

Yr7 Project Title: Drawing skills

The Graphics unit is designed to introduce students to graphic design and visual communication through a structured project based on a real client brief. It gives pupils the opportunity to research, generate ideas, develop layouts and create final design outcomes that communicate clearly to a target audience.

This unit is appropriate because it develops foundational design skills that are essential in KS3 and beyond. Students learn how to use visual language purposefully, including colour, typography, layout, symbols and image, while also building confidence in drawing, annotation and presentation.

Yr7 Project Title: Automata

The Year 7 Wooden Automata project is designed to introduce students to the principles of Design and Technology through an engaging practical project. Students explore how mechanisms work and use a structured design process to research, generate ideas, develop and manufacture their own moving wooden automata. The project gives pupils the opportunity to develop their understanding of mechanisms, movement, materials, tools and manufacturing processes while creating a functional and visually appealing final product.

This unit is appropriate for Year 7 because it develops essential Design and Technology skills that provide a strong foundation for future KS3 and KS4 projects. Students learn how to identify a design problem, research existing products, develop and communicate ideas through sketching and annotation, and make informed decisions about materials and construction methods. They also develop practical skills in measuring, marking out, cutting, drilling, shaping and assembling timber safely and accurately.

The project encourages students to understand how components work together to create movement, including the use of cams, followers, axles and linkages. Through designing, making, testing and evaluating their automata, students develop their creativity, problem-solving skills, accuracy and resilience while gaining confidence in using workshop tools and equipment safely.

Yr7 Project Title: Pull along toy

The Year 7 Pull-Along Toy project is designed to introduce students to the principles and processes of Design and Technology through an engaging practical project. Students will investigate existing pull-along toys, explore how they are designed and manufactured, and use this research to develop their own ideas. They will follow a

structured design process to design, develop and manufacture a functional pull-along toy that is suitable for a specific user or target audience.

This unit is appropriate for Year 7 because it develops a range of essential Design and Technology skills that provide a strong foundation for future KS3 and KS4 projects. Students will learn how to communicate their design ideas through freehand sketching, annotation and technical drawing, while developing their understanding of form, function, materials and aesthetics.

Students will develop practical workshop skills including measuring and marking out, cutting, shaping, drilling, assembling and finishing timber and other appropriate materials. They will learn how to select and use tools and equipment safely and accurately, while developing an understanding of material properties and manufacturing processes.

The project also introduces students to basic mechanical principles through the design and construction of wheels, axles and moving components. Students will have opportunities to test, modify and evaluate their designs, developing their creativity, problem-solving skills, accuracy, resilience and ability to work independently. The project provides an engaging introduction to the iterative design process and encourages students to understand how successful products combine function, aesthetics, user needs and manufacturing considerations.

Yr7 Project Title: Water rockets

Project Overview: Build and improve a simple 2L water rocket that links science to engineering design, all students will Test, record, and refine their rockets.

The Year 7 Water Rocket project is designed to introduce students to engineering through a short, high-impact sequence that links science, design and practical making. It gives pupils the chance to build, test and improve a simple rocket while learning how forces and motion affect performance.

This unit is suitable for Year 7 because it is accessible, engaging and highly visual, making it an effective early KS3 experience. Students work with a clear challenge, simple materials and a structured design-build-test approach that helps them understand how engineers develop products through evidence and iteration.

Y7 Project Title: Gruffalo

Project Overview: This is an introduction to workshop safety, tools and equipment, students will learn how to use the following tools and equipment safely:

- Tenon Saw
- Steel Rule
- Pillar Drill
- Laser Cutter
- Bench Hook
- Wood Vice
- Machine Vice
- Tri Square

Students will gain the theoretical knowledge and skills in workshop, tool safety and key aspects of the design process. All students will be able to produce a specification which they will use to help design their end outcome. All students will gain the ability to evaluate their work against the original specification they produced

Y7 Project Title: Key Tag

Project Overview: This is an introduction to workshop safety, tools and equipment, students will learn how to use the following tools and equipment safely:

- Hacksaw
- File
- Pillar Drill
- Stamps
- Machine Vice
- Centre Punch

Students will gain the theoretical knowledge and skills in workshop, tool safety and key aspects of the design process. All students will be able to produce a metal keyring based on there chosen design

Y7 Project Title: Tote Bag

Project Overview: This is an introduction to dye sublimation printing where students will design a graphic to be printed onto a tote bag based on a given culture. Students will learn how to:

- Compare cultures and use their chosen theme as inspiration for their design

- Compare different techniques for applying finishes to fabric
- Draw to scale to fit a specific size.
- Use colour effectively to make their design eye catching
- Measure and mark out
- Safely and accurately use a heat press
- Work out the manufacturing cost of making each bag.

Y7 Project Title: Product Disassembly

Project Overview: Students will disassemble two products (mains plug and drill powered water pump) and gain the knowledge, skills and understanding of how each component is industrially manufactured and why the materials are used.

They will focus on:

- Using a variety of screwdrivers to assemble and disassemble products
- Using 3D Cad software to produce a colour rendered drawing
- Understanding how engineers need to consider material properties
- Producing 3D sketches to help communicate ideas
- Understanding how “engineers” use drawings and problem solving skills to do their job.

Y7 Project Title: Introduction to Food

Project Overview: Students will learn a wide range of modern and traditional cooking methods as well as understanding the need to follow the Eatwell guide and the theory behind the function of ingredients. Students will make the following dishes:

- Scones
- Savoury tarts
- Vegetable soup
- Pasta bake
- Savoury rice
- Bread shapes
- Showcase lesson- this is where students will cook one dish independently showing the skills learnt during their food rotation.

