Pearson BTEC Level 2 Certificate in Construction Plant Operations

Specification

BTEC specialist qualification

First teaching January 2012

Issue 2

Edexcel, BTEC and LCCI qualifications

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This specification is Issue 2. Key changes are listed in the summary table on the next page. We will inform centres of any changes to this issue. The latest issue can be found on the Pearson website: qualifications.pearson.com

This qualification was previously known as:

Edexcel BTEC Level 2 Certificate in Construction Plant Operations (QCF)

The QN remains the same.

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All information in this specification is correct at time of publication.

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Summary of Pearson BTEC Level 2 Certificate in Construction Plant Operations specification Issue 2 changes

Summary of changes made between previous issue and this current issue	Section number
All references to QCF have been removed throughout the specification	
Definition of TQT added	Section 1
Definition of sizes of qualifications aligned to TQT	Section 1
TQT value added	Section 2
Reference to credit transfer within the QCF removed	Section 6
Guided learning definition updated	Section 11
QCF references removed from unit titles and unit levels in all units	Section 11

Earlier issue(s) show(s) previous changes.

If you need further information on these changes or what they mean, contact us via our website at: qualifications.pearson.com/en/support/contact-us.html.

Contents

Purpose of this specification

This specification sets out:

- the qualification's objective
- any other qualification which a learner must have completed before taking the qualification
- any prior knowledge, skills or understanding which the learner is required to have before taking the qualification
- units which a learner must have completed before the qualification will be awarded and any optional routes
- any other requirements which a learner must have satisfied before the learner will be assessed or before the qualification will be awarded
- the knowledge, skills and understanding which will be assessed as part of the qualification (giving a clear indication of their coverage and depth)
- the method of any assessment and any associated requirements relating to it
- the criteria against which the learner's level of attainment will be measured (such as assessment criteria)
- any specimen materials
- any specified levels of attainment.

1 Introducing BTEC Specialist qualifications

What are BTEC Specialist qualifications?

BTEC Specialist qualifications are work-related qualifications available from Entry to Level 3 in a range of sectors. They give learners the knowledge, understanding and skills they need to prepare for employment in a specific occupational area. The qualifications also provide career development opportunities for those already in work. The qualifications may be offered as full-time or part-time courses in schools or colleges. Training centres and employers may also offer these qualifications.

Sizes of Specialist qualifications

For all regulated qualifications, Pearson specify a total number of hours that it is estimated learners will require to complete and show achievement for the qualification – this is the Total Qualification Time (TQT). The TQT value indicates the size of a qualification.
Within the TQT, Pearson identifies the number of Guided Learning Hours (GLH) that we estimate a centre delivering the qualification might provide. Guided learning means activities, such as lessons, tutorials, online instruction, supervised study and giving feedback on performance, that directly involve tutors and assessors in teaching, supervising and invigilating learners. Guided learning includes the time required for learners to complete external assessment under examination or supervised conditions.
In addition to guided learning, other required learning directed by tutors or assessors will include private study, preparation for assessment and undertaking assessment when not under supervision, such as preparatory reading, revision and independent research.

As well as TQT and GLH, qualifications can also have a credit value – equal to one tenth of TQT, rounded to the nearest whole number.

TQT and credit values are assigned after consultation with users of the qualifications.

BTEC Specialist qualifications are generally available in the following sizes:

- Award – a qualification with a TQT value of 120 or less (equivalent to a range of 1–12 credits)
- Certificate – a qualification with a TQT value in the range of 121–369 (equivalent to a range of 13–36 credits)
- Diploma – a qualification with a TQT value of 370 or more (equivalent to 37 credits and above).

2 Qualification summary and key information

Qualification title	Pearson BTEC Level 2 Certificate in Construction Plant Operations
Qualification Number (QN)	600/4084/1
Date registrations can be made	01/01/2012
Age range that the qualification is approved for	16–18 18+ 19+
Credit value	30
Assessment	Centre-devised assessment (internal assessment)
Total Qualification Time (TQT)	300
Guided learning hours	180
Grading information	The qualification and units are at pass grade.
Entry requirements	No prior knowledge, understanding, skills or qualifications are required before learners register for this qualification. However, centres must follow the Pearson *Access and Recruitment* policy (see *Section 9, Access and Recruitment*).

Qualification title and Qualification Number

Centres will need to use the Qualification Number (QN) when they seek public funding for their learners. The qualification title, unit titles and QN are given on each learner's final certificate. You should tell your learners this when your centre recruits them and registers them with us. There is more information about certification in our *UK Information Manual,* available on our website, qualifications.pearson.com

Objective of the qualification

The Pearson BTEC Level 2 Certificate in Construction Plant Operations is for learners who work in, or want to work in, the construction industry.

It gives them the opportunity to:

- engage in learning that is relevant to them and which will give them opportunities to develop a range of skills and techniques, personal skills and attributes essential for successful performance in working life
- achieve a nationally recognised level 2 vocationally-related qualification
- progress to employment in a particular vocational sector
- progress to related vocational qualifications.

Apprenticeships

ConstructionSkills approve the Pearson BTEC Level 2 Certificate in Construction Plant Operations as a knowledge component for the Intermediate Apprenticeship in Construction.

Progression opportunities through Pearson qualifications

Learners who have achieved the Certificate can progress to a range of qualifications, including the Pearson BTEC Level 3 Award, Extended Certificate and Diploma in Construction and the Built Environment, or to employment in the construction sector. See *Annexe A* for further information.

Industry support and recognition

This qualification is supported by ConstructionSkills, the SSC for the construction sector.

Relationship with National Occupational Standards

This qualification relates to the National Occupational Standards (NOS) for Plant Operations (Construction). The knowledge covered in all units of the Pearson BTEC Level 2 Certificate in Construction Plant Operations can be partially mapped against the underpinning knowledge of the National Occupational Standards for Plant Operations (Construction).

3 Centre resource requirements

As part of the approval process, centres must make sure that the resource requirements below are in place before offering the qualification.

General resource requirements

- Centres must have appropriate physical resources (for example equipment, IT, learning materials, teaching rooms) to support the delivery and assessment of the qualification.
- Staff involved in the assessment process must have relevant expertise and occupational experience.
- There must be systems in place to make sure that there is continuing professional development for staff delivering the qualification.
- Centres must have appropriate health and safety policies in place relating to the use of equipment by learners.
- Centres must deliver the qualifications in accordance with current equality legislation.

Specific resource requirements

As well as the general requirements above, centres must provide access to appropriate plant and work situations as specified within the individual units in the qualification.

4 Qualification structure

Pearson BTEC Level 2 Certificate in Construction Plant Operations

The learner will need to meet the requirements outlined in the table below before Pearson can award the qualification.

Minimum number of credits that must be achieved	30
Number of mandatory credits that must be achieved	15
Number of optional credits that must be achieved	15

Unit	URN	Mandatory units	Level	Credit	GLH
1	L/503/6454	Site Safety and Roles and Responsibilities for Plant Operators	2	10	60
2	L/600/0063	Sustainability in the Construction Industry	2	5	30
Unit	**URN**	**Optional units**	**Level**	**Credit**	**GLH**
3	M/503/6415	Operating a Forward Tipping Dumper	2	5	30
4	F/503/6449	Operating an Excavator 180º – Below 5 Tonnes	2	5	30
5	A/503/6448	Operating an Excavator 180º – Above 5 Tonnes	2	5	30
6	L/503/6423	Operating a Ride-on Roller	2	5	30
7	A/503/6451	Operating an Excavator 360º – Below 10 Tonnes	2	5	30
8	T/503/6450	Operating an Excavator 360º – Above 10 Tonnes	2	5	30
9	D/503/6426	Operating a Skid Steer Loader	2	5	30
10	Y/503/6425	Operating a Skip Handler	2	5	30
11	T/503/6416	Operating a Dump Truck – Rigid Chassis	2	5	30
12	T/503/6433	Operating a Dump Truck – Articulated Chassis	2	5	30
13	L/503/6440	Operating a Rough Terrain Forklift	2	5	30
14	D/503/6443	Operating a Telescopic Handler	2	5	30
15	J/503/6419	Operating a Hoist	2	5	30

Unit	URN	Optional units	Level	Credit	GLH
16	F/503/6421	Operating a Mobile Elevating Work Platform – Scissor	2	5	30
17	J/503/6436	Operating a Mobile Elevating Work Platform – Boom	2	5	30
18	D/503/6412	Operating a Concrete Pump – Trailer Mounted	2	5	30
19	A/503/6434	Operating a Grader	2	5	30
20	K/503/6428	Operating a Wheeled Loading Shovel	2	5	30
21	K/503/6431	Operating a Crawler-Tractor/Dozer	2	5	30
22	Y/503/6411	Operating a Concrete Pump – Truck-mounted Boom	2	5	30
23	H/503/6458	Operating a Tracked Loading Shovel	2	5	30
24	A/503/6420	Operating a Motorised Scraper	2	5	30
25	H/503/6430	Operating a Crawler-Tractor – Side Boom	2	5	30
26	M/503/6446	Operating a Trencher	2	5	30
27	K/503/6414	Operating a Crawler Crane	2	5	30
28	H/503/6427	Operating a Tower Crane	2	10	60
29	F/503/6418	Operating a Lorry Loader	2	5	30
30	J/503/6453	Performing Slinger/Signaller Duties	2	5	30
31	F/503/6435	Operating a Mobile Crane	2	5	30
32	L/503/6437	Operating a Pedestrian Operated Tower Crane	2	5	30
33	M/503/6429	Operating a Compact Crane	2	5	30
34	H/503/6413	Operating a Crusher	2	5	30
35	R/503/6441	Operating a Screener	2	5	30
36	M/503/6432	Operating a Dragline	2	5	30
37	R/503/6455	Operating a Piling Rig – Tripod	2	5	30
38	Y/503/6439	Operating a Piling Rig – Driven Below 15 Tonnes	2	5	30
39	J/503/6422	Operating a Piling Rig – Driven Above 15 Tonnes	2	5	30
40	Y/503/6456	Operating a Piling Rig – Bored Below 15 Tonnes	2	5	30

Unit	URN	Optional units	Level	Credit	GLH
41	R/503/6438	Operating a Piling Rig – Bored Above 15 Tonnes	2	5	30
42	T/503/6447	Operating an Agricultural Tractor	2	5	30
43	F/503/6452	Operating an Industrial Forklift Truck	2	5	30
44	R/503/6424	Operating a Reach Truck	2	5	30
45	K/503/6445	Operating a Transporter Loader/Securer STGO	2	5	30
46	H/503/6444	Operating a Transporter Loader/Securer non-STGO	2	5	30
47	A/503/6417	Operating a Loader Compressor	2	5	30
48	Y/503/6442	Operating a Soil/Landfill Compactor	2	5	30

5 Assessment

Centre-devised assessment is used for all units in this qualification.

Centre-devised assessment (internal assessment)

Each unit has specified learning outcomes and assessment criteria. To pass an internally assessed unit, learners must meet all the assessment criteria. Centres may find it helpful if learners index and reference their evidence to the relevant learning outcomes and assessment criteria.

Centres need to write assignment briefs for learners to show what evidence is required. Assignment briefs should indicate clearly which assessment criteria are being targeted.

Assignment briefs and evidence produced by learners must meet any additional requirements in the *Information for tutors* section of the unit.

Unless otherwise indicated within *Information for tutors*, the centre can decide what form assessment evidence will take (eg performance observation, presentations, projects, tests, extended writing) as long as the methods chosen allow learners to produce valid, sufficient and reliable evidence of meeting the assessment criteria.

Centres are encouraged to give learners realistic scenarios and maximise the use of practical activities in delivery and assessment.

To avoid over assessment, opportunities to link the delivery and assessment of units with other units should be taken.

Further guidance about internal assessment is given on our website. See *Section 12* for details.

6 Recognising prior learning and achievement

Recognition of Prior Learning

Recognition of Prior Learning (RPL) is a method of assessment (leading to the award of credit) that considers whether a learner can demonstrate that they can meet the assessment requirements for a unit through knowledge, understanding or skills they already possess and so do not need to develop through a course of learning.

Pearson encourages centres to recognise learners' previous achievements and experiences in and outside the workplace, as well as in the classroom. RPL provides a route for the recognition of the achievements resulting from continuous learning.

RPL enables recognition of achievement from a range of activities using any valid assessment methodology. If the assessment requirements of a given unit or qualification have been met, the use of RPL is acceptable for accrediting a unit, units or a whole qualification. Evidence of learning must be sufficient, reliable and valid.

Further guidance is available in our policy document *Recognition of Prior Learning Policy and Process*, available on our website, qualifications.pearson.com

7 Quality assurance of centres

Quality assurance is at the heart of vocational qualifications. The centre assesses BTEC qualifications. The centre will use quality assurance to make sure that their managers, internal verifiers and assessors are standardised and supported. Pearson uses quality assurance to check that all centres are working to national standards. It gives us the opportunity to identify and provide support, if needed, to safeguard certification. It also allows us to recognise and support good practice.

For the qualifications in this specification, the Pearson quality assurance model will follow one of the processes below.

1 Delivery of the qualification as part of a BTEC apprenticeship (single-click registration):

- an annual visit by a Standards Verifier to review centre-wide quality assurance systems and sampling of internal verification and assessor decisions.

2 Delivery of the qualification outside the apprenticeship:

- an annual visit to the centre by a Centre Quality Reviewer to review centre-wide quality assurance systems
- Lead Internal Verifier accreditation. This involves online training and standardisation of Lead Internal Verifiers using our OSCA platform, accessed via Edexcel Online. Please note that not all qualifications will include Lead Internal Verifier accreditation. Where this is the case, we will allocate annually a Standards Verifier to conduct postal sampling of internal verification and assessor decisions for the Principal Subject Area.

For further details, please go to the *UK BTEC Quality Assurance Handbook* on our website: qualifications.pearson.com.

8 Programme delivery

Centres are free to offer the qualifications using any mode of delivery (for example full time, part time, evening only, distance learning) that meets their learners' needs. Whichever mode of delivery is used, centres must make sure that learners have access to the resources identified in the specification and to the subject specialists delivering the units.

Those planning the programme should aim to enhance the vocational nature of the qualification by:

- liaising with employers to make sure a course is relevant to learners' specific needs
- accessing and using non-confidential data and documents from learners' workplaces
- developing up-to-date and relevant teaching materials that make use of scenarios that are relevant to the sector
- giving learners the opportunity to apply their learning in practical activities
- including sponsoring employers in the delivery of the programme and, where appropriate, in the assessment
- making full use of the variety of experience of work and life that learners bring to the programme.

Where legislation is included in unit content, centres must ensure that only current legislation is taught.

9 Access and recruitment

Pearson's policy regarding access to our qualifications is that:

- they should be available to everyone who is capable of reaching the required standards
- they should be free from any barriers that restrict access and progression
- there should be equal opportunities for all those wishing to access the qualifications.

Centres are required to recruit learners to BTEC Specialist qualifications with integrity.

Applicants will need relevant information and advice about the qualification to make sure it meets their needs.

Centres should review the applicant's prior qualifications and/or experience, considering whether this profile shows that they have the potential to achieve the qualification.

For learners with disabilities and specific needs, this review will need to take account of the support available to the learner during teaching and assessment of the qualification. The review must take account of the information and guidance in *Section 10, Access to qualifications for learners with disabilities or specific needs*.

10 Access to qualifications for learners with disabilities or specific needs

Equality and fairness are central to our work. Pearson's Equality Policy requires all learners to have equal opportunity to access our qualifications and assessments and that our qualifications are awarded in a way that is fair to every learner.

We are committed to making sure that:

- learners with a protected characteristic (as defined by the Equality Act 2010) are not, when they are undertaking one of our qualifications, disadvantaged in comparison to learners who do not share that characteristic
- all learners achieve the recognition they deserve from undertaking a qualification and that this achievement can be compared fairly to the achievement of their peers.

Learners taking a qualification may be assessed in British sign language or Irish sign language where it is permitted for the purpose of reasonable adjustments.

Details on how to make adjustments for learners with protected characteristics are in the policy document *Reasonable Adjustment and Special Considerations for BTEC and Pearson Edexcel NVQ Qualifications*, which is on our website at: qualifications.pearson.com.

11 Units

Units have the following sections.

Unit title

This is the formal title of the unit that will appear on the learner's certificate.

Unit reference number

Each unit is assigned a unit reference number that appears with the unit title on the Register of Regulated Qualifications.

Level

All units and qualifications have a level assigned to them. The level assigned is informed by the level descriptors defined by Ofqual, the qualifications regulator.

Credit value

When a learner achieves a unit, they gain the specified number of credits.

Guided learning hours

Guided Learning Hours (GLH) is the number of hours that a centre delivering the qualification needs to provide. Guided learning means activities that directly or immediately involve tutors and assessors in teaching, supervising, and invigilating learners, for example lectures, tutorials, online instruction and supervised study.

Unit aim

This gives a summary of what the unit aims to do.

Learning outcomes

The learning outcomes of a unit set out what a learner knows, understands or is able to do as the result of a process of learning.

Assessment criteria

The assessment criteria specify the standard required by the learner to achieve the learning outcome.

Unit amplification

This section gives further clarification on what a learner needs to know to achieve a learning outcome. Information in brackets gives exemplification for specific areas of knowledge.

Unit 1: Site Safety and Roles and Responsibilities for Plant Operators

Unit reference number: L/503/6454

Level: 2

Credit value: 10

Guided learning hours: 60

Unit aim

This unit is specifically for plant operators, to help them develop knowledge and understanding of site safety issues and their roles and responsibilities. It also provides an opportunity to develop progressive career pathways.

The unit gives learners an understanding of individual job roles and responsibilities and helps them to examine and plan the typical career development of a plant operator by exploring various career paths and training opportunities.

Significant health and safety improvements are constantly being made in the construction industry. Construction operations are inherently dangerous and so it is essential that learners entering or already working in the construction industry understand health and safety issues and can carry out their work safely. Hazards in construction can come from plant, equipment and substances used, from the actual tasks carried out and from the way people perform these tasks. Appropriate training ensures that operators are competent to use plant and equipment safely.

This unit focuses on health and safety for plant operators. Learners will understand the importance of ensuring good standards of health and safety and will become familiar with important relevant legislation. They will learn how to identify hazards, minimise risks and how to deal with emergencies and accidents should these happen. The emphasis is on legislation and organisational procedures.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Know the roles and responsibilities of plant operators in the construction sector	1.1	Describe the importance of own role as a plant operator	□ Own job description
		1.2	Describe how own role links to the wider construction sector	□ Organisation's aim □ Role of the sector □ Aims and objectives of the construction sector
		1.3	Describe the main roles and responsibilities of representative bodies that influence the construction sector	□ Trade unions □ Professional bodies □ Health and Safety Executive (HSE)
		1.4	State employee rights and responsibilities under employment law	□ Difference between rights and responsibilities □ Current employment legislation
		1.5	Describe how related legislation can support employees in the workplace	□ Current anti-discrimination legislation, eg gender, race, religion, disability, age □ Working hours and holiday entitlement □ Data protection □ Other relevant examples

Learning outcomes		Assessment criteria		Unit amplification
		1.6	Describe employer responsibilities in the workplace	□ Duty of care to employees, eg safe and healthy workplace, public liability insurance □ Appropriate training and development □ Adherence to terms of contract
		1.7	Identify sources and types of information and advice on own employment rights and responsibilities	□ Human resources (HR) department □ Line manager □ Trade union representative □ Professional body □ Internet □ Trade magazines and journals
2	Know training and career opportunities for plant operators in the construction sector	2.1	Describe occupational opportunities within the construction sector	□ Progression routes within construction □ Importance of continued professional development (CPD); training opportunities on and off the job; online and distance learning; skills updating/renewal □ License to practice such as Construction Plant Competence Scheme (CPCS) etc
		2.2	Identify sources of information related to a chosen career pathway	□ Line manager □ Sector Skills Council □ Professional organisations, eg CIOB, RICS, RIBA, ICE, CIBSE □ JobCentre Plus □ Relevant websites

Learning outcomes		Assessment criteria		Unit amplification
		2.3	Identify next steps in own career pathway	□ Create a development plan □ Consult related websites
3	Know the importance of health and safety for plant operators on construction sites	3.1	State the legislation that covers health and safety on construction sites	□ For example, Health and Safety at Work Act 1974 and other current and relevant legislation applicable to the working environment such as Provision and Use of Work Equipment Regulations (PUWER) and Lifting Operations and Lifting Equipment (LOLER) Regulations, Control of Substances Hazardous to Health (COSHH)
		3.2	Identify the health and safety responsibilities of individuals on construction sites	□ Inspection and testing □ Requirement for operator competence □ Safe systems of work □ Awareness of the requirements of other legislation, eg management of health and safety at work regulations, workplace health and safety and welfare regulations, personal and protective equipment at work regulations, manual handling operations regulations □ Sources of information and guidance within an organisation □ Using equipment safely, eg mechanical, electrical, fluid power equipment □ Lifting and carrying techniques □ Housekeeping, eg tidy workspace, protecting others from harm for example as a result of work being carried out by self or others

Learning outcomes		Assessment criteria		Unit amplification
4	Know potential risks and hazards on construction sites	4.1	Identify potential risks and hazards on construction sites	□ Working environment, eg working at height, electricity, confined spaces, hot work □ Tools and equipment □ Materials and substances □ Dangers of not working to laid down procedures
		4.2	Describe how potential risks and hazards can be reduced on construction sites	□ For example, Health and Safety Executive (HSE) '5 steps to risk assessment' including identifying hazards, deciding who might be at risk of harm and how they might be harmed, evaluation of the risks and control measures, recording of findings and implementation, review of risk assessment and update when necessary
		4.3	Describe hazard warning signs and symbols used on construction sites	□ Identification and appropriate positioning of safety signs □ Difference between mandatory, warning, prohibition and safety advisory signs
5	Know the emergency and accident procedures on construction sites	5.1	Describe evacuation procedures for a construction site	□ Construction site incidents (accident/injury, work hazards, fire) □ Identification of appropriate qualified persons, eg first aider, fire warden □ Actions in the event of an accident or emergency, eg types and sounding/initiating emergency alarm, evacuation procedure and escape routes □ Reporting routines, eg at assembly point, hazards and malfunctions, injury, near miss occurrences

Learning outcomes		Assessment criteria		Unit amplification
		5.2	Describe procedures for reporting accidents and incidents	□ Theory of fire triangle □ Classes of fires □ Types of fire extinguishers □ Selection of appropriate extinguishers for given situations
		5.3	State where to obtain assistance to deal with injuries	□ Reporting accidents □ Accident records □ Organisational policies □ Location of first aid equipment □ Accident trends in construction

Unit 2: Sustainability in the Construction Industry

Unit reference number: L/600/0063

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit develops learners' understanding of sustainability, explores how sustainability is integrated into construction projects and investigates how sustainability issues can be addressed more effectively in the future.

Global climate change and consequent potential changes mean that sustainability is important to the modern construction and built environment. It is becoming increasingly difficult to resource the materials needed for construction and, therefore, we must reduce the waste and pollution generated by the construction industry. The expectation is that any developments in the industry will now take place with minimal harm to the natural environment. The construction and built environment sector must learn to create a balance between the need for development of the built environment and the need to protect the natural environment. This can be achieved only by having underpinning knowledge and skills in planning, design, production and maintenance stages of the construction process.

This unit provides learners with an opportunity to explore the concept of sustainable construction and how this relates to the current and future impact of the built environment upon the natural environment. Learners will explore issues such as minimisation of waste, pollution control, careful use of resources, preservation of wildlife, flora and fauna and protection of biodiversity.

The unit encourages learners to investigate how sustainable design and construction techniques can be used to address environmental issues. This will include the specification of products, materials and services that do minimal harm to the environment in terms of their manufacture, transport and incorporation into the built environment, and the use of environmentally friendly designs, locally sourced materials, improved management techniques and alternative energy technology. On completion of this unit, learners should be able to use the knowledge and understanding gained to support a sustainable approach to construction in the built environment.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand the concept of sustainability as it applies to the construction and built environment sector	1.1	Explain what is meant by sustainability	□ The meaning of sustainability in social, physical, economic and general terms
		1.2	Evaluate the relevance of sustainability to the construction and built environment sector	□ Finite resources; global warming; melting icecaps; rising sea levels; climate change; flooding; shortages; extinction of species □ Potential consequences of a reduction in biodiversity □ Needs of future generations □ Local and global context □ Inter-relationships, eg impact on construction design and planning
2	Know the issues affecting the development of a sustainable built environment	2.1	Identify the issues associated with the provision of a sustainable built environment	□ Nature of the built environment (significant features, existing and future) □ Impact of the built environment on the natural environment eg local, national, existing, future □ Duty of the construction industry to present and future generations, eg safeguard, maintain, improve and expand the built environment without harming the natural environment

Learning outcomes		Assessment criteria		Unit amplification
		2.2	Describe the issues associated with the provision of a sustainable built environment	□ Meeting local and national needs □ Improved business and employment opportunities □ Skills development □ Positive economic impact, eg contribution to gross domestic product (GDP), financial return on development, increased prosperity □ Negative social impact, eg over development, pollution
3	Know how sustainability can benefit the built environment both locally and nationally	3.1	Identify the benefits of using sustainable construction, in both local and national terms	□ Employment; social benefits; green spaces; aesthetics; community consultation; local involvement; improved environments; regeneration
		3.2	Describe the benefits of using sustainable construction, in both local and national terms	□ Cleaner air; reduction in flooding; education; conservation of resources; economic wellbeing; environmental protection; better quality standards; change in education; government benefits; tourism
4	Know how sustainable design and construction techniques are used to address environmental issues	4.1	Identify the sustainable design and construction techniques used to minimise environmental impact	□ Stages of the development process (planning, design, construction) □ Factors influencing these stages (physical, technical, financial, legal and aesthetic) □ Impact on the natural environment at each stage

Learning outcomes		Assessment criteria		Unit amplification
		4.2	Describe the sustainable design and construction techniques used to minimise environmental impact	□ Respecting the natural environment: overall aims and objectives; minimisation of waste; reduction of pollution; control of rate of consumption of valuable resources; conservation of natural assets; preservation of wildlife, flora and fauna; protection of biodiversity □ Techniques, eg environmentally friendly design, specification of locally sourced materials, improved site management, improved resource management, improved waste management, reclamation and recycling, alternative energy technology

Unit 3: Operating a Forward Tipping Dumper

Unit reference number: M/503/6415

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating forward tipping dumpers to transport and discharge materials in the workplace within the relevant sector of industry.

Dump trucks are used to move loose earth and other material within or outside a construction site. There are a number of types of these trucks to suit different needs of the site work. Forward tipping dump trucks are used for off-road transportation, usually within a construction site. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a forward tipping dump truck. This includes identifying components, understanding procedures to load, transport and discharge and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will develop an understanding of loading requirements. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in receiving, transporting and discharging the load into an excavation. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a forward tipping dumper	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for travel (site and highway) □ Procedures for travelling over rough, undulating ground, steep inclines and level surfaces – loaded and unloaded □ Actions required for manoeuvring in restricted spaces whilst carrying loads
		1.3	Explain how to set up the machine for work	□ Procedures ensuring the suitability of the tipping and loading area □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for positioning and receiving loads □ Compliance with loading procedures □ Actions required for ensuring load integrity and security □ Actions required for transferring loads to different locations □ Actions required for discharging loads into trenches and over edges □ Actions required to maintain safe and tidy working areas

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a forward tipping dumper	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling (in a loaded and unloaded state) over rough terrain, up and down a slope, stop and start on the slope in both up and down directions □ Passing through a chicane executing full right- and left-hand turns in a forward and reverse direction (unloaded only) □ Reversing (loaded only) in a straight line for a specified distance and pass through a restriction at the end of the run
		2.3	Set up the machine for work	□ Ensuring the suitability of the tipping and loading area □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Positioning the dumper for loading □ Receiving a load □ Discharging the load into an edge or excavation □ Cleaning out the skip fully □ Parking the machine
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 4: Operating an Excavator 180° – Below 5 Tonnes

Unit reference number: F/503/6449

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating 180° excavators to excavate ground in the workplace within the relevant sector of industry.

Excavators are commonly used for all works where digging and transportation are required, such as civil engineering works and mining operations. A 180° excavator comprises a boom or arm and a cabin fixed over an undercarriage. 180° excavators come in two categories: above and below 5 tonnes. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate an excavator 180° – below 5 tonnes. This includes identifying components and understanding procedures to carry out excavation in various soil types and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will also develop an understanding of lifting requirements. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in excavating trenches, lifting and rotating loads and placing materials in vehicles or receptacles, as well as grading, levelling and spreading operations. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate an excavator 180° – below 5 tonnes	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for travel (site and/or highway) □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for excavating duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for excavating differing types of excavations in various types of ground □ Actions required for placing materials into transporting vehicles and receptacles □ Actions required for grading, spreading and levelling ground and materials □ Actions required for attaching and removing buckets □ Actions required for lifting, moving and placing basic slung loads with the rear boom

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Explain how to shut down the machine □ Loading and unloading procedures for machine transporting □ Refuelling procedures
2	Be able to operate an excavator 180° – below 5 tonnes	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling up and down slopes, passing through restrictions in forward and reverse and travelling over rough terrain □ Manoeuvring in restricted spaces and around obstacles
		2.3	Set up the machine for work	□ Configuring and setting up the machine for excavating duties □ Operating excavator near hazards, underground and overhead services safely

Learning outcomes		Assessment criteria		Unit amplification
		2.4	Undertake the specified work tasks	□ Digging two straight trenches to form a 'T' pattern with square starts and finishes □ Loading materials safely and securely into transporting vehicles/receptacles □ Changing the (backhoe) bucket □ Lifting and rotating a load and, on completion, landing the load at a given point and detaching □ Grading, spreading and levelling ground and materials □ Reinstating the work area as required by the contract □ parking the excavator
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures □ Refuelling procedures

Unit 5: Operating an Excavator 180° – Above 5 Tonnes

Unit reference number: A/503/6448

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating 180° excavators to excavate ground in the workplace within the relevant sector of industry.

Excavators are commonly used for all works where digging and transportation are required, such as civil engineering works and mining operations. A 180° excavator comprises a boom or arm and a cabin fixed over an undercarriage. 180° excavators come in two categories: above and below 5 tonnes. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate an excavator 180° – above 5 tonnes. This includes identifying components and understanding procedures to carry out excavation in various soil types and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will also develop an understanding of lifting requirements. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in excavating trenches, lifting and rotating loads and placing materials in vehicles or receptacles, as well as grading, levelling and spreading operations. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate an excavator 180° – above 5 tonnes	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for travel (site and/or highway) □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for excavating duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for excavating differing types of excavations in various types of ground □ Actions required for placing materials into transporting vehicles and receptacles □ Actions required for grading, spreading and levelling ground and materials □ Actions required for attaching and removing buckets □ Actions required for lifting, moving and placing basic slung loads with the rear boom

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting □ Refuelling procedures
2	Be able to operate an excavator 180° – above 5 tonnes	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling over rough, undulating ground, steep inclines and level surfaces □ Manoeuvring in restricted spaces and around obstacles
		2.3	Set up the machine for work	□ Configuring and setting up the machine for excavating duties □ Operating excavator near hazards, underground and overhead services safely

Learning outcomes		Assessment criteria		Unit amplification
		2.4	Undertake the specified work tasks	□ Digging four vertical trenches of equal length at right angles to form a square □ Loading materials safely and securely into transporting vehicles/receptacles □ Changing the bucket □ Lifting and rotating a load and, on completion, landing the load at a given point and detaching □ Grading, spreading and levelling ground and materials □ Reinstating the work area as required by the contract □ Parking the excavator
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures □ Refuelling procedures

Unit 6: Operating a Ride-on Roller

Unit reference number:	**L/503/6423**
Level:	**2**
Credit value:	**5**
Guided learning hours:	**30**

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating ride-on rollers to compact materials in the workplace within the relevant sector of industry.

Compacting soil is an important operation in construction and civil engineering projects. Ride-on rollers are used to carry out compaction operations. They are similar to the rollers used in landfill compaction or agricultural tasks and consist of steel drums which act as wheels and are able to compact large areas. They can also be a combination of drum wheels and tyre wheels. The drum can be static or vibratory. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a ride-on roller. This includes identifying components and understanding the requirement to compact loose granular materials to specification, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate a ride-on roller and will be able to demonstrate competence in compacting straight runs and a radius. The emphasis is on compliance with manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices, and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a ride-on roller	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for site travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up for compacting duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for compacting loose granular materials to specification □ Actions required for compacting in straight lines and around radii □ Principles, requirements and techniques for compacting supported and unsupported edges □ Principles, requirements and techniques of good compaction

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a ride-on roller	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for site travel □ Travelling to the work area, passing through a restriction (in forward and reverse), driving up and down a gradient and driving on uneven ground
		2.3	Set up the machine for work	□ Configuring and setting up for compacting duties □ Operating roller near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Compacting straight run(s) to specification □ Compacting a radius to specification □ Parking the ride-on roller
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 7: Operating an Excavator 360º – Below 10 Tonnes

Unit reference number: A/503/6451

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating 360º excavators to excavate ground in the workplace within the relevant sector of industry.

Excavators are commonly used for all works where digging and transportation are required, such as civil engineering works and mining operations. A 360º excavator comprises a boom or arm and a cabin fixed over a rotating platform and an undercarriage which can be on tracks or tyres, though track versions are more common. 360º excavators come in two categories: above and below 10 tonnes. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate an excavator 360º – below 10 tonnes. This includes identifying components and understanding procedures to carry out excavation in various soil types and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will also develop an understanding of lifting requirements. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in excavating trenches, lifting and rotating loads and placing materials in vehicles or receptacles, as well as grading, levelling and spreading operations. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate an excavator 360° – below 10 tonnes	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for travel (site and/or highway) □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for excavating duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for excavating differing types of excavations in various types of ground □ Actions required for placing materials into transporting vehicles and receptacles □ Actions required for grading, spreading and levelling ground and materials □ Actions required for attaching and removing buckets and dipper mounted attachments □ Actions required for lifting, moving and placing basic slung loads

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting □ Refuelling procedures
2	Be able to operate an excavator 360° – below 10 tonnes	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling over rough, undulating ground, substantial inclines and level surfaces □ Manoeuvring in restricted spaces and around obstacles
		2.3	Set up the machine for work	□ Configuring and setting up the machine for excavating duties □ Operating excavator near hazards, underground and overhead services safely

Learning outcomes		Assessment criteria		Unit amplification
		2.4	Undertake the specified work tasks	□ Digging a trench to a given depth and tolerance □ Digging two straight trenches to form a 'T' pattern with vertical sides at the end of the dug trench □ Loading materials safely and securely into transporting vehicles/receptacles □ Changing the bucket □ Lifting and rotating a load and, on completion, landing the load at a given point and detaching □ Grading, spreading and levelling ground and materials □ Reinstating the work area as required by the contract □ Parking the excavator
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures □ Refuelling procedures

Unit 8: Operating an Excavator 360º – Above 10 Tonnes

Unit reference number: T/503/6450

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating 360º excavators to excavate ground in the workplace within the relevant sector of industry.

Excavators are commonly used for all works where digging and transportation are required, such as civil engineering works and mining operations. A 360º excavator comprises a boom or arm and a cabin fixed over a rotating platform and an undercarriage which can be on tracks or tyres, though track versions are more common. 360º excavators come in two categories: above and below 10 tonnes. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate an excavator 360º – above 10 tonnes. This includes identifying components and understanding procedures to carry out excavation in various soil types and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will also develop an understanding of lifting requirements. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in excavating trenches, lifting and rotating loads and placing materials in vehicles or receptacles, as well as grading, levelling and spreading operations. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate an excavator 360° – above 10 tonnes	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for travel (site and/or highway) □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for excavating duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for excavating differing types of excavations in various types of ground □ Actions required for placing materials into transporting vehicles and receptacles □ Actions required for grading, spreading and levelling ground and materials □ Actions required for attaching and removing buckets and dipper mounted attachments □ Actions required for lifting, moving and placing basic slung loads

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting □ Refuelling procedures
2	Be able to operate an excavator 360° – above 10 tonnes	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling over rough, undulating ground, substantial inclines and level surfaces □ Manoeuvring in restricted spaces and around obstacles
		2.3	Set up the machine for work	□ Configuring and setting up the machine for excavating duties □ Operating excavator near hazards, underground and overhead services safely

Learning outcomes		Assessment criteria		Unit amplification
		2.4	Undertake the specified work tasks	□ Digging a vertical trench to specified dimensions □ Digging a square excavation with vertical sides at the end of a trench □ Loading materials safely and securely into transporting vehicles/receptacles □ Changing the bucket □ Lifting and rotating a load and, on completion, landing the load at a given point and detaching □ Grading, spreading and levelling ground and materials □ Reinstating the work area as required by the contract □ Parking the excavator
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures □ Refuelling procedures

Unit 9: Operating a Skid Steer Loader

Unit reference number: D/503/6426

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating skid steer loaders to extract materials in the workplace within the relevant sector of industry.

As the name suggests, a skid steer loader is used to place materials in transporting vehicles and other receptacles. This small machine can perform a number of labour-saving tasks. The wheels are designed to be independent of each other, meaning that skid steer loaders can move through zero radius, which makes them highly desirable in restricted spaces. This plant plays an important part in moving materials within and outside construction sites, and operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a skid steer loader. This includes identifying components and understanding procedures to travel over rough terrain, inclines and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate a skid steer loader and will be able to demonstrate competence in loading a vehicle using materials from a stockpile as well as in creating an upward ramp. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a skid steer loader	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for site travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces (loaded and unloaded) □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for extraction and loading duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for extracting differing types of materials from stockpiles and other sources □ Actions required for forming stockpiles of segregated materials and constructing (temporary) ramps □ Actions required for sorting and placing materials into transporting vehicles and receptacles □ Actions required for backfilling and levelling ground and materials

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a skid steer loader	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for site travel □ Travelling and manoeuvring in a loaded and unloaded state, up and down a slope, stopping and starting on the slope in up and down directions, travelling over rough terrain, reversing (loaded state only) in a straight line and passing through a restriction at the end of the run
		2.3	Set up the machine for work	□ Preparing and setting up the skid steer loader for relevant work activities □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Creating an upward ramp □ Loading material into a vehicle □ Backfilling and levelling ground and materials □ Cleaning and tidying the work area □ Parking the skid steer loader
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 10: Operating a Skip Handler

Unit reference number: Y/503/6425

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating skip handlers to lift and transfer loads in the workplace within the relevant sector of industry.

As the name suggests, skip handlers are used to move and transfer loads to desired locations. This plant plays an important part in moving materials within and outside construction sites, and operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a skip handler. This includes identifying components and understanding procedures to travel over rough terrain, inclines and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate a skip handler and will be able to demonstrate competence in moving, carrying and unloading a skip to a given location. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a skip handler	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for site and highway travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces, loaded and unloaded □ Actions required for manoeuvring in restricted spaces whilst carrying loads
		1.3	Explain how to set up the machine for work	□ Procedures for ensuring the suitability of the tipping and loading area □ Procedures to deal with hazards, underground and overhead services

Learning outcomes		Assessment criteria		Unit amplification
		1.4	Explain how to undertake the specified work tasks	□ Positioning the vehicle for picking up and placing skip(s)/container(s), including areas having height restrictions □ Procedures for retrieving and placing skips or containers of various sizes and weights □ Actions required for depositing loads from a skip or container □ Transferring loads to different locations □ Procedures for ensuring load integrity and security during travel
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Road Traffic Act requirements
2	Be able to operate a Skip Handler	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Preparing the vehicle and skip handler for road travel (loaded and unloaded) □ Travelling to the work area (loaded and unloaded) over uneven terrain and undertake left- and right-hand turns
		2.3	Set up the machine for work	□ Positioning, preparing and setting up the skip handler and loading for each lift □ Operating machine near hazards, underground and overhead services safely

Learning outcomes		Assessment criteria		Unit amplification
		2.4	Undertake the specified work tasks	□ Picking up an empty skip or body and carrying out activity; after completing, depositing the skip/body at a different location □ Picking up a fully-loaded skip/body, securing in preparation for road travel and carrying out activity; after completing, tipping a load from the skip/body at a given position □ Placing a skip/body within a restricted space □ Retrieving a loaded skip or body from a restricted headroom location □ Stowing all equipment and returning the vehicle to the park position □ Parking the vehicle
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 11: Operating a Dump Truck – Rigid Chassis

Unit reference number: T/503/6416

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating dump trucks with a rigid chassis to transport and discharge materials in the workplace within the relevant sector of industry.

Dump trucks are used to move loose earth and other material within or outside construction sites. There are number of types of these trucks to suit different needs of the site work. Dump trucks with rigid chassis have better manoeuvrability capabilities than other types. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a dump truck with rigid chassis. This includes identifying components and understanding procedures to load, transport and discharge and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will develop an understanding of loading requirements. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in receiving, transporting and discharging the load into an excavation. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a dump truck – rigid chassis	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for travel (site and highway) □ Procedures for travelling over rough, undulating ground, steep inclines and level surfaces – loaded and unloaded □ Actions required for manoeuvring in restricted spaces whilst carrying loads
		1.3	Explain how to set up the machine for work	□ Procedures ensuring the suitability of the tipping and loading area □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for positioning and receiving loads □ Complying with loading procedures □ Actions required for ensuring load integrity and security □ Actions required for transferring loads to different locations □ Actions required for discharging loads into trenches and over edges □ Actions required to maintain safe and tidy working areas

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a dump truck – rigid chassis	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling over a gradient, rough terrain and around obstacles (loaded and unloaded), stopping on the slope in the downwards direction and reversing backwards up the slope for a minimum of 5 metres □ Driving through a restriction (not chicane) – unloaded only
		2.3	Set up the machine for work	□ Ensuring the suitability of the tipping and loading area □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Positioning the dump truck for loading □ Receiving a load □ Discharging the load into the edge or excavation □ Cleaning out the skip fully □ Parking the machine
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 12: Operating a Dump Truck – Articulated Chassis

Unit reference number: T/503/6433

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating dump trucks with articulated chassis to transport and discharge materials in the workplace within the relevant sector of industry.

Dump trucks are used to move loose earth and other material within or outside construction sites. There are number of types of these trucks to suit different needs of the site work. Dump trucks with articulated chassis are used for off-road transportation, usually within a construction site. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a dump truck with articulated chassis. This includes identifying components and understanding procedures to load, transport and discharge and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will develop an understanding of loading requirements. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in receiving, transporting and discharging the load into an excavation. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a dump truck – articulated chassis	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for travel (site and highway) □ Procedures for travelling over rough, undulating ground, steep inclines and level surfaces – loaded and unloaded □ Actions required for manoeuvring in restricted spaces whilst carrying loads
		1.3	Explain how to set up the machine for work	□ Procedures ensuring the suitability of the tipping and loading area □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for positioning and receiving loads □ Complying with loading procedures □ Actions required for ensuring load integrity and security □ Actions required for transferring loads to different locations □ Actions required for discharging loads into trenches and over edges □ Actions required to maintain safe and tidy working areas

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a dump truck – articulated chassis	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling over a gradient, rough terrain and around obstacles (loaded and unloaded), stopping on the slope in the downwards direction and reversing backwards up the slope for a minimum of 5 metres □ Driving through a restriction (not chicane) – unloaded only
		2.3	Set up the machine for work	□ Ensuring the suitability of the tipping and loading area □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Positioning the dump truck for loading □ Receiving a load □ Discharging the load into the edge or excavation □ Cleaning out the skip fully □ Parking the machine
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 13: Operating a Rough Terrain Forklift

Unit reference number: L/503/6440

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for operating rough terrain masted forklifts to lift and transfer loads in the workplace within the relevant sector of industry.

As the name suggests, a forklift consists of two forks to lift and place loads into position. It is a mobile machine and can access hard-to-reach areas. Forklifts generally fall into two categories: industrial and rough terrain. Rough terrain forklifts, as the name implies, are designed to run on rough, unpaved surfaces. They are commonly used on construction sites. These forklifts can have a vertical tower or a telescopic boom. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a rough terrain forklift. This includes identifying components and understanding the requirements to lift and move loads and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate a rough terrain forklift and will be able to demonstrate competence in lifting and placing various loads. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a rough terrain forklift	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces (with and without loads) □ Actions required for manoeuvring in restricted spaces (with and without loads)
		1.3	Explain how to set up the machine for work	□ Configuring and setting up for lifting and transferring duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for lifting and removing various loads, up to the full working height of the forklift □ Actions required for transferring and placing loads accurately at given locations □ Actions required for placing and removing loads from a vehicle □ Actions required to maintain safe and tidy working areas
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a rough terrain forklift	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Procedures for travelling in an unloaded state and with load passing through a chicane, executing full right- and left-hand turns in forward and reverse direction □ Procedures for travelling with load, reversing in a straight line and passing through a restriction at the end of the run
		2.3	Set up the machine for work	□ Configuring and setting up for each lifting and transferring duty □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Lifting and placing a load onto a loading-out tower and moving forklift away; retrieving the load, lowering to ground level and placing at a given point □ Lifting and placing 3 loads onto a truck bed; after completing, removing all loads from the truck bed □ Stacking 3 loads vertically on top of one another; after completing, de-stacking all of the loads and placing alongside each other in a straight line □ Carrying out undercutting when lifting and placing a load □ Placing all loads on the ground
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 14: Operating a Telescopic Handler

Unit reference number: D/503/6443

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating telescopic handlers to lift and transfer loads in the workplace within the relevant sector of industry.

A telescopic handler or tele-handler is a versatile machine which can perform the tasks of a forklift as well as those of a crane. Various attachments can be fixed to its telescopic boom to move different types of materials, such as pellet loads and buckets. It can lift materials to a desired height as well as transporting them from one place to another. The plant is used both in construction and in agriculture. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a telescopic handler. This includes identifying components and understanding the requirements to lift and move loads, travel and manoeuvre through restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate a telescopic handler and will be able to demonstrate competence in lifting and placing various loads. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a telescopic handler	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for travel (site and highway – where applicable) □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces □ Actions required for manoeuvring in restricted spaces (with and without loads)
		1.3	Explain how to set up the machine for work	□ Configuring and setting up for lifting and transferring duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for lifting and removing various loads, up to full extension and working height of the telescopic handler □ Actions required for placing and removing loads from a vehicle □ Actions required for attaching and removing buckets □ Actions required to maintain safe and tidy working areas

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a telescopic handler	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel (site and highway – where applicable) □ Procedures for travelling in an unloaded state and with load, up and down a slope, over rough terrain, passing through a chicane, executing full right- and left-hand turns in forward and reverse direction; stopping and restarting on the slope whilst loaded □ Procedures for travelling with load, reversing in a straight line and passing through a restriction
		2.3	Set up the machine for work	□ Configuring and setting up the tele-handler for each lift □ Operating near hazards, underground and overhead services safely

Learning outcomes		Assessment criteria		Unit amplification
		2.4	Undertake the specified work tasks	□ Lifting and placing a load onto the loading tower and moving the tele-handler away; retrieving the load, lowering to ground level and placing at a given point □ Lifting and placing 3 loads onto a truck bed; after completing, removing all loads from the truck bed □ Stacking 3 loads vertically on top of one another; after completing, de-stacking all of the loads and placing alongside each other in a straight line □ Lifting a load and placing at ground level at an indicated point using either a full reach (horizontal) of the tele-handler or 240 degrees from the pick up point using full reach (horizontal) of the tele-handler □ Carrying out undercutting when lifting and placing a load □ Placing all loads on the ground □ Configuring the tele-handler for road travel
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 15: Operating a Hoist

Unit reference number: J/503/6419

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating hoists to lift and transfer loads in the workplace within the relevant sector of industry.

Hoists are used to lift or lower a load. The lifting or lowering of loads is achieved by means of ropes, chains and pulleys. Lifting and lowering loads is an important operation across a range of industrial sectors such as construction and logistics.

The initial focus of the unit is to provide the underpinning knowledge required to operate a hoist. This includes identifying components and understanding capacity and stability issues, as well as carrying out operational and functional checks. Learners will become familiar with the checks required for emergency lowering. Learners will apply this knowledge to operate a hoist and will be able to demonstrate competence in loading and travelling the platform to a given location, as well as travelling in an unloaded state. The emphasis is on compliance with signals, the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a hoist	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Stability, alignment and safety checks □ Checking gates and safety devices function according to specification □ Checking capacity of the hoist to accommodate expected loads and/or passengers □ Pre-use, running and operational checks □ Checking emergency lowering functions
		1.2	Explain how to set up the machine for work	□ Placing, loading and unloading materials on and off the hoist platform using manual handling techniques □ Preparing the hoist for the required load(s) and/or passengers
		1.3	Explain how to undertake the specified work tasks	□ Operating the hoist to the limits of operation, both loaded and unloaded □ Complying with signals and instructions □ Safely operating hoist within working limitations
		1.4	Explain how to shut down the machine	□ Placing the hoist in an out-of-service condition, isolation and securing procedures

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a hoist	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks, functional and operational checks □ Preparing an exclusion zone in the relevant area □ Agreeing the signal codes with the signaller □ Carrying out the emergency lowering procedure (passenger type only)
		2.2	Set up the machine for work	□ Configuring and setting up for lifting duties □ Operating near hazards, underground and overhead services safely
		2.3	Undertake the specified work tasks	□ Travelling the platform unloaded to the full limits of operation □ Placing the load within the platform □ Travelling the platform to a given level and removing the load □ Placing the load within the platform and travelling to a different level □ Travelling the platform to an out-of-service level and removing the load
		2.4	Shut down the machine	□ Placing the hoist out-of-service, isolation and securing procedures

Unit 16: Operating a Mobile Elevating Work Platform – Scissor

Unit reference number: F/503/6421

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding required for preparing and operating scissor-type mobile elevating work platforms (MEWPs) for accessing operations in the workplace within the relevant sector of industry.

Mobile elevating work platforms (MEWPs) are used to carry out work at height. They are used across a range of industrial sectors such as construction, logistics and shipyards. The scissor-type MEWP is suitable if a single worker is to be raised along with materials to the desired working height. It provides a safe working platform with guardrails from which to work. It can be self-propelled and comes in a variety of sizes.

The initial focus of the unit is to provide the underpinning knowledge required to operate a scissor-type mobile elevating work platform (MEWP). This includes identifying components, understanding issues related to positioning the platform and carrying out operational and functional checks. Learners will apply this knowledge to operate a MEWP and will be able to demonstrate competence in accessing the given point at height. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a mobile elevating work platform – scissor	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks □ Emergency lowering functions
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for site travel □ Procedures for travelling over level surfaces and inclines □ Procedures and precautions for travelling over rough terrain and on inclines □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for accessing duties □ Positioning the platform for accessing a work position □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for accessing working points up to full operating height □ Actions required for travelling with a raised platform (where applicable)
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a mobile elevating work platform – scissor	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks □ Emergency lowering function check
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for site travel □ Travelling to the work area and passing through a chicane, executing full left-hand and right-hand turns □ Travelling the MEWP with the platform raised and passing through a restriction
		2.3	Set up the machine for work	□ Preparing an exclusion zone in the relevant area □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Accessing given points at height □ Parking the MEWP
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 17: Operating a Mobile Elevating Work Platform – Boom

Unit reference number: J/503/6436

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding required for preparing and operating boom-type mobile elevating work platforms (MEWPs) for accessing operations in the workplace within the relevant sector of industry.

Mobile elevating work platforms (MEWPs) are used to carry out work at height. They are used across a range of industrial sectors, such as construction, logistics and shipyards. They can be vehicle- or trailer-mounted or can be self-propelled. The boom can be telescopic or articulated. This group of MEWPs is commonly known as 'cherry pickers'. Health and safety considerations are paramount in the operation due to inherent risks in working at height.

The initial focus of the unit is to provide the underpinning knowledge required to operate a mobile elevating work platform (MEWP). This includes identifying components, understanding issues related to positioning the platform and carrying out operational and functional checks. Learners will become familiar with the checks required for emergency lowering. Learners will apply this knowledge to operate a MEWP and will be able to demonstrate competence in accessing the given point at height, as well as where horizontal reach is required. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a mobile elevating work platform – boom	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks □ Emergency lowering functions
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for site travel □ Procedures for travelling over level surfaces (all types), inclines and uneven terrain (self-propelled units only) □ Procedures and precautions for travelling on inclines □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up for accessing duties □ Positioning the platform for accessing a work position □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for accessing working points up to full operating height and reach □ Actions required for travelling with a raised platform
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a mobile elevating work platform – boom	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks □ Emergency lowering function check
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for site travel, ensuring machine is set up for intended direction of travel □ Travelling to the work area and passing through a chicane, executing full left-hand and right-hand turns □ Travelling the MEWP with the platform raised and passing through a restriction
		2.3	Set up the machine for work	□ Preparing an exclusion zone in the relevant area □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Accessing given points at height □ Accessing given points requiring use of horizontal reach □ Parking the MEWP
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 18: Operating a Concrete Pump – Trailer Mounted

Unit reference number: D/503/6412

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding required to prepare for operating and operate trailer-mounted concrete pumps to pump and discharge materials in the workplace within the relevant sector of industry.

Concrete is a very important material which is used in new construction works as well as in renovations, refurbishments and upgrades. Concrete pumps are commonly used for in situ concrete operations for structures and components such as slabs, foundations and bridges. Operating a concrete pump safely is an important and transferable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a trailer-mounted concrete pump. This includes identifying components, securing pipes and lines and dealing with blockages, as well as carrying out operational and functional checks. Learners will gain an appreciation of the appropriate consistency of concrete for pumping. Learners will apply this knowledge to operate a concrete pump and will be able to demonstrate competence in pumping and pouring to the specified location, as well as cleaning and dismantling the components ready for movement of the trailer. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a concrete pump – trailer mounted	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to set up the machine for work	□ Confirming the position and configuring the machine for pumping duties □ Procedures for deploying the outriggers to specification (where applicable) □ Arranging, anchoring and securing all pipes and lines □ Confirming a given mix is suitable for pumping □ Procedures for arranging, using and complying with communication procedures □ Directing the loading/mixer vehicle to position □ Procedures to deal with hazards, underground and overhead services
		1.3	Explain how to undertake the specified work tasks	□ Procedures for pumping and controlling materials accurately to the desired pour location □ Blockage occurrences and solution methods available to overcome them □ Actions required for maintaining safe working situations □ End-of-use cleaning procedures

Learning outcomes		Assessment criteria		Unit amplification
		1.4	Explain how to shut down the machine	□ Shut down, isolation and securing procedures
2	Be able to operate a concrete pump – trailer mounted	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Set up the machine for work	□ Ensuring that the trailer is secure and segregating the working area □ Preparing for the relevant work following the given pipeline specification □ Lining the pipes and placing hoses with suitable grout □ Directing the material-carrying vehicle into position □ Operating machine near hazards, underground and overhead services safely
		2.3	Undertake the specified work tasks	□ Pumping the material to the pour location whilst following signals □ Stopping and restarting the pour during work □ Cleaning the pumping system components □ Dismantling and storing all components ready for the movement of the trailer
		2.4	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 19: Operating a Grader

Unit reference number: A/503/6434

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for operating graders to form and shape materials in the workplace within the relevant sector of industry.

A grader is a piece of heavy equipment which is used in earthworks to help achieve a smooth and level surface. They are used in the construction of roads or where the ground surface needs to be rendered smooth. The blade attached to the grader helps to carry out levelling operations. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a grader. This includes identifying components and understanding procedures to carry out grading, spreading and levelling operations and travel over rough terrains and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in trimming banks, grading, levelling and reinstatement of works. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a grader	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for site travel □ Procedures for travelling over rough, undulating ground and level surfaces □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for general grading and side-casting duties □ Configuring and setting up the machine for high bank work □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for grading, spreading materials and levelling ground □ Actions required to produce even finishes
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a grader	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for site travel □ Travelling to the work area, up and down the slope, passing through a restriction and travelling over rough terrain
		2.3	Set up the machine for work	□ Preparing and setting up the grader for relevant work activities □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Trimming the bank to an agreed angle □ Grading and levelling an area to specification □ Reinstating the work area to level □ Parking the grader
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 20: Operating a Wheeled Loading Shovel

Unit reference number: K/503/6428

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating wheeled loading shovels to extract materials in the workplace within the relevant sector of industry.

A wheeled loading shovel is a loader, which is used to place materials in transporting vehicles and other receptacles. They can be small and compact and hence easy to manoeuvre, or can be of a more powerful variety. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a wheeled loading shovel. This includes identifying components and understanding procedures to travel over rough terrain, inclines and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate a wheeled loading shovel, and will be able to demonstrate competence in loading a vehicle using materials from a stockpile as well as in creating an upward ramp. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a wheeled loading shovel	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for site and highway travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces (loaded and unloaded) □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for extraction and loading duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for extracting differing types of materials from stockpiles and other sources □ Actions required for forming stockpiles of segregated materials and constructing (temporary) ramps □ Actions required for sorting and placing materials into transporting vehicles and receptacles □ Actions required for spreading and levelling ground and materials

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a wheeled loading shovel	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for site and highway travel □ Travelling and manoeuvring in a loaded and unloaded state, up and down a slope, stopping and starting on the slope in up and down directions, travelling over rough terrain, reversing (loaded only) in a straight line and passing through a restriction at the end of the run
		2.3	Set up the machine for work	□ Preparing and setting up the machine for extraction and loading duties □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Creating an upward ramp (using material from a bank) □ Loading material into a vehicle □ Spreading and levelling ground and materials □ Cleaning and tidying the work area □ Parking the wheeled loading shovel
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 21: Operating a Crawler-Tractor/Dozer

Unit reference number: K/503/6431

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating crawler-tractor/dozers for excavating/forming operations in the workplace within the relevant sector of industry.

A crawler-tractor is a type of construction vehicle, which instead of using wheels uses tracks. Using tracks means that the load is spread over a large area, making such machines suitable for use in a variety of site conditions. A number of attachments can be added to a crawler-tractor. When a blade is attached to the machine, it is then called a dozer, which is used for a variety of excavation operations. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a crawler-tractor/dozer. This includes identifying components and understanding procedures to carry out excavation in various soil types and travel over rough terrains, inclines and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in excavating trenches, constructing ramps and carrying out grading, spreading and levelling tasks. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a crawler-tractor/dozer	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for site travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for excavating duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for excavating differing types of excavations in various types of ground □ Actions required for constructing ramps and form and shape stockpiles □ Actions required for grading, spreading and levelling ground and materials
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting □ Refuelling procedures

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a crawler-tractor/dozer	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling to the work area, up and down a slope, passing through a restriction and travelling over rough terrain
		2.3	Set up the machine for work	□ Preparing and setting up the crawler-tractor/dozer for relevant work activities □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Producing a straight trench to specified dimensions and forming a stockpile □ Side casting material from an embankment to specified dimensions □ Constructing ramps and forming and shaping stockpiles □ Grading, spreading and levelling ground and materials □ Reinstating the work area in accordance with the contract information □ Parking the crawler-tractor/dozer
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures □ Refuelling procedures

Unit 22: Operating a Concrete Pump – Truck-mounted Boom

Unit reference number:	**Y/503/6411**
Level:	**2**
Credit value:	**5**
Guided learning hours:	**30**

Unit aim

This unit provides learners with the knowledge and understanding required to prepare for operating and operate truck-mounted boom concrete pumps to pump and discharge materials in the workplace within the relevant sector of industry.

Concrete is a very important material, which is used in new construction works as well as in renovations, refurbishments and upgrades. Concrete pumps are commonly used for in situ concrete operations for structures and components such as slabs, foundations and bridges. Operating a concrete pump safely is an important and transferable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a truck-mounted concrete pump. This includes identifying components, securing pipes and lines and dealing with blockages, as well as carrying out operational and functional checks. Learners will gain an appreciation of the appropriate consistency of concrete for pumping. Learners will apply this knowledge to operate a concrete pump. They will be able to demonstrate competence in pumping and pouring to the specified location and changing boom radius during the pour, as well as cleaning and dismantling the components ready for moving the truck. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a concrete pump – truck-mounted boom	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for travel (site and highway) □ Procedures for travelling the vehicle to an area of work □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Confirming the position and configuring the machine for pumping duties □ Procedures for deploying the outriggers to specification (where applicable) □ Arranging, anchoring and securing all pipes and lines □ Confirming a given mix is suitable for pumping □ Procedures for arranging, using and complying with communication procedures □ Directing the loading/mixer vehicle to position □ Procedures to deal with hazards, underground and overhead services

Learning outcomes		Assessment criteria		Unit amplification
		1.4	Explain how to undertake the specified work tasks	□ Procedures for pumping and controlling materials accurately to the desired pour location □ Blockage occurrences and solution methods available to overcome them □ Actions required for maintaining safe working situations □ End-of-use cleaning procedures
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Road traffic requirements
2	Be able to operate a concrete pump – truck-mounted boom	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel (site and highway) □ Procedures for travelling the vehicle to the work area and manoeuvring in restricted spaces
		2.3	Set up the machine for work	□ Positioning the truck and preparing for the relevant work following the given pipeline specification □ Lining the pipes and placing hoses with suitable grout □ Directing the material-carrying vehicle into position □ Operating machine near hazards, underground and overhead services safely

Learning outcomes		Assessment criteria		Unit amplification
		2.4	Undertake the specified work tasks	□ Pumping the material to the pour location whilst following signals □ Changing the boom radius whilst pumping material with end of hose kept at a constant height □ Stopping and restarting the pour during work □ Cleaning the pumping system components □ Dismantling and storing all components ready for the movement of the trailer □ Parking the machine
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 23: Operating a Tracked Loading Shovel

Unit reference number: H/503/6458

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating tracked loading shovels to extract materials in the workplace within the relevant sector of industry.

A tracked loading shovel is a loader, which is used to place materials in transporting vehicles and other receptacles. Using tracks means that the load is spread over a large area, making such machines suitable for use in a variety of site conditions. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a tracked loading shovel. This includes identifying components and understanding procedures to travel over rough terrain, inclines and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate a tracked loading shovel. They will be able to demonstrate competence in loading a vehicle using materials from a stockpile, as well as in creating an upward ramp. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a tracked loading shovel	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for site and highway travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces (loaded and unloaded) □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for extraction and loading duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for extracting differing types of materials from stockpiles and other sources □ Actions required for forming stockpiles of segregated materials and constructing (temporary) ramps □ Actions required for sorting and placing materials into transporting vehicles and receptacles □ Actions required for spreading and levelling ground and materials

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a tracked loading shovel	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for site and highway travel □ Travelling and manoeuvring in a loaded and unloaded state, up and down a slope, stopping and starting on the slope in up and down directions, travelling over rough terrain, reversing (loaded only) in a straight line and passing through a restriction at the end of the run
		2.3	Set up the machine for work	□ Preparing and setting up the machine for extraction and loading duties □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Creating an upward ramp (using material from a bank) □ Loading material into a vehicle □ Spreading and levelling ground and materials □ Cleaning and tidying the work area □ Parking the loading shovel
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 24: Operating a Motorised Scraper

Unit reference number: A/503/6420

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating motorised scrapers to extract, transport and distribute materials in the workplace within the relevant sector of industry.

A motorised scraper is a piece of heavy equipment, which is used for earth-moving operations. It is very efficient on short haulages where cut and fill areas are close to each other. The blade attached to the scraper helps to carry out these operations. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a motorised scraper. This includes identifying components and understanding procedures to carry out excavation and stockpiling operations and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate the plant, and will be able to demonstrate competence in excavating and forming stockpiles as well as in making formation levels. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a motorised scraper	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces – loaded and unloaded □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Positioning and setting up the machine to load and deposit materials/ground □ Factors that ensure the suitability of the loading and depositing area □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for excavating various types of ground □ Actions required for transferring and depositing loads to different locations □ Actions required for forming stockpiles of material □ Actions required for grading, spreading and levelling ground and materials □ Actions required for performing push loading techniques

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a motorised scraper	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for travel □ Travelling to the work area, travelling up and down a slope, passing through a restriction and travelling over rough terrain □ Reversing into a restricted area
		2.3	Set up the machine for work	□ Preparing and setting up the scraper for relevant work activities □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Excavating a given area and forming stockpiles as instructed □ Depositing loads to formation level and discharging to a uniform length □ Parking the motorised scraper
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 25: Operating a Crawler-Tractor – Side Boom

Unit reference number: H/503/6430

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding required for preparing and operating crawler-tractors with side boom to lift and transfer loads in the workplace within the relevant sector of industry.

A crawler-tractor is a type of construction vehicle, which instead of using wheels uses tracks. Using tracks means that the load is spread over a large area, making such machines suitable for use in a variety of site conditions. A number of attachments can be added to a crawler-tractor, such as a side boom, which enables the machine to lift and place heavy loads, for example large pipe sections. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a crawler-tractor with side boom. This includes identifying components and understanding procedures to travel over rough terrain, inclines and restricted spaces, as well as carrying out operational and functional checks. Learners will gain an appreciation of how to balance loads to avoid swinging. Learners will apply this knowledge to operate a crawler-tractor with side boom, and will be able to demonstrate competence in picking up and travelling with a steel pipe to and from a trench, as well as in stowing all the equipment safely. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a crawler-tractor – side boom	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for lifting duties □ Rigging and de-rigging procedures □ Procedures to deal with hazards, underground and overhead services

Learning outcomes		Assessment criteria		Unit amplification
		1.4	Explain how to undertake the specified work tasks	□ Actions required for programming/setting up rated capacity indicators for lifting duties □ Identifying weights and centres of gravity of loads □ Actions required for lifting various loads using the full radius capabilities □ Actions required to accurately place loads □ Actions required to minimise the swinging of loads □ Actions required to move loads through machine travel □ Actions required for complying with signals and instructions □ Actions required to maintain safe working situations □ Preparing the crawler-tractor – side boom ready for movement after lifting duties
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a crawler-tractor – side boom	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling to the work area, up and down a slope, passing through a restriction and travelling over rough terrain

Learning outcomes		Assessment criteria		Unit amplification
		2.3	Set up the machine for work	□ Preparing and setting up the machine for each lift □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Picking up steel piping and travelling over rough terrain before arriving at a trench □ Depositing the steel pipe into the trench at a given position; after completing, detaching the pipe □ Attaching and removing the pipe from the trench and placing back at the original start point □ Stowing all equipment and returning the vehicle to the park position □ Parking the machine
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 26: Operating a Trencher

Unit reference number: M/503/6446

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating trenchers to extract materials in the workplace within the relevant sector of industry.

Trenchers are used to dig trenches for laying drainage, pipes or cables. A trencher can be tracked, wheeled or chained and can be a mini or a portable one. Each type has its own application depending on the location or extent of work. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a trencher. This includes identifying components and understanding procedures to carry out excavation in various soil types and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will also develop an understanding of working with different types of soils and how to maintain a consistent depth. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in cutting vertical trenches and straight excavations and placing materials in vehicles or receptacles. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a trencher	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for excavating duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for producing cut trenches in various types of ground □ Actions required for producing consistent depths of cut in level and uneven ground □ Actions required for cutting trenches up and down inclines □ Techniques used for radius cutting □ Actions required for placing materials into transporting vehicles/receptacles

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a trencher	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for travel □ Travelling to the work area, travelling up and down a slope, passing through a restriction and over rough terrain
		2.3	Set up the machine for work	□ Preparing and setting up the machine for extraction duties □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Completing 2 x vertical trenches in a 'T' formation □ Completing a straight excavation with vertical sides along sloping ground □ Loading material into a vehicle or in windrows □ Parking the trencher
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 27: Operating a Crawler Crane

Unit reference number: K/503/6414

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating crawler cranes (above 10 tonnes) to lift and transfer loads in the workplace within the relevant sector of industry.

Lifting and moving loads is important across a range of industrial sectors such as construction, offshore and logistics. Cranes are generally used for lifting and moving operations and there are a number of crane varieties available. A crawler crane is a type of crane vehicle, which is mounted on tracks. Using tracks means that the load is spread over a large area, making such machines suitable for use in a variety of site conditions without requiring any outriggers.

The initial focus of the unit is to provide the underpinning knowledge required to operate a crawler crane. This includes identifying components and understanding the use and limitations of tools, as well as carrying out operational and functional checks. Learners will gain an appreciation of how to balance loads to avoid swinging. Learners will apply this knowledge to operate a crawler crane and will be able to demonstrate competence in lifting, moving and landing loads in designated areas, using a variety of rope falls and moving through various radii. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a crawler crane	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks required to place the crane into service □ Procedures that must be followed when accessing the jib for inspection and maintenance purposes
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up the machine for travel □ Procedures required for travelling to an area of work □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for lifting duties □ Rigging and de-rigging procedures when fitting a lattice-type extension □ Procedures to deal with hazards, underground and overhead services

Learning outcomes		Assessment criteria		Unit amplification
		1.4	Explain how to undertake the specified work tasks	□ Actions required for programming/setting-up rated capacity indicators for lifting duties □ Identifying weights and centres of gravity of loads □ Actions required for lifting various loads, using the full radius and slewing capabilities of the crawler crane □ Actions required for accurately placing loads □ Changing falls of rope on a hook block □ Actions required for minimising the swinging of loads □ Actions required for moving loads through machine travel □ Complying with signals and instructions □ Actions required to maintain safe working situations □ Preparing the crane ready for movement from lifting duties
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a crawler crane	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks, functional and operational checks and placing the crane into service □ Safely complying with procedures for accessing the jib for inspection and maintenance purposes
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for travel □ Travelling the crawler crane to an area of work through a restriction

Learning outcomes		Assessment criteria		Unit amplification
		2.3	Set up the machine for work	□ Preparing and setting up the machine for each lift □ Changing the number of falls on the hook block from 3 to 2, or 2 to 3 □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Lifting a load and landing at a designated place; once landed, moving and then rotating through 360 degrees; landing the load at mid-radius at a designated place □ Lifting a load using three falls of rope, rotating for 270 degrees and landing at a designated place □ Lifting a load from a ground level and rotating through 360 degrees maintaining minimum radius; landing at a designated place □ Lifting a load from a given point and landing at a designated place out of sight □ Lifting a load using two falls of rope from a designated position and travelling with the load; whilst travelling, executing a 90 degree turn □ Recovering simulated 2-metre load swings □ Making safe all loads after each activity □ Parking the machine
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 28: Operating a Tower Crane

Unit reference number: H/503/6427

Level: 2

Credit value: 10

Guided learning hours: 60

Unit aim

This unit provides learners with the knowledge and understanding for operating tower cranes to lift and transfer loads in the workplace within the relevant sector of industry.

Lifting and moving loads is important across a range of industrial sectors such as construction, offshore and logistics. Cranes are generally used for lifting and moving operations, and there are a number of crane varieties available. A tower crane is used for construction of tall structures, and comprises a long jib, a counter short jib, slewing equipment, a base and a mast. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a tower crane. This includes identifying components and understanding how to select lifting accessories, as well as carrying out operational and functional checks. Learners will gain an appreciation of how to balance loads to avoid swinging. Learners will apply this knowledge to operate a tower crane and will be able to demonstrate competence in lifting, moving and landing loads in designated areas through various radii. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a tower crane	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks required to place the tower crane into service □ Procedures that must be followed when accessing the jib for inspection and maintenance purposes
		1.2	Explain how to set up the machine for work	□ Configuring and setting up the machine for lifting duties □ Reasons for changing the number of falls of rope □ Procedures to deal with hazards, underground and overhead services

Learning outcomes		Assessment criteria		Unit amplification
		1.3	Explain how to undertake the specified work tasks	□ Actions required for programming/setting-up rated capacity indicators and/or other load/distance indicators for lifting duties □ Actions required for lifting various loads using the full radius and slewing capabilities of a tower crane □ Actions required for ensuring load balance, security and integrity □ Actions required for accurately placing loads □ Actions required for minimising the swinging of loads □ Actions required for moving loads through machine travel (where applicable) □ Complying with signals and instructions □ Actions required to maintain safe working situations
		1.4	Explain how to shut down the machine	□ Preparing the crane for out-of-service, isolation and securing procedures
2	Be able to operate a tower crane	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks, functional and operational checks and placing the tower crane into service □ Safely complying with procedures for accessing the jib for inspection and maintenance purposes

Learning outcomes		Assessment criteria		Unit amplification
		2.2	Set up the machine for work	□ Configuring and setting up the machine for lifting duties □ Changing the number of falls of rope safely □ Operating near hazards, underground and overhead services safely
		2.3	Undertake the specified work tasks	□ Lifting a load, rotating for 180 degrees without changing radius before landing the load; after completing, lifting and landing the load at a designated place □ Lifting a load, rotating over the structure and landing in a designated place; after completing, returning the load to the original start point and landing at a designated place □ Lifting a load at ground level and rotating – maintaining minimum of 75% radius; landing the load at a designated place □ Lifting a load from a designated position and landing in a designated place out of sight □ Simulating pouring a wall by travelling a load in a straight line for a designated distance □ Recovering simulated 2-metre load swings □ Making safe all loads after each activity
		2.4	Shut down the machine	□ Placing the crane in out-of-service mode □ Carrying out isolation and securing procedures

Unit 29: Operating a Lorry Loader

Unit reference number: F/503/6418

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating lorry loaders/knuckle boom cranes to lift and transfer loads in the workplace within the relevant sector of industry.

Lorry loaders are used in the construction industry to move and lift loads and can carry out tasks traditionally undertaken by mobile and tower cranes. On smaller machines, the crane is integral to the lorry loader. Care should be taken to plan lifting operations with the size of the plant in view. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a lorry loader. This includes identifying components and understanding the use and limitations of tools, as well as carrying out operational and functional checks. Learners will gain an appreciation of how to balance loads to avoid swinging. Learners will apply this knowledge to operate a lorry loader and will be able to demonstrate competence in lifting, placing, moving and securing loads ready for travel. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a lorry loader	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring the vehicle and loader crane for travel □ Procedures for travelling the vehicle to an area of work □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Positioning and configuring the vehicle and loader crane for lifting duties □ Actions required for deploying the outriggers/stabilisers to specification □ Procedures to deal with hazards, underground and overhead services

Learning outcomes		Assessment criteria		Unit amplification
		1.4	Explain how to undertake the specified work tasks	□ Actions required for programming/setting-up rated capacity or load moment indicators for lifting duties □ Identifying weights and centres of gravity of loads □ Actions required for lifting various loads, using the full radius and slewing capabilities of the loader crane □ Actions required for accurately placing loads at ground level and on/into a vehicle □ Actions required for attaching and using boom extensions □ Actions required for minimising the swinging of loads □ Actions required for securing loads on/in the vehicle □ Lifting accessories compatible with loader crane use □ Actions required to maintain safe working situations
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures
2	Be able to operate a lorry loader	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks on the host vehicle and loader crane □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the vehicle and loader crane for road travel (loaded and unloaded) □ Travelling to and within the work area (loaded and unloaded)

Learning outcomes		Assessment criteria		Unit amplification
		2.3	Set up the machine for work	□ Positioning the vehicle, preparing and setting the crane and load for each lift □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Reversing into a restricted area □ Lifting 3 loads and placing them onto the vehicle bed □ Securing all loads in preparation for travel □ Removing and placing the 3 loads to different locations □ Stowing all equipment and returning the vehicle to the park position □ Parking the vehicle
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 30: Performing Slinger/ Signaller Duties

Unit reference number: J/503/6453

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for slinging and signalling the movement of loads (secondary role) in the workplace within the relevant sector of industry.

This unit is designed for those undertaking slinger/signaller duties in a secondary or part-time role in support of a learner's main occupation. Other units of competence exist for those undertaking slinging and signalling as a main occupation.

Although slinger and signaller perform different tasks, usually one person is trained to perform both jobs. Their role in lifting and movement operations is important and the skills to carry out slinging and signalling competently are valuable, not only in the construction industry but wherever cranes are used to lift and move loads.

The initial focus of the unit is to provide the underpinning knowledge required to carry out slinging and signalling duties. This includes identifying components and understanding the use and limitations of lifting accessories, as well as carrying out operational and functional checks. Learners will gain an appreciation of how to balance loads to avoid swinging. Learners will apply this knowledge to demonstrate competence in selecting the right accessory and carrying out signalling and slinging duties to safely lift, move and land loads in designated areas. The emphasis is on compliance with the manufacturer's instructions, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to perform slinger/signaller duties	1.1	Explain procedures for obtaining information and preparing lifting accessories for work activities	□ Purpose, construction, controls and terminology of differing types of lifting accessories □ Manufacturer's requirements as per technical data, other types of information source and relevant regulations and legislation □ Interpreting and extracting information on all relevant documentation □ Pre-use checks on non-specialist lifting accessories and identification of non-serviceable items □ Procedures for placing non-serviceable items out-of-service
		1.2	Explain how to set up and prepare the work area, and the procedures required to identify, select and use lifting accessories	□ Identifying centres of gravity and estimating weights of loads □ Actions required to prepare the area of operation for carrying out lifting duties □ Selecting relevant lifting accessory for a given load □ Actions required for dealing with hazards, underground and overhead services

Learning outcomes		Assessment criteria		Unit amplification
		1.3	Explain how to undertake the specified work tasks	□ Actions required for securing various types of load to a lifting hook, using the relevant lifting accessory and following correct procedures □ Ensuring load balance, security and integrity □ Processes required for directing and guiding the movement of loads to different types of location □ Actions required for accurately placing loads □ Complying with organisational communication procedures □ Maintaining safe working situations
		1.4	Explain how to complete the specified work tasks	□ Out-of-service and securing procedures for lifting accessories and the work area
2	Be able to perform slinger/signaller duties	2.1	Obtain and extract relevant lift information, and prepare lifting accessories for use	□ Checking equipment for functional and operational serviceability □ Identifying and impounding all unserviceable items □ Identifying certification not meeting current legislation or regulations
		2.2	Set up the work area for lifting duties and select lifting accessories	□ Establishing the weight and features of each load prior to lifting □ Establishing communication methods (visual and with radios) with the crane operator □ Selecting the relevant lifting accessory for the load to be lifted

Learning outcomes		Assessment criteria		Unit amplification
		2.3	Undertake the specified work tasks	□ Attaching the selection lifting accessory and preparing each load for lifting □ Lifting a load from ground level, guiding and landing in a designated place out of sight of the crane operator; after landing, returning the load to the original start point, landing at a designated place and detaching the accessory □ Lifting a load from ground level, guiding to maximum radius of the crane, slewing for at least 180 degrees and landing at a designated place, mid radius; after landing, detaching the accessory □ Lifting a load from ground level, guiding to a minimum radius of the crane, slewing for at least 360 degrees and landing at a designated place, involving a change of radius; after landing, detaching the accessory
		2.4	Complete the specified work tasks	□ Making safe all loads following each activity □ Collecting and storing all lifting accessories

Unit 31: Operating a Mobile Crane

Unit reference number: F/503/6435

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating mobile cranes to lift and transfer loads in the workplace within the relevant sector of industry.

Lifting and moving loads is important across a range of industrial sectors such as construction, offshore and logistics. Cranes are generally used for lifting and moving operations, and there are a number of crane varieties available. A mobile crane is mounted on carriers, which can be either crawler or with tyres. Such cranes have a telescopic boom and are generally hydraulically operated.

The initial focus of the unit is to provide the underpinning knowledge required to operate a mobile crane. This includes identifying components and understanding the use and limitations of tools, as well as carrying out operational and functional checks. Learners will gain an appreciation of how to balance loads to avoid swinging. Learners will apply this knowledge to operate a mobile crane, and will be able to demonstrate competence in lifting, moving and landing loads in designated areas through various radii. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a mobile crane	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks required to place the crane into service □ Procedures that must be followed when accessing the jib for inspection and maintenance purposes
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up the machine for travel (site and highway) □ Procedures required for travelling to an area of work □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the crane for lifting duties □ Deploying outriggers to specification (where applicable) □ Procedures to deal with hazards, underground and overhead services

Learning outcomes		Assessment criteria		Unit amplification
		1.4	Explain how to undertake the specified work tasks	□ Actions required for programming/setting-up rated capacity indicators for lifting duties □ Identifying weights and centres of gravity of loads □ Actions required for lifting various loads using the full radius and slewing capabilities of a crane □ Techniques for accurately placing loads □ Actions required for changing falls of rope on a hook block □ Actions required for minimising the swinging of loads □ Actions required for moving loads through machine travel (where applicable) □ Complying with signals and instructions □ Actions required to maintain safe working situations □ Rigging and de-rigging procedures when fitting fly jibs or boom extensions □ Dismantling the crane in preparation of movement
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures
2	Be able to operate a mobile crane	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks, functional and operational checks

Learning outcomes		Assessment criteria		Unit amplification
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for travel (site and highway) □ Travelling to the work area and reversing into a restricted space
		2.3	Set up the machine for work	□ Preparing and setting up the machine for each lift □ Changing the number of falls on the hook block from 2 to 3, or 3 to 2 □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Lifting a load at a designated place; moving back to and rotating; landing the load at mid-radius at a designated place □ Lifting a load and simulating a concrete pouring exercise; landing the load at a designated place □ Lifting a load using three falls of rope and landing at a designated place □ Lifting a load using a minimum radius and rotate maintaining minimum radius; landing the load at a designated place □ Lifting a load from a given point and landing at a designated place out of sight □ Recovering simulated 2-metre load swings □ Making safe all loads after each activity □ Configuring the crane for travel □ Parking the machine

Learning outcomes		Assessment criteria		Unit amplification
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 32: Operating a Pedestrian Operated Tower Crane

Unit reference number: L/503/6437

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating pedestrian operated tower cranes to lift and transfer loads in the workplace within the relevant sector of industry.

Lifting and moving loads is important across a range of industrial sectors such as construction, offshore and logistics. Cranes are generally used for lifting and moving operations. There are a number of crane varieties available. A tower crane is used for constructing tall structures and comprises a long jib, a counter short jib, slewing equipment, a base and a mast. If the operator is working from the ground, the crane is a pedestrian operated tower crane or POTC.

The initial focus of the unit is to provide the underpinning knowledge required to operate a POTC. This includes identifying components and understanding how to select lifting accessories, as well as carrying out operational and functional checks. Learners will gain an appreciation of how to balance loads to avoid swinging. Learners will apply this knowledge to operate a POTC and will be able to demonstrate competence in lifting, moving and landing loads in designated areas through various radii. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a pedestrian operated tower crane	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks required to place the pedestrian operated tower crane (POTC) into service
		1.2	Explain how to set up the machine for work	□ Configuring and setting up the POTC for lifting duties □ Identifying centres of gravity and estimating weights of loads □ Actions required for selecting and using lifting accessories □ Procedures to deal with hazards, underground and overhead services

Learning outcomes		Assessment criteria		Unit amplification
		1.3	Explain how to undertake the specified work tasks	□ Actions required for securing various types of load to a lifting hook using the relevant lifting accessory and following correct procedures □ Actions required for ensuring load balance, security and integrity □ Actions required for lifting various loads using the full radius and slewing capabilities of a POTC □ Actions required for accurately placing loads □ Actions required for attaching and using boom extensions and fly jibs □ Actions required for minimising the swinging of loads □ Complying with signals and instructions □ Actions required to maintain safe working situations □ Altering hoist rope falls
		1.4	Explain how to shut down the machine	□ Preparing the crane for out-of-service, isolation and securing procedures
2	Be able to operate a pedestrian operated tower crane	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks, functional and operational checks and placing the POTC into service

Learning outcomes		Assessment criteria		Unit amplification
		2.2	Set up the machine for work	□ Configuring and setting up the POTC for lifting duties □ Safely identifying centres of gravity and estimating weights of loads □ Selecting and using lifting accessories safely □ Operating near hazards, underground and overhead services safely
		2.3	Undertake the specified work tasks	□ Lifting a load, rotating through 180 degrees without changing radius before landing at minimum radius; after completing, lifting and landing the load in a designated place at mid radius □ Lifting a load at mid radius and rotating over a structure and landing in a designated position at 75% radius; after completing, returning the load to the original start point and landing in a designated place □ Lifting a load at minimum radius and rotating through 360 degrees and landing in a designated place □ Simulating pouring a wall by travelling a load in a straight line for a designated distance □ Recovering simulated 2-metre load swings □ Lifting a load from a given point and landing in a designated place out of sight □ Making safe all loads after each activity
		2.4	Shut down the machine	□ Placing the POTC in out-of-service mode □ Carrying out isolation and securing procedures

Unit 33: Operating a Compact Crane

Unit reference number: M/503/6429

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding required to operate compact cranes to lift and transfer loads in the workplace within the relevant sector of industry.

Lifting and moving loads is important across a range of industrial sectors such as construction, offshore and logistics. Cranes are generally used for lifting and moving operations. There are a number of crane varieties available. As the name suggests, compact cranes are useful when there is restricted workspace or where lifting is required to inaccessible areas.

The initial focus of the unit is to provide the underpinning knowledge required to operate a compact crane. This includes identifying components and understanding the use and limitations of tools, as well as carrying out operational and functional checks. Learners will gain an appreciation of how to balance loads to avoid swinging. Learners will apply this knowledge to operate a compact crane and will be able to demonstrate competence in lifting, moving and landing loads in designated areas. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a compact crane	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up the machine for travel □ Procedures required for travelling to an area of work □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the crane for lifting duties □ Actions required for programming/setting up rated capacity indicators or load moment indicators for lifting duties □ Identifying weights and centres of gravity of loads □ Deploying outriggers to specification (where applicable) □ Function, use and limitations of jib extensions □ Procedures to deal with hazards, underground and overhead services

Learning outcomes		Assessment criteria		Unit amplification
		1.4	Explain how to undertake the specified work tasks	□ Actions required for lifting various loads using the full radius and slewing capabilities of a crane □ Techniques for accurately placing loads □ Actions required for minimising the swinging of loads □ Actions required for moving loads through machine travel (where applicable) □ Complying with signals and instructions □ Actions required to maintain safe working situations □ Types of lifting accessories compatible with compact crane use □ Limitations of slinging with compact cranes
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting □ Procedures for lifting and/or towing □ Refuelling procedures
2	Be able to operate a compact crane	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks, functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for travel □ Travelling to the work area and manoeuvring in restricted spaces

Learning outcomes		Assessment criteria		Unit amplification
		2.3	Set up the machine for work	□ Preparing and setting up the machine for lifting duties □ Programming/setting up rated capacity indicators or load moment indicators for lifting duties □ Identifying weights and centres of gravity □ Deploying outriggers to specification □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Lifting loads and landing at minimum radius at a designated place □ Lifting and travelling with loads and landing at a designated place □ Making safe all loads after each activity □ Parking the machine
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 34: Operating a Crusher

Unit reference number: H/503/6413

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating crushers to process materials in the workplace within the relevant sector of industry.

Crushers are used to break down large rocks into aggregates of specified sizes. Crushers are also used for recycling and disposal of materials. During a crushing operation, sufficient force has to be applied to break or crush the material. Once crushed, the material or aggregate is sorted according to the specified grading. A crusher can be fixed or can be a mobile unit carrying out operations on site.

The initial focus of the unit is to provide the underpinning knowledge required to operate a crusher. This includes identifying components and understanding procedures to crush and sort material and to travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will gain an appreciation of a material's suitability for crushing. Learners will apply this knowledge to operate a crusher, and will be able to demonstrate competence in converting uncrushed material into processed material of a specified grade. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a crusher	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for travel (mobile units) □ Procedures for travelling over rough, undulating ground and level surfaces (mobile units) □ Actions required for manoeuvring in restricted spaces (mobile units)
		1.3	Explain how to set up the machine for work	□ Configuring and setting up for crushing duties to produce aggregate to specified sizes □ Procedures ensuring suitability of the discharge area □ Procedures to deal with hazards, underground and overhead services

Learning outcomes		Assessment criteria		Unit amplification
		1.4	Explain how to undertake the specified work tasks	□ Actions required for crushing differing types of materials □ Actions required for sorting materials into graded sizes □ Actions required for controlling and maintaining the work flow rate □ Appropriate communication procedures before and during work □ Procedures for removing blockages and foreign objects □ Cleaning down the machine and working area
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a crusher	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel (mobile units) □ Travelling over rough, undulating ground and level surfaces and manoeuvring in restricted areas (mobile units)
		2.3	Set up the machine for work	□ Certifying that the crusher is sited appropriately and is stable, level and configured for crushing duties □ Ensuring discharge area(s) are suitable □ Operating machine near hazards, underground and overhead services safely

Learning outcomes		Assessment criteria		Unit amplification
		2.4	Undertake the specified work tasks	□ Ensuring the material is suitable for crushing and setting the crusher for the given specification □ Agreeing the work process and signals with others involved in the crushing process □ Starting the crusher and engaging all systems □ Converting uncrushed material into processed material of a specified grade □ Operating the crusher until a stockpile is produced to required height □ Carrying out emergency stop of operations during the crushing process □ Clearing all material from the crusher and immediate area
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 35: Operating a Screener

Unit reference number: R/503/6441

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating screeners to process materials in the workplace within the relevant sector of industry.

Screeners are used to sift through material such as gravel, aggregates and topsoil, and sort it according to the required sizes. Screeners are also used for recycling and disposal of materials. A screener can be fixed or can be a mobile unit carrying out operations on site. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a screener. This includes identifying components and understanding procedures to screen and sort material and to travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will gain an understanding of how to deal with blockages. Learners will apply this knowledge to operate a screener and will be able to demonstrate competence in screening material into three different sizes and forming stockpiles. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a screener	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for travel (mobile units) □ Procedures for travelling over rough, undulating ground and level surfaces (mobile units) □ Actions required for manoeuvring in restricted spaces (mobile units)
		1.3	Explain how to set up the machine for work	□ Configuring and setting up for screening duties to produce aggregate to specified sizes □ Procedures ensuring suitability of the discharge area □ Procedures to deal with hazards, underground and overhead services

Learning outcomes		Assessment criteria		Unit amplification
		1.4	Explain how to undertake the specified work tasks	□ Actions required for screening differing types of materials □ Actions required for sorting materials into graded sizes □ Actions required for controlling and maintaining the work flow rate □ Appropriate communication procedures before and during work □ Procedures for removing blockages and foreign objects □ Cleaning down the machine and working area
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate a screener	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel (mobile units) □ Travelling over rough, undulating ground and level surfaces and manoeuvring in restricted areas (mobile units)
		2.3	Set up the machine for work	□ Certifying that the screener is sited appropriately and is stable, level and configured for screening duties □ Ensuring discharge area(s) are suitable □ Operating machine near hazards, underground and overhead services safely

Learning outcomes		Assessment criteria		Unit amplification
		2.4	Undertake the specified work tasks	□ Ensuring the material is suitable for screening and setting the screener for the given specification □ Agreeing the work process and signals with others involved in the screening process □ Starting the screener and engaging all systems □ Screening material into at least three different sizes □ Operating the screener until a stockpile is produced to required height □ Carrying out emergency stop of operations □ Clearing all material from the screener and immediate area
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 36: Operating a Dragline

Unit reference number: M/503/6432

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating draglines to extract materials in the workplace within the relevant sector of industry.

A dragline is a piece of heavy equipment used in civil engineering and mining and is considered to be one of the largest pieces of mobile equipment ever built. A dragline is most efficient and is frequently used where excavation is required below the base. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a dragline. This includes identifying components and understanding procedures to carry out excavation in various soil types and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will develop an understanding of lifting requirements. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in excavating, stockpiling and placing materials in vehicles or receptacles. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a dragline	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for excavating duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for excavating different types of excavations in various types of ground □ Actions required for placing materials into transporting vehicles and receptacles □ Actions required for adjusting the tipping rope for different materials □ Lifting requirements that affect the operation of a dragline
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a dragline	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for travel □ Travelling to the work area, up and down a slope, passing through a restriction and travelling over rough terrain
		2.3	Set up the machine for work	□ Preparing and setting up the dragline for the relevant work activities □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Excavating soil and forming two stockpiles □ Loading material into a vehicle/receptacle □ Parking the dragline
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 37: Operating a Piling Rig – Tripod

Unit reference number: R/503/6455

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for operating a tripod piling rig to construct and form in the workplace within the relevant sector of industry.

A piling rig is used to drill in various types of soil so that piles can be formed. It is generally used for foundation construction in buildings, bridges and so on. It can bore through dry or wet soil and also through rock when an appropriate tool is attached. The tripod rig is lightweight and is suitable for sites with difficult access and low headroom. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a tripod piling rig. This includes identifying components, understanding procedures to accurately form piles and carrying out operational and functional checks. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in forming piles and ensuring that they are plumb. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a piling rig – tripod	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to set up the machine for work	□ Configuring, positioning and setting up the machine for driven and bored works □ Procedures to deal with hazards, underground and overhead services
		1.3	Explain how to undertake the specified work tasks	□ Actions required for accurately forming bored piles to completion □ Complying with signals and instructions □ Maintaining safe working situations □ Lifting requirements and limitations using a tripod piling rig
		1.4	Explain how to shut down the machine	□ Shut-down, isolation and securing procedures □ De-rigging the tripod and preparing for movement
2	Be able to operate a piling rig – tripod	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks, functional and operational checks

Learning outcomes		Assessment criteria		Unit amplification
		2.2	Set up the machine for work	□ Positioning rig and setting up for boring work □ Operating near hazards, underground and overhead services safely
		2.3	Undertake the specified work tasks	□ Forming bored piles to specification □ Ensuring the bore is plumb throughout the boring activity
		2.4	Shut down the machine	□ Carrying out isolation and securing procedures □ Cleaning the area and dismantling the rig ready for transportation

Unit 38: Operating a Piling Rig – Driven Below 15 Tonnes

Unit reference number: Y/503/6439

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for operating a driven piling rig to construct and form in the workplace within the relevant sector of industry.

A driven piling rig is used to drive piles into soil so that buildings and other structures can be supported. Such a rig can use different attachments for drilling depending on the work requirements. This category of rig is light and versatile and can be used over ground with low bearing capacity. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a piling rig – driven below 15 tonnes. This includes identifying components and understanding procedures to accurately drive piles and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in installing displacement piles and ensuring that they are plumb. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a piling rig – driven below 15 tonnes	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up the machine ready for travel □ Actions required for travelling over rough, undulating ground □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring, positioning and setting up the machine for driven works □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for accurately installing displacement piles to completion □ Complying with signals and instructions □ Maintaining safe working situations □ Lifting requirements and limitations using a piling rig
		1.5	Explain how to shut down the machine	□ Shut-down, isolation and securing procedures □ De-rigging, loading and unloading procedures for machine transporting

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a piling rig – driven below 15 tonnes	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks, functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling to the work area and negotiating restrictions and obstacles
		2.3	Set up the machine for work	□ Configuring, preparing and setting up the rig for driven works □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Installing given displacement piles to the given specification □ Ensuring the bore is plumb throughout the boring activity □ Configuring the rig for travel □ Parking the rig
		2.5	Shut down the machine	□ Carrying out isolation and securing procedures

Unit 39: Operating a Piling Rig – Driven Above 15 Tonnes

Unit reference number: J/503/6422

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for operating a driven piling rig to construct and form in the workplace within the relevant sector of industry.

A driven piling rig is used to drive piles into soil so that buildings and other structures can be supported. Such a rig can use different attachments for drilling depending on the work requirements. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a piling rig – driven above 15 tonnes. This includes identifying components and understanding procedures to accurately drive piles and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in installing displacement piles and ensuring that they are plumb. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a piling rig – driven above 15 tonnes	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up the machine ready for travel □ Actions required for travelling over rough, undulating ground □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring, positioning and setting up the machine for driven works □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for accurately installing displacement piles to completion □ Complying with signals and instructions □ Maintaining safe working situations □ Lifting requirements and limitations using a piling rig
		1.5	Explain how to shut down the machine	□ Shut-down, isolation and securing procedures □ De-rigging, loading and unloading procedures for machine transporting

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a piling rig – driven above 15 tonnes	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks, functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling to the work area and negotiating restrictions and obstacles
		2.3	Set up the machine for work	□ Configuring, preparing and setting up the rig for driven works □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Installing given displacement piles to the given specification □ Ensuring the bore is plumb throughout the boring activity □ Configuring the rig for travel □ Parking the rig
		2.5	Shut down the machine	□ Carrying out isolation and securing procedures

Unit 40: Operating a Piling Rig – Bored Below 15 Tonnes

Unit reference number: Y/503/6456

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for operating a bored piling rig to construct and form in the workplace within the relevant sector of industry.

A piling rig is used to drill in various types of soil so that piles can be formed. It is generally used for foundation construction in buildings, bridges and so on. It can bore through dry or wet soil, and also through rock when an appropriate tool is attached. This category of rig is light and versatile and can be used over ground with low bearing capacity. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a piling rig – bored below 15 tonnes. This includes identifying components and understanding procedures to accurately form piles and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in forming piles and ensuring that they are plumb. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a piling rig – bored below 15 tonnes	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up the machine ready for travel □ Actions required for travelling over rough, undulating ground □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring, positioning and setting up the machine for bored works □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for accurately forming bored piles to completion □ Complying with signals and instructions □ Maintaining safe working situations □ Lifting requirements and limitations using a piling rig
		1.5	Explain how to shut down the machine	□ Shut-down, isolation and securing procedures □ De-rigging, loading and unloading procedures for machine transporting

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a piling rig – bored below 15 tonnes	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks, functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling to the work area and negotiating restrictions and obstacles
		2.3	Set up the machine for work	□ Configuring, preparing and setting up the rig for bored works □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Forming bored piles to specification □ Ensuring the bore is plumb throughout the boring activity □ Configuring the rig for travel □ Parking the rig
		2.5	Shut down the machine	□ Carrying out isolation and securing procedures

Unit 41: Operating a Piling Rig – Bored Above 15 Tonnes

Unit reference number: R/503/6438

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for operating a bored piling rig to construct and form in the workplace within the relevant sector of industry.

A piling rig is used to drill in various types of soil so that piles can be formed. It is generally used for foundation construction in buildings, bridges, and so on. It can bore through dry or wet soil, and also through rock when an appropriate tool is attached. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a piling rig – bored above 15 tonnes. This includes identifying components and understanding procedures to accurately form piles and travel over rough terrain and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate the plant and will be able to demonstrate competence in forming piles and ensuring that these are plumb. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards – especially overhead and underground services – to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a piling rig – bored above 15 tonnes	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up the machine ready for travel □ Actions required for travelling over rough, undulating ground □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring, positioning and setting up the machine for bored works □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for accurately forming bored piles to completion □ Complying with signals and instructions □ Maintaining safe working situations □ Lifting requirements and limitations using a piling rig
		1.5	Explain how to shut down the machine	□ Shut-down, isolation and securing procedures □ De-rigging, loading and unloading procedures for machine transporting

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a piling rig – bored above 15 tonnes	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks, functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling to the work area and negotiating restrictions and obstacles
		2.3	Set up the machine for work	□ Configuring, preparing and setting up the rig for bored works □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Forming bored piles to specification □ Ensuring the bore is plumb throughout the boring activity □ Configuring the rig for travel □ Parking the rig
		2.5	Shut down the machine	□ Carrying out isolation and securing procedures

Unit 42: Operating an Agricultural Tractor

Unit reference number: T/503/6447

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating agricultural-based tractors for construction-related activities in the workplace within the relevant sector of industry.

Agricultural tractors are versatile machines. Though they are used on farms for a range of agricultural tasks, they are also used extensively in construction works. A number of tools and implements can be attached to a tractor, including backhoe loaders and buckets. A tractor can also be used for moving a trailer, for construction, agricultural, or other purposes. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate an agricultural tractor. This includes identifying components and understanding procedures to travel over rough terrain, inclines and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate an agricultural tractor and will be able to demonstrate competence in attaching, removing and travelling with mounted or power-driven implements. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate an agricultural tractor	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for site and highway travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces, with and without mounted and towed implements □ Actions required for manoeuvring in restricted spaces, with and without mounted and towed implements
		1.3	Explain how to set up the machine for work	□ Configuring and setting up towed implements ready for work □ Configuring and setting up mounted implements ready for work □ Configuring and setting up power take-off drives ready for work □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for operating a mounted or power-driven implement □ Removal and storage of towed and mounted implements

Learning outcomes		Assessment criteria		Unit amplification
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting
2	Be able to operate an agricultural tractor	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Travelling to the work area with a trailer and mounted implement, travelling up and down a slope and over rough terrain
		2.3	Set up the machine for work	□ Positioning, preparing and setting up the machine for all work activities □ Operating machine near hazards, underground and overhead services safely

Learning outcomes		Assessment criteria		Unit amplification
		2.4	Undertake the specified work tasks	□ Attaching and travelling with the trailer, stopping and restarting on an incline in the up direction, carrying out sharp left and right-hand turns and reversing into a restricted space; after completing, disconnecting the trailer within the restricted area □ Attaching the 3-point linkage implement and carry out; after completing, disconnect the implement □ Connecting the PTO driven implement and running to full speed to ensure correct functioning; after completing, detaching the PTO driveline □ Leaving all implements, trailers and components safe and secure □ Parking the tractor
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 43: Operating an Industrial Forklift Truck

Unit reference number: F/503/6452

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating industrial counterbalanced forklifts to lift and transfer loads in the workplace within the relevant sector of industry.

As the name suggests, a forklift consists of two forks to lift and place loads into position. It is a mobile machine and can access hard-to-reach areas. Forklifts generally fall into two categories: industrial and rough terrain. Industrial forklifts are commonly used in warehouses and around loading docks. They have small tyres designed to run on paved surfaces and are usually powered by an electric motor or an internal combustion engine. Some smaller industrial forklifts are powered by an electric motor. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate an industrial forklift truck. This includes identifying components and understanding the requirements to lift and move loads, travel and manoeuvre through restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate an industrial forklift truck and will be able to demonstrate competence in lifting and placing various loads. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate an industrial forklift truck	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up for travel □ Actions required for travelling to and manoeuvring in restricted spaces (with and without loads)
		1.3	Explain how to set up the machine for work	□ Configuring and setting up for lifting and transferring duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for lifting and removing various loads, up to the full working height of the forklift □ Actions required for transferring and placing loads accurately at given locations □ Actions required for placing and removing loads from a vehicle □ Actions required to maintain safe and tidy working areas
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate an industrial forklift truck	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Procedures for travelling in an unloaded state and with load, passing through a chicane, executing full right- and left-hand turns in forward and reverse direction □ Procedures for travelling with load, reversing in a straight line and passing through a restriction at the end of the run
		2.3	Set up the machine for work	□ Configuring and setting up for lifting and transferring duties □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Lifting and placing a load at high level on/in a structure/stack and moving the forklift away; retrieving the load, lowering to ground level and placing at a given point □ Lifting and placing 3 loads onto a truck bed; after completing, removing all loads from the truck bed □ Stacking 3 loads vertically on top of one another; after completing, de-stacking all 3 loads and placing alongside each other in a straight line □ Carrying out undercutting when lifting and placing a load □ Placing all loads on the ground □ Parking the forklift
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 44: Operating a Reach Truck

Unit reference number: R/503/6424

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating reach trucks to lift and transfer loads in the workplace within the relevant sector of industry.

Lifting and moving loads is an important operation across a range of industrial sectors such as construction and logistics. Reach trucks are commonly used to lift and transport loads in tall shelving structures. Different varieties are available to suit a range of shelf depths. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a reach truck. This includes identifying components and carrying out operational and functional checks. Learners will apply this knowledge to operate a reach truck and will be able to demonstrate competence in picking, lifting and placing loads to and from designated areas. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a reach truck	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up the machine for travel □ Actions required for travelling to and manoeuvring in restricted spaces (with and without loads)
		1.3	Explain how to set up the machine for work	□ Configuring and setting up for lifting and transferring duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for lifting and removing various loads, up to the full working height □ Actions required for transferring and placing loads accurately at given locations □ Actions required for placing and removing loads from a vehicle □ Actions required to maintain safe and tidy working areas
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting □ Recharging procedures

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a reach truck	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up for travel □ Procedures for travelling in an unloaded state and with load, passing through a chicane, executing full right- and left-hand turns in forward and reverse direction □ Procedures for travelling with load, reversing in a straight line and passing through a restriction at the end of the run
		2.3	Set up the machine for work	□ Configuring and setting up the machine for each lift □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Lifting and placing a load at high level on/in a structure/stack and moving the machine away; retrieving the load, lowering to ground level and placing at a given point □ Picking and placing 3 loads next to a given object or structure □ Stacking 3 loads vertically on top of one another (creating a 3-high load stack); after completing, de-stacking all 3 loads and placing alongside each other in a straight line □ Carrying out undercutting when lifting and placing a load □ Placing all loads on the ground □ Parking the forklift

Learning outcomes		Assessment criteria		Unit amplification
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures □ Recharging procedures

Unit 45: Operating a Transporter Loader/ Securer STGO

Unit reference number: K/503/6445

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with knowledge and understanding of transporters (STGO) to enable them to carry out loader and securer duties in the movement of loads.

A transporter loader/securer is used for the transportation of plant items to and from a construction site, travelling on public highways. The loads they carry can be either Special Type General Order (STGO) or non-STGO. To put it simply, STGO is an abnormal load and is allowed under special conditions. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a transporter loader/securer STGO. This includes identifying components, understanding procedures to set up and configure for lifting and transporting duties and negotiating inclines and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate a transporter loader/securer STGO and will be able to demonstrate competence in placing, guiding, securing and removing loads from the transporter. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a transporter loader/securer STGO	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use checks on the transporter and prime mover □ Functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up the machine for site and public highway travel, loaded and unloaded
		1.3	Explain how to set up the machine for work	□ Preparing the area for loading and unloading duties □ Configuring and setting up the machine for lifting and transferring duties □ Procedures to deal with hazards, underground and overhead services □ Arranging, using and complying with communication procedures

Learning outcomes		Assessment criteria		Unit amplification
		1.4	Explain how to undertake the specified work tasks	□ Actions required for loading or directing and positioning different items of plant on and off a trailer □ Actions required for arranging, securing and making ready items of plant in preparation for travel on the public highway □ Legislative requirements for transporting loads on the highway □ Considerations required when planning a route on the public highway □ Requirements when undertaking loading and unloading on the public highway
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Road Traffic Act requirements
2	Be able to operate a transporter loader/securer STGO	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks on the transporter and prime mover □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for site and public highway travel, loaded and unloaded □ Travelling to the loading and unloading area

Learning outcomes		Assessment criteria		Unit amplification
		2.3	Set up the machine for work	□ Positioning, preparing and setting up the transporter for receiving and removing loads □ Establishing the communication methods and loading arrangements with the plant operator (if applicable) □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Placing or guiding each load into the transporter bed □ Positioning and securing all loads in preparation for travel □ Removing or guiding loads from the transporter □ Stowing all equipment and returning the transporter to the park position □ Parking the transporter
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 46: Operating a Transporter Loader/ Securer non-STGO

Unit reference number: H/503/6444

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with knowledge and understanding of transporters (non-STGO) to enable them to carry out loader and securer duties in the movement of loads.

A transporter loader/securer is used for the transportation of plant items to and from a construction site, travelling on public highways. The loads these carry can be either Special Type General Order (STGO) or non-STGO. To put it simply, STGO is an abnormal load and is allowed under special conditions. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a transporter loader/securer non-STGO. This includes identifying components, understanding procedures to set up and configure for lifting and transporting duties and negotiating inclines and restricted spaces as well as carrying out operational and functional checks. Learners will apply this knowledge to operate a transporter loader/securer non-STGO and will be able to demonstrate competence in placing, guiding, securing and removing loads from the transporter. The emphasis is on compliance with signals and the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a transporter loader/securer non-STGO	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use checks on the transporter and prime mover □ Functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up the machine for site and public highway travel, loaded and unloaded
		1.3	Explain how to set up the machine for work	□ Preparing the area for loading and unloading duties □ Configuring and setting up the machine for lifting and transferring duties □ Procedures to deal with hazards, underground and overhead services □ Arranging, using and complying with communication procedures

Learning outcomes		Assessment criteria		Unit amplification
		1.4	Explain how to undertake the specified work tasks	□ Actions required for loading or directing and positioning different items of plant on and off a trailer □ Actions required for arranging, securing and making ready items of plant in preparation for travel on the public highway □ Legislative requirements for transporting loads on the highway □ Considerations required when planning a route on the public highway □ Requirements when undertaking loading and unloading on the public highway
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Road Traffic Act requirements
2	Be able to operate a transporter loader/securer non-STGO	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks on the transporter and prime mover □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for site and public highway travel, loaded and unloaded □ Travelling to the loading and unloading area

Learning outcomes		Assessment criteria		Unit amplification
		2.3	Set up the machine for work	□ Positioning, preparing and setting up the transporter for receiving and removing loads □ Establishing the communication methods and loading arrangements with the plant operator (if applicable) □ Operating near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Placing or guiding each load into the transporter bed □ Positioning and securing all loads in preparation for travel □ Removing or guiding loads from the transporter □ Stowing all equipment and returning the transporter to the park position □ Parking the transporter
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 47: Operating a Loader Compressor

Unit reference number: A/503/6417

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating loader compressors to extract materials in the workplace within the relevant sector of industry.

As the name suggests, loader compressors are used to place materials in transporting vehicles and other receptacles. In addition to the loading function, pneumatic tools can be attached to carry out breaker tasks. This plant plays an important part in moving materials both within and outside construction sites and operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a loader compressor. This includes identifying components and understanding procedures to travel over rough terrain, inclines and restricted spaces, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate a loader compressor, and will be able to demonstrate competence in loading a vehicle using materials from a stockpile and spread over an area, as well as in carrying out breaker tasks. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a loader compressor	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for site and highway travel □ Procedures for travelling over rough, undulating ground and level surfaces, loaded and unloaded □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up the machine for loading duties □ Configuring and setting up for pneumatic tool operations □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for placing materials into transporting vehicles and receptacles □ Procedures for clearing spread materials
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a loader compressor	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for site and highway travel □ Travelling to the work area and passing through a restriction □ Reversing the machine with a fully-loaded bucket in a straight line for a specified distance
		2.3	Set up the machine for work	□ Preparing and setting up the loader compressor for the relevant work □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Loading the vehicle to capacity using material from a stockpile; after completing, re-deposit at the original place and spread the material □ Loading the vehicle to capacity using the spread material; after completing, deposit material at the stockpile □ Positioning the compressor at a given point and preparing the breaker for work; test running the breaker; after completing, detaching the breaker from the compressor □ Cleaning and tidying the work area □ Stowing all equipment and preparing the machine ready for transport

Learning outcomes		Assessment criteria		Unit amplification
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

Unit 48: Operating a Soil/ Landfill Compactor

Unit reference number: Y/503/6442

Level: 2

Credit value: 5

Guided learning hours: 30

Unit aim

This unit provides learners with the knowledge and understanding for preparing and operating soil/landfill compactors to spread and compact materials in the workplace within the relevant sector of industry.

Waste is compacted first within collection vehicles and later on at landfill sites. The primary aim is to reduce the amount of space that the waste occupies. Landfill compactors essentially perform two main tasks: spreading waste evenly and compacting waste to reduce its volume. They are similar to the ride-on rollers used in compaction operations. Operating the plant competently and safely is a valuable skill.

The initial focus of the unit is to provide the underpinning knowledge required to operate a soil/landfill compactor. This includes identifying components and understanding the requirements to spread and compact waste materials, as well as carrying out operational and functional checks. Learners will apply this knowledge to operate a soil/landfill compactor and will be able to demonstrate competence in spreading a dumped load and forming a cover over it. The emphasis is on compliance with the manufacturer's instructions, safe operation of the machine, dealing with hazards to ensure compliance with acceptable health, safety and welfare practices and completing tasks to given work instructions.

Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria		Unit amplification
1	Understand how to operate a soil/landfill compactor	1.1	Explain how to prepare the machine for work	□ Principal components, controls, manufacturer's requirements and relevant regulations and legislation □ Pre-use, functional and operational checks
		1.2	Explain how to drive and manoeuvre the machine	□ Configuring and setting up machine for site travel □ Procedures for travelling over rough, undulating ground, substantial inclines and level surfaces □ Actions required for manoeuvring in restricted spaces
		1.3	Explain how to set up the machine for work	□ Configuring and setting up for spreading and compacting duties □ Procedures to deal with hazards, underground and overhead services
		1.4	Explain how to undertake the specified work tasks	□ Actions required for spreading and compacting various discharged waste-type materials to specification □ Principles of compaction and the requirements and techniques of waste material compaction
		1.5	Explain how to shut down the machine	□ Shut down, isolation and securing procedures □ Loading and unloading procedures for machine transporting

Learning outcomes		Assessment criteria		Unit amplification
2	Be able to operate a soil/landfill compactor	2.1	Prepare the machine for work	□ Complying with manufacturer's requirements as per the operator's handbook, other types of information and relevant regulations and legislation □ Pre-use checks □ Functional and operational checks
		2.2	Drive and manoeuvre the machine	□ Configuring and setting up the machine for site travel □ Travelling to the work area, up and down the slope (soil compactor only), passing through a restriction (in forward and reverse) and travelling over rough terrain
		2.3	Set up the machine for work	□ Preparing and setting up the compactor for relevant work tasks □ Operating machine near hazards, underground and overhead services safely
		2.4	Undertake the specified work tasks	□ Spreading dumped loads on the sloping face (landfill compactors) or on a level area (soil compactors) □ Forming a cover over the spread material and levelling □ Parking the compactor
		2.5	Shut down the machine	□ Shut down, isolation and securing procedures

12 Further information and useful publications

To get in touch with us visit our 'Contact us' pages:

- Edexcel, BTEC and Pearson Work Based Learning contact details: qualifications.pearson.com/en/support/contact-us.html
- books, software and online resources for UK schools and colleges: www.pearsonschoolsandfecolleges.co.uk

Key publications:

- *Adjustments for candidates with disabilities and learning difficulties, Access and Arrangements and Reasonable Adjustments, General and Vocational qualifications* (Joint Council for Qualifications (JCQ))
- *Supplementary guidance for reasonable adjustments and special consideration in vocational internally assessed units* (Pearson)
- *General and Vocational qualifications, Suspected Malpractice in Examination and Assessments: Policies and Procedures* (JCQ)
- *Equality Policy* (Pearson)
- *Recognition of Prior Learning Policy and Process* (Pearson)
- *UK Information Manual* (Pearson)
- *BTEC UK Quality Assurance Centre Handbook*

All of these publications are available on our website.

Publications on the quality assurance of BTEC qualifications are also available on our website.

Our publications catalogue lists all the material available to support our qualifications. To access the catalogue and order publications, please visit our website.

Additional resources

If you need further learning and teaching materials to support planning and delivery for your learners, there is a wide range of BTEC resources available.

Any publisher can seek endorsement for their resources and, if they are successful, we will list their BTEC resources on our website.

13 Professional development and training

Pearson supports UK and international customers with training related to BTEC qualifications. This support is available through a choice of training options offered on our website.

The support we offer focuses on a range of issues, such as:

- planning for the delivery of a new programme
- planning for assessment and grading
- developing effective assignments
- building your team and teamwork skills
- developing learner-centred learning and teaching approaches
- building in effective and efficient quality assurance systems.

The national programme of training we offer is on our website. You can request centre-based training through the website or you can contact one of our advisers in the Training from Pearson UK team via Customer Services to discuss your training needs.

BTEC training and support for the lifetime of the qualifications

Training and networks: our training programme ranges from free introductory events through sector-specific opportunities to detailed training on all aspects of delivery, assignments and assessment. We also host some regional network events to allow you to share your experiences, ideas and best practice with other BTEC colleagues in your region.

Regional support: our team of Curriculum Development Managers and Curriculum Support Consultants, based around the country, are responsible for providing advice and support in centres. They can help you with planning and curriculum developments.

To get in touch with our dedicated support teams please visit our website.

Your Pearson support team

Whether you want to talk to a sector specialist, browse online or submit your query for an individual response, there's someone in our Pearson support team to help you whenever – and however – you need:

- Subject Advisors: find out more about our subject advisor team – immediate, reliable support from a fellow subject expert
- Ask the Expert: submit your question online to our Ask the Expert online service and we will make sure your query is handled by a subject specialist.

Please visit our website at qualifications.pearson.com/en/support/contact-us.html

Annexe A

Progression opportunities

These are examples of progression opportunities to other Pearson qualifications within the construction sector.

Level	General qualifications (GCSEs, GCEs)	BTEC Firsts/Nationals/ Higher Nationals	BTEC Specialist/ Professional qualifications	NVQ/competence-based qualifications
5		Pearson BTEC Level 5 HND Diploma in Construction and the Built Environment		
4		Pearson BTEC Level 4 HNC Diploma in Construction and the Built Environment		We have too many qualifications to list in this space. Please go to qualifications.pearson.com for further information.
3		Pearson BTEC Level 3 Certificate, Subsidiary Diploma, Diploma and Extended Diploma in Construction and the Built Environment	Pearson BTEC Level 3 Award, Extended Certificate and Diploma in Construction and the Built Environment	We have too many qualifications to list in this space. Please go to qualifications.pearson.com for further information.
2		Pearson BTEC Level 2 Certificate, Extended Certificate and Diploma in Construction	Pearson BTEC Level 2 Award, Certificate and Extended Certificate in Construction and the Built Environment (Craft) and Construction and the Built Environment (Technician)	We have too many qualifications to list in this space. Please go to qualifications.pearson.com for further information.

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For information about Edexcel, BTEC or LCCI qualifications visit qualifications.pearson.com

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