Stottesdon Primary School

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Design and Technology Policy

All references in this policy are saved here. This policy needs to be read alongside other school policies, including: Safeguarding Policy; E-Safety Policy; Marking and Feedback Policy; Monitoring and Evaluation Policy; Assessment Policy; SEND Policy; Equal Opportunities Policy; Teaching and Learning

Aims:

Our School believes that every child should have the right to a curriculum that champions excellence. We endeavor to support all pupils to achieve. We believe that it is important for all children at Stottesdon Primary school, regardless of gender, race, or religious background to experience a range of design and technological activities. We will differentiate activities appropriately for more able pupils and for those with special educational needs, so that they can access all areas of the Design and Technology curriculum.

We understand the value that a varied curriculum plays in supporting the progression of knowledge and skills in Design and Technology and the whole school curriculum. We believe that Design and Technology can provide both individual and collaborative learning opportunities; better engagement of pupils; rich content based on real life products and contexts; support conceptual understanding of new concepts and can support the needs of all our pupils.

What is Design and Technology?

Design and Technology is a 'hands on' subject in which pupils have the experience of investigating, evaluating, designing, developing ideas, and making products and systems of a high standard. Design and Technology encourages children to examine their environment, to question the world and to think about how and why things work the way they do, their uses and impacts.

Design and Technology presents children with a series of real-life scenarios, where children become innovative, creative problem solvers. As they do this, they will develop their ability to evaluate past and present design and become more focused on what makes a successful product and more imaginative in how a product could be made or improved.

Design and Technology should draw on the child's knowledge and experience from all curriculum areas, particularly English, Maths, Science, Art, and ICT. When the child is drawing upon these skills, they should maintain their high standards of learning in relation to age related expectations.

At Stottesdon Primary, we strive to make Design and Technology a relevant, enjoyable, and creative activity for all children.

In Design and Technology, we aim to:

- Develop children's design and making skills.
- Develop their knowledge and understanding of the design process.
- Guide children to use an increasing range of techniques and processes with confidence.
- Develop their capability to make high quality products through combining their investigation, design, making and evaluation skills.

- Encourage children to be more aware of the ways in which everyday objects have been designed and made to meet people's needs.
- Equip children with the confidence and skills to use a range of tools and materials safely and effectively.
- To help children to develop their decisions when making choices and selecting materials, so that their product is fit for the purpose set in the design brief.
- To provide children with a range of engaging projects which will develop their skills with mechanical systems, structures, food, textiles, and electrical systems.
- Develop children's confidence to make constructive self and peer evaluations of finished work.
- Provide opportunities to revisit and build on prior learning in Design and Technology, but also in other subjects that link across the curriculum.
- Where possible to use age related mathematical objectives to apply their skills to a real-life context (e.g., measuring, data collection).

Curriculum:

As a school, we have chosen to use the Project Planner created by the Design and Technology Associate from Year 1 to Year 6. The scheme of work supports our teachers in delivering fun and engaging lessons, which help to raise standards and allows all pupils to achieve their full potential. We are confident that the scheme of work meets the national vision for Design and Computing. It provides flexibility to establish strong cross-curricular links and effective resources to develop staff subject knowledge. Teachers may wish to use other platforms/tools to deliver the curriculum and we support this as appropriate. By the end of Y6, we aim for children to be confident in the process of designing, making, and evaluating a range of products using their technical knowledge for a range of technical areas (mechanical systems, structures, food, textiles, and electrical systems).

To ensure good practice, each project should include these key processes:

- Investigative and Evaluative Activities: where the children learn from a range of existing products and discover the uses of DT in the wider world.
- Focused Tasks: where the children are taught specific technical knowledge, designing skills, and making skills.
- Design, Make and Evaluate Assignment: where the children create functional products with users and purposes in mind.

Our curriculum maps are in line with the National Curriculum and Project Planner Book, which details 6 essential skills that should be carefully considered when planning DT projects. Different projects will have a different balance of these essential skills, but long-term planning should ensure that each essential skills is adequately taught over the course of the school year or key stage.

The six essential skills are:

1. User: the children should have a clear idea of who they are designing the products for and their needs.
2. Purpose: the children should know what the products they design and make are for.
3. Functionality: the children should design and make products that function in a particular way to be successful, so that products are both functional and aesthetically pleasing.
4. Design Decisions: the children need opportunities to make informed decisions about selecting materials, components and techniques, as well as deciding what form the products will take, how they will work, what task they will perform and who they are for.
5. Innovation: when designing and making, children need chance to innovate. Projects that encourage innovation should result in a range of design ideas and products being developed.
6. Authenticity: children should design and make products that are believable, real and meaningful to themselves.

Expectations and Progression:

For Foundation Stage:

During the Early Years Foundation Stage, pupils explore and use a variety of media and materials through a combination of child initiated and adult led activities. Adults plan DT activities linked to each topic. Child interests are also explored, when they arise, and are supported in child-initiated learning through the continuous provision (indoors, outside; including Forest Fun sessions), which gives children access to a variety of DT resources.

Indoors:
Construction kits: small and large, junk modelling, deconstruction building, mobilo, duplo, Lego, wooden blocks, stickle bricks, popoids, nuts and bolts, waffles and cogs, marble run, wooden blocks, bricks
Cutting and joining resources: scissors, hole punches, hammers, nails, glue, sellotape, treasury tags, ribbon, split pins, wool, string, nuts and bolts.
Media: paper, card, bags, cardboard boxes, trays.
Embellishments: sequins, glitter, buttons, threads, pom poms, wool, ribbon, stickers.

Outdoors:
Materials and resources include: planks of wood, tyres, den building poles, fabric, canes, crates, pegs, ropes, guttering, bricks
Woodwork / Forest Fun: saws, hammers, screwdrivers, nails, screws, balsa wood, offcuts of soft wood, small wheels, potato peelers, branches, and other natural items.

Children in EYFS have opportunities to learn to:

- Explore the textures, movement, feel and look of different media and materials.
- Respond to a range of media and materials developing an understanding that they manipulate and create effects with these.
- Use different media and materials to express their own ideas.
- Construct with a purpose in mind using a variety of resources.
- Develop skills to use simple tools and techniques competently and appropriately.
- Select appropriate resources for a product and adapt their work where necessary.

By the end of Reception children in EYFS will be able to:

- Explore, use, and refine a variety of artistic effects to express their ideas and feelings.
- Return to and build on their previous learning, refining ideas and developing their ability to represent them.
- Create collaboratively sharing ideas, resources, and skills.

Key Stage 1 Outcomes:

Design

- 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.

Make

- 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.

Evaluate

- Explore and evaluate a range of existing products.
- Evaluate their ideas and products against design criteria.

Technical knowledge

- 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.

Key Stage 2 Outcomes:

Design

- 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.

Make

- 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 wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.

Evaluate

- 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

- 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.

How is Design and Technology taught at Stottesdon Primary?

At Stottesdon Primary, Design and Technology is taught using our curriculum map, which sometimes refers to DT schemes of work from the Project Planner Book. Units of work explore cross-curricular links were possible to complement the wider curriculum and to get children to make connections by using and applying their skills across different subjects.

We have carefully mapped the DT projects, so that children will have the opportunity to complete a range of different projects each year and that there is a clear progression across the projects, as the children progress through their schooling (please see Design and Technology Skills Progression).

Lessons should be taught in a carefully planned sequence using a small step approach, which will allow pupils to build on prior learning and make connections because the workload does not overload their working memory. Retrieval practice will be used in lessons to help children to strengthen memory links to their long-term memory and teachers will make knowledge they need to know clear. Depending upon the unit, Design and Technology can be taught as a block of lessons – within one week - or may be taught in a series of sessions over a period of weeks.

A unit of work may be taught at a specialist workshop (e.g. at Enginuity, Ironbridge), with specialists leading the design and making process.

Depending on the time of year and project, Lacon Childe has offered that we could use their facilities and technology to teach DT.

Health and Safety:

Shropshire local authority guidance for specific resources and tools is comprehensive. This can be found on the Shropshire Learning Gateway/Curriculum/DT/Health and Safety. Teachers refer to this guidance when planning and delivering their units.

Assessment:

Teachers use assessment for learning opportunities throughout the design process to fully develop each child's skills in designing, making, and evaluating. In addition, assessment for learning will be used to revisiting prior technical knowledge to develop their knowledge. Books are marked in line with the teaching and marking policy, which helps teachers to form their assessment judgements.

Assessment sheets are recorded on a spreadsheet. Unit specific skills are assessed and recorded at the end of that unit. Overarching skills, which are developed throughout the year, are assessed at the end of the year. On the spreadsheet, numbers are used to detail the progress children are making with that skill (1=emerging, 2=developing, 3=secure, 4 = above). The spreadsheets are maintained by teachers, can be accessed by other teachers for transition and are reviewed by the subject lead and headteacher. In years 1/2, 3/4 and 5/6, the progression of knowledge and skills is developed over a two-year program.

The progress and attainment of children in Design and Technology is relayed to parents at Parents' evening and reports twice a year. Staff use the progression of skills document to guide age-appropriate judgements.

Resources:

- Planning resources from the Project Planner Book is saved in This PC > Staff Workgroup (T:) > All Staff > DT/Project Planner Book
- Design and Technology Skills Progression Sheets: This PC > Staff Workgroup (T:) > All Staff > Policies > Policies 2014 > Curriculum > DT
- Design and Technology equipment and resources are kept in labeled boxes inside Clun Class. All teachers are responsible for keeping the equipment tidy and should check stocks of equipment before they begin teaching a unit.
- Food technology equipment is kept in the school kitchen.
- The Shropshire Learning Gateway also has lots of good links and resources to support with planning and delivery. The school also purchases packs and kits from the Science and Technology Centre if this is appropriate.

Reviewed: February 2023 Next Review Feb: 2026