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, metals and plastics and food preparation and nutrition. Students will develop practical skills and theory knowledge and understanding in:
CAD/CAM 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 casting and forming techniques, traditional joining methods, surface finishes and finishing techniques, producing complex products, working with a range of materials, 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.

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 Why is this being taught? This prepares students for further progression with CAD CAM and enables students to grasp the design process as most will have had an insufficient experience at KS2 as reported by Ofsted	Topic: Product Design with a focus on CAD CAM and Design Principles incl knowledge of Alessi and Philippe Starck Why is this being taught? This prepares students for further progression with CAD CAM and enables students to grasp the design process as most will have had an insufficient	Topic: Textiles with a focus on Vivian Westwood and sustainable design Why is this being taught? Students will learn how to generate graphics for fabrics, how to sew using a sewing machine and to understand the work of Vivian Westwood. Students will also explore the 6R's to re	Topic: Textiles with a focus on Vivian Westwood and sustainable design Why is this being taught? Students will learn how to generate graphics for fabrics, how to sew using a sewing machine and to understand the work of Vivian Westwood. Students will also explore the 6R's to re	Topic: Food Preparation and Nutrition with a focus on macronutrients and an introduction to working safely in the kitchen. Why is this being taught? This prepares students for producing a range of practical dishes in Y7, Y8 and Y9. Students will study the sources and impact of macronutrients to consider how to	Topic: Food Preparation and Nutrition with a focus on macronutrients and an introduction to working safely in the kitchen. Why is this being taught? This prepares students for producing a range of practical dishes in Y7, Y8 and Y9. Students will study the sources and impact of macronutrients to consider how to

	Why now? CAD skills take time to develop and design principles are an intrinsic part of developing a design idea. Will this be revisited? Yes students will continue to study product design in Y8 and Y9	experience at KS2 as reported by Ofsted Why now? CAD skills take time to develop and design principles are an intrinsic part of developing a design idea. Will this be revisited? Yes students will continue to study product design in Y8 and Y9	use an old shirt to make a cushion case. Why now? This unit will be delivered now to build upon CAD skills in terms of graphics, to introduce students to textile products and to introduce a designer that focuses on a political motivation within design. This will also teach key knowledge in regards to sustainability. Will this be revisited? Yes students will continue to study textiles in Y9	use an old shirt to make a cushion case. Why now? This unit will be delivered now to build upon CAD skills in terms of graphics, to introduce students to textile products and to introduce a designer that focuses on a political motivation within design. This will also teach key knowledge in regards to sustainability. Will this be revisited? Yes students will continue to study textiles in Y9	consume a healthy and balanced diet. Why now? This unit will be delivered to help students build foundation skills in food preparation and nutrition as well as basic understanding of consuming a healthy diet. This will enable students to develop and build upon base skills learnt in future food preparation and nutrition units. Will this be revisited? Yes students will continue to study food preparation and nutrition in Y8 and Y9	consume a healthy and balanced diet. Why now? This unit will be delivered to help students build foundation skills in food preparation and nutrition as well as basic understanding of consuming a healthy diet. This will enable students to develop and build upon base skills learnt in future food preparation and nutrition units. Will this be revisited? Yes students will continue to study food preparation and nutrition in Y8 and Y9
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	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	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 Why is this being taught?	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 Why is this being taught?

	functioning prototype product. Why is this being taught? This develops upon fundamental skills learnt in Y7 and introduces the key concepts of working with electronics and a range of materials and equipment in a practical environment Why now? Understanding how to design and make a product for an intended user as well as producing a prototype product from a range of materials is a key skill required to undertake further studies of product design. Will this be revisited? Yes students will continue to study product design in Y9.	functioning prototype product. Why is this being taught? This develops upon fundamental skills learnt in Y7 and introduces the key concepts of working with electronics and a range of materials and equipment in a practical environment Why now? Understanding how to design and make a product for an intended user as well as producing a prototype product from a range of materials is a key skill required to undertake further studies of product design. Will this be revisited? Yes students will continue to study product design in Y9.	Why is this being taught? This topic helps to develop students understanding of the working properties of a range of materials. Students will develop their design skills using CAD and various graphic drawing techniques to display an idea for a prototype product. Students will study the fundamental features of sustainable living to consider their environmental responsibility within modern society. Why now? Understanding how to design with sustainability as a focus is an important factor of design and technology key to sustaining the natural environment. Students will develop their making skills with a range of materials to produce products in different media.	Why is this being taught? This topic helps to develop students understanding of the working properties of a range of materials. Students will develop their design skills using CAD and various graphic drawing techniques to display an idea for a prototype product. Students will study the fundamental features of sustainable living to consider their environmental responsibility within modern society. Why now? Understanding how to design with sustainability as a focus is an important factor of design and technology key to sustaining the natural environment. Students will develop their making skills with a range of materials to produce products in different media.	This topic helps students to develop their understanding from Y7 of the impact of nutrients within the body. Students will further develop their practical skills in using a range of equipment and cooking techniques within a practical environment. Why now? Understanding the importance of micronutrients within a balanced diet is vital in promoting a healthy lifestyle. Students will implement a range of cooking techniques in producing practical dishes to further develop fundamental skills learnt in Y7 Will this be revisited? Yes students will continue to study food preparation and nutrition in Y9.	This topic helps students to develop their understanding from Y7 of the impact of nutrients within the body. Students will further develop their practical skills in using a range of equipment and cooking techniques within a practical environment. Why now? Understanding the importance of micronutrients within a balanced diet is vital in promoting a healthy lifestyle. Students will implement a range of cooking techniques in producing practical dishes to further develop fundamental skills learnt in Y7 Will this be revisited? Yes students will continue to study food preparation and nutrition in Y9.

			Will this be revisited? Yes graphic design will form a key part of design and technology studies in Y9 and within GCSE projects.	Will this be revisited? Yes graphic design will form a key part of design and technology studies in Y9 and within GCSE projects.		
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. Why is this being taught? This topic ties together the range of skills studied in Y7/Y8. Students will develop skills in analysing research, displaying designs using CAD and graphic drawing techniques and implementing the use of a range of joining methods in producing a product. Students will develop	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. Why is this being taught? This topic ties together the range of skills studied in Y7/Y8. Students will develop skills in analysing research, displaying designs using CAD and graphic drawing techniques and implementing the use of a range of joining methods in producing a product. Students will develop	Topic: Metals and plastics with a focus on producing an item of jewellery with cultural influences. Why is this being taught? This topic helps integrate handmaking skills with the use of CAD/CAM to produce a product with precision and accuracy. Why now? Students will continue to develop skills in working with a range of materials and equipment important in demonstrating a broad level of subject knowledge as well as skills in working safely and efficiently in a	Topic: Metals and plastics with a focus on producing an item of jewellery with cultural influences. Why is this being taught? This topic helps integrate handmaking skills with the use of CAD/CAM to produce a product with precision and accuracy. Why now? Students will continue to develop skills in working with a range of materials and equipment important in demonstrating a broad level of subject knowledge as well as skills in working safely and efficiently in a practical	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 Why is this being taught? This topic helps students to develop their understanding from Y7/Y8 of the impact of nutrients within the body. Students will further develop their practical skills in using a range of equipment and cooking techniques within a practical environment. Why now?	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 Why is this being taught? This topic helps students to develop their understanding from Y7/Y8 of the impact of nutrients within the body. Students will further develop their practical skills in using a range of equipment and cooking techniques within a practical environment. Why now?

	their skills in using CAM as well as traditional technique to produce a prototype product. Why now? Students will tie together and develop skills learnt across Y7/Y8 in order to produce a prototype product focusing on innovation and working safely and independently. Students will complete a project in the style of GCSE coursework to help prepare them for further design and technology studies. Will this be revisited? Yes skills learnt throughout product design and graphics studies will be vital to help support the study of design and technology at GCSE	their skills in using CAM as well as traditional technique to produce a prototype product. Why now? Students will tie together and develop skills learnt across Y7/Y8 in order to produce a prototype product focusing on innovation and working safely and independently. Students will complete a project in the style of GCSE coursework to help prepare them for further design and technology studies. Will this be revisited? Yes skills learnt throughout product design and graphics studies will be vital to help support the study of design and technology at GCSE	practical environment. Students will further develop design ideation and development display using CAD and a range of graphic drawing methods. Will this be revisited? Yes skills learnt in metals and plastics projects will be important to inform GCSE studies of design and technology.	environment. Students will further develop design ideation and development display using CAD and a range of graphic drawing methods. Will this be revisited? Yes skills learnt in metals and plastics projects will be important to inform GCSE studies of design and technology.	Understanding the importance of micronutrients within a balanced diet is vital in promoting a healthy lifestyle. Students will implement a range of cooking techniques in producing practical dishes to further develop fundamental skills learnt in Y7/Y8 Will this be revisited? Students can continue to use key knowledge and information learnt in their daily life.	Understanding the importance of micronutrients within a balanced diet is vital in promoting a healthy lifestyle. Students will implement a range of cooking techniques in producing practical dishes to further develop fundamental skills learnt in Y7/Y8 Will this be revisited? Students can continue to use key knowledge and information learnt in their daily life.