

Unit 19: Photography Media, Techniques and Technology

Unit code:	K/602/0739
QCF Level 3:	BTEC National
Credit value:	10
Guided learning hours:	60

● Aim and purpose

This unit aims to introduce learners to the skills and knowledge associated with photography media, techniques and technology and how these can be applied in practice. It is designed for learners in centre-based settings looking to progress into the sector or onto further/higher education.

● Unit introduction

Photographers use a range of skills when working professionally, which they will have developed over a period of time through learning and personal experience. A photographer's choice of materials, techniques and technologies will often give their work a unique identity or recognisable character. In some ways, this becomes the photographer's trademark. Many of these materials, techniques and technologies have health and safety guidelines relating good working practice and photographers need to be aware of these and also of any changes and updates. This knowledge allows them to minimise the potential of harming themselves and others.

Professional photographers use digital photography equipment and processes extensively in studio photography and design-related work. In this unit learners can explore some of the qualities of both wet-based and digital photography.

Learners will be encouraged to investigate a range of different photographic materials, media, techniques and associated technologies. The emphasis will be on practical exploration, with learners working through as wide a range of media as possible. In working directly with materials and processes, learners will be able to form responses and reach conclusions about the characteristics and properties of photographic media. This will help them choose working practices that are appropriate to their intentions, and that best suit their creative interests.

Learners will be taught how to use equipment and materials safely. They will need to keep a record of all relevant health and safety guidance and show an awareness of legislation that applies to activities in this area. In this way they will build up a valuable store of important information. The unit also gives learners the opportunity to explore the similarities and differences between wet-based and digital photography. They may be able to use film and digital single lens reflex (SLR) cameras to experience the similarities, such as aperture, shutter and priorities. They may also be able to experience the differences by processing and printing wet-based black and white photographic images, and comparing this with downloading digital-based imagery and using image manipulation software to produce the images.

As learners progress through the unit they will evaluate and analyse their working practices. They need to describe the properties and working characteristics of the photographic media that they have used and explored. They will review their work in terms of the visual impact of any final piece/s, use of techniques, and other relevant aspects such as adherence to health and safety guidelines. This will give them an opportunity to gain valuable insights into photographic media and techniques, and form conclusions about their preferences in photography.

● Learning outcomes

On completion of this unit a learner should:

- 1 Be able to investigate photographic materials and processes
- 2 Be able to use photographic materials and processes safely
- 3 Understand the characteristics and properties of photographic materials
- 4 Be able to evaluate their use of photographic materials and processes.

Unit content

1 Be able to investigate photographic materials and processes

Photographic materials: eg black and white film, colour film, photographic paper, film and paper processing chemicals, light sources, spotting dyes and inks, toning chemicals, photo-finishing media, digital cameras, automatic cameras, image handling software, output devices, printers

Photographic processes: eg using 35 mm (SLR) film camera, using digital SLR camera, image manipulation, exploring different lenses, capturing movement, calculating exposures, black and white film processing, black and white printing, photo finishing, image transfer, darkroom techniques

2 Be able to use photographic materials and processes safely

Health and safety: eg apply safe working practices when using a darkroom, Health and Safety at Work Act (1974), the Control of Substances Hazardous to Health (COSHH) Regulations (2002), the Provision and Use of Work Equipment Regulations (1998), Health and Safety (Display Screen Equipment) Regulations 1992, basic risk assessments

3 Understand the characteristics and properties of photographic materials

Characteristics and properties: eg film types, film speeds, variations in photographic emulsion coatings, studio lighting, available lighting, alternative lighting equipment, flash, torches, properties of different film processing chemicals, pushing and pulling film when processing, different photographic papers, resin coated, fibre based, different filters when printing in black and white

4 Be able to evaluate their use of photographic materials and processes

Evaluate: eg suitability of materials for specific purposes, responses to tests and experiments, different characteristics of materials, use of techniques, control of lighting, qualities of black and white film and printing, qualities of different colour films, hue, saturation, comparison between wet-based and digital-based image production, use of tools in image manipulation software, cropping, adjusting levels, contrast, visual impact, use of formal elements, line, colour, contrast, pattern, shape

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 investigate photographic materials and processes [IE, CT]	M1 investigate a diverse range of photographic materials and processes effectively	D1 use a comprehensive range of photographic materials and processes safely and fluently
P2 use photographic materials and processes safely [IE, TW]	M2 use a diverse range of photographic materials and processes safely and skillfully	
P3 describe the characteristics and properties of photographic materials [IE, RL, CT]	M3 consistently understand the characteristics and properties of a diverse range of photographic materials	D2 independently evaluate their use of photographic materials and processes, making recommendations for improvement.
P4 evaluate their use of photographic materials and processes [IE, RL, CT, EP]	M4 coherently evaluate their use of photographic materials and processes.	

PLTS: This summary references where applicable in the pass criteria, in the square brackets, the elements of the personal, learning and thinking skills. 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

Delivery of this unit will involve practical assessments, written assessments, visits to suitable collections and will link to work experience placements.

This unit gives learners the opportunity to explore film and digital-based photographic equipment and processes. These two areas can be studied separately or combined to allow learners to compare the qualities and characteristics of each medium. Learners should be encouraged to develop personal approaches to exploring the media and processes.

For learning outcome 1, learners should be taught how to investigate photographic materials and processes. Learners will need to use a range of skills to work with confidence. To support or reinforce this, tutors may need to demonstrate techniques and the use of equipment. The extent of any demonstrations will depend on learners' prior knowledge. As the learning outcome focuses on investigation, tutors will need to provide as broad a range of materials, equipment and processes as are available in the centre. Learners will then be able to compare and contrast the properties of specific materials and the associated techniques. Tutors will need to decide on the balance between the amount of wet-based and digital photography that they deliver. In using cameras and considering visual elements, such as composition and contrast, the two areas can be delivered together. When learners are producing their images, different processes and technologies can be applied. It may be beneficial to allow learners to experience both wet-based and digital image production, so they are able to consider specific qualities based on personal experience. As learners develop their work they should record their ideas and observations in their work journals or sketchbooks.

Learning outcome 2 is integral to the delivery of learning outcome 1. As learners are exploring and investigating the properties and characteristics of photographic materials they will need to learn how to work safely. There are a number of hazards associated with wet-based photography which learners need to be aware of. They should also record any health and safety induction notes given by tutors. In relation to legislation, learners should consider the information contained in the unit content.

There are obvious hazards such as exposure to fumes and chemicals. There are also a number of factors that, whilst not obvious, can still be potentially hazardous, such as working in low-lit darkrooms, using lighting equipment that is hot and using extension cables. There are also hazards associated with using screens and display equipment when working digitally. Learners should present notes and relevant health and safety information for assessment.

Learning outcome 3 also links to learning outcome 1 in that it involves learners developing their knowledge and understanding as they carry out their investigative work. As they explore materials, techniques, technology and processes they will need to record their observations and ongoing evaluations. These should show what they have learned about the working characteristics and properties of the media and techniques, as well as how they think they could apply them in future work. Tutors may support this by holding short group critiques where learners discuss their responses, or in one-to-one tutorials where learner progress is discussed.

For learning outcome 4, learners should evaluate their photographic experiences. This can be delivered to conclude the unit, but it may be beneficial to use a system of ongoing evaluation to support this process. Learners should record the successes and areas for development in their work. They may consider how they have used techniques, the skills they have learned, the understanding they have gained about the different media and processes in photography, and any personal preferences.

They should also evaluate their use of formal elements such as composition and contrast. Evidence could be in the form of notes and observations in sketchbooks or work journals, tutor observation of group critiques, and one-to-one tutorials.

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 gives **an indication of the volume of learning it would take the average learner** to achieve the learning outcomes. It is **indicative and is one way of achieving the credit value**.

Learning time should address all learning (including assessment) relevant to the learning outcomes, regardless of where, when and how the learning has taken place.

Topic and suggested assignments/activities and/assessment
Introduction to unit – relevance of unit and links to other units.
Assignment 1: Workbook Journal (P1, M1, P3, M3)
Theory – investigating photographic materials and processes.
Assignment 2: Using photographic materials and processes safely (P2, M2, D1)
Theory – using photographic materials and processes safely.
Practical – investigating photographic materials and processes.
Practical - using photographic materials and processes safely.
Theory – understanding the characteristics and properties of photographic materials.
Practical - understanding the characteristics and properties of photographic materials.
Assignment 3: Evaluation of Photographic Materials and Processes (P4, M4, D2)
Theory – evaluating photographic materials and processes.
Assessment – presentation of workbook and evaluations.
Unit review.

Assessment

Work at pass level will show a suitable sense of enquiry and investigation. The range of materials and techniques considered will be appropriate.

For P1, learners will investigate photographic materials and processes. They will show a basic understanding of the properties of the different media and be able to work through a series of different techniques.

For P2, learners will use photographic materials and processes safely. They will be able to explain the hazards related to the different processes and any specific equipment. Records in sketchbooks and/or work journals will be clear and concise.

For P3, learners will understand the characteristics and properties of photographic materials. They will be able to explain clearly what they have learned. The range of selected photographic materials and techniques will be appropriate.

For P4, learners will evaluate their use of photographic materials and processes. They will show an understanding in being able to recognise strengths and areas for development in their work and how they developed their photographic skills.

Work at Merit level will show an effective approach. Investigations will be carried out into a wider range of material and techniques.

For M1, learners will investigate a diverse range of photographic materials and processes effectively. The investigations will yield more effective results than for the pass grade. Learners will demonstrate consistent skills in using different photographic equipment.

For M2, learners will use a diverse range of photographic materials and processes safely and skillfully. There will be a consistent approach shown throughout the unit, and learners will be able to apply understanding gained in previous investigations.

For M3, learners will consistently understand the characteristics and properties of a diverse range of photographic materials. Learners will record their knowledge consistently. They will form coherent conclusions about the properties of the materials.

For M4, learners will coherently evaluate their use of photographic materials and processes. Learners will be consistent in the way they extract information from their work and reach considered conclusions.

Work at this level will show a greater sense of innovation and originality. Learners will be able to perform all the tasks within the assignment/s with fluency. Investigations will be comprehensive.

For D1, learners will use a comprehensive range of photographic materials and processes safely and fluently. Learners will be able to work with materials to discover their potential. Techniques will be used fluently and knowledge gained will inform further application of techniques and choice of materials.

For D2, learners will independently evaluate their use of photographic materials and processes. They will show an in-depth understanding of how they have learned through investigating media and techniques. They will be able to identify the strengths and areas for development in their work, perceptively.

Programme of suggested assignments

The following table shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the 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, M1, P3, M3	Workbook Journal	You work for a trade magazine taking photographs of various industry- related items. You need to create a reference workbook showing photographic materials and processes and the different characteristics and properties of these photographic processes.	Workbook. Sketchbook. Website. Presentation. Essay. Report.
P2, M2, D1	Using Photographic Processes Safely	You work in the training department where members of staff use photographic processes regularly. You need to create a guide for them showing how to use these processes safely.	Posters. Presentation. Leaflet. Booklet. Podcast.
P4, M4, D2	Evaluation of Photographic Materials and Processes	You are the manager in charge of a website promoting various industry products. You need to be able to evaluate the use of a range of photographic processes to ensure that you have the highest quality images for inclusion on your website.	Presentation. Workbook journal. Mood boards. Essay.

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

This unit forms part of the BTEC land-based sector suite. This unit has particular links with:

Level 2	Level 3
Undertake Basic Floristry Display Techniques	Plan, Prepare and Assemble Diverse Wedding Designs
	Plan, Prepare and Assemble Diverse Sympathy Designs
	Plan, Prepare and Assemble Diverse Tied Designs
	Plan, Prepare and Assemble Diverse Accessories and Novelty Designs

Essential resources

Learners will need access to specialist studios. There should be adequate space for learners to explore aspects of studio lighting at an introductory level. They should also be able to work through black and white film processing and printing in a dedicated black and white darkroom. Learners will also need access to computers to obtain some of the information on health and safety issues and legislation.

Indicative reading for learners

Textbooks

Berger J – *Ways of Seeing* (Penguin BBC, 1990) ISBN 9780140135152

Hirsch R – *Exploring Colour Photography, 3rd Edition* (McGraw-Hill Education, 1996) ISBN 9780071224253

Ingledew J – *Photography* (Laurence King, 2005) ISBN 9781856694322

Jeffrey I – *Photography: A Concise History* (Thames & Hudson, 1981) ISBN 9780500201879

Jeffrey I – *The Photography Book* (Phaidon Press, 2000) ISBN 9780714839370

Langford M – *Advanced Photography, 5th Edition* (Focal Press, 1998) ISBN 9780240514864

Langford M – *Basic Photography, 6th Edition* (Focal Press, 1997) ISBN 9780240514857

Parr M and Barker N – *Signs of the Times* (Cornerhouse, 1992) ISBN 9780948797910

Sontag S – *On Photography, 6th Edition* (Penguin, 1979) ISBN 9780140053975

Journals

British Journal of Photography – Incisive Media

Portfolio – *Portfolio Photography Workshop* – Edinburgh Ltd

Websites

www.hse.gov.uk Health and Safety Executive

www.opsi.gov.uk Office of Public Sector Information

Delivery of personal, learning and thinking skills (PLTS)

The following table identifies the PLTS opportunities that have been included within the assessment criteria of this unit:

Skill	When learners are ...
Independent enquirers	investigating and using photographic materials and processes describing and evaluating photographic processes
Creative thinkers	investigating and using photographic materials and processes describing and evaluating photographic processes
Reflective learners	describing and evaluating photographic processes
Team workers	using photographic processes safely
Self-managers	using a range of photographic processes safely
Effective participators	evaluating their use of photographic materials and processes.

Although PLTS opportunities 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	researching photographic materials and processes
Creative thinkers	developing an understanding of how the unit is relevant to their industry
Reflective learners	improving their knowledge of photographic materials and processes and how they can be utilised fo best effect
Team workers	working together to use a range of photographic materials and processes
Self-managers	developing time management skills during practical sessions
Effective participators	contributing to discussions and giving feedback to peers.

● 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	describing photographic materials and processes
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	
Manage information storage to enable efficient retrieval	saving work for assessment over a period of time
Follow and understand the need for safety and security practices	
Troubleshoot	
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	developing reports and presentations
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	using photographic materials and processes
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 	investigating and using photographic materials and processes developing presentations and workbooks
Bring together information to suit content and purpose	developing assessment work
Present information in ways that are fit for purpose and audience	developing assessment work and using photographic materials and processes
Evaluate the selection and use of ICT tools and facilities used to present information	evaluating the use of photographic materials and processes
Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists	
Mathematics	
Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations	using photographic materials and processes
Identify the situation or problem and the mathematical methods needed to tackle it	

Skill	When learners are ...
Select and apply a range of skills to find solutions	
Use appropriate checking procedures and evaluate their effectiveness at each stage	
Interpret and communicate solutions to practical problems in familiar and unfamiliar routine contexts and situations	
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	discussing the use of photographic materials and processes
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	investigating photographic materials and processes
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	developing assessment work, presentations posters and reports.