APPENDIX

THE EXEMPLIFICATION OF KEY SKILLS

The following tables give some examples of Geology contexts in which naturally occurring key skills evidence could be accumulated.

Note: If producing certain types of evidence creates difficulties due to disability or other factors, the candidate may be able to use other ways to show achievement. The candidate should ask the tutor or supervisor for further information.

The first table focuses on Communication (Level 2). Candidates must provide evidence to meet the standards for C2.1a, C2.1b, C2.2 and C2.3:

- Take part in a group discussion
- Give a talk of at least 4 minutes
- Read and summarise information from at least two documents (minimum 500 words) about the same subject
- Write two different types of documents (one of which must be at least 500 words), each one giving different information

COMMUNICATION: LEVEL 2

C2.1a TAKE PART IN A GROUP DISCUSSION			
Candidates must:	**Evidence must show that candidates can:**	**Examples of evidence:**	**Suggested context**:
Take part in a group discussion.	Make clear and relevant contribution in a way that suits their purpose and situation. Respond appropriately to others. Help to move the discussion forward.	A record from someone who observed the discussion or video/ audiotape of discussion.	Discuss the interpretation of a field locality, map or aerial photograph of a landscape [2.2]. Discuss the safety requirements of a geological locality [2.5]. Discuss planning and environmental issues raised by extraction of limestone [5.4].

C2.1b GIVE A TALK OF AT LEAST FOUR MINUTES			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Give a talk of at least four minutes.	Speak clearly in a way that suits their subject, purpose and situation. Keep to the subject and structure their talk to help listeners follow what they are saying. Use appropriate ways to support their main points.	A record from someone who has observed the talk including a description of any image/support material used or a video/ audiotape or preparatory notes with images/ support material.	Present a talk on classification of geological materials as minerals, rocks and fossils [1.1] using appropriate specimens and/or photographs. Present a talk on the modification of a landscape by human activity [2.4]. Present a talk on a natural hazard event [5.1].

C2.2 READ AND SUMMARISE INFORMATION			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Read and summarise information from at least **two** documents about the same subject. Each document must be a minimum of 500 words long.	Select and read relevant documents. Identify accurately the main points, ideas and lines of reasoning. Summarise the information to suit their purpose.	• A record of what was read and why.. • Notes, highlighted text or answers to questions about material read. • Evidence of summarising information from notes of a presentation or a written document.	Use textbook/magazine/newspaper/ CD-ROM/Internet to obtain information on major concepts that underpin current understanding of the Earth [3.1, 3.2, 3.3] and summarise main points in mind map. Use the USGS (United States Geological Survey) website and a newspaper magazine article to summarise the hazards and monitoring associated with a named natural disaster [5.1].

C2.3 WRITE TWO DIFFERENT TYPES OF DOCUMENTS			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Write **two different** types of documents each one giving different information. **One** document must be at least 500 words long.	Present relevant information in a format that suits their purpose. Use a structure and style of writing to suit their purpose. Spell, punctuate and use grammar accurately. Make their meaning clear.	The two different documents might include an extended essay, a piece of research, report, letter, handouts.	Report on local geology e.g. quarry visit [2.4]. Essay on the evidence supporting plate tectonic theory [3.2]. A summary note on great fossil finds [5.3]. Report on suitability of a landfill site [5.4, 6.4]. Formal report to a planning department on a geotechnical problem in your area and an article for your local newspaper on the same topic [6.5].

APPLICATION OF NUMBER: LEVEL 2

Candidates must:
Undertake at least **ONE** activity that includes tasks for all three of N2.1, N2.2 (a or b or c or d) and N2.3* e.g. **an assessment of relative density of minerals**.

Overall, through one or more activities the candidate must:

- use **TWO DIFFERENT** sources which include material containing a chart or graph (N2.1)
- do calculations for a, b, c and d (N2.2)
- present findings in **TWO DIFFERENT** ways using charts, graphs or diagrams (N2.3).

* Where it is necessary to carry out additional activities to meet all the requirements of N2.2 (a, b, c, d) each activity must include tasks for N2.2 and N2.3 or N2.1 and N2.2.

N2.1 INTERPRET INFORMATION FROM A SUITABLE SOURCE			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Interpret information from a suitable source.	Choose how to get the information they need to meet the purpose of their activity. Obtain relevant information. Choose appropriate methods to get the results they need.	The purpose of the task should be set out at the beginning of the work including an explanation of how they choose to get their information.	**Plan steps needed to assess relative density of minerals [1.2], gather relevant information and make sufficient appropriate measurements to enable valid results to be calculated.** Plan an investigation into shortening of folds [1.6]. Analyse graph relating velocity changes to transport of sediment [2.1]. Link characteristics of sediments to transport/deposition [2.1].

N2.2 USE THIS INFORMATION TO CARRY OUT MULTI- STEP CALCULATIONS			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Use your information to carry out calculations to do with: (a) Amounts or sizes (b) Scales or proportion (c) Handling statistics (d) **Using formulae**	Carry out calculations, clearly showing their methods and levels of accuracy. Check their methods to identify and correct any errors and make sure their results make sense.	Perform a number of different types of multi-step calculations, with and without a calculator for each of a, b, c and d showing methods, appropriate rounding and levels of accuracy; how the candidate checked that the methods and results made sense.	**Use data collected to calculate mineral density using the appropriate formula [1.2].** (a) Sediment analysis measurements e.g. crystal size in porphyritic texture [1.4], displacement of marker beds associated with faulting [1.6], mean grain size [2.1]. (b) Scaled drawing of fossil specimen [1.3]. (c) Any investigation in which data sets are collected. (d) Calculate the original length and shortened length of a folded sequence [1.6].

N2.3 INTERPRET THE RESULTS OF YOUR CALCULATIONS AND PRESENT YOUR FINDINGS			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Interpret the results of your calculations and present your findings.	Select effective ways to present their findings. Present their findings clearly using a chart, graph or diagram and describe their methods. Use more than one way of presenting their findings. Describe what their results tell them and how these meet their purpose.	Candidates must draw conclusions from their results, graphs, diagrams, etc. These should be related to the original purpose of the task and main findings highlighted. This should either prove or disprove their original hypothesis. Select the most appropriate method to display findings. Explain their choice of methods.	**Present mineral density [1.2] data in appropriate table and graph form and describe any conclusions drawn.** Present crystal size and orientation within an igneous rock [1.4]. Sediment analysis [2.1]: grain size - histogram; sorting - cumulative frequency curve. Use seismological data to locate earthquake epicentre [5.1] - annotated diagram.

INFORMATION and COMMUNICATION TECHNOLOGY: LEVEL 2

Candidates must overall, through two or more activities:

- include at least one ICT based information source
- include at least one non ICT based information source
- use at least one example of text, one example of image and one example of number
- present combined information such as text with image, text with number, image with number
- present evidence of purposeful use of email

ICT 2.1 SEARCH FOR AND SELECT INFORMATION, USING DIFFERENT SOURCES			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Search for and select information to meet your needs. Use different information sources for each task and multiple search criteria in at least one case.	Select information relevant to the tasks.	Show use of multiple search criteria for 1 task. Evidence of selective internet searching. Non electronic source of information Action plan.	**Earthquakes and volcanoes [5.1] - internet/CD-ROM, textbooks/journals and newspapers.** Methods being considered for reducing carbon dioxide emissions [5.2] - internet search and email request for information e.g. from electricity supplier. **Research and select information for a PowerPoint and associated booklet on great fossil finds [5.3].**

ICT 2.2 ENTER AND DEVELOP THE INFORMATION AND DERIVE NEW INFORMATION			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Enter and develop the information to suit the task and derive new information.	Enter and combine information using formats that helps development. Develop information derive new information as appropriate.	Use of ICT technology for word processing, number calculations and image develop. Annotate with correct terminology. Use spell checker Combine the information	**Earthquakes and volcanoes [5.1] - combine and reorganise information in appropriate format.** **Produce a PowerPoint on great fossil finds [5.3] where you have entered and combined information from a variety of sources.**

ICT 2.3 PRESENT COMBINED INFORMATION			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Present combined information such as text with image, text with number, image with number.	Develop the presentation so that the final output is accurate and shows consistent use of formats. Use layout appropriate to the types of information.	Present two tasks in different formats showing combined information that has been spell checked. Include use of purposeful email.	**Earthquakes and volcanoes [5.1] - produce PowerPoint presentation.** Produce flyer for electricity supplier promoting its development of renewable energy resources [5.2]. **Final PowerPoint includes images and text with relevant graphs based on great fossil finds [5.3] and e-mail leaflet to teacher.**

WORKING WITH OTHERS: LEVEL 2

Candidates must provide at least one example of meeting the standards for WO2.1, WO2.2 and WO2.3, to include work in a group or team situation. They must check progress on two occasions (for WO2.2).

WO2.1 PLAN WORK WITH OTHERS			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Plan work with others	Identify what they need to achieve together. Share relevant information to identify what needs to be done and individual responsibilities. Confirm the arrangements for working together.	A candidate statement showing understanding of what the team members aim to achieve. Minutes of meetings. A record of a discussion indicating what information was shared and each team member's responsibility. A candidate statement showing what support and advice will be given.	**Work as a pair or small group to plan an investigation in the field or laboratory.** Work as a pair or small group to plan a display or booklet on the geology of your local area. Work as a pair or small group to plan an investigation into the pros and cons of nuclear energy as an energy resource [5.2].

WO2.2 WORK CO-OPERATIVELY TOWARDS YOUR AGREED OBJECTIVES			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Work co-operatively towards achieving the identified objectives.	Organise and carry out tasks safely using appropriate methods, to meet their responsibilities. Support co-operative ways of working to help archive the objectives for working together. Check progress, seeking advice from an appropriate person when needed.	A log/diary/workbook indicating how resources were identified and obtained including awareness of health of safety issues. Statements by team members to ensure that the working with others went smoothly. A candidate record of advice sought, form whom and why it was sought. A record by the candidate clearly detailing all progress checks.	**Implement plan to safely carry out field or laboratory investigation.** Implement plan to collect and process information and report findings on the local geology using an appropriate method e.g. wall display, booklet. Implement plan to collect and process information and report findings on the pros and cons of nuclear energy as an energy resource [5.2], using an appropriate method e.g. class presentation.

WO2.3 REVIEW WORK WITH OTHERS AND AGREE WAYS OF IMPROVING			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Review your contributions and agree ways to improve work with others.	Share relevant information on what went well and less well in working with others. Identify their role in helping to achieve things together. Agree ways of improving their work with others.	Minutes of group meetings showing evidence of agreement between team members on ways to improve the way they work together. An analysis of what was done to aid the process of working with others.	**Evaluate individual performance and performance of partner/other group members during field or laboratory investgation. Exchange information.** Review group presentation on a topic of their choice or any completed group task e.g. wall display on rock cycle. Discuss how teamwork contributed to success or failure of any particular aspect. Carry out individual and group evaluation. Agree on a minimum of two ways of improving teamwork which will improve the process of working with others.

IMPROVING OWN LEARNING AND PERFORMANCE: LEVEL 2

Candidates must provide at least one example of meeting the standard for LP2.1, LP2.2 and LP2.3 (the example should cover at least three targets). Overall, candidates must show they can use at least two different ways of learning to improve their performance.

LP2.1 SET TARGETS USING INFORMATION FROM APPROPRIATE PEOPLE			
	Evidence must show candidates can:	**Examples of evidence:**	**Suggested context**:
Help set targets with an appropriate person and plan how these will be met.	Provide information to help set realistic targets for what they want to achieve. Identify clear action points for each target and how they will manage their time. Identify how to get the support they need and arrangements for reviewing their progress.	A candidate statement referring to the candidate's current knowledge and performance level and what they want to achieve. A detailed action plan for each target, clearly showing actions, deadlines and how the candidate will manage their time. A candidate statement showing that they know where and when support and resources can be had and from whom. A candidate statement showing they fully understand the arrangements for progress reviews. The candidate must know who will conduct the review, what form it will take, where and when it will happen.	**Controlled Internal Assessment task.** **Any field or laboratory investigation.** Internal review and target setting. Student log/diary and reviews.

LP2.2 TAKE RESPONSIBILITY FOR SOME DECISIONS ABOUT YOUR LEARNING			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Take responsibility for some decisions about your learning, using your plan to help meet targets and improve your performance.	Use their action points to help manage their time well, revising their plan when needed. Choose ways of learning to improve their performance working for short periods without close supervision. Identify when they need support and use this effectively to help meet targets.	A candidate log or workbook, showing how and when each point in the action plan was addressed. A record on the action plan of how closely the candidate kept to their planned timings. A record on the action plan showing what revisions the candidate considered as necessary, why they were made and how effective these were. A learning log or workbook, clearly showing how the learning was carried out and why different ways of learning were adopted at different times. Reference in the learning log or workbook to the candidate's identification of when and why support is needed. A candidate statement on the effective use of the support.	**Controlled Internal Assessment task.** **Any field or laboratory investigation.** Internal review and target setting. Student log/diary and reviews.

LP2.3 REVIEW PROGRESS AND PROVIDE EVIDENCE OF YOUR ACHIEVEMENTS			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Review progress with an appropriate person and provide evidence of your achievements.	Identify what they learned and how they have used their learning in another task. Identify targets they have met and evidence of their achievements. Identify ways they learn best and how to further improve their performance.	A candidate statement clearly showing what has been learned. A cross-check by the candidate of the targets identified in the action plan and those which have been met. This may be written by the candidate, recorded by the assessor or it could be taped. I t could take the form of a tick box with brief comments. A candidate statement identifying how they learn best e.g. by doing, by studying, working alone etc. Suggestions from the candidate how they might improve their performance.	**Controlled Internal Assessment task.** **Any field or laboratory investigation.** Work with partner to identify respective strengths and weaknesses in any 'end of unit' review and choose activity appropriate to address individual needs. Internal review and target setting.

PROBLEM SOLVING: LEVEL 2

Candidates must provide at least one example of meeting the standard for PS2.1, PS2.2 and PS2.3. The example should include exploring at least three different ways of tackling a problem (for PS2.1).

PS2.1 IDENTIFY A PROBLEM AND IDENTIFY WAYS OF TACKLING IT			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Identify a problem, with help from an appropriate person and identify different ways of tackling it.	Provide information to help identify a problem accurately describing its main features. Identify how they will know the problem has been solved. Come up with different ways of tackling the problem.	An account of a discussion between the candidate and another appropriate person. A detailed description of the problem's main features. A candidate statement describing, in detail, the desired outcome(s). A candidate statement clearly showing they have considered at least **two** different approaches to tackling the problem e.g. a variety of visual, numerical, physical methods and mind-mapping, asking others about similar problems, by experimenting, by studying, by imitation.	**Any field or laboratory investigation.** **Select one case study from below and collect information to help identify geological or environmental problem and devise three ways of tackling this problem e.g. siting of a mine or extension of a quarry [6.2], siting or leakage from a reservoir or dam [6.3], contamination of groundwater by waste disposal [6.4], remedial methods to strengthen a geotechnical problem, e.g. cutting/ tunnel [6.5].**

PS2.2 PLAN AND TRY OUT AT LEAST ONE WAY OF SOLVING THE PROBLEM			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Plan and try out at least one way of solving the problem.	Confirm with an appropriate person how they will try to solve the problem. Plan what they need to do, identifying the methods and resources they will use. Use their plan effectively, getting support and revising their plan when needed to help tackle the problem.	A signed record of a discussion with an appropriate person. A detailed candidate action plan. An authenticated log or workbook. It may be confirmed by anyone in authority who has observed the candidate at work. A statement by a third party referring to any support offered and taken. Annotations on the plan showing when and why revisions were needed and what revisions were made.	**Any field or laboratory investigation.** **Plan a solution to geological or environmental problem associated with selected case study e.g. siting a mine [6.2], siting a reservoir or dam [6.3], waste disposal [6.4], geotechnical work [6.5].**

PS2.3 CHECK IF THE PROBLEM HAS BEEN SOLVED AND IDENTIFY WAYS TO IMPROVE YOUR PROBLEM SOLVING SKILLS			
Candidates must:	**Evidence must show candidates can:**	**Examples of evidence:**	**Suggested context**:
Check if the problem has been solved and identify ways to improve problem solving skills.	Check if the problem has been solved by accurately using the methods they have been given. Describe clearly the results, including the strengths and weaknesses of how they tackled the problem. Identify ways of improving their problem solving skills.	A candidate record showing in detail what was checked and which method was used. A detailed account of the results by the candidate. A brief analysis by the candidate of both the strengths and weaknesses of how the problem was tackled. A record of assessor feedback questioning. A candidate account of the checking process and assessor feedback.	**Any field or laboratory investigation.** **Review and evaluate success of planned solution to geological or environmental problem associated with selected case study e.g. siting a mine [6.2], siting a reservoir or dam [6.3], waste disposal [6.4], geotechnical work [6.5].**