

Unit 37: 2D Animation Production

Unit code:	J/502/5663
QCF Level 3:	BTEC National
Credit value:	10
Guided learning hours:	60

● Aim and purpose

This unit aims to develop learners' skills in the production of 2D animations using traditional or digital techniques, or a combination of the two. Learners will work on design, character, setting and narrative whilst also developing production techniques.

● Unit introduction

Learners will research the content and production techniques used in historical and contemporary examples of work. Learners will develop understanding in such things as persistence of vision, frame rates, stop-frame techniques and the production of cells. This background will inform planning and production of work using traditional methods or some of the digital tools for 2D animation. In order to develop their understanding and skills, learners will need to keep their intended audience constantly in mind, and to that end their animation work will be exhibited to audiences after completion and responses evaluated.

Animation has become an increasingly important media form and examples can be seen in platforms as different as advertising, feature films, mobile phone content, the internet and television. Good animation skills are also important in the computer games industry.

The animation industry includes both large production companies and individuals working on small digital projects. Animation on all scales requires people with fresh, exciting ideas for new work, whilst larger companies will need individuals with specialist skills, such as storyboarding and 'tweening,' or the evidence to prove that they can develop them. This unit provides learners with the opportunity to develop their competence in both areas of work. Learners will also be encouraged to experiment with both content and technique.

To have a successful career in animation requires, first of all, good drawing skills, as these are a key requisite to get into the industry. Second, it requires the ability to develop fresh ideas for content which will engage the chosen audience. Also, a good animator will take into account at all stages the role of animation as communication, whether this be for entertainment or information. It always aims to move beyond simply creating moving shapes on a screen.

● Learning outcomes

On completion of this unit a learner should:

- 1 Understand the techniques and development of 2D animation
- 2 Be able to devise a 2D animation with soundtrack
- 3 Be able to produce a 2D animation with soundtrack
- 4 Be able to evaluate audience responses to own 2D animation work.

Unit content

1 Understand the techniques and development of 2D animation

Techniques: traditional 2D animation (flick book, cel animation, rotoscoping, drawn on film, photographic stills); digital techniques for 2D animation (2D bitmap graphics, 2D vector graphics); application software, eg Flash, After Effects, Anime Studio, Toon Boom Studio, PowerPoint

Development: pioneers, eg Joseph Plateau (phenakitoscope), William Horner (zoetrope), Emile Reynaud (praxinoscope), Edward Muybridge, Edison (kinetoscope), Lumière brothers; developers, eg Walt Disney, Hannah Barbera, Warner Bros, Norman McLaren, Len Lye; contemporary work, eg *Monty Python*, *Yellow Submarine*, *A Scanner Darkly*, *Persepolis*; genres and forms, eg cinema, advertising, children's television, music videos, computer games, mobile phones, websites

2 Be able to devise a 2D animation with soundtrack

Choice of possible formats: suitability for resources available; appropriateness for chosen style, eg stop-frame techniques, flip book, animatic, filmstrip, time lapse photography, sequential photographs, collage, index cards, cut-out animation, cel animation, mark making on film

Generation of ideas: visualisation; characters; backgrounds; storylines; audio; working within technical limitations

Consideration of audience appeal: definition of audience, eg by age, by gender, by interests; taste; viewing context

Planning: designs; drawings; storyboarding; consideration of movement; continuity; frames per second; perspective; soundtrack design; point of view, eg changes or extents of an action or movement

3 Be able to produce a 2D animation with soundtrack

Components of production: format; camera ready content; narrative; music; special effects; cuts; transitions; timing; frame numbers; dope sheets

Camera: framing; angle; movement; lighting; appropriate point of view

Post-production audio: soundtrack; dialogue; synchronisation; levels scanning; use of software; key frames

For digital production: use of software application, eg Flash, Photoshop, After Effect, Anime Studio, Toon Boom Studio, PowerPoint

4 Be able to evaluate audience responses to own 2D animation work

Showing work to audiences: eg local screenings, festivals, websites

Identifying criteria for feedback: genre; content; style; narrative; character; techniques; technical qualities; aesthetic qualities; creative qualities

Collecting audience responses: discussions; questionnaires; reviews; focus groups; feedback from online exhibition

Reporting findings: eg oral presentation, written report, action plan, review

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 summarise accurately the techniques and development of 2D animation with some appropriate use of subject terminology	M1 explain the techniques and development of 2D animation with reference to detailed illustrative examples and with generally correct use of subject terminology	D1 comprehensively explain the techniques and development of 2D animation with elucidated examples and consistently using subject terminology correctly
P2 generate outline ideas for a 2D animation with soundtrack, working within appropriate conventions and with some assistance [CT]	M2 generate detailed ideas for a 2D animation with soundtrack, showing some imagination and with only occasional assistance	D2 generate thoroughly thought-through ideas for a 2D animation with soundtrack, showing creativity and flair and working independently to professional expectations
P3 produce a 2D animation with soundtrack with some assistance [SM]	M3 produce a 2D animation with soundtrack to a good technical standard with only occasional assistance	D3 produce a 2D animation with soundtrack to a technical quality that reflects near-professional standards, working independently to professional expectations
P4 comment on audience responses to own 2D animation work with some appropriate use of subject terminology. [RL]	M4 explain audience responses to own 2D animation work with reference to detailed illustrative examples and with generally correct use of subject terminology.	D4 critically evaluate audience responses to own 2D animation work with supporting arguments and elucidated examples and consistently using subject terminology correctly.

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

Teaching of this unit should begin by establishing that the importance of animation has grown in recent years. Even brief discussion is likely to demonstrate that animation work is now shown on mobile phones, 2D games, the internet, music video and advertising, as well as more traditionally in television and film. Learners may well be aware of the success of recent animated feature films, the companies which produced them (such as Disney and Pixar) and the fact that the audience for animation is not limited to children. Learners are likely to have some background awareness of the role of digital techniques in animation production and should be encouraged to reflect on this. They should also understand, however, that although digital packages are frequently used, core skills such as drawing are still needed in the industry.

Consideration of the development of 2D animation and the techniques used to produce it can be encouraged through tutorials, lectures and screenings. Research by individual learners, especially in relation to material screened online, is another strategy likely to be productive. The outcomes of this research could be shared by learners in the form of a screening and presentation within a seminar session.

Visits to studios, screenings and exhibitions are also likely to provide material to support the understanding of techniques and styles of animation, its development and current position. These activities should, in turn, inform the planning and production processes used in practical work. Contact with aspects of the animation industry is highly desirable. Centres should aim to develop contacts with studios or freelance animators or individuals with specific relevant skills such as designers, illustrators or software experts. These professionals can provide learners with awareness of industry practice, offer insights through discussion of both professional and learner work and inform the design of assignments to ensure their relevance to industry practice. In addition, learners can obtain valuable insights through accessing material where animators discuss the techniques used to make their work. Much of this exists on DVD, in books and on websites.

Learners will need to be made aware of the wide variations existing in the animation industry. Whether through lectures, research or contact with professionals, it is important that learners are aware that the needs of large production companies and individual professionals working on small digital projects can be quite different, though animation on all scales requires people with fresh, exciting ideas for new work. Centres should ensure that learners have insight into more than one type of company and the employment opportunities they might provide: smaller companies are likely to require multi-skilled individuals whilst larger companies will need individuals with specialist skills such as storyboarding, or the evidence to prove that they can develop them.

Workshops and demonstrations will be required to illustrate the production potential of the facilities available. Centres should aim to bring learners into contact with work produced through as wide a range of techniques as possible. Learners should have the chance to become familiar with any software applications prior to undertaking the production stage. Short, non-assessed projects are an effective way of developing familiarity with the functions and potential of a piece of software prior to an assignment. Learners should be encouraged to experiment within this unit and to be aware of the industry need for fresh, dynamic ideas and designs.

Centres should be sure that learners are aware of methods used to gather and interpret audience responses whilst still at the design stage, both to inform the content of the piece and to devise appropriate exhibition and feedback activities. Learners should be encouraged to explore ideas for character and narrative structure, perhaps through a series of tutorials where ideas can be pitched at a tutor or visiting professional.

Production management techniques will be key to learners using time and resources effectively in their animation work. This unit offers learners an opportunity to implement skills acquired elsewhere in their programme as well as an opportunity to develop techniques in planning, logging and scheduling.

Learners will need the opportunity to screen their work to members of a relevant audience. As a minimum this could simply involve using other members of their class as audience and recording their responses in one of the ways identified. More challenging for learners would be organising a public screening or contributing work to an existing event involving a wider public, including members of the target audience. Entering work festivals or publishing work on line and recording responses would be valuable, although with internet exhibition learners will need to be aware of the issues around the authenticity of respondents to online questionnaires.

Formal lectures and tutorials are likely to be most appropriate for providing information about the various techniques or methods of recording audience response and the strengths and weaknesses of each.

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.
Screenings of productions demonstrating: <ul style="list-style-type: none"> • principles of animation and persistence of vision • techniques, formats and styles • range and development of 2D animation • applications capable of 2D animation.
Assignment 1 – 2D Animation Past and Present
Learners receive brief from a publisher to produce a chapter, illustrated with stills, on the history of 2D animation techniques. The book is aimed at 10 to 12-year-old children.
Visiting animator with demonstration of her work.
Workshops: <ul style="list-style-type: none"> • drawing character and background • use of digital applications to create character and background • creating ideas • narrative • planning, logging and scheduling techniques • soundtrack production.
Exercise using software to create a simple 2D character animation.
Illustrated lectures: <ul style="list-style-type: none"> • communicating with an audience • identifying mode of address and audience appeal in example productions • methods of recording audience response and the strengths and weaknesses of each.
Visit to studios, screening or exhibition.

Topics and suggested assignments and activities

Assignment 2 – Five a Day

Learners receive a brief to produce a 30-second 2D animation for a public service campaign aimed at encouraging primary school children to eat more fruit and vegetables.

Learners will:

- prepare treatment identifying the content of proposed animation.
- prepare drawings and designs for characters and backgrounds
- prepare initial storyboards
- design soundtrack.
- discuss treatment with visiting professional.

Assignment 3 – Production

Production of animation developed in Assignment 2.

Learners must keep a production log throughout the production process.

Assignment 4: The Moment of Truth

- prepare screening to a group of primary school children
- gather audience feedback
- collate and analyse feedback
- write up evaluation of the animation.

Unit learning and assessment review.

Assessment

Evidence for assessment

Evidence for the achievement of learning outcome 1 could be an oral presentation, video blog, or a portfolio of work on techniques which have been significant in the development of animation and on current techniques. The presentation could be illustrated with a screening of clips and the report or portfolio illustrated by screen grabs. Presentations must be recorded for the purposes of internal and external verification.

As evidence of achievement of learning outcome 2 learners could present a treatment identifying the content of a proposed animation, along with drawings and designs for characters and backgrounds, storyboards and other appropriate pre-production documentation. They might also give a presentation or pitch on their proposal, ideally to a visiting practitioner.

Evidence for achievement of learning outcome 3 will be a piece of animation with soundtrack. This could be an advertisement, a channel ident or a short piece of narrative lasting from 15 seconds to one minute. It must be clear, in the case of group work, which learner is responsible for which elements of the concept, design and production. It must also be clear which learner has produced drawings, collage, photographs or other 2D work, including the use of animation software. Evidence of camera operation and direction will also be required, along with soundtrack production and video post-production techniques. Learners are required to generate evidence for all grading criteria and, whether learners are working individually or in groups, centres may need to set assignments which require two or more pieces of animation in order for this to be possible within the context of group work. The technical skills demonstrated must show use of one of the recognised animation techniques covered by this unit.

Achievement of learning outcome 4 could be evidenced through a written report, an oral presentation or some form of structured audio-visual statement. Presentations should be recorded for the purposes of verification. Learners will need to screen their work in front of an audience or arrange for their work to be uploaded to a website in order for audience members to view the production and respond to it.

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 provide a brief summary of the development of animation, correctly identifying through brief outline descriptions the various techniques developed, and placing them accurately in the timeline. Reference will be made to key figures in the history of animation from the earliest to some contemporary practitioners.

P2: learners will provide an indication of how the proposed animation will be produced and how the style is appropriate to the content. The intended audience will be briefly described, together with possible screening plans. Drawings and designs for characters and backgrounds will be provided although they will not be totally clear. Storyboards will indicate storyline, camera movement and soundtrack but will fall short of a detailed approach. A production schedule will also be provided but will lack detail and may be unrealistic in one or two places.

P3: the content and style of the production will be predictable and conventional and the motion of the animation may not be fluent. Sound will have some problems – for example, levels will be inconsistent or will not synchronise accurately.

P2 and P3: learners will have required support and encouragement during both the planning and the production processes. 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 criterion.

P4: learners will arrange a screening to a small and possibly unrepresentative audience and are likely to require assistance and support in organising that. They will arrange a brief recorded discussion or devise basic questionnaires in order to record audience response. Responses will be used without further comment or discussion and will be at the level of unsupported assertion. The learner might write: 'Most of the audience enjoyed the animation. They liked the figures I used but did not like the red background.'

P1 and P4: 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.

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 development of animation by reference to detailed illustrative examples of the work of key figures in the development of animation from its beginnings to the present, paying detailed

attention both to the content of the work and the techniques used to produce it. In discussing more recent or current work they will typically note the company which produced this work, the techniques they use and what they have contributed to the development of animation. Learners will show some understanding of movement expressed in a range of ways identifying traditional and non-traditional techniques.

M2: learners will offer competently presented drawings and designs for characters and backgrounds, a script, a storyboard and design for a soundtrack. This might demonstrate a consideration of movement and continuity, perspective, point of view, transitions and special effects. Evidence of timing and synchronisation to the soundtrack will be produced but it will not always be precise. Learners will be aware of the conventions used in storyboard production and will use them with clarity. They will use appropriate terminology. The production schedule will be clear and realistic.

M3: learners will have used the chosen format effectively and the finished animation will be clearly recognisable as the piece described in the treatment. If the piece is, for example, a short advertisement for a chocolate bar, the conventions of that form will be followed, but they will be developed with some imagination: the name of the product, its appeal and target audience will be clearly communicated. Technical errors should be rare and not interfere with audience reception. Motion will be fluent. The soundtrack is likely to use at least two tracks, as well as video post-production techniques including synchronisation.

M2 and M3: learners will require occasional support with technical issues at both the planning and the production stages, particularly when dealing with more complex technology or trying to apply more sophisticated techniques, but they will make good use of any advice or help offered. Like the pass grade learner, they will benefit from it.

M4: detailed approaches will be used to collect the responses of audience members, and consideration of these responses will identify the key findings and patterns which emerge, as well as evaluating the types of approach used. For example, 'The results of the survey show that people in older age groups were unable to understand some of the humorous references to other, more recent animations.'

M1 and M4: learners will use technical vocabulary for the most part correctly, but may make mistakes or be unsure about usages at times.

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 show understanding of movement expressed in a wide range of ways using combinations of traditional and non-traditional materials, processes, techniques and technologies and these techniques will be given a full and clear explanatory discussion. The impact of each technique will be critically considered and linked to examples of both past and contemporary animators, their work and influence on others. These examples will be elucidated to show clearly how they illustrate the points and ideas they are being used to support. Awareness of the role of animation will be detailed and learners will make connections across the range of work they have considered – for example, between elements in commercial entertainment and advertising, fantasy and propaganda, and the experimental and artistic contexts.

D2: plans will show a full consideration of movement and continuity, perspective, point of view, transitions and special effects. They will clearly have been developed from and informed by the work done for learning outcome 1. Precise and workable planning of timing and synchronisation to a soundtrack will be produced. It will be clear at this stage, from the documentation, what the finished piece will look and sound like. Learners will follow the industry conventions and terminology used in storyboard production correctly. Drawings, script and storyboard will all show a creative interpretation of the brief. For example a channel ident for a new TV station would demonstrate not only a sense of audience address in keeping with the channel content and appeal but would also be based on original and clever ideas.

D3: learners will use one or more of the recognised techniques with confidence, creativity and to near-professional standards of technical skill. Technical errors will not be evident to the target audience and the form of the animation will enhance the meaning of the piece, for example through the use of a specific style to produce recognition and response from the audience. The content will be sufficiently different to attract attention. 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. The designs or artwork which form the basis of the animation will show an element of individual flair, and narrative or structure used will be more than simply derived from existing work. Camera operation will use a range of points of view, movement and angles. The soundtrack is likely to contain material recorded specifically for the production and to be quite complex – for example, it might use two or more audio tracks, or a series of FX and dialogue synchronised in post-production. The documentation linked to the production will be full and detailed and there will be evidence that the production management and scheduling of the project has been effective and carried out in a professional manner. The techniques used in the production of the work are likely to be related to an understanding of current trends in the industry.

D2 and D3: in all practical activity learners will be capable of working autonomously and effectively. The term ‘working independently’ means that they are able to work on their own initiative, do not need constant support or supervision, give the work their full commitment, work positively and cooperatively with others, and meet deadlines. In other words, they have the kind of self-management skills that would be expected of them in a professional context. Note also that this criterion should not be taken to mean that learners do not seek advice or that they work without discussing things with their tutor, but rather that they are not dependent upon the support of others and that when they take advice they weigh it carefully for themselves.

D4: learners will typically show more initiative in the ways they choose to exhibit their work to audiences, such as by submitting their work to festivals or on line competitions, as well as the methods mentioned above. They will produce a presentation or report which considers the data collected critically and relates it strongly to the strengths and weaknesses of their own work. The presentation is likely to place their animation in context and explore their choice of narrative, characters, technique used and visual style in relation to audience appeal. A learner might note, for example, ‘The individual interviews I carried out revealed that the younger viewers had not understood the intercutting techniques I used and had become confused about the sequence of events in the narrative.’

D1 and D4: technical vocabulary will be secure and used correctly and confidently at all times.

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
PI, M1, D1	Assignment 1 – 2D Animation Past and Present	Learners receive brief from a publisher to produce a chapter, illustrated with stills, on the history of 2D animation techniques.	<ul style="list-style-type: none"> All preparatory and research notes. Finished chapter.

Criteria covered	Assignment title	Scenario	Assessment method
P2, M2, D2	Assignment 2 – Five a Day	Learners receive a brief to produce a 30-second 2D animation for a public service campaign aimed at encouraging primary school children to eat more fruit and vegetables.	<ul style="list-style-type: none"> • All pre-production documentation. • Treatment. • Pitch presentation slides, handouts and notes. • Recording of presentation.
P3, M3, D3	Assignment 3 – Production	As above.	<ul style="list-style-type: none"> • Finished animation. • Production log.
P4, M4, D4	Assignment 4 – The Moment of Truth	Learners create a focus group to get feedback on their animation.	<ul style="list-style-type: none"> • Notes on audience feedback. • Completed evaluation.

Essential resources

Hardware and software should reflect industrial standards where appropriate. It should include animation production and editing facilities, a rostrum camera and studio facilities for filming.

Learners will need access to a rostrum camera, animation table and lighting, as well as camera equipment capable of frame capture and remote shutter control. Many DV cameras come with animation modes and whilst some of these are less than frame accurate, their use can be combined with existing video editing applications. A wide range of animation software is available from domestic to industrial. Of these, Toonboom may be of interest to centres. Some software companies offer frame capture applications whilst the potential of Flash, Photoshop and After Effects for animation is well documented.

This unit involves 2D animation produced by traditional or digital means or a combination of both. Space for learners to draw and cut may be required for the production of collages, cells or backgrounds.

Library resources providing DVD resources, as well as relevant and current information on animation, filming techniques and digital animation and contemporary film makers will be needed.

Centres are recommended to develop their own list of web links and multimedia research material.

Employer engagement and vocational contexts

Centres should aim to develop relationships with local animation companies, freelancers and illustrators to develop a programme which includes visiting speakers, screenings and work placements.

Animation is commissioned by a range of organisations wishing to use this media to convey messages on websites. Some live brief work with external clients will be valuable.

Publicly funded media centres will also provide a range of opportunities and collaboration and contact details for these will be available through regional screen agencies.

Skillset, the Sector Skills Council for the audio-visual industries, has a substantial section of their website dedicated to careers, including job descriptions. Guidance about industry roles and careers in animation is on Skillset's website at: www.skillset.org/animation.

The following agencies exist to develop film and media in the UK. Their websites provide much material for research and many of them include clips of production work. They do not fund production work by students, but offer information about the production, distribution and exhibition initiatives taking place across the UK:

- www.firstlightmovies.com/ – First Light movies
- www.bfi.org.uk – British Film Institute
- www.em-media.org.uk/pages/home – East Midlands Media
- www.filmagencywales.com/ – Film Agency for Wales
- www.filmlondon.org.uk/ – Film London
- www.northernirelandscreen.co.uk/ – Northern Ireland Screen
- www.northernmedia.org/ – Northern Film and Media
- www.northwestvision.co.uk/ – North West Vision and Media
- www.scottishscreen.com/ – Scottish Screen
- www.screeneast.co.uk/ – Screen East
- www.screensouth.org/ – Screen South
- www.screenwm.co.uk/ – Screen West Midlands
- www.screenyorkshire.co.uk/ – Screen Yorkshire
- www.swscreen.co.uk/ – South West Screen
- www.ukfilmcouncil.org.uk – UK Film Council.

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

Books

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

Chi Hang Li – *The Complete Guide to Anime Techniques: Create Mesmerizing Manga-Style Animation with Pencils, Paint, and Pixels* (Barron, 2006) ISBN 978-0764133800

Furniss M – *The Animation Bible: A Practical Guide to the Art of Animating from Flipbooks to Flash* (HNA, 2008) ISBN 978-0810995451

Grant J – *Masters of Animation* (Watson-Guptill Publications Inc, 2001) ISBN 978-0823030415

Hartas L – *How to Draw and Sell Digital Cartoons* (ILEX, 2004) ISBN 978-1904705284

Lord P – *Cracking Animation: The Aardman Book of 3-D Animation, 2nd Edition* (Thames & Hudson, 2004) ISBN 978-0500511909

McFarlane T and Beck J – *Outlaw Animation: Cutting-edge Cartoons from the Spike and Mike Festivals* (Harry N Abrams, 2003) ISBN 978-0810991514

Noake R – *Animation: The Guide to Animated Film Techniques* (McDonald and Co, 1988) ISBN 978-0356158723

Priebe K – *The Art of Stop-Motion Animation* (Delmar, 2006) ISBN 978-1598632446

Shaw S – *Stop Motion: Craft Skills for Model Animation* (Focal Press, 2008) ISBN 978-0240520551

Taylor R – *Encyclopedia of Animation Techniques* (Focal Press, 1999) ISBN 978-0240515762

Wiedemann J – *Animation Now!* (Taschen, 2007) ISBN 978-3822837894

Williams R – *The Animator's Survival Kit* (Faber & Faber, 2001) ISBN 978-0571202287

Websites

www.anvil.clara.net/ani11.htm – links to sources about the development of animation

www.cartoon-factory.com/jones.html – animation art gallery

www.theanimationartgallery.com/ – the Animation Art Gallery

www.thefirstpost.co.uk/9804/features/animation-gallery – contemporary animation work on line

www.toonboom.com/products – animation software

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 ...
Creative thinkers	generating storylines, drawings, characters and techniques for own production work solving technical and aesthetic problems which arise during production
Reflective learners	reviewing progress on the basis of audience feedback to inform future learning
Self-managers	taking responsibility for the production of a project, to deadline and following safe practice prioritising time and resources to produce an individual 2D animation production.

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	identifying techniques used in the development of animation researching examples of contemporary animation.

● 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 development of animation locating contemporary examples of animation presenting findings of research
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	exploring the potential of 2D animation software
Manage information storage to enable efficient retrieval	storing documents, images, clips from research; uploading material to digital video editing systems
Follow and understand the need for safety and security practices	creating and finding appropriate materials, techniques and processes, and adapting them for use in own multidisciplinary fine art project
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	researching animators and information about their work and techniques; research and identification of on line animation exhibition sites
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	exploring and assessing the relevance of information from a range of 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, support proposals and effect safe use of cross-discipline media, materials, techniques and processes producing a report around animation techniques and styles presenting audience response information and an evaluation of those responses
Bring together information to suit content and purpose	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 own proposals

Skill	When learners are ...
Mathematics	
Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations	planning a production in relation to frames, shot length, running time
Identify the situation or problem and the mathematical methods needed to tackle it	controlling production timing alongside issues of production management and, if digital, memory, compression and rendering time
Select and apply a range of skills to find solutions	presenting production management plan and the decisions and revisions linked to monitoring the plan
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	<p>discussing the formats, techniques used and role played by animation</p> <p>reporting on the techniques and styles used in animation or in relation to the methods used</p> <p>presenting a report around audience responses to an animation they have produced</p>
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	exploring the context to the work of animators both current and historical
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	preparing reports based on research findings into the development of animation and contemporary work.