Design & Technology

Vision: Every child a designer

Intent: What do we hope to achieve by teaching Design and Technology?

At Binfield C.E. Primary School (V.A.) we intend to build a Design Technology curriculum which is inspiring, rigorous, and practical. We want our children to use creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts. We aim for all pupils to learn to think and intervene creatively to solve problems both as individuals and as members of a team. We intend for all children to acquire appropriate subject knowledge, skills and understanding as set out in the National Curriculum and to create strong cross curricular links with other subjects, such as Mathematics, Science, Computing, and Art. At Binfield C. E. Primary (V. A.) we encourage children to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. We aim for every child to develop and achieve the characteristics of being a designer during their time with us. These are:

- Significant levels of originality and the willingness to take creative risks to produce innovative ideas and prototypes.
- An excellent attitude to learning and independent working.
- The ability to use time efficiently and work constructively and productively with others.
- The ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.
- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely.
- A thorough knowledge of which tools, equipment and materials to use to make their products.
- The ability to apply mathematical knowledge.
- The ability to manage risks exceptionally well to manufacture products safely and hygienically.
- A passion for the subject, and knowledge of, up-to-date technological innovations in materials, products and systems.

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Implementation: How is design and technology organised and taught?

The National Curriculum states that design and technology is an inspiring, rigorous and practical subject. Therefore, using the National Curriculum in Design and Technology for Key Stage 1 and 2, we have created ahigh-quality, ambitious curriculum for all pupils that builds on the children's knowledge and skills taught through their journey at Binfield C. E. Primary School (VA). Using the Design and Technology Association's Projects on a Page, our progression is ensured through:

• A whole school overview of the DT curriculum, informed by the planning and sequencing of the curriculum clearly so that all pupils can access it, which allows for progression across year groups in all areas of DT (textiles, mechanisms, structures, food and electrical systems) and allows pupils to gain knowledge and skills sequentially and cumulatively

• Well-planned projects that provide children with a hands-on and enriching experience that is implemented in line with leaders' intentions so that the subject is taught effectively, focusing on fundamental knowledge and concepts. Teachers will present information clearly, promote discussion through informed oracy, check pupils' understanding, identify misunderstandings and adapt teaching as necessary to correct these. Teachers prioritise 'keeping up' rather that 'catching up', quickly dealing with identified gaps in pupils' knowledge

• A range of skills being taught while ensuring our children are aware of health and safety issues when working with different equipment and materials

• Teachers being given ownership of their planning for Design and Technology. Teachers have the flexibility to teach DT as a block of lessons to allow the time needed for the children to be critical, inventive and reflective on their work

• Pupils being introduced to specific designers, chefs, nutritionists, etc. helping to engender an appreciation of human creativity and achievement and increase the cultural capital from which they can draw in the future

Power Tools for Learning

'Power Tools for Learning' are at the heart of our school's curriculum and we are a recognised 'Advanced Thinking School' (Exeter University). 'Power Tools' are a range of skills, attributes and tools taught from Year R upwards, which support pupils in becoming more independent, thinkers and learners. They include: De Bono's Thinking Hats, Hyerle's Thinking Maps, Claxton's Learning Muscles. Furthermore, within our curriculum, Bloom's Taxonomy (a model/hierarchy of thinking which starts at a simple level and becomes more complex) is integral, ensuring that deeper thinking and learning is required as pupils advance through each stage of learning. Together, these support staff in ensuring that suitable cognitive challenges are integrated across the curriculum and that pupils are equipped with the skills to learn independently, beyond school. We aim to ensure that all pupils are well prepared for the next stage of their educational careers by the time they leave us in Year 6.

Impact: What difference does it make and how do we know?

In determining the impact of the Design Technology curriculum, we are essentially asking the question, 'How well have pupils developed the essential characteristics of a designer (as defined above in our **Intent**)?'

We use 2 main methods to determine this: Assessment (quantitative) and feedback from the pupils, their parents and other stakeholders (qualitative).

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1. **Assessment**

At Binfield C.E. Primary School (VA), we assess YR pupils using the non-statutory Development Matters steps alongside the statutory Early Learning Goals. In YR, pupils are assessed using on-going observation and teacher-led activities. Evidence is used to build up a picture of the child's achievements and level of independence over time and summative assessments are made each term. At the end of YR, a determination is made as to whether the child has met the Early Learning Goals.

For Years 1-6, pupils' progress in Design Technology will be assessed through a combination of teacher observation, questioning, and evaluation of finished products. We use our own 'bespoke assessment' based on a 'best fit' model of what a typical child should achieve in each subject area. Assessment in an ongoing process and is used whilst teaching to support pupil learning - revising and revisiting knowledge as necessary, ensuring that pupils 'keep up' rather than 'catch up'. When written work is produced, it is marked in line with the school policy. As per our Marking and Feedback policy, adults are encouraged to formatively assess throughout the entire learning sequence, ensuring proactivity and responsivity to the needs of all children. This feedback can be verbal or written feedback. Throughout each unit of DT, assessment comes from photographic evidence from the live work taking place, skills carried out and the result of the final product created. It will also come from the children's self-evaluations of their purposeful product – how successful or unsuccessful it was and how they can critically assess their own skills. This will all inform and support the teacher's assessment of learning over performance. A summative assessment is made for each child against the typical/expected standard and a determination made as to whether they have met the standard or not is recorded on the school's tracking system.

2. Feedback

We also value the feedback from the pupils themselves and from other stakeholders. These are captured informally (during lessons) but also more formally too e.g. through questionnaires, and comments submitted to the school.

This is what some of our stakeholder's say:

'I just love making things!'

Reception child

'I really enjoyed designing and making my carriage.'

Year 2 pupil

'It was really important to work as a group to design and make our product for Dragon's Den.' Year 5 pupil

'The Dragons Den projects allow the children to have a real-life engineering experience. It really inspires them.' Year 6 Teacher