

Design and Technology

During Year 7 students rotate around the three technology subjects. This carousel continues into Year 8 so each student receives two term's worth of lessons in each subject over the two years.

During Year 9, students pick a technology option in either Food and Nutrition or Product Design. They will then take this through the year and potentially into GCSE.

Resistant Materials and Product Design

Years 7

Catapult Project

- Design and make two products that relate to the research carried out
- Health and safety brief
- Types of machines and tools
- Material strengths, how we define properties of materials
- How to use tools and materials to construct and join
- Mark out and drill holes
- Properties of metal and the material that will be used
- Creative designs for the catapult sides 3D and 2D
- Create and complete a 2d design , construct the throwing arm, understand rendering techniques
- Assemble final product
- Identify the need for different materials and positions
- How do we define acrylic and it's properties
- Metal design – key ring construction
- Use a CAD package to design the creative element.
- Understand the use of the laser cutter as a CAM tool.

Year 8

Automaton Project. Flying Pig

- Understand types of energy source.
- Know how cams and linkages work and what they do.
- Have an understanding of gears.
- Research the work of engineers and designers.
- Mark out materials
- Use of workshop tools and machines.
- Joining woods using different methods.
- Creating movement with cams.
- Using CAD/CAM inventively to make a moving focal point.
- Add to their automaton to include more moving parts.
- Exploded isometric drawing.
- Finishing techniques for their products.
- How to evaluate effectively.

Year 9

Product Design

Incorporates both Resistant Materials, Textiles, Graphics and Electronics

Lighting Project

- Create a mood board, write a specification
- Sustainable woods, develop ideas
- Marking out materials, use of CAD/CAM and the laser cutter
- Types of plastic, thermo/thermo set
- Orthographic projection
- Isometric drawing
- Plan of production
- Innovation products, product analysis
- Industrial processes
- Evaluation
- 2 point perspective drawing
- Soldering and constructing a circuit on a P.C.B.

Textiles

Year 7

- Understand what textiles products are and the importance they play in the wider society.
- Learn about how fabric is constructed, where it comes from and why their properties make them fit for purpose.
- Know how to use a range of tools and workshop equipment safely.
- Learn how to control the sewing machine, and produce stitch samples.
- Trail and test different surface decoration techniques such a couching, machine embroidery and using disperse dyes.
- Understand the constructional techniques used in textiles to create a functional product (tote bag).
- Learn how to test and evaluate a complete product.

Year 8

- Develop knowledge and understanding of how to use textiles equipment safely.
- Analyse a design brief through exploring the needs of possible target users and learning from existing products.
- Writing a specification and using this to inform the design of a functional device case.
- Learn about CAD in industry and how to create print patterns using CAD software.
- Understand how to use different colourways and scale a print design.
- Learn how to incorporate a range of decorative techniques such as applique, couching, embroidery and 3D textures into a design.
- Understand the importance of paper modelling prior to construction.
- Develop skills in manufacturing a functional product to a high standard. Processes include inserting a fastening, creating seam allowances and quilting.
- Learn how to test and evaluate a final product against a specification.

Food & Nutrition

Year 7

- Introduction to health and safety rules in the food room
- Fruit salad practical with introduction to knife skills using the bridge and claw method.
- Pasta salad practical , cooking pasta on the hob
- Oven safety assessment – fruity flapjack practical
- To understand the purpose of the eat well guide and be able to interpret this model of healthy eating
- Mini pizzas practical
- To understand the terms seasonality and food provenance
- To be able to weigh and measure food ingredients accurately
- Sweet scone practical
- Learn the functionality of ingredients in shortcrust pastry
- Jam tart practical
- Learn the functionality of ingredients in cake making and the different cake making methods
- Fruity cakes practical
- To understand and identify the different vegetarian diets
- Vegetable pasties practical

Year 8

- Understanding why we eat food and the nutritional profile of some foods
- Gelatinisation process
- Pasta bake practical incorporating a roux sauce
- Vegetarian tacos practical
- Religious dietary laws and how religion can affect the food we eat
- The importance of consistency and accuracy in cooking
- Batch control checks when making biscuits on an industrial scale
- Chocolate chunk cookies practical
- Chicken or Quorn parmigiana practical
- Understand that food can be influenced by moral or ethical beliefs
- Differences in egg farming and production
- Sausage rolls practical
- Investigating the use of standard components in food production
- Food science in action and the functionality of eggs
- Pizza using yeast based dough practical
- Understanding the functionality of ingredients in pizza dough
- Moral, ethical, social and cultural considerations that need to be made when designing a pizza product
- Fruit upside down cake
- Reviewing the Eat well guide

Year 9

- Reviewing how we keep food safe
- Reviewing the use of the Eat well Guide as our model for healthy eating
- Understanding how to use the gas and electric cookers efficiently
- Food commodity – starch
- Using gelatinization to thicken sauces
- Investigation into different starches to find out which one is the most viscous
- Food commodity – pastry
- Learning about the different types of pastry
- Investigating the different types of fat in pastry and the effect this has on colour, appearance, texture and overall acceptability
- The use of raising agents in food

Updated September 2018

- Finding out how effective a mechanical raising agent is
 - Understanding the different chemical raising agents there are in food
 - Investigation in to which chemical raising agent produces the most co2 to help baked products to rise
 - Food commodity – eggs
 - Extending our knowledge on different farming methods of eggs
 - Looking into the different uses of eggs in cooking
 - Investigating the effect of het on an egg – coagulation
-
- Nutritional dietary needs of different groups of people
 - Finding out about different cuisines from around the world
 - Examining nutritional labelling and allergy advice on food labels to help make informed choices about food
 - Understanding food sources and being able to explain some of the environmental issues associated with food.
 - Learning about macro and micro nutrients and why they are so important in the diet.