Bonneygrove Primary School Curriculum Guidance

Science

INTENT

At Bonneygrove Primary School, we believe that our design and technology curriculum prepares children to participate in the development of tomorrow's rapidly changing world. Our curriculum promotes high expectations and has been developed and made specific to the learners at Bonneygrove. Cultural capital is developed through experiential learning such as preparing and making a range of foods, including bread, salads and global foods, using tools to design and build products for a purpose, use research to inform and develop detailed design criteria. By evaluating past and present design and technology, they critically understand its impact on daily life and the wider world. Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, children design and make products that solve real and relevant problems within various contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on mathematics, science, engineering, computing and art and apply them in their design and technology learning. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Children will become autonomous and creative problem-solvers as part of a team or as individuals. Through our Golden threads, children will understand the global market and ethics by learning how to reduce the carbon footprint and the sustainability of products and materials. Pupil Voice 'D&T is about making things move. I like making things and sharing them to help children read (moving pictures).' Lucas – Year Two 'We have learnt how to make pictures move, we have to plan first. I like making things move.' Libby – Year Two 'D&T is about creating something that you have designed, you can use computers too. It is about making something to help you in the future and has to be fit for purpose.' Etem – Year Six 'D&T is about learning new skills to help you in the future, like phone cases as we use phones in year 6. We learn a range of skills such as sewing and the best materials to use.' Mason – Year Six

IMPLEMENTATION

Skills and knowledge are carefully mapped across the school from Early Years to Year Six. In all year groups, children revisit previous learning and continue to build from that point. They have many carefully planned opportunities to recall and apply key information consolidating their learning at each stage. Children design products with a purpose in mind and an intended user of the products with knowledge drivers, focusing on the learning journey. Food technology is taught across the school, and children understand where food comes from, the importance of a varied and healthy diet, and preparing the food. Children are taught through reallife experiences, and our Golden Threads are woven through their experiences. Debates, outdoor learning, visits and broadening horizons experiences show children the wider world. Cross-curricular activities are planned for linking the curriculum through mathematics, science, English and art. Outdoor learning activities and having whole school DT days and Ethics create real-life experiences for our children. These experiences allow knowledge to be built upon as the children journey through school, deepening their understanding.

At Bonneygrove Primary School, we make reasonable adjustments for all our children (including those with SEND). In our school, we ensure that all of our children registered as SEND, including the provision of auxiliary, are not at a substantial disadvantage compared with their peers.

At Bonneygrove, we are guided by the SEND Code of Practice - Right Support, Right Place, Right Time March 2023. We recognise that each child has a specific need, including:

· Communication and interaction

· Cognition and learning

· Social, emotional, and health difficulties

· Sensory and/or physical needs

The above needs will be addressed through quality first teaching, effective differentiation, use of resources (primary and secondary), individual interventions, small group interventions, specialist provision and other supporting agencies.

Here at Bonneygrove, we ensure children with SEND have every opportunity to succeed and recognise that additional support may be required to ensure they progress and attain in line with their peers. We do this by utilising various strategies- e.g.

SEND area of need	Barrier to learning	Strategies
• Communication and Interaction	• Specific interests • Attention span • Fine motor skills • Managing physical resources particularly "fiddly bits" such as crocodile clips in circuits • Difficulty recording	• Adapted equipment Alternative ways of recording
• Cognition	• Understanding • Recording • Recall of instructions • Remembering key facts and vocab • Retaining focus • Retaining information	• Revisit prior learning • Pre-teach and post teach • Ways of recording – cloze label diagrams, record, pictures • Adapted equipment • Alternative ways of recording
• Social, Emotional and Mental Health	• Making links to prior learning • Resilience/fear of failure. • Concentration span • Safety regarding impulsive behaviour	• Revisit prior learning • Pre-teach and post teach • Ways of recording – cloze label diagrams, record, pictures • Knowledge organisers • Adapted equipment • Alternative ways of recording

• Sensory and/or physical needs	• Reading • Navigating classroom • Managing resources and equipment • May struggle with contrasting colours on the board • Difficulty in hearing instructions • Vocabulary • Managing practical investigations/ interactions • Filtering noise to hear what is important • Low self esteem • Difficulty with vocabulary. • Awareness of safety	• Positioning in classroom • Visuals Pictorial representations • Video • Vocab lists and explanations/dictionaries so words can be revised • Position with role model for safety • Task planners • Use of signing of needed • Ensure mini- mic is working and check hearing aids daily • Positioning in classroom • Visuals Pictorial representations • Video • Vocab lists and explanations/dictionaries so words can be revised • Position with role model for safety • Task planners • Use of signing of needed • Ensure mini- mic is working and check hearing aids daily

IMPACT

Our children will have gained knowledge and understanding of different skills and techniques required to problemsolve by designing and creating various products using a safe approach through our design and Technology curriculum. Children will have an understanding of cross-curricular elements within the subject. They will also understand the importance of skills learnt in other areas of the curriculum and how they aid the design and making process, as well as how these techniques and skills will assist them not just at the next stage of their learning but in future life. The children will investigate and analyse a range of existing products and evaluate their ideas against their design criteria. They will consider the views of others to improve their work and understand how key events and individuals in design and technology have helped shape the world. Design and Technology Policy Role of the subject Leader The subject leader will monitor design and technology through curriculum walks. Standards of teaching and learning will be adjudged using work sampling, photographs of children at work and reporting findings to teachers of the curriculum walks and data review. The subject leader will policy will be reviewed at this meeting. The subject leader will audit resources regularly and take responsibility for equipment and resources.

Objectives

The following objectives derived from the above aims will form the basis of our decisions when planning a scheme of work. Assessment will also be related to these objectives:

- To develop pupils' enjoyment and interest in Design and Technology and appreciate its contribution to all aspects of everyday life.

- To develop technical understanding and making skills, learn about design methods and investigate their environment and materials.

- To encourage pupils to use their knowledge and understanding when developing ideas, planning, and making products and evaluating them.

- To develop a knowledge of the Design and Technology curriculum contained within the programmes of study of the National Curriculum. To build on pupils' curiosity and sense of awe of the natural world.

- To develop in pupils a general sense of enquiry, which encourages them to question and make suggestions and build upon their experiences of investigating objects around them.

- To encourage pupils to predict the likely outcome of their investigations and practical activities, identify what works well and what could be improved in their own and other people's designs. To draw on a developing repertoire of skills and knowledge in Design and Technology that will include:

- Developing, planning, and communicating ideas

- Gaining knowledge and understanding of materials and their components

- Carrying out focused, practical tasks that develop a range of techniques, skills, processes, and knowledge

- Designing and making assignments using a range of materials, including electrical and mechanical components, food, mouldable materials, stiff and flexible sheet materials, and textiles

- Investigating and evaluating a range of familiar products, thinking about how they work, how they are used and the views of the people who use them

- Allowing constructive conversation and language interaction between students

- Learning the importance of health and safety. To develop pupils' use of ICT in their Design and Technology studies.

- To give pupils opportunities to use ICT (video, digital camera, data logger) to record their work and store results for future retrieval throughout their Design and Technology studies.

- To give pupils the chance to obtain information using the internet.

Breadth and Balance Variety

Pupils will be involved in a variety of structured activities and more open-ended investigative work:

- activities to develop good observational skills

- practical activities using tools, equipment, materials and components which develop pupils' ability to make quality products

- structured activities to develop an understanding of the design process

- Open-ended investigations. On some occasions, pupils will carry out the whole investigative process themselves or in small groups.

Cultural Capital Design and Technology work will be related to the real world, and everyday real-life experiences will be used.

Principles of teaching and learning Differentiation and Additional Educational Needs

The study of Design and Technology will be planned to give pupils a suitable range of differentiated activities appropriate to their age and abilities. Tasks will be set which challenge all pupils, including the more able. The task will be differentiated effectively for pupils with SEND, or pupils may be given extra support. The grouping of pupils for practical activities will take account of their strengths and weaknesses and ensure that all take an active part in the task and gain confidence.

Cross-curricular skills and links

Design and technology permeate every aspect of our lives, and we will relate them to all areas of the curriculum. We will emphasise the positive effects of Design and Technology on the world and include problems which some human activities can produce. We will also ensure that pupils realise the positive contribution of both men and women to design and technology and those of other cultures.

Continuity and Progression At Bonneygrove Primary School,

Children in EYFS learn how to construct objects through outside and inside play.

During Key Stage 1, the children learn to think imaginatively and talk about what they like and dislike when designing and making. They build on their early childhood experiences of investigating objects around them. They explore how familiar things work and talk about, draw and model their ideas. They learn how to design and make it safer and use ICT as part of their designing and making.

During Key Stage 2, children work on their own and as part of a team on a range of designing and making activities. They think about what products are used for and the needs of the people who use them. They plan what has to be done and identify what works well and what could be improved in their own and other designs. They draw on knowledge and understanding from different curriculum areas and use computers in a range of ways.

Equality of Opportunity

All children have equal access to the Design and Technology curriculum and its associated practical activities. The SLT, Class Teachers and TAs at Bonneygrove Primary School are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. Where appropriate, work will be adapted to meet pupils' needs and, if required, the extra support given. More able pupils will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used. All children have equal access to the Design and Technology Curriculum, its teaching and learning, throughout any year and monitored by analysing pupil performance throughout the school to ensure no disparity between groups.

Health and safety

Children and staff will undertake appropriate hand washing and other hygiene-related activities to prepare food. Children and staff working with food must wear aprons designated for cooking. All

jewellery should be removed and hair tied back. Glue guns At Bonneygrove School, low-temperature glue guns should only be used by an adult in Key Stage One and EYFS unless a child has one-to-one supervision. Key Stage two children should use low-temperature glue guns under supervision in a designated work area, wearing safety goggles. Craft knives An adult/teacher should only use craft knives, quick cutters, and rotary cutters should only be used by an adult/teacher in Key Stage One and the EYFS. Key Stage two children may use cutting equipment under supervision, using a cutting mat and wear safety goggles. Sawing Bench hooks and clamps must be used when sawing any material. Safety goggles must be worn, and any loose items of clothing/hair must be tucked in.

Assessment for Learning, recording and reporting Throughout the school

Teachers will assess whether children are working at/above or below the expected level for their age based on their understanding and application of the content of the National Curriculum 2014. Progress and attainment is reported to parents through parents' evenings and end of year reports. Marking for Improvement Throughout the school, teachers will assess whether children are working at/above or below the expected level for their age - based on their understanding and application of the content of the National Curriculum 2014. Progress and attainment are reported to parents through parents' evenings and end of year reports. Marking for Improvement (see policy) Much of the work done in Design and Technology lessons are practical or oral, and, as such, recording will take many varied forms, thus making marking different. However, written work must be marked regularly and clearly to aid progression and celebrate achievement. When appropriate, pupils may be asked to self-assess or peer assess their own or others' work. Marking for improvement comments in a child's book must be relevant to the learning objective to help children better focus on future targets. Resourcing Specialist equipment and those posing a potential safety risk will be held centrally and staff access when required.