Design Technology Policy

Safeguarding Statement

West Heath Primary will continuously strive to ensure that everyone in our school is treated with respect and dignity. Each person in our school will be given fair and equal opportunity to develop their full potential with positive regard to gender, ethnicity, cultural and religious background, sexuality or disability. West Heath Primary School is committed to safeguarding and promoting the welfare of children and young people, and expects all staff to share this commitment.

Please also refer to the No Platform, Visiting Speaker Policy.

Owner – Design Technology Coordinator

Date for review – September 2024

West Heath Primary School's Policy for Design Technology

Aim

The purpose of this policy is to outline our approach to teaching and learning in Design Technology, and to establish the principles that guide our practice. It aims to ensure consistency in design technology education across the school, ensuring that all pupils have the opportunity to explore, create, and evaluate a wide range of design and engineering processes and outcomes. Through these hands-on experiences, pupils will gain a deeper understanding of the designed and built environment around them, engaging in activities that are appropriate, relevant, and challenging. This policy is designed to nurture pupils' curiosity, inspire their creativity, and develop their ability to problem-solve and innovate through design technology.

Curriculum Intent Statement

'Our aim at West Heath Primary School is for all pupils to become innovative and creative thinkers.'

At West Heath Primary School, we aim to inspire pupils to be innovative and creative thinkers who have an appreciation for the product design cycle through ideas, creation, and evaluation. We want pupils to develop the confidence to take risks, through drafting design concepts, modelling, testing and to be reflective learners who evaluate their work and the work of others. Through our curriculum, we aim to build an awareness of the impact of design and technology on our lives and encourage pupils to become resourceful, enterprising citizens who will have the skills to contribute to future design advancements.

The curriculum has been designed as a spiral curriculum with the following key principles in mind:
Cyclical: Pupils return to the key areas again and again during their time in primary school. Children are given the time to practise.
Increasing depth: Each time a key area is revisited it is covered with greater complexity.
Prior knowledge: Upon returning to each key area, prior knowledge is utilised so pupils can build upon previous foundations, rather than starting again.

- To develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- To build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.
- To critique, evaluate and test their ideas and products and the work of others.
- To understand and apply the principles of nutrition and learn how to cook.
- To celebrate achievements in D&T, with a gallery of their products.
- Extra-curricular visits and experiences.

'Studying design and technology includes the use of a broad range of knowledge, skills and understanding, and prompts engagement in a wide variety of activities. Pupils design and make products that solve real and relevant problems within a variety of contexts' (Design & Technology Association, 2024).

The Design and technology scheme of work aims to inspire pupils to be innovative and creative thinkers who have an appreciation for the product design cycle through ideation, creation, and evaluation. We want pupils to develop the confidence to take risks, through drafting design concepts, modelling, and testing and to be reflective learners who evaluate their work and the work of others. Through the scheme of work, we aim to build an awareness of the impact of design and technology on our lives and encourage pupils to become resourceful, enterprising citizens who will have the skills to contribute to future design advancements. The Design and technology scheme of work enables pupils to meet the end of key stage attainment targets in the

National curriculum and the aims also align with those in the National curriculum. EYFS (Reception) units provide opportunities for pupils to work towards the Development matters statements and the Early Learning Goals. Kapow Primary is an Artsmark partner and supports our school on our Artsmark journey, inspiring children and young people to create, experience, and participate in great arts and culture.

Curriculum Implementation Statement

The Design and technology National curriculum outlines the three main stages of the design process: design, make and evaluate. Each stage of the design process is underpinned by technical knowledge which encompasses the contextual, historical, and technical understanding required for each strand. Cooking and nutrition* has a separate section, with a focus on specific principles, skills and techniques in food, including where food comes from, diet and seasonality. The National curriculum organises the Design and technology attainment targets under four subheadings: Design, Make, Evaluate, and technical knowledge. We have taken these subheadings to be our Kapow Primary strands:

- **Design**
- **Make**
- **Evaluate**
- **Technical Knowledge**

Cooking and nutrition are given a particular focus in the National curriculum and this is one of our six key areas that pupils revisit throughout their time in primary school:

- **Cooking & Nutrition**
- **Mechanisms/Mechanical Systems**
- **Structures**
- **Textiles**
- **Electrical Systems (KS2 Only)**
- **Digital World (KS2 Only)**

Kapow Primary's Design and technology scheme has a clear progression of skills and knowledge within these strands and key areas across each year group.

Curriculum Impact Statement

The impact of Kapow Primary's scheme can be constantly monitored through both formative and summative assessment opportunities. Each lesson includes guidance to support teachers in assessing pupils against the learning objectives. Furthermore, each unit has a unit quiz and knowledge catcher which can be used at the start and/ or end of the unit. After the implementation of Kapow Primary Design and technology, pupils should leave school equipped with a range of skills to enable them to succeed in their secondary education and be innovative and resourceful members of society. The expected impact of following the Kapow Primary Design and technology scheme of work is that children will:

- Understand the functional and aesthetic properties of a range of materials and resources.
- Understand how to use and combine tools to carry out different processes for shaping, decorating, and manufacturing products.
- Build and apply a repertoire of skills, knowledge and understanding to produce high quality, innovative outcomes, including models, prototypes, CAD, and products to fulfil the needs of users, clients, and scenarios.
- Understand and apply the principles of healthy eating, diets, and recipes, including key processes, food groups and cooking equipment.

- Have an appreciation for key individuals, inventions, and events in history and of today that impact our world.
- Recognise where our decisions can impact the wider world in terms of community, social and environmental issues.
- Self-evaluate and reflect on learning at different stages and identify areas to improve.
- Meet the end of key stage expectations outlined in the National curriculum for Design and technology.

Meet the end of key stage expectations outlined in the National curriculum for Computing.

Organisation

Design

All pupils at West Heath Primary school will have the opportunity to develop their **design skills** by:

KS1

- Design purposeful, functional, appealing products for themselves and other users based on design criteria.
- Generate, develop, model, and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.
- Use basic principles of a healthy and varied diet to prepare dishes.
- Understand where food comes from.

KS2

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.
- Understand and apply principles of a healthy and varied diet.
- Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques.
- Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.

Make

All pupils at West Heath Primary school will have the opportunity to develop their **making skills** by:

KS1

- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining, and finishing].
- Select from and use a wide range of materials and components, including construction materials, textiles, and ingredients, according to their characteristics.
- Use basic principles of a healthy and varied diet to prepare dishes.
- Understand where food comes from.

KS2

- Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.

- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.

Evaluate

All pupils at West Heath Primary school will have the opportunity to develop their **evaluating skills** by:

KS1

- Explore and evaluate a range of existing products.
- Evaluate their ideas and products against design criteria.
- Use basic principles of a healthy and varied diet to prepare dishes.
- Understand where food comes from.

KS2

- Investigate and analyse a range of existing products.
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals in design and technology have helped shape the world.

Technical Knowledge

All pupils at West Heath Primary school will have the opportunity to develop their **technical knowledge** by:

KS1

- Build structures, exploring how they can be made stronger, stiffer and more stable.
- Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

KS2

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
- Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].
- Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].
- Apply their understanding of computing to program, monitor and control their products.

Inclusion

"Schools have a responsibility to provide a broad and balanced curriculum for all pupils." National Curriculum, QCA, 2008. The curriculum is there to be changed, where necessary, to include all pupils. The statutory 'inclusion statement' in the National Curriculum sets out a framework for modifying the curriculum to include all pupils. Teachers should:

- Set suitable learning challenges.

- Respond to pupils' diverse learning needs.

- Overcome potential barriers to learning and assessment for particular individuals and groups of pupils.

- Choose objectives for pupils with SEN and/or disabilities that are different from those of the rest of the group.

• Modify the curriculum to remove barriers so all pupils meet the same objectives.

Planning for pupils with SEN and/or disabilities should be part of the planning that is done for all pupils, rather than a separate activity. It should include the approaches that will be used to remove barriers for pupils with SEN and/or disabilities and any smaller steps needed to achieve the learning goal as well as provision of additional resources. Some pupils with SEN and/or disabilities will show they understand in different ways from their peers, so teachers should look at a range of opportunities for pupils to demonstrate what they know and can do.

Wider Opportunities

Pupils at West Heath Primary school will have the opportunity to **explore the wider design technology curriculum** by:

- Participating in after school design technology clubs.
- Experiencing, listening, and appreciating professionals within the industry.
- Learning about art culture and repertoire from external providers.
- Visiting external art establishments/displays.
- Displaying and celebrating their Art in school and at the arts festival.

Through Kapow Primary's Design and technology scheme, pupils respond to design briefs and scenarios that require consideration of the needs of others, developing their skills in the six key areas. Each of the key areas follows the design process (design, make and evaluate) and has a particular theme and focus from the technical knowledge or cooking and nutrition section of the curriculum. The Kapow Primary scheme is a spiral curriculum, with key areas revisited again and again with increasing complexity, allowing pupils to revisit and build on their previous learning.

Pedagogy & Assessment

- Teachers routinely model work effectively, provide clear explanations and point out connections between content, supporting pupils, including pupils who need the most support, to learn the curriculum in the long term.
- Teachers are clear about what they want pupils to learn. They make sure that pupils practise the building blocks of subject knowledge along the way. Pupils have sufficient repeated encounters with concepts, they have sufficient practice 'in the moment' when learning practical knowledge.
- Teacher's design and plan activities; they are clear about the knowledge they want pupils to learn. Teachers use the teaching methods that will best enable pupils to know and remember this content in the long term.
- Teachers plan classroom activities to teach knowledge and are clear about which concrete examples they require pupils to use.
- Teachers make subject-specific adaptations to activities for pupils with SEND, where appropriate, without lowering expectations.
- Formative Assessment – Occurs throughout the learning process, through dialogue and conversation. The curriculum is built around the several assessment areas: generating ideas, using design, making skills, evaluating and analysing.
- Self and Peer Review - Pupils know objectives and success criteria to enable them to review successfully.
- Summative Assessment – Assessment materials and quizzes are used for each unit of work.

Role of the Subject Coordinator

The Design Technology (DT) coordinator plays a crucial role in shaping and enhancing the teaching and learning of design and technology. Their responsibilities typically include:

- **Curriculum Development**: The DT coordinator is responsible for developing and maintaining a comprehensive DT curriculum that aligns with the school's educational objectives and national standards. This includes ensuring a progression of skills and knowledge from year to year, covering key areas such as materials, mechanisms, structures, textiles, electronics, and food technology.
- **Resource Management**: The coordinator manages DT resources, including tools, materials, and equipment. They ensure that all necessary resources are available, maintained, and safely stored. This role also involves budgeting for new resources and planning for the replacement or upgrading of outdated tools and equipment.
- **Lesson Planning and Support**: The DT coordinator supports teachers in planning and delivering high-quality DT lessons. This may include providing lesson ideas, resources, and guidance on how to teach specific DT concepts or skills. They may also create or source instructional materials to assist teachers.
- **Professional Development**: They organise and deliver training sessions for staff to enhance their confidence and competence in teaching DT. This might involve workshops on new technologies, teaching methods, or curriculum updates.
- **Monitoring and Evaluation**: They monitor the effectiveness of the DT curriculum and teaching practices across the school. This involves observing lessons, reviewing students' work, and gathering feedback from both teachers and students. Based on these evaluations, the coordinator makes recommendations for improvements or adjustments to the DT curriculum.
- **Student Engagement and Support**: The DT coordinator works closely with students to encourage their interest in design and technology. They provide support and guidance for projects, helping students develop their skills and creativity. They may also identify and nurture particularly talented students, offering them additional opportunities to explore DT.
- **Organising Events and Competitions**: The coordinator organises events such as DT fairs, competitions, or exhibitions to showcase students' work. These events help to promote the subject within the school and the wider community, celebrating students' achievements and raising awareness of the importance of DT.
- **Cross-Curricular Integration**: They work to integrate DT with other subjects, demonstrating how design and technology can complement and enhance learning in areas such as science, mathematics, and art. This might involve collaborating with other subject coordinators to create interdisciplinary projects.
- **Staying Updated with Industry Trends**: The DT coordinator stays informed about current trends and advancements in design and technology education. This ensures that the curriculum remains relevant and that students are exposed to the latest technologies and practices in the field.
- **Community and Industry Links**: The coordinator may establish links with local businesses, industry professionals, or higher education institutions to enrich the DT curriculum. This could involve arranging guest speakers, trips, or partnerships that provide students with real-world insights and experiences.

Overall, the DT coordinator plays a pivotal role in ensuring that design and technology education is engaging, effective, and up to date, helping students to develop practical skills, creativity, and problem-solving abilities that will serve them well in the future.