

ST1309/

DRAFT END-POINT ASSESSMENT PLAN FOR THE MINE MANAGEMENT APPRENTICESHIP STANDARD

APPRENTICESHIP STANDARD REFERENCE NUMBER	LEVEL OF THIS END-POINT ASSESSMENT (EPA)	INTEGRATED
ST1309	6	Yes

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Key Fields

Introduction and overview

This document explains the requirements for end-point assessment (EPA) for [mine management](#) apprentices. End-point assessment organisations (EPAOs) must follow this when designing and delivering their EPA.

Mine Management apprentices, their employers and training providers should read this document.

An approved EPAO must conduct the EPA for this apprenticeship. Employers must select an approved EPAO from the Education and Skills Funding Agency's Register of end-point assessment organisations (RoEPAO).

A full-time apprentice typically spends 48 months on-programme (this means in training before the gateway) working towards competence in [mine management](#). All apprentices must spend at least 12 months on-programme. All apprentices must spend at least 20% of their on-programme time completing off-the-job training.

This EPA has [2](#) assessment methods.

The grades available for each EPA method are:

EPA method [1](#) - [project with report, presentation and questioning](#):

- [fail](#)
- [pass](#)
- [distinction](#)

EPA method [2](#) - [professional discussion underpinned by a portfolio of evidence](#) :

- [fail](#)
- [pass](#)

The result from each EPA method is combined to decide the overall apprenticeship grade. The following grades are available for the apprenticeship:

- [fail](#)
- [pass](#)
- [distinction](#)

EPA summary table

On-programme (typically 48 months)	Training to develop the knowledge, skills and behaviours (KSBs) of the occupational standard. Training towards English and mathematics qualifications at Level 2¹, if required. Training towards any other qualifications listed in the occupational standard. The qualification(s) required are: Completed and passed all credit carrying modules of the BEng (Hons) Mining Engineering & Management apart from the final module which will form the EPA. Compiling a portfolio of evidence.
End-point assessment gateway	The employer must be content that the apprentice is working at or above the level of the occupational standard. The apprentice's employer must confirm that they think the apprentice: • is working at or above the occupational standard in mine management • has the evidence required to pass the gateway and is ready to take the EPA The apprentice must have passed any other qualifications listed in the mine management occupational standard ST1309. The qualification(s) required are:

	Completed and passed all credit carrying modules of the BEng (Hons) Mining Engineering & Management degree apart from the final module which will form the EPA. Apprentice must have achieved English and mathematics at Level 2¹. The apprentice must submit all gateway evidence to the EPAO. The EPAO must review the evidence. When the EPAO confirms the gateway requirements have been met, the EPA period starts and typically takes 6 months to complete. The expectation is that the EPAO will confirm the gateway requirements have been met as quickly as possible. For the project with report, presentation and questioning, the apprentice will be required to submit the following supporting material: project title and scope requirements. To ensure the project allows the apprentice to meet the KSBs mapped to this EPA method to the highest available grade, the EPAO should sign-off the project's title and scope at the gateway to confirm it is suitable. A brief project summary must also be submitted to the EPAO. It should be no more than 500 words. This needs to show that the project will provide the opportunity for the apprentice to cover the KSBs mapped to this EPA method. It is not assessed. For the professional discussion underpinned by a portfolio of evidence, the apprentice will be required to submit a portfolio of evidence. The apprentices must submit any policies and procedures as requested by the EPAO.
End-point assessment (typically 6 months)	Grades available for each method: Project with report, presentation and questioning • fail • pass • distinction Professional discussion underpinned by a portfolio of evidence • fail

	• pass Overall EPA and apprenticeship can be graded: ○ fail ○ pass ○ distinction
Professional recognition	This apprenticeship standard aligns with Incorporated Engineer (IEng) for Institute of Minerals, Mining and Metallurgy . The experience gained and responsibility held by the apprentice on completion of the apprenticeship will either wholly or partially satisfy the requirements for registration at this level.
Re-sits and re-takes	• Re-take and re-sit grade cap: pass • Re-sit timeframe: typically 2 months • Re-take timeframe: typically 4 months

For those with an education, health and care plan or a legacy statement, the apprenticeship's English and mathematics minimum requirement is Entry Level 3. British Sign Language (BSL) qualifications are an alternative to English qualifications for those who have BSL as their primary language.

Length of end-point assessment period

The EPA will be taken within the EPA period. The EPA period begins when the EPAO confirms the gateway requirements are met and is typically 6 months.

The expectation is that the EPAO will confirm the gateway requirements are met and the EPA begins as quickly as possible.

EPA gateway

The apprentice's employer must confirm that they think the apprentice is working at or above the occupational standard in mine management. They will then enter the gateway. The employer may take advice from the apprentice's training provider(s), but the employer must make the decision.

Apprentices must meet the following gateway requirements before starting their EPA.

These are:

- achieved English and mathematics at Level 2¹.
- completed and passed all credit carrying modules of the **BEng (Hons) Mining Engineering & Management degree apart from the final module which will form the EPA**
- for the **project with report, presentation and questioning** apprentices must submit: **project title and scope requirements**

To ensure the project allows the apprentice to meet the KSBs mapped to this EPA method to the highest available grade, the EPAO should sign-off the project's title and scope at the gateway to confirm it is suitable. A brief project summary must be submitted to the EPAO. It should be no more than 500 words. This needs to show that the project will provide the opportunity for the apprentice to cover the KSBs mapped to this EPA method. It is not assessed.

- for the **professional discussion underpinned by a portfolio of evidence** apprentices must submit: **portfolio of evidence**

Portfolio of evidence requirements:

Apprentices must compile a portfolio of evidence during the on-programme period of the apprenticeship. It should contain evidence related to the KSBs that will be assessed by this assessment method. The portfolio of evidence will typically contain 15 discrete pieces of evidence. Evidence should be mapped against the KSBs.

Evidence may be used to demonstrate more than one KSB; a qualitative as opposed to quantitative approach is suggested. Evidence sources may include:

- workplace documentation/records, for example:
 - safety documentation, such as Bowtie risk assessments
 - workplace policies/procedures, records, such as geotechnical assessments, ground control and other rules that underpin the safe running of the operation
 - witness statements
 - annotated photographs
 - video clips (maximum total duration 10 minutes); the apprentice must be in view and identifiable

This is not a definitive list; other evidence sources can be included.

The portfolio should not include reflective accounts or any methods of self-assessment. Any employer contributions should focus on direct observation of performance (for example witness statements) rather than opinions. The evidence provided should be valid and attributable to the apprentice; the portfolio of evidence should contain a statement from the employer and apprentice confirming this.

The EPAO should not assess the portfolio of evidence directly as it underpins the discussion. Independent assessors should review the portfolio of evidence to prepare questions for the discussion assessment method. They are not required to provide feedback after this review.

Apprentices must submit any policies and procedures as requested by the EPAO.

The EPA period starts when the EPAO confirms all gateway requirements have been met. The expectation is they will do this as quickly as possible.

Assessment methods

The assessment methods can be delivered in any order.

The result of one assessment method does not need to be known before starting the next.

Project with report, presentation and questioning

Overview

A project involves the apprentice completing a significant and defined piece of work that has a real business application and benefit. The project must start after the apprentice has gone through the gateway.

The [project with report, presentation and questioning](#) must be structured to give the apprentice the opportunity to demonstrate the KSBs mapped to this EPA method to the highest available grade.

The project must meet the needs of the employer's business and be relevant to the apprentice's occupation and apprenticeship. The EPAO must confirm that it provides the apprentice with the opportunity to demonstrate the KSBs mapped to this EPA method to the highest available grade. The EPAO must refer to the grading descriptors to ensure that projects are pitched appropriately.

This EPA method includes 2 components:

- [a project with a project output](#)
- [a presentation with questions and answers](#)

The project and any components must be assessed holistically by the independent assessor when they are deciding the grade for this EPA method.

Rationale

This EPA method is being used because in this occupation reports and presentations are commonly used in the workplace and this is a typical method of delivering project outcomes. The method was selected as it provides the opportunity to demonstrate a range of knowledge, skills, and behaviours that are usually demonstrated in a complex project environment and other assessment methods would be unsuitable due to the length of time the project takes to complete.

The further rationale for this assessment is:

- it is a holistic assessment method, allowing the apprentice to demonstrate KSBs in an integrated way
- it allows for a range of mine management activities to be demonstrated
- it provides a cost-effective assessment, as it minimises independent assessor time and makes use of the apprentice's employer's workplace, equipment and resources, and should contribute to workplace productivity

Component 1: Project with a project output

Delivery

Apprentices must complete a project which may be based on any of the following:

A typical mine management project, some example projects could include:

- scope and recommendations for a new mine
- an extension to an existing mine
- an optimisation of a mining operation that requires a full re-appraisal of all reserve and resource data

To ensure the project allows the apprentice to meet the KSBs mapped to this EPA method to the highest available grade, the EPAO should sign-off the project's title and scope at the gateway to confirm it is suitable.

The project output must be in the form of a **report**.

The apprentice must start the project after the gateway. They must complete and submit the **report** to the EPAO a maximum of **12** weeks after the gateway. The employer should ensure the apprentice has the time and resources within this period, to plan and complete their project.

The apprentice must complete their project and the production of all its components unaided.

The apprentice may work as part of a team which could include technical internal or external support. However, the project output must be the apprentice's own work and will be reflective of their own role and contribution. The apprentice and their employer must confirm that the project output(s) is the apprentice's own work when it is submitted.

The report must include at least:

- an executive summary (or abstract)
- an introduction
- the scope of the project (including key performance indicators, aims and objectives)
- a project plan
- research outcomes
- data analysis outcomes
- project outcomes
- discussion of findings
- recommendations and conclusions
- references
- appendix containing mapping of KSBs to the report. Other appendices could include Bowtie risk assessment, mine layout plans, ventilation and geotechnical assessments, engineering design and specifications.

The project report has a word count of 6500 words. A tolerance of 10% above or below the word count is allowed at the apprentice's discretion. Appendices, references and diagrams are not included in this total. The project report must map, in an appendix, how it evidences the relevant KSBs mapped to this EPA method.

Component 2: Presentation with questioning

Delivery

This is a formal presentation where an apprentice will present to an independent assessor on a set subject. The independent assessor must ask questions. Apprentices must prepare, submit and deliver a presentation. The presentation is restricted to the KSBs allocated to this EPA method as shown in the mapping section of this document.

The presentation and questioning must last 60 minutes. This will typically include a presentation of 25 minutes and questioning lasting 35 minutes.

The independent assessor must ask at least 5 questions. They must use the questions from the EPAO's question bank or create their own questions in-line with the EPAO's training. Follow up questions are allowed where clarification is required.

The presentation will provide an overview of the apprentice's project. Independent assessors will ask questions after the presentation. All presentations must include at least:

- an overview of the project
- the project scope (including key performance indicators)
- summary of actions undertaken by the apprentice
- project outcomes and how these were achieved.

The apprentice must prepare and submit their presentation to the EPAO at the same time as the report which is a maximum of 12 weeks after the gateway.

The apprentice must notify the EPAO, at the submission of the presentation, of any technical requirements for the presentation. For the presentation, the apprentice will have access to:

- audio-visual presentation equipment
- flip chart and writing and drawing materials
- computer
- any other requirements as previously notified to the EPAO

The independent assessor must have at least 2 weeks to review the project output(s) and presentation before the presentation is delivered by the apprentice, to allow them to prepare appropriate questions.

Apprentices must be given at least 2 weeks notice of the date and time of the presentation or question and answer session.

Assessment location

The presentation with questioning must take place in a suitable venue selected by the EPAO for example the EPAO's or employer's premises. The presentation with questioning should take place in a quiet room, free from distractions and influence.

The presentation with questioning can be conducted by video conferencing. The EPAO must have processes in place to verify the identity of the apprentice and ensure the apprentice is not being aided.

Question and resource development

EPAOs must write an assessment specification and question bank. The specification must be relevant to the occupation and demonstrate how to assess the KSBs shown in the mapping. It is recommended this is done in consultation with employers of this occupation. EPAOs should maintain the security and confidentiality of EPA materials when consulting employers. The questions must be unpredictable. A question bank of sufficient size will support this. The assessment specification and questions must be reviewed at least once a year to ensure they remain fit-for-purpose.

EPAOs must develop purpose-built question banks and ensure that appropriate quality assurance procedures are in place, for example, considering standardisation, training and moderation. EPAOs must ensure that questions are refined and developed to a high standard.

EPAOs must ensure that apprentices have a different set of questions in the case of re-sits or re-takes.

- independent assessor EPA materials which include:
 - training materials
 - administration materials
 - moderation and standardisation materials
 - guidance materials
 - grading guidance
 - question bank
- EPA guidance for the apprentice and employer

Professional discussion underpinned by a portfolio of evidence

Overview

In the [professional discussion](#), an independent assessor and apprentice have a formal two-way conversation. It gives the apprentice the opportunity to demonstrate their competency across the KSBs as shown in the mapping.

Rationale

The rationale for this assessment method is:

- it allows for assessment of KSBs that do not occur on a predictable or regular basis and may not naturally be assessed as part of the project
- it allows for testing of responses where there are a range of potential answers

- it is cost effective, as apart from a venue, it does not require additional resources.

Delivery

The **professional discussion** must be structured to give the apprentice the opportunity to demonstrate the KSBs mapped to this EPA method to the highest available grade.

The purpose of the independent assessor's questions will be to assess the depth and understanding of the apprentice's knowledge and skills, and to ensure that all mapped knowledge, skills and behaviours are assessed.

The EPAO must give an apprentice **2 weeks** notice of the **professional discussion**. The independent assessor must have at least **2 week(s)** to review the supporting documentation.

Apprentices must have access to their **portfolio of evidence** during the **professional discussion**.

Apprentices can refer to and illustrate their answers with evidence from their **portfolio of evidence**, however the **portfolio of evidence** is not directly assessed.

The **professional discussion** must last for **75** minutes. The independent assessor can increase the time of the **professional discussion** by up to 10%. This time is to allow the apprentice to respond to a question if necessary.

For the professional discussion, the independent assessor must ask at least 6 questions. Follow-up questions are allowed. The independent assessor must use the questions from the EPAO's question bank or create their own questions in-line with the EPAO's training.

The **professional discussion** must allow the apprentice the opportunity to demonstrate the KSBs mapped to this EPA method at the highest possible grade.

The independent assessor conducts and assesses the **professional discussion**.

The independent assessor must keep accurate records of the assessment. The records must include the KSBs met, the grade achieved and answers to questions.

The independent assessor will make all grading decisions.

Assessment location

The **professional discussion** must take place in a suitable venue selected by the EPAO (for example the EPAO's or employer's premises).

The **professional discussion** can be conducted by video conferencing. The EPAO must have processes in place to verify the identity of the apprentice and ensure the apprentice is not being aided.

The **professional discussion** should take place in a quiet room, free from distractions and influence.

Question and resource development

EPAOs must write an assessment specification and question bank. The specification must be relevant to the occupation and demonstrate how to assess the KSBs shown in the mapping. It is recommended this is done in consultation with employers of this occupation. EPAOs should

maintain the security and confidentiality of EPA materials when consulting employers. The questions must be unpredictable. A question bank of sufficient size will support this. The assessment specification and questions must be reviewed at least once a year to ensure they remain fit-for-purpose.

EPAOs must develop purpose-built question banks and ensure that appropriate quality assurance procedures are in place, for example, considering standardisation, training and moderation. EPAOs must ensure that questions are refined and developed to a high standard.

EPAOs must ensure that apprentices have a different set of questions in the case of re-sits or re-takes.

EPAOs must produce the following materials to support the **professional discussion underpinned by a portfolio of evidence** :

- independent assessor assessment materials which include:
 - training materials
 - administration materials
 - moderation and standardisation materials
 - guidance materials
 - grading guidance
 - question bank
- EPA guidance for the apprentice and employer

Mapping of KSBs to grade themes

Project with report, presentation and questioning - Project

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
Project management	The different stages of projects including the principles of	Use project management and planning techniques.	N/A

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
K16 K26 S6 S18	planning, scheduling, and sequencing to ensure effective life of mine plans. The ways of managing, influencing, and controlling outcomes. through the application of project management techniques (K16) Time management, how to set SMART targets, prioritise activities and undertake forward planning in a business environment. (K26)	Allocate resource requirements. Monitor progress towards project goals and identify corrective actions. (S6) Plan and manage own time. (S18)	

Project with report, presentation and questioning - Project

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
Communication K23 S13	Communication techniques, including written, verbal, nonverbal and digital, and different types of interpersonal skills including questioning and listening. (K23)	Communicate with colleagues, stakeholders and other interested parties using a range of different methods and techniques, challenging, influencing, and	N/A

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
		negotiating where appropriate. (S13)	

Project with report, presentation and questioning - Project

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
Sustainable mine design and technical engineering principles K2 K3 K4 K5 K6 K7 K8 K11 K15 K19 K20 K27 S1 S2 S5 S20	Physical geology on the mine environment, including the physical properties of rock, soil and mineral deposits and the impact of weathering, plate tectonics and geomorphic features. (K2) The impact of structural geology, including features such as dip, faulting, rock strength and the principles of elasticity. (K3) Design principles of mines and layout including geology and geomechanics, layout, size and position of mine entries and roadways, and the systems and	Specify the system for supporting the excavation, using information such as the characteristics of the geology, rock formations, data from modelling and measurements taken. (S1) Undertake the mine design process, incorporating elements such as mine layout, roadway design, scheduling, resourcing and ventilation. Determine the impact that these decisions have on the safe, efficient, and sustainable operation of the mine. (S2)	N/A

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
	equipment used for extraction and mine support. (K4) Stress analysis in the mine environment, including the means of measuring pre-mining stress, induced mining stress and stress redistribution. (K5) Types of support systems, considering the design, intended life, suitability of support systems and strata reinforcement. (K6) Rock mechanics and the impact on mine design and the surrounding environment. (K7) The influence and requirements of mechanical and electrical engineering principles and procedures have on the safe, efficient operation of the mine. (K8)	Develop and implement operational mine plans that have SMART targets and are supported by key performance indicators. (S5) Specify the machinery and equipment to support the overall safety and production. (S20)	

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
	How to design the operation to extract the reserves in a legislatively compliant, economic, ecological and socially acceptable manner. (K11) The factors controlling the planning and deployment of automated and digital technologies in mine environments to improve operational efficiency, productivity, and safety. (K15) The principles of mine closure and legacy risk management. (K19) The impact of a mining operation through its life cycle using the principles of asset integrity, environmental and social impact assessment methodologies and the application of current industry best practice to support an		

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
	environmentally robust and sustainable operation. (K20) Data analysis techniques used to examine complex and interacting issues, to assist in developing appropriate solutions solving and support the decision-making process. (K27)		

Project with report, presentation and questioning - Project

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
Cost management K21 S11 B8	Financial and economic strategies, including budgets, financial management and accounting. The influence of commodity prices, feasibility studies, financial reports incorporating cash	Manage and adapt budgets and control expenditure. Review and produce financial reports that provide analysis and draw conclusions on financial risk and evaluation of short and	Recognise the limits of their capabilities and authorisation and work to those limits. (B8)

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
	flow, capital, profit and loss. (K21)	long term mine strategies. (S11)	

Professional discussion underpinned by a portfolio of evidence - Discussion

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
Resource characterisation and development K1 K9 K10 K17 K22 K28 S3 S9 S12	The mining life cycle including the key regulations, standards and guidance that influence the design, construction and operations and closure of mining operations. (K1) Mine surveying techniques for measuring and mapping of mine workings, including the recording of information and the use of analytical measures to verify the results. (K9) Mineral preparation, processing, and waste management techniques including the use of separation techniques, methods of concentrating and further	Undertake mine surveys and use the information to evaluate mine development against the agreed layout and design. (S3) Undertake ventilation surveys such as measuring airflow, heat and dust to identify how the mine environment is being maintained. (S9) Review quality control standards	N/A

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
	refining, the handling and transport of bulk solids and the safe, sustainable disposal of mineral waste and tailings. (K10) Underground mining management principles, including the role that mine ventilation systems and ventilation techniques have on the release and presence of toxic, noxious, and explosive gasses through the mining process. The generation and control of inhalable and respirable dust and increased levels of heat and humidity. (K17) Approaches to costing & procurement, contracting, sales, marketing, and the route to market, including consideration of any legal requirements. (K22) How to develop and implement operational strategy and plans including approaches to identify and classify mineral reserves. (K28)	and ensure that these are effectively and consistently applied and where necessary take corrective action. (S12)	

Professional discussion underpinned by a portfolio of evidence - Discussion

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
Health and safety, environmental and continuous improvement K12 K13 K14 K18 S4 S7 S8 S10 S19 B1 B2 B4	The influence and requirements of legislation on the principles of risk management and the methods that are used to deal with major and occupational hazards, operational, safety, health, financial and environmental risks. The evaluation and implementation of appropriate control measures to reduce risk to As Low as Reasonably Practicable (ALARP). (K12) The principles of major hazard control, and the impact that preventative and mitigating control failure had have on elevating the propensity for mine disasters. (K13)	Collect, analyse and use data from mining and asset management systems to review the impact on operation, using the outputs to improve the safety, efficiency and effectiveness of the mining system. (S4) Identify and utilise risk assessment techniques appropriate for the identified hazards such as major mining hazards with the use of Bowtie methodology. Use these techniques to identify and implement key controls and use safety performance indicators to monitor the effectiveness of those controls. (S7)	Act as a role model and advocate for health and safety across the team. (B1) Act as a role model and advocate environmental, ethical, and sustainable practices. (B2) Adapt and is resilient to challenging or changing situations. (B4)

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
	The principles of scenario planning to recognise the factors that influence the implementation of mine emergency plans including suitable considerations for self-escape and the use of mines rescue. The use of data collected through simulated exercises to improve the planned response. (K14) The mine environment and the impact that it has on operational performance, safety, and long-term health of employees. (K18)	Plan and manage emergency arrangements, including simulated exercises. Determine the effectiveness of those emergency arrangements, and to inform potential improvements. (S8) Identify the statutory and company requirements for monitoring and maintaining records and plans and complete a suitable audit and evaluation to ensure compliance. (S10) Use evidence-based tools, qualitative and quantitative analysis techniques to demonstrate an ethical approach to problem solving and making decisions that improve the safety, operational	

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
		and environmental performance of the underground operation. (S19)	

Professional discussion underpinned by a portfolio of evidence - Discussion

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
Teamwork, leadership & professional behaviours K24 K25 S14 S15 S16 S17 B3 B5 B6 B7	Different, inclusive leadership styles and models, how to develop diverse teams and support people using coaching and mentoring. (K24) Approaches to stakeholder, customer, and supplier management. (K25)	Build teams, empower, mentor, coach, motivate and delegate to others, providing clear guidance and ensuring inclusivity. (S14) Developing others; taking account of diversity, equality and inclusivity. (S15) Work collaboratively with all stakeholders, including regulators (Health and Safety	Collaborate and promote teamwork across disciplines. (B3) Lead by example to promote accessibility, diversity and inclusion. (B5) Commit to their own and support others' professional development. (B6)

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
		Executive), customers, suppliers, and trade unions. (S16) Manage and lead others including conflict management. (S17)	Take responsibility for their own actions and challenge the behaviours and actions of others. (B7)

Grading

Project with report, presentation and questioning

Fail - does not meet pass criteria

THEME	PASS	DISTINCTION
KSBS	Apprentices must demonstrate all the pass descriptors	Apprentices must demonstrate all the pass descriptors and all of the distinction descriptors
Project management K16 K26 S6 S18	Selects and applies project management techniques to plan, manage and execute the project on time. Manages the organisation of tasks, people and resources to achieve the project brief (K16, K26, S6, S18)	Critically analyses potential contingencies to mitigate the effects of forecasted problems and incorporates them into the project plan (S6)

THEME	PASS	DISTINCTION
KSBs	Apprentices must demonstrate all the pass descriptors	Apprentices must demonstrate all the pass descriptors and all of the distinction descriptors
Communication K 23 S13	Selects and applies written, verbal, nonverbal and digital communication techniques appropriate to the audience when dealing with colleagues, stakeholders and other interested parties to meet the project brief. Adapts their style to manage challenging situations, for example influencing and negotiating (K23, S13)	Critically evaluates the impact of their selection of communication techniques on project outcomes (K23, S13)
Sustainable mine design and technical engineering principles K2 K3 K4 K5 K6 K7 K8 K11 K15 K19 K20 K27 S1 S2 S5 S20	Applies the principles of mine design and layout to the project, justifying the impact that the design has on the safe, efficient, and sustainable operation of the mine (K4, S2) Summarises how their design incorporates SMART	Critically compares the safe, efficient and sustainable operation of their mine design with alternative solutions (K4, S2) Analyses the benefits of digital tools in the mine environment (K15) Critically evaluates the suitability of alternative support systems for the project solution using

THEME	PASS	DISTINCTION
KSBs	Apprentices must demonstrate all the pass descriptors	Apprentices must demonstrate all the pass descriptors and all of the distinction descriptors
	targets supported by key performance indicators, complies with legislative guidance, is economically, ecologically and socially acceptable and follows the principles of mine closure and legacy risk management (S5, K11, K19) Applies and evaluates mining methods and analyses geological and geotechnical data to develop and specify ground support systems appropriate to the project brief (K2, K3, K5, K6, K7, K27, S1) Explains mechanical and electrical engineering principles and procedures used in the design of mines and how they impact on safe and efficient operation (K8) Specifies the machinery, equipment and systems	geological and engineering data and research (K6, K27, S1)

THEME	PASS	DISTINCTION
KSBs	Apprentices must demonstrate all the pass descriptors	Apprentices must demonstrate all the pass descriptors and all of the distinction descriptors
	including digital technologies to support the overall safety and production throughout the life-cycle (K15, K20, S20)	
Cost management K21 S11 B8	Applies financial and economic strategies such as taxation, royalties, cashflow analysis, present value to managing and adapting budgets and expenditure within their authorisation limits and in line with the project brief (K21, S11, B8)	Critically evaluates strategies to determine risks to the project or business (K21, S11)

Professional discussion underpinned by a portfolio of evidence

Fail - does not meet pass criteria

THEME	PASS
KSBs	Apprentices must demonstrate all the pass descriptors
Resource characterisation and development K1 K9 K10 K17 K22 K28 S3 S9 S12	Analyses the development and implementation of operational strategies and plans including approaches to identify and classify mineral reserves (K28) Evaluates strategies for costing and procurement, contracting, sales, marketing, and the route to market, including consideration of any legal requirements (K22) Articulates the techniques for mine surveying and how information is recorded and utilised to evaluate mine development against the agreed layout and design (K9, S3) Critically evaluates the role that mine ventilation systems and ventilation techniques play in the maintenance of the underground environment with reference to ventilation survey data (K17, S9) Summarises the application of quality control standards to meet customer specifications and

THEME	PASS
KSBs	Apprentices must demonstrate all the pass descriptors
	requirements with reference to mineral preparation, processing and waste management techniques and taking corrective action when necessary (K10, S12) Evaluates the regulations, standards and guidance that influence the design, construction and operations and closure of mining operations (K1)
Health and safety, environmental and continuous improvement K12 K13 K14 K18 S4 S7 S8 S10 S19 B1 B2 B4	Articulates how they identify mine hazards, including major mining hazards, and how they put in place preventative and mitigating barriers to control and mitigate those hazards, evaluating their effectiveness in line with legislative requirements (K12, K13, S7, B1)

THEME	PASS
KSBs	Apprentices must demonstrate all the pass descriptors
	Analyses the planning and managing of simulated scenario-based emergency arrangements and uses the resulting information and data to validate success and inform improvements (K14, S8) Evaluates the impact mine environment has on operational performance, safety and the long term health of employees (K18) Outlines how evidence-based tools and qualitative and quantitative analysis techniques are used to demonstrate an ethical approach to problem solving and decision making that improve the safety, operational and environmental performance of the underground operation (S19, B2, B4) Articulates how they collect, record, store and analyse data to improve the safety, efficiency and effectiveness of the mining systems and how this is verified

THEME	PASS
KSBs	Apprentices must demonstrate all the pass descriptors
	using auditing ensuring compliance with statutory and company requirements (S4, S10)
Teamwork, leadership & professional behaviours K24 K25 S14 S15 S16 S17 B3 B5 B6 B7	Evaluates how they build teams and develop others by applying inclusive leadership styles to achieve outcomes in line with organisational or company policy on accessibility, diversity and inclusion (K24, S14, S15, B3, B5) Explains how they manage conflict by taking responsibility for their own actions, negotiating and challenging the behaviour of others (S17, B7) Evaluates the impact of collaborative working with stakeholders including regulators (HSE), customers, suppliers, and trade unions (K25, S16, B7) Explains how they demonstrate drive and commitment for their own continued professional development, how they support

THEME	PASS
KSBs	Apprentices must demonstrate all the pass descriptors
	the development of others and the impact that CPD has on the business (B6)

Overall EPA grading

The EPA methods contribute equally to the overall EPA grade.

Performance in the EPA will determine the apprenticeship grade of:

- fail
- pass
- distinction

Independent assessors must individually grade the: **project with report, presentation and questioning and professional discussion underpinned by a portfolio of evidence** according to the requirements set out in this EPA plan.

EPAOs must combine the individual assessment method grades to determine the overall EPA grade.

Apprentices who fail one or more assessment methods will be awarded an overall EPA fail.

Apprentices must achieve at least a pass in all the EPA methods to get an overall pass. In order to achieve an overall EPA 'distinction', apprentices must achieve a distinction in the project report with presentation and questioning assessment method.

Grades from individual assessment methods should be combined in the following way to determine the grade of the EPA as a whole.

PROJECT WITH REPORT, PRESENTATION AND QUESTIONING	PROFESSIONAL DISCUSSION UNDERPINNED BY A PORTFOLIO OF EVIDENCE	OVERALL GRADING
Fail	Any grade	Fail
Any grade	Fail	Fail
Pass	Pass	Pass
Distinction	Pass	Distinction

Re-sits and re-takes

Apprentices who fail one or more EPA method(s) can take a re-sit or a re-take at the employer's discretion. The apprentice's employer needs to agree that a re-sit or re-take is appropriate. A re-sit does not need further learning, whereas a re-take does.

Apprentices should have a supportive action plan to prepare for a re-sit or a re-take.

The employer and EPAO agree the timescale for a re-sit or re-take. A re-sit is typically taken within 2 months of the EPA outcome notification. The timescale for a re-take is dependent on how much re-training is required and is typically taken within 4 months of the EPA outcome notification.

If the apprentice fails the project assessment method, they will be required to amend the project output in line with the independent assessor's feedback. The apprentice will be given 4 weeks to rework and submit the amended report.

Failed EPA methods must be re-sat or re-taken within a 6-month period from the EPA outcome notification, otherwise the entire EPA will need to be re-sat or re-taken in full.

Re-sits and re-takes are not offered to apprentices wishing to move from pass to a higher grade.

An apprentice will get a maximum EPA grade of pass for a re-sit or re-take, unless the EPAO determines there are exceptional circumstances.

Roles and responsibilities

ROLES	RESPONSIBILITY
Apprentice	As a minimum, apprentices should: • participate in and complete on-programme training to meet the KSBs as outlined in the occupational standard for a minimum of 12 months • undertake 20% off-the-job training as arranged by the employer and training provider • understand the purpose and importance of EPA • undertake the EPA including meeting all gateway requirements
Employer	As a minimum, employers must: • select the EPAO and training provider • work with the training provider (where applicable) to support the apprentice in the workplace and to provide the opportunities for the apprentice to develop the KSBs • arrange and support a minimum of 20% off-the-job training to be undertaken by the apprentice • decide when the apprentice is working at or above the level required by the occupational standard and so is ready for EPA

ROLES	RESPONSIBILITY
	• ensure that all supporting evidence required at the gateway is submitted in accordance with this EPA plan • remain independent from the delivery of the EPA • confirm arrangements with the EPAO for the EPA (who, when, where) in a timely manner (including providing access to any employer-specific documentation as required, for example company policies) • ensure that the EPA is scheduled with the EPAO for a date and time which allows appropriate opportunity for the apprentice to meet the KSBs • ensure the apprentice is well prepared for the EPA • require the training provider and EPAO to ensure the EPA is booked in a timely manner Post-gateway, employers must: • confirm arrangements with the EPAO for the EPA (who, when, where) in a timely manner (including providing access to any employer-specific documentation as required, for example company policies) • ensure that the EPA is scheduled with the EPAO for a date and time which allows appropriate opportunity for the KSBs to be met • remain independent from the delivery of the EPA • ensure the apprentice is given sufficient time away from regular duties to prepare for, and complete all post-gateway elements of the EPA, and that any required

ROLES	RESPONSIBILITY
	supervision during this time (as stated within this EPA plan) is in place • where the apprentice is assessed in the workplace, ensure that the apprentice has access to the resources used on a daily basis • pass the certificate to the apprentice upon receipt from the EPAO
EPAO	As a minimum, EPAOs must: • conform to the requirements of this EPA plan and deliver its requirements in a timely manner • conform to the requirements of the Register of End-Point Assessment Organisations (RoEPAO) • conform to the requirements of the external quality assurance provider (EQAP) for this apprenticeship • understand the occupational standard • make all necessary contractual arrangements, including agreeing the price of the EPA • develop and produce assessment materials including specifications and marking materials (for example mark schemes, practice materials, training material) • appoint suitably qualified and competent independent assessors and oversee their working

ROLES	RESPONSIBILITY
	• appoint administrators (and invigilators where required) to administer the EPA as appropriate • provide training for independent assessors in terms of good assessment practice, operating the assessment tools and grading • provide adequate information, advice and guidance documentation to enable apprentices, employers and training providers to prepare for the EPA • arrange for the EPA to take place, in consultation with the employer • where the apprentice is not assessed in the workplace, ensure that the apprentice has access to the required resources and liaise with the employer to agree this if necessary • develop and provide appropriate assessment recording documentation to ensure a clear and auditable process is in place for providing assessment decisions and feedback to all relevant stakeholders • have no direct connection with the apprentice, their employer or training provider. In all instances, including when the EPAO is the training provider (i.e. HEI), there must be no conflict of interest • have policies and procedures for internal quality assurance (IQA), and maintain records of regular and robust IQA activity and moderation for external quality assurance (EQA) purposes

ROLES	RESPONSIBILITY
	• deliver induction training for independent assessors, and for invigilators and/or markers (where used) • undertake standardisation activity on this apprenticeship standard for all independent assessors before they conduct an EPA for the first time, if the EPA is updated and periodically as appropriate (a minimum of annually) • manage invigilation of apprentices in order to maintain security of the assessment in line with the EPAO's malpractice policy • verify the identity of the apprentice being assessed • use language in the development and delivery of the EPA that is appropriate to the level of the occupational standard Pre-gateway, EPAOs must: • make all necessary contractual arrangements, including agreeing the price of the EPA • provide adequate information, advice and guidance documentation to enable apprentices, employers and training providers to prepare for the EPA • arrange for the EPA to take place, in consultation with the employer. At the gateway, EPAOs must:

ROLES	RESPONSIBILITY
	• confirm all gateway requirements have been met as quickly as possible. Post-gateway, EPAOs must: • where the apprentice is not assessed in the workplace, ensure that the apprentice has access to the required resources and liaise with the employer to agree this if necessary
Independent assessor	As a minimum, independent assessors must: • have the competence to assess the apprentice at this level and hold any required qualifications and experience in line with the requirements of the independent assessor as detailed in the IQA section of this EPA plan • understand the occupational standard and the requirements of this EPA • have, maintain and be able to evidence, up-to-date knowledge and expertise of the subject matter • deliver the end-point assessment in-line with the EPA plan • comply with the IQA requirements of the EPAO • have no direct connection or conflict of interest with the apprentice, their employer or training provider; in all instances, including when the EPAO is the training provider (i.e. HEI)

ROLES	RESPONSIBILITY
	• attend induction training • attend standardisation events when they begin working for the EPAO, before they conduct an EPA for the first time and a minimum of annually on this apprenticeship standard • assess each assessment method, as determined by the EPA plan, and without extending the EPA unnecessarily • assess against the KSBs assigned to each assessment method, as shown in the mapping of assessment methods and as determined by the EPAO, and without extending the EPA unnecessarily • make all grading decisions • record and report all assessment outcome decisions, for each apprentice, following instructions and using assessment recording documentation provided by the EPAO, in a timely manner • use language in the development and delivery of the EPA that is appropriate to the level of the occupational standard • mark open (constructed) test answers accurately according to the EPAO's mark scheme and procedures
Training provider	As a minimum, training providers should: • work with the employer and support the apprentice during the off-the-job training to provide the

ROLES	RESPONSIBILITY
	opportunities to develop the knowledge, skills and behaviours as listed in the occupational standard • conduct training covering any knowledge, skill or behaviour requirement agreed as part of the Commitment Statement (often known as the Individual Learning Plan) • monitor the apprentice's progress during any training provider led on-programme learning • advise the employer, upon request, on the apprentice's readiness for EPA • remain independent from the delivery of the EPA. Where the training provider is the EPAO (i.e. a HEI), there must be procures in place to mitigate against any conflict of interest.

Reasonable adjustments

The EPAO must have reasonable adjustments arrangements for the EPA.

This should include:

- how an apprentice qualifies for reasonable adjustment
- what reasonable adjustments may be made

Adjustments must maintain the validity, reliability and integrity of the EPA as outlined in this EPA plan.

Internal quality assurance (IQA)

Internal quality assurance refers to how EPAOs ensure valid, consistent and reliable EPA decisions. EPAOs must adhere to the requirements within the roles and responsibilities section and:

- have effective and rigorous quality assurance systems and procedures that ensure fair, reliable and consistent EPA regardless of employer, place, time or independent assessor
- appoint independent assessors who are competent to deliver the EPA and who:
 - have recent relevant experience of the occupation or sector to at least occupational level 6 gained in the last 3 years or significant experience of the occupation or sector
- operate induction training for anyone involved in the delivery and/or assessment of the EPA
- provide training for independent assessors in good assessment practice, operating the assessment tools and making grading decisions
- provide ongoing training for markers and invigilators
- provide standardisation activity for this apprenticeship standard for all independent assessors:
 - before they conduct an EPA for the first time
 - if the EPA is updated
 - periodically as appropriate (a minimum of annually)
- conduct effective moderation of EPA decisions and grades
- conduct appeals where required, according to the EPAO's appeals procedure, reviewing and making final decisions on EPA decisions and grades
- have no direct connection with the apprentice, their employer or training provider. In all instances, including when the EPAO is the training provider (for example a higher education institution)

Value for money

Affordability of the EPA will be aided by using at least some of the following:

- utilising digital remote platforms to conduct applicable assessment methods
- using the employer's premises

- conducting assessment methods on the same day

Professional recognition

This apprenticeship aligns with:

Incorporated Engineer (IEng) for Institute of Minerals, Mining and Metallurgy

Mapping of KSBs to assessment methods

KNOWLEDGE	ASSESSMENT METHODS
K1 The mining life cycle including the key regulations, standards and guidance that influence the design, construction and operations and closure of mining operations.	Professional discussion underpinned by a portfolio of evidence
K2 Physical geology on the mine environment, including the physical properties of rock, soil and mineral deposits and the impact of weathering, plate tectonics and geomorphic features.	Project with report, presentation and questioning
K3 The impact of structural geology, including features such as dip, faulting, rock strength and the principles of elasticity.	Project with report, presentation and questioning
K4 Design principles of mines and layout including geology and geomechanics, layout, size and position of mine entries and	Project with report, presentation and questioning

KNOWLEDGE	ASSESSMENT METHODS
roadways, and the systems and equipment used for extraction and mine support.	
K5 Stress analysis in the mine environment, including the means of measuring pre-mining stress, induced mining stress and stress redistribution.	Project with report, presentation and questioning
K6 Types of support systems, considering the design, intended life, suitability of support systems and strata reinforcement.	Project with report, presentation and questioning
K7 Rock mechanics and the impact on mine design and the surrounding environment.	Project with report, presentation and questioning
K8 The influence and requirements of mechanical and electrical engineering principles and procedures have on the safe, efficient operation of the mine.	Project with report, presentation and questioning
K9	Professional discussion underpinned by a portfolio of evidence

KNOWLEDGE	ASSESSMENT METHODS
Mine surveying techniques for measuring and mapping of mine workings, including the recording of information and the use of analytical measures to verify the results.	
K10 Mineral preparation, processing, and waste management techniques including the use of separation techniques, methods of concentrating and further refining, the handling and transport of bulk solids and the safe, sustainable disposal of mineral waste and tailings.	Professional discussion underpinned by a portfolio of evidence
K11 How to design the operation to extract the reserves in a legislatively compliant, economic, ecological and socially acceptable manner.	Project with report, presentation and questioning
K12 The influence and requirements of legislation on the principles of risk management and the methods that are used to deal with major and occupational hazards, operational, safety, health, financial and environmental risks. The evaluation and implementation of appropriate control measures to reduce risk to As Low as Reasonably Practicable (ALARP).	Professional discussion underpinned by a portfolio of evidence

KNOWLEDGE	ASSESSMENT METHODS
K13 The principles of major hazard control, and the impact that preventative and mitigating control failure had have on elevating the propensity for mine disasters.	Professional discussion underpinned by a portfolio of evidence
K14 The principles of scenario planning to recognise the factors that influence the implementation of mine emergency plans including suitable considerations for self-escape and the use of mines rescue. The use of data collected through simulated exercises to improve the planned response.	Professional discussion underpinned by a portfolio of evidence
K15 The factors controlling the planning and deployment of automated and digital technologies in mine environments to improve operational efficiency, productivity, and safety.	Project with report, presentation and questioning
K16 The different stages of projects including the principles of planning, scheduling, and sequencing to ensure effective life of mine plans. The ways of managing, influencing, and controlling outcomes. through the application of project management techniques	Project with report, presentation and questioning

KNOWLEDGE	ASSESSMENT METHODS
K17 Underground mining management principles, including the role that mine ventilation systems and ventilation techniques have on the release and presence of toxic, noxious, and explosive gasses through the mining process. The generation and control of inhalable and respirable dust and increased levels of heat and humidity.	Professional discussion underpinned by a portfolio of evidence
K18 The mine environment and the impact that it has on operational performance, safety, and long-term health of employees.	Professional discussion underpinned by a portfolio of evidence
K19 The principles of mine closure and legacy risk management.	Project with report, presentation and questioning
K20 The impact of a mining operation through its life cycle using the principles of asset integrity, environmental and social impact assessment methodologies and the application of current industry best practice to support an environmentally robust and sustainable operation.	Project with report, presentation and questioning
K21 Financial and economic strategies, including budgets, financial management and accounting. The influence of commodity prices,	Project with report, presentation and questioning

KNOWLEDGE	ASSESSMENT METHODS
feasibility studies, financial reports incorporating cash flow, capital, profit and loss.	
K22 Approaches to costing & procurement, contracting, sales, marketing, and the route to market, including consideration of any legal requirements.	Professional discussion underpinned by a portfolio of evidence
K23 Communication techniques, including written, verbal, nonverbal and digital, and different types of interpersonal skills including questioning and listening.	Project with report, presentation and questioning
K24 Different, inclusive leadership styles and models, how to develop diverse teams and support people using coaching and mentoring.	Professional discussion underpinned by a portfolio of evidence
K25 Approaches to stakeholder, customer, and supplier management.	Professional discussion underpinned by a portfolio of evidence
K26 Time management, how to set SMART targets, prioritise activities and undertake forward planning in a business environment.	Project with report, presentation and questioning

KNOWLEDGE	ASSESSMENT METHODS
K27 Data analysis techniques used to examine complex and interacting issues, to assist in developing appropriate solutions solving and support the decision-making process.	Project with report, presentation and questioning
K28 How to develop and implement operational strategy and plans including approaches to identify and classify mineral reserves.	Professional discussion underpinned by a portfolio of evidence
SKILL	ASSESSMENT METHODS
S1 Specify the system for supporting the excavation, using information such as the characteristics of the geology, rock formations, data from modelling and measurements taken.	Project with report, presentation and questioning
S2 Undertake the mine design process, incorporating elements such as mine layout, roadway design, scheduling, resourcing and ventilation. Determine the impact that these decisions have on the safe, efficient, and sustainable operation of the mine.	Project with report, presentation and questioning
S3 Undertake mine surveys and use the information to evaluate mine development against the agreed layout and design.	Professional discussion underpinned by a portfolio of evidence

KNOWLEDGE	ASSESSMENT METHODS
S4 Collect, analyse and use data from mining and asset management systems to review the impact on operation, using the outputs to improve the safety, efficiency and effectiveness of the mining system.	Professional discussion underpinned by a portfolio of evidence
S5 Develop and implement operational mine plans that have SMART targets and are supported by key performance indicators.	Project with report, presentation and questioning
S6 Use project management and planning techniques. Allocate resource requirements. Monitor progress towards project goals and identify corrective actions.	Project with report, presentation and questioning
S7 Identify and utilise risk assessment techniques appropriate for the identified hazards such as major mining hazards with the use of Bowtie methodology. Use these techniques to identify and implement key controls and use safety performance indicators to monitor the effectiveness of those controls.	Professional discussion underpinned by a portfolio of evidence
S8	Professional discussion underpinned by a portfolio of evidence

KNOWLEDGE	ASSESSMENT METHODS
Plan and manage emergency arrangements, including simulated exercises. Determine the effectiveness of those emergency arrangements, and to inform potential improvements.	
S9 Undertake ventilation surveys such as measuring airflow, heat and dust to identify how the mine environment is being maintained.	Professional discussion underpinned by a portfolio of evidence
S10 Identify the statutory and company requirements for monitoring and maintaining records and plans and complete a suitable audit and evaluation to ensure compliance.	Professional discussion underpinned by a portfolio of evidence
S11 Manage and adapt budgets and control expenditure. Review and produce financial reports that provide analysis and draw conclusions on financial risk and evaluation of short and long term mine strategies.	Project with report, presentation and questioning
S12 Review quality control standards and ensure that these are effectively and consistently applied and where necessary take corrective action.	Professional discussion underpinned by a portfolio of evidence

KNOWLEDGE	ASSESSMENT METHODS
S13 Communicate with colleagues, stakeholders and other interested parties using a range of different methods and techniques, challenging, influencing, and negotiating where appropriate.	Project with report, presentation and questioning
S14 Build teams, empower, mentor, coach, motivate and delegate to others, providing clear guidance and ensuring inclusivity.	Professional discussion underpinned by a portfolio of evidence
S15 Developing others; taking account of diversity, equality and inclusivity.	Professional discussion underpinned by a portfolio of evidence
S16 Work collaboratively with all stakeholders, including regulators (Health and Safety Executive), customers, suppliers, and trade unions.	Professional discussion underpinned by a portfolio of evidence
S17 Manage and lead others including conflict management.	Professional discussion underpinned by a portfolio of evidence
S18 Plan and manage own time.	Project with report, presentation and questioning

KNOWLEDGE	ASSESSMENT METHODS
S19 Use evidence-based tools, qualitative and quantitative analysis techniques to demonstrate an ethical approach to problem solving and making decisions that improve the safety, operational and environmental performance of the underground operation.	Professional discussion underpinned by a portfolio of evidence
S20 Specify the machinery and equipment to support the overall safety and production.	Project with report, presentation and questioning
BEHAVIOUR	ASSESSMENT METHODS
B1 Act as a role model and advocate for health and safety across the team.	Professional discussion underpinned by a portfolio of evidence
B2 Act as a role model and advocate environmental, ethical, and sustainable practices.	Professional discussion underpinned by a portfolio of evidence
B3 Collaborate and promote teamwork across disciplines.	Professional discussion underpinned by a portfolio of evidence

BEHAVIOUR	ASSESSMENT METHODS
B4 Adapt and is resilient to challenging or changing situations.	Professional discussion underpinned by a portfolio of evidence
B5 Lead by example to promote accessibility, diversity and inclusion.	Professional discussion underpinned by a portfolio of evidence
B6 Commit to their own and support others' professional development.	Professional discussion underpinned by a portfolio of evidence
B7 Take responsibility for their own actions and challenge the behaviours and actions of others.	Professional discussion underpinned by a portfolio of evidence
B8 Recognise the limits of their capabilities and authorisation and work to those limits.	Project with report, presentation and questioning

Supporting information

External quality assurance

Option selected: Office for Students (OfS)

Involved employers

Albion Stone PLC, British Fluorspar Ltd, British Gypsum Ltd, Cleveland Potash Ltd, Compass Minerals UK Ltd, Energybuild Ltd, Schlumberger Oilfield UK PLC (MI UK Division), Anglo American Woodside Project (York Potash Ltd)

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