



SAINT MARTIN'S CATHOLIC ACADEMY

Design & Technology

Curriculum Intent & Five-Year Learning Pathway

*“Knowing that we are loved by God,
Learning the best that has been thought and said,
and Living a virtuous life.”*

Aligned to the Eduqas GCSE Design and Technology specification

Design & Technology Curriculum Intent

At the heart of Saint Martin's curriculum lies our mission: knowing that we are loved by God, learning the best that has been thought and said, and living a virtuous life. Design and Technology plays a distinctive part in that mission. Where other subjects hand pupils the accumulated thought of the past, Design and Technology asks them to put that inheritance to work — combining knowledge of materials, mechanisms, systems and manufacture with creativity and moral judgement, to design and make products that serve genuine human need. In doing so, pupils learn to be good stewards of the world's materials and technologies, exercising the virtues of care, patience and honesty that good making demands.

Design and Technology is taught as a knowledge-rich subject in its own right, not a purely activity-based one. Pupils are taught the vocabulary, facts and principles of the discipline explicitly, by teachers who are expert in their field, so that this knowledge is secure in long-term memory and available for pupils to draw on independently when designing. As across the curriculum, we take the view that pupils cannot think critically or creatively about a problem without a well-integrated base of background knowledge relevant to it; broad technical knowledge is the foundation for, not a distraction from, genuine originality.

The five-year curriculum is sequenced deliberately so that later, more independent design-and-make projects are built on secure earlier foundations, rather than pupils being asked to design ambitiously before they have the knowledge to do so well. This ambition is set with the demands of the Eduqas GCSE Design and Technology specification in view from Year 7, so that pupils opting into the subject at Key Stage 4 progress with confidence rather than starting afresh. By the end of Year 11, pupils have secure command of:

- **Core technical principles** — new and emerging technologies, energy generation and storage, developments in materials, systems approaches, mechanical devices, and the working properties of materials
- **Specialist technical principles** — in-depth knowledge of their chosen material category (timbers, metals, polymers, papers and boards, or textiles), including selection, properties and manufacture
- **Designing and making principles** — investigating user needs, primary and secondary research, environmental, social and economic issues, design strategies, communication of ideas, prototyping, and specialist tools and processes — the knowledge base the non-exam assessment draws on directly

Pupils are taught to work through the iterative design process central to the Eduqas specification — exploring a context and its constraints, creating and testing ideas through modelling and prototyping, and evaluating outcomes honestly against real criteria — returning to earlier stages as their understanding sharpens, in the same way a professional designer would. Mistakes and failed prototypes are treated as part of this process, building the perseverance and resilience Saint Martin's expects of every pupil.

Ambitious subject-specific vocabulary is taught explicitly, and pupils are expected to communicate their thinking as designers do: through sketching, annotated technical drawing, CAD, physical modelling and written evaluation, learning to justify their decisions with precision rather than vague preference. Practical work spans both traditional workshop skills and contemporary manufacture — including CAD/CAM, laser cutting and 3D printing — so that pupils understand how products move from idea to industry-scale production as well as from idea to workshop bench. Health and safety, quality control and tolerance are taught explicitly and reinforced in every practical lesson; the safe, disciplined use of tools and machinery is itself an exercise in the personal responsibility and respect for others that underpins our Catholic ethos and British Values alike.

Pupils study the work of a genuinely diverse range of designers, engineers and architects across cultures and eras, guarding against stereotypical assumptions about who designs and what “good design” looks like. Environmental, social and ethical consequences are treated as design constraints to be worked with from the outset, not as an afterthought — developing pupils' sense of responsibility for the world they help to shape. The curriculum also opens pupils' eyes to the breadth of careers the subject leads to, from engineering, architecture and construction to product design and the wider creative and digital industries, so that Design and Technology is understood as a foundation for many futures rather than a single path.

Ultimately, our Design and Technology curriculum aims to send every pupil forward with the technical knowledge, creative confidence and moral seriousness to design, make and evaluate work of real quality — putting into practice, in a very concrete way, the virtuous and thoughtful life Saint Martin's mission calls every pupil to live.

Year 7–11 Sequencing

This maps each year's focus onto the Eduqas GCSE strands — Core technical principles, Specialist technical principles, and designing and making principles — so the progression toward the GCSE and its non-exam assessment (NEA) is visible from Year 7 onward.

Year 7 — Foundations

Focus: Safe workshop practice, first contact with the major material categories, and the basic vocabulary of design.

- Health and safety induction and safe use of hand tools, benches and machinery
- Introduction to timbers, metals and polymers — properties, sources and working characteristics
- Basic mechanisms: levers, linkages and simple movement
- First CAD experience (2D design) alongside hand-drawing skills
- A short design-and-make project bringing these skills together, with simple evaluation against a brief

Eduqas strand seeded: Core technical principles (materials, mechanical devices)

Year 8 — Building Depth

Focus: Widening material knowledge and introducing systems thinking and more independent decision-making.

- Building on previous metals knowledge, students will work with pewter to make a key fob of their own design, applying an understanding of metal properties to a real-life design brief
- Use of hand tools and applying skills to produce an outcome
- CAD/CAM in practice — laser cutting linked to a design task
- Produce wood working joints
- A more open design brief requiring pupils to research a user need before designing, with a written evaluation

Eduqas strand seeded: Core technical principles (systems approaches, materials); early Designing and making principles (user needs, evaluation)

Year 9 — Specialising Begins

Focus: Formal introduction to the iterative design process and consolidation of Core technical principles across all material areas, ahead of choosing a Year 10 specialism.

- New and emerging technologies, and energy generation and storage
- Systematic coverage of core technical knowledge across timbers, metals, polymers, papers/boards and textiles
- Explore–create–evaluate taught explicitly as a named process and applied to a mini design-and-make project

- Introduction to specification-writing and primary/secondary research methods

Eduqas strand covered: Core technical principles (complete); Designing and making principles (introduced formally)

Year 10 — Specialist Depth

Focus: Depth in the pupil's chosen material category, and the research and prototyping skills the NEA will demand.

- In-depth study of the chosen specialist category (timbers and polymers) — properties, selection and manufacture
- Environmental, social and economic issues explored as live design constraints, not an add-on topic
- Prototyping and prototyping communication: modelling, CAD, annotated development.
- A substantial practice project mirroring the shape of the NEA, including context exploration and a written specification

Eduqas strand covered: Specialist technical principles (in depth); Designing and making principles (applied at length)

Year 11 — NEA and Consolidation

Focus: Completing the live non-exam assessment and consolidating knowledge for the written examination.

- NEA: context investigation, design brief and specification, idea generation, development, manufacture, testing and evaluation, completed to Eduqas' assessment criteria
- Revision of Core and Specialist technical principles interleaved with NEA work, so exam knowledge and practical work reinforce each other rather than competing for time
- Exam technique: extended-response practice and use of subject-specific vocabulary in written answers

Eduqas strand covered: All three strands assessed — NEA (Designing and making principles, Specialist technical principles) and written paper (Core and Specialist technical principles)

Year 7



Assessment points

Theory Pathway

Woods

Metals

Plastics

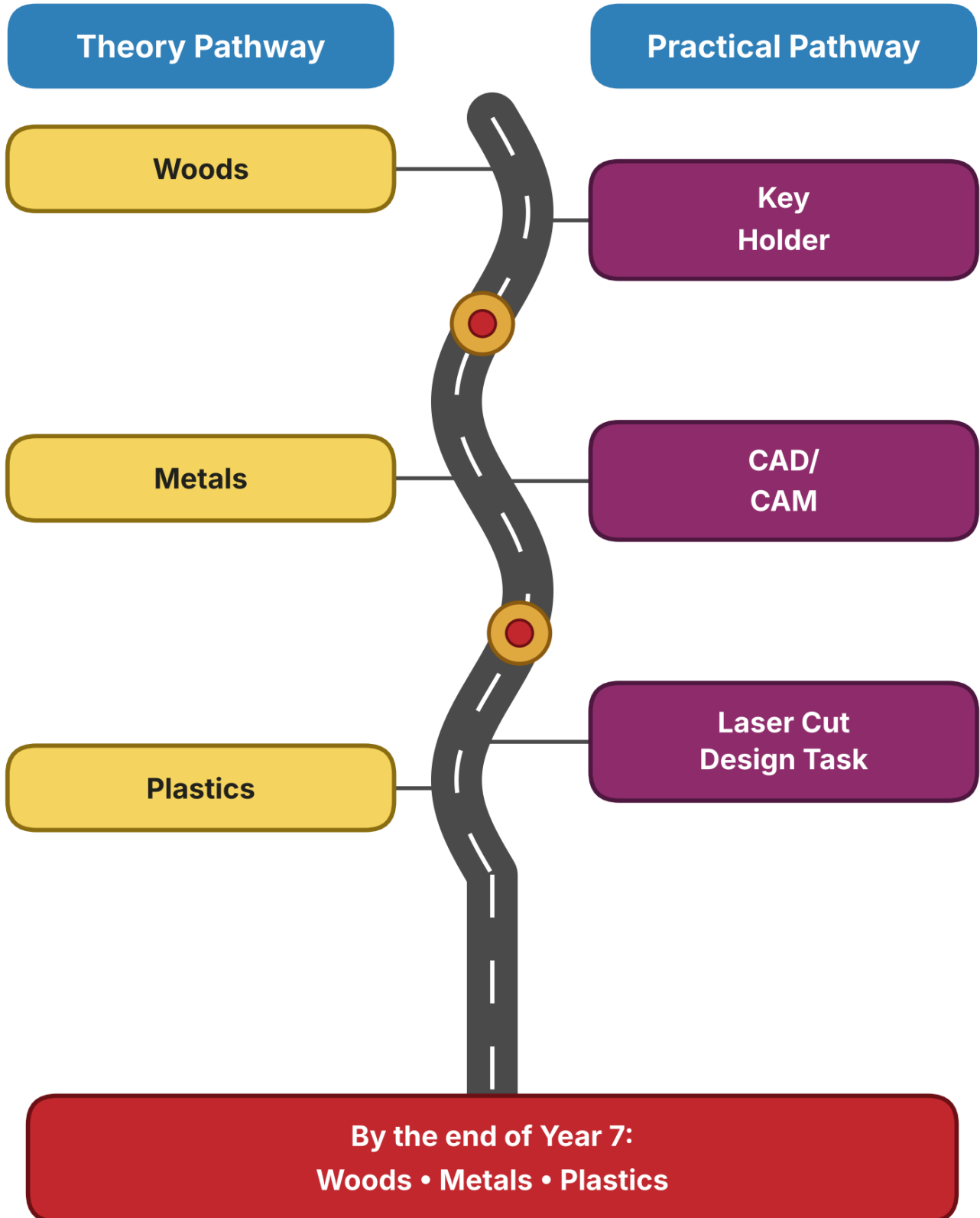
Practical Pathway

Key
Holder

CAD/
CAM

Laser Cut
Design Task

By the end of Year 7:
Woods • Metals • Plastics



Year 8



Assessment points

Theory Pathway

**Metal Properties
& Pewter**

**Hand Tools
& Skills**

**CAD/CAM &
Laser Cutting**

**Woodworking
Joints**

**User Needs &
Evaluation**

Practical Pathway

**Pewter
Key Fob**

**Woodworking
Joints**

**Laser-cut
Design Task**

**By the end of Year 8:
Metals • Hand Tools • CAD/CAM • Wood
Joints • User Needs**

Year 9



Assessment points

Theory Pathway

New &
Emerging Tech

Energy Generation
& Storage

Iterative Design
Process

Specification
Writing

Practical Pathway

Research &
User Need Task

Explore-Create-
Evaluate Project

3D
Frame

By the end of Year 9:
Emerging Tech • Energy • Design Process
• Specifications

Year 10



Assessment points

Theory Pathway

**Specialist
Material Study**

**Environmental,
Social & Economic
Issues**

**Prototyping &
Communication**

**Specification
& Research**

Practical Pathway

**NEA-style
Investigation**

**Development &
Prototyping Project**

**By the end of Year 10:
Specialist Material • Environmental
Issues • Prototyping • Specification**

Year 11



Assessment points

Theory Pathway

**NEA:
Investigation**

**NEA:
Specification
& Ideation**

**NEA:
Development**

**NEA:
Manufacture**

**NEA:
Testing &
Evaluation**

Practical Pathway

**Revision:
Core Principles**

**Revision:
Specialist
Principles**

**Exam Technique
& Vocabulary**

**By the end of Year 11:
NEA Complete • Core Principles •
Specialist Principles • Exam Ready**