

Year
1

Design & Technology

ANALYSING

The ability to work effectively within the rules to make the porridge



Preparing fruit and vegetables while making porridge



Meta-thinking
Working out how to join and build the structures

Create a free-standing structure for the 3 little pigs



Mini Beast Sliders and Levers

LINKING



Pupils will use their Science learning of animals



Design, create and evaluate an Djembe drum

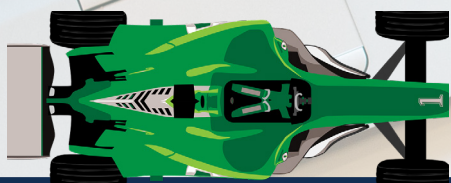


As part of their learning topic 'Near and Far' pupils will design, create and evaluate an African mask

Creating



Draw inspiration from a range of examples to create their own drum/mask



Design, create and evaluate a car with moving axles and wheels



Pupils will apply science knowledge to make the wheels move

Year
2

ANALYSING

The ability to break down a task and decide on a suitable approach to make your product



REALISING

To cut quickly and with precision



Make a healthy fruit kebab

To build and improve on a previously taught skill



To use levers and linkages to design and make a moving Minotaur book cover

Year
3

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Design & Technology

Year
4

To use simple circuits and switches to design and create an appealing and functional Christmas light

Link to science and understanding how electricity works

Design and create a paper-mache volcanoes

CREATING

To draw inspiration from a real volcanoes to make a realistic model

To design appealing Viking bags/purses for a purpose

Designing and making the most efficient working bottle rocket as possible

Creating a wooden Christmas decoration using the appropriate tools and precision

Pupils will draw inspiration from space rockets to help them design their model

Design a pair of shoes

Pupils will to draw inspiration from Northampton's shoe history when designing their own shoe

LINKING

Link to science and understanding how electricity works

Year
6

To work as a team to make their quilt

Collaboratively create a textile quilt of Victorian and modern inventors and their contributions

Designing, creating and testing their own towers built to withstand a tsunami

ANALYSING

The ability to break down a task, decide on a suitable approach to make a strong tower

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REALISING

To use tools with precision and accuracy and building on skills taught in year 3

Follow WW2 rationing recipes

KS3 Design & Technology

Year
7

Product Design
Manufacture a table tennis bat



Students will be introduced to the idea of **self-monitoring** and ongoing evaluation of their work as they manufacture their product.



Food

Students will begin studying food technology by first learning about hygiene and safety. They will learn about the 'Eatwell guide' and its function to a well balanced diet. Student will use a range of techniques such as using the hob & oven.

Recipes will include Apple crumble, Pizza toast, Macaroni Cheese and Ragu

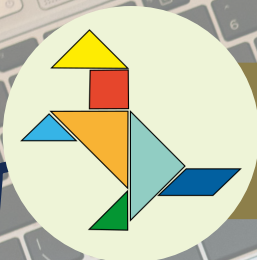
Textiles - Koinobori windsock

This project is intended to build making skills. Students will learn to safely but fabrics, use appliqué to create interesting projects and use a sewing machine.



REALISING

Learning how to carefully apply techniques with a high level of skill



Graphics - Tangram

Students will research existing products and focus on the graphical aspect of colour/image/text. They will also be introduced to CAD and desktop publishing.

Year
8

Product Design - Photo frame

Students will learn to cut halving joints. They will need to measure and mark out without the aid of templates. There will be a far greater emphasis on accuracy of manufacture and quality control.



Evolutionary thinking

To build on current ideas to come up with something better



Collaborative: The ability to seek out opportunities to receive responses to your work



Textiles

In this unit, students will use the theme of 'day of the dead' to create their cushion cover. They will use the batik and tie-dye methods.



Food

In Year 8, students will focus more on the function of ingredients in their food technology lessons. Dishes will develop in complexity and students will understand why particular ingredients are used in recipes. They will evaluate the food through sensory analysis as well as third party feedback. Strong emphasis on cultural foods.

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Design & Technology

Graphics - CAD mini projects

This project builds upon the skills in using CAD from Year 7. It focuses on creativity and improvement of an existing product with attention to graphical language. Iterative design will be a focus in this project.

Design

Prototype

Evaluate

Iterative design is based on a cyclic process when creating a product.

Flexible thinking

The ability to abandon one idea for a superior one or generate multiple solutions

Year
9

Self-regulation

To evaluate your own work and come up with improvements if necessary.



META-THINKING

Product Design - Clock

Students will focus on multiple materials and more complex manufacturing methods to create a product based on the Art Deco theme.

ASOS

Textiles - Fast Fashion

SHEIN

This project focusses on the environmental and ethical issues surrounding the fast fashion industry. Students will also learn about printing and will create their own logo-printed T-shirt and carry bag.

Concerned for society

Food

Students will produce challenging dishes and focus on presentation skills. Students will learn how nutrients from foods are used by the body and adapt recipes for particular dietary needs. Wider range of equipment will be used and professional working skills will be set.

Graphics - CAD Lantern

This project is intended to build on CAD skills learnt in Year 7+8 in order to manufacture a product using CAM. There is an increased focus on accuracy as their individual components must fit the standard component provided. Pupils use natural forms to influence their design ideas to produce a lamp. Electronics are introduced through a simple LED and switch circuit soldered to a battery pack.



To be able to become so competent at certain techniques you can do them without thinking.

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Design & Technology

Year
10



Storage box and pewter casting

This project introduces wood working and joining techniques. As well as rebate joints, student will learn to use Onshape CAD software.

Core theory:
New and
emerging
technologies



Creative and enterprising

The ability to be open-minded and flexible in your thought processes.



Core theory:
Energy
generation and
storage



Laminated products

Students are introduced to the lamination manufacturing technique, allowing them to produce impressive and interesting compound curve products. CAD skills are also further improved from last term.

Core theory:
Materials

LINKING



Make links between the engineered structures that appear in nature to inform design decisions.

Workshop processes

A series of mini practical projects designed to increase confidence in a range of techniques such as casting and 3D printing, while covering the associated theoretical knowledge.



Non Examined Assessment (NEA)

NEA tasks are published on 1 June and students will begin their major NEA project. This term includes investigation of possibilities and research.



Strategy planning

The ability to approach new learning experiences by actively attempting to connect it to existing knowledge or concepts and hence determine an appropriate way to think about the work

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GCSE Design & Technology

Year
11

NEA - Worth 50% of final grade

Designing

Students use a variety of communication techniques to convey a range of design ideas. Iterative design is the main focus.

Developing

Through drawing, modelling and CAD (Sketchup and Fusion 360) students develop their ideas towards a feasible final design.

Making

Students work independently to make their final prototype, keeping a photographic record of all stages.

Evaluating

The final prototype is evaluated against the specification and 3rd party feedback and testing is used to prove it meets their wants and needs.

Throughout Year 11, students will study core theory aspects including mechanical devices, electronic systems and devices and design in context.



Students will work with surface treatments and finishes, stock forms and processing materials as well as sourcing materials.

CREATING

Fluent thinking:

Being confident to create lots of different ideas and not be scared to fail



HARD WORKING

EXAM

May or June
1h 45m

Worth 100 marks /
50% of final grade

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Year
12

A-Level Design & Technology

Mini NEA - Laminated furniture

Students use the laminating process to design and make a scale prototype of a chair.



ANALYSING



Multi-step problem solving

Being independent in the workshop and solving issues as they arise.



Health & Safety

REALISING

The ability to work at speed and with accuracy when using equipment and processes.

NEA - Project introduction and investigation

Students find a design problem in order to create their own unique major project. Thorough research leads to a comprehensive specification.

Digital design

Health and safety and copyright

Enterprise and marketing

NEA - Designing

Students produce a broad range of ideas using a variety of techniques. Iterative process used to avoid design fixation.

Year
13

NEA - Development

Students will look at a range of modelling, CAD and testing methods used to thoroughly develop more than one idea leading to a final proposal.

Design theory

Responsible design

Designers and movements

Critical and logical thinking

Being selective with research and ensuring it is applicable to a design problem.

NEA - Evaluation

NEA - Making

- Cultural impacts on design
- National and international standards
- Design for manufacture



Practice

The ability to train and prepare through repetition of the same processes in order to become more proficient.

At the end of Year 13, students will sit 2 exams.

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