

# Design and Technology

## Orleton CE Primary School

We want our children to learn to think and intervene creatively to solve problems, both as individuals and as members of a team. By the time children leave our school, they will have been taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making which equips them with practical skills, knowledge and understanding for life.

### Curriculum Intent for Design and Technology

What Design and Technology looks like in our school:

- Throughout the school, our Design and Technology topics and teaching provide rich opportunities for children to be inspired to develop a love of creating
- We ensure topics provide opportunities for **enjoyment** and **exploration**, and incorporate **environmental** links wherever possible, to deliver **excellence**
- We want our children to reflect upon past and present design technology, its uses and its effectiveness
- With this in mind, children are encouraged to become innovators and risk-takers
- We aim, wherever possible, to link work to other disciplines such as mathematics, science, computing and art
- Children work alone, with partners and in groups to develop key skills focussing on design, planning, communicating plans, accuracy in key skills such as measuring, knowledge and technical understanding, skills in food preparation and nutrition, and evaluating their work. (See our **Design and Technology Curriculum Progression Grids** and our **Knowledge maps** for this broken down by area and year group.)
- Knowledge and skills progression across year groups ensures that children know more, and remember more, as they progress through our school

By the end of Year R, pupils will:

- Work confidently in designing and making a product for a particular purpose and user, communicating their ideas and saying whether their product is fit for its intended use

By the end of KS1, pupils will:

- Design and make simple products for an identified user and purpose
- Develop and communicate ideas through talking and drawing
- Say how their products will work
- Select from a range of tools and equipment, explaining their choices
- Select from a range of materials according to their characteristics
- Follow procedures for health and safety

- Measure, mark out, cut, and join materials
- Use finishing techniques, including those from art and design
- Make simple judgements about their product against their intentions
- Suggest ways their products could be improved
- Know the properties of a range of materials and components
- Know about the movement of simple mechanisms
- Know freestanding structures can be made stronger, stiffer and more stable
- Know that all food comes from plants and animals and is either farmed or caught
- Know the fundamentals of healthy eating and safe techniques for food preparation

By the end of KS2 pupils will:

- Design and make products within a range of contexts using research to establish the needs, wants and preferences of the intended users
- Use a simple design specification to guide the development of their products
- Share their plans using annotated sketches, cross-sectional drawings and exploded diagrams
- Consider constraints such as time, resources and cost of their designs
- Select from a range of tools and materials, considering suitability and aesthetic qualities
- Follow procedures for safety and hygiene
- Accurately measure, mark out, cut, shape and join materials and components
- Apply a range of finishing techniques, including those from art and design
- Evaluate their own ideas and products against their design specification
- Evaluate other products against criteria such as sustainability, cost, innovativeness and impact
- Know about the movement of mechanical systems and how they can be combined in their products
- Know about electrical circuits and how they can be combined in their products
- Know about how their products can be controlled by a computer
- Know how to prepare and cook a range of predominantly savoury dishes using a range of techniques
- Know where food comes from and how to plan a diet for energy and a healthy body

## Curriculum Implementation for Design and Technology

How Design and Technology is taught:

- Design and Technology is taught in a variety of ways across our school to maximise pupil learning and cross curricular links wherever possible. We allow teachers the flexibility to block or spread lessons as they choose, this works out to approximately 1 hour of design and technology teaching per week for every year group
- We aim for our lessons to be as practical and engaging as possible
- **Curriculum Progression Grids** and **Knowledge maps** are used by each year group to plan lessons and series of lessons. This ensures full coverage of our curriculum over the academic year
- By the time children leave our school they will have been taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making

#### Adults' roles:

- Plan lessons based on the **Curriculum Progression Grids** and **Knowledge maps** for their year groups
- Create a learning environment that stimulates children's interest
- Biannual review of our design and technology curriculum by the co-ordinator to include: lesson observations, work scrutiny, staff and pupil interviews
- Provide opportunities for stakeholders to come into the classroom to share in the designing and making process eg. parents and carers are often invited to take part

#### How we support pupils and ensure they can access the curriculum:

- Teachers use our **assessment grids** before they start a new topic to identify pupils' previous competence in the subject / area. For those pupils requiring support, the **assessment grids** will give a clear indication of why they had not previously met the expected standard and this will allow their current class teacher to provide appropriate support
- Work may be differentiated to allow children to meet the learning objective. This could take the form of additional adult support, the use of resources, peer support or the differentiation of the work to be completed
- We use live teacher-assessment and self-assessment to quickly identify those who may need more help in specific areas
- For pupils with specific SEN or EAL needs a variety of approaches may be used including: pre-teaching of specific vocabulary, seating children alongside role-models, providing visual practical prompts, adult support and adaptation of activities to ensure engagement

#### How we provide challenge:

- Teachers use our **assessment grids** before they start a new topic to identify pupils' previous competence in the subject / area, for those pupils exceeding the expected level the **assessment grids** will give a clear indication of why exceeded the expected standard and this will allow their current class teacher to provide challenge
- Work may be differentiated to allow children to go beyond the year group's objective. This could take the form of additional independent work, the use of resources, peer mentoring or the differentiation of the work to be completed
- We use live teacher-assessment and self-assessment to quickly identify those who may need more challenge in a specific areas

## Curriculum Impact for Design and Technology

#### This is what you might see:

- Pupils develop knowledge and skills across the curriculum
- The development of knowledge and skills they need for the next stage in education
- Pupils work across the curriculum is of good quality
- A recap of learning from previous year groups
- An outline of the product aim, often linked to another topic
- Children posing questions for research
- Children reflecting on the work of past and present designers, evaluating for sustainability, innovation, cost and impact

- Children exploring other products before starting to design their own
- Children communicating and explaining their ideas in a variety of different ways, including orally, or by diagrams and drawing
- The teaching of specific skills such as how to sew, or measuring accurately or how to knead bread dough, for example
- Children working alone, or in teams, discussing their progress as they go
- Children evaluating their own work, and that of their peers

This is how we know our pupils are doing well:

- Lessons are planned using our **Curriculum Progressions Grids** and our **Knowledge maps**
- Teachers assess progress using our **Assessment Grids** recording who has achieved each key area, those who have exceeded it and those who are working towards it. For those exceeding the objective and those (20%) working below the expected level, evidence will be provided to support the teacher judgement
- Feedback from teachers and peers
- Tapestry will record the key learning in each class and show exemplars of work at the expected level through the use of photographs, pieces of class work and explanation of lessons / learning strategies undertaken
- Subject leaders monitor the coverage and progression of pupils within their subject on a biannual basis

Impact of our teaching:

- Children who enjoy design and technology
- Children who are inquisitive and reflective learners
- Children who enjoy the process of designing and making products and are proud of the finished results
- Children who are acquiring skills and knowledge for a creative and practical future