

Unit 2: Materials, Techniques and Processes in Art and Design

Unit code:	R/502/4967
QCF Level 3:	BTEC National
Credit value:	10
Guided learning hours:	60

● Aim and purpose

The aim of this unit is to develop learners' skills and understanding in working safely and creatively with the materials, techniques and processes associated with their specialist pathway.

● Unit introduction

Artists, craftspeople and designers use a broad range of materials, techniques and processes in their work, sometimes combining traditional craft with contemporary art and design in innovative ways. Developments in new technologies have brought a wealth of new opportunities to the creative process. Practitioners' use of materials, techniques and processes has a direct bearing on the look and feel of artefacts and products, their presentation and the cost of production.

The aim of this unit is to develop learners' knowledge, skills and understanding in working safely and creatively with the materials, techniques and processes associated with their specialist pathway. It will enable learners to explore, experiment with and understand the use of a range of materials, techniques and processes.

As the unit develops, learners will be made aware of the importance of the health and safety issues related to the technologies associated with their specialist disciplines. As a result, the unit underpins all other units in the qualification and is essential in preparing learners for vocational progression.

Learners should demonstrate skill and understanding in their developmental work and in the production of finished work. In order to select and use appropriate materials and techniques, learners will evaluate the different qualities and properties associated with different media. They will learn to review their experiments critically at different stages of development in order to modify and refine their work as it progresses. Learners will also be made aware of the significance and value of studying the work of professional practitioners for the development of their own work.

● Learning outcomes

On completion of this unit a learner should:

- 1 Be able to explore materials, techniques and processes safely
- 2 Be able to use materials, techniques and processes
- 3 Understand the suitability of materials, techniques and processes

Unit content

1 Be able to explore materials, techniques and processes safely

Variety of materials: eg 2D, 3D, time-based, papers, natural and synthetic fabrics, card, glass, perspex, aluminium foils, wood, clay, plastics, concrete, steel, aluminium sheeting, computers, hardware and software

Mark making: eg wet, dry, lens-based (exposure, projection), textiles (dyeing, printing, warp, weft), collage, montage, 3D forming, fabricating (carving, modelling, gluing, welding, riveting, tying), time-based (interval, persistence)

2D processes: eg monoprinting, relief printing, tapestry, weaving, machine embroidery, pigment printing, imprinting/transfer printing, painting, mixed media drawing, thumbnail sketches, lens-based (lighting, capture, exposure, manipulation, development, printing, presentation)

3D processes: eg maquette making, armatures, construction, mould-making, casting, mixed media work, toiles, model-making, paper engineering, CAD/CAM

Time-based processes: eg video, audio, performance, music, storyboard, film, web design, animation, flipbooks

Exploration: experiment eg analysis, methods, surfaces, parameters (wetness, dryness, malleability, workability, resistance); investigate eg equipment, technologies (manual, mechanical, electronic or digital), sequence, timelapse; combining materials eg drawing on to film, ceramic glaze, dyed fabrics, collage, assemblage, installation, site-specific

Health and safety: elimination of risk to self and others; thinking and working safely within a studio environment; following the appropriate COSHH guidance on materials; understanding risk assessments

2 Be able to use materials, techniques and processes

Apply knowledge of materials, techniques and processes: limitations eg selecting, intentions, context, brief; potential eg experiments, testing, surfaces, supports, wetness, dryness, malleability, workability, resistance; investigation eg equipment, technologies, sketchbook, design, drawing, recording, test pieces, development, finished pieces

3 Understand the suitability of materials, techniques and processes

Evaluate suitability: qualities eg fitness for purpose, aesthetics, characteristics, effects, uses, limitations, creative potential; alternative options eg different combinations; working methods, comparisons; correct terminology eg technical terms, critical vocabulary; decisions eg materials, techniques, equipment, technologies, processes, suitability

Stages of the process: eg initial experiments, ideas, raw state, setting time, drying time, preparation, planning, storage, problem solving, development, finishing, presentation

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
P1 explore materials, techniques and processes safely [IE, CT, SM, RL]	M1 show considered understanding of the characteristics and uses of materials, techniques and processes through in-depth investigation and producing diverse experimental work	D1 use analysis, evaluation and experimental techniques perceptively to develop work that recognises the full potential and limitations of materials, techniques and processes.
P2 use materials, techniques and processes [IE, CT, SM, RL, EP]	M2 carry out purposeful analysis and application of materials, techniques and processes.	
P3 evaluate the suitability of selected materials, techniques and processes at relevant stages of the process. [IE, CT, SM, RL, TW, EP]		

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

Given the exploratory nature of the unit, it is expected that it will be used as a platform for further investigation and development in all other core and specialist units. The aim of the unit is to broaden learners' knowledge, skills and understanding of the materials, techniques and processes associated with their vocational specialism.

In planning this unit, tutors will need to structure a course of practical exploration that ensures coverage of all the learning outcomes. Given the exploratory nature of the unit, it is expected that it will be integrated into all other core and specialist units. The aim of the unit is to broaden learners' knowledge, skills and understanding of the materials, techniques and processes associated with their vocational specialism.

Delivery should be structured within a framework of activities or design briefs. This could form part of learner induction and would be an opportunity to introduce a general range of materials, techniques and technology, together with health and safety principles and legislation, to a whole cohort of learners. At this stage, learners might be given activities to develop and broaden their ability to test the properties and qualities of different media and materials, and to select appropriate tools and techniques for specific purposes.

For learning outcomes 1 and 2, learners should be encouraged to explore the potential of a medium or technique and to record the findings from their experiments. It is expected that tutors will structure a series of different activities or briefs that encourage learners to develop specific skills and a creative approach to handling a variety of materials, techniques and processes.

It would be highly appropriate to integrate this unit with one or more specialist pathway units and, in so doing, tutors will need to ensure they track coverage of the required outcomes.

Learners will need to be advised of, and adhere to, all aspects of current legislation associated with health and safety practices in the studio or workplace. Learners should be aware of appropriate COSHH guidance material.

For learning outcome 2, tutors should encourage learners to develop a versatile approach when developing and resolving specific technical problems. For learning outcome 3, when evaluating the suitability of different materials, techniques and processes, learners might work on a one-to-one basis with the tutor, in groups, or contribute to whole group discussions when commenting on the qualities and properties of materials they have explored. Learners should continuously evaluate their practical exploratory work with regard to fitness for purpose or quality of work produced and be encouraged to develop their critical, analytical vocabularies in discussions and written evaluative notes. Frameworks, question sheets and audio-visual recorded discussions or presentations might be used to promote learners' use of technical terms and inform their critical, analytical understanding.

The main purpose of this unit is the exploration and application of practical skills within art, craft and design. Work generated in this context will be influenced by the technical opportunities and constraints of the specialism. Investigation and exploration may arise from the needs of a given situation but may also be stimulated by curiosity, extending personal vocabulary or style. Learners should expect to produce work that demonstrates their breadth of understanding when using different materials, techniques and processes associated with their specialist pathway.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and/assessment
Unit introduction
Assignment 1: Exploring Materials, Techniques and Processes
Introduction to the unit and brief
Visit to gallery/studio/workplace/visits from practitioners
Recording primary sources with photography, sketches, drawings, notes, voice recording, video
Exploring working processes of artists, craftspeople and designers
Demonstrations of new techniques, highlighting correct technical terms, health and safety issues and keywords
Primary research to experiment with and develop ideas
Collecting and organising secondary research
Independently investigating a variety of materials, techniques and processes:
<ul style="list-style-type: none">• Fine Art• Photography• Textiles• Interactive Media• Graphic Design• Design Crafts• 3D Design• Fashion and Clothing
Recording experiments, (through selecting outcomes, taking photographs, printing developmental work, maquettes) writing notes, annotating, thumbnails
Experimenting and improving skills in selected techniques, independently
Developing and/or practise skills in chosen technique/technology
Comparing techniques
Guidance in making informed choices about presentation
Collating all developmental and experimental work
Mounting visual and written work
Producing final outcome independently
Review of unit and assessment

Assessment

The evidence produced for P1 should demonstrate the ability to carry out methodical, safe investigations of a range of materials, techniques and processes. Activities or tasks could be set requiring learners to explore the different properties and characteristics of a range of media and materials. Learners should be able to compare the different qualities and properties of media and to investigate their suitability for specific tasks. Similarly, for time-based and digital media, learners would be expected to explore the different programmes, functions and settings of 4D media and materials.

Evidence for P1 could be a series of test pieces, trials, swatches, sketchbook studies, printouts, video/film clips, annotated worksheets etc. Observation sheets and witness statements might support further evidence of understanding, with tutor/learner feedback on task sheets supporting achievement. Learners will evidence their knowledge and understanding of health and safety in the same way and at a basic level.

For P2, learners will evidence their use of media and processes. This could be achieved through tutors setting a range of increasingly complex activities for learners to experiment with different ways of exploring and manipulating media, materials and techniques. Learners could use assignments and/or briefs carried out for their specialist units as further evidence for P2.

For P3, learners will demonstrate basic critical skills in evaluating the qualities of materials, techniques and processes, and give reasons as to their suitability, or not, for different tasks. Evidence might be in the form of annotated visual studies or printouts, sketchbooks/worksheets showing examples of experimental trials, samples, test pieces, video clips. Learners might also evidence their ability to use appropriate technical terms and critical vocabulary in reviewing their studies through frameworks, witness statements, verbal evidence sheets and audio-visual taped discussions and presentations.

To achieve a merit grade learners should evidence diverse and consistent, skilful investigations into materials, techniques and processes associated with their specialist pathway.

For M1 and M2, learners might produce a series of planned and annotated exploratory studies, for example investigating the range and potential of a new digital programme for developing and presenting multi-viewpoints of their 3D designs.

For M1, learners need to demonstrate an individual, creative and effective use of media, for example through experimental application of techniques in developing work for a particular specialist assignment.

For M2, learners should demonstrate the considered use of technical and critical vocabulary in explaining and reviewing their studies. This might be shown throughout an activity or assignment where learners produce ongoing evaluations of the properties and characteristics of selected media, as well as identifying and selecting the most appropriate techniques and processes for their task. Evidence could be gathered in the range of forms outlined for P3.

For D1, learners will use highly informed analysis and articulate critical vocabulary continuously in evaluating their exploratory studies. Learners will demonstrate fluency in the imaginative manipulation of materials and use creative experimental techniques to develop exciting work. They will present their knowledge of the potential and limitations of materials, techniques and processes showing independence and innovation in experimental studies. Their work will be characterised by articulate, ongoing review and refinement towards producing sophisticated and highly skilled outcomes.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, P2, P3 M1, M2 D1	Assignment 1: Exploring Materials, Techniques and Processes	A group of artist/designers/ craftspeople investigating materials, techniques and processes for an exhibition titled ' <i>Innovation and tradition in art and design</i> '	Assessment methods might include: <ol style="list-style-type: none"> 1 Using witness statements to: <ul style="list-style-type: none"> • observe and record learner activity and their progress while working • record learner discussions with groups and ability to communicate at tutorials • observe and record learner presentations 2 Learner's own ongoing review of progress and self-evaluation evidenced through statements, notes and annotated sketchbooks/worksheets 3 Evidence of test pieces, samples, swatches, worksheets, visual studies etc, from portfolio of ongoing and final work

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC Art and Design sector suite. This unit has particular links with the following unit titles in the BTEC Art and Design suite:

Level 1	Level 2	Level 3
Explore Painting	2D Visual Communication	Visual Recording in Art and Design
Explore Printmaking	3D Visual Communication	Ideas and Concepts in Art and Design
Explore Mixed Media		Communication Through Art and Design

National Occupational Standards

This unit also provides development opportunities for some of the underpinning skills, knowledge and understanding of the following National Occupational Standards:

CCSkills Sector Skills Council

Design (revisions in draft form June 2009)

- DES1 Apply Research on the History and Theory of Design to Your Own Design Activities
- DES2 Apply Design Industry Knowledge to Inform Your Own Design Work Practice and Work
- DES4 Communicate the Importance of the Design Brief
- DES5 Follow a Design Process
- DES6 Work Effectively with Others in a Creative Environment
- DES7 Contribute to the Production of Prototypes, Models, Mock-ups, Samples or Test Pieces
- DES8 Explore the Use of Colour in a Creative Environment
- DES9 Research, Test and Apply Techniques for the Design of Products
- DES10 Create Visual Designs
- DES18 Interpret the Design Brief and Follow the Design Process
- DES21 Articulate, Present and Debate Ideas in a Creative Environment
- DES23 Create 2D Designs Using a Computer Aided Design System
- DES24 Create 3D Models Using a Computer Aided Design System
- DES28 Developing Your Own Design Offer
- DES32 Apply Concepts and Theories of Creativity and Innovation to Your Own Design Work
- DES36 Develop and Extend Your Design Skills and Practices
- DES38 Manage Design Realisation
- DES39 Manage a Design Project

Skillset Sector Skills Council

Animation

- ANIM8 Create Designs
- ANIM11 Create 2D Assets For Production
- ANIM12 Create 2D Animation
- ANIM13 Finalise Artwork for 2D Animation
- ANIM14 Set Up 3D Elements For Animation
- ANIM15 Create 3D Animation
- ANIM16 Render 3D Animation

Interactive Media and Computer Games

- IM1 Work Effectively in Interactive Media
- IM6 Use Authoring Tools to Create Interactive Media Products
- IM24 Create 2D Animations for Interactive Media Products
- IM27 Create Sound Effects for Interactive Media Products
- IM28 Create Music for Interactive Media Products

Design for the Moving Image

- DMI7 Create Models For Use In Productions
- DMI30 Create Physical Artwork For Graphic Designs For The Moving Image
- DMI34 Produce Graphic Elements On Electronic Media

Photo Imaging

- P2 Organise and Carry Out Photographic Assignments
- P3 Take Standardised Portrait Photographs
- P4 Take Standardised Still-Life Photographs
- P5 Take Specified Photographs
- P6 Conceive and Take Photographs
- D1 Create Original Artwork for Digital Images
- D2 Carry Out Specified Image Scanning
- D3 Plan and Produce Scanned Images
- D4 Carry Out Specified Image Editing
- D5 Plan and Produce Edited Images

Skillfast-UK Sector Skills Council

Textiles and Material Design

- D1 Research Design Information and Ideas for Textiles and Materials Using a Range of Techniques
- D3 Develop Design Responses for Textiles and Materials to Meet Agreed Requirements
- D2 Develop and Communicate Design Ideas for Textiles and Materials
- D4 Contribute to Producing Detailed Designs for Textiles and Materials
- D5 Contribute to Realising Design Prototypes for Textiles and Materials
- D6 Contribute to Realising Final Textiles and Materials Design
- D9 Clarify Textile and Material Design Briefs and Research Information
- D10 Develop Alternative Textile and Material Design Ideas
- D12 Develop, Produce and Present Design Responses
- D13 Plan and Manage Design Work
- D14 Realise Design Prototypes
- D15 Plan and Contribute to the Realisation of Final Textile and Material Design

Essential resources

This is a core unit and is therefore mandatory across all specialist pathways. The resources needed for this unit will vary according to the specific technical and material demands of learners' work.

Essential resources include:

- *specialist workspaces*: eg studios, workshops, computer suites, video and film editing suites
- *materials, equipment and tools*: eg for 2D, 3D, 4D and associated materials, equipment and tools across all specialist areas
- *access to a learning centre*: eg for books, periodicals, journals, videos, CD ROMs, the internet
- *specialist staff*: eg for the different specialist pathways and might also include technical support staff.

Employer engagement and vocational contexts

Centres should develop links with practising artists, craftspeople and designers, to deliver assignments to learners or to provide work experience.

Links with employers are essential to delivery of the programme in terms of relevant work experience and employment.

Assignments should be vocationally relevant. Centres should consider the delivery of 'live projects' to support the vocational content of the unit and programme.

Centres forming compacts with universities to provide progression routes will also give learners greater opportunity to pursue and develop their art and design career through appropriate higher education courses.

Visits to galleries, exhibitions, film reviews, plays, performance and live art, workshops, studios and advertising agencies could play an important role in the designing of assignments for this unit. Alternatively, bringing professional practitioners from art, design or media backgrounds in to talk about their work could help learners with the evidence requirements of this unit.

Vocational learning support resources include:

- Learning and Skills Network – www.vocationallearning.org.uk

Business and finance advice:

- local and regional Business Link – www.businesslink.gov.uk

Creative & Cultural Skills (www.ccskills.org.uk), the sector skills council for design have launched the web portal Creative Choices (www.creative-choices.co.uk). This portal has a range of information about careers in the design sector, including job descriptions.

Skillset, the sector skills council for creative media, provide details (www.skillset.org/photo) about careers advice and industry information, plus a regularly updated news and events page.

Skillfast-UK, the sector skills council for fashion and textiles, provide details on their careers web pages (www.skillfast-uk.org/justthejob) about careers advice and industry information, plus regularly updated news and events pages.

Indicative reading for learners

Textbooks

Atkinson J, Harrison H and Grasdal P – *Collage Sourcebook: Exploring the Art and Techniques of Collage* (Rockport Publishers Inc, 2005) ISBN 978-1592531011

Campbell-Harding V – *Fabric Painting for Embroidery* (Batsford Ltd, 2001) ISBN 978-0713486094

Dabner D – *Graphic Design School: The Principles and Practices of Graphic Design* (Thames & Hudson 2004) ISBN 978-0500285268

Dormor R, Holmes S, Mott T, Schofield J, Thomas L, Wicks S, Wilson G – *Edexcel Level 3 BTEC National Art and Design Student Book* (Edexcel, 2010) ISBN 978-1846906374

Dormor R, Holmes S, Mott T, Schofield J, Thomas L, Wicks S, Wilson G – *Edexcel Level 3 BTEC National Art and Design Teaching Resource Pack* (Edexcel, 2010) ISBN 978-1846906374

Fish J – *Designing and Printing Textiles* (The Crowood Press, 2005) ISBN 978-1861267764

Galton J – *The Encyclopedia of Oil Painting Techniques* (Search Press Ltd, 2001) ISBN 978-0855329600

Harthill B and Clarke R – *Collographs and Mixed Media Printmaking* (A&C Black Ltd, 2005) ISBN 978-0713663969

Hornung D – *Colour: a Workshop for Artists and Designers* (Laurence King, 2005) ISBN 978-1856694193

Hughes R and Rowe M – *The Colouring, Bronzing and Patination of Metals* (Thames & Hudson, 1991) ISBN 978-0500011501

Ingledeew J – *Photography (Portfolio Series)* (Laurence King, 2005) ISBN 978-1856694322

Issett R – *Colour on Paper and Fabric* (Batsford Ltd, 1998) ISBN 978-0713480689

Issett R – *Print, Pattern and Colour* (Batsford Ltd, 2007) ISBN 978-0713490374

Lefteri C – *Materials for Inspirational Design* (RotoVision, 2006) ISBN 978-2940361502

McCreight T – *Jewellery: Fundamentals of Metalsmithing* (Hand Books, 1999) ISBN 978-1880140291

Mills J – *Encyclopaedia of Sculpture Techniques* (Batsford, 2005) ISBN 978-0713489309

Perrella L – *Artists' Journals and Sketchbooks: Exploring and Creating Personal Pages* (Rockport Publishers Inc, 2007) ISBN 978-1592530199

Sentence B – *Ceramics – A World Guide to Traditional Techniques* (Thames & Hudson, 2004) ISBN 978-0500511770

Smith R – *New Artist's Handbook* (Dorling Kindersley, 2003) ISBN 978-0789493361

Smith S and Ten Holt H F – *The Artist's Manual* (Little Brown, 1990) ISBN 978-0356196060

Walsh Macario J – *Graphic Design Essentials: Skills, Software and Creative Solutions* (Laurence King, 2009) ISBN 978-1856695992

Journals

Art Monthly

Art Review

Artists and Illustrators

British Journal of Photography

Crafts Magazine

Creative Review

Contemporary

Dazed and Confused Magazine

Design

Interior Design

Websites

www.artjournal.co.uk

www.craftscouncil.org.uk

www.creativehandbook.co.uk

www.culture24.org.uk/am30786

www.design-council.org.uk

www.designmuseum.org

www.fashion-era.com/C20th_costume_history

www.graphicdesign.about.com/arts/graphicdesign

www.masters-of-photography.com

www.tate.org.uk

www.vam.ac.uk

online guide to books and journals

the national development agency for contemporary crafts in the UK

directory of creative practitioners

links to a broad range of art and design resources

the national strategic body for design in the UK

website of the Design Museum, dedicated to contemporary design

links to resources on fashion

graphic design links

photography links

website for the Tate galleries

website for the Victoria and Albert museum

Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit:

Skill	When learners are ...
Independent enquirers	exploring materials, techniques and processes safely using materials, techniques and processes evaluating the suitability of selected materials, techniques and processes at relevant stages of the process
Creative thinkers	exploring materials, techniques and processes safely using materials, techniques and processes evaluating the suitability of selected materials, techniques and processes at relevant stages of the process and generating ideas
Reflective learners	analysing materials, techniques and processes safely using materials, techniques and processes evaluating the suitability of selected materials, techniques and processes at relevant stages of the process
Team workers	participating in tutorials, reviews, critiques, giving and receiving feedback
Self-managers	setting timeframes, working to deadlines, generating ideas, devising and following action plans
Effective participators	applying skills and knowledge, making and developing work, engaging in own learning

Although PLTS are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Independent enquirers	exploring materials, techniques and processes in own experimental work investigating contextual material related to others' use of materials, techniques and processes developing ideas from investigations into materials, techniques and processes, towards final work planning, researching and preparing presentations assessing own and others performance
Creative thinkers	experimenting with materials, techniques and processes originating and developing ideas developing skills in the use of materials, techniques and processes imaginatively discussing progress and ways forward

Skill	When learners are ...
Reflective learners	reviewing own and peers' progress analysing and evaluating others' use of materials, techniques and processes discussing problems encountered and seeking solutions giving and receiving feedback and acting on advice and guidance annotating sketchbooks/worksheets and writing evaluative notes and final evaluations
Team workers	participating in group activities and discussions working on joint briefs/projects/activities working in groups for self and peer assessment planning and mounting displays and exhibitions
Self-managers	working safely with materials, techniques and processes managing time by planning and structuring project/assignment tasks planning and managing requirements and constraints of a brief initiating discussion and developing awareness of own qualities
Effective participators	participating in group activities and discussions working on briefs/projects/activities participating in self and peer assessment planning and mounting displays and exhibitions

● Functional Skills – Level 2

Skill	When learners are ...
ICT – Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	scanning and developing ideas digitally using software programmes to develop image creation researching contextual and other information for the development of own visual recording work
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	planning project briefs and where and how ICT might be used when appropriate evaluating outcomes
Manage information storage to enable efficient retrieval	researching from internet sources, downloading information, creating folders for storage and retrieval
Follow and understand the need for safety and security practices	undergoing induction period – introduction to the ICT centre and systems and working practices
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	researching internet sources, selecting from their research and developing own response informed by research
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	researching information for different briefs and activities evaluating results
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: <ul style="list-style-type: none"> • text and tables • images • numbers • records 	experimenting with digital processes and techniques designing digitally, using scanners, inputting and formatting information from sources
Bring together information to suit content and purpose	developing design ideas digitally, importing visual and textual information relevant to brief/activity
Present information in ways that are fit for purpose and audience	using digital means to plan, create and give presentations to different audiences
Evaluate the selection and use of ICT tools and facilities used to present information	assessing their progress and commenting on the appropriateness of their selection of ICT tools and facilities eg use of software programmes
Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists	using email to submit written work, downloading information from internet sources, storage of information – creating folders for access

Skill	When learners are ...
Mathematics	
Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations	working with materials, techniques and processes in scaling, timing, measuring using perspective and other methods of projection
Identify the situation or problem and the mathematical methods needed to tackle it	using measuring and orthographic projection for accuracy, and scaling using software to observe and modify designs taken from visual recordings checking and modifying different viewpoints
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	discussing the project brief, contributing to group discussions and the sharing of ideas, comparing others' use of materials, techniques and processes; evaluating own visual recording, presenting to different audiences
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	researching, reading, selecting text and images, annotating, commenting and comparing, using text and image to relate to own work and evidencing understanding through discussion, evaluations and presentations
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	evaluating results of use of materials, techniques and processes and analysing skills and qualities achieved analysing and evaluating selected artists' images for the purpose of developing own work, using personal judgements, evaluating final ideas