WJEC Level 1/2 Vocational Award in Construction and the Built Environment (Technical Award)

GUIDANCE FOR TEACHING

UNIT 1 GUIDE

Aims of the Guidance for Teaching

The principal aim of the Guidance for Teaching is to support teachers in the delivery of the WJEC Level 1/2 Vocational Qualification in Construction and the Built Environment (Technical Award) and to offer guidance on the requirements of the qualification and the assessment process. The Guidance for Teaching is **not intended as a comprehensive reference,** but as support for professional teachers to develop stimulating and exciting courses tailored to the needs and skills of their own learners in their particular institutions.

Aims of the Unit Guide

The principal aim of the Unit Guide is to support teaching and learning and act as a companion to the Specification. Each Unit Guide will offer detailed explanation of key points in the Specification and aim to explain complex areas of subject content. An overview of the whole course can be found in the Delivery Guide.

CONTENTS

INTRODUCTION

The WJEC Level 1/2 Vocational Award in Construction and the Built Environment (Technical Award), approved by Ofqual and DfE for performance qualification tables in 2024 (first teaching from September 2022), is available to:

- all schools and colleges in England
- subject to local agreement, it is also available to centres outside England, for example in Northern Ireland, the crown dependencies of the Isle of Man and the Channel Islands, and in British overseas territories, and to British forces schools overseas. It is not available to other overseas centres or in Wales.

It will be awarded for the first time in January 2024, using grades Level 1 Pass, Level 1 Merit, Level 1 Distinction, Level 1 Distinction*, Level 2 Pass, Level 2 Merit, Level 2 Distinction, Level 2 Distinction*.

ADDITIONAL WAYS THAT WJEC/EDUQAS CAN OFFER SUPPORT:

- sample assessment materials and mark schemes
- exemplar materials
- face-to-face CPD events
- examiners' reports on each question paper
- direct access to the subject officer
- free online resources
- Exam Results Analysis
- Online Examination Review
- Regional Support team.

Overview of Unit 1

Introduction to the Built Environment

Overview of the unit

Unit 1 introduces learners to the construction sector and the type of professional and trade roles and activity that is undertaken. The learner will explore the different types of buildings and structures that the built environment forms. Sustainability and the impact of the built environment on the local community is explored along with reduction measures that can be employed.

In studying for this unit, learners will develop knowledge, skills and understanding in the following areas of content:

1.1	The sector
1.2	The built environment life cycle
1.3	Types of building and structure
1.4	Technologies and materials
1.5	Building structures and forms
1.6	Sustainable construction methods
1.7	Trades, employment and careers
1.8	Health and safety

How to read the Specification

WJEC/Eduqas Vocational Award (Technical Awards) specifications are written to be transparent and easy to understand.

The amplification provided uses the following four stems:

- 'Learners should know' has been used for the recall of facts such as: legislation and definitions.
- 'Learners should know and understand' has been used for the majority of the unit content where knowledge needs to lead to a sense of understanding.
- 'Learners should be aware of' has been used when the volume of content is quite extensive, and learners do not need to understand all aspects in detail.
- 'Learners should be able to' has been used when learners need to apply their knowledge to a scenario or practical situation.

The amplification provided includes all of the assessable content for the relevant section, unless it states, 'e.g.' 'including' or 'such as'. In these cases, the amplification lists relevant content, which should be expanded upon in an appropriate way, taking account of learners' needs and interests. The use of the word 'including' indicates compulsion (i.e., a question could be specifically set on that aspect). The use of the words 'e.g.,' or 'such as' are for guidance only, and an alternative can be chosen.

UNIT 1 TEACHER GUIDANCE

1.1 The sector		
	Content Amplification	**Teacher Guidance**
1.1.1	Learners should know: • the main types of buildings and structures covered within the sector: residential and non-residential buildings, bridges and roads • typical component parts of buildings and structures, including walls, floors and openings.	Built Environment encompasses a diverse range of industries, from mining to the construction of infrastructure and buildings, the installation of services, the manufacture of building products, maintenance, operation, restoration and recycling, as well as disposal. Learners should be aware of this diversity and of the overall contribution industries involved in the built environment make to the UK, including over 3 million jobs and around 7% of GDP (over £100 Billion per annum). The specification lists examples of infrastructures ranging from roads to telecommunications. Learners would benefit from an awareness of the nature of the built environment sector, including that: • Infrastructure projects generally account for 15% of output, residential construction 40% and commercial/social projects 45%. • Investment splits approximately 25% / 75% public sector/private sector. • 60% of construction work is new build and 40% refurbishment and maintenance. • In a new building project building services will typically account for 30 – 40% of the total cost. Building and infrastructure projects are high cost, long term activities that are a good indicator of the overall health of the wider economy. Investment in building and infrastructure projects tends to dry up during economic downturns, but in times of recovery the sector will be one of the first to benefit and may not cope with the increase in demand.
1.1.2	Learners should be aware of the following facilities and systems: • roads • railways • bridges • tunnels • water supply and sewerage systems • electrical grids • telecommunications.	
1.1.3	Learners should be aware of the function of the following services in buildings: • mechanical services, including escalators and lifts, heating, ventilation, air conditioning • electrical services, including energy supply, lighting and low voltage (LV) systems, communication lines, telephones and IT networks, fire detection and protection, security and alarm systems • services that support public health, including plumbing for water supply, and domestic hot water, drainage of wastewater (sewage) and stormwater drainage.	

1.1.4	Learners should know the following professional roles and be aware of the responsibilities of each (listed below) regarding the design and construction of a project through to its completion and handover: • designer/architect • civil/structural engineering • contracts manager and site manager • surveyor • quantity surveyor. Learners should be aware of the professional associations such as CIOB, RICS, RIBA[1], and the benefits of membership.	The design and construction of a project involves a significant number of individuals in professional roles. The list of professional roles provides the basis of assessment. Whilst other professional roles will contribute to the successful completion of projects, teachers should focus on those listed. Likewise, there are many professional associations representing members carrying out professional roles in the completion of projects; teachers should focus on CIOB, RICS and RIBA.
Designer/architect	Learners should be aware that an architect: • creates new buildings and/or renovations or changes existing buildings • produces designs to meet client requirements along with regulations, legislation and environmental requirements • produces detailed drawings for the contractor • manages the post design stages of the project for the client.	Qualified professionals that are registered with the ARB (Architects Registration Board) can offer their services as architects. The ARB has responsibility for: • recognising qualifications • maintaining a list of registered architects and ensuring that people not on the list do not offer their services as an architect • monitoring standards and investigating complaints. As with other professional bodies the ARB issues a code of conduct and can take action against those falling short of the code's standards. Architects can also become chartered members of the Royal Institute of British Architects (RIBA) or, in Northern Ireland, the Royal Society of Ulster Architects (RSUA), although this is voluntary. Architects will normally have a responsibility to the project from its inception to the opening of the building/infra-structure project. They are licenced to operate so also have a responsibility for public safety during the construction process and after the project completion.

[1] RSUA is the equivalent professional association in Northern Ireland and this should be taught in centres there.

Civil/structural engineering	Learners should be aware that a civil and structural engineer: • designs, plans and manages construction projects • solves design and development problems • produces a structural solution in terms of the design codes, such as Building Regulations or British Standards • assesses potential risks within a project.	Civil engineering as a profession encompasses a range of subjects that can be developed as specialisms. They primarily construct and maintain infrastructure projects and systems in the public and private sectors including roads, buildings, airport tunnels, dams, bridges and systems for water supply and sewage drainage and treatment. Structural engineering focuses on the design, assessment and inspection of structures to ensure that they are stable and safe. Structural Engineers work mainly with architects as consultants working out solutions to ensure buildings and bridges are strong enough and stable to withstand all appropriate structural loads. This includes traffic, gravity, wind, earthquakes and temperatures. Structural engineering is a discipline of civil engineering. Qualified civil and structural engineers will be members of the ICE (Institute of Civil Engineers).
Contracts manager and site manager	Learners should be aware that a contracts manager or site manager: • is responsible for coordinating construction site activities • manages the progress of the site and undertakes site meetings • organises resources of labour, plant and materials • undertakes the day-to-day activities on site • is responsible for health and safety on site and for the welfare of workers.	The site manager is the senior construction company representative on site and will usually be responsible to an office-based 'contracts manager', who may oversee multiple contracts and sites. The site manager's role is the supervision and management of all site-based staff employed by the company as well as visiting sub-contractors to ensure that the project is delivered within their contractual obligations. They are responsible for maintaining the site safety protocols for all site-based workers and visiting persons, usually through a site safety officer. Induction sessions would normally be provided before anyone visits the site. A site manager will have considerable experience of working on construction sites. Most site managers have qualifications, such as an HND, foundation degree or degree accredited by the Chartered Institute of Building (CIOB).

Surveyor	Learners should be aware that a surveyor: • surveys land, measuring existing features of the natural and built environment • sets out construction works in accordance with the drawings and specification • produces built data and drawings for architects and structural engineers.	Surveying is like engineering in that it covers a wide range of specialisms, including land surveying, estate management, building surveying and commercial work, involving valuations, sales, and rentals. Surveyors check boundary lines and prepare site for construction so that legal disputes are prevented. Surveyors work with architects and Local Planning Authorities and report on the environmental impact of development. A qualified surveyor will be a member of the RICS (Royal Institute of Chartered Surveyors) and must carry out their professional work in accordance with the RICS code of conduct.
Quantity surveyor	Learners should be aware that a quantity surveyor: • is responsible for the financial management of a project • makes payment to subcontractors and supplier • produces a final account at the end of a project • is responsible for the control of budgets and control of cost.	The Quantity Surveyor (QS) will work for either the client or the contractor. Both have a similar role, although at opposite ends of the project. The QS working for the client will determine the expected budgetary expectations of the project so the client will be able to determine whether they can afford the project. They will work with the Architect to create the specification and produce the tender documentation. They will then audit the costs of the project during its lifetime. The QS who work for the contractor will be responsible for estimating the costs involved in the project by measuring and compiling financial information on direct labour, plant and equipment, material costs and sub-contracting costs. They will produce a Bill of Quantities and an estimation of financial risks to the contractor. They will, if all is well, complete the tender documents for submission and manage the financial costs throughout the life of the project.

UNIT 1 TEACHER GUIDANCE

1.2 The built environment life cycle		
	Content Amplification	**Teacher Guidance**
1.2.1	Learners should know that the following industries extract raw materials: • oil and gas • forestry • quarrying • mining.	This section of the specification provides an opportunity for learners to consider the impact these industries have on economies and the environment. **Advantages** will include revenue for local/national economies leading to improvements in schools, health service and transport etc. and employment. **Disadvantages** such as air and water pollution, damage to the landscape and loss of habitat, noise from processes and transport, and hazards such as waste tips and old mine workings that can cause subsidence. This is an opportunity to look for advantages in the use of natural raw materials in energy conservation of the production and use of building materials in harmony with the environment that produces low energy housing. E.g., Passivhaus, using timber framed construction and SIPs.

1.2.2	Learners should be aware of the following means of transforming raw materials into finished goods:
	• timber: felled logs are cut into 'boards' and then seasoned to remove excess water
	• engineered wood products (EWP): designed to overcome limitations on size of sawn timber, including trussed rafters, structural sections and manufactured boards such as plywood and oriented strand board (OSB)
	• steel:
	  • structural steel – made into standard column and beam sections
	  • stainless steel – made into fixings and fastenings
	  • lightweight mild steel sections – lintels, purlins and rails
		This section of the specification concentrates on the manufacture of the most commonly used building materials.
		Learners should be aware of the basic processes involved in the preparation/ manufacture of the common building materials listed in the content amplification.

	• profiled sheeting – wall and roof cladding. • copper: manufactured to produce building services products such as electric cable and water/gas pipes • plastic: manufactured to produce building services products such as water pipes • crushed rock materials: used as hardcore and granular fill materials reduced to 20mm crushed grading • clay: natural clay minerals are crushed, shaped, dried and then fired in ovens to produce bricks • cement: raw materials such as limestone are crushed, blended and heated in a kiln to make cement • mortar: sand, cement and water are mixed to make a paste used to bind and point building blocks.	
1.2.3	Learners should know and understand the following forms of construction activities: • new buildings and structures and the assembly on site of prefabricated elements • alteration, conversion, and renovation of existing buildings and structures • civil engineering works such as roads and bridges • mass concrete foundations and large diameter drainage schemes • installation of mechanical, electrical, gas and communication services.	Learners should understand that: • Construction includes the preparation of land and utilisation of materials, plant, and labour to carry out building work. • The construction industry is made up of developers, consultants, manufacturers, suppliers and contractors.

1.2.4	Learners should know and understand that:
	• operation can involve:
	  • controlling and monitoring of heating, cooling and lighting systems
	  • the provision of security, cleaning and other ancillary services, including testing and evacuation procedures
	• maintenance may take the form of:
	  • planned and preventive maintenance: carried out on a regular basis, in order to keep something in working order or extend its life
	  • cyclical maintenance: replacing over a cycle of work as an investment in stakeholders' comfort levels
	  • emergency or reactive maintenance due to safety reasons for stakeholders.
	
	Learners should be aware that a building operation and maintenance manual:
	• is given to the client or end user on completion in accordance with the Construction, Design and Management (CDM) Regulations relevant sections
	• contains information regarding the operation, maintenance, decommissioning and subsequent demolition of a building.
		This section of the specification is concerned with the operation and maintenance of a building in use.
		Learners should understand that:
		• Operation refers to the management of a built environment to provide suitable and safe conditions for occupants and their activities.
		• Maintenance is the repair/prevention of decay, deterioration and damage caused by weather, ageing and general so that a building retains a good appearance and operates efficiently.

1.2.5	Learners should know that:
	• a pre-demolition plan includes details of:
	  • hazardous materials such as asbestos, foam insulation, and medium density fibre board
	  • live utilities and disconnections
	  • structures and load bearing party walls
	  • site conditions and constraints
	• statutory requirements need to be considered
		The amplification in the specification is based on the Construction, Design and Management (CDM) regulations, which outline best practice measures and procedures for the planning and execution of demolition work.
		Learners should understand that:
		• Demolition is the process of taking down a building or other structure and safely disposing of materials arising.
		• Demolition is the most hazardous activity in the construction sector that requires efficient risk control, environmental and site management, and careful planning.
		• Demolition will include the restoration of the soil and sometimes the natural environment depending on the utilisation of the building/s. For example, mining

	• demolition may involve the use of explosives, hand demolition or machine demolition
	• procedures include:
	  • site security set up
	  • disconnection of utilities
	  • removal of hazardous materials
	  • soft strip of non-structural elements
	  • taking down superstructure
	  • onsite crushing of demolition materials into filling that can be recycled
	  • dust suppression measures
	  • removal of slab and foundations.
		and manufacturing can use chemicals and substances that leave a major environmental impact on the soil that can last for decades if not treated or replaced.

1.2.6	Learners should know that: • waste materials may be sent directly to landfill or salvaged for reuse or for recycling • waste materials can be retained on site in embankments and landscape bunding • excavation materials can be retained on site by a balanced cut and fill excavation • construction can produce a significant amount of waste so there are benefits to be gained from encouraging more reuse or recycling, including preservation of natural resources, creation of jobs and reduction in pollution • sustainable construction methods may include specifying materials that are sustainable and renewable from managed sources.	Broken waste materials such as concrete slabs, bricks, rubble and ceramics left after demolition can be broken down into hard-core and used as foundations and sub-bases for new construction. More valuable unbroken building elements, such as stone blocks, bricks, roofing slates, steel sections and timber, can be recovered and re-cycled with the general aim of minimising, resulting in a growing number of salvage centres where building items can be purchased for reuse.

UNIT 1 TEACHER GUIDANCE

1.3 Types of building and structure		
	Content Amplification	**Teacher Guidance**
1.3.1	Learners should know and understand that infrastructure construction: • covers a range of functions such as roads, motorways, services such as electrical distribution, harbour works, rail cycle paths, bridges and tramways • may have significant benefits to quality of life by providing economic, social and environmental benefits on a local or national scale • may have significant drawbacks, including economic, social and environmental, on a local or national scale. • projects are often controversial because developers, planning authorities and communities have to weigh the benefits against drawbacks.	This section of the specification provides an opportunity for learners to consider the economic and environmental impacts arising from major infrastructure projects, such as the channel tunnel, or HS2, that are of national importance, involve long lead-in times and provide significant business and employment opportunities. This section allows for the awareness of the local council planning authority and how they function, as well as the national authorities who are responsible for connecting infrastructure such as railways and motorways.
1.3.2	Learners should be aware that residential dwellings: • are used as places of habitation • are among the smallest types of building • often vary by location with multi-dwelling structures such as apartment blocks in urban areas and single detached properties in rural areas • are often made of block or timber frame construction • are in demand because there is a shortage of available, affordable homes in the UK.	This section (1.3.2 to 1.3.8) covers the basic characteristics and purpose of various types of building. The content is rudimentary, but awareness of these characteristics and functions will reinforce knowledge of the diverse nature of the industry and of its importance in supporting human activity.

1.3.3	Learners should be aware that commercial buildings: • are used to provide services or retail products to customers • accommodate business activities, usually undertaken to make a profit for the owners • are usually adapted to fulfil the purpose of the business • may be purpose-built or converted to enable a change of use • are often located in retail centres, in or out of town/city centres.	
1.3.4	Learners should be aware that industrial buildings: • are usually larger buildings, adapted to specific functions • are often used for storing, processing, engineering or manufacturing materials • may be part of a new development, such as in a modern industrial park, or a refurbished older building or site.	
1.3.5	Learners should be aware that agricultural buildings: • are associated with farming and the agricultural industry • may be older buildings constructed using traditional materials and techniques • may be large modern buildings, designed to suit a particular function and the rural landscape/environment in which they are situated.	
1.3.6	Learners should be aware that community buildings: • are used by members of a community • are usually located in a convenient location for the community using the building • may be modern or older buildings, sometimes converted to enable a change of use.	

1.3.7	Learners should be aware that religious buildings: • usually serve as places of worship • vary considerably in terms of age, size and architectural style • often include elaborate architecture, with towers or domes, and may therefore be one of the most expressive and influential structures in the local built environment.	
1.3.8	Learners should be aware that recreational buildings: • vary considerably in terms of size and style • may be buildings in their own right or extensions to other buildings to enable an existing business to offer recreational activities • may be designed for a specific function or versatile to accommodate a range of functions.	

UNIT 1 TEACHER GUIDANCE

1.4 Technologies and materials		
	Content Amplification	**Teacher Guidance**

1.4.1	Learners should know the functions of the following elements and components of low-rise buildings:
	• foundations
	• substructure
	• ground floor
	• super structure:
	  • walls
	  • upper floors
	  • frame
	  • roof supports
	  • wall cladding
	  • roof finishes.
		Learners should understand that:
		Foundations:
		• provide support for structures, by transferring their load to layers of soil or rock that have sufficient bearing capacity and suitable settlement characteristics to support them
		• can be categorised as shallow foundations, such as strip footings, trench fill, pads or rafts, or deep foundations such as piles, sheet piles and diaphragm walls.
		Substructures:
		• provide support for superstructures by transferring their load to the foundations and then to the soil underneath
		• may include foundation, retaining and basement walls and any other work below the lowest floor construction.
		Superstructures:
		• are designed to provide a controlled environment (in terms of shelter, comfort, privacy, and security) to suit the intended activities to be carried out inside the building.

1.4.2	Learners should be aware that the following materials and components are used in the construction of walls, installing building services, fitting roofs and finishing interiors. External walls: • structural element: load bearing masonry (insulating blockwork), structural frame (steel or timber), structural insulated panels (SIP) • insulation: mineral fibre rolls, sprayed foam, rigid foam slabs • external cladding: brick or rendered blockwork, steel sheeting, aluminium faced insulated panels, curtain walling. Internal walls and floors: • block or stud (timber or steel) partitions • timber, concrete or steel floor joists. Secondary structures: • steel lintels, joists and timber trussed rafters for masonry walls • sheeting rails and purlins for steel frames. Roof finishes: • slate or concrete tiles for timber trussed roofs • steel sheeting over insulated lining trays for steel framed structures • rubber based sheeting or fibreglass for flat roofs. Internal finishes: • floor screeds and boards • plasterboard for walls and ceilings • wall plaster and decorations Building services:	Learners should understand the term building element and that components described in the amplification such as external walls, internal walls, secondary structures may all be referred to as building elements. Therefore, elements are the main components of a structure e.g., foundations, piers, and deck will be the main elements of a bridge. In a building, a single element may be a multi-trade built object such as external walls, with performance attributes such as insulation values, that become steadily more defined as design decisions are made. The structures within a building or structure will be divided into: • Primary Structures (those which are integral to the building standing up such as columns, braces and beams in steel or shear walls and slabs in concrete). • Secondary Structures (those which hold things up but is not crucial to the building structural integrity). NRM1 (New Rules for Measurement) for cost estimating and cost planning for building work, defines hierarchies of elements, such as group element 3: Internal finishes, comprising: • 3.1: Wall finishes • 3.2: Floor finishes • 3.3: Ceiling finishes. A separate cost target can then be established for each element in the group.

	• incoming services run through sub-structure walls and then extended for internal distribution • internal drainage run through external walls for connection to underground systems. Building services materials: • plastic and copper pipework for plumbing and heating services • plastic rainwater goods and drainage systems • copper cable for electricity and communication systems.	

1.4.3	Learners should know that energy may be generated or collected from renewable sources, as opposed to generated by burning finite resources such as fossil fuels.
	
	Learners should know and understand the main principles of the following forms of renewable technologies and be aware of the main benefits and limitations of their use:
	
	• Solar Energy:
	  • solar photovoltaic: conversion of sunlight into electricity using photovoltaic (PV) cells/panels
	  • solar thermal: conversion of sunlight into thermal energy (or heat).
	
	• Wind turbines:
	  • harness the power of the wind to generate electricity
	  • domestic wind turbines may be pole mounted or building mounted.
		Examples of renewable energy technologies include solar power, wind power, and heat pumps.
		Learners, in their study of sustainability, will benefit from an awareness of other examples of renewable energy sources, including:
		• Hydroelectric power uses the energy of moving water passing through water turbines to generate electricity. The Dinorwig Power Station in Snowdonia is an example of a hydroelectric power plant. It is also known as Electric Mountain. Hydroelectric power generation can also be produced on a micro-generation level, usually on hill farms and buildings where a river or stream runs downhill.
		• Biomass and biofuel – bioenergy derived from burning waste organic matter (biomass), to generate electricity and heat, or to produce liquid fuels for transport.
		• Marine energy technologies refer to renewable energy derived from the sea generated by harnessing the energy within waves, or tides.
		
		The specification also refers to sustainable water systems, including:
		• Rainwater harvesting (RWH). A process of collecting and storing rainwater that falls on a catchment surface, used for non-potable purposes such as flushing toilets, supplying washing machines, landscape irrigation, etc. Sources indicate that approximately 50% of domestic and 85% of non-domestic mains water supply could be replaced by RWH.

	• Heat pumps:
	  • ground source: uses pipes that are buried underground to transfer heat from the ground into the building
	  • air source: transfers heat from the air outside of a building into the building
	  • water source: transfers heat from a source of water outside of a building into the building.
	
	• Water:
	  • rainwater harvesting
	  • grey water re-use
	  • hydro-generation of electricity (tidal/hydroelectric).
		• Grey water reuse. Grey water is wastewater from showers, baths, washbasins and washing machines that is not considered to be potentially dangerous. It is possible to collect greywater and, after treatment, use it for purposes, such as flushing and garden watering. This greatly reduces the demand on mains water and reduces the volume of water discharged into sewage systems.
		
		Renewable technologies can be used in a micro sense for electrical generation or heating, on a communal basis where a community will take advantage of larger installations or on a national generation system such as on/offshore wind farms or solar farms.

UNIT 1 TEACHER GUIDANCE

1.5 Building structures and forms		
	Content Amplification	**Teacher Guidance**
1.5.1	Learners should know that in cellular constructions: • load bearing walls provide the main vertical support and lateral stability for floors • external wall panels, lift shafts or staircases are used to provide stability • bridging components such as floors, roofs and beams are supported by load bearing walls • prefabricated modular construction, such as pods, may be used.	Cellular construction methods create structurally efficient buildings with high levels of acoustic and fire separation between adjacent rooms. They are suitable for buildings that follow regular grids and repeating floor plans where internal separating or party walls are required, such as in blocks of flats and student accommodation. They are usually restricted to 6-10 storeys depending on location and exposure to wind action.
1.5.2	Learners should know that in rectangular frame constructions: • weight is carried by a skeleton or framework of columns and beams, rather than being supported by walls. Learners should be aware that: • a lightweight timber-frame is a common structure used in the construction of contemporary housing • steel and reinforced concrete frames are used in larger structures • contemporary commercial framed buildings have replaced traditional external walls with the use of metal and glass screens, or curtain walls, as exterior cladding.	The specification content refers to a skeleton frame, a structure used for the construction of multi-storey buildings comprising a system of columns and connecting beams that support the internal floors and external walls and carries all loads to the foundations. Floor areas will be free of immovable walls resulting in more flexible spaces. The skeletal frame structure has made it possible to construct tall buildings and skyscrapers. A **braced frame** is a development of the skeleton frame used in structures subject to high lateral loads, such as wind pressure. The beams and columns carry vertical loads, and the bracing systems such as floor slabs and diagonal steel sections transfer lateral loads. **Portal frames:** A building structure can be formed using a series of parallel portal frames, typically 6-8m apart and can span between 15 to 50m. A secondary framework of purlins fixed to the rafters and rails fixed to the columns is required to support cladding such as profiled sheeting or prefabricated composite metal panels, (masonry cladding is often included at low level to give greater resistance to damage and improve security). Bracing is required in at least one side bay per elevation to give the row of parallel frames lateral stability, Portal frames are a simple and rapid form of

		structure to erect, and create a wide, clear-span, weather-proof enclosure at low cost. Portal frames are used because of their resistance to transverse wind forces but wind forces acting on the end walls require transference vis roof bracing to the side walls and therefore to the foundations. They are also low in thermal conductivity, which makes them poor in energy retention.
1.5.3	Learners should know that in portal frame constructions: • beams or rafters are supported at either end by columns • columns are secured to pad foundations using holding down bolts • the joints between the beams and columns are 'rigid' so the beam can be reduced in size and can span large distances. Learners should know the terminology of the components of a portal frame detail drawing, including: • columns on base plates • rafters • apex and knee details • eaves beam • wind bracing cold formed sections and connections. Learners should be aware that portal frame constructions are: • often fabricated from structural steel, reinforced pre-cast concrete, or laminated timber • lightweight and can be fabricated off-site, then bolted to a substructure.	

1.5.4	Learners should be aware of:
	• the importance of heritage and traditional methods in the maintenance of the historic built environment:
	  • to maintain the history and character of a building
	  • to comply with planning regulations within conservation areas
	  • to preserve our heritage for the benefit of present and future generations.
	• the maintenance methods used by heritage and traditional trades:
	  • having a regular programme of maintenance to help prevent small problems escalating, or further deterioration occurring
	  • matching existing materials and methods of construction where possible
	  • retaining as much of the original fabric as possible in historically significant buildings.
		Heritage and traditional methods as practised by traditional trades include:
		• masonry and stone carving
		• timber framing/rafter and purlin roofs, carpentry and joinery
		• thatching and roofing using natural shingles
		• leadwork, including sheeting and ornamental work
		• plasterwork, including mouldings and repairs
		• blacksmithing, and ornamental metal working.
		Learners should be aware that the work performed using traditional methods is essential to the conservation and maintenance of the historic built environment, as is the preservation of the trade skills and knowledge required to carry out this work.
		The design and installation of building services in historic buildings needs to be considered carefully. It should aim to protect the building and its setting with no loss of historic fabric, and follow principals of mitigation, minimisation and reversibility. However, while the building needs to be carefully considered it needs to be recognised that there is a much larger range of services used today than in the past. These also include any renewable technology for micro-generation and heating as well as communication, safety and security. Installation and management of services in historic buildings can be best served by using wireless connections where possible.

UNIT 1 TEACHER GUIDANCE

1.6 Sustainable construction methods		
	Content Amplification	**Teacher Guidance**

1.6.1	Learners should be aware of the following benefits of using sustainable construction methods:
	• financial benefits:
	  • minimising waste
	  • reducing energy consumption
	  • improving water efficiency
	  • reducing operating costs
	  • optimising the life cycle of buildings
	• cultural and social benefits:
	  • protection of the environment
	  • helps avoid the depletion of natural resources
	  • improving environmental quality may:
	  • improve occupants' comfort
	  • create an aesthetically pleasing environment
	  • improve air quality
	  • improve productivity.
		Sustainable construction methods that:
		• focus on renewable energy, sustainable materials, water conservation, site development and indoor environmental quality
		• aim to preserve the environment and avoid the depletion of natural resources.

1.6.2	Learners should know and understand that construction methods should take account of factors including pollution, preservation of the natural environment and natural habitats. Learners should be aware of the following approaches to preserving the natural environment and natural habitats: • limiting the pollution released into water, air or the ground during construction and use of the built environment • places may be made into protected areas by organisations in each of the devolved countries of the UK (England, Scotland, Wales and Northern Ireland) such as Natural Resources Wales, Natural England,	Measures to Prevent Pollution: Good construction site practice can help to control and prevent pollution. This begins with the environmental risk assessment for all construction activities and materials likely to cause pollution. Specific measures can then be taken to mitigate these risks. Measures may include: • minimising land disturbance and leave maximum vegetation cover to prevent erosion and run-off • controlling dust through use mesh screens and fine water sprays to control dust and dampen down the site • covering stores of cement, sand, and other powders, and locating them

	Scottish National Heritage or Department of Agriculture, Environment and Rural Affairs in Northern Ireland, which place restrictions on activities and developments • developers may try to reduce the impact on nature by building tunnels under roads for newts to use, or creating new roosts for bats when their original roosts are lost because of development • reducing carbon dioxide emissions during construction and use of the built environment.	where they will not be washed into waterways or drainage areas • using non-toxic paints, solvents, and other hazardous materials wherever possible • segregating and monitoring toxic substances to prevent spills and site contamination • collecting any wastewater generated from site activities in settlement tanks and disposing according to environmental regulations • avoiding any burning of materials on site • reducing noise pollution through careful handling of materials, and use modern, quiet power tools, equipment, and generators.
1.6.3	Learners should know that: • wood is a renewable construction material and is commonly used in homebuilding • steel used in construction contains recycled content and steel can be recovered and recycled again • recycled bricks may be used to create walls or crushed to be used as hard-core • straw bales can be used to create walls inside a frame • wool may be used as insulation instead of fibreglass or polyurethane • reclaimed slates or tiles, thatch or timber shingles can be used on roofs.	The amplification lists several examples of sustainable materials. Sustainable materials are materials that do not deplete non-renewable (natural) resources and have no adverse impact on the environment when used.

1.6.4	Learners should be aware of the following in relation to waste disposal, re-use and recycling of materials:
	• Waste disposal
	  • includes the classification of waste materials: hazardous, non-hazardous, origin, properties
	  • the costs of landfill: financial, environmental and social
	• Re-use
	  • salvaged construction products are re-used with little or no reprocessing, typically: bricks, slates, steel sections
	  • the environmental impact of reprocessing is minimised
		Learners will benefit from an awareness of the financial and environmental benefits of reuse and recycling including:
		• Conservation of raw materials. This reduces the negative impact of material consumption, such as deforestation.
		• Conservation of energy. This is the amount of energy required to create new products and is frequently more than that required for recycling.
		• Reduction of pollution arising from reduced manufacturing.
		• Reduction of landfill. Landfill sites harm the surrounding environment and habitats, particularly as a result of the chemicals that can be produced when waste breaks down, causing hazardous contamination of land and water.

	• Recycling
	  • processes typically include crushing, smelting, decontamination, sorting
	  • there are a wide variety of potential end uses of recycled concrete, wood, metals, glass and plastic.	

1.6.5	Learners should know that: • planning permission is a system that enables Local Planning Authorities (LPA) to control the development of the built environment in their area. Learners should know and understand the characteristics, benefits and drawbacks of brownfield sites, including that: • they have been used before and tend to be disused or derelict land • existing buildings may have to be demolished and there may be clean-up costs for land decontamination • redevelopment of brownfield sites can clean up environmental health hazards and eyesores • access roads, drainage and services may already be available onsite, reducing the cost of a new development. Learners should know and understand the characteristics, benefits and drawbacks of greenfield sites, including that: • they have not been built upon previously • they tend to be cheaper to develop, subject to legal and planning constraints. • infrastructure works, including new roads and utility connections must be taken into account.	Subject to certain exceptions planning permission must be obtained from the LPA before a new building can be constructed, an existing building can be altered/extended, or the use of an existing building can be changed. Learners will benefit from knowledge of the planning system for the control of development and from an understanding of the main characteristics of greenfield and brownfield sites so that they can begin to assess the potential of proposed building projects. When brownfield sites have been left unused for long periods of time, they can become environmentally critical. Species of flora and fauna can thrive that have been previously thought extinct or endangered. Rules and protocols must be observed as government legislation now exists that protects some inner-city brownfield sites from re-development without sufficient environmental assessments taking place. There may be a need to include habitat conservation in the design. Discovery of new or endangered flora and fauna may result in delays in the development project starting. When utilising existing infrastructure and services on brownfield sites care must be taken to ensure any upgrading of these is considered at the design stage. Roads may need to widen, drainage systems increased, and electrical supply upgraded.

UNIT 1 TEACHER GUIDANCE

1.7 Trades, employments and careers		
	Content Amplification	**Teacher Guidance**
1.7.1	Learners should be aware that a bricklayer: • works from plans and specifications • constructs structures by spreading layers of mortar, placing bricks/blocks, checking vertical and horizontal alignment • constructs brickwork using traditional bonding patterns.	It would be incorrect to assume that all learners have this knowledge at the start of the course of study. Learners should develop understanding of the skills and scope of work carried out by the various trades and develop an awareness of their contributions to new build, refurbishment, and conservation/heritage projects. The list in the specification content amplification is not exhaustive of all trades that work on construction sites. It should be noted, however, that only those trades listed (1.7.1 – 1.7.8 in the specification) may feature in examination questions.
1.7.2	Learners should be aware that a stonemason: • dresses, carves and lays traditional stonework, including dry-stone walling • repairs and cleans existing traditional stone mouldings and other features.	
1.7.3	Learners should be aware that a plasterer: • applies wet finishes and protective coverings on external walls • applies plaster to inside walls and ceilings • dry lines internal studs of walls • replicates traditional ornamental plasterwork using plaster, moulds and casts.	
1.7.4	Learners should be aware that a joiner: • joins pieces of wood in a workshop, which a carpenter fixes on site. Learners should be aware that a carpenter: • installs floor joists, floorboards, roof trusses, wall partitions • fits interior woodwork – staircases, doors, skirting boards, cupboards, kitchens • replicates traditional ornamental mouldings.	

1.7.5	Learners should be aware that an electrician: • installs, inspects and tests electrical services and equipment • follows relevant safety regulations.	
1.7.6	Learners should be aware that a plumber: • installs cold water, hot water, sanitation (toilets), boilers, and central heating systems • follows relevant safety regulations, (e.g. 'Gas Safe') • installs traditional lead flashings and roof coverings.	
1.7.7	Learners should be aware that a painter and decorator: • prepares and applies paint, wallpaper and other finishes to interior surfaces • prepares and applies paint and other finishes to exterior surfaces • follows relevant safety regulations.	
1.7.8	Learners should be aware that a floor layer: • prepares and applies levelling compounds • lays carpet and vinyl floor finishes to internal surfaces • installs ceramic wall and floor tiles.	

UNIT 1 TEACHER GUIDANCE

1.8 Health and safety		
	Content Amplification	**Teacher Guidance**
1.8.1	Learners should know and understand that construction sites are hazardous environments with many risks: • workers are at risk from heavy construction equipment and vehicles, working at height, manual handling and slips, trips and falls • employers have the responsibility for the safe operation of sites and may be held to account in the case of accidents or incidents • the public may be at risk when close to a construction site, or if they gain access to the site, from harmful materials and site traffic.	Learners should understand that the construction industry can be dangerous, ranking third in the UK's list of dangerous industries and with falls from height accounting for nearly half of all serious incidents. It is also the most improved UK industry in terms of recent reductions in serious incidents. This improvement being the result of the combined effort and acceptance of responsibility of all stakeholders to mitigate risk. Learners will need to understand that: • any career connected with the construction of the built environment will require knowledge of the hazards inherent in construction and of the risks arising • risks from construction to employees, employers, and members of the public must all be considered and minimised • health and safety requirements will involve knowledge and understanding of risk assessment, including reference to relevant legislation and associated regulations.
1.8.2	Learners should know and understand the importance of following the correct procedures (rules) so that contractors and employees work safely and prevent accidents and injuries. Learners should know that risk assessments include: • general assessments of health and safety risks on construction sites and associated control measures • specific assessments for particular hazards such as working at height, manual handling and noise, and associated control measures.	

1.8.3	Learners should know and understand that regulations require employers to protect the wellbeing of workers, visitors and members of the public, and control exposure to hazards in order to prevent illness or injury, including by: • preparing risk assessments • deciding what control measures are necessary • preventing (or controlling) exposure to hazards • ensuring that the hierarchy of control is followed • monitoring the level of exposure to hazards • preparing procedures to deal with accidents • training and supervising employees.	It is common for Construction Skills Certification Scheme (CSCS) cards to be issued at varying levels for site workers. Each level requires some form of test to be completed. Levels range from operative, trainees and apprentices, skilled workers, supervisors and managers. Each card will have an identification colour. Although the CSCS card is not a legal requirement, most sites recognise them as proof of qualified status in the role and work the person is undertaking on site. The CSCS card is used as a risk assessment control measure for health and safety purposes. Although CSCS cards are not issued to site visitors anymore the site manager/supervisor is directly responsible for ensuring all visitors undergo a training /induction on safety on their site before they are allowed to visit.
1.8.4	Learners should know and understand that regulations require employers to control exposure to hazards to prevent illness or injury by: • assessing the use of PPE as a control measure • preventing (or controlling) exposure to dangerous environments, such as heat, cold, chemicals, biological risks, falls from height and working in enclosed spaces, by the selection of the correct PPE for the task • training and supervising employees in the correct use, storage and maintenance of PPE.	PPE includes: • eye protection, gloves, harnesses and hearing protection • high-visibility and protective clothing • respiratory equipment • safety footwear and safety helmets. Employers are responsible for providing PPE and the training of its use in the workplace free of charge. It should be used only as a last resort when exposure to risks cannot be adequately controlled in other ways. Risk management is undertaken to ensure the proper planning and communication is maintained regarding any health, safety, or welfare. Up to date information should be issued that complies with the proper working practices on site.

1.8.5	Learners should know and understand the importance of following the correct safety procedures when working with gas, water and electricity: • gas and electric should only be worked on by a competent person who holds the necessary qualifications and accreditations (e.g. Gas Safe and NICEIC) • follow appropriate working practices, safety procedures and precautions • use the correct protective equipment • know the means of cutting off the supply of gas, water or electricity for isolation prior to carrying out work.	If gas appliances are not installed and maintained properly, there is a danger of fire, explosion, gas leaks and carbon monoxide poisoning. In domestic properties and workplaces such as shops, restaurants, schools and hospitals, it is illegal for an unregistered person (not qualified to be on the Gas Safe Register.) to carry out work on a gas appliance. Preventing damage during construction due to water leaks requires a focus on quality, planning and testing throughout the construction process and employing competent persons to carry out the work. Electrical work must also be carried out by a competent person who has the suitable training, skill and knowledge for the task to be undertaken to prevent injury to themselves and others. They will be aware of risks arising from overhead lines and underground cables and be able to mitigate other hazards of working with electricity, including: • electric shock and burns from contact with live parts • injury from exposure to arcing, fire from faulty electrical equipment or installations • explosion caused by unsuitable electrical apparatus or static electricity igniting flammable vapours or dusts.

1.8.6	Learners should know and understand that to ensure safety:
	• those working at height must:
	  • be properly planned and use an appropriate method of access (e.g. MEWP, Scaffold or access platform)
	  • take account of weather conditions (if appropriate)
	  • use equipment which is appropriately inspected
	  • control risks from fragile surfaces and falling objects
	• those working in enclosed spaces must manage risks from:
	  • exposure to fumes
	  • reduced oxygen levels
	  • flooding/drowning
	  • the risk of fire and explosive atmospheres
		Working at height remains one of the biggest causes of fatalities and major injuries. Common cases include falls from ladders and through fragile surfaces. Control measures include:
		• avoiding working at height where it is reasonably practicable to do so
		• where work at height cannot be easily avoided, prevent falls using the right type of equipment, such as guard rails
		• minimise the distance and consequences of a fall, by using the right type of equipment, such as a harness.
		Any equipment supplied by a third party is required to be provided with suitable instructions and warning notices and may require training prior to use. A confined space includes any place, such as a chamber, tank, silo, pit, trench, sewer, flue, well or similar space where there arises a reasonably foreseeable

	• entrapment in machinery (if appropriate) • PPE (e.g., harnesses) Learners should be aware that there must be arrangements in place to get the person out of the enclosed space safely and promptly if they become unwell.	risk of the types listed in the amplification. Working in a confined space should be subject to a risk assessment completed following the standard 5 step process: 1. Identify the hazards and those affected by them. 2. Evaluate the risks – Low, Medium or High? 3. Record findings – and communicate them to those affected. 4. Introduce control measures; eliminate, substitute, reduce, control isolate, information, training, instruction, and last resort PPE 5. Review the findings – monitor the effectiveness of the assessment.

CREATE YOUR OWN EXAM QUESTIONS

When you are helping your learners prepare for Unit 1, you will find using the questions in the SAMs useful. However, we appreciate that at the start of a course you might want to have a bigger bank of questions to use with your learners. Therefore, you might find it useful to create some of your own. You might even decide to get your learners to write their own questions and mark schemes. This step by step guide will help you create your own exam papers.

All exam questions have three core elements:

A command word + **Link to the specification content** + **A tariff**

What do you need to know about the core elements?

Command word	1. Must be appropriate for the task. 2. Must be linked to the assessment objective. 3. Are often linked to the question's tariff.	1. Is it clear to the learner what they are expected to do in order to access the full range of the mark scheme? 2. If the question is targeting more than one assessment objective, more than one command word must be used. **A full table of how command words relate to assessment objectives is available in the 'Assessment Guide'.** 3. For example, commands words such as 'state' and 'name' should be reserved for lower tariff questions, whereas 'analyse' and 'explain' are often better for higher tariff questions.
Link to the specification content	1. The question must ask the learner about content listed in the specification only. 2. The link to the specification must be clear and unambiguous.	It should be clear which area/s of the specification are being targeted. Consider the stem of the specification content and this will indicate the depth the learner should know and understand the content.

Tariff	1. Must be appropriate for the command word used. 2. Must be appropriate for what is being assessed. 3. Must be accessible for level 1/2 learners within an exam context.	1. It should be possible and clear to the learner how they can achieve all of the marks available for any question: the higher the tariff, the longer the learner should take to answer the question. A good starting point is to allow one mark per minute. 2. Use the SAMs as a guide for what is an appropriate tariff and about the range of tariffs used across a whole paper.

Name **two** other professional roles associated with the built environment sector. [3]

Command word

Unambiguous link to specification

Tariff

There are some additional elements that some exam questions use:

Context	Sometimes, it is necessary to provide leaners with a context to which they will apply their knowledge and understanding of a particular topic. These questions are often assessing AO2.	A context should be written clearly and using language that is as simplistic as possible. The context should be concise and should provide only the information that learners will need to answer the question. Additional information may be time-consuming or misleading. It should depict something that learners will understand, rather than something that is unfamiliar or confusing. **An example of a question that uses a context in the Unit 1 SAMs is Question 5.**
Stimulus	Sometimes learners may be provided with a stimulus. The stimulus might be an image, data in the form of a graph or a table, or something else.	Any stimulus must be clear and should not provide information that is excessive or irrelevant. If the stimulus is an image, it should be clear, an appropriate size and of good quality.

Assessment Objectives

Each question should target an assessment objective which is signalled by the command word. If more than one Assessment Objective is targeted, more than one command word should be used.

A full table of the assessment objectives that have been set for all our Vocational qualifications is available in the 'Assessment Guide'. However, what does each assessment objective require learners to do?

AO1	Requires learners to recall the knowledge that they have learned throughout their course.
AO2	Requires learners to: • use learned material in a new situation with a minimum amount of help or direction. • apply rules/principles to a problem, without being given the rule; problem solving.
AO3	Requires learners to: • break material into component parts so that its structure may be understood • break complex concepts down to component parts and analyse how parts are related to each other; seeing patterns, recognising hidden meanings • judge the value of material based on certain criteria • evaluate, make judgments on the worth of a concept for a purpose • resolve controversies/differences of opinion • verify value of evidence • recognise subjectivity.

What type of question should be used?

There are several ways to ask a question, and you should consider what is most appropriate for the question that you're asking. Some guidance is given below:

Matching pairs Multiple choice True or false	These styles of question are useful for asking questions that have answers that are predetermined, usually assessing straightforward knowledge and understanding (AO1).	These questions should be marked objectively, in that there is a correct and an incorrect answer.
Short Answer	These can be open-ended and require leaners to construct a short answer. They are low tariff, and usually used to test knowledge and understanding. Short answer questions are also used for calculations and data manipulation.	This type of question could be marked objectively if there is one or several correct that might be given. However, if the candidate is required to construct a response, it may be that subjectivity is required to decide whether a number of marks maybe given according to the accuracy and quality of the response, as permitted by the tariff. **For an example, see page 5 of the Unit 1 SAMs.**
Extended answer	This allows learners to respond at length to open-ended questions. In this, learners may be required to organise their ideas, to build an argument, and may result in a range of interpretations that draw upon wider and more flexibly defined sources. These are usually used to test higher skills, writing and structuring skills, further reading and a deeper level of understanding.	These questions will be marked subjectively: you should use your judgement to place learners' responses into bands that detail criteria that responses should meet. **For an example, see page 16 of the Unit 1 SAMs.**

Problem solving	These require a range of critical thinking skills from identification, description and analysis, to synthesis and evaluation. Sometimes there will be exact or correct answers to problems – as in answering maths problems – or sometimes learners may be asked to propose and justify a course of action to address a specified situation, or to develop a well-reasoned explanation or response based on data analysis, models or precedent.	Questions that require exact or correct answers should be marked objectively, in that there is a correct and an incorrect answer. **For an example, see page 13 of the SAMs.** Questions that require a proposed or justified course of action will be marked subjectively: you should use your judgement to place learners' responses into bands that detail criteria that responses should meet. **For an example, see page 16 of the SAMs.**
Graph production or interpretation	Graph production questions involve both numerical/mathematical skills. Graph interpretation questions involve both numerical/mathematical skills as well as reasoning skills.	These questions should be marked objectively, in that there is a correct and an incorrect answer.

Golden Rules:

1. Try and keep questions as short and clear as possible.
2. Consider splitting long questions into a statement and a question.
3. Avoid asking more than one question in a sentence.
4. Use plain English, e.g., *buy* rather than *acquire*.
5. Avoid using:
   a. negatives (where possible)
   b. technical language (unless it is part of what is being assessed)
   c. idioms/metaphors/non-literal use of language, e.g., see eye to eye, cut back on, branching out
   d. words that have more than one meaning, e.g., volume, fit, illustrate (unless it is part of what is being assessed)
   e. gender-biased words, e.g., chairman, manmade, policewoman.
6. Across a whole paper, questions should increase in difficulty. Higher tariff questions are more likely to be found towards the end of the paper.
7. A whole paper should sample a wide range of specification content. You might find it useful to use a blank version of the tracking grid from the SAMs (Unit 1, page 37).

Key Principles:

Candidates must take the external assessment, worth 40% of the qualification, in the series in which they certificate. This is the examined unit, which in Construction and the Built Environment is Unit 1.	Only the result for the external assessment that is achieved in the final series, the series in which candidates 'cash-in', can contribute to their final grade. If a candidate takes the external assessment prior to the series in which they 'cash-in', this result cannot contribute to the overall grade, even if it is the better result.	In relation to school performance table points – as opposed to individual candidate results – it is always the first qualification result which counts, irrespective of whether a candidate re-certificates again at a later date.

- Candidates can enter for internally assessed units in January and June
- Candidates may resit each **internally** assessed unit but cannot improve previously submitted work. The best uniform mark score from the attempts will be used in calculating the final overall grade.

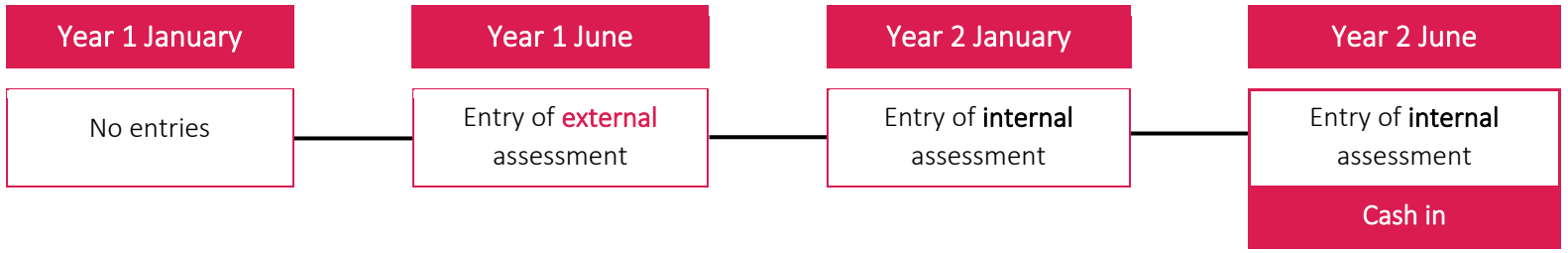
Example scenarios (assuming that the delivery of the qualification takes place over two years):

Scenario 1:

Year 1 January	Year 1 June	Year 2 January	Year 2 June	
No entries	Entry of **internal** assessment	Entry of **internal** assessment	Entry of **external** assessment **Cash in**	✓

Entry for external assessment takes place in the same series as cash-in and certification.

Scenario 2:



Entry for external assessment **does not** take place in the same series as cash-in and certification.

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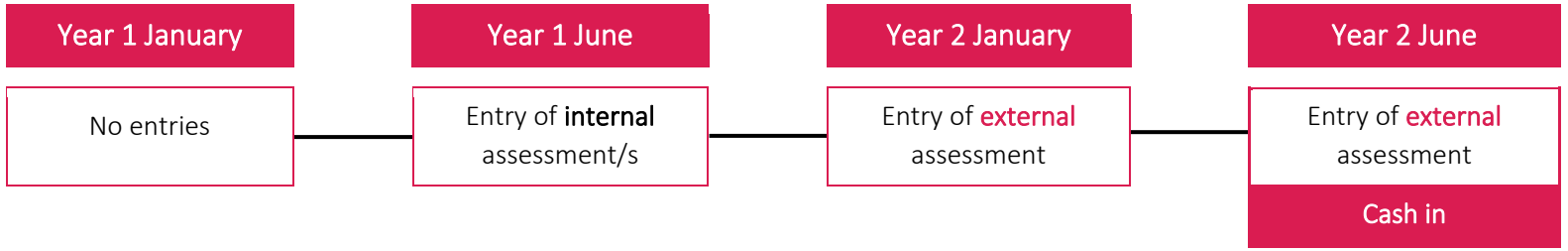
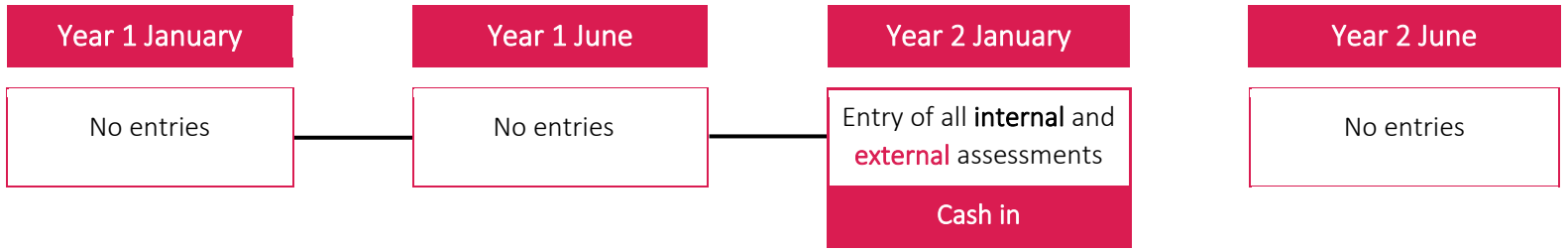
Scenario 3:



It is the **second** attempt of the external assessment that will count towards the final grade, even if it is lower than the previous attempt.

Scenario 4:



This is a linear approach and would be permissible if the qualification was completed in either January or in June.

Assessment of Unit 1

Unit 1: Introduction to the built environment
On-screen examination: 1 hour 30 minutes
40% of qualification
80 marks: 120 UMS

An assessment (taken on-screen), comprising of a range of question types to assess specification content related to ideas and concepts in construction and the built environment.

All questions are compulsory.

The assessment objective weightings for Unit 1 are:

AO1	AO2	AO3
24%	11%	5%
48 marks	22 marks	10 marks

FAQs

Can learners resit the Unit 1 assessment?

Candidates may resit the **externally** assessed unit, prior to certification; however, this qualification has a 40% terminal requirement which must be satisfied by the externally assessed unit. Therefore, only the uniform mark score from the attempt made in the series in which the candidate is cashing in the qualification will be used in calculating the final overall grade, even if this is lower than the previous attempt.

Candidates who are unhappy with the grade awarded for the qualification may choose to resit one or more units following certification.

Where the candidate resits the externally assessed unit, only the uniform mark score from the resit attempt will be used in calculating the final overall grade, even if this is lower than the previous attempt. The candidate does not need to resit the internally assessed unit as marks for the internally assessed unit may be carried forward for the lifetime of the specification.

Is the assessment available on paper?

The assessment is available on-screen only. In the case of technical or other difficulties that might prevent a candidate from sitting the on-screen exam, centres should contact WJEC.

What is the entry code for this unit?

		Entry Code
Unit 1	External – On-screen	E819U1

Is this assessment compulsory?

Yes.

When can candidates sit the Unit 1 assessment?

Assessment opportunities will be available in January and May/June each year, until the end of the life of this specification. January 2024 will be the first assessment opportunity for Unit 1.

Are candidates assessed on their spelling, punctuation and grammar in this assessment?

No, although learners are reminded of the need for good English and orderly, clear presentation in their answers.

Will candidates be expected to answer questions about content in Unit 2 or Unit 3 in this exam?

No. Examination questions will be based on Unit 1 content only.

Will the assessment objective weightings remain the same throughout the life of the specification?

Yes.

How is the unit reported?

This unit will be graded Level 1 Pass, Level 1 Merit, Level 1 Distinction, Level 1 Distinction*, Level 2 Pass, Level 2 Merit, Level 2 Distinction, Level 2 Distinction*.

GLOSSARY FOR UNIT 1

Term	Definition
Building trades	Trades that are essential to and practised in connection with building construction, such as carpentry, plumbing and bricklaying.
Built Environment	The man-made surroundings that provide the setting for human activity that includes cities, infrastructures buildings, the spaces between them such as parks.
Construction Industry	The term used to describe the sector of the national economy that carries out building and infrastructure projects.
Hazard	Something that can cause harm, such as working at height and using heavy plant and machinery.
Infrastructure	The general term for a basic physical system that supports human activity, such as transportation systems, communication networks and energy distributions.
Manufacturing	The processes required to transform raw materials into useful products.
Primary Industries	Industries that extract raw materials from nature for use in their unprocessed state; such as coal, iron ore or for use in manufacturing.
Renewable energy technologies	Technologies involved in the generation or collection of energy from renewable sources, as opposed to generating energy by burning finite resources such as fossil fuels or natural gas.
Risk	A risk is the chance, high, medium, or low, that any hazard will actually cause harm.
Risk assessment	A critical examination of health and safety hazards at a construction site, usually involving a five-step process.