



Curriculum Intent for Design and Technology

We have learned from our families that West Leigh children have gone on to become designers and engineers. We want each of our children to develop a passion for D & T and to be given the best opportunities to apply these skills in their future lives.

'We are artists and designers'



At West Leigh we choose to teach D & T within our bespoke Connected Curriculum. Year groups relate it to their topics in order to ensure that learning has greater purpose and is better secured. Our lessons are sequenced as part of a project where children are challenged to design and produce a specific product across a number of weeks. The objectives for these lessons have been created using the National Curriculum Programme of Study as a starting point, but with us then raising the bar to reflect our high aspirations.

We focus on inspiring and challenging our children through carefully planned tasks, which require a variety of tools and skills; these include cooking, woodworking, measuring, cutting, sewing and weaving, joining, electrical circuits and programming. To complement this, we create D & T days to enthuse learners across the school with projects inspired by British engineering (e.g. Bloodhound LSR). We are mindful to provide our most able pupils with additional opportunities to deepen their learning through special collaborative projects.

As children progress through West Leigh, they learn, build upon and apply the full range of skills required in any production process. By the time they leave us in Year 6, our children have learned to:

- ✓ analyse design briefs to identify what their product must do to succeed.
- ✓ research products that already exist and learn from them to inform their own ideas.
- ✓ create a range of designs, which they evaluate before selecting and producing a final design.
- ✓ develop and refine confidence with specific tools and production techniques.
- ✓ make the product (prototype) using the required skills and evaluate progress to identify further ways to improve.
- ✓ undertake a final evaluation to reflect on what worked and what they could do to improve the process; this often includes consideration of 'real world' production.

Each year group uses our Connected Curriculum medium term plan as a starting point for their lessons. From this, weekly plans are created by the teachers in their year groups (usually with the help of the D & T subject leader) to ensure that the learning will be accessible and challenging to all. A vocabulary list has been created for staff with the intent of helping children explain their learning with greater confidence and clarity; examples of pertinent vocabulary are always included on planning.



'We are problem solvers'

Year 3:

Children joining us from Year 2 develop basic strengthening techniques by folding and reinforcing card structures when creating animal homes for creatures within our local habitat. This builds on skills begun in the infant school and extends them by putting the product into a 'real world' scenario as well as adding additional features to make them viable as products such as caged doors and handles. These skills are taken further in Year 5 where children are required to strengthen structures made from a combination of wood and card.

Children begin their sewing project by learning stitching skills to create a purse for a Greek God. These skills are picked up in Year 6 where a wider range of techniques is required to achieve different shapes and effects.

Finally, Year 3 begin working with mechanisms by investigating levers as part of a project linked to work about The Thames. This is further developed in Year 5 when cam mechanisms are introduced.

Year 4:

Children in Year 4 are introduced to programming in the context of a physical product; this is organised through a robot project linking to the Iron Man story in the autumn term. This skill is developed further in the summer term by creating fairground rides and programming them to operate in a variety of ways. The fairground project, where children design rides based on research carried out at our local amusement park, also incorporates the skills learned in Year 3 as the fairground rides are made from card and require strengthening to hold the electrical components. Once in Year 5, more challenging projects are undertaken to advance programming knowledge further.

Children also begin their cooking projects with a simple dish from a European country. Minimal equipment is required and thus the skills required can be more focused on preparing food safely and healthily. This is taken further in Year 5 when a wider range of skills including preparing and cooking is introduced.

Year 5:

Children in Year 5 begin with an extension to mechanisms by using cams to move parts of a toy which is an extension on Year 3's lever skills. This project builds upon the structure and reinforcement work in Years 3 and 4 as structures made from wood and card are used.

Following on from the programming introduction and development in Year 4, Year 5 children are challenged to create weather control devices such as flood gates and volcano alerts. These projects are more challenging to programme due to their variable nature and use of sensors, but also require more intricate building structures with the Lego WeDo kits. When children reach Year 6, they use a range of programming programmes to control a variety of products.

The final project for Year 5 introduces cooking skills to food, as well as preparing and serving food. This builds on the food safety and preparation learning which occurred in Year 4. They learn how to create healthy, savoury dishes linked to their learning about Mexico.

Year 6:

Year 6 create puppets using a variety of sewing techniques that initially began in Year 3. A wider range of techniques are used, as the older children are able to successfully apply them to creating different 3D effects on their puppet.

Children in Year 6 also programme real and imaginary products (for example, a Lego lift and an imaginary banana crane in the Amazon Rainforest!) using different applications; this project develops everything covered in prior years and children need to adapt to different formats and input commands.

The final Year 6 project incorporates a wide range of skills from across their time at West Leigh – measuring, cutting, electrical circuits (with opportunities to programme) and strengthening/reinforcing – through the Quiz Board project.

