



Subject: Design and Technology

Year/Course: Year 7

Knowledge and Understanding

By the end of this course, students will have acquired a broad knowledge base on the following concepts:

- Demonstrate understanding and analysis of design contexts
- Be capable of generating ideas that fulfil a design brief
- Understanding the needs and requirements of others
- Understand the working characteristics of some materials
- Understand the concepts of systems of production
- Recognise the importance of producing outcomes of quality and introduce ways of guaranteeing quality in manufacturing.
- Understand the importance of safety in the workshop

Subject Specific Skills developed

- Developing appropriate graphical skills to communicate and present ideas clearly
- Select and use an appropriate range of materials, tools and equipment accurately and safely
- Using Computer Aided Design(CAD) and Computer Aided Manufacturing (CAM)

Transdisciplinary and Generic Skills developed

Designing and creativity, review and analysis, testing and evaluation (self and peer assessment), project and time management, ICT skills, layout and presentation.

Assessment

Students are assessed in three areas: designing, making and evaluating. They demonstrate this through a range of design and make activities (DMA'S)

Each activity provides the student opportunities for self/peer assessment and formally setting their own targets to improve.

Challenge for All

All DMA's are differentiated by content (knowledge and comprehension), resources and support utilised and outcome. This allows provides opportunities to work to their own potential. It also enables teachers to provide individualised feedback.

Subject: Design and Technology
Year/Course: Year 8

Knowledge and Understanding

By the end of this course, students will have acquired a broad knowledge base on the following concepts:

- Demonstrate understanding and analysis of design contexts
- Select and apply relevant data to inform decision making
- Be capable of generating ideas that fulfil a design brief taking into account the requirements of a target group
- Understand the working characteristics of some materials
- Understand the concepts sustainable design and apply it to designs
- Product Life Cycles and Obsolescence in design
- Understand why products work in a market
- The role of packaging and advertising
- Recognise the importance of producing outcomes of quality and introduce ways of guaranteeing quality in manufacturing.
- Understand the importance of safety in the workshop

Subject Specific Skills developed

- Developing appropriate graphical skills to communicate and present ideas clearly
- Be capable of planning and realizing designs effectively and efficiently (appropriate drawings, manufacturing plans and cutting lists)
- Select and use an appropriate range of materials, tools and equipment accurately and safely
- Using Computer Aided Design(CAD) and Computer Aided Manufacturing (CAM)

Transdisciplinary and Generic Skills developed

Designing and creativity, review and analysis, testing and evaluation (self and peer assessment), project and time management, ICT skills, layout and presentation.

Assessment

Students are assessed in three areas: designing, making and evaluating. They demonstrate this through a range of design and make activities (DMA'S)

Each activity provides the student opportunities for self/peer assessment and formally setting their own targets to improve.

Challenge for All

All DMA's are differentiated by content (knowledge and comprehension), resources and support utilised and outcome. This allows provides opportunities to work to their own potential. It also enables teachers to provide individualised feedback.

Subject: Design and Technology
Year/Course: Year 9

Knowledge and Understanding

By the end of this course, students will have acquired a broad knowledge base on the following concepts:

- Demonstrate understanding and analysis of design contexts
- Select and apply relevant data to inform decision making
- Be capable of generating ideas that fulfil a design brief taking into account the requirements of a target group
- Understand the diversity of products and the influence of culture and lifestyle
- Understand the working characteristics of some materials
- Understand the concepts sustainable design and apply it to designs
- Product Life Cycles and Obsolescence in design
- Understand why products work in a market
- Recognise the importance of producing outcomes of quality and introduce ways of guaranteeing quality in manufacturing.
- Understand the importance of safety in the workshop

Subject Specific Skills developed

- Developing appropriate graphical skills to communicate and present ideas clearly
- Select and use an appropriate range of materials, tools and equipment accurately and safely
- Using Computer Aided Design(Techsoft 2D Design, Adobe Photoshop, Google Sketchup) and Computer Aided Manufacturing (CAM)
- Effective use of modelling

Transdisciplinary and Generic Skills developed

Designing and creativity, review and analysis, testing and evaluation (self and peer assessment), project and time management, ICT skills, layout and presentation.

Assessment

Students are assessed in three areas: designing, making and evaluating. They demonstrate this through a range of design and make activities (DMA'S)

Each activity provides the student opportunities for self/peer assessment and formally setting their own targets to improve.

Challenge for All

All DMA's are differentiated by content (knowledge and comprehension), resources and support utilised and outcome. This allows provides opportunities to work to their own potential. It also enables teachers to provide individualised feedback.

Subject: Design and Technology: Graphic Products
Year/Course: Year 10 GCSE

Knowledge and Understanding

Year 10 is the first year of the two-year GCSE course. By the end of this year students will have been exposed to a large range of knowledge and skills by utilizing Focused Practical Tasks (FPT) which deliver specific knowledge and skills, designing and making assignments which enable students to follow a series of designing and making tasks (mini projects) or by a combination of both methods.

Subject Specific Skills developed

Students will develop skills in the following areas:

- Materials and Components
- Design and Market Influences – Designers, Techniques and Processes, Sketching, Enhancement, Presentation, Information drawings
- Paper and card Engineering - Products and applications, Social, Cultural, Moral, Environmental, Economic and Sustainability Issues, Economic, Sustainability, Information and Communication Technology, Health and safety issues
- Processes and Manufacture - Systems and control procedures, Industrial Practices

Transdisciplinary and Generic Skills developed

Learning Technologies (Digital photography, Adobe Photoshop, Corel Draw, Google Sketchup, VLE – Wiki/Forum, Kerboodle)

Evaluation –self and peer

Problem solving –reviewing/analysis

Design and creativity – divergent/convergent thinking

Numeracy

Communication

Time/Project management

Assessment

Design and Make Project (formative - to reflect expectations for Coursework)

Mock examination (formative)

Challenge for All

Students use a subject-specific text which is supported by an online program 'Kerboodle'. This allows all students to extend the work covered in class and also to consolidate knowledge for revision purposes. Coursework is scaffolded using detailed task sheets and exemplars. Students now begin to work individually and therefore modelling is used extensively. Students are also guided with their choice of coursework to suit their interests and ability level.

Subject: Design and Technology: Graphic Products
Year/Course: Year 11 GCSE

Knowledge and Understanding

Year 11 is the final year of the GCSE course. By the end of this year students will have produced a coursework project that assimilates previous knowledge. Emphasis is placed upon producing a project that could be manufactured on an industrial scale.

Subject Specific Skills developed

- Materials and Components
- Design and Market Influences – Designers, Techniques and Processes, Sketching, Enhancement, Presentation, Information drawings
- Paper and card Engineering - Products and applications, Social, Cultural, Moral, Environmental, Economic and Sustainability Issues, Economic, Sustainability, Information and Communication Technology, Health and safety issues
- Processes and Manufacture - Systems and control procedures, Industrial Practices

Transdisciplinary and Generic Skills developed

Learning Technologies (Digital photography, Adobe Photoshop, Corel Draw, Google Sketchup, VLE – Wiki/Forum, Kerboodle)

Evaluation –self and peer

Problem solving –reviewing/analysis

Design and creativity – divergent/convergent thinking

Numeracy

Communication

Time/Project management

Assessment

Coursework (60% of total GCSE result)

External Exam (40% of total GCSE result)

Feedback on projects can be provided, but only in general terms. Self-assessment is on-going.

Challenge for All

Students at all times should endeavour to be:

- Creative (be original and take risks)
- consider sustainability throughout the production of controlled assessment tasks
- produce work that is of the best quality and content they are capable.

Students use a subject-specific text which is supported by an online program 'Kerboodle'. This allows all students to extend the work covered in class and also to consolidate knowledge for revision purposes. Coursework is scaffolded using detailed task sheets and exemplars. Students now begin to work individually and therefore modelling is used extensively.

Subject: Design and Technology: Resistant Materials Technology
Year/Course: Year 10 GCSE

Knowledge and Understanding

Year 10 is the first year of the two-year GCSE course. By the end of this year students will have been exposed to a large range of knowledge and skills by utilizing Focused Practical Tasks (FPT) which deliver specific knowledge and skills, designing and making assignments which enable students to follow a series of designing and making tasks (mini projects) or by a combination of both methods.

Subject Specific Skills developed

Students will develop skills in the following areas:

Materials and Components

Design and Market Influences

Industrial Practices

Sustainability of design

Designing

Information and Communication Technology

Selection of appropriate process and techniques for own product

Consumer choice

Consumer rights legislation, product maintenance and codes of practice

Health and Safety Issues

Safety for the consumer

Systems and Control

Transdisciplinary and Generic Skills developed

Learning Technologies (Digital photography, Adobe Photoshop, Corel Draw, Google Sketchup, VLE – Wiki/Forum, Kerboodle)

Evaluation –self and peer

Problem solving –reviewing/analysis

Design and creativity – divergent/convergent thinking

Numeracy

Communication

Time/Project management

Assessment

Design and Make Project (formative - to reflect expectations for Coursework)

Mock examination (formative)

Challenge for All

Students use a subject-specific text which is supported by an online program 'Kerboodle'. This allows all students to extend the work covered in class and also to consolidate knowledge for revision purposes. Coursework is scaffolded using detailed task sheets and exemplars. Students now begin to work individually and therefore modelling is used extensively. Students are also guided with their choice of coursework to suit their interests and ability level.

Subject: Design and Technology: Resistant Materials Technology
Year/Course: Year 11 GCSE

Knowledge and Understanding

Year 11 is the final year of the GCSE course. By the end of this year students will have produced a coursework project that assimilates previous knowledge. Emphasis is placed upon producing a project that could be manufactured on an industrial scale.

Subject Specific Skills developed

Materials and Components

Design and Market Influences

Industrial Practices

Sustainability of design

Designing

Information and Communication Technology

Selection of appropriate process and techniques for own product

Consumer choice

Consumer rights legislation, product maintenance and codes of practice

Health and Safety Issues

Safety for the consumer

Systems and Control

Transdisciplinary and Generic Skills developed

Learning Technologies (Digital photography, Adobe Photoshop, Corel Draw, Google Sketchup, VLE – Wiki/Forum, Kerboodle)

Evaluation –self and peer

Problem solving –reviewing/analysis

Design and creativity – divergent/convergent thinking

Numeracy

Communication

Time/Project management

Assessment

Coursework (60% of total GCSE result)

External Exam (40% of total GCSE result)

Feedback on projects can be provided, but only in general terms. Self-assessment is on-going.

Challenge for All

Students at all times should endeavour to be:

- Creative (be original and take risks)
- consider sustainability throughout the production of controlled assessment tasks
- produce work that is of the best quality and content they are capable.

Students use a subject-specific text which is supported by an online program 'Kerboodle'. This allows all students to extend the work covered in class and also to consolidate knowledge for revision purposes. Coursework is scaffolded using detailed task sheets and exemplars. Students now begin to work individually and therefore modelling is used extensively.

Subject: IB Design and Technology
Year/Course: IB Standard

Knowledge and Understanding

Demonstrate an understanding of:

- relevant facts and concepts
- design and technological methods and techniques
- technological terminology
- methods of presenting technological information.

Key content: The Design Process, Product Innovation, Green Design, Materials Product Development, Product Design, Evaluation, Human Factors Design

Subject Specific Skills developed

Apply and use:

- relevant facts and concepts
- design methods and technological techniques
- technological terminology to communicate effectively
- appropriate communication methods to present information.

Construct, analyse and evaluate:

- design briefs, problems, specifications and plans
- methods, techniques and products
- data, information and technological explanations.

Demonstrate the manipulative skills, processes and techniques necessary to carry out technological activity with precision and safety.

Transdisciplinary and Generic Skills developed

All elements of the IB Learner Profile are addressed in the Design and Technology course.

Assessment

5 Internal Assessments (IA's) – Areas to be assessed: Planning, Research, Development, Evaluation

Major Design Project (Year 13) – As for IA's, but to include Manufacturing Skills

Group 4 Project – Assessing: Personal Skills

External examinations (3 papers)

Self-assessment and peer assessment is a crucial part of this subject and is therefore, on-going.

Challenge for All

Internal investigations and design project tasks are scaffolded using detailed task sheets and exemplars. Modelling is used extensively with students. Students are also guided with their choice of project to suit their interests and ability level. More able students are encouraged and guided to choose more complex tasks and problems to solve. Students are allowed individual choice of topics in Year 13 Design Project to meet their own interests and experiences and therefore increase the chance of a successful outcome.

Subject: IB Design and Technology
Year/Course: IB Higher

Knowledge and Understanding

Demonstrate an understanding of:

- relevant facts and concepts
- design and technological methods and techniques
- technological terminology
- methods of presenting technological information.

Key content: The Design Process, Product Innovation, Green Design, Materials Product Development, Product Design, Evaluation, Energy, Structures, Mechanical Design, Advanced Manufacturing Techniques, Sustainable Development, Human Factors Design

Subject Specific Skills developed

Apply and use:

- relevant facts and concepts
- design methods and technological techniques
- technological terminology to communicate effectively
- appropriate communication methods to present information.

Construct, analyse and evaluate:

- design briefs, problems, specifications and plans
- methods, techniques and products
- data, information and technological explanations.

Demonstrate the manipulative skills, processes and techniques necessary to carry out technological activity with precision and safety.

Transdisciplinary and Generic Skills developed

All elements of the IB Learner Profile are addressed in the Design and Technology course.

Assessment

5 Internal Assessments (IA's) – Areas to be assessed: Planning, Research, Development, Evaluation

Major Design Project (Year 13) – As for IA's, but to include Manufacturing Skills

Group 4 Project – Assessing: Personal Skills

External examinations (3 papers)

Self-assessment and peer assessment is a crucial part of this subject and is therefore, on-going.

Challenge for All

Internal investigations and design project tasks are scaffolded using detailed task sheets and exemplars. Modelling is used extensively with students. Students are also guided with their choice of project to suit their interests and ability level. More able students are encouraged and guided to choose more complex tasks and problems to solve. Students are allowed individual choice of topics in Year 13 Design Project to meet their own interests and experiences and therefore increase the chance of a successful outcome.