

Key Words: Jigs, Moulds, Dies, templates/ Mass, Batch, One Off production, Prototypes/ Just in Time/ QA and QC/ Technology Push, market Pull/ Sustainability, Fair Trade? The 6 Rs/ Environmental and recycling/ Colour in Design/ Cognitive, Sensory and Physical Ergonomics/ Flow Diagrams/ Safety and Symbols/ Electronic Data Exchange/ CAD CAM/ Drawing methods, Orthographic, Isometric, Perspective/ British Standards and CE/ Tension, Compression, lamination.

Subject: Industry Issues

Year: 9

Term: 2

Topic: industrial

Lesson Sequence

1. Jigs, Moulds, Dies, templates
2. Mass, Batch, One Off products
3. QA and QC, / Standards
4. Technology Push, market Pull
5. Sustainability / Environmental
6. Colour in Design/ Ergonomics
7. Safety and Symbols
8. Data Exchange/ CAD CAM/
9. Drawing methods
10. Advertising and Promotion

Key Assessments

TBA

Core Texts

Ebbsfleet Revision Pack 1

Knowledge Area	What You Must Know
Jigs	A cutting aid which physically forces your saw blade or drill bit to follow a certain path for accuracy.
Moulds	A 3D shape to either vacuum form AROUND (male) or a hollow mould to injection mould WITHIN. (female)
Dies	These are blades shaped like the things that you are going to cut such as a cutter for gingerbread men.
templates	These are shapes that you can use to either draw or cut around so that you make an exact pattern.
Mass Production, /	This is where a limitless amount of a product are made usually on a CONTINUOUS production line.
Batch production	This is where a set amount of a product are made, such as 12 bakers buns or 100 car engines.
One Off production	This is where a special product is hand made for one person or a prototype (first one) in a factory.
Just in Time	This is where parts arrive at a mass production line just as they are needed to be fit. NOT stocked at factory.
QC (Quality Control)	These are checks that are made on a production line (say every 100 products) to check they are still perfect.
QA (Quality assurance)	This is a promise of quality that a manufacturer can make to its customers because its quality control works.
British Standards Kite mark	This is a high British standard to show a product is made to a high standard
CE (community European)	This is the BASIC legal safety standard that products need to meet to be sold in the E.U.
Technology Push	This is where manufacturers make us buy things we did not demand (but want) by introducing them. (I-Pads)
market Pull	This is where consumers bring products on to the market because of their buying habits. (economical cars)
Sustainability	This means we can keep on doing something as it is renewable but also a WILL and DESIRE to do it (financial)
Fair Trade	This means a fair price is paid to producers in third world countries for the goods or services they provide.
Environmental	This means care for the environment or world we live in.
6 Rs: Reuse	To re- use a product. For example wash a glass milk bottle and use it again.
Recycle	This means to grind up, melt down or mash up and use a material again and re-shape it into a new product.
Repair	This means fix it and don't just throw it away if we can.
Refuse	This is the act of throwing things away (we should limit it) by all the other 5 Rs.
Rethink	This means think about how we throw things away and use materials. Can we use less, throw away less?
Reduce	This means do not use so much material in a product. Such as making them smaller, lighter or better designed.
Electronic Data Exchange advantages	This means sending pictures, drawings, emails and other files by cable, or email. Rather than posting paper.
CAD CAM advantages	CAD CAM is: Neater, More accurate, less wasteful, quicker, requires less skill, less humans, less wages to worker.
CAD CAM disadvantages	This means it needs money investment, can break, needs skill training, needs maintaining.
Drawing methods : Isometric	A 3D method of drawing that uses the 30 degree angle which looks almost realistic.
Orthographic	This is the 2D drawing method which draws accurately to scale but only shows: Top, Side, Front of product.
Perspective drawing	This is the most realistic 3D drawing method which shows objects getting smaller as they go back into distance.
Structures: Frame structure	These are strong shapes, made from rods or beams, which link together to make strong objects like bridges.
Shell structure	These are continuous sheets of material which form strong shapes of thin sheet such as eggs and cars.
Triangulation	This is where triangle shapes are used in FRAMES to make them more rigid such as roof structures.
Compression	This is where a structure is being squashed or CRUSHED by the bending or weight put onto a structure.
Tension	This is the stretching or PULLING APART of a structure by weight hanging on it or bending it.
Reinforcing	This is placing one material inside or with another material to make it stronger: (eg: Steel inside concrete)
Laminating	This is layering material or different materials to increase strength: Glue laminating wood or Plywood!