Curriculum: Design & Technology

‘Design and Technology should be the subject where mathematical brainboxes and Science whizzkids turn their bright ideas into useful products.’

James Dyson

Why do we learn D&T?

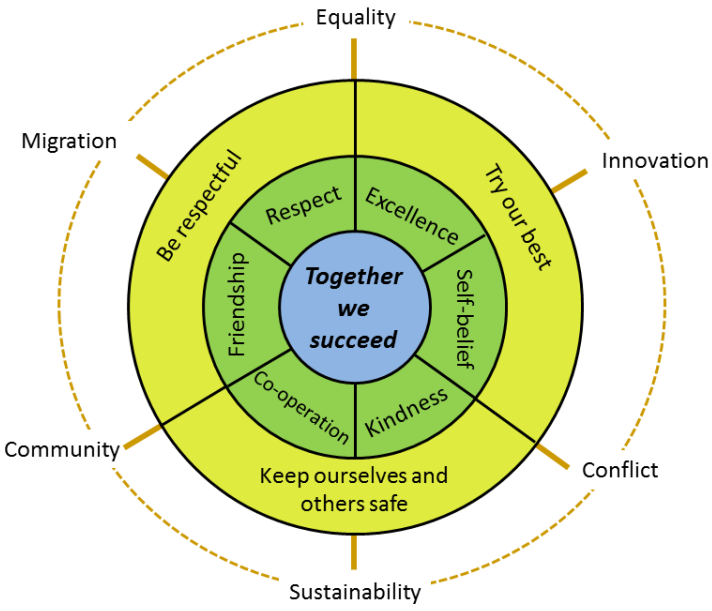
Design and technology is an inspiring and practical subject. Using creativity and imagination, children design and make products that solve real and relevant problems, considering their own and others' needs, wants and values. To do this children are required to draw on disciplines such as mathematics, science, engineering, computing and art. Through design and technology children will also learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present products, children develop a critical understanding of the impact on daily life and the wider world.
The design and technology curriculum makes an essential contribution to the creativity and culture of the children providing them with essential skills for the future.

What are the aims of our D&T curriculum?

At Werrington Primary School we aim to give our pupils the opportunity to develop skills, knowledge and understanding of designing and making functional products. We feel it is vital to nurture creativity and innovation through design, and by exploring the designed and made world in which we all live and work.
We believe that design and technology should focus on stimulating the children's imagination and experimental side while learning about the practical elements such as; knowledge and understanding of materials and components, mechanisms and control systems, structures, existing products, quality and health and safety.
Design and technology is also a great way for children to work collaboratively, by doing so, this develops the skills and ideas of team work, communication, community and resolving conflict. As children progress through the school, we provide them with opportunities to produce products which they can see, touch – and even taste through food technology, textile work and construction kits.
The way the D&T curriculum at Werrington Primary School is organised gives children a context for discovering literacy, mathematics, science, art, PSHE and ICT. It also provides a firm basis for later learning in the subject and a platform for developing skills in literacy and numeracy.

At Werrington Primary our bespoke curriculum has 6 golden strands which encompass the core values of our school. These strands run through the Design and Technology curriculum from Nursery to Year 6. Examples of this can be found in the table below.

Equality	Year 2 create sandwiches and think about a balanced and equal diet.
Innovation	Year 5 create bridges and learn about the engineers who design and build them.
Conflict	**Year 1 create their own pizza topping and think about how we need a variety to please all customers.**
Sustainability	**Year 6 create 'rag rugs' and think about reusing old material for a new purpose.**
Community	Year 4 create torches in teams to help as part of their survival in the rainforest together.
Migration	**Year 3 create their own version of a Shuduf and look at the transportation of water for farming.**



What skills do we learn about in Design & Technology at Werrington Primary

Year 6

Know how to reinforce and strengthen a 3D framework.

Suggest alternative methods of making if the first attempts fail.

Know how to prepare and cool a variety of dishes safely and hygienically including, where appropriate, the use of a heat source.

Understand how food is processed into ingredients that can be eaten or used in cooking.

Pin and tack fabric pieces together.

Year 5

Join fabrics using over sewing, back stitch and blanket stitch.

Begin to measure and mark out more accurately.

Join and combine a range of ingredients that are complimentary.

When planning consider the views of others, including intended users, to improve their work.

Draw up a specification for their design and link with Mathematics and Science learning

Explore fastenings and recreate some e.g. sew on buttons and make loops.

Year 4

Start to measure, tape or pin, cut and join fabric with some accuracy

Understand how more complex electrical circuits and components can be used to create functional products

Join and combine a range of ingredients which have been measured and weighed

Investigate similar products to the one to be made to give starting points for a design

Year 3

Use pictures and words to convey what they want to design and make

Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement

Decorate fabrics with buttons, beads, sequins, braids and ribbons.

Know how to use techniques such as kneading, cutting, peeling and grating

Join fabrics by using a running stitch, staples, over sewing and tape

Year 2

Draw on their own experiences to help generate ideas

Start to assemble, join and combine materials in order to make a product.

Explore and use mechanisms [for example, levers, sliders and wheels]

Know and talk about the different factors that support their healthy eating

Make imaginative and complex 'small worlds' with blocks and construction kits

Year 1

Begin to understand how to prepare simple dishes safely and hygienically, without using a heat source

Develop their own ideas and then decide which materials to use to express them

Early Years

Explore different materials freely

An example of progression in Design & Technology: Textiles

Year 6

Finally children will learn about decorating fabrics appropriately before joining the components together. They will be sure to pin and tack fabric pieces together to help with the process of sewing. Using the stiches they have learned, children will use the most appropriate to join their pieces of fabric.

Year 5

Now children will learn about pattern layout and how pieces come together to make a 3D product. Children will refine their sewing skills and join fabrics using over sewing, back stitch and blanket stitch.

Year 4

Children will now learn about seam allowance and explore fastenings and recreate some e.g. sew on buttons and make loops. They will also consider using appropriate decoration techniques such as appliqué.

Year 3

Children will start to measure, tape or pin, cut and join fabric with some accuracy independently and join their own choice of fabrics using running stitch, over sewing and back stitch.

Year 2

Next children will learn to cut out shapes which have been created by drawing around a template onto the fabric and join fabrics by using a running stitch, staples, over sewing and tape.

Year 1

Children are given the opportunity to match and sort fabrics and threads for colour, texture, length, size and shape and consider their properties. Children also look at how to join fabrics with glue.

EYFS

Children explore different materials freely, in order to develop their ideas about how to use them and what to make. They develop their own ideas and then decide which materials to use to express them. They join different materials and explore different textures.