

What Design & Technology look like in Goodrich CE (VC) Primary School



*At Goodrich Church of England Primary School, we work as a school community to share knowledge, skills and understanding required now and for the future to help each individual **achieve** their potential.*

Curriculum Intent

Design and Technology is an inspiring, rigorous and practical subject. It encourages children to learn, to think and to intervene creatively to solve problems both as individuals and as members of a team. Using creativity and imagination, children design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art.

Children learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

What Design & Technology looks like in our school:

Our high-quality scheme of work encourages children to look at, evaluate and adapt existing products and systems, working creatively to design their own that solve real and relevant problems within a variety of contexts (for example home, school, leisure, culture, enterprise, industry and the wider environment). Children are introduced to great inventors and designers from around the world who inspire and encourage the children to become innovators and risk-takers. The delivery of our Design and Technology curriculum, along with our whole school values of Achieve, Believe, Care enable our children to develop their skills, understanding and ability. Above all, we want our children to enjoy their Design and Technology lessons and embrace the opportunities they are presented with, without fear of failure or judgement from others.

This is our philosophy:

At Goodrich CE (VC) Primary School we believe Design and Technology should be fully inclusive to every child. Our progressive scheme of work develops children's skills and knowledge in design, structures, mechanisms, electrical control and a range of materials, including food. We aim to, whenever possible, make cross-curricular links to Maths, English and Science and other compulsory subjects on the curriculum, in a fun manner, putting these subjects into context, making them easier to digest and more understandable.

This is the knowledge and understanding gained at each stage.

By the end of EYFS children will:

- represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.
- safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and materials in original ways, thinking about uses and purposes.















By the end of Key Stage 1 children will:

- design purposeful, functional, appealing products for themselves and other users based on design criteria.
- select from and use a range of tools, equipment and materials to perform practical tasks.
- explore and evaluate a range of existing products and their own designs.
- develop their technical knowledge - build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms in their products.
- use the basic principles of a healthy and varied diet to prepare dishes and understand where food comes from.

By the end of KS2 children will:

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose
- generate, develop, model and communicate their ideas

- select from and use a wider range of tools, equipment, materials and components to perform practical tasks
- investigate and analyse a range of existing products
- evaluate existing products and their own designs and understand how key events and individuals in design and technology have helped shape the world
- build on their existing technical knowledge including applying their understanding of how to strengthen, stiffen and reinforce more complex structures using mechanical systems and electrical systems and applying their understanding of computing to program, monitor and control their products
- understand and apply the principles of a healthy and varied diet prepare and cook a variety of dishes understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.

DESIGN & TECHNOLOGY														
BIG IDEAS	Master Practical Skills							Design, Make, Evaluate & Improve				To Take Inspiration From Designs Throughout History		
Building Blocks	Cooking & Nutrition	Materials	Textiles	Electricals & Electronics	Computing	Construction	Mechanics	Vocabulary	Designers	Making	Evaluating	Explore Real Designs	Improve Designs	Explore How Products are Created
														

Curriculum Implementation

- National Curriculum Compliance document – to demonstrate that statutory requirements are met.
- Building Block Coverage – to plot where building blocks are taught throughout the curriculum.
- Long Term overview – to identify themes used to explore the building blocks
- Vocabulary document – words required to be taught in each milestone or class
- Theme webs – which summarise the key knowledge and skills to be acquired in each theme taught
- Design and Technology Progression document – skills and knowledge to be taught in each building block by milestone or class.

This is how it works:

- We use the Chris Quigley Design and Technology scheme enabling teachers to develop their knowledge, understanding and skills when teaching Design and Technology.
- Class teachers have organised their own curriculum for this subject using the topic/themed Chris Quigley units to create long-term curriculum maps across a 2-year rolling program.
- Design and Technology units are taught discretely, but meaningful cross curricular links are made across subjects when and wherever possible.
- Prior knowledge links to new learning deepens children's knowledge, understanding and skills and promotes a broad and balanced curriculum.
- A progression document is used to ensure that previous knowledge and skills are built on.
- By the time the children leave Year 6, they will have explored and discussed a range of different designers and their work, focusing on the techniques used or the features designers incorporated in their inventions or products.
- The children will then have a chance to recreate and reimagine these into their own designs.
- All children will be given a chance to work on a range of different collaborative design projects and have their work showcased across the school and in the local community.
- Small group/1:1 adult support given where required.
- We use teacher and self-assessment to quickly identify any child who requires additional support developing specific skills and techniques.
- These children will then receive additional support or resources to use in order for them to successfully meet the learning objective.
- Design and Technology events relevant to specific topics may be used to immerse children in the design experience.

This is what the adults do:

- Plan inspiring, progressive lessons which work on developing or acquiring design skills and techniques.
- Create a positive learning environment where children feel comfortable discussing and sharing their own and others work and suggesting positive feedback and ways to improve.
- Regularly monitor class books, listen to pupil feedback and audit planning.
- Raise the profile of Design Technology within the school, using displays, design and technology events and running extra-curricular design and technology clubs.

This is how we support the children:

- Work might be scaffolded so that all children are able to meet the learning objective in activities suitable to their own individual needs.
- Offering a range of equipment and resources so that all children can make progress during a lesson, e.g. use of templates or guides, different tools etc.
- Small group/1:1 adult support given where required.
- We use teacher and self-assessment to quickly identify any child who requires additional support developing specific skills and techniques. These children will then receive additional support or resources to use in order for them to successfully meet the learning objective.

This how we support staff:

- Identification of CPD needed.
- Curriculum Groups – share information, updates and expertise throughout the school.
- Use of staff meetings.
- Small sessions and immediate support as and when required.
- Use of D+D to overcome any technical issues and identify more effective software/school processes.

This is how we challenge children:

- Additional activities stretch the learning within the lesson and further develop certain skills or techniques.

This is how we ensure all children can access the curriculum:

- Children who have SEN or EAL needs are introduced to specific subject relevant language prior to the lesson.
- Seating children alongside good role models to support one another or working in groups to enable children to discuss their design choices.
- By providing equipment and resources relevant to each individual child, e.g. templates, relevant vocabulary necessary for writing up design choices, writing frames.

What is Cultural Capital?

The National Curriculum defines cultural capital as: 'the essential knowledge that children need to be educated citizens, introducing them to the best that has been thought and said and helping to engender an appreciation of human creativity and achievement'. This powerful knowledge can be split into two categories: powerful subject knowledge and powerful personal knowledge.

Powerful Subject Knowledge in Design and Technology:

- To allow them to draw on disciplines such as mathematics, science, engineering, computing and art.
- To learn how to take risks, become resourceful, innovative, enterprising and capable citizens.
- Through the evaluation of past and present design and technology, to develop critical understanding and impact on daily life and the wider world.

Powerful Personal Knowledge in Design and Technology:

- Enrichments activities and events to further allow children to be creative, imaginative and to design products that solve real-life problems within a variety of contexts. Thus, giving opportunities for the children to contribute creativity, wealth and well-being in society.
- Cross curricular experiences to further embed skills and techniques learned.

Curriculum Impact

The impact of children's progress and their ability to know more and remember more will be visible through a range of methods. These may include end of unit assessments or quizzes, hot and cold tasks, spoken responses, progress over time in children's books, extended writing or even an end of unit project.

This is what you might typically see:

- Structured lessons.
- Happy and engaged learners.
- Children posing questions about designs that they wish to research.
- A range of different activities including practical lessons, research lessons, showcase of inventions and evaluations of designs.
- Children able to self-reflect on their designs and the making process, finding both areas of success and evaluating areas of possible improvement.
- Displays around the school and showcases of children's designs.
- Confident children who are willing to persevere with skills and techniques they are developing.

This is how we know how well our children are doing:

- The assessment milestones have been broken down for each year group, ensuring the skills in Design Technology are progressive and build year on year.
- Summative assessment informs the subject leader of progress or skills and knowledge still to be embedded.
- A comprehensive monitoring cycle is developed at the beginning of each academic year. This identifies when monitoring is undertaken. Monitoring in Design and Technology includes class book scrutiny, lesson observations and/or learning walks, and pupil/staff/parent voice interviews conducted by the Design and Technology Subject lead.

This is the impact of the teaching:

We have identified substantive and disciplinary knowledge which is fundamental to the children's development and understanding as technicians. They accumulate this as they move through our school which then gives them a firm foundation to build on when they move on to KS3 and beyond.

- Data is used to inform and further develop the Design Technology Curriculum and its impact on pupil attainment and progression
- Marking and feedback by teacher and peers.
- Monitoring of progress.
- Photographic evidence included in children's Design and Technology books.
- Displays of work in classes.
- Class book scrutiny, pupil voice and planning audits.
- Targeting both Teacher and Learning Assistant support during lessons to ensure progress of all children.