Unit 109: 3D Sculptural Textiles

Unit code: J/502/5484

QCF Level 3: BTEC National

Credit value: 10

Guided learning hours: 60

Aim and purpose

The aim of this unit is to develop learners' creative 3D sculptural textile techniques of exploring and investigating surface qualities and structures for craft and commercial purposes. They will investigate practitioners' approaches and using primary and secondary source material develop their samples from original design ideas.

Unit introduction

We live in a 3D world where everything fits together like a jigsaw, in terms of height, width and depth. Contemporary textile artists continuously extend and explore the use of textile techniques and equipment within their work. With this knowledge, the exploration of 3D work offers endless scope and innovation.

Learners need to review the work of historical and contemporary textile artists. They will explore, experiment with, and understand how 3D techniques and processes have been applied to the work of these artists and how they can be applied to their own work.

Learners will be encouraged to develop creative 3D techniques that explore and investigate surface qualities and structures for craft and commercial purposes. They will investigate and develop their samples from original design ideas to form functional and non-functional samples using primary and secondary source material.

Learners will work to specific briefs in order to investigate their creative potential and limitations. Through practical investigation in the area of 3D sculptural textiles they will develop imaginative ideas. Learners will be encouraged to investigate exciting and inventive uses for materials, techniques and construction processes when developing and creating sculptural work.

Learners will need to evaluate and analyse work at appropriate stages of the creative design process. This will involve considering the suitability (and the use) of alternative combinations when choosing 3D techniques and processes. Learners will be encouraged to seek the opinions of others and to participate in peer reviews and group critiques.

Learners will need to be aware of health and safety requirements whilst understanding the significance of professional practice for the development of their own work. They will be required to work safely in a studio environment when working independently and within a group. Appropriate risk assessments and COSHH guidance should be followed at all times.

Learning outcomes

On completion of this unit a learner should:

1 Be able to explore the physical properties and characteristics of materials

2 Be able to develop design ideas into 3D outcomes using techniques and construction processes

3 Be able to demonstrate safe practice when using 3D techniques and processes

4 Understand 3D sculptural textiles processes.

Unit content

1 Be able to explore the physical properties and characteristics of materials

Materials: papers, eg handmade, commercially made, various weights, textures; fabrics: synthetic, eg acrylic, acetate, viscose, PVC, latex, polyester; natural, eg cotton, wool, linen, silk; yarns, threads, eg wire, elastic, spun and various fibres; metal, eg sheet, wire and foil; recycled and found, eg glass, cans, wire, stones, wood, feathers, plant matter

Physical properties and characteristics: characteristics and properties, eg opacity, translucency, dullness, reflectivity, weight, strength, texture and rigidity; performance, eg strength, flammability, elasticity, durability, weight, hardness, malleability, flexibility

2 Be able to develop design ideas into 3D outcomes using techniques and construction processes

Construction processes: eg shaping, forming, moulding, joining, linking, cutting, wiring, interlacing, stiffening, slitting, modelling

Techniques: weave techniques, eg hand loom, braid, tablet, tapestry techniques, eg knots, loops, tassels, tufts, knitting techniques, eg felt making by hand, by machine; embroidery techniques, eg by hand, by machine; fabric manipulation, eg pleating, tucking, ruching, smocking, gathering, quilting, fraying, layering, distressing, piping; other techniques, eg netting, macramé, batik

3 Be able to demonstrate safe practice when using 3D techniques and processes

Safe practice: techniques; processes preparatory work, making, finishing, safe use of tools, machinery equipment

Health and safety: Health and Safety Act 1974, elimination of risk to self and others; studio environment, COSHH risk assessments, technical information, safe working practices

4 Understand 3D sculptural textiles processes

Review: investigate and review ideas, subjects, influences, refinements, working practice, fitness for purpose, design constraints

Evaluate: reflection, analysis; chosen materials, techniques, processes; identify, eg strengths, weaknesses, success, failure of techniques, of equipment; preference, purpose, function

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 the physical properties and characteristics of materials by producing samples [IE, CT, RL, TW, SM, EP]	**M1** produce an in-depth collection of experimental work and outcomes which explore the physical properties and characteristics of materials	**D1** present a body of independently produced, finished work which demonstrates a full range of 3D techniques and processes and informed understanding.
P2 develop design ideas into 3D outcomes using techniques and construction processes [IE, CT, RL, SM]	**M2** evaluate the selection and suitability of 3D techniques and construction processes throughout the creative process.	
P3 use a selection of 3D techniques and construction processes safely [IE, CT, RL, TW, SM]		
P4 review the suitability of 3D techniques and processes throughout the creative process. [IE, RL, TW, SM, 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

Tutors will deliver the practical stages of this unit in a studio or workshop environment. Delivery should stimulate, motivate, educate and inspire learners. Teaching methods should help to develop learners' knowledge and understanding of working with a variety of 3D techniques and construction processes. Learners should be encouraged to be experimental and innovative in the use of techniques and equipment, and to work with new materials and technologies. Learners will also need access to a range of equipment and to be encouraged to work using a variety of scales. It is important that storage space is made available.

Learners will need to research visual sources to inspire, influence and direct their ideas, including primary and secondary sources. This unit could be linked to other units that provide existing visual studies that could be a basis for further development. Learners should also have internet access. It is important that learners review the work of other textile artists to inform their own ideas. The work of historical and contemporary artists such as Tadek Beutlich and Caroline Broadhead will introduce learners to the diversity possible within this unit.

Research could take the form of visits to galleries and exhibitions, workshops or artists studios in addition to observing the work of their peer group. Learners will need to discuss and explain their creative decisions and constraints that affected their work in a written and verbal format.

Learning outcomes 1 and 2 are linked. Tutors should encourage learners to be experimental and investigative when engaged in developmental work. Learners should produce a collection of samples (developed from initial design ideas) that demonstrate the use of a range of different 3D techniques and processes. They must also explore and investigate surface qualities and structures for craft and commercial purposes.

Learners should have access to a range of materials and equipment and should also be encouraged to use found and recycled media and materials. Learners should be taught in the first instance how to use the appropriate equipment. They should be given guidance on the interpretation and development of the initial design ideas before developing their own ideas in an experimental and innovative way.

For learning outcome 3, learners must be aware of all health and safety issues relating to the techniques and equipment to be used. Learners will need to be advised of, and adhere to, all aspects of current legislation associated with health and safety in the workplace. They must be aware of how they can minimise risk to themselves and others by working safely at all times.

For learning outcome 4, learners should review the suitability of 3D construction techniques and processes at appropriate stages in their work. Tutors should encourage and inspire learners to investigate the creative potential and limitations of techniques and equipment throughout the design process. Learners should be encouraged to talk about their work and to analyse the suitability of their chosen materials. They should also be encouraged to consider alternative combinations. This may take the form of a verbal discussion or group critique.

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
Introduction to the brief/explore aims and requirements of the unit. Project launch and suggested breakdown of tasks; theme: A sculpture evoking a sense of place.
Assignment 1: A sculpture evoking a sense of place Stage 1: Selecting potential media Learners: • identify and review the properties/qualities of a range of appropriate sculptural materials • evaluate potential use and suitability of selected sculptural materials for the project.
Stage 2: Exploration and experimentation Learners: • explore a range of appropriate traditional sculptural techniques • experiment with a range of appropriate non-traditional sculptural techniques.
Learner initiated study
Stage 3: Designing and maquette creation Learners: • generate and develop ideas using a range of appropriate sculptural methods • produce a range of sculptural studies, models/maquettes.
Learner-initiated study.
Learners: • review and evaluate developmental studies and sample models • present design ideas and sample models to peers and tutor and respond appropriately to feedback.
Stage 4: Refining and completing final sculptural piece Learners: • select and develop final idea using appropriate sculptural methods and techniques • produce final sculptural work.
Learner-initiated study.
Learners: • plan, and create a presentation of the work as a whole • present appropriately to different audiences.
Review of unit and assessment

Assessment

For P1, learners will produce a body of creative and experimental samples exploring the physical properties and characteristics of materials. The range of techniques covered may be limited, and alternative approaches to using techniques may be identified but are likely to be unexplored.

For P2, learners will be expected to develop design ideas into 3D outcomes using a variety of techniques and construction processes. Ideas will however be limited. Designs will be pursued to produce outcomes that meet the requirements of the brief without extending the range of possible alternatives. Solutions may tend to be obvious, without in-depth exploration of the potential of techniques.

For P3, learners must demonstrate that they have selected and used a selection of 3D techniques and construction processes safely and effectively when producing samples. This could take the form of tutor observation or of learners recording the techniques and processes used and the application and relevance to health and safety issues.

For P4, learners are expected to evaluate the suitability of selected techniques and processes at appropriate stages of the creative process. Ongoing evaluation may tend towards listing the sequential development of the assignment work. Evaluative skills will be present but are likely to show obvious conclusions. Ongoing review will conform intentions and actions.

For M1, learners must produce an in-depth collection of experimental personal work that explores 3D textile techniques and construction processes in an experimental and investigative way. The depth of enquiry will be greater than in work assessed at P1. Explorations will be sensitive to the inherent qualities of the materials used, and techniques will be employed with real purpose. Materials are likely to be combined in effective ways.

For M2, learners will need to evaluate the selection and suitability of selected techniques and processes throughout the design process. The sense of enquiry and understanding gained will be evidenced clearly, and insights gained will be applied effectively to refining and adapting techniques employed. Decisions will be reached about the suitability of specific techniques and processes with more purpose and confidence than in work assessed at pass level.

For D1, learners must present an independently produced portfolio of work demonstrating the use of a full range of 3D techniques and construction processes with a high skill level and informed understanding. Learners must be able to confidently explain their creative decisions and how any constraints have affected the work. Learners will demonstrate a higher level of sophistication in their evaluation than in pass or merit level work. Ideas and developmental work will be independently evaluated and design decisions made with confidence.

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, P4 M1, M2 D1	**Assignment 1**: A sculpture evoking a sense of place	Sculptor develops ideas for a commissioned fine art piece of work inspired by the theme: 'A sculpture evolving a sense of place'. Ideas will be based on primary source studies from the environment and contextual research. From 2D studies, sculptor develops maquettes and first stage models for sculptures. Project includes: • project proposal to clients • development of ideas • final piece • evaluation.	• Research. • Development of ideas such as, experiments with materials, techniques relevant to proposal. • Final piece including presentation sheets. • Evaluation such as development and analysis of design ideas and final piece; strengths and weaknesses of design ideas and final piece. • Witness statements. • Reports of progress from work experience placements. • Self-evaluation evidenced through statements, notes and annotated sketchbooks/ worksheets. • Evidence of visual studies from portfolio of ongoing and final work.

Links to 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:

Level 1	Level 2	Level 3
Introduction to Machine Techniques	Constructed Textiles	Textile Installation
Introduction to Surface Pattern	Working with Textiles Briefs	Feltmaking and Felting
	Working with 3D Design Crafts Briefs	Woven Textiles

National Occupational Standards

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

Skillfast-UK Sector Skills Council

Textiles and Material Design

- HS1 – Health, safety and security at work
- 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

For design and production learners must have access to 3D design workshops for hand and machine tools. Provision of malleable and non-malleable materials is essential for learners' design experimentation, development and design outcomes.

Equipment for cutting, shaping, modelling, carving, forming, constructing moulding and the use of digital working practice is essential.

As well as access to a well-equipped three-dimensional workshop, learners require photographic or video equipment for recording purposes, which will include gathering primary source material and keeping a record of models, maquettes and work in progress.

Access to design studios for group teaching and evaluation sessions, including design ideas origination and development, is essential. Facilities with both specialist and general learning support materials, including books, journals and periodicals are vital for research purposes. Computers with appropriately updated design software are required to support learners' digital ideas, technical development and expertise. Access to the internet is required for historical, cultural and contemporary contextual research.

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 the delivery of the programme for work experience and future employment.

Vocational learning support resources:

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

Business and finance advice:

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

Assignments should be vocationally relevant; centres should consider the delivery of 'live projects', for example, to support the vocational content of the unit and programme.

Creative and Cultural Skills (www.ccskills.org.uk), the Sector Skills Council for Arts, Crafts and Design, has launched the web portal Creative Choices (www.creative-choices.co.uk). This portal has a range of information about careers in the arts, crafts and design sector, including job descriptions.

Skillfast-UK, the Sector Skills Council for Fashion and Textiles (www.skillfast-uk.org), provides details on careers (www.skillfast-uk.org/justthejob) and the industry and has regularly updated news and events pages.

Indicative reading for learners

Textbooks

Beaney J and Littlejohn J – *A Complete Guide to Creative Embroidery* (Batsford, 1997) ISBN 978-0713482621

Beaney J and Littlejohn J – *Stitch Magic* (Batsford, 2005) ISBN 978-0713481969

Campbell-Harding V and Grey M – *Layers of Stitch* (Batsford, 2004) ISBN 978-0713489064

Edmonds J – *Three Dimensional Embroidery* (Batsford, 2009) ISBN 978-1906388546

Fisch A M – *Textile Techniques in Metal* (Lark Books, 2001) ISBN 978-0937274934

Grey M – *Stitch, Dissolve, Distort Machine Embroidery* (Batsford, 2006) ISBN 978-0713489965

Grey M and Wild J – *Paper, Metal Stitch* (Batsford, 2007) ISBN 978-0713490671

Holmes V – *Creative Recycling in Embroidery* (Batsford, 2006) ISBN 978-0713489866

Wolff C – *The Art of Manipulating Fabric* (KP Books, 1996) ISBN 978-0801984969

Ziegler K – *Fabric Sculpture* (Rockport Publishing, 1997) ISBN 978-1564961334

Journals

Embroidery Magazine – Embroiderers' Guild

Selvedge Magazine – Selvedge Ltd

Magazines

Art Monthly

Art Review

Contemporary

Crafts Magazine

Creative Review

Design Magazine

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	selecting, using and safely operating appropriate equipment and machinery for the development of garment production
Creative thinkers	selecting and using appropriate production processes to assemble a well finished garment
Reflective learners	evaluating their work at appropriate stages of the production process
Self-managers	planning the production process and use appropriate techniques to present well finished garments and accompanying documentation.

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	selecting and operating appropriate equipment and materials
Creative thinkers	using an innovative and creative approach to the production process when completing finished garments
Reflective learners	adapting and refining garment production processes to meet a sophisticated level of competence
Team workers	working as a team to produce a collection of garments
Self-managers	producing garments which demonstrate a high standard of competence and meeting the requirements of the brief and meeting the deadline
Effective participators	effectively participating in group critique and presentations.

Functional Skills – Level 2

Skill	When learners are ...
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: • text and tables • images • numbers • records	producing and presenting the following using IT: • lay plan • sequence of operation • working sketch • costing • technical specification • evaluation
Bring together information to suit content and purpose	
Present information in ways that are fit for purpose and audience	
Mathematics	
Interpret and communicate solutions to practical problems in familiar and unfamiliar routine contexts and situations	producing a cost effective lay plan for the selected garment to include fabric requirements for a minimum number of two fabric widths
Draw conclusions and provide mathematical justifications	
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	participating in one to one tutorials and group critique throughout the production process
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	gathering research on quality inspection processes used within the fashion and clothing industry
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	producing an ongoing evaluation of the production process, sequence of operation and report of quality inspection within the fashion and clothing industry.