Unit 64: Motion Graphics and Compositing Video

Unit code: M/600/6647

QCF Level 3: BTEC National

Credit value: 10

Guided learning hours: 60

Aim and purpose

The aim of this unit is to develop learners' understanding of motion graphics and compositing video and enable them to produce a range of visual effects on digital video. Learners will achieve this through a study of existing examples of motion graphics, planning and producing a motion graphics sequence, and reflecting on their work.

Unit introduction

Moving image productions frequently feature elements of graphic design for the screen. For example, television stations are frequently branded with an animated logo between shows, caption bars on documentaries and news features can animate on and off the screen, title sequences often mix still with animated and moving images, and DVD interfaces use combinations of animated graphics and typography with digital video sequences. It is also common to see visual effects applied to moving image sequences in a wide range of productions.

Motion graphics techniques are used to create these sequences. This unit gives learners the opportunity to develop skills in motion graphics by planning and producing a motion graphics project. These techniques take learners beyond shooting and editing video into more complex and sophisticated post-production techniques.

Project planning is important and in motion graphics this covers generating ideas, making decisions about graphical content, and storyboarding the way this integrates with moving image. Work needs to be reviewed for quality throughout, so learners need to be able to assess the appropriateness of what they are producing against the given brief and examine its technical and aesthetic standards. Learners will need to show evidence of how they have managed their project from the generation of ideas through to acquiring feedback on the finished work. This represents a mapping of the creative and project management processes involved.

The unit begins with investigations into motion graphics, enabling learners to understand the uses of graphics in moving image production. These investigations will cover both visual and technical research. Learners will look closely at existing motion graphics sequences to analyse their design and effects. They will also investigate technologies associated with motion graphics and moving image delivery.

Learners will apply motion graphics software techniques to create their visual material, which will be assessed for both its technical and aesthetic qualities. This encourages learners to produce material that answers the brief imaginatively and is technically suitable for its purpose, which is a good grounding for professional practice.

Learning outcomes

On completion of this unit a learner should:

1 Understand current uses of motion graphics and compositing video

2 Be able to originate and plan a motion graphics sequence

3 Be able to produce a motion graphics sequence.

Unit content

1 Understand current uses of motion graphics and compositing video

Uses: eg DVD interfaces, title and credit sequences, animated captions, stings, idents, interactive menus, web banners

Characteristics: graphics; movement; visual effects

Technology considerations: frame rate; video format; screen ratios; resolution; compression

2 Be able to originate and plan a motion graphics sequence

Specification: client needs; audience; audio settings; video settings; other settings

Develop ideas: brainstorming; storyboards; scripts; legal and ethical considerations

Proposal: content; purpose; target audience; medium of delivery

Planning: importance of planning; time management; deadlines

3 Be able to produce a motion graphics sequence

Software techniques: importing; composition; frame size; resolution; copy and cut key frames; key frame assistant; rasterising; motion paths; interpolation; drop shadows; effects; layers; adjustment layers; masks; mattes; RAM preview; rendering; filters; compression; exporting

Compositing video: layers; uses; blue screen and green screen techniques; compositing software; TV formats (PAL, NTSC); frame rate; resolution; colours; safe area

Workspace: project window; title bar; help; timeline; menus; effects window; custom settings (preferences, general, preview, display)

Production management: scheduling; meeting deadlines; management of resources; working to the client's brief; liaison with clients; client negotiation; quality management; teamworking; presentations

Reflective practice: finished product (compared with original intentions, fitness for purpose, technical qualities, aesthetic qualities, content, style); production skills; ideas generation; planning; preparation; workflow and time management; technical competence; project management; monitoring work in progress; creative ability; own work; teamwork; self-evaluation; comments from others, eg audience, peers, tutors, client; documentation, eg notes, sketches, storyboards, production logs

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 current uses of motion graphics and compositing video with some appropriate use of subject terminology [IE]	**M1** explain current uses of motion graphics and compositing video with reference to detailed illustrative examples and with generally correct use of subject terminology	**D1** critically discuss current uses of motion graphics and compositing video with supporting arguments and elucidated examples and consistently using subject terminology correctly
P2 originate and plan a motion graphics sequence working within appropriate conventions and with some assistance [CT]	**M2** originate and plan a motion graphics sequence showing some imagination and with only occasional assistance	**D2** originate and plan a motion graphics sequence showing creativity and flair and working independently to professional expectations
P3 produce a motion graphics sequence working within appropriate conventions and with some assistance. [SM; RL]	**M3** produce a motion graphics sequence working to a good technical standard, showing some imagination and with only occasional assistance.	**D3** produce a motion graphics sequence to near-professional standards, showing creativity and flair and working independently to professional expectations.

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

This unit is intended to develop learners' understanding of the range of practical applications in motion graphics. Learners must be aware of the use of motion graphics in television and film as well as interactive media applications. Interesting examples of professional work should be viewed and discussions should focus on the purpose and form of the sequences. Learners should be encouraged to investigate the relevant technologies such as video file formats, resolution and compression.

An important foundation for any motion graphics project is ideas generation and planning, so time spent on this away from the computer will pay dividends. Learners must be encouraged to think about how ideas are generated and how to apply techniques such as brainstorming and mood boards. Motion graphics should be clearly devised before production, particularly through storyboards.

Lectures and discussions should be incorporated into the teaching programme as should demonstration classes from practitioners if possible, as people working in the media industries can bring a new perspective to learners' understanding of contemporary practice. Visits to media producers and trade exhibitions would provide valuable experiences for learners.

This is a software skills and knowledge unit and is best taught through demonstrations, discussions and practical projects. Learners must have opportunities to use industry-standard software and to experiment with a wide range of ideas and techniques. They should produce an appropriate motion graphics sequence of an appropriate length.

Workshops and demonstrations are recommended when teaching software applications. Learners should then be encouraged to apply these software techniques to their own assignment work. Learners should monitor and review their work during production, creating a quality control process which will enable them to improve technical and creative decisions. Projects can then culminate in learners reflecting on their work, evaluating both the production processes and the quality of their finished products.

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 of planning the teaching and assessment of this unit.

Topics and suggested assignments and activities
Introduction to unit and unit assessment.
Lecture on uses and characteristics of motion graphics and compositing for video.
Comparison and demonstration of compositing programmes.
Lecture and research on technology considerations in motion graphics.
Small-group investigation of examples of motion graphics.
Lectures on TV formats and compression, frame size, frame rate, resolution.

Topics and suggested assignments and activities
Assignment 1 – Analysis of Examples of Motion Graphics Learners have been asked to give a presentation on motion graphics to a careers convention for 16-year-olds. Learners will cover: • different uses of motion graphics • characteristics of each example referred to • interesting technological issues evidenced in the examples.
Skill building using features of motion graphics and video compositing software including: • introduction to software and workspace • basic compositing exercises using layers • key frames • blue screen/green screen techniques • effects, eg drop shadow, filters • previewing, rendering and exporting.
Introduction to and review of ideas generation and planning.
Assignment 2 – Creating a Motion Graphics Sequence Brief from sci-fi channel to create a motion graphics sequence for the intro sequence of a children's TV pilot. Stage 1 – ideas generation. Learners will: • consider and interpret a creative brief • generate and record ideas • consider the legal and ethical implications of their proposed work • storyboard and script sequence • carry out planning activities prior to production • maintain a development log evidencing their creative work. Stage 2 – produce and review. Learners will: • create/collect materials for motion graphics sequence • undertake production workshop sessions following their planned ideas • maintain a development log evidencing their creative work • obtain feedback on and review their motion graphics sequence • present motion graphics sequence.
Unit learning and assessment review.

Assessment

Evidence for assessment

Evidence for the achievement of learning outcome 1 could be made up of a learner's investigations into, and experimentation with, motion graphics technologies. Notes from lectures, research from the internet, books and periodicals, written reports and case studies, and oral presentations can all contribute to the evidence. Presentations must be recorded for the purposes of internal and external verification.

Achievement of learning outcome 2 could be evidenced through notes on the creative process, including storyboards and sketches, and the planning process, including schedules and minutes of meetings.

Evidence for the achievement of learning outcome 3 should be generated in response to a brief. This brief can either be given to learners or developed by them in negotiation with their tutor. In the latter case, the 'client' should be carefully defined so that learners are able to develop a clear idea of what the specific needs of that 'client' might be. Evidence could be made up of individual notes accompanied by digital documents showing work in progress and the finished sequence, along with tutor observation of software use. Learners could test their work for content and concepts on clients, peers, and target audiences, and test for technical functionality. A reflective development log should cover both the successes of the production processes and the qualities of the finished images.

For some elements of this unit, and for some learners, a formal viva voce assessment might be appropriate. When more than one learner in a cohort is assessed in this way, care must be taken to ensure that all learners are asked equivalent questions, and that all are given equal opportunities to expand or clarify their answers. Interviewers must also ensure that questions are not phrased in such a way as to provide or suggest an answer. Formal vivas should be recorded for the purposes of internal and external verification and at least 50 per cent of such assessments must be internally verified.

Application of grading criteria

When applying the grading criteria, tutors should follow the advice given below. Please note that any examples of evidence given here are indicative only. This advice is not exhaustive and the examples need not specifically be included in a learner's work in order for that learner to achieve the exemplified grade.

Pass

To achieve a pass grade, learners must achieve all the criteria at pass level. For each of the criteria learners must present evidence that addresses each italicised sub-heading of the content for the learning outcome.

P1: learners will describe correctly, and with substantial but not necessarily complete coverage, the key characteristics of motion graphics and compositing video technology and usage. They will accurately identify technical considerations such as file formats and compression. A pass grade learner may note, 'Codecs compress and decompress information to reduce file size which can sometimes cause a reduction in the image quality.' They will also identify the purpose of examples of motion graphics, distinguishing correctly between, for example, title sequences and programme stings. Evidence will show a basic understanding of technical terminology but learners will generally be unsure about this vocabulary and will make fairly frequent mistakes when they do use it.

P2: learners will originate and plan a motion graphics and compositing video project which uses some of the key characteristics of motion graphics and compositing video in simple and conventional ways. There will be limited evidence of the development process, such as basic visualisations.

P3: learners will achieve a finished sequence working with basic motion graphics and compositing video software techniques, but the outcomes will not be exactly as intended. The work on the production will have been purposeful and the outcome will have some shape, some sense of design, or the deliberate application of some technique behind it.

P2 and P3: in terms of the aesthetic or imaginative qualities of their work, learners will not move beyond the conventional, but the conventions applied will be appropriate to the form or genre within which they are working. When engaged in practical activities, learners will need frequent assistance and support, though they will take note of and make use of this help when it is given. If they are in frequent need of such help but fail to make positive use of it, they should not be considered for a pass grade for this unit. Learners will be able to consider their own work in such a way that they move beyond merely describing it. They will make evaluative comments upon what they have done but these comments will be assertions that are not supported by evidence or exemplification, such as, 'I think my motion graphics sequence is very dynamic and would be interesting for young people.'

Merit

To achieve a merit grade, learners must achieve all the pass and all the merit grade criteria. For each of the criteria learners must present evidence that addresses each italicised sub-heading of the content for the learning outcome.

M1: learners will explain the key characteristics of motion graphics and compositing video technology through detailed illustrative, relevant examples which show how particular technologies are used. They will also discuss the purpose of the chosen examples, clearly explaining differences between, for example, title sequences and programme stings. They will accurately discuss technical considerations such as file formats and compression. However, learners will not elucidate their examples to show fully how they illustrate the point they support. For example, a merit grade learner may note, 'Codecs compress and decompress video information to reduce file size by a variety of methods such as spatial compression which uses areas of the same colour and temporal compression which picks up on areas of the image that change. Some methods can cause a reduction in the image quality.' Learners will use technical vocabulary for the most part correctly, but may make mistakes or be unsure about usage at times.

M2: learners will originate and plan a motion graphics and compositing video project which combines the key characteristics of motion graphics and compositing video in an imaginative way, making use of conventions but not slavishly copying them, and reflecting in their ideas an understanding of the form.

M3: learners will achieve a competent finished sequence working with motion graphics and compositing video software techniques, showing facility and some confidence in the application of skills. Work will be approached methodically and with adequate preparation, and processes will be undertaken with care. The work presented will reflect a facility for motion graphics and compositing video production.

M2 and M3: learners will still be working within recognisable generic conventions, but there will be some imaginative thought behind the work so that technical skills and codes and conventions will be employed with some inventiveness. When engaged in practical activities, learners will need occasional support, particularly when dealing with more complex technology or trying to apply more sophisticated techniques. Learners will be able to explain what they have tried to accomplish and how they have worked to try to achieve what they have set out to do. They will be able to explain decisions made and will be able to exemplify these explanations through relevant and detailed reference to their own work, though the examples they give will not be further elucidated. A learner might note, for example, 'I made the text increase in size very quickly, so it would seem like it was jumping out of the screen, to try to make it dynamic and interesting for young people.'

Distinction

To achieve a distinction grade, learners must achieve all the pass, all the merit and all the distinction grade criteria. For each of the criteria learners must present evidence that addresses each italicised sub-heading of the content for the learning outcome.

D1: learners will critically discuss the characteristics of motion graphics and compositing video technologies. They will discuss, for example, title sequences and programme stings, and technical considerations such as file formats and compression with reference to precisely detailed illustrative examples and in such a way as to compare and evaluate the examples given. For example, a distinction grade learner may note, 'Codecs compress and decompress video information to reduce file size by a variety of methods. One example of this is spatial compression which mathematically identifies areas of the image which are the same colour and uses this as a basis for compression. This type of codec works well where images have large areas of flat colour such as animation or images of the sky. Temporal compression on the other hand references the first frame of a scene and then only codes the changes made in each subsequent frame. For example if the clip is a close-up of someone talking where only the mouth and eyes change, a temporal codec only stores information about these areas. Some methods are 'lossy', that is, cause a significant reduction in the image quality, while others are lossless and maintain the image quality.' This fuller and more extensive explanation and provision of argument to support points made, and the higher quality expression, will discriminate between this grade and the merit. Learners will also be able to analyse uses of this technology through examples which illustrate clearly the breadth of applications of motion graphics and compositing video. Distinction grade learners will be able to critically compare, assess and discriminate between the given examples of usage and justify points made using supporting arguments or evidence. They will draw out of each example precisely what it is about it that exemplifies the point it illustrates. Technical vocabulary will be secure and used correctly and confidently at all times.

D2: learners will originate and plan a motion graphics and compositing video project which combines the key characteristics of motion graphics and compositing video not just in an imaginative way, but with ingenuity and even elegance, codes and conventions being used with occasionally surprising results.

D3: learners will achieve a high quality finished sequence working with complex motion graphics and compositing video software techniques showing technical excellence in relation to skills. The phrase 'near-professional standards' does not mean learners have to achieve actual professional standards. 'Near' means that technical and production skills are beginning to approach the professional standard and bear comparison with it.

D2 and D3: learners will apply their technical skills not just with imagination but with ingenuity and even elegance, and codes and conventions will be used with occasionally surprising results. They will work autonomously and effectively, being able to work on their own initiative with full commitment. They will be able to work positively and cooperatively with others and meet deadlines. In other words, they will have the kind of self-management skills that would be expected of them in a professional context. Learners will be able to make an accurate and critically objective assessment of their own achievement with detailed reference to elucidated examples taken from that work. They will be able to make critical comparisons of their own work with current or past practice in a relevant area (that is, the same genre or format as they have worked in). A learner might note, for example, 'The text element of my sequence was influenced by the title sequence of <movie name> which I felt was dynamic and appealed to the target audience of young people. I made the text increase even more dramatically than in <movie name>, growing in size from 6pt to 72pt over the space of 3 seconds to enhance the sensation of it rushing towards the viewer and jumping out of the screen.'

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, M1, D1	Assignment 1 – Analysis of Examples of Motion Graphics	Learners have been asked to give a presentation on current uses of motion graphics to a careers convention for 16-year-olds.	• All preparatory notes. • Presentation slides, notes and handouts. • Recording of presentation.
P2, M2, D2	Assignment 2 – Creating a Motion Graphics Sequence Stage 1 – ideas generation	Brief from sci-fi channel to create a motion graphics sequence for the intro sequence of a children's TV pilot.	• All ideas notes, sketches and storyboards. • Summary of legal and ethical implications.
P3, M3, D3	Assignment 2 – Creating a Motion Graphics Sequence Stage 2 – produce and review	As above.	• Final product saved to CD. • All production documentation. • Development log. • Feedback and review.

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

This unit forms part of the BTEC Creative Media Production suite. This unit has particular links with the following units in the BTEC Creative Media Production suite:

Level 2	Level 3
Animation Techniques	Designing Idents for Television
Digital Graphics for Interactive and Print-Based Media	Film and Video Editing Techniques
Video Production	Digital Video Production for Interactive Media
	Web Animation for Interactive Media

There are opportunities to relate the work done for this unit to Skillset National Occupational Standards in Animation, and Design for the Moving Image as follows:

Animation

ANIM 21 Create Digital Visual Effects

ANIM 22 Composite Animation

Design for the Moving Image

DMI32 Generate and modify captions for use in one plane

DMI33 Produce artwork from live action references

DMI35 Create graphics to specification

DMI36 Interpret graphic design requirements.

Essential resources

Learners will need access to computer hardware with appropriate accessories such as scanners and printers, and to appropriate software such as Adobe After Effects, Adobe Premiere, Macromedia Flash and Adobe PhotoShop/Image Ready FTP. They may also need access to digital video cameras to film the footage to be used in the sequence, and internet access for research purposes.

Employer engagement and vocational contexts

Centres should develop links with local video post-production studios which could be approached to provide visiting speakers, study visits or samples of typical products.

Skillset, the Sector Skills Council for the creative media sector, has a substantial section of its website dedicated to careers, including job descriptions – www.skillset.org/careers and specifically at www.skillset.org/facilities/post/.

Further general information on work-related learning can be found at the following websites:

- www.aimhighersw.ac.uk/wbl.htm – work-based learning guidance
- www.businesslink.gov.uk – local, regional business links
- www.nebpn.org – National Education and Business Partnership Network
- www.vocationallearning.org.uk – Learning and Skills Network
- www.warwick.ac.uk/wie/cei – Centre for Education and Industry, University of Warwick – work experience and workplace learning frameworks.

Indicative reading for learners

Textbooks

Baylis P, Freedman A, Procter N et al – *BTEC Level 3 National Creative Media Production, Student Book* (Pearson, 2010) ISBN 978-1846906725

Baylis P, Freedman A, Procter N et al – *BTEC Level 3 National Creative Media Production, Teaching Resource Pack* (Pearson, 2010) ISBN 978-1846907371

Adobe Creative Team – *Adobe After Effects CS4: The Official Training Workbook* (Adobe, 2009) ISBN 978-0321573834

Christiansen M – *Adobe After Effects CS4 Visual Effects and Compositing Studio Techniques* (Adobe Press, 2008) ISBN 978-0321592019

Meyer T – *Creating Motion Graphics with After Effects* (Focal Press, 2007) ISBN 978-0240810102

Spencer M – *Motion Graphics and Effects in Final Cut Studio 2* (Peachpit Press, 2007) ISBN 978-0321509406

Woolman M – *Motion Design: Design for Motion, Sequence and Visual Impact* (RotoVision, 2004) ISBN 978-2880467890

Websites

www.adobe.com – the website of this software manufacturer contains useful information and resources, including training materials, forums, downloadable trial software and players, news etc

www.apple.com – the 'developer' section of the Apple website offers training, news, reference and resources particularly relevant to users of Final Cut and Motion; the trailers section is a good resource for movie trailers

www.bbc.co.uk/bbcone/downloads – a collection of idents from BBC1

www.dv.com – *DV* magazine website, specialising in digital video production news and information

www.meldrum.co.uk/mhp/identzone – a collection of idents over the years

www.visit4info.com – a good source for example trailers and adverts

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 to develop their understanding of motion graphics carrying out research to develop ideas for their own motion graphics sequence
Creative thinkers	generating ideas and exploring possibilities for a motion graphics sequence trying out alternative ways of constructing their own motion graphics sequence, following ideas through to complete a motion graphics sequence adapting their ideas as circumstances change
Reflective learners	reviewing and reflecting on their motion graphics sequence and acting on the outcomes to modify and improve their work setting goals with success criteria for their production work inviting feedback on their own work and dealing positively with praise, setbacks and criticism evaluating their experiences and learning to inform future progress
Self-managers	organising time and resources and prioritising actions when producing a motion graphics sequence, whether working on their own or in a group 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.

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 ...
Team workers	collaborating with others to produce a motion graphics sequence if working in a group if working in a group to produce a motion graphics sequence, taking responsibility for their own role managing discussions to reach agreements and achieve results.

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	handling motion graphics and video compositing systems to create a motion graphics sequence
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	planning a motion graphics sequence
Manage information storage to enable efficient retrieval	managing clips sourced and created for a motion graphics sequence
Follow and understand the need for safety and security practices	handling motion graphics and video compositing systems to create a motion graphics sequence
Troubleshoot	handling motion graphics and video compositing systems to create a motion graphics sequence
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	sourcing video clips for a motion graphics sequence
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	researching technology issues of motion graphics and compositing video
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	building and presenting their project portfolio and blog showing: • interpretation of the brief • generation of ideas • documentation and management of chosen assets • consideration of legal implications • review of own work
Bring together information to suit content and purpose	
Present information in ways that are fit for purpose and audience	
Evaluate the selection and use of ICT tools and facilities used to present information	preparing a report on motion graphics uses, characteristics and technology
Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists	gathering feedback on their own work as part of their self-reflective practice

Skill	When learners are ...
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	taking part in brainstorming sessions to generate ideas as a response to a creative brief presenting the final motion graphics sequence to their peer group and talking about it
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	reviewing literature and websites to find examples of motion graphics and to find out about the uses, characteristics and technology
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	writing down ideas and notes creating production documentation writing reflective reviews.