



AVANTI GRANGE

SECONDARY SCHOOL

Design and Technology

Curriculum Map and Intent

Subjects: Design and Technology & Food Preparation and Nutrition

Design and Technology Intent:

The Avanti Grange Design and Technology curriculum instils a strong commitment to ethical, empathetic, and innovative product design. Students are encouraged to understand the historical context of design and the development and use of technology, empowering them to shape a responsible and inclusive future.

Our curriculum exposes students to diverse design and technological advancements across cultures and time, fostering a deep appreciation for human creativity. They are prompted to tackle challenges with consideration for ethical, social, and environmental factors.

Key curriculum components include:

- Historical progression of design and technology in a global context.
- Exploration of concepts like sustainable design, responsible innovation, and inclusive engineering.
- Recognising their role as responsible designers within the context of past and future developments.

Students learn a systematic approach to design and technology, including:

- Crafting purposeful design specifications from design briefs and contexts.
- Analysing past design solutions and technological advancements to inform their choices.
- Understanding the societal, environmental, and personal impacts of their decisions.
- Embracing diverse perspectives and defending their choices.

Engagement with accomplished designers and technologists guides students in structuring their own creative, ethical designs. Studying at Avanti Grange equips students to:

- Excel in design and technology assessments and other related disciplines.
- Pursue diverse careers in product design, engineering, sustainability, and entrepreneurship.
- Lead as informed, socially responsible citizens committed to positive change through innovative design practices.

Food Preparation and Nutrition Intent:

The Avanti Grange Food Preparation and Nutrition curriculum is dedicated to fostering a holistic understanding of nutrition and health. Students are guided to apply these principles with emphasis is placed on cultivating competence in diverse cooking techniques, including ingredient selection, preparation, and nuanced heat application. The curriculum highlights a heightened awareness of taste, texture, and smell, reflecting the thoughtful consideration, encouraged in responsible practices which prepares students for future careers in food preparation and nutrition. Moreover, students gain an understanding of the source, seasonality, and characteristics of a wide array of ingredients, with a clear emphasis on enhancing the vegetarian experience. This focus supports our principle of empowering students to make informed, socially responsible choices in their dietary preferences. During their experience in Food Preparation and Nutrition students will:

- Understand and apply the principles of nutrition and health, aligning with our commitment to holistic education that goes beyond traditional subjects.
- Cook a repertoire of predominantly savoury dishes, fostering the ability to feed themselves and others a healthy and varied diet. This parallels the ethos of responsible decision-making in design, extending to choices made in daily life.
- Become competent in a range of cooking and preparation techniques, including selecting and preparing ingredients, using utensils and electrical equipment, and applying heat in different ways. Awareness of taste, texture, and smell guides decisions on seasoning dishes and combining ingredients, reflecting the thoughtful consideration encouraged in responsible design practices.
- Understand the source, seasonality, and characteristics of a broad range of ingredients, fostering a deep appreciation for the origins and qualities of food sources.

KS3 Curriculum Overview:

Design and Technology / Food Preparation and Nutrition are provided on a rotational basis. Students will study the design and technology subjects of product design, graphic design, textiles and food preparation and nutrition at various stages of their KS3 studies. Students may not participate in all curriculum areas in the order presented during an academic year.

Year 7 students are introduced to a range of fundamental skills in design and technology and food preparation and nutrition. Year 7 students will study product design, textiles and food preparation and nutrition. Students will develop practical skills and theory knowledge and understanding in: CAD/CAM, textile product creation, sustainable design, design ideation and innovation, considering the work of existing designers, foundational food preparation and nutrition practical skills, food safety and hygiene, macronutrients and food manufacture in industry.

Year 8 students delve deeper into developing skills in a range of fields in design and technology and food preparation and nutrition. Year 8 students will study product design, graphic design and food preparation and nutrition. Students will develop practical skills and theory knowledge and understanding in:

CAD/CAM, traditional manufacturing techniques, foundational electronics, graphic product prototyping, architectural studies, sustainable design, setting out specification points, design ideation and development, use of modern technologies, working properties of a range of materials, performing a range of cooking methods, safely using a range of equipment and utensils, micronutrients and their functions in the body and allergies and intolerances. They also further explore the work of other designers and manufacturers to enhance their understanding of design.

Year 9 students will study the role of design and technology and food preparation and nutrition in the wider society, further developing skills in a broad range of areas. Year 9 students will study product design, textiles and food preparation and nutrition. Students will develop practical skills and theory knowledge and understanding in:

CAD/CAM and the role of robotics in manufacture, creating innovative products in response to a design context/brief, producing products for a target user, studying the influence of designers and design movements, justifying a range of specification points, the use of smart textiles and materials, traditional joining methods, surface finishes and finishing techniques, producing complex textile products, working with a range of materials and fibres, producing balanced meals to promote a healthy lifestyle, working safely and independently in a practical environment, understanding the impact of food manufacture on sustainability and the environment, impact of religion on diet and factors affecting meal planning and preparation.

KS4 Curriculum Overview:

GCSE Design and Technology will be offered to students in Year 10 and Year 11. The specialist technical principles focus for the GCSE course will be natural and manufactured boards and timbers. GCSE Design and Technology will prepare students to participate confidently and successfully in an increasingly technological world. Students will gain awareness and learn from wider influences on Design and Technology including historical, social, cultural, environmental and economic factors. Students will get the opportunity to work creatively when designing and making and apply technical and practical expertise.

The exam board that students will study their GCSE with is AQA. AQA's GCSE in Design and Technology allows students to study core technical and designing and making principles, including a broad range of design processes, materials techniques and equipment. They will also have the opportunity to study specialist technical principles in greater depth.

Students will complete a non-examination assessment in the form of a coursework portfolio which forms 50% of the overall GCSE grade. Students will design and manufacture a prototype product in response to a given design context. Students will complete a written exam which forms 50% of the overall GCSE grade. The written exam will cover knowledge and understanding of a range of core and specialist technical principles as well as designing and making principles. Cross curricular links are made between design and technology and maths and science as 15% of the examination questions will assess maths skills and 10% of the examination questions will assess science skills.

Super Curriculum Links:

[Super Curriculum D&T Year 7.docx](#)

[Super Curriculum D&T Year 8.docx](#)

[Super Curriculum D&T Year 9.docx](#)

Year Group	Autumn Half Term 1	Autumn Half Term 2	Spring Half Term 1	Spring Half Term 2	Summer Half Term 1	Summer Half Term 2
Key Stage 3						
Y7	Topic: Product Design with a focus on CAD CAM and Design Principles incl knowledge of Alessi and Philippe Starck	Topic: Product Design with a focus on CAD CAM and Design Principles incl knowledge of Alessi and Philippe Starck	Topic: Textiles with a focus on Vivian Westwood and sustainable design	Topic: Textiles with a focus on Vivian Westwood and sustainable design	Topic: Food Preparation and Nutrition with a focus on macronutrients and an introduction to working safely in the kitchen.	Topic: Food Preparation and Nutrition with a focus on macronutrients and an introduction to working safely in the kitchen.
Y8	Topic: Product Design with a focus on electronics and designing and making a product for an intended user. Students will study the work of others in detail to help influence the design of a product. Students will develop their manufacturing skills in creating a functioning prototype product.	Topic: Product Design with a focus on electronics and designing and making a product for an intended user. Students will study the work of others in detail to help influence the design of a product. Students will develop their manufacturing skills in creating a functioning prototype product.	Topic: Graphics with a focus on architectural and sustainable design. Students will study the Scandinavian design style as well as key features of sustainable living. Students will design and manufacture a prototype architectural design for a sustainable home.	Topic: Graphics with a focus on architectural and sustainable design. Students will study the Scandinavian design style as well as key features of sustainable living. Students will design and manufacture a prototype architectural design for a sustainable home.	Topic: Food Preparation and Nutrition with a focus on micronutrients and food intolerances. Students will develop practical skills in producing a range of dishes focused around the use of a range of staple foods	Topic: Food Preparation and Nutrition with a focus on micronutrients and food intolerances. Students will develop practical skills in producing a range of dishes focused around the use of a range of staple foods

Y9	Topic: Product Design with a focus on responding to a given design context and brief. Students will research and analyse a range of design influences to inform the design and manufacturing process of an educational game.	Topic: Product Design with a focus on responding to a given design context and brief. Students will research and analyse a range of design influences to inform the design and manufacturing process of an educational game.	Topic: Textiles with a focus on studying and taking influence from the design styles of Alexander McQueen and Under Armour. Students will manufacture a backpack in order to develop their making skills with a range of materials and equipment.	Topic: Textiles with a focus on studying and taking influence from the design styles of Alexander McQueen and Under Armour. Students will manufacture a backpack in order to develop their making skills with a range of materials and equipment.	Topic: Food Preparation and Nutrition with a focus on micronutrients and food intolerances. Students will develop practical skills in producing a range of dishes focused around the use of a range of staple foods	Topic: Food Preparation and Nutrition with a focus on micronutrients and food intolerances. Students will develop practical skills in producing a range of dishes focused around the use of a range of staple foods

Key Stage 4 (GCSE)

Y10	Topic: Practice coursework project 1 – lamp prototype. Students will perform relevant research, design, manufacture and reviewing the success of a prototype product with a given design brief and context. Students will also study core technical principles of design and technology.	Topic: Practice coursework project 1 – lamp prototype. Students will perform relevant research, design, manufacture and reviewing the success of a prototype product with a given design brief and context. Students will also study core technical principles of design and technology.	Topic: Practice coursework project 2 – Portable speaker prototype. Students will perform relevant research, design, manufacture and reviewing the success of a prototype product with a given design brief and context. Students will also study specialist technical principles of design and technology.	Topic: Practice coursework project 2 – Portable speaker prototype. Students will perform relevant research, design, manufacture and reviewing the success of a prototype product with a given design brief and context. Students will also study specialist technical principles of design and technology.	Topic: Design and Technology designing and making principles. Students will develop skills in performing a range of graphic drawing techniques, use of CAD/CAM and a range of traditional manufacturing technique important for supporting the completion of NEA coursework and the final written examination.	Topic: NEA Coursework research and specification
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Y11	Topic: NEA coursework design ideation and development. Re-cap and revision of core technical principles.	Topic: NEA coursework design ideation and development. Re-cap and revision of core technical principles.	Topic: NEA coursework prototype manufacture. Re-cap and revision of specialist technical principles.	Topic: NEA coursework review and evaluation. Re-cap and revision of designing and making principles.	Topic: Written examination preparation. Assessment skills and key content.	