Kingsley Academy
Find your remarkable

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Principal Mr B Tinsley
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An excellent education for every child, in every classroom, every day.

2024/25 - Design & Technology

Design & Technology Vision

Our curriculum develops practical skills and technical knowledge, enabling young people to design innovative solutions for real-world challenges.

STEM Vision

STEM connects learning to real-world applications, builds problem-solving skills, and sparks innovation. Through hands-on projects, new technologies, and industry partnerships, we prepare young people to shape the future.

Intent

Our curriculum equips young people with the skills, knowledge, and creativity to solve problems. Hands-on learning fosters resilience, collaboration, and innovation. By integrating STEM principles, we prepare them for careers in technology, engineering, and design while promoting ethical and sustainable solutions. We challenge stereotypes, celebrate diversity, and encourage inclusive, responsible design. The iterative design process builds critical thinking and adaptability—key for success in a changing world.

Core Values in Action

- **Be Kind:** Encouraging empathy, inclusivity, and respectful collaboration.
- **Be Courageous:** Taking risks, embracing failure, and developing resilience.
- **Be Curious:** Exploring new technologies, real-world challenges, and lifelong learning.

Implementation

Our curriculum is delivered through a combination of hands-on practical experiences, real-world problem-solving, and theoretical understanding. We ensure progression by developing skills and knowledge from KS3 to KS5, integrating STEM subjects, and fostering creativity and resilience. Collaboration with industry experts, the use of emerging technologies, and cross-curricular links enhance learning and prepare young people for future careers.

Key Stage 3 (KS3):

- Engaging young people in real-world problem-solving through hands-on learning.
- Developing practical skills, safe equipment use, and design thinking.
- Linking STEM subjects to materials, science, and technology.
- Exploring robotics, 3D printing, and intelligent design systems.

Key Stage 4 (KS4):

- Analysing ethical, environmental, and societal impacts of design.
- Gaining independence in research, prototyping, and real-world problem-solving.
- Ensuring industry relevance through STEM integration and market-driven design.
- Completing a Non-Examined Assessment (NEA) to demonstrate innovation and skill.

KS5 Vision:

- Developing a future-ready curriculum with advanced technical knowledge and practical expertise.
- Embedding industry-led problem-solving, research, and cutting-edge technologies.
- Engaging with STEM ambassadors, industry professionals, and universities.
- Providing pathways to opportunities like the Arkwright Engineering Scholarship and apprenticeships.

Unique Aspects

- Adapting to scientific and technological advancements.
- Teaching sustainability, emerging technologies, and intelligent product design.
- Supporting career pathways through industry partnerships and STEM initiatives.
- Developing practical skills in food technology, hygiene, and provenance.

Impact

Our curriculum empowers young people to become confident, skilled, and innovative thinkers. We track progress through assessments, project-based learning, and external recognition. The impact is seen in their ability to apply technical knowledge, secure STEM-related opportunities, and progress into further education or industry. By fostering adaptability and problem-solving skills, we prepare them to make meaningful contributions to society and the evolving technological landscape.

- Measuring success through practical application, academic achievement, and career progression.
- Building confidence, resilience, and industry-ready technical expertise.
- Increasing uptake in STEM careers, university placements, and apprenticeships.
- Gaining national recognition through awards like the Arkwright Engineering Scholarship and Fresh Enterprise competitions.

The Bottom Line

We don’t just teach Design & Technology—we aim to create problem-solvers, innovators, and future leaders.

Design and Technology KS3 Curriculum Overview (2024-2025)

Students will study from the 4 CORE STRANDS in a different order depending on which class they are in. Classes will rotate 4 times within an academic year, working within a specialist area of D&T.

CORE STRANDS	Emerging Technologies and Design Innovation	Mastering Design and Making Skills		Food Preparation and Nutrition
Year 7	**Electronics/Robotics:** Introduction to electronics, systems and control, programming, Types of robots, automation, robot articulation, mechanism and ethical issues	**Introduction to the Workshop skills:** H&S in workshop, materials categories, timber sources and origins, FSC	**Design Innovation: The role of an Architect, designer and Engineers.** Structures, forces, loads, modelling, user needs, contextual problem solving for a London context	**Introduction to Food and Nutrition** Basic food preparation (cutting, weighing, measuring, ingredients) Food safety and hygiene Eatwell Guide Balanced diets and nutritional needs.
Year 8*	**CAD/CAM skills:** Introduction to TinkerCAD, Design Specification, 3D printing.	**Electronics/Robotics:** Introduction to electronics, systems and control, programming, Types of robots, automation, robot articulation, social and ethical issues	**Formal Drawing Skills:** Introduction to Isometric Oblique 1 and 2 point perspective Orthographic Drawing Model making	**Intermediate Food and Nutrition** **Food and Society** Food choice Ethical and moral influences global cuisine Seasonality Food and environment Labelling and marketing
Year 9*	**Advance Drawing and CAD/CAM Skills:** TinkerCAD: Using Coding to create 3D shapes 3D Fusion 360, CAD for simulation Using TinkerCAD (plus coding) 3D printing	**Advanced Workshop Skills:** Design Movements Types of Wood Joints Using CAD/CAM Brief and Specification Research skills Manufacturing a quality prototype	**Formal Drawing Skills:** Introduction to Isometric Oblique 1 and 2 point perspective Orthographic Drawing Model making	**Intermediate Food and Nutrition** **Food and Society** Food choice Ethical and moral influences global cuisine Seasonality Food and environment Labelling and marketing

** Since D&T has been reintegrated into the Academy for the current academic year (2024/2025), students in year 8 and 9 are engaging in a streamlined curriculum to enable the development of practical skills and technical knowledge needed to develop innovative design solutions.*

Design and Technology KS4 Option Pathways (2024-2025)

AQA GCSE DESIGN AND TECHNOLOGY

Year 10	GCSE Design and Technology (AQA)						
		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
(single)	Technical Knowledge	Core technical principles: Materials, properties & uses	Material Categories (Core) Manufacturing processes & sustainability	Core Specialist Technical Knowledge -Material Processes	Designing & making principles Mini NEA project introduced. : Prototyping & iteration	Design and Making Principals (theoretical understanding)	NEA 1 Begins 1st June
Double lesson	Practical Applications	Skill Development: Workshop Skills, CAD Skills	Skills Development: CAD (Fusion 360),	Skill Development : Designing & making principles, Sketching & CAD	Mock NEA intro	Mock NEA	Mock NEA

Proposed Plan for 2025/26

Year 11	GCSE Design and Technology (AQA)						
		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
(single)	Technical Knowledge	New and Emerging Technologies	Specialist Technical (timber)	Exam Theory: Manufacturing, industrial processes & smart materials	Exam Theory: Core Technical principals	Exam Theory: Materials, tools, processes, & sustainability	Exam Preparation and GCSE EXAM
Double lesson	Practical Applications	NEA: Developing ideas, sketches & CAD modelling	NEA: Prototyping & manufacturing techniques	NEA: Making & testing the final prototype	NEA: Finalising project & producing portfolio		

Design and Technology KS4 Option Pathways (2024-2025)

WJEC Hospitality and Catering BTEC

Year 10	**WJEC Hospitality and Catering BTEC**					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Technical/ Theoretical Knowledge	HOSPITALITY AND CATERING INDUSTRY	HOSPITALITY AND CATERING PROVISION	HOSPITALITY AND CATERING PROVISION (Continued)	HOW H&C PROVIDERS OPERATE	HEALTH AND SAFETY IN HOSPITALITY AND CATERING	UNDERSTANDING THE IMPORTANCE OF NUTRITION
Practical Skills	Basic cooking techniques (knife skills, vegetable cuts) Safe use of kitchen equipment Simple recipe preparation	Food safety, preparation & cooking techniques	Food preparation, cooking, and presentation	Developing medium-level cooking, preparation, and presentation techniques	Advanced cooking, preparation & presentation techniques	Advanced cooking, preparation & plating techniques

Year 11	WJEC Hospitality and Catering BTEC					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Technical/ Theoretical Knowledge	**H&C RECAP (Summer Term, Year 10)**	**PLANNING FOOD PRODUCTION** **NEA RELEASED**	NEA: Working on the Unit 2 controlled assessment. 12 hours to complete the task.		Exam Preparation: Hospitality and Catering Industry-Reviewing topics covered in year 10.	Exam Preparation and GCSE EXAM
Practical Skills	Advanced cooking, preparation, plating & presentation techniques	Develop dishes tailored to diverse dietary needs, including vegetarian, vegan, dairy-free, and gluten-free options.	Students will plan, prepare, cook, and present two dishes with accompaniments,			