

Unit 7: Design Methods in Art and Design

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| Unit code: | T/502/4976 |
| QCF Level 3: | BTEC National |
| Credit value: | 10 |
| Guided learning hours: | 60 |

● Aim and purpose

The aim of this unit is to enable learners to develop skills and understanding of the design process and skills in applying this in the creation of art and design work.

● Unit introduction

When developing designs to meet the requirements of a brief, the development cycle used is vital in ensuring effective outcomes. The application of a design methodology will ensure that all significant factors are considered structured way. Designers need to be able to develop and communicate their ideas and concepts through 2D and 3D skills. It is important for learners to develop the necessary knowledge, skills and understanding to enable them to communicate their intentions effectively.

In this unit learners will develop an understanding of the importance of using the appropriate methods to achieve their creative intentions. They will develop ideas and focus concepts within the confines of specific briefs. They will learn to communicate their ideas and intentions professionally, through visual and verbal communication and the consultation process.

Briefs should be written and presented in a vocational context, providing opportunities for learners to work on realistic scenarios and outcomes. Projects can be set in both 2D and 3D areas to meet the specific needs of learners.

Learners will develop the necessary research and analysis, synthesis, and time management skills, as well as teamwork and organisational skills. They will be introduced to the design development cycle through specific project briefs.

Learners will need to be aware of legal constraints, such as copyright, building regulations and health and safety issues associated with specific materials, techniques and practices, which impact on their proposals.

The unit gives learners the opportunity to explore all areas of visual communication, including mind mapping, concept sketches, experimental and scale modelling, proofs, mood boards, colour/sample boards and final presentations.

● Learning outcomes

On completion of this unit a learner should:

- 1 Understand the design development process
- 2 Be able to use the design development process in own work
- 3 Be able to communicate ideas and intentions clearly
- 4 Be able to work safely with others

Unit content

1 Understand the design development process

Analysis and clarification of the brief: requirements eg specifics, restrictions, discussion, definition, clarification

Planning: timeline eg design stages, organisation, meeting schedule; allocation eg time, resources, research, development, implementation, revisions, contingency, presentation

Consultation: eg clients, end users, interested parties, colleagues

Process: research eg work of others, similar context, comparisons, historical, contemporary, other contexts; working methods eg traditional, non-traditional, materials, techniques, examples of design work; initial ideas eg ideas generation, mind mapping, mood boards, concept sketches, exploratory, working models, alternative solutions

Design concepts: eg 2D visuals, proofs, mock-ups, maquettes, samples, test pieces

Review and modification: eg discuss, select, reject initial ideas, propose, alter, implement

Final outcome: eg artefacts, designs for production, prototypes, presentation of designs in response to brief

Evaluation: effectiveness eg time management, outcome(s) against brief, strengths, weaknesses

2 Be able to use the design development process in own work

Identify and clarify design opportunities: consult eg clients, colleagues, end users

Develop ideas in response to research and the brief: record ideas eg written notes, records of collaboration, sketches, concept models; modify initial ideas eg alternative materials, stylistic alterations, physical alterations; produce experimental models, scale models

Produce effective design solutions: innovation; sustainability; alternative options; consultation eg feedback, clients, other users; solutions eg select, preference, requirements of the brief

3 Be able to communicate ideas and intentions clearly

Consult with clients and others: verbally; using appropriate language (professional terms, conventions, written and spoken)

Review feedback: comments; review proposals; revise proposals

Communicate intentions: visually eg creative visuals, models, technical drawings, clear annotations, proofs; diverse methods; develop online communication skills eg video conferencing, webcams, online collaboration, electronic proofing

4 Be able to work safely with others

Work within health and safety and other legal constraints: eg building regulations, Disability Discrimination Act (DDA), copyright law, Control of Substances Hazardous to Health (COSHH); safe operation of tools and equipment; maintaining a safe studio environment

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 describe the design development process [IE, CT, TW, SM, EP] | M1 consistently show a clear understanding and effective application of the design process | D1 show independence and creativity in the safe application of the design process, producing professional outcomes based on highly-focused research and collaborative development of ideas. |
| P2 use the design development process in own work [IE, CT, RL, TW, EP] | M2 use verbal and visual communication with others confidently and effectively. | |
| P3 communicate ideas and intentions clearly [CT, RL, TW, SM, EP] | | |
| P4 work safely with others. [CT, 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.

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

Delivery

This unit offers tutors and learners opportunities to engage with internal and external professional briefing activities, working to current professional practice and using a wide range of media, materials and processes. Tutors should use realistic and/or actual scenarios to motivate, inspire and stimulate learners. By developing industry links, learners can benefit from opportunities to communicate their innovative ideas and proposals in a professional context.

This unit has been designed so tutors can engage learners in realistic projects through the presentation of professional briefs. Projects should be set to reflect current professional practice. Depending on the choice of specialist area, projects should be set so that learners use a wide range of media, materials and processes. Tutors should use a wide range of realistic scenarios in order to motivate, inspire and stimulate learners.

This unit should be delivered through a practical programme, so learners gain an understanding of design methods through experience rather than theory. In particular, learners should have enough exposure to professional practice to recognise the significance of using a methodical approach to solving design problems, particularly within a team.

It is equally important to show that there is no one method or design process that can be applied to all creative work. There is a difference between the free exploration and origination of ideas, and how they can be developed to meet specified design requirements.

Health and safety issues relating to work in studios, workshops and relevant specialist areas, should be emphasised and documented throughout. Learners will need to be guided through current legislation such as the Disability Discrimination Act (DDA), building regulations and copyright laws.

Learning outcomes 1 and 2 are closely linked and give learners the chance to learn from experience. They cover the concept of design development in response to a given brief, the recording of initial ideas, the discussion of ideas with other parties, and the alteration and improvement processes used in response to these. Learners will need to participate in analysing and questioning the brief's directives.

Learning outcome 1 covers work sequences, time management, setting and meeting targets within deadlines, adapting to new demands when they arise, and organising resources when planning and developing work. Learners will also learn how, through research, to select, find and use relevant information and reference materials. Learners will review work in progress and implement modifications to improve their design ideas.

For learning outcome 2, learners will demonstrate their understanding of the design cycle through responding to briefs. The briefs should be structured to enable learners to develop their understanding of the design cycle and their ability to apply it in a variety of different contexts.

Learners should also be encouraged to question their own and others' outcomes at all stages. Learners should test their outcomes through prototypes, proofs, maquettes or other appropriate pre-production models and mock-ups. Part of their development could involve producing a reflective practice model, which could be implemented across all units at all levels.

Learning outcome 3 covers the communication of ideas through appropriate methods. This is fundamental to the design profession and learners should be given opportunities to communicate their ideas in a number of formats. They should be taught to use suitable written and verbal language and to communicate through both 2D and 3D representations, as appropriate. Learners need to learn how to work constructively with others. They need to develop appropriate communication skills in order to use language clearly, creatively, accurately and effectively.

Learning outcome 4 covers professional practices and legal requirements. Learners should be taught where to seek legal documentation relevant to their specialist design area. Learners should also be taught what legislation relates to their chosen specialism and how it restricts work within specific briefs.

Learners will need to be made aware of up-to-date health and safety legislation. They will need to use their understanding to maintain a safe, healthy and secure environment and to act responsibly themselves and with others in their team.

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 unit content Project briefing (which may involve clients from outside) Briefing analysis and clarification Identify design process methods in briefing context |
| Assignment 1: Researching the Design Process Project brief Project planning, applying design methods to assigned tasks Outline research proposals Plan resources for concept development, presentation methods Establish timelines, to include internal and external design reviews, presentation(s), revisions, evaluations Produce report on design process in three examples across the sector |
| Assignment 2: Show How the Design Process Works in Own Work Structure research strategy Analyse own work Consider application of design process in own working methods Research historical, contemporary and topical contexts Consider methods of recording and illustrating research and analysis Implement process and record evidence independently |
| Assignment 3: Client Brief: Design and Make a Storage Container Develop clear methodology for 2D and 3D design concepts and making process Produce models Present interim design proposals to individuals, team and tutors using a range of visual and verbal techniques Implement reflective practice model to review interim presentation outcomes |
| Learner independent working Agree revisions and confirm any variations Implement revisions and any variations Present final project proposals |
| Review of unit and assessment |

Assessment

For P1, learners will be expected to demonstrate their awareness and understanding of the factors that affect the design development process. They will need to analyse and respond to a brief, as well as analyse and evaluate their own design process showing which factors influenced development. There will be significant tutorial input.

For P2, learners need to produce effective design solutions, to a given brief, as a result of the development cycle. Learners will need to support changes made to their initial ideas. Assessment evidence for P1 and P2 should come from practical work and include written analysis and evaluation as well as design visuals. There will be significant tutorial support and guidance.

For P3, learners need to communicate ideas and intentions at all stages of the design development cycle. As well as practical work, assessment evidence might be generated through correspondence, witness statements or observation records.

For P4, learners need to work safely and constructively with others. Again, assessment evidence could come from witness statements and observation records, as well as from practical work.

For M1, learners should be able to consistently demonstrate in-depth understanding. At this level learners will be expected to explore and act on a range of factors that influence design outcomes. They will be expected to develop their ideas thoroughly and produce a variety of prototypes and pre-production fabrications. Learners would also be expected to carry out regular analysis and evaluation throughout the development. Learners should demonstrate a greater independence when planning their work and selecting outcomes to be developed.

M2 requires learners to communicate with others consistently and confidently. Tutors would expect learners to demonstrate greater confidence in all areas of communication.

For D1, research and development should be wide ranging and show that learners have responded with clarity to the demands of the brief. The work presented should be of a high standard and clearly show that the design development cycle has been applied to produce professional outcomes. Learners must show evidence of collaboration with own team and others involved in the brief.

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 | Assignment 1: Researching the Design Process | Designer briefed to evaluate of three different design approaches | Portfolio of evidence containing: <ul style="list-style-type: none"> documents, diagrams and recordings which show informed research of design process |
| P1, P2, P3, P4 M1, M2 D1 | Assignment 2: Show How the Design Process Works in Own Work | Ceramicist writing about own working methods for an exhibition catalogue | Portfolio evidence of a range of: <ul style="list-style-type: none"> mixed media visual and spoken presentations techniques to indicate design process in own work |

| Criteria covered | Assignment title | Scenario | Assessment method |
|--------------------------------|---|---|--|
| P1, P2, P3, P4 M1, M2 D1 | Assignment 3: Client Brief: Design and Make a Storage Container | 3D designer producing storage container for cooking equipment | Portfolio evidence including: <ul style="list-style-type: none"> completed project demonstrating the design process used evidence of working as part of a team health and safety considerations |

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 |
|--|--|--------------------|
| Working to a 3D Brief | Using Ideas to Explore, Develop and Produce Art and Design | Small Scale Design |
| Working to a Visual Arts Brief | Working in the Art and Design Industry | Human Scale Design |
| Investigate Interactive Media Products | Building an Art and Design Portfolio | Large Scale 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
- DES3 Use Critical Thinking Techniques in your Design 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
- DES11 Provide Written Information in Relation to Your Design Work
- DES12 Make a Presentation

- DES14 Explore the History and Social Impact of Creativity and How it can Influence Your Own Design Work
- DES15 Research and Evaluate the Nature of Design in a Specific Industry Context
- 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

Interactive Media and Computer Games

- IM9 Provide Creative and Strategic Direction for Interactive Media Projects
- IM16 Plan Content for Web and Multimedia Products
- IM17 Architect Interactive Media Products
- IM20 Design Electronic Games

Photo Imaging

- C1 Contribute to Effective Performance At Work
- C3 Contribute to The Maintenance of Health, Safety And Security At Work
- C6 Contribute to The Development of The Photo Imaging Brief
- D7 Contribute to the Effectiveness of Imaging Activities

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

Learners will need access to a wide range of resources and facilities which will depend on their chosen area of specialisation. Suitable studio and workshop space will enable learners to develop 2D and 3D work. Library, internet and telephone access will allow research and communication. Suitable computer access with relevant software, would enhance the experience and support the achievement of learning outcomes.

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 work experience and future employment. County Councils employer or business units, local industrial and commercial businesses and charitable organisations offer possibilities for providing briefs.

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
- work-based learning guidance – www.aimhighersw.ac.uk/wbl.htm

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

Creative & Cultural Skills (www.ccskills.org.uk), the sector skills council for arts, crafts and design have 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.

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

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

Indicative reading for learners

Textbooks

Bower J – *Introduction to Two-dimensional Design: Understanding Form and Function* (John Wiley & Sons Inc, 1999) ISBN 978-0471292241

De Saumarez M – *Basic Design: The Dynamics of Visual Form* (Herbert, 2002) ISBN 978-0713683660

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

Hickman R (Ed) – *Research in Art & Design Education: Issues and Exemplars* (Intellect, 2008) ISBN 978-1841501994

Pipes A – *Drawing for Designers: Drawing Skills, Concept Sketches, Computer Systems, Illustration, Tools and Materials, Presentations, Production Techniques* (Laurence King Publishing, 2007) ISBN 978-1856695336

Schön D A – *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning, New edition* (Jossey Bass, 1990) ISBN 978-1555422202

Urban Design Associates – *The Urban Design Handbook: Techniques and Working Methods* (W W Norton & Co, 2003) ISBN 978-0393731064

Journals

Design Journal

Design Week

Reflective Practice

Websites

www.design-council.org.uk the national strategic body for design in the UK

www.designmuseum.org website of the Design Museum, dedicated to contemporary design

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 | planning and carrying out research into specialist projects |
| Creative thinkers | exploring the design process and generating ideas |
| Reflective learners | reviewing, reflecting on and evaluating own and others' work |
| Team workers | collaborating with other to develop ideas, concepts, proposals, techniques and processes |
| Self-managers | organising time, planning resources, handling budgets when working to a specialist project brief, whether working on own or as part of a design team |
| Effective participators | allowing for own and others' requirements and proposals to be respected, considered, reviewed and actioned where appropriate. |

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 | planning and carrying out research into the design process and methodology carrying out research to implement design methods in own design work |
| Creative thinkers | trying out alternative ways of developing their concepts, following ideas through to complete a design brief adapting their ideas as circumstances change |
| Reflective learners | setting goals, with success criteria, for their design work inviting feedback on their own work and dealing positively with praise, setbacks and criticism evaluating their experiences and learning to inform future progress |
| Team workers | working as part of a design project team, taking responsibility for their own role managing discussions to reach agreements and achieve results |
| Self-managers | seeking out challenges or new responsibilities and showing flexibility when priorities change dealing with competing pressures, including personal and work-related demands responding positively to change, seeking advice and support when needed |
| Effective participators | implementing opportunities, during a project schedule, to allow for own and others' requirements and proposals to be respected, considered, reviewed and actioned where appropriate allowing project scheduling to encompass implementation of action points. |

● 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 | researching the design development process |
| Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used | planning for a design project |
| Manage information storage to enable efficient retrieval | developing appropriate methods of storing visual and written materials relating to the design project |
| Follow and understand the need for safety and security practices | creating and finding appropriate materials, techniques and processes, and adapting them for use |
| Troubleshoot | exploring, extracting and assessing the relevance of information from design-related specialists and associated sources |
| ICT – Find and select information | |
| Select and use a variety of sources of information independently for a complex task | creating and finding appropriate resources, materials, techniques and processes, and adapting them for use in a design project |
| Access, search for, select and use ICT-based information and evaluate its fitness for purpose | exploring and assessing the relevance of information from design-related websites |
| 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 | sourcing, evaluating and testing appropriate information to influence ideas, underpin proposals and enable safe use of media, techniques and processes |
| Bring together information to suit content and purpose | implementing design proposals, bringing together a variety of ideas, concepts, materials, techniques and processes gathered through research and development |
| Present information in ways that are fit for purpose and audience | using specialist media, techniques and processes to present design proposals |
| Evaluate the selection and use of ICT tools and facilities used to present information | evaluating the appropriate use of tools and software in the design development and presentation of 2D and 3D design proposals |
| Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists | communicating with other members of a design team |

| Skill | When learners are ... |
|--|---|
| Mathematics | |
| Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations | using appropriate calculations and tests to develop creative ideas and eventual project proposals |
| Identify the situation or problem and the mathematical methods needed to tackle it | considering a range of techniques, processes and materials which can be investigated through mathematical calculation |
| Select and apply a range of skills to find solutions | considering appropriate media, techniques, processes and specialist skills needed, to implement design development and project proposals |
| Use appropriate checking procedures and evaluate their effectiveness at each stage | implementing the appropriate project reviews to evaluate concepts and proposals |
| Interpret and communicate solutions to practical problems in familiar and unfamiliar routine contexts and situations | implementing a range of specialist techniques, processes and materials which have been proven through mathematical calculation |
| Draw conclusions and provide mathematical justifications | evaluating, analysing and recording findings and results of mathematical testing in a design context |
| English | |
| Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts | being a part of design project review and critiquing or presenting conclusions attending production meetings |
| Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions | reading information gathered from a range of visual, written and electronic sources to gather ideas, influence development and affect proposals |
| Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively. | recording written research, analysis and evaluation producing design project reports which confirm ideas and proposals effectively and persuasively. |