

Unit 91: Special Effects and Animated Props for the Stage

Unit code:	Y/502/5635
QCF Level 3:	BTEC National
Credit value:	10
Guided learning hours:	60

● Aim and purpose

This unit enables learners to develop the skills and practices required to design and produce special effects for use within a production.

● Unit introduction

The term 'The Magic of Theatre' is often used. This unit seeks to guide learners as to how to create some of that magic. Many plays make demands for inanimate objects to suddenly become 'alive' for no apparent reason. Ghosts and poltergeists inexplicably transport objects round the stage. Julius Caesar is assassinated and his toga is to be blood soaked before the audience's eyes. A telephone becomes a lobster.

The requirements of this kind of stage illusion are boundless. To resolve these staging problems a practitioner needs very practical skills that can be put to task with invention and creativity. Often the requirements are part of the skill set of the prop maker. Equally, the knowledge and abilities of lighting technicians or set designers can be called upon.

This unit needs both a sense of creativity as well as the appreciation of technological requirements. The unit will allow learners to appreciate the extent of possible effects that are available and to learn how to create them in a practical way that fits the concept of a production. Attention will be given to the suitability of any effects so that they are meaningful to a production and highlight a feature within a play that will surprise and enthral an audience. Effects can be real or symbolic, exciting and shocking, familiar or surreal. Working on these kinds of effects can often generate concern with regards to health and safety issues. The creator of any effect must be aware of these issues both for themselves and any other member of a company that has contact with the effect. It might be a member of the crew or an actor whose task is to operate the effect. The unit, therefore, requires learners to be aware of various forms of legislation that are connected with the work.

There is scope within this unit to study special effects and animated props in general, or delivery of the unit could be focused towards specific areas of special effects suitable for the stage. There is no prescription for scale of work. Learners may produce intricate small and detailed effects, or huge effects filling an entire stage, depending on the requirements of the centre. In addition, centres are able to produce special effects from raw materials, or source ready-built effects and modify them to suit their needs.

● Learning outcomes

On completion of this unit a learner should:

- 1 Know the range of available special effects
- 2 Be able to create a special effect for the stage
- 3 Be able to demonstrate the safe operation of a special effect.

Unit content

1 Know the range of available special effects

Physical effects: casting eg resin, plaster, alginate, fibreglass, latex

Special effects: mechanical/electrical props eg collapsing furniture, falling objects, breaking objects, disappearing objects, retracting knives, flying objects, moving objects, Pepper's ghost

Practical effects: eg white goods, brown goods, lamps, lights, fans, puppets

Injury effects: eg blood, wounds, fractures, amputations

Pyrotechnics and special effects: eg smoke, haze, CO₂, low fog, bubbles, snow, flashes, maroons, gerbs, stars, confetti, glitter, flames, artificial flames, flash paper, strobes, Ultra-violet (UV) lighting

2 Be able to create a special effect for the stage

Create: make; construct; fabricate; devise; invent; ergonomics

Plan: research, draw plans; sketch; illustrate; budget; discuss eg with director, actor, set designer, lighting designer

Evaluate: test; modify; review; compare; replicate

3 Be able to demonstrate the safe operation of a special effect

Implementation: set up; operate; instruct others; manage the operation

Manage safely: regulation and legislation; COSHH; manufacture and storage of explosives regulations (MSER); toxicology – smoke and haze products; strobe lighting effects

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 identify a range of special effects and their use in a production setting [IE, RL]	M1 describe a range of effects and their use in a production setting	D1 explain a range of effects and their use and application in a production setting
P2 research and experiment with the production of a special effect, identifying the process [IE, CT, TW, SM, EP]	M2 research and experiment with the production of a special effect, describing the process	D2 research and experiment with the production of a special effect, explaining the process
P3 create a simple effect that makes some contribution to production requirements [RL, SM]	M3 create a complex effect that makes a significant contribution to production requirements	D3 create a complex effect that makes a profound contribution to the requirements of a production and its meaning
P4 demonstrate the safe operation of an effect with considerable support and guidance. [EP, RL]	M4 demonstrate the safe operation of an effect in the context of a production with some support and guidance.	D4 demonstrate the safe operation of an effect in the context of a production without support and guidance.

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

Learners should be introduced to a range of performance material where the need for special effects occurs. For example, Edward Bond *Early Morning*, Noel Coward *Blithe Spirit*, Dario Fo *Accidental Death of an Anarchist*, RC Sherriff *Journey's End*, Terry Johnson *Hysteria* as well as a variety of Christmas pantomimes and less serious drama aimed at younger children. As an example consider the many shows featuring acts such as the Chuckle Brothers and other similar children's entertainers learners should also consider popular musicals such as *Little Shop of Horrors* that requires many versions of the central plant that appears to grow and needs to be able to consume the cast! In addition to these examples where the special effects are a small but essential part of the performance, enhancing the audiences experience, there are many productions where the special effects are the central feature. Magic, illusion and science fiction genres all feature these special effects as the focal point. These examples offer a range of curious activities required by props, explosions that destroy an entire set, the spooky effects of ghostly activity and pumpkins turning into golden coaches or genies appearing at the rub of a lamp. Learners need to be aware of the variety of materials and techniques that might be employed in the creation of effects. This should include materials that may be used to make relevant props, special lighting effects or makeup.

It is essential that any work on special effects is conducted in the context of the performance material. As well as considering the problems of realising the effect learners will need to show evidence of their awareness of the concept of the director or choreographer, the specific performance conditions to be experienced by the actor(s) or dancer(s) when the effect is in operation and, most importantly, any health and safety issues connected with the operation of the effect. Ideally the special effects created for this unit should be made in the context of a complete production. Alternatively, where no such production planning is available performance material can be selected that contains opportunity for special effects and an assignment brief designed to include discussion with a director or choreographer whose role is satisfied by the tutor or a fellow learner.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and/assessment
Introduction to unit and structure of the programme – whole group. Includes health and safety primer.
Examples of productions that use special effects and animated prop designs – DVDs and photographs.
Assignment 1: A Range of Special Effects – P1, M1, D1 Tutor-led work with learner-produced evidence <ul style="list-style-type: none">• the effects• what they appear to be• what they appear to do• how do they do it?
Physical Items – how to make products to turn into special effects <ul style="list-style-type: none">• simulated food• body parts• large items.
Workshop sessions – moulding techniques <ul style="list-style-type: none">• papier-mâché• glass fibre/resin• alginate.
Assignment 2: Moulding – P2, M2, D2 Produce a copy of an everyday object or item – use a technique suitable for the project. Requires workshop time.
Special effects – taking a manufactured item and modifying it to fall apart or collapse AND be able to be put back together and used again. Workshop sessions.
Experiment – Pepper's Ghost.
Modifying real items – kitchen appliances and TV/audio systems. Workshop sessions <ul style="list-style-type: none">• manual operation by stage crew• water effects• imitation – old-fashioned lighting.
Assignment 3: Create a Simple Effect for Use in the Christmas/Easter Production – P3, M3, D3 Requires workshop time.

Topic and suggested assignments/activities and/assessment

Workshop sessions: Create a Magic Prop or Illusion – P2, M2, D2, P3, M3, D3

Basic construction skills.

Basic finishing skills.

Testing.

Assignment 4: Presentation of a Magic Effect – P4, M4, D4

Introduction to safety legislation for hazardous substances and pyrotechnics

- laws, legislation, regulation and codes of practices
- COSHH
- toxicology – smoke and haze machine products
- MSER.

Industry codes of practice and models of good practice

- pyrotechnics
- smoke and haze devices
- photosensitive epilepsy.

Introduction to risk assessments.

Assignment 5: Create an Animated Object – P2, M2, D2, P3, M3, D3, P4, M4, D4

Research and experiment with ideas.

Create the effect.

Demonstrate the effect.

Requires workshop time.

Assessment

There must be evidence of research into both materials and purpose of the effects worked on. Learners may produce a variety of effects if they are relatively simple or only one effect if the demands are complex. Evidence of the creation of effects may take the form of working notes, sketches, detailed drawings, etc. There should also be evidence of the understanding of how the effect fits into the requirements of the performance material. Photographs and/or recorded evidence should also be offered for assessment. Witness statements from tutors, performers, operators or stage managers may also prove to be invaluable.

Learning outcome 1 is focused on learners being able to understand the range of special effects that are possible. This encompasses both readymade effects and effects created from scratch. The key to this outcome is that all these special effects must be viewed from a production setting – so learners need to consider how they will be perceived by an audience.

Learning outcome 2 requires learners to be able to carry out research and experiment with the production of special effects. It is likely that they may need to repeat their experiments to produce an effect that will meet a production requirement.

Learning outcome 3 is the final stage – actually using the special effect in a production setting. Assessors should note that the specification does not require learners to demonstrate their own special effect. Sometimes it may be more appropriate for learners to demonstrate each others' work and the specification is flexible in this area.

Grading criterion 1 requires learners to identify a range of special effects. The focus of assessment for P1 is that they must consider the use in a production setting – concentrating on the benefits they will bring to the production. The unit guide gives many examples of the scope of special effects and animated props, but the list is not exhaustive as designers are constantly recreating or modifying effects to generate new ones. Learners working at pass level may be able to recognise and identify a range of effects but to gain access to M1 they need to be able to describe these effects in a manner that demonstrates that their understanding of the techniques and processes involved is sound. As a guide to the differences between P1 and M1 learners may be aware of low-lying smoke or fog used on stage to present a mysterious or cloud-like location. Learners working at P1 may be able to identify the effect as being dry ice, CO₂ or low smoke but may not understand the connections or differences between these very different techniques. D1 grade is available to learners who can explain the range of effects with complete understanding. To use the low-lying smoke effect as an example, D1 learners will also be able to correctly carry out the explanation but be very aware of the significance of the differences – especially potential hazards.

Criterion 2 is used when learners are carrying out research and as a result, experimenting with special effects. It is important to note that the experiments do not have to generate successful effects as in many cases, learners will learn more from their failures than an idea that works first time. Ideas that eventually work, after more research and repeated modification, may be more valuable as a learning experience. Learners who can identify the various stages their ideas pass through may be awarded a P2 grade. If they can add descriptive comment to the process they have met the requirements of the M2 criteria, reserving the D2 grade for those learners who are able to describe the research and experiment phase of the effect production.

Creating a simple effect that is needed for a production is the focus of criterion 3. The effect must have some impact on the production to be awarded the P3 grade. Scale of effect is not important. A small matchbox size box that conceals a piece of flash paper that is used for just a few seconds in a production has made a contribution to the overall product, and meets the criterion for a P3 grade, as would a carefully built and prepared large prop fitted with a hidden light source that is on stage all the time. For the M3 criteria to be awarded the effect must be complex enough to have a significant contribution to the production. As an example, perhaps a learner is working on the Little Shop of Horrors show and is tasked with creating the small-sized Audrey II plant that is carried by Seymour. This is really a glove puppet style creation. There would obviously be the much larger plant for the end section of the show. If the learner designed a creation that could rotate the head section, allowing the actor to carry it and the audience to believe in it, then this could be considered a significant contribution to the production and be given the M3 grade. A different learner could take this requirement and produce an improved design, perhaps adding extra features such as better dexterity and the ability to talk, with mouth style movement – this would meet the requirements for the D3 grade.

The criterion P4 at first sight appears to overlap with criterion 3, but is not concerned with the mechanics of designing and building the effect; it requires learners to demonstrate the safe operation of an effect. This could be as part of a performance with or without an audience, or carried out in a presentation style. As there is no design and build element it is also acceptable to use another learner's creation with permission or to use a bought-in effect. It is important to note that M4 and P4 criteria require the demonstration to be set in the context of a production, but the P4 grade is without this restriction. In practice it may be the case that a learner has designed, or is about to demonstrate an effect, and what happens is that the learner simply demonstrates the effect in bright daylight, revealing the techniques and tricks used to allow it to work, needing considerable support and guidance throughout. This is not within the context of a production and although these factors allow a P4 grade to be awarded, they do not enable the learner to meet the M4 criterion. If, with some support, the learner could demonstrate how the effect works in context, perhaps revealing the secrets afterwards then the award of the M4 grade is appropriate. An independent demonstration 'as live' fully meets the requirements for the D4 grade. The unit abstract details how important presentation of effects is to the audience, and this criterion requires elements of showmanship for progression into the merit and distinction grade areas.

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	A Range of Special Effects	Tutor-led work on special effects.	Learner written work and/or presentation.
P2, M2, D2	Moulding	Learners will be making a copy of an everyday object using suitable techniques.	Learner written work. Video/audio recordings. Photographs.
P3, M3, D3	Special Effects for the Christmas/Easter Production	Produce a real special effect for the production.	Learner written work. Video/audio recordings. Assessor observation. Photographs.
P2, M2, D2, P3, M3, D3	Create a Magic Prop or Illusion	Learners will be producing a magic prop.	Learner written work. Assessor observation. Video/audio recordings. Photographs.
P4, M4, D4	Presentation of a Magic Effect	Learners will present/perform a magic effect.	Assessor observation. Video/audio recordings. Photographs.
P2, M2, D2, P3, M3, D3, P4, M4, D4	Create an Animated Object	Learners research, create and demonstrate a special effect.	Learner written work. Assessor observation. Video/audio recordings. Photographs.

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

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

Level 1	Level 2	Level 3
		Production Arts Workshop
		Props Making
		Stage Management
		Special Effects Makeup
		Stage Lighting Operations

This unit also has links with the following National Occupational Standards:

Technical Theatre

- TP5.3 – Sourcing lighting and special effects equipment and consumables
- TP8.3a – Operating special effects for live performances in the theatre
- TP20.3a – Operating special effects for live performances in the theatre.

Essential resources

It is essential that learners have access to a suitable range of materials and a space where they can work with these materials. Relevant tools should be available and where lighting equipment is utilised there should be equipment that offers sufficient performance to demonstrate the needs of the effect.

The workspace available needs to have sufficient ventilation and heat to enable the effects to be produced safely. Hiring in specialist products to cover the requirements of the unit in the context of production may be a suitable method to give learners with a range of special effects during the delivery period.

Employer engagement and vocational contexts

Centres should develop links with local theatres, amateur production companies and other entertainment venues. Centres with learners under 16 need to be aware that placements or real work experience are rarely available in theatres due to legal restrictions.

Indicative reading for learners

Textbooks

Coleman P – *Basics – A Beginner's Guide to Special Effects* (Entertainment technology Press, 2005)
ISBN 9781904031338

Debreceni T – *Special Makeup Effects for Stage and Screen: Making and Applying Prosthetics* (Focal press, 2009)
ISBN 9780240809960

Hopkins A – *Magic: Stage Illusions, Special Effects and Trick Photography* (Dover Publications, 1991)
ISBN 9780486265612

Rickett R – *Special Effects: The History and Technique* (Aurum Press, 2006) ISBN 9781845131302

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	researching and experimenting with effects
Team workers	producing special effects
Self-managers	creating and producing effects
Effective participators	demonstrating the safe operation of effects.

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 special effects in a production setting
Reflective learners	creating effects that contribute to production requirements.

● Functional Skills – Level 2

Skill	When learners are ...
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	researching hair designs used in productions from different genres
Mathematics	
Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations	handling linear and liquid measurement systems, dealing with ratios for mixing chemicals and working to budgets
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	responding to the requests of the producer, director or other production team members
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	using scripts and other production documentation to generate ideas for special effects.