

Unit code: K/600/0183

QCF Level 3: BTEC National

Credit value: 10

Guided learning hours: 60

Aim and purpose

This unit will enable learners to explore design materials and processes. Learners will be able to apply design processes and materials to the creation of a design element.

Unit introduction

In this unit learners will develop an understanding of the use of design methods, materials and problem solving approaches that can be used to produce a product that satisfies the design problems and fulfils the potential. Design ideas need to be communicated to the rest of the production team and the performers, therefore design skills will also include necessary skills such as time management, teamwork, organisation, analysis and synthesis; it is the combination of the design development skills with team interaction skills that will lead to the successful completion of a finished product.

The application of this design methodology incorporates skills needed for undertaking a design project within the performing arts sector. Learners will gain an understanding of how this design methodology can be incorporated into elements within the performing arts sector, such as costume, set, props, sound, lighting, model making and makeup.

Learners will gain an understanding and awareness of how the appropriate design materials can be successfully used in the development of ideas and processes into a finished product. Accordingly, this unit offers excellent opportunities to demonstrate to prospective employers and/or higher education establishments the high levels of understanding and creativity generated by learners.

Learners will be able to develop creative and practical skills that are transferable within the design elements of the performing arts. This unit links with a range of other units in the drama, dance and technical pathways and has direct links with Puppet Design, Production Planning, Costume for Performance, Props Making, Design for Performance, Design Drawing Development and Design Materials and Process.

Learning outcomes

On completion of this unit a learner should:

- 1 Know the characteristics of design materials, techniques and processes
- 2 Be able to generate design ideas for a production
- 3 Be able to realise design ideas
- 4 Be able to reflect on the design process.

Unit content

1 Know the characteristics of design materials, techniques and processes

Materials: working characteristics and physical properties eg papers, natural and synthetic fabrics, card, glass, polycarbonate and acrylic sheet, aluminium, foils, plywood, hardboard, wood, clay, plastics, concrete, steel

Techniques: eg wet, dry, lens based, textiles, dyeing, printing, distorted weft, collage, montage, 3D shaping, fabricating, carving, modelling, glueing, welding, riveting, tying

2D processes: eg monoprinting, relief printing, tapestry, weaving, machine embroidery, pigment printing, imprinting/transfer printing, painting, mixed media drawing, thumbnail sketches; lens-based; photography, exposing, developing, printing photo sensitive films, digital imagery, image manipulation software

3D processes: eg maquette making, armature construction, mould-making, mixed media work, model making

Health and safety: legislation; regulation; good working practices; workshop safety; risk management; Control of substances hazardous to health regulations current requirements

2 Be able to generate design ideas for a production

Concepts: eg analysis of texts, artistic requirements, aesthetic considerations, practical considerations, budget, skills audit

Process: selecting specialist materials, techniques, processes, experimental materials, testing, initial drawings, renderings and sketches, sketchbook work, design developments, drawings and maquettes

Communicating design ideas: model box; sketches; maquette; paintings; drawings; scale technical plans; production meetings; ground plans and sections; construction plans; explaining decisions taken about materials, techniques and processes

3 Be able to realise design ideas

Techniques: eg using plans, marking out, sourcing components

Production: eg selection of materials, techniques, processes, finishes, managing the process

Problem solving: changing design ideas in response to problems posed by the materials, the production demands and the design process

Communications: eg explaining decisions taken about materials, techniques, processes

Health and safety: construction methods; Control of substances hazardous to health regulations current requirements; construction materials; applying decorative finishes, adhesives and solvents

4 Be able to reflect on the design process

Reflection on planning: the use of research; response to the design stimulus; development of ideas; planning of materials; health and safety

Reflection on design process: response to research; problem solving; development of design ideas; creation of design communication drawings; health and safety

Reflection on the design production process: use of materials; problem solving; suitability of final product; health and safety

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.

Asse	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	describe the characteristics and uses of design materials, techniques and processes [IE]	M1	explain the characteristics and uses of design materials, techniques and processes	D1	comment critically on the characteristics and uses of design materials, techniques and process
P2	develop design ideas in response to a stimulus [CT]	M2	develop considered design ideas that show a thoughtful response to the stimulus	D2	develop fully considered design ideas that show a innovative and accomplished response to the stimulus
Р3	communicate design ideas with some guidance [CT]	М3	clearly communicate design ideas in reasonable detail	D3	efficiently communicate the full detail of the design ideas
P4	use methods, material and processes to realise design ideas [CT]	M4	competently select and use suitable methods, materials and processes to effectively realise design ideas	D4	skilfully select and use wholly appropriate methods, materials and processes to realise all of the design ideas
P5	describe health and safety considerations for the designer [RL]	M5	apply health and safety considerations to the creation, planning and realisation of the design ideas	D5	fully and autonomously apply health and safety considerations to all aspects of the creation, planning and realisation of the design ideas
P6	describe the design process. [RL]	М6	explain all aspects of the design process and production.	D6	critically reflect on all aspect of the design planning and realisation process.

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

The introduction to this unit will explore the characteristics of design materials, methods and processes. Learners will develop skills that show application and command of materials, techniques and processes that are used in the design and creation process. It is important that this introductory work is as wide ranging as possible in order to provide learners with a broad range of skills, understanding and approaches which will enable them to tackle subsequent design challenges. Learners will develop an understanding of how to research, explore, develop and communicate design ideas in response to a design stimulus. The introductory workshops will also introduce learners to design potential and opportunities of design elements; set design, costume design, prop design, puppet design, lighting design and sound design. This could be achieved through carefully planned research activities and it is advisable to teach design elements through examples of professional practice. Planning for the delivery of this unit must encompass the need for a practical, experiential approach that may present resource implications for materials, time and workshop space.

For learning outcome 1, learners will be introduced to design materials, techniques and processes. The purpose will be to develop learners' engagement and ownership of design approaches. Different design materials and techniques will be explored in either group or pair work or individually. Learners will be shown how processes can be applied to design costumes, set, props, lighting and sound for theatre and/ or TV. Learners will develop their understanding of the characteristics of the different materials through practical workshops. For assessment purposes learners will make personal comment on the characteristics and potential applications of the materials, techniques and processes.

For learning outcome 2, learners will apply the skills that they learnt in the first exploratory design workshops. Learners will develop design ideas in response to a stimulus. The development of ideas will include researching, exploring, planning and progressing design ideas. Learners may create a design element for a theatre performance, a video, a fashion show, or an installation/visual arts event.

For learning outcome 2, learners will demonstrate how to communicate design ideas through 2D and 3D work. This can include the use of scale plans, 2D design sheets and 3D scale models if appropriate to the chosen role. This may include the management of a production team if that is appropriate.

For learning outcome 3, learners will realise their design ideas. They will select and use design skills, processes and approaches that were introduced and developed at the beginning of the unit to complete a design task. Learners will be expected to select, use and show control and management of the design production materials and processes. The management of the process will be assessed; therefore through practical work, meetings and appropriate planning materials learners must demonstrate that they can plan their time and can work steadily through the process The design task may be for costume, prop, puppet, lighting, sound, or set design and construction. For learning outcome 3, learners will be introduced to essential health and safety practice for the puppet maker and operator. Learners will then demonstrate their understanding of appropriate health and safety practice in all unit assignments.

For learning outcome 4, the final grading criteria relates to the learners ability to reflect on the design process as they have experienced it in this unit. Their reflection will comprise their thoughts on their understanding of the materials, the skills and process that they have applied. The use of peer witness statements, lecturer observation records, annotated photographs of the process and the final performance will provide a useful account of the process.

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 unit and the structure of the programme, lecturer lead whole class. Assignment introduction.

Assignment 1: Design Fundamentals - P1, M1, D1

Learners are Introduced to the different design materials, processes and techniques, at this introductory stage the learners will learn about how these processes can be applied to design for costume, set, props, lighting, make-up and sound for theatre and/or TV.

Assignment 2: The Creative Spark - P2, M2, D2, P3, M3, D3

This assignment focuses on the following:

The first element is for learners to research and develop design ideas in response to a given stimulus.

Secondly learners are taught and given the opportunity to apply the skills to communicate design ideas, this will include (where appropriate):

- notes and sketches
- design drawings
- 2D design sheets
- scale plans
- scale ground plans
- 3D scale model boxes.

Assignment 3: For Real - P4, M4, D4

This assignment follows on from the previous assignment as the learners work to realise the design ideas developed in the previous assignment. This could be in the creation of a design element; the design element could be for set, costumes, props, puppets etc.

This will include the monitoring and problem solving process that the designer experiences as they work through the design production process.

Assignment 4: For Real (2) - P5, M5, D5

This assignment runs throughout the unit alongside the other assignments. Through the use of a note book and practical demonstration learners will demonstrate an understanding and application of correct health and safety practices.

Assignment 5: In Conclusion - P6, M6, D6

This assignment also runs alongside the other assignments. Learners will use the reflection to be come fully aware of the opportunities, intricacies and pressures of the design process.

Assessment

Learners will initially need a good deal of tutor input during the introduction and exploration of design materials, techniques and processes. As far as possible, learner skill and understanding should be assessed in realistic contexts; tutors may wish to introduce some of the skills through exercises or simulations. Where learners as designer initially practices and subsequently applies researching, planning, designing and realisation skills, the learners will build skills in their confidence in those skills. Learners will be able to demonstrate how to select appropriate materials and to use appropriate communication methods. It would also be useful for some learners to have examples of the different exemplar design material. The intention of the unit is that learners should be able to utilise skills learnt to plan, manage and fulfil a design task.

Health and safety is integral to design and realisation of design elements for the stage or TV, therefore health and safety is integral to the unit.

To meet learning outcome 1: evidence for assessment will include work produced by learners in the introductory workshops. Lecturer, peer and self observations and evaluations will provide suitable evidence. Learners' understanding of the process may also be evidenced by learner reflection on the process. Materials, techniques and processes could be evidenced through a questionnaire written by the learner, written or visual response to research findings, or a presentation to the rest of the group. To ascertain individual understanding the tutor can use question and answer to validate individual understanding. However the learners' understanding is evidenced, it must be shown that learners understand the characteristics of different performance materials, techniques and processes and their potential for performance use as well as the role of the design elements in creating a performance environment.

To meet learning outcome 2 learners will provide evidence that demonstrates an understanding of how to develop design ideas in response to a stimulus. The stimulus may be given to, or chosen by the learner. Learners will evidence research processes and the ability to develop ideas using a range of research sources. Research and design development work will be evidenced by photographs, drawings and written evidence that details methods and materials. Some evidence may be collected by tutor and peer witness statements and peer and self evaluation. Learners will demonstrate the ability to communicate design intentions; the skills will include, for example, notes and sketches, scale plans, ground plans, design development drawings, construction guidance sheets, cutting guidance, patterns, painting/decoration guidance sheet and 3D models. Learner reflection will comment on the development of the learner's design communication skills; this may be in a reflective journal, presentation, notes, diagrams.

To meet learning outcome 3 the learners will demonstrate and evidence the skills and understanding that they have learnt. Learners will demonstrate the ability to select, use and show control and management of the design production materials and processes. Work for this outcome will also demonstrate a successful management of the process in practical work, meetings and appropriate planning materials; learners will demonstrate that they can plan their time and work steadily through the process. Learners will demonstrate their understanding in a reflective logbook. Some evidence may be collected by the teacher; this could be in the form of videos, photographs, witness statements, observation records and peer and self evaluation. Learners must demonstrate their understanding of the importance of health and safety. Assessment will be informed by learners demonstration of appropriate health and safety practice in all practical work. Learners will support this with on-going written reflection on their application of correct health and safety practice. Good health and safety practice can also be recorded to support assessment sessions by peer observation, tutor observation records or witness statements.

To meet learning outcome 4 learners will demonstrate their understanding through their description, discussion and reflection on their experience of this unit. Their reflection will comprise their thoughts on their understanding of the materials, the skills and process that they have applied. The use of peer or lecturer observation records, witness statements, annotated photographs of the process and the final performance will be a useful account of the process. It is important that student reflection and evaluation is

central to the work presented for the final grading criteria.

To achieve P1 learners will describe the characteristics and uses of design materials, techniques and processes. The work may be illustrated with a few useful images and photographs which have some simple annotations. There will be little development of the learner's first statements and ideas. There will be limited investigation of the materials techniques and processes. Learners will be able to recognise what the design elements are and to describe in general detail their role in the production process. Learners responses to tutor's questioning will be short simple sentences that give obvious and briefly considered answers.

To achieve M1 learners will demonstrate a mostly correct understanding of the characteristics of design materials, techniques and processes that is detailed in places. Learners practical work will show that learners appreciates the key limitations and potential of the design materials and processes. Learners will demonstrate some command of the materials skills and processes in their practical work. Learners will explain a mostly competent understanding of their use and application. The work may be illustrated with some useful images and photographs which have some annotations. There will be some thoughtful development of the learner's first statements and ideas. There will be some considered investigation of the materials techniques and processes. Learners will be able capably to recognise what the design elements are and to describe in detail their role in the production process. Learners responses to tutor's questioning will be considered and mostly accurate.

To achieve D1 learners will demonstrate a correct and fully detailed understanding of the characteristics of design materials, techniques and processes. Learners will demonstrate a confident command of the materials skills and processes in their practical work. Learner reflection on the process will critically evaluate their use and application and will make informed conclusions. The work may be thoroughly illustrated with some wholly relevant images and photographs which are fully annotated. There will be some fully considered and insightful development of the learner's statements and ideas. There will be some fully considered investigation of the materials, techniques and processes. Learners will be wholly able to recognise, demonstrate and discuss their accurate and informed understanding of the design elements and their role in the production process. Learners responses to tutor's questioning will be thoughtful, fully considered, accurate and exemplified.

To achieve P2 and P3 learners must be able to show that they are able to develop design ideas in response to a stimulus and to communicate the resulting design ideas. Learners will demonstrate an ability to use limited research processes from obvious sources to develop some design ideas. The research and design findings and the learner's development of design ideas will be simple and show little development from the initial research findings. Learners will demonstrate an ability to communicate the main design intentions in their paperwork, the paperwork will offer some guidance: however, this will be general. As supporting evidence self evaluation on tasks will be outline in detail and show an awareness of the use of the materials, techniques and processes.

To achieve M2 and M3 learners must be able to show that they are able to carry out some capable exploration of design ideas, that they can develop design some interesting ideas in response to a stimulus and can communicate some important detail of the resulting design ideas. Learners will demonstrate an ability to plan and carry out a programme of useful research using range of sources. Learners will demonstrate an ability to develop some thoughtful design ideas. The research design findings and the learner's development of design ideas will be detailed in places and show some considered development from the initial research findings. Learners will demonstrate an ability to communicate a detailed representation of the design intentions in their paperwork; the paperwork will offer some thoughtful guidance. As supporting evidence self evaluation on tasks will be detailed in places and show an considered awareness of the use of the materials techniques and processes. Learner reflection will make some thoughtful observations on the research process and the development of the learner's design communication skills.

To achieve D2 and D3 learners must be able to show that they are able to carry out a thorough and successful exploration of design ideas. Learners must also show that they can develop and use interesting, accurate and informed detail to communicate fully considered design ideas. Learners will demonstrate an ability to plan and carry out a programme of useful and at times innovative research using a range of sources. Learners will demonstrate an ability to develop some thoughtful design ideas. The design research findings and the learner's development of design ideas will be fully detailed, they will show insightful and considered development of ideas from the initial research findings. The learner's deign ideas will be communicated in full detail; the paperwork will offer thoughtful, informed explanation. As supporting evidence self evaluation on tasks will be thoroughly detailed and will show a fully considered critical understanding of the use of the materials, techniques and processes. Learner reflection will make some insightful, correct and informed observations on the research process and the development of the learner's design communication skills.

To achieve P4 and P5 learners will demonstrate an ability to apply practical design realisation skills, techniques and processes. Learners must be able to show that they have learnt and understood and are capable of selecting and applying some design realisation skills. Learners will have demonstrated simple planning strategies and will have met the final design deadline. The completed design work will produce a design element that meets the main intentions of the design. Learners will demonstrate a simple command of the chosen design skills and materials. As supporting evidence learners will describe the process, problems faced and a description of the materials used. Learners will have demonstrated an awareness of health and safety practice in all practical work as evidenced by witness observation, learners will have made some general reference to health and safety considerations in their account of the process.

To achieve M4 and M5 learners will demonstrate an ability to apply practical design realisation skills, techniques and processes with some success. Learners must be able to show that they have some detailed understanding of the materials and skills required and are capable of selecting and applying design realisation skills. Learners will have demonstrated planning strategies that are realistic and the completion of tasks will have met all design deadlines. The completed design work will produce a creative design element that meets the main intentions of the design and is useable without alteration. Learners will demonstrate a capable command of the chosen design skills and materials. As supporting evidence learners will describe the process, problems faced and a description of the materials used and in addition will explain the reasons for his choices.

Learners will have demonstrated effective health and safety practice in all practical work; learners will have discussed the application of health and safety in their account of the process with some thoughtful explanations.

To achieve D4 and D5 learners will demonstrate an ability to apply practical design realisation skills, techniques and processes in a skilful and creative way. Learners must be able to show that they have a fully detailed understanding of the materials and skills required and are capable of selecting and applying wholly effective design realisation skills. Learners will have demonstrated planning strategies that are fully considered and successfully applied; the completion of tasks will have met all design deadlines. The completed design work will produce an impressive design element that skilfully meets the intentions of the design; the design element will be performance ready. Learners will demonstrate a wholly capable command of the chosen design skills and materials. As supporting evidence learners will offer informed critical judgement on their completion of the process, of the problems faced and a detailed description of the materials used. Learners will have demonstrated wholly effective health and safety practice in all practical work; learners will have justified the application of health and safety in their account of the process with some well informed and thoughtful explanations.

To achieve P6 learners account will describe the learner's understanding in outline detail. There will be some attempts to use correct terminology. The account may include a brief description of the design intentions, design planning, materials, techniques, processes, resource management and team management and interaction. Notes will also include some basic observations about how the skills that they have learnt have been applied. The work may also include images and photographs of the learners completing the process the notes will include some simple annotations. There will be some description of how the processes learnt have been applied.

To achieve M6 learners must be able to show that they are able to discuss and explain design realisation work confidently making some appropriate use of terminology. The work will be characterised by some thoughtful consideration and descriptions will show some insight and understanding of how the skills learnt have been applied. Learner reflection will draw some considered conclusions. The work will include relevant images, photographs and diagrams which have considered annotations.

To achieve D6 learners must be able to show that they are able to fully discuss design production skills accurately using correct terminology. Distinction level work will be characterised by fully detailed explanations that show an informed insight and understanding of the use of design development and realisation materials, techniques and processes. Learner reflection will draw fully informed and considered conclusions and make insightful observations that discuss the application of the skills that they have learnt. The work will include relevant images, photographs and diagrams which have informed annotations.

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 Pearson assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, M1, D1	Design Fundamentals	Learners will be introduced to different design materials, processes and techniques. Learners will experiment with and explore the characteristics of design development approaches.	Learners will complete an on-going log which reflects on their experience of the process. Learners will produce a handout which details and explains the skills that they have learnt.
		Learners will make their own notes in a logbook, which chronicles their experiences and draws conclusions about the usefulness of materials and approaches. Finally learners will be given some sample scenarios containing certain theoretical design problems. Learners will describe possible ways in which they could tackle the design problems.	Learners will demonstrate their summative understanding in the final theoretical task. The learners completion of practical tasks will also inform assessment.

Criteria covered	Assignment title	Scenario	Assessment method
P2, M2, D2, P3, M3, D3	The Creative Spark	Learners will apply their understanding from the previous assignment in completion of design planning tasks.	Learners will be observed throughout the practical activity and the tutor will complete witness observation sheets.
		Initially learners will research and develop design ideas in response to a stimulus. Secondly learners will communicate their design ideas in accepted formats. This may include some or all of the following: notes and sketches scale plans groundplans design drawings timeplans/schedules 2D sheets 3D sheets.	Learners completed design development ideas and final design communication materials.
P4, M4, D4, P5, M5, D5	For Real	Learners will select and prepare an application for a design role.	Learners will complete two peer evaluations at different stages of the process.
		The design process will be guided by the tutor who manage and run production meetings; learners will be responsible for completing design and making tasks as allocated to them. Learners will keep an individual account of the process and their reflection on the process. Learners will demonstrate their understanding of health and safety for the design process in their logbook and demonstrate an understanding of health and safety in their practical work.	The tutor will complete tutor observation sheets. The final product will demonstrate learner skills, engagement and understanding. Learners describe their experiences, and reflect on the materials, methods and skills learnt in a logbook. Learners include health and safety reflection in their logbook.

Criteria covered	Assignment title	Scenario	Assessment method
P6, M6, D6	In Conclusion	This assignment is a summative overview of the learner's experience of the design production process. This evaluation refers to the logbook completed for the previous assignment and encourages learners to draw conclusions about what they have learnt.	The learner's contribution to the group evaluation. Learners completion of a SWOT analysis. Teacher learner 1:1 viva about the success of the final product. An individual written evaluation.

Links to other BTEC units

This unit forms part of the BTEC Performing and Production Arts sector suite. This unit has particular links with the following unit titles in the BTEC Performing and Production Arts suite:

Level 1	Level 2	Level 3
		Production Arts Planning
		Scenic Painting
		Designing Costumes for Performance
		Stage Design for Performance
		Prop Making
		Period Props
		Puppet Design
		Puppet Construction

Essential resources

All workshop spaces must be suitably equipped with appropriate tools and materials that will enable the planning and realisation of design elements, this will require a dry design space where learners can draw and develop design ideas, a set construction space, a set painting space and a costume wardrobe. Learners would be best served by access to suitable reference materials; this includes books, journals, magazines and computers with internet access. The space will need appropriate storage space. The workshop must meet current health and safety guidelines and offer suitable lighting and ventilation. Learners will require access to a range of design planning and making materials; this should include access to painting and drawing materials and card for experimentation with possible construction methods. The learners will need a suitable room in which to present their final designs; this space should have IT presentation resources.

Employer engagement and vocational contexts

Watching and evaluating productions can inform and support learner research work. This can be achieved through theatre visits or through inviting a touring theatre company to your centre. Centres should work to develop links with any local theatre companies, professionals or receiving houses. Backstage tours in repertory theatres are very informative. Trips to the larger city based museums are also recommended.

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	researching the characteristics of different design materials techniques and	
	processes	
	developing design ideas in response to a stimulus	
Creative thinkers	developing design ideas in response to a stimulus	
	communicating design ideas	
	using methods materials and processes to realise design ideas	
Reflective learners	using reflection on learning to describe and evaluate the skills learnt in the	
	realisation of the design element	
	understanding and applying health and safety to the design realisation process	
Team workers	realising design production element as a member of the design production	
	team	
Self-managers	showing responsibility to agree and complete design realisation skills	
Effective participators	using skills and understanding to make a design production element.	

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	using a design planning package to plan costume or set designs
English	
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	completing written reflective log.