Design and Technology

Curriculum Philosophy

The Design and Technology (D&T) curriculum at St George's is founded on Christian values of **wisdom, creativity, and service**, aiming to empower students to become **resourceful, innovative,** and **ethical problem-solvers** . We view D&T as a dynamic, practical, and intellectually stimulating subject that applies **research**, **knowledge** and **skills** to **design, make, and evaluate** innovative products and systems, addressing real-world needs.

Our overarching goal is to foster **creativity** and **critical thinking** by challenging students to identify diverse needs, generate imaginative solutions, and develop a deep understanding of **materials, processes, and systems**. We encourage students to see the **dignity and worth** in the materials they use and the structures they create, promoting **stewardship** and a **sense of responsibility** for the impact of design on society and the environment.

By balancing **technical expertise** with an understanding of **aesthetics, economics, and moral issues**, D&T prepares students not only for academic success but also for careers that align with Christian principles of **service and ethical practice**. Students develop **resilience** and **resourcefulness** by tackling challenging design projects, celebrating the value of learning from mistakes, and working both **independently** and **collaboratively**.

In order to achieve a true understanding of Design and Technology, topics have been intelligently sequenced based on the following rationale:

The curriculum is designed to nurture the very best D&T learners and to equip them with the appropriate knowledge and skills needed to develop their **employability**. Projects are carefully selected to provide students with a broad and balanced exposure to different **material areas** (e.g., resistant materials, textiles, systems, and control) and **manufacturing processes**, ensuring a **rich cultural capital** and the necessary skills for diverse post-16 pathways.

- **Building Secure Schema:** The curriculum is planned vertically and horizontally to establish **strong foundations** in core concepts and then **incrementally** build upon this knowledge through increasingly complex and challenging projects. **curriculum coherence**.
- **Knowledge and Skills Intertwined:** Content is delivered to learners and then immediately reinforced through a variety of **practical applications** and **project work**, recognising that **knowledge underpins and enables the application of skills**.
- **The Design Process:** Students repeatedly encounter and master the full **design process**: **investigating, designing, planning, making, and evaluating**. This iterative exposure develops **metacognition and reflection skills** by encouraging students to critically evaluate their progress and the work of others.
- **Substantive Concepts:** The curriculum explores key substantive concepts in D&T, including **sustainability, ethics, and innovation**, connecting the historical evolution of design with current industry practices and **future design challenges**.

The Design and Technology curriculum will address social disadvantage by addressing gaps in learners' knowledge and skills:

The D&T curriculum at St George's is committed to **addressing social disadvantage** and contributing to the **personal development** of all students.

- **Skill Development for Employability:** D&T is a **multidisciplinary** subject that cultivates a wide range of **transferable skills**, including **numeracy, graphical skills, problem-solving, and critical assessment**. This skill set is essential for **high-skilled professions** and helps close the opportunity gap.

- **Cultural Capital and Diversity:** Students study a wide range of **design and technological contexts** from around the world, learning about the **cultural, historical, and political impacts** of the design and manufacturing industries. This ensures an inclusive curriculum that respects and celebrates **diversity**.

- **SEND and Differentiation:** Reference material will be **differentiated** to support learners in their development of knowledge, and SEND learners will be given the opportunity to complete projects in relation to their needs.

We fully believe Design and Technology can contribute to the personal development of learners at St George's:

The study of D&T is fundamental in a student's ability to consider what it means to be a thoughtful and ethical **creator** and **steward** of resources.

- **Ethical and Moral Judgements:** D&T provides opportunities for students to develop and apply **valued judgments of an aesthetic, economic, moral, social, and technical nature**, fostering a **sense of responsibility as global citizens** and aligning with **Christian values of morality and empathy**.

- **Self-Awareness: Self-assessment** is developed, which enables learners to have an accurate understanding of their strengths and weaknesses, to accept them and then understand how to learn from them.

- **Collaboration and Communication:** Learners will be encouraged to develop socially through the celebration of making mistakes and the setting of high expectations, helping learners to develop **listening and speaking skills** within project teams.

Opportunities are built in to make links to the world of work to enhance the careers, advice and guidance that learners are exposed to:

- The subject provides a **solid foundation** for careers such as **Product Designer, Engineer (Civil, Mechanical, Electrical), Architect, Urban Planner, Draughtsperson, and Manufacturing Specialist**.
- Students will explore the **need for professional ethics and professional development** and current issues that impact on professional practice, such as new techniques and legislation.
- **Drafting** and **refinement** of design work is a skill which is practised and developed as they progress, showing them the importance of sophisticated **professional impressions**.

A true love of Design and Technology involves learning about various cultural domains. We teach beyond the specification requirements, but do ensure learners are well prepared to be successful in BTEC assignments and examinations:

- Learners are exposed to additional and highly relevant knowledge of **cultural, historical and political impacts** of the design and manufacturing industry – knowledge that they may otherwise not encounter.

- We believe that learning should be both **appreciated and retained** for future use, therefore our pupils are taught **revision skills** built into all our topics.

Curriculum Sequencing

All children are entitled to a curriculum and to the powerful knowledge that will open doors and maximise their life chances. Below is an overview of the units children will learn in this particular subject, at Key Stage 3 to progress towards Key Stage 4 options, in order to equip students with the cultural capital they need to succeed in life. The curriculum is planned vertically and horizontally giving thought to the optimum knowledge sequence for building secure schema.

	Sequencing
Year 7	**Textiles Fundamentals: Materials, Making, and Design Basics**
Year 8	**Product Designing Solutions: Research and Innovation, Systems, Prototyping, and Technical Knowledge**
Year 9	**Applied Technology: Advanced Woodworking Construction Techniques and Construction Technology**