



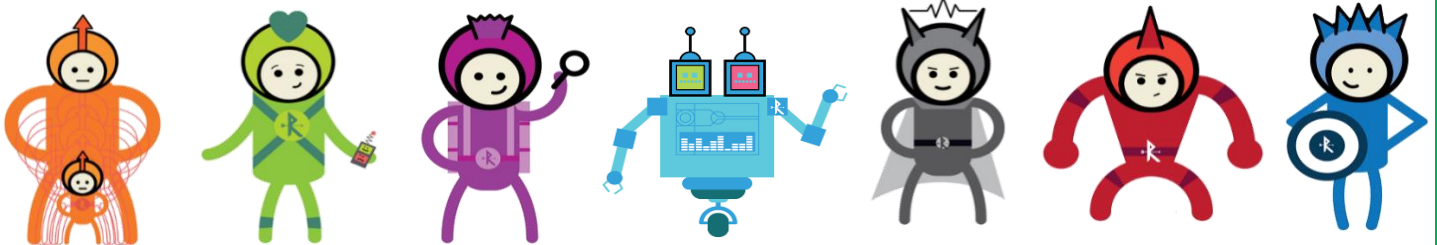
Design and Technology

(D&T) Policy

Review frequency: Annually (2022-23)



“Technology makes possibilities. Design makes solutions so let’s encourage young learners to think creatively and critically. Welcome innovation and problems solving, build in opportunities for children to plan and evaluate and welcome our leaders of tomorrow.” (John Meada, TED Talks, 2014)



Introduction

Design and Technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others’ needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, children develop a critical understanding of its impact on daily life and the wider world. High- quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the Nation (DfE, 2014)

Intent:

At Robin Hood, we teach Design and Technology to all pupils in our school. We teach a progressive sequence of components as part of our knowledge-rich curriculum, so that children combine the practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industrial practices.

Design and Technology develops the key skills exemplified in our Learning Charter.

Major Challenge:

Children will challenge themselves to design and make products that solve a real-life problem that suits the user and fulfils its purpose.

Doctor Resilience:

Children at Robin Hood will work with a wide range of materials in a wide variety of contexts. They will face challenges with great determination and resilience fostering perseverance and a growth mindset.

Captain Collaborate:

In Design and Technology children will have opportunities to work in small groups and independently. They will develop skills such as turn-taking, negotiating and the art of compromising to move a project forwards whilst showing value and respect to all members ideas and contributions.

Judge Reflect:

Children will regularly reflect on their design decisions and work during evaluative tasks. They will refer to the DMEA and brief to ensure their design and product is suitable for the user and fulfils its purpose. Children at Robin Hood

will be given time to make appropriate amendments to improve their product.

Ranger Respect:

Children will show respect whilst peer critiquing others work and ideas. They will be objective in the feedback they give but sensitive to the listener and their feelings. During negotiations, children are likely to have different thoughts and ideas. However, all pupils will approach these situations with respect and others feelings in mind.

Agent Knowledge:

At Robin Hood we foster a thirst for knowledge and a love of learning. To do so, we contextualise all learning to give it purpose and meaning and encourage independence giving children autonomy within their learning.

Professor Proud:

All children's designs and creations are valued and displayed around school and on the School's website. They are often showcased to parents and given the opportunity to take them home or to share with members of the local community. Children are encouraged to reflect on the Design and Make process which highlights the progress they have made and the challenges they have faced and overcome. This gives children a great deal of satisfaction and raises their self-esteem.

As stated in the national curriculum, Design and Technology is an inspiring, rigorous and practical subject that encourages children to learn and think creatively to solve problems, both as individuals and as part of a team. At Robin Hood, we encourage children to use their creativity to design and make products that solve relevant problems within a variety of contexts, considering their own and other's needs, wants and values. This gives children's work a contextual purpose and enables children to contribute effectively to the school's ethos and wider society. We also aim to, wherever possible, link work to other disciplines such as mathematics, science, computing and art so that children deepen their understanding of concepts taught by making connections within their learning. Evidence of this includes weighing and measuring food and liquids in different units, using TinkerCAD to design 3-D objects and completing sketches to effectively communicate their ideas in a range of ways. Through the evaluation of past and present design and technology, children develop a critical understanding of its impact on daily life and the wider world allowing them to become discriminating and informed consumers and potential innovators.

Design and Technology is high-profile across the school and we provide a clear and sequential series of lessons which are progressive, building upon children's prior learning.

We teach children the skills needed to:

- Develop the creative, technology and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for 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.

(DfE, 2014)

Throughout the year, children will engage in the Design, Make and Evaluate process in every project undertaken. They will build upon prior knowledge and develop their skills to design and make high-quality prototypes and products for a wide range of users. Most importantly, children will critically evaluate the process and their product with the user and purpose in mind and make improvements where appropriate. Links to designs and designers from different backgrounds and cultural capital throughout history will also be made to break down gender stereotypes and barriers facing children of a low socio-economic background and minority ethnic backgrounds. Educators at Robin Hood will also provide children with the opportunity to meet and learn from specialists in the industry for

example, engineers, designers, chefs and architects. Where possible, members from the local community will be invited in to support with projects and to allow us to give back to the community.

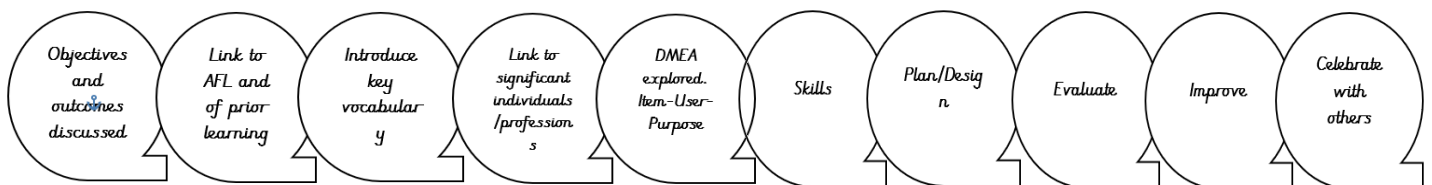
Our intent at Robin Hood is to inspire, motivate and broaden children's horizons by equipping them with the skills, knowledge and understanding that they need to become educated citizens who can contribute positively to society. Through Design and Technology, we instil qualities such as curiosity, enquiry and determination. Students are inspired by contextual problems and take great enjoyment from their learning. They become resilient and open-minded individuals who never stop striving for a better future for themselves and others to live in.

The skills acquired in DT will help children with any career they choose to pursue in their day to day lives, both at home and within the community. This country requires engineers, inventors and mechanics in the future and the skills developed in this subject could be the first step towards these.

Implementation:

Planning:

- A sequential series of lessons is taught across KS1 and KS2, every other half term, 1 hour per session, 8-12 hours per project.
- The school uses 'Projects on the Page', produced by the Design and Technology Association to provide a clear and comprehensive scheme of work in line with the National Curriculum adapted to suit the needs of children within our school.
- Lessons are planned and delivered by class teachers supported by the Design and Technology lead. Planning is underpinned by objectives from our Root, Branch and Leaf Documents, Progression Maps and Year Group Long Term and Medium-Term Plans.
- Each unit follows the same sequence of learning to ensure coverage of key elements that form the foundations of the Design and Technology curriculum.



- Children develop and build on the skills of design, make and evaluate and acquire technical knowledge through well planned and progressive sequences of learning.
- Projects are well structured and will remain open-ended. Teachers will ensure a variety of resources are available to allow choice and encourage innovation and creativity.
- Children will have opportunity in every project to work collaboratively, to support and help one another to a challenging, yet rewarding goal.
- Teachers will utilise the extensive school grounds and provide learning opportunities outside, inside in learning areas and also on purposeful trips.
- Key vocabulary is discussed and highlighted in red on all planning. It is also displayed in classrooms and on DT displays in communal areas to improve the retention of key concepts.
- Children's work is celebrated and put on display across school.

Assessment:

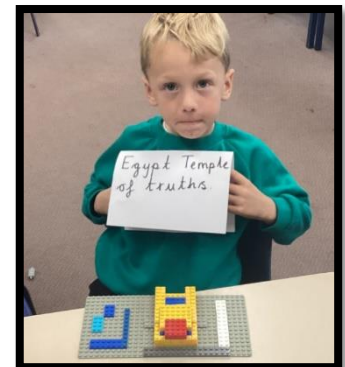
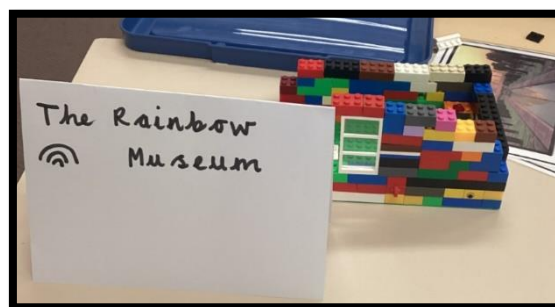
Learning is defined as an alteration in long term memory. If nothing has been altered in long term memory nothing has been learned. Progress is knowing more and remembering more. Therefore, our focus is very much on ensuring what we teach becomes embedded in our pupils' long-term memory. For this reason, an essential component of

every DT lesson is the process of retrieval, giving the children the opportunity to retrieve what they have previously been taught and learnt. Our teachers will use a variety of cognitive load retrieval strategies such as quizzes, multiple choice questions, the Frayer model, lists, graphic organisers, knowledge organisers, dual coding and think-pair-share. Retrieval tasks are built into all our DT lesson plans. A pupil's progress is indicated by how well they have learnt the curriculum, what they have remembered. Teachers make ongoing teacher assessments as to what children have learned through ongoing questioning, retrieval activities, marking of written work and through specifically designed Proof of Progress tasks (POP tasks). Because learning is a change in long term memory, it is impossible to see impact in the short term. We do, however, use probabilistic assessment based on deliberate practice. This means that we look at the practices taking place to determine whether they are appropriate, related to our goals and like to produce results in the long run. To ensure consistency in a two-form entry school, we undertake comparative judgments across the year group. Teachers also use the assessment indicator to support their judgements.

- Foundation Subject Assessments are completed at two points in the year: the end of the Spring 1st half-term and the end of Summer term.
- Design and Technology is a practical and dynamic subject so evidence of children's learning will vary. Evidence of learning may include, drawings, mock-ups, verbal conversations recorded on a IPAD or written work.
- Work is recorded in Curriculum books within KS1 and KS2, clearly labelled with a red border and square evidencing learning in D&T.
- Book monitoring, lesson visits, conversations with children and planning analysis take place throughout the year in termly sessions to allow effective monitoring of the subject by subject lead Sian Christie.
- Observations of lessons will take place to ensure quality first teaching takes place. Discussions will be held with children to give them a voice and ownership of their learning. This also helps class teachers to critically evaluate lessons which informs their future planning.
- Staff have access to CPD and resources they need to plan and teach high quality lessons and to extend their professional understanding of the subject.

Enrichment:

- There is an enrichment day every year which encompasses a DT aspect.



- Children in KS2 will engage in DT days local Universities.
- Access to a set of Design and Technology books relevant to projects undertaken, designers and inventors are available for children to use to inspire, motivate, raise aspirations and challenge gender stereotypes in different professional fields.
- Children will have opportunity to grow their own food to use in cooking projects (patches outside Year 2 classrooms/in pots/polytunnel).



- Educational visits are carefully planned and organised to enhance children's understanding of the knowledge/skills being taught (museums/food establishments).
- External providers and visitors will be invited into school (chefs, designers, nutritionists) to give projects a purpose and to enhance creativity and to increase the cultural capital from which children can draw on in the future.
- After school clubs (cookery/gardening club) provide further opportunity for children to develop their knowledge and skills of food technology.



- At Robin Hood, we have links with local secondary schools and shops near by to enrich opportunities provided to children e.g provide a wider range of resources and experiences.

Impact:

Children:

- Children are inspired and take enjoyment from their learning. They apply their learning to other areas of the curriculum and speak with confidence about the Design, Make and Evaluate process.
- Children think rationally, reasonably and empathetically and consider purpose, user and intended outcome when evaluating their own or someone else's work. They take ownership of their learning, set themselves targets and make improvements to their work/model with the design brief/specifications in mind.
- Pu Children become resourceful, innovative and enterprising. They problem solve and ask questions about the world around them and matters that affect them.
- Through carefully planned and implemented learning activities, pupils develop the creative, technical and practical expertise to participate in an increasingly technological world.
- Children are confident in using a range of tools, materials, equipment and managing risk.
- Children understand and apply the principles of healthy eating to their diet and make healthy food choices at school and at home.
- Children know why they are learning what they are and how this contributes to the end outcome.

- Children know how the skills and knowledge gained relate to professions and jobs in the wider world.
- The skills and attributes acquired enable children to become educated citizens who can contribute positively to society.

Staff:

- Through on-going CPD opportunities and support provided, staff will feel knowledgeable on the subject and confident to teach high-quality, inspiring and engaging lessons that challenge and motivate all learners.
- The teaching of Design and Technology improves with feedback and CPD opportunities which raises outcomes for all children.
- Children know more, remember more and understand more!

Attainment:

- Through monitoring and assessment, groups of learners not making expected progress are identified, and targets are set to enable them to close the gap.
- Most children reach the end of year expectations in terms of attainment and progress.

KS1 Attainment in Design and Technology	
2020-2021	71% @ EXS+
2020-2021	2% @ GD
2021-2022	76% @ EXS+
2021-2022	3% @ GD
KS2 Attainment in Design and Technology	
2020-2021	79% @ EXS+
2020-2021	2% @ GD
2021-2022	81% @ EXS
2021-2022	4% @ GD

British Values:

At Robin Hood Primary School, we actively promote the spiritual, moral, social and cultural education and understanding of our pupils as well as promote the British values of democracy, rule of law, individual liberty, mutual respect and tolerance of those with different faiths and beliefs.

Spiritual Education:

Design and Technology encourages pupils to exercise their imagination, inspiration, intuition and insight through creativity and risk taking in analysing, designing and manufacturing a range of products. It instils a sense of awe, wonder and mystery when studying the natural world or human achievement. Encouraging creativity allows pupils to express innermost thoughts and feelings and to reflect and learn from evaluation.

Moral Education:

In Design and Technology children gain an awareness of the moral dilemmas created by technologic advances, for example, the effect advanced manufacturing automation has had on employment and how globalisation has caused poverty and inequality in different parts of the world. It encourages children to value the environment and its natural resources and to consider the environmental impact of everyday products. It educates pupils to become responsible consumers and inventors.

Social Education:

Social Education in Design and Technology provides positive corporate experiences- for example, through industrial visits. There are also opportunities to work collaboratively with a partner or take turns in a small group which requires effective social interaction and at times compromise. Children are also encouraged to engage in peer

evaluation and to act as a critical friend to give objective feedback sensitively to improve outcomes for all. At Robin Hood, children have a collective responsibility to ensure they contribute to a safe working environment where the use of tools and equipment are involved. Design and Technology promotes equality of opportunity and provides awareness of areas that have gender stereotypes and equips children with the confidence to challenge these.

Cultural Education:

At Robin Hood we develop cultural awareness through projects that have a connection with our past heritage globally and locally. We also seek to expand children's knowledge of other cultures through linking products we explore to countries we are learning about. Pupils are also encouraged to consider Design Movements and how they have developed within a historical period, though continue to have a place in the world, and influence our perspective.

British Values:

Democracy:

- The children take the views and opinions of others into account but still have the right to make their own choices.
- Children take turns both in speech and practically with others.
- Children understand that it is not always possible or right to have their own way and understand the value of compromise.
- Children are often asked for their views about D&T lessons and feedback is welcomed by the subject lead, this is often part of a pupil voice questionnaire.
- Children work together to support each other and children that are more able can be given the opportunity to lead with their own examples of work.

The rule of law:

- Children understand the importance following safety rules when using tools.
- Children are expected to follow the School's Golden Rules that aims to keep children safe and promote a positive atmosphere for teaching and learning.
- Pupils understand and accept that if these rules are not followed that there are consequences to this.

Individual liberty:

- Children take on board feedback from others but can choose to use their own ideas instead.
- Children respect that others ideas may not be the same as their own and show value to them regardless.
- Pupils take responsibility of all equipment used when working in Design and Technology.
- Children are encouraged to take on new challenges and aspire to be the best they can be.
- Children are given are encouraged to express their opinions and preferences in a variety of ways.

Tolerance:

- Children are open to ideas from others that differ to their own.
- Pupils understand that many great design ideas originate from other cultures.

Mutual Respect:

- Children listen to and consider the ideas and opinions of others even if they differ from their own.
- Pupils take turns during discussions and compromise when making difficult decisions.
- Children offer supportive comments in evaluations that will improve learning outcomes in a way that the objective but sensitive to the listener.

- Children support others when working collaboratively or facing challenges.

Health and safety:

All teachers at Robin Hood know how to handle and store tools and equipment safely and model this effectively to students. As a result, children are aware of the intended use of tools and have safe, controlled access to them during Design and Technology lessons. All teachers insist on good practise and take precautionary steps to manage risks. However, safety issues do arise when teaching this subject. These issues could involve:

- The use of electrical equipment such as glue guns.
- The use of cooking appliances, including ovens and hobs.
- Contact with sharp objects including wood, nails, needles saws etc.

All teachers are responsible for the health and safety of themselves, teaching assistants, visitors and children within their class. It is the duty of all staff to:

- Remove all jewellery, tie hair back and wear the appropriate PPE.
- Recognise and assess the hazards and risks to themselves and others when working with food and other materials.
- Take action to control these risks and hazards.

All staff members will refer to the 'Handling tools' policy when planning and conducting a lesson which involves potentially dangerous tools.

Teachers should be aware of the following:

- Children must not use cooking appliances unless under direct supervision from a responsible adult. The portable oven may be used in an area away from the children or with a barrier between at the teacher's discretion.
- Saws and other sharp objects (nails, needles, craft knives, etc) must be used under direct supervision. The teacher will make a judgement on the undertaking of activities involving sharp and / or potentially dangerous equipment depending on the age / ability of the children in his / her class. Some activities may be undertaken by an adult or in a small group or one to one situation as appropriate.
- All equipment is monitored and collected back in at the end of every lesson and stored in a safe area which is not accessible to children.
- Perishable foods must be stored sensibly and refrigerated if necessary. Care must be taken to ensure food is not used after the given sell by / use by date.
- Teachers and adult support staff must oversee that cupboards, table tops, cooker etc, are clean and in working order.
- Children must wash their hands before and after any contact with food and other potentially harmful substances.
- Teachers must take into account possible food allergies to food such as nuts and should be aware of the location of any medication for the allergy.

Pupils should:

- Collect and return tools and equipment safely
- Follow clear instructions
- Only move around the room when necessary
- Wear safety equipment when necessary

Resources:

The National Curriculum documents a wide range of materials and equipment to be used within this subject. The safe storage of materials and equipment together with the ease of access for class teachers is important. All

resources are stored securely out of reach from children and a log book documents where resources are at all times to ensure that they are all accounted for.

Food hygiene and safety issues:

We enable pupils to have access to the full range of activities involved in learning Design and Technology. Where children are to participate in activities outside of the classroom, for example in a museum or fire station trip, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

At least one member of staff in school has an up-to-date food hygiene certificate.

Budget:

The Design and Technology budget covers the cost of materials and the replacement of tools, although we do occasionally ask children to bring some materials from home if they can. The school will provide resources to any children who are unable to do this so as to allow all children to have the same opportunities. Where possible children will keep their creations but if this is not possible and resources need to be re-used, children will be able to keep a photograph their product instead. As outlined in the Long-Term Plan above, classes will engage in a cooking unit every year. To fund this, each class will be given £10 to purchase the items needed. If this does not cover the cost of the items needed, class teachers can use their Year Group budgets to finance this.

Adaptive Teaching and SEND:

Design and Technology is taught to and inclusive of all children, regardless of their ability. Teaching is adapted to the needs of learners in a variety of ways to ensure inclusivity. The teacher's role is to monitor each child's learning and to adjust instruction as necessary. Strategies used to support learners in DT include using differentiated materials, scaffolding tasks and providing more or less support. Most lessons have a Going Beyond objective to challenge more able learners. Please refer to the SEND in DT document for further information.

The role of the Design and Technology Subject Leader:

The DT subject leader is responsible for:

- The development and monitoring of the DT curriculum (See subject Leader file for evidence).
- Updating the School's policy and School Development Plan.
- Keep up to date with local and national developments in design and technology and disseminate relevant information.
- Involvement in class teachers' planning and giving support if requested.
- Ordering and allocating resources.
- The organisation and maintenance of resources.
- Keeping staff updated and providing training days (INSET) when needed.
- Providing children with different opportunities for learning.
- Co-ordinate any display of design and technology work.