

Design and Technology: Intent, Implementation and Impact

Intent

To build a Design Technology curriculum that meets the interests of all children and enables all children to develop their talents. At Hawthorn we aim to develop creative, curious learners who have the ability to embrace an ever-changing environment. Through the teaching of DT, we hope that children will develop the capacity to problem solve by stimulating creativity and imagination through the production of quality products that solve real and relevant problems within a variety of contexts, considering their own and others' needs. We aim to, wherever possible, link work to other disciplines such as Mathematics, English, Science, Computing and Art.

To teach a curriculum where, the appropriate subject knowledge, skills and understanding are taught as set out in the National Curriculum Design Technology Programmes of study, to fulfill the duties of the National Curriculum whereby schools must provide a balanced and broadly-based curriculum which promotes the spiritual, moral, cultural, mental and physical development of pupils and prepares them for the opportunities and responsibilities they will face in later life.

Implementation

By the end of the EYFS, pupils are expected to safely explore different materials, tools and techniques freely, in order to develop their ideas about how to use them and what to make, experimenting with colour, design, texture, form and function. They should be able to share their creations, explaining the process they have used.

By the end of each Key Stage pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programmes of studies. Pupils should be taught:

- To use research. and develop design criteria to inform the design of innovative, functional, appealing products th.at are fit for purpose, aimed at particular individuals or groups.
- To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology, preparing them for secondary and an ever-changing world.
- To select from and use a wider range of tools and equipment to perform practical tasks accurate[y.
- To 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.
- To investigate and analyse a range of existing products.
- To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- To understand how key events and individuals in design and technology have helped shape the world.
- To apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

- To understand and use mechanical systems in their products.
- To understand and use electrical systems in their products.
- To apply their understanding of computing to program, monitor and control their products

The children are taught in a variety of ways to suit different learning styles wherever possible, and may work in a whole class, group or individual setting. DT is taught at least once a term, following the 'research., design, make, evaluate' model and learning journeys in books will evidence this and progression is seen across each Key Stage, using the D&T long-term maps created using the Kapow schemes of work. Teachers also use the D&T progression of skills documents to plan effective D&T lessons that ensure progression across the school. (The progression document ensures the curriculum is covered and the skills/knowledge taught is progressive from Key Stage to Key Stage.) These can be used alongside online resources such. as, Kapow.co.uk, data.org.uk, sustainablelearning.com, planbee.com, STEM.org.uk, teach.wire.net etc. Key Stage One, Lower Key Stage Two and Upper Key Stage Two will teach 6 units across the two year groups, however each year group covers Food Technology at least once. Food Technology h.as a focus on Healthy. Eating. Opportunities for speaking and listening, writing, mathematics and computing are taken into consideration when each unit of work is planned. For example, when teaching wheels and axels in Year Two, teachers discuss measurement, size and shape. Assessment of each. unit ensures th.at teachers are able to plan for the progression of skills. Children are given the opportunity to experience D&T on educational visits. For example, the children have visited local museums, food establishments and had visitors into school.

Health and Safety

When working with tools, equipment and materials, pupils are taught:

- About hazards, risks and risk control.
- To recognise hazards, assess consequent risks and take steps to control the risks to themselves and others.
- To use information to assess the immediate and cumulative risks.
- To manage their environment to ensure the health. and safety of themselves and others.
- To explain the steps to take to control risks.
- Teachers assess the risks of each. D.T activity and consider steps to make each activity safe for all pupils.

E-Safety

When conducting research on the Internet or uploading any work, pupils are taught:

- To only use websites an adult has said are safe.
- To ask an adult if they want to change the program.
- To only use the class log-in or their own user name and password.

- Not to change anyone else's work.
- About the laws of copyright.

Inclusion

At Hawthorn we ensure that:

- We offer an inclusive environment through. promoting equality of opportunity for all and eliminating discrimination on the grounds of gender, race, ethnic origin, ability or special needs. We promote this ethos through our curriculum as a Rights Respecting School. Equipment, resources and staffing are provided or adapted to meet specific needs.
- Staff find ways to set suitable learning challenges for all learners, challenging pupils who have high levels of skills and knowledge in D.T by providing opportunities for them with.in a D.T topic to extend their understanding and develop their skills. (Using more open-ended design briefs, adapted design briefs specifying user requirements, planning and carrying out independent research., challenging the thinking of more able children)
- We recognise the diversity with.in our school by using a wide range of cultural images and products.
- Staff actively encourage all children's opinions and value ideas. Children's work is collected for an end of year 'Arts Exhibition' that showcases work from children with. a range of needs and abilities.
- We encourage all children to achieve as much independence as possible in line with their needs and/or disability, ensuring that plans still provide these children with success and independence but will not be beyond the child's capabilities. We also ensure that children are not put at risk because they have a limited understanding of safety.
- We provide quality first teaching and deploy teaching assistants effectively to support children where necessary . In instances where there are hearing impaired children being taught, teaching staff pre-teach vital vocabulary and sign in order to ensure achievement for all.
- We address all gender stereotypes by looking at both female and male engineers.

Assessment

Assessing pupils' work is an integral part of teaching and is done through. a range of approaches including pupils' self and peer assessment. Progress is tracked by the class teacher and monitored by the D.T co-ordinator and Senior Leaders on a half termly basis to ensure consistency of teaching and standards within the subject. It also forms the basis of planning to deliver next steps so children are challenged in their learning.

Resources

An extensive range of resources are available to support the teaching of D.T. These are regularly audited and purchased as required so teachers are able to deliver the curriculum effectively. Classroom teachers are encouraged to inform the D.T Lead when resources need ordering. The school is also part of The Design and Technology Association and undertake D&T training from this provider.

The D.T lead endeavours to source resources through parent partnerships, external organisations, schemes and grants. For example, in 2021 the school was able to secure funding for D.T through the Health for Life scheme.

Implementation

- DT taught at least once a term, following the 'research, design, make, evaluate' model and learning journeys in books/portfolios will evidence this.
- Progression is seen across each Key Stage, using the D&T long-term maps. Key Stage One, Lower Key Stage Two and Upper Key Stage Two will teach 6 units across the two year groups, however each year group will cover Food Technology at least once each year.
- Food Technology has a focus on Healthy Eating.
- Teachers use the D&T progression of skills documents to plan effective D&T lessons that ensure progression across the school. (The progression document ensures the curriculum is covered and the skills/knowledge taught is progressive from Key Stage to Key Stage.) These can be used alongside online resources such as, data.org.uk, sustainablelearning.com, planbee.com, STEM.org.uk, teachwire.net etc.
- Children's work is collected for an end of year 'Arts Exhibition.'
- Where possible, D&T is integrated alongside other subjects to ensure full submersion of the curriculum.
- Children are given the opportunities to experience D&T on educational visits. The children have visited local museums, food establishments and had visitors into school.
- Linked with local high school to use their facilities, technology and expertise.
- D&T assessed using the school's assessment model for all Theme subjects and ongoing monitoring will take place through pupil conferences, book looks and learning walks.
- Staff take part in D&T training from an outside provider.

Impact

We aim for children to express their creativity through designing, as they have been given the opportunity to carefully select tools and materials appropriate to the purpose and needs of an audience. Children will be self-critical learners who are confident to self-evaluate their final product, discussing its strengths and weaknesses and offering ways in which their work can be improved. They will gain the necessary skills for the future, by developing their ability to collaborate, investigate, design and evaluate. They will be fully equipped with the transferable skills needed to succeed in future work life.

