.
- To instil a love of learning and the ability to make connections
- To incorporate other aspects of the curriculum as outlined in the school's curriculum overview document.

Underlying Principles

The following principles form the basis of this document:

- The needs and progress of the learner are central to planning, delivery and assessment of the curriculum
- Learning promotes sustained progress and achievement for all pupils, including those with SEND, disadvantaged and most able pupils.

Intent

At Homerswood, our primary goal is to provide a Design and Technology pathway that fosters curiosity, promotes growth and encourages discovery in our pupils. We firmly believe that Design and Technology is a vital subject. It equips our children with the essential skills and knowledge to both pursue future careers in this field and apply these skills in their daily lives.

To achieve this goal, our curriculum is carefully designed to ignite curiosity and stimulate a desire for exploration. Pupils will have opportunities for hands-on learning, allowing students to engage in experimentation, prototyping and innovation. Through project-based assignments, our students actively participate in real-world problem-solving activities, creating products for a purpose, individual or group.

In addition to nurturing skills and knowledge, we integrate British values within our Design and Technology curriculum. By promoting democracy, mutual respect, and tolerance, we cultivate an environment where students appreciate cultural diversity and understand the importance of respecting different perspectives. This becomes particularly significant when children work collaboratively to achieve outcomes or when they engage in evaluating each other's work.

Effective communication is a key focus in our curriculum. We place emphasis on developing various communication skills, including verbal and non-verbal communication, as well as written and visual communication. Through these efforts, students learn to articulate their ideas, collaborate effectively with others, and confidently present their work.

Understanding the laws and regulations relevant to the field of Design and Technology is crucial. Therefore, we want our students to develop an understanding of legal and ethical considerations by discussing issues related to health and safety, intellectual property rights, and environmental impact.

Outdoor learning experiences play an integral role in our Design and Technology curriculum. We want our pupils to understand Design and Technology shouldn't be reserved for indoors and provide opportunities to engage with the natural environment, explore sustainable design concepts, and gain a deeper understanding of the impact their creations have on the world around them. These experiences are facilitated through dedicated Design and Technology sessions as well as integrated within our broader Outdoor Learning provision.

We recognise the importance of vocabulary development in Design and Technology. Our curriculum places a strong emphasis on expanding students' subject-specific vocabulary, enabling them to communicate effectively and express their ideas with confidence.

Debate and discussion form an integral part of our Design and Technology approach. We encourage our students to critically evaluate their own work as well as that of others. Through engaging in debates and learning from experts in the field, students develop a deeper understanding and appreciation for different perspectives, enhancing their critical thinking abilities.

Inclusivity and personalisation are fundamental principles we uphold. We value the uniqueness of each student and strive to create an inclusive learning environment where everyone can actively engage and thrive. Our curriculum is personalised, where required, to cater to the diverse needs and interests of our students.

We also acknowledge the significance of memory and retrieval in the learning process. Our curriculum incorporates strategies such as spaced repetition and retrieval practice, enabling students to enhance their long-term retention of knowledge and skills.

In addition, we prioritise the development of writing skills within Design and Technology. Students are encouraged to effectively articulate their ideas, document their design processes and reflect on their learning through written communication.

Given the close relationship between Design and Technology and technological advancements, we integrate the use of technology throughout our curriculum. This empowers our students to develop digital literacy, utilise design software, and gain a comprehensive understanding of the role of technology in shaping our world.

By incorporating these elements into our Design and Technology curriculum, we aim to create a learning environment that supports our students in becoming proactive learners with high expectations for themselves and others. Through the cultivation of critical thinking skills and problem-solving abilities, our students

develop the confidence and respect necessary to analyse their outcomes and collaborate with their peers both within and beyond the subject.

Implementation

The Design and Technology curriculum follows a broad and balanced approach. It builds on previous learning and provides support and challenge for learners. The Kapow Combined scheme of work is followed in Key Stage One and Two, ensuring a progression of skills and covering all aspects of the Design and Technology National Curriculum. In the Early Years Foundation Stage, Design Technology skills are developed through Child-Initiated Learning and Adult-Led tasks based on specific themes and children's interests. Children in KS1 and KS2 will learn about the iterative design process (design, make, evaluate), research existing products, construct and work to design specifications, and collaborate to improve and evaluate their products.

Each year, the children will complete three projects. The structure and timing of each lesson is flexible and can be adjusted based on the project needs and skills being undertaken. For example, if developing running stitch skills, short 10-minute bursts may be allocated each day throughout the week to enable children to make steady progress overtime through repeated retrieval practice, while building a final outcome may require a full day or two to ensure pupils are fully immersed and have the chance to demonstrate their knowledge and abilities. Alongside these projects, each class will complete a specified recipe to help them build on their cooking and nutrition skillset.

At Homerswood, Design and Technology will be taught by either Class Teachers or Higher-Level Teaching Assistants (with responsibility for class cover). Adults will have access to training and professional development opportunities to enhance their teaching skills and subject knowledge should they require it. Collaboration and sharing of best practices among teachers will be encouraged to ensure effective delivery of the curriculum and the subject lead will work with teachers to personalise and develop use of the existing Kapow scheme to enable children to have the best possible outcomes.

Children will have access to high-quality resources relevant to Design and Technology. These may include tools, equipment, materials and technology-based resources. The school will ensure that resources are regularly maintained, updated, and expanded to support a variety of projects and learning experiences. The subject lead will liaise with teaching staff to ensure resources enable children to progress their skills over time and resources which need replenishing are in place before beginning a project.

Educational visits and visits from professionals or experts in the field of Design and Technology will be organised to expose children to real-world applications and experiences. In addition, elements from the pathway curriculum, like children taking part in 'Young Chef of the Year', enable us to provide additional stimuli, inspiration and a clearer context for children to build a deeper understanding of the subject.

Teachers will encourage thoughtful questioning to foster deeper thinking and understanding. Open-ended questions will be used to promote critical thinking, problem-solving, and creative exploration. Teachers will provide opportunities for children to ask their own questions and guide them in finding answers through research and investigation. This includes creating opportunities for children to generate their own design criteria for projects along with opportunities to work with others to assess their outcomes.

The school will actively participate in events and special days related to Design and Technology. These include the yearly Science Week where STEM subjects are highlighted. These activities will provide opportunities for children to showcase their skills, collaborate with peers, and engage with the wider community.

Children with Special Educational Needs and Disabilities (SEND) will be scaffolded in Design and Technology to help them reach their potential. Manipulatives and assistive technologies will be used to support their learning and participation in Design and Technology activities. This might include the equipment provided.

Teachers will provide guidance, feedback, and additional resources to support students who are capable of working beyond the expected level. This might include opportunities for them to collaborate with their peers but will be dependent on the skill they are developing.

Impact -

Children's learning in Design and Technology will be formally assessed termly by their class teacher. This assessment process will be supported by a newly introduced assessment sheet, which will aid teachers in making summative judgements and inform their formative assessment and planning throughout the year. The assessment will take into account evidence from the children's Design and Technology books, including any prototypes and final projects they produce in addition to pupil voice and observations of the children during lessons. Teachers will also assess the children's skill development in the subject. This will be evident within their books with children given the opportunity to use their books as a journal of both mistakes and successes. The subject leader will monitor this data through book scrutinies and observations to support teachers in enhancing pupil outcomes.

Children will demonstrate a deeper understanding of the design, make, evaluate process and articulate how this cycle has influenced their thinking throughout each project. They will enthusiastically discuss the subject and their achievements, including instances where they displayed resilience when faced with challenges. This emphasis on pupil voice will allow children to have a greater sense of ownership and engagement in their learning.

Through a series of units focused on Structures, Mechanisms and Mechanical Systems, Electrical Systems, Textiles, Digital World, and Cooking and Nutrition, children will develop their knowledge of the Design and Technology iterative process. They will acquire a range of skills, such as the ability to select the most

effective methods to achieve desired outcomes. By the time they reach Year 6, they will be able to determine the best tools to use for specific tasks, such as cutting straight lines in wood or joining objects together. This progressive development of knowledge and skills will empower students to become proficient in Design and Technology.

Teachers will plan opportunities for students to explore various concepts and deepen their conceptual understanding in Design and Technology. This approach will encourage pupils to develop their ideas and be inspired to expand their knowledge. They will appreciate the value of Design and Technology within the context of their personal wellbeing and the creative and cultural industries. Discussions around the "inventor of the week" and exposure to examples of innovative thinking through platforms like Twig Science Reporter will contribute to their cultural capital. The Design and Technology curriculum will foster personal development in creativity, independence, judgement, and self-reflection. Students will confidently discuss their work and be encouraged to share it with others, showcasing their growth and achievements.

Overall, the impact of the Design and Technology curriculum will be evident through the formal assessment of children's learning, their deeper understanding of the design process, the acquisition of knowledge and skills, and their ability to apply these in practical projects. The curriculum will nurture pupils' creativity, independence, judgement, and self-reflection, ensuring they are well-prepared for future challenges and opportunities in the field of Design and Technology leading to a strong foundational base for entry into KS3.

Safeguarding Links

In the Design and Technology Curriculum, the well-being and safety of children are paramount. Safeguarding links have been integrated to ensure that children are equipped with the necessary knowledge and skills to navigate potential risks and make responsible decisions.

Children are educated to recognise and assess the various risks associated with using new tools, techniques, and equipment. Additionally, they are taught about potential food allergens, enabling them to be mindful of the risks posed to others.

Furthermore, children are empowered with strategies to mitigate and reduce risks. This includes learning about specialist grips to enhance knife safety and acquiring knowledge on safely transporting equipment within the learning environment.

In promoting a respectful and inclusive environment, children are encouraged to be receptive to diverse opinions, fostering empathy and understanding.

Recognising the importance of digital safety, children are educated on conducting safe internet searches and are equipped with skills to evaluate the validity and appropriateness of the information they find. They also understand the significance of reporting any concerning information to a trusted adult.

Moreover, children are made aware that their digital footprint is created with every technological interaction, including Computer-Aided Design (CAD), emphasising the need for responsible and thoughtful online behaviour.

By integrating these safeguarding links into the design and technology curriculum, we ensure that children are well-prepared to make informed decisions, protect their well-being, and contribute positively to the digital and physical environments they engage with.

Consultation

This Guidance was written in conjunction with staff and pupil viewpoints alongside the Homerswood Pathway curriculum overview.

Written by: Stuart Prior

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