



ROEBUCK ACADEMY
DESIGN & TECHNOLOGY
POLICY 2021



INTENT, IMPLEMENTATION & IMPACT



Our Approach to Design & Technology at Roebuck Academy

This policy outlines the teaching and learning of Design and Technology at Roebuck Academy. DT is made up of two strands; Designing, making and evaluating products and cooking and nutrition. It is imperative that both strands are taught to a high standard throughout all age phases. Design and Technology prepares children to deal with tomorrow's rapidly changing world. It encourages children to become independent, creative problem-solvers and thinkers. At primary school level, we can instill attitudes towards Design and Technology in which the children can realise that in technology there is never just one correct solution. The process of identifying a need, designing a solution, building an artefact and testing and evaluating it can be most satisfying to the child, particularly if it works and has some relevant function or application. The implementation of this policy is the responsibility of all teaching staff.

Aims

Our aim is to teach children to develop their Design and Technology capacity through combining their designing and making skills with knowledge and understanding in order to design and make products to the best of each child's ability, using a range of tools, materials and components safely. Design and technology is a practical subject providing opportunities for all children to design and make good quality products. Design and technology involves children in developing an understanding of the ways in which people have designed products in the past and present to meet their needs.

In line with the national curriculum we aim to ensure that all pupils:

- Develop the creative, technical and practical expertise need to perform everyday tasks confidently and to participate successfully in an increasingly technological world;
- Build and apply a repertoire of knowledge, skills, understanding in order to design and make high quality prototypes and products for a wide range of users;
- Critique, evaluate and test their ideas and products and the work of others;
- Understand and apply the principles of nutrition and learn how to cook.

Intent of our Design & Technology curriculum

At our school, we intend that children should master Design and Technology to such an extent that they can go on to have careers within Design and Technology and make use of design and technology effectively in their everyday lives. Our children will be taught Design and Technology in a way that ensures progression of skills, and follows a sequence to build on



previous learning.

Our children will gain practical experience and skills of a wide range of formal elements of design and concepts of technology in a safe way that will enhance their learning opportunities, enabling them to use design and technology across a range of subjects and contexts to be creative and solve real and relevant problems, considering their own and other's needs, wants and values, ensuring they make progress and aim for excellence.

In EYFS, DT begins with child initiated exploration of technological toys, different materials, tools and techniques to construct with purpose in mind.

During Key Stage 1, children begin to put this exploration into action by designing, making and evaluating purposeful, functional and appealing products for themselves. They select and use a range of tools and materials to perform practical tasks according to specific characteristics. Children will build structures, explore and use mechanisms as well as prepare healthy and varied dishes with an understanding of where food comes from.

During Key Stage 2, children use research to devise their own design criteria to aid their design of innovative, functional and appealing products fit for purpose for a target audience. They will select and use a wider range of tools and materials. Children will work with more complex structures, understand and use mechanical and electrical systems, apply and use computing knowledge in their products as well as prepare and cook predominately savoury dishes, understanding seasonality and where ingredients have come from.

Implementation

We want to ensure that Design and Technology is embedded in our whole school curriculum and that opportunities for enhancing learning by using design and technology are always taken. With this in mind, DT is delivered as part of an immersive curriculum with links often made to Science, History or Geography. However, DT is taught as a discrete lesson and children are aware that when studying this that this is Design and Technology and not history! Each unit is begun with a big question which the children are expected to consider and design their product accordingly.

We follow a broad and balanced Design and Technology curriculum that builds on previous learning and provides both support and challenge for learners. We follow a Design and Technology scheme that ensures progression of skills and covers all aspects of the Design and Technology curriculum. Class teachers are free to teach DT lessons as a blocked unit of work taking place within a week or as a sequence of lessons over a half-term.

Children's work and pictures of their work will be placed into their DT books for reference and assessment.



Impact

Our children enjoy and value Design and Technology and know why they are doing things, not just how. Children will understand and appreciate the value of Design and Technology in the context of their personal well-being and the creative and cultural industries and their many career opportunities.

Progress in Design and Technology is demonstrated through regularly reviewing and scrutinising children's work, to ensure that progression of skills is taking place. Namely through:

- Looking at pupils' work, especially over time as they gain skills and knowledge;
- Observing how they perform in lessons;
- Talking to them about what they know.

Summative assessment data is provided by class teachers termly to indicate the number of children performing below age related expectations, at age related or those deemed to be greater depth. This helps to inform the subject leader of the progress made towards developing age related skills and knowledge.

The Design and Technology curriculum will contribute to children's personal development in creativity, independence, judgement and self-reflection. This would be seen in them being able to talk confidently about their work, and sharing their work with others.

Progress will be shown through outcomes and through the important record of the process leading to them.

Curriculum Planning

Design technology is an integral part of the school curriculum and is embedded into the planning and may be taught discretely or as part of a wider topic. Teaching and learning time is managed effectively to allow children to work on sustained pieces of work. At Roebuck Academy we use the Kapow scheme of work for mechanisms, structures, textiles & electrical systems (Key Stage 2 only). This is a progressive scheme of work and ensures skills are built on year after year in each area. Teachers are able to choose when to cover each unit with the expectation that one area (mechanisms, structures, textiles or electrical systems (KS2 only) is covered each term. The planning provided by this scheme of work clearly states how to support lower ability pupils and extend learning for greater depth pupils. Teachers are able to adapt the theme of the unit to suit their overall topic for the term but the key skills taught must remain the same. Additionally, we have developed our own cooking skills progression. Each class must incorporate cooking into their planning every term, ensuring they are covering some of their year group specific skills each term - with all skills covered by the end of the academic year. Teachers have the flexibility to teach DT in one hour slots each week over a



half term or to teach an entire unit over a shorter focused period. The relevant links with Art, Maths, Science and Computing will be made in plans.

Curriculum Teaching & Learning

EYFS

Early Years Foundation Stage children are expected to make good progress at the end of Foundation Stage in the areas of 'Knowledge and Understanding of the World' and 'Expressive Art and Design'. Opportunities for developing designing and making skills will be given as set out under this area of learning, preparing children for Design and Technology in Key Stage 1 and consistent with the National Curriculum.

Key Stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding, skills and vocabulary needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making children should be taught to:

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

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, leisure, culture, enterprise, industry and the wider environment].

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.



Cooking and Nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

EYFS

- Safely use and explore a variety of materials, tools and techniques;
- Recognise that a range of technology is used in places such as homes and schools;
- Know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe.

Key Stage 1

- Use the basic principles of a healthy and varied diet;
- Understand where food comes from.

Key Stage 2

- Understand and apply the principles of a healthy and varied diet;
- Prepare and cook a 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.

Learning Outcomes

Children will design and make a range of products. A good quality finish will be expected in all designs and make activities appropriate to the age and ability of the child. Foundation Stage children will recognise that a range of technology is used in places such as homes and schools and will be able to select and use technology for particular purposes. Photographic evidence and children's plans, designs and evaluations will be kept in each child's DT book to aid assessment and progression.



Health and safety

Teachers will always teach the safe use of tools and equipment and insist on good practice, following the schools risk assessments and 'How to guides'. All adults that work with children in any way connected with Design and Technology will be made aware of health and safety implications. Copies of these guidelines are kept with the tools. Tools which could pose a risk to injury are kept in a locked cupboard, with the key held by the DT subject leader. Food hygiene and safety is very important: Children and adults must wash their hands thoroughly and wear an apron before handling food; Food is bought when it is needed to ensure the freshest ingredients are used; Cupboards, table tops, cookers are kept clean, tidy and in working order.

Resources

We have sufficient resources at Roebuck Academy to be able to teach all strands of DT in the National Curriculum Programme of Study. All DT resources are kept in the Year 4 Group room and must be signed in and out when used. Some items are locked away for safety and a key must be obtained from the Year 4 subject leader to access them. Once these have been removed from the locked area they are the responsibility of the adult who has signed them out and must be stored safely when not in use, until such time as they are returned to the locked area. DT subject leader may use their budget to provide new equipment and resources in line with the subject action plan.

Role of the Subject Leader

The role of the Design and Technology Subject Leader is in line with other subject leader roles as outlined in job descriptions.

The Subject Leader will:

- Oversee the development of Design and Technology in the school;
- Provide support and guidance to colleagues;
- Maintain equipment and make them easily accessible for teachers;
- Keep up to date with local and national developments in Design and Technology and pass on relevant information to colleagues;
- Review and monitor the success and progress of the planned units of work;
- Order stock linked to the planned units of work at the end of each term so that they are ready for the next term;



- Be responsible for the organisation of and maintenance of resources;
- Attend courses for CPD and report back to staff;
- Providing the Senior Leadership Team with an annual summary report in which they evaluate the strengths in the subject and indicate areas for further improvement.

Inclusion

In line with the school's Inclusion policy, each child will have an equal entitlement to all aspects of the Design and Technology curriculum. We believe that it is important for all children to experience the range of Design and Technology activities. We will use opportunities within Design and Technology to challenge stereotypes. With specific reference to Design and technology, teachers should be aware of recent research which shows that girls tend to outperform boys in investigating, designing and evaluating and boys tend to outperform girls in planning and making. Teachers should be aware of their own expectations and their position as a positive role model. Throughout all Design and Technology work care will be taken to differentiate tasks and teaching styles in order to take into account the whole spectrum of special needs. Consideration needs to extend to children who are left handed or colour blind.

Assessment and recording

Assessment and Recording Assessment is viewed as part of the teaching and learning process and is the teacher's responsibility to assess and monitor the individual progress and development of pupils. Assessments take place throughout each unit and teachers record the progress and attainment against the National Curriculum expectations of attainment. Teachers use this information to inform future lessons. Specific guidance in our Kapow units of work are given to enable teachers to make judgements as to where children are working below, at or above age related expectation for each lesson. Once a unit of work has been completed teachers use these to make a final judgment of a children's overall performance for the term. This is recorded on an assessment spreadsheet to enable analysis by the DT subject leader. The assessments can identify areas of strength and development for a class, year group or whole school focus. Children in Foundation Stage are assessed within Expressive Arts and Design and Knowledge and understanding of the World and their progress is tracked termly.

Monitoring and Evaluation

The subject leader will monitor and evaluate design technology throughout the school in a variety of ways; including checking planning, lesson observations, work scrutiny, pupil voice and staff questionnaires to ensure coverage of the curriculum and quality of teaching and learning is provided. The subject leader will also support fellow colleagues in the planning, teaching and CPD of design technology.



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Spiritual, Moral, Social and Cultural Development

The teaching of Design and Technology offers opportunities to support the social development of our children through the way we expect them to learn with each other. Working in groups allows children to learn together, and give them the opportunity to discuss their ideas and feelings about their own learning and that of others. Through their collaboration and cooperative learning across a range of activities and experiences in Design and Technology, the children learn to develop respect for the abilities of other children and a better understanding of themselves. They also develop a respect for the environment, for their own health and safety that of others.

Review

This policy is a working document and is subject to change and amendment when necessary. Governors will work with the subject leader to ensure this policy is current and relevant and that the design technology curriculum is delivered to a high standard in an effective manner ensuring coverage and quality teaching and learning

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