

Year 11 Revision Guide

Graphic Products.

Drawing systems.

Isometric including circles and isometric grids

2 point perspective

Orthographic

Exploded drawings

Dimensioning of drawings – British Standards

Planometric

Basic Graphic Shapes

Know how to construct the following:

Triangles

Pentagons

Hexagons

Octagons

Ellipses

Quadrilaterals

Shapes formed from a combination of circles, tangents and tangential arcs.

Enhancement techniques

Know about:

Tone – applying an understanding of light, shade, and shadow in drawings using a variety of media

Use of thick and thin lines

Use of texture techniques to represent wood, plastic, glass, metals, concrete

Data Presentation

The following methods of presentation should be used – tables, line graphs, pie charts (2D and 3D), bar charts (2D and 3D), Pictographs

Product Manufacture

Developments (Nets) such as cubes, cylinders, pyramids, cones
Forming methods such as line bending plastic, vacuum forming plastic

Use of jigs and formers

Colour Theory

Colour wheel- primary colours, secondary colours, colour associations

Typography and layout

correct layout techniques such as justification of text etc.

ICT Applications

Use of CAD/CAM in industrial manufacturing

Use of CAD/CAM in single and batch production methods

How CAD/CAM control machines and equipment

Industrial Applications

Understand the meaning of the following commercial PRODUCTION methods:

Job Production
Batch production
Repetitive flow Production
Continual Flow Production

Understand the meaning of the following commercial
MANUFACTURING methods:

Cell Production
In-line assembly
Just-in-Time
Logistics

Understand the packaging, marketing and advertising
implications of a product:

The kind of information needed on a product, legislation,
labeling requirements, storage implications, distribution, cultural
and European influences.

Understand that control is a necessary part of production and
marketing:

What procedures are necessary to ensure a quality product?
What is quality control?

Know the following commercial printing methods:

Letterpress
Block Gravure
Lithography
How to produce a printing plate

Understand the terms:- process camera, colour separation, process colours, CMYK.

Know about time plans, produce work plans, flow charts using standard symbols.

Materials

Paper:

Know about the sizes of paper A5 – A1

Understand the relationship between the thickness of the following cards and boards and the construction techniques such as folding, creasing, cutting and fabrication:

Card and Board:

Flat card and Board, Corrugated Card, Coated cards and boards, Oiled cards (for stencils)

Foam-board:

Know what foam board is and how it is constructed.

Thin sheet Plastics:

Understand the properties of thermoplastic sheets and their uses

Smart and Modern Materials:

Learn about these and their special properties

know that they respond to changes in temperature, light or increased voltage

Know about the different types of smart materials – thermo chromic inks, Liquid crystal displays LCDs.

Rigid Foam:

(Styrofoam). - What adhesive is suitable for joining rigid foam?
What paints are suitable? What uses are made of rigid foam?
What adhesives and paints should not be used on rigid foam?

Methods of Joining Graphic Materials:

PVA, Spray adhesives, Solvent cement, Hot melt (glue gun), epoxy resin, glue sticks, single and double sided adhesive tape, Velcro, double sided sticky pads, press fit fasteners, staples.

Finishing Materials:

Spirit varnishes, UV lacquers, Laminating.

Systems and Control:

3 elements of a control system- Input, Process, Output.

Know that a system can be seen as a mechanical one e.g. pop up card etc

Electronic e.g. flashing lights on a point of sale.

Know the importance of feedback to a batch production system eg. jig, former, template.

Mechanical Systems:

Understand different mechanical systems such as pulleys, cams, gears, levers and linkages.

Identify and describe the following types of motion in mechanical systems:

Linear, Reciprocating, Rotary, Oscillating.

Identify and describe mechanisms that will do the following:

Turn motion through a right angle.

Reverse the direction of motion

Change linear motion into rotary motion

Change rotary motion into reciprocating motion.

Health and Safety:

Risk assessments, COSHH, Recognition of safety symbols (UK and European)

Safe storage methods for different materials and finishes, safety issues for workers.

Safe storage of materials, chemicals, solvents, finishes, flammable and toxic substances.

Protective gear, use of machine guards, dust and fume extraction, safe disposal of waste, use of barrier creams, accident procedures.

Environmental effects:

Safe disposal of chemicals in manufacturing processes, reduction in common use of chemicals dangerous to the environment e.g. bleaches, CFCs, toxic materials.

Safe and environmentally methods of the disposal of redundant products.

Use of Colour associations e.g. red for danger etc.