

Long Term Plan

Date: July 2016

Year Group: 10 into 11

Content/Topic: Point of Sale Project Making

Assessments: At the end of each unit of the project [four units]

Homework: Bi-Weekly

Subject Aim:

- To engage students in a rewarding practical subject that is concerned with all aspects of how we live and is linked to our intellectual, emotional and physical needs.
- To offer opportunities which are fun, practical, challenging and rewarding
- To develop a range of designing and making skills which are readily transferable to higher level study, apprenticeships or the world of work.
- To achieve as high a grade as possible at GCSE.

Learning:

In y10 students will be engaged in the first year of the OCR Design & Technology Resistant Materials.

The first year embeds a range of theoretical elements and engages students in designing and making the first project a prototype trophy [worth 30% of the final overall mark.] and producing a portfolio of supporting research and design work.

Summer 2	Point of Sale project	<p>Tools and equipment • Knowledge and understanding of the basic graphics materials</p> <ul style="list-style-type: none"> • Equipment; how to select the appropriate tool and use it safely and effectively <p>Processes Recognise, name and draw basic graphic shapes and developments • Triangles; quadrilaterals; pentagons; hexagons; octagons; ellipses</p> <p>Read, interpret and produce drawings to scale</p>
Autumn 1	Point of Sale project	<ul style="list-style-type: none"> • Orthographic Projection – Third angle to include the layout of views, dimensioning; the third angle projection symbol; the use of square grids • Sectional Views – whole sections on the principal vertical and horizontal lines; cross hatching. • Assembly Drawings – to show up to three separate component parts join together to make a product; parts list • Isometric Drawing – to include circles and part circles using any

		<p>appropriate accurate method; isometric grids; exploded views showing up to three component parts</p> <ul style="list-style-type: none"> • Perspective Drawing – one- and two-point perspective, excluding circles and curves.
Autumn 2	Point of Sale project	<ul style="list-style-type: none"> • Developments (nets) including fold/cut lines and appropriate flaps/tabs. <p>Enhancement techniques –suggesting form and material.</p> <ul style="list-style-type: none"> • Tone – apply an understanding of light, shade and shadow to enhance mass in pictorial drawing; to include the use of shading, shadowing, highlights, reflections, lines and dots • Thick and Thin Lines – to enhance pictorial drawings, create impact and make objects look more solid • Texture – use textural representation to illustrate the following materials – wood, plastics (matt, textured and shiny), glass, metal (matt and chrome), architectural surfaces • Select colours based on aesthetic considerations, an understanding of the colour wheel, making use of colour associations, e.g. green for safety
Spring 1	Point of Sale project	<p>Graphical interpretation of data</p> <ul style="list-style-type: none"> • Be able to translate or transpose written data into a visual form <p>Developments</p> <ul style="list-style-type: none"> • Shapes based on cube, prism, cylinder, pyramid, cone of these shapes; correct representation of fold lines, use of glue tabs, fold-in flaps and slot and tab fixing methods that do not require adhesive <p>The conversion or altering of materials into other usable forms</p> <ul style="list-style-type: none"> • Laminating card and paper; corrugation <p>Manufacturing processes</p> <ul style="list-style-type: none"> • Use of suitable tools including:-- scissors, craft knife, safety rule circle cutter perforation cutter cutting mat
Spring 2	Past Papers and exam prep	<p>Cutting and creasing</p> <ul style="list-style-type: none"> • Card and paper, including: die cutters and creasing bars, laser cutting guillotine <p>. Mechanical systems</p> <ul style="list-style-type: none"> • Analyse and design simple mechanical systems of the type used for pop-up cards and interactive pages in educational and story books based on levers and linkages .Select appropriate levers, linkages and rotating discs to design mechanisms that bring about required changes of movement;. Select components for joining and acting as pivots, paper fasteners, eyelets, Clic rivets (plastic rivets) • Pop-up Systems – based on V-fold mechanisms; multiple layers (parallelogram) mechanisms • Copyright issues associated with download and use of images • Selection of appropriate text styles and point sizes for a given situation; the use of correct layout technique such as text justification. • Use of image manipulation software to alter/enhance images to include facilities such as:-- crop-- resize-- rotate-- layer-- re-colour--

		distort-- blur-- mirror-- justify • Understand the difference between applications of Vector and Bitmap images
Summer 1	Past papers and exam prep	• Printing methods • Colour separation, process colours, CMYK, registration marks and the order of application of colours; digital printing • Vacuum former and strip heater to form thin plastic sheet Health and safety • Understand the importance of personal safety when engaged in designing and making activities, including:-- Personal protective equipment-- machine guards-- accident procedures • Understand basic risk-assessment procedures • Understand the importance of following instructions provided for certain materials and processes

Throughout the year and as part of the preparation and completion of Controlled Assessment , students will cover;

Application of CAD/CAM to the designing and making of models and prototypes	Application of CAD/CAM to quantity production	Computer control of machines (CNC), including: laser cutters printing machines to include consideration of quality and quantity, Rapid prototyping	Identify the process used to make the product	Compare a variety of products designed to meet the same need	Assess commercially manufactured products to determine fitness for purpose	Carry out a Life Cycle Analysis (LCA) to a variety of products
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Understand the importance of following instructions provided for certain materials and processes	Recognise and understand safety symbols used in the workshop or studio	Quality Distinguish between quality of design and quality of manufacture	Describe simple quality control checks to ensure accuracy and quality of finish	Product analysis Establish the function of commercially manufactured graphics materials; determine what the product was designed to do	Determine the intended market or user of the product	Identify the materials and components from which products are made	Give reasons why specific materials have been used by referring to the working properties of materials
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