

INDUSTRIAL CONNECTIONS

IC1

Suggested industrial visits:

Nacco: Hyster & Yale forklift truck production, Craigavon.

Wrightbus: manufacturers of buses for European market, Ballymena.

Connections to Specification:

3.2.1: engineering drawings, tolerances, industrial health and safety;

3.2.2: health and safety signs, health and safety procedures;

3.2.3: quality control and quality assurance, tolerances, testing, checking and inspecting, product safety, standards; and

3.3.1: stress, strain, factor of safety, elastic limit, use formula to perform calculations, waste cost in manufacturing, production methods, direct costs, indirect costs, total costs, CNC machines, robotics and finishing techniques.

IC2

Suggested industrial visits:

Tayto: crisps and snacks manufacturers and packaging facility, Tandragee.

Smurfit Kappa: leading providers of paper-based packaging solutions, Lurgan.

Connections to Specification:

3.2.2: health and safety signs, health and safety procedures;

3.3.1: waste as a cost, disposal and recycling of waste;

3.3.2: production methods;

3.3.3: direct, indirect and total costs;

3.3.4: CAD, CAM, CIM and CAE, robotics in industry, pick and place; and

3.3.6: new and emerging technologies, impact on the design and manufacture of products.

IC3

Suggested industrial visits:

Greiner Packaging: bespoke packaging designs and concepts, Dungannon.

Denroy Plastics: main manufacturers of Denman hair brushes in UK, Bangor.

Connections to Specification:

3.1.1: design brief, research specification, concepts, development and manufacturing proposals;

3.2.2: manufacturing processes, permanent and semi-permanent joining processes;

3.3.1: thermoplastics and composite materials, aspects of materials in industry;

3.3.2: engineering and manufacturing production methods; and

3.3.5: mechanical and pneumatic systems, new and emerging technology;

IC4

Suggested industrial visits:

Coca Cola: soft drinks manufacturer and bottling facility, Lambeg.

Norbev: soft drinks manufacturer and bottling facility, Ballymena.

Connections to Specification:

3.3.1: mechanical properties of plastics, elastic limit, factor of safety, change in the properties of materials;

3.3.2: engineering and manufacturing production methods, batch, mass and continuous production;

3.3.5: application of electrical, mechanical and pneumatic components and systems; and

3.3.6: sustainability, environmental, recycling considerations, efficiency of production methods, reducing energy costs and maintenance and repair.

IC5

Suggested industrial visits:

Magellan Aerospace: aerospace products, Newtownards.

Spanwall Engineering: architectural façades, Carryduff.

Balmoral Furniture: furniture manufacturer, Dunmurray.

Connections to Specification:

3.2.1: engineering drawings, tolerances, industrial health and safety;

3.2.2: application of specific permanent and semi-permanent joining methods, use of a range of hand and CNC machine equipment, application of a range of joining, finishing and assembly processes;

3.2.3: focus on BSI, CE and EN standards, product safety regulations, application of quality control; and

3.3.1: hardwood, softwood, manufactured boards and composite materials.



Content Preparation: to optimise the learning experience of the candidates before industrial visits, candidates should consider the following:

- understanding of the appropriate content from the specification;
- complete some background research into the appropriate company
- be prepared to take note on pre-agreed key topics or aspects;
- prepare questions to address the key topics or areas of learning they may encounter during the industrial visit; and
- be aware of health and safety considerations that they need to adhere to during the visit.