

KS3/4 DT Curriculum Map

Major Project

- Develop design
- ☐ Realising ideas



Major Project

- Realising ideas □ Analysing and evaluating
- Exam preparation



Next Steps

Next Steps

Professional

Mock Exams, Revision and targeted support

https://www.bbc.co.uk/bitesize/tags/zn7h8xs/jobs-that-use-design-and-technology/1

Major Project

- □ Producing design brief/ specification
- ☐ Generate design ideas



YEAR

Academic Reflection

Major Project

- **Existing products** Ergonomics/
- anthropometrics

Major Project

- ☐ Identifying a client ☐ Analysis of context Identifying design possibility
 - Researching design possibility

Modellina project

- □ Research/Analysis □ Specification/ideas
- Modelling to scale







- ☐ Preparation and **Cooking Techniques** ☐ Preventing Bacterial
- Growth
- ☐Functions of Nutrient
- ☐Eatwell Guide: How age changes things!
- □ Dietary Needs of

☐Nutritional Labels

eflection

- Finishing metal



Food & Nutrition 2

- ☐Practical Evaluation
- ☐Food Assurance Scheme ☐Functions of Ingredients
- ☐Breaking Food Barriers
- ☐Creating your Recipe Kit



Bauhaus Laser Cut Clock

- Bauhaus design movement



- CAD/CAM 2D/Laser cutter
- Polymers



- □ Designing for a client
- Working with metals

Design Based





- Modelling
- □ Shaping metal □ Soldering



- □ Processing metal □ Design Brief / Specification
- Design ideas



YEAR

Food & Nutrition 2 **Dietary Needs of Groups**

- ☐ Factors affecting Food Choice
- **Function of Bread Ingredients**
- Planning Healthy Meals
- Practical Sensory and Skills Evaluation



- Personal and Food Safety
- Food Related Illnesses
- The Eatwell Guide Analysis

Academic Reflection

- Energy Balance
- ☐ Function of Protein
- Micro Nutrients



Food & Nutrition 2

- □ Sensory Analysis
- □ Practical Evaluation ☐Making Healthy Choices
- □Environmental Issues
- □Food Provenance
- ☐Stir fry, muffins and Pastry Practical



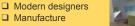
DT





- movement Polymers
- The environment Idea generation
- ☐ CAD/CAM
 - Manufacture

□ Card modelling







Food & Nutrition 1

- □Hazards & □Equipment Safety □4C's of Food Safety
- ☐Knife Skills □5 Main Nutrients
- □Practical □Eatwell Guide









YEAR

☐ Timber/Woods □ Health & Safety Use of machinery to manufacture the

wooden animal

Wooden Animal





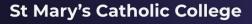
Battery Tester

□ Smart Materials □ Colour theory ☐ CAD 2D Design



We work with our primary school partners to make sure we get to know you and you get to know us and what we teach you links up and follows on from what you have learnt already









KS3 DT Curriculum Map

Unit 2: Planning to meet the needs of others!

- Food Assurance Scheme
- Spring Roll Practical
- Functions of Ingredients Breaking Food Barriers Creating your Recipe Kit

Next Steps

Technol Engineering

Hospitality & **Catering**

Unit 1: Food for Everyone



- Preparation and Cooking Techniques Preventing Bacterial Growth Functions of Nutrients

- Eatwell Guide: How age changes
- Dietary Needs of Teens Nutritional Labels





- Shaping metal
 - Soldering
- Finishing metal





Unit 1: Art Deco Candle Holder

- Art Deco design movement
- Processing metal
- Design Brief and Specification
- Generating Design ideas

In Year 9

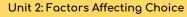


Unit 1: **Nutritional** Needs



- The Eatwell Guide Analysis
- Energy Balance





- Dietary Needs of Groups Factors affecting Food Choice Function of Bread Ingredients

In Year 8 learners will take on a

decisions about food choice.

Planning Healthy Meals

Sensory and Skills Evaluation

 CAD/CAM Modern



- designers
- Manufacture









- The Memphis design movement
- Polymers: sources and classification
- The environmental effects



Unit 1: Polymers Memphis Clock



confidence of cooking a range of dishes and make informed













- Hazards
- Room Layout
- Why we cook food! 4C's & Control Measures
- Knife Safety 5 Main Nutrients
 - **Fotwell Guide**
- Weights and Measures



Unit 2: Making Better Choices



- Sensory Analysis Practical Evaluation
- Making Healthy Choices
- Environmental Issues
- Food Provenance





• Use of machinery to

manufacture the

wooden animal





Unit 1: Hazards,

Hygiene and

Health



- Smart Materials
- Colour theory
- CAD 2D Design





In Year 7 learners will develop a basic understanding of materials and nutrition building on knowledge learnt at KS2. This year focuses on designing and manufacturing products for themselves.

Key Stage 2 pupils are introduced to our curriculum through transition days and taster sessions!





Post 16 / KS5 - Product Design Curriculum Map

Major Project NEA

Analysing and evaluating

Remember more

- Evaluating the work of others Testing & evaluating products
- Identify appropriate manufacturing techniques

Next Steps

Careers: Design and technology can set you up for a career in a wide variety of industriessuanas fastion, engineering, aratitecture, information teatrology, careers in nospitality, and eveneducation.

Skills By studying design and technology, you'll be able to build up your creativity, problem solving, planning, practical and evaluation skills

Section D - 20 marks

Mock Exams, Revision and targeted support













Remember more

- ☐ Historical design styles
- ☐ Designers and their work ☐ Socio economic influences
- Responsibilities of a designer

Remember more

- □ Marketing / brand identity
- □ Feasibility studies
- ☐ Global identity
- Intellectual property

manufacture

Exams

- Production planning
- Industrial testing
- Design for maintenance

Digital design and Major Project NEA Remember more

- Development of design prototype(s) Timber fabrication

 Material finishes
 - Section D -25 marks
- Paper & Board
- ☐ CAD/CAM
- ☐ Computer systems ☐ incomposites industry



- Biodegradable polymers **Smart Materials**
- Shaping & joining



















RoHS





Academic

Reflection







□ Producing a design brief and specification

Section B - 10 marks

Preparation for mock exam

□ Class focused revision Personal revision time

YEAR

National & International standards

British Standards Institute International Organisation for Standardisation (ISO) Restriction of Hazardous Substances (ROHS) directive



 Development of design proposal(s)





UCAS and Careers Fairs

Design methods and processes

- ☐ Iterative & UCD_process
- Investigative methods
- Primary and secondary research

Major Project NEA

Identifying and investigating design possibilities

Section A - 20 marks

Academic

- Reflection ☐ Health & Safety legislation
- Marketing & Brand identity
- □ Communication & presentation techniques



- □ CAD/CAM
- Safe working practices
- Fitness for purpose

ALESSI

Academic Reflection



Pulp and Paper

Papers & Boards

- ☐ Stock sizes
- Uses / Properties Printing & finishing techniques









Design Styles

☐ Arts & Crafts

☐ Art Nouveau

☐ Art Deco

□ Bauhaus

Memphis

□ De Stijl







Designers

Marianne Brandt

Margaret Calvert

Philippe Starck

James Dyson

☐ Dieter Rams

☐ Charles & Ray Eames





wood

Joining methods

☐ Finishing woods

☐ CAD onshape

☐ Designing

eflection





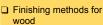


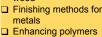
Designing / making

- & Environment Environmental issues
- Sustainability Finite & non finite Resources















Ergonomics









Mini Project











Pizza cutter

- Anthropometrics
- Designing for a client ☐ Modelling



Applications

- Properties/ Characteristics
- Stock forms

- **Materials**
- ☐ Metals □ Timbers Polymers



Year 11 pupils have a programme of Advice and Guidance to help them choose Post 16 Pathways.



Reflection



KS4/5 Engineering Curriculum Map

Creating Technical Drawings

3D Modelling OnShape

40% Unit 3: Exam

Question Analysis

next Exam Preparation

Higher Qualifications

Courses at SMCC

Courses such as:

BTEC Extended Diploma in Advanced Manufacturing

Engineering Level 3 BTEC Higher National Certificate (HNC) in General Engineering

Electrical Engineering, Manufacturing Engineering, Mechanical Engineering, and General Engineering

A-Level Product Design

Product **Evolution**

- Make it Better
- Suit Target Market



Product Evaluation

- Improvement analysis
- Manufacturing Challenges



20%

Unit 2: Design



Develop Plan of Making

Photo evidence of making the product



Practical Sessions

Apprenticeship

- Manufacture from Technical Drawing
- Apply Skills



Analysing Technical Drawings

- **Annotations**
- Descriptive **Analysis**

Applying Research





Portfolio

Preparation

Science in Engineering

Applied Sciences **Year**

Unit 1: Manufacturing

Assessment Brief Released





- Algebra
- Geometry

Exam Preparation





Precision Cutting

- Templates
- Abra Saw
- Micrometers







Equipment Analysis

- Tooling
- Machinery
- Justifications

Multi Tool **Project**

3D Models

Filler Knife

Multi Tool

House



CAD Mini Project

Precision Marking

- Tooling Micrometers
- Tolerances





- Sustainability
- Manufacturing





- Scales
- Symbols
- Expanded Views

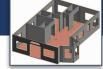


Evaluation



OnShape

- Axis Viewpoints Faces v Edges
- 3D Modelling





onshape

Filler Knife Project

- **Engineering Sectors** Industries
- Collaboration
- Careers Technology



<u>Focus</u>

Marking Out

Year

Students learn vital Engineering skills such as reading technical drawings, accurate marking out, and precision manufacturing. Good understanding of Maths & Science (grade 4) will support learning.



