

YEAR 7



PRODUCT DESIGN

- Basic use of tools and machinery
- Develop the skill to work with accuracy and precision
- To complete a well-constructed fully functioning prototype.
- To work within tolerance
- develop an understanding of natural and manufactured timbers

- Develop knowledge of the basic health and safety rules
- Describe and understand basic mechanisms and motions
- Develop knowledge of sustainability and the 6'Rs
- Students will produce a basic design brief and specification.
- Describe the stages of making a product using annotations and sketches.

FOOD

- Use of a range of equipment
- Introduction to Basic Health and Safety rules
- Cutting Skills (Knife skills)
- Cooking techniques use of Oven/ Grill/ Hob
- Basic use of scales in order to measure correctly

- Familiarise themselves with terminology of the equipment within kitchen
- Cross contamination
- Appropriate hand washing knowledge / Apron / Oven gloves (PPE)
- Eat well guide
- Different types of Grip (bridge, Claw)
- Storage of food – (freezer/ Fridge)
- Introduction to heat transfer

TEXTILES

- Use of sewing machine, threading the machine and bobbin, stitching in straight lines, use of reverse stitch, name and function of machine parts
- Use different methods to decorate fabric such as hand embroider, applique or tie-dye
- Join fabric together using an open seam
- Produce a final design in response to a brief

- Identify fabric
- Develop an understanding of different ways to decorate fabric
- Understand how to collect and reference primary and secondary sources of research
- Produce a logical set of instructions to produce the pencil case

YEAR 8



PRODUCT DESIGN

Describe and understand basic electronic components Identify materials and their suitable properties. Correctly apply health and safety skills during practical lessons Develop CAD/CAM Skills. Applying aesthetical finishes to product. Advanced use of machinery - use of the Vacuum Former, Gerbil and injection moulding.

Identify the properties and qualities of materials to achieve functioning products Develop Knowledge of electronic systems (I, P, O) use of sensors, switches and buzzers to provide functionality to products and process explain the best process to use when making and ensure accuracy PC Students develop knowledge of the main categories and types of polymers. (Thermoforming and Thermosetting plastics) Students develop knowledge of using CAD (2D Design) and operating CAM machines (Vinyl cutter, Laser cutter) Soldering accurately and tidily.

FOOD

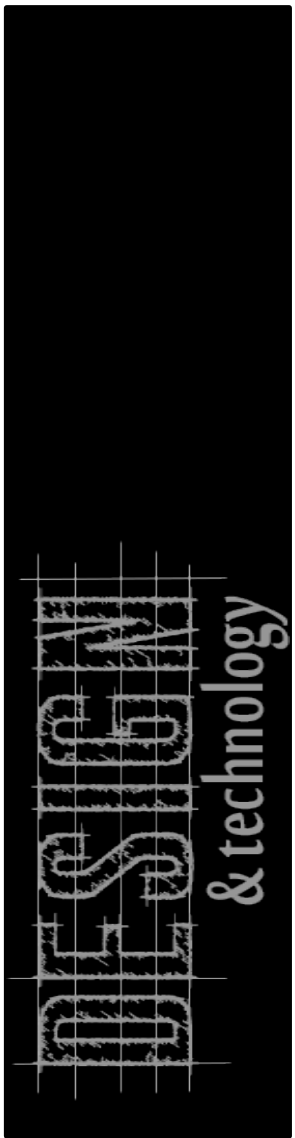
- Peel food correctly
- Refine knife skills
- Use measuring scales correctly
- Use of oven/grill/ hob independently
- Control temperature

- Familiarise themselves with terminology of the equipment within kitchen
- Gain an understanding of the 8 healthy eating guidelines
- Understand the importance of seasonality when considering food choice
- Introduction into food choices
- Understanding of the temperatures in food (fridge/ freezer temperatures, danger zone, cooking/ reheating temperatures)
- Independently operating the oven/hob – preventing burning
- Function of Macro and Micro nutrients

TEXTILES

- Sewing machine skills
- Hand sewing skills
- Unpicking garments

- Identify and understand the properties of fabric, new fabrics are introduced
- Understanding different fabrics have different responses to a variety of manipulation techniques
- Product assessment, reflection and critique of final product



SKILLS

- Using hand tools and machinery independently
- Accuracy and precision is demonstrated with a fully functioning final prototype – Money box
- Writing a built point specification
- Using hand drawn skills to generate a range of ideas – one-point and two-point perspective drawings
- Working with man-made boards (MDF) and developing skills of applying finishes

KNOWLEDGE

- Analysis of existing products using ACCESS FM and applying this to finished Money box
- How to interpret and produce a scaled drawing.
- To work independently and safely within the workshop using the tools and processes in the project
- Describe the stages of making a product using annotations and sketches
- Develop knowledge of Design movements and apply this to final prototype.
- Develop an understanding of different types of fittings and wood joints Understand the concept of applying a finish in order to enhance aesthetical features

- Working with yeast
- Making white sauce
- Expert knife skills
- Sensory analysis

- Understanding the nutritional needs of different age groups and understanding the requirements
- Understand the chemical properties and how this is implicated when cooking foods
- Implications of excess/deficiency of Macro and Micro Nutrients
- Introduction into cultural food choices

- Use of sewing machine, threading the machine and bobbin, stitching in straight lines, use of reverse stitch, name and function of machine parts
- Use different methods to decorate fabric such as hand embroider, applique or tie-dye
- Join fabric together using an open seam
- Produce a final design in response to a brief

- Identify fabric
- Produce a logical set of instructions to produce their item
- Articulate an in depth knowledge of decorative fabric techniques
- Demonstrate an understanding of various research methods, with clear influences in their work
- Be able to discuss the range of fashion movements within the industry with reasoning for their preferred designers, signature styles etc.

DT Vision

The Design and Technology department at Valentines High School are dedicated to delivering a curriculum accessible to all which provides the widest possible range of opportunities for students to become self motivated, confident and creative learners. Students will develop technical and practical skills valued by employers and our main priority is for students to be problem solvers who are resilient whilst taking risks.

We believe that students learn best by experimenting and taking risks. This is achieved through imaginative teaching that embraces new technologies. At the heart of this, is the desire to deliver a well rounded curriculum in which students produce high quality outcomes. Which enables them to combine their designing and making skills with knowledge, in order to design, make, analyse and evaluate products of high quality.

DESIGN
& technology





YEAR 10

Y10 Skills

- AO1: Identify, investigate and outline design possibilities to address needs and wants.
- AO2: Design and make prototypes that are fit for purpose.
- AO3: Analyse and evaluate:
 - Design decisions and outcomes, including for prototypes made by themselves and others
 - Wider issues in design and technology.
- AO4: Demonstrate and apply knowledge and understanding of:
 - Technical principles
 - Designing and making principles.

Y10 Knowledge

- Unit 1 – New and emerging Technologies
- Unit 2 – Energy, materials, systems and devices
- Unit 3 – Core Materials
- Unit 4 – Common specialist technical principles
- Unit 5 – Individual strand theory
- Unit 6 – Design Principles
- Unit 7 – Making principles – Collaboration of practical and theory lessons

YEAR 11

Y11 Skills

- AO1: Identify, investigate and outline design possibilities to address needs and wants.
- AO2: Design and make prototypes that are fit for purpose.
- AO3: Analyse and evaluate:
- AO4: Demonstrate and apply knowledge and understanding of Technical principles
- Designing and making principles.

Projects for year 11

- NEA coursework

Y11 Knowledge

Extensive Exam readiness practice via end of unit and mock exams - Each unit is revisited (Recap lessons)

- Unit 1 – New and emerging Technologies
- Unit 2 – Energy, materials, systems and devices
- Unit 3 – Core Materials
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- Unit 5 – Individual strand theory
- Unit 6 – Design Principles
- Unit 7 – Making principles (collaboration with NEA project)



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YEAR 10

Y10 Skills

- AO1: Demonstrate knowledge and understanding of nutrition, food, cooking and preparation.
- AO2: Apply knowledge and understanding of nutrition, food, cooking and preparation. Projects for year 10
- AO3: Plan, prepare, cook and present dishes, combining appropriate techniques.
- AO4: Analyse and evaluate different aspects of nutrition, food, cooking and preparation, including food made by themselves and others.

Projects for year 10

- Mini Skill's - Building up skills in preparation for NEA coursework

Y10 Knowledge

- 3.1 Food preparation skills
- 3.2 Food, nutrition and health
- 3.3 Food science
- 3.4 Food safety
- 3.5 Food choice
- 3.6 Food provenance
- 3.7 Food preparation and cooking techniques

YEAR 11

Y11 Skills

- AO1: Demonstrate knowledge and understanding of nutrition, food, cooking and preparation.
- AO2: Apply knowledge and understanding of nutrition, food, cooking and preparation. Projects for year 10
- AO3: Plan, prepare, cook and present dishes, combining appropriate techniques.
- AO4: Analyse and evaluate different aspects of nutrition, food, cooking and preparation, including food made by themselves and others.

Projects for year 11

- NEA coursework

Y11 Knowledge

Extensive Exam readiness practice via end of unit and mock exams - Each unit is revisited (Recap lessons)

- 3.1 Food preparation skills
- 3.2 Food, nutrition and health
- 3.3 Food science
- 3.4 Food safety
- 3.5 Food choice
- 3.6 Food provenance
- 3.7 Food preparation and cooking techniques



YEAR 12

Y12 Skills

Year 12 Projects -

- Introduction to different materials, machines, tools and equipment.
- One plank wood Project – (working with Wood)
- Pewter casting Project – (working with metal)
- Polymers Project – (working with Polymers)
- Mini Architecture Project – NEA Taster

The exams and non-exam assessment will measure how students have achieved the following assessment objectives:

- AO1: Identify, investigate and outline design possibilities to address needs and wants.
- AO2: Design and make prototypes that are fit for purpose.
- AO3: Analyse and evaluate:
 - design decisions and outcomes, including for prototypes made by themselves and others
 - wider issues in design and technology.
- AO4: Demonstrate and apply knowledge and understanding of:
 - technical principles
 - designing and making principles.

Y12 Knowledge

Paper 1 content to cover in year 12 – Students gain knowledge on the following areas.

1. Materials and applications
2. Performance characteristics
3. Enhancements of materials
4. Forming, redistributions and additional processes
5. The use of finishes
6. Modern and industrial
7. Digital design and manufacture
8. The requirements for product design and development
9. Health and Safety
10. Protecting designs and intellectual property
11. Design for manufacturing, Maintenance, Repair
12. Feasibility studies
13. Enterprise

YEAR 13

Y13 Skills

Year 13 Projects –

NEA Project – Architecture 50% of final grade.

The exams and non-exam assessment will measure how students have achieved the following assessment objectives:

- AO1: Identify, investigate and outline design possibilities to address needs and wants.
- AO2: Design and make prototypes that are fit for purpose.
- AO3: Analyse and evaluate:
 - Design decisions and outcomes, including for prototypes made by themselves and others
 - Wider issues in design and technology.
- AO4: Demonstrate and apply knowledge and understanding of:
 - Technical principles

Designing and making principles.

Y13 Knowledge

Paper 2 content to cover in year 13 – Students gain knowledge on the following areas.

- 2.1 Design Methods
- 2.2 Design Theory
- 2.3 Technology and cultural changes
- 2.4 Design Process
- 2.5 Critical analysis and evaluation
- 2.6 Selecting tools, equipment and processes
- 2.7 Accuracy in design manufacture
- 2.8 Responsible design
- 2.9 Design for manufacture and project management
- 2.10 National and international standards