# Switching to OCR from Eduqas

## Key differences

| **OCR Geology (H014/H414)** | **Eduqas (B410QA/A410QS)** |
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| **Practical skills take centre stage**, detailed in full at the start of the specification in a separate module for **clarity** and **prominence** | Specified practical activities listed in the specification |
| **Flexible practical** assessment that allows you to use your own practical activities or select from our range of fully-detailed suggested activities. | A required set of 20 specified practicals activities linked to the specific skills, apparatus and techniques. |
| **Extensive support for mathematical skills development**, with linking of skills in the specification and a dedicated Mathematical Skills Handbook. | Linking of mathematical skills at sub-topic level. |
| **Fewer marks in the AS and A Level assessments**, giving learners more time to develop their answers. (AS 120 marks in 150 minutes; A Level 270 marks in 360 minutes) | 30 more marks in AS Level (180 minutes) and 30 more marks in A Level (360 minutes). |
| Our subject team, including our **Geology Subject Advisor**, areavailable by phone and email for advice on all aspects of delivering A Level Geology, and regularly run network sessions and CPD events around the country. | The Eduqas Science Team. |

## Content

The content within the [OCR Geology specification](http://www.ocr.org.uk/Images/171720-specification-accredited-a-level-gce-chemistry-a-h432.pdf) covers the key concepts of geology and will be very familiar. We’ve laid it out in a logical progression to support co-teaching the AS Level and teaching the A Level in a linear way. The first module of the AS (M2: Foundations in Geology) is designed to give students a toolkit of geological skills which are developed in familiar content-led course. The second year of the A level course has evolved in response to teachers and students so ideas are introduced within relevant and contemporary settings that help students to anchor their conceptual knowledge of the range of geological topics required at A Level.

| **OCR Geology (H014/H414)** | **Eduqas (B480QS/A480QS)** *(\* – topic is split)* |
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| **Module 1: Development of practical skills in**  **geology**   * Practical skills assessed in a written examination: planning, implementing, analysis and evaluation * Practical skills assessed in the practical endorsement * Practical skills developed through fieldwork and assessed in a written examination | The same practical skills, as mandated by the DfE, are listed in the Eduqas specification:   * Appendix A Working scientifically * Appendix B Practical technique requirements and exemplification |
| **Module 2 – Foundations in geology**   * Minerals and rocks – minerals * Igneous rocks * Sedimentary rocks * Metamorphic rocks * Fossils and time * Geological time | F1.K1 The Earth is composed of rocks which have distinctive mineralogies and textures\*  F2.K1 The mineralogy and texture of sedimentary rocks are the result of the surface process part of the rock cycle, driven by external energy sources\*  F2.K2 The formation and alteration of igneous and metamorphic rocks result from the Earth’s internal energy\* |
| **Module 3 – Global tectonics**   * The physical structure of the Earth * The origin of the Earth’s structure * The plate tectonics paradigm * Plate boundaries and igneous process * Geological structures – Rock mechanics * Structural geology and plate boundaries | F1.K1 The Earth is composed of rocks which have distinctive mineralogies and textures\*  F2.K2 The formation and alteration of igneous and metamorphic rocks result from the Earth’s internal energy\*  F2.K3 Deformation results when rocks undergo permanent strain in response to applied tectonic stresses and can be interpreted using geological maps\*  F4.K1 The Earth has a concentrically zoned structure and composition  F4.K2 The Earth’s internal heat is the underlying cause of lithospheric plate motions that control global geological processes  G2.K1 Geological structures are formed when rock material undergoes deformation\*  T2.K1 Outcrop patterns on geological maps can be used to identify and interpret structural elements  T2.K2 Geological maps contain information relevant to a wide range of geological applications\* |
| **Module 4 – Interpreting the past**   * Uniformitarianism and the rock cycle * Surface processes and products * Relative dating and biostratigraphy | F2.K1 The mineralogy and texture of sedimentary rocks are the result of the surface process part of the rock cycle, driven by external energy sources\*  F3.K1 Study of present day processes and organisms enables understanding of changes in the geological past  F3.K2 Geological events can be placed in relative and absolute time scales\*  T2.K2 Geological maps contain information relevant to a wide range of geological applications\* |

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| **Module 5 – Petrology and economic geology**   * Sedimentary processes and resources * Fluids and geological processes – Fluids in rocks * Igneous petrology * Mid-ocean ridges * Metamorphic petrology * Mining geology – Exploration for metals * Resource extraction and impacts | G1.K1 The generation and evolution of magma involves different processes  G1.K2 The mineralogy and texture of metamorphic rocks are determined by the composition of the parent rock and the conditions of metamorphism  G1.K3 Sedimentary processes can be understood using scientific modelling  G2.K1 Geological structures are formed when rock material undergoes deformation\*  G4.K1 Geological processes lead to the concentration and accumulation of natural resources in deposits that can be exploited; economic deposits can be concentrated by igneous and sedimentary processes  G4.K2 Permeable rocks offer pathways for oil and gas migration; highly porous rocks can act as natural reservoirs for underground supplies of oil and gas \*  G4.K3 A wide range of prospecting techniques can be employed to explore for mineral resources  T2.K2 Geological maps contain information relevant to a wide range of geological applications\*  *T5.K2 Oceanic lithosphere is formed at divergent plate boundaries and reabsorbed by subduction at convergent plate boundaries\** |
| **Module 6: Geohazards**   * Earthquake geology * Geohazard risk analysis * Geohazards in the British Isles * Engineering geology – Geotechnics * Applied engineering geology | F2.K3 Deformation results when rocks undergo permanent strain in response to applied tectonic stresses and can be interpreted using geological maps\*  T1.K1 Natural geohazards have a worldwide impact on human populations including in the British Isles  T1.K2 Geohazard management attempts to predict and manage hazardous geological events with only limited success  T1.K3 Engineering activities can have a major impact on the natural environment  T2.K2 Geological maps contain information relevant to a wide range of geological applications\* |
| **Module 7: Basin analysis**   * The changing Earth * Evolution and applied palaeontology * Mass extinctions * Lagerstätten deposits * Oil and gas basins * Whole basin facies analysis | F3.K2 Geological events can be placed in relative and absolute time scales\*  G3.K1 Fossils provide evidence for the increasing diversity of life through geological time  G3.K2 A combination of global factors contributes to climate change through geological time  G3.K3 Evidence for global climate change is interpreted from the geological record and the geochemistry of rocks  G4.K2 Permeable rocks offer pathways for oil and gas migration; highly porous rocks can act as natural reservoirs for underground supplies of oil and gas \*  *T3.K1 A combination of global factors contributes to climate change through geological time*  *T4.K1 The Neoproterozoic and Phanerozoic stratigraphy of the British area has been determined largely by the assembly of lithotectonic terranes during three orogenic*  *events*  *T4.K2 The evidence for the northward drift of the British area through the Neoproterozoic and Phanerozoic*  *T4.K3 The northward drift of the British area as controlled by plate tectonic motions has resulted in the deposition of a wide range of sedimentary facies during the Neoproterozoic and Phanerozoic (from 1000Ma to 2.6Ma)*  *T5.K2 Oceanic lithosphere is formed at divergent plate boundaries and reabsorbed by subduction at convergent plate boundaries\** |
| **Appendix 5e: Mathematical requirements**   * Number * Statistics and probability * Algebra and graphs * Geometry and measures | **Appendix C: Use of mathematical skills**   * Number * Statistics and probability * Algebra and graphs * Geometry and measures |

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| **Appendix 5g: Practical Assessment Groups**  Required skills and techniques are embedded in twelve Practical Assessment Groups (PAGs) that support the teachers’ delivery of the whole course content linked to wider concepts. There are three exemplar tasks in each PAG which enable teachers to choose a fieldwork or laboratory focus to their practical work. The PAGs become progressively less scaffolded to increase the students’ independent investigative skills over the course. | **Appendix B: Specified Practical Activities**  Each Specified Practical offers a process led activity linked to the DfE list of required skills, apparatus and techniques. Specified activities are linked to the practical skill learning objectives in both the first (SP1 to SP19) and second (SP20) years of the course. |
| 1. Investigating minerals and rocks  * Mineral testing * Describing rocks * Geology on the streets | SP1, SP2, SP3, SP4, SP5, SP7, SP8, SP9, SP11, SP18 |
| 1. Investigating seismology  * USGS seismology database * Designing a seismograph * MarsQuake – hammer seismics | SP19 |
| 1. Investigating crystalline processes  * Modelling crystalline processes * Virtual microscope * Contact zone in the field | SP4, SP9, SP14 |
| 1. Investigating sedimentary processes  * Sieving sediment * Sediment table * Sedimentary structures in the field | SP5, SP7, SP12, SP13, SP14, SP15 |
| 1. Investigating fossils  * Identifying macrofossils * Investigating microfossils * Fossils in the field | SP16, SP17 |
| 1. Investigating geological sequences  * Basic structural geology * Geochronology of a field site * Logging a sequence | SP4, SP5, SP6, SP7, SP8, SP10, SP12, SP13, SP14, SP15 |
| 1. Investigating orogenic processes  * Modelling stress versus strain * Modelling geological structures * Mineralisation in the field | SP4, SP6, SP8, SP9, SP10, SP11, SP12, SP13, SP14, SP15, SP18, SP20 |
| 1. Investigating fluid movement  * Fluid movement Darcy’s law * Surface tension and pore pressure * Porosity and permeability in the field | — |
| 1. Site investigations  * Geotechnical desk study * Investigating the properties of rock * Geotechnical investigation in the field | SP12, SP13, SP14, SP15 |
| 1. Investigating geological resources  * BGS GeoIndex * Chemical testing of ores * Mineral prospecting in the field | SP12, SP13, SP14 |
| 1. Investigation  * Independent lab based investigation * Independent investigation of sedimentary rocks/sediments * Independent investigation of crystalline rocks | SP12, SP13, SP14, SP15, SP16, SP17 |
| 1. Research skills  * Integrating fieldwork into analysis of the sedimentary basin – research poster * Critical mineral resources – fact sheet * Exploring beyond the specification – oral presentation | — |

## Assessment – AS Level

| **OCR Geology (H014)** | **Eduqas (B410QA)** |
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| **AS Paper 1: AS Geology,**  **Modules 1–4**  120 marks, 100% of AS Level  Written paper – 2 hour 30 minutes  Section A multiple choice questions, 20 marks.  Section B short answer (structured questions, problem solving, calculations, practical) and extended response questions, including those marked using Level of Response (Banded) mark schemes, 100 marks. | **AS Paper 1: Geological Enquiries, Sections F1-F4 Fundamentals of Geology**  60 marks , 40% of AS Level  Written paper – 1 hour 30 minutes  Alternative to coursework practical, with a simplified geological map, hand specimens and photographs. Short answer (structured questions, problem solving, calculations, practical) and extended response questions, including those marked using Level of Response (Banded) mark schemes. |
| **AS Paper 2: Foundation Geology,**  **Sections F1-F4 Fundamentals of Geology**  90 marks, 60% of AS Level  Written paper – 1 hour 30 minutes  Short answer (structured questions, problem solving, calculations, practical) and extended response questions, including those marked using Level of Response (Banded) mark schemes. |

## Assessment – A Level

| **OCR Geology (H414)** | **Eduqas (A410QS)** |
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| **A Level Paper 1: Fundamentals of Geology, Modules 1–7**  110 marks, 41% of A Level  Written paper – 2 hour 15 minutes  Section A multiple choice questions, 25 marks.  Section B short structured questions and extended response questions, problem solving, calculations, practical and theory, including those marked using Level of Response (Banded) mark schemes, 95 marks. | **A Level Paper 1: Geological Investigations, Sections F1–F4 & G1–G4**  105 marks, 35% of A Level  Written paper – 2 hour 15 minutes  Alternative to coursework practical, with a simplified geological map, hand specimens and photographs. Short answer (structured questions, problem solving, calculations, practical) and extended response questions, including those marked using Level of Response (Banded) mark schemes. |
| **A Level Paper 2: Scientific Literacy in Geology, Modules 1–7**  100 marks, 37% of A Level  Written paper – 2 hours 15 minutes  Contains a one page extract which will be based on a contemporary synoptic geological content (a short scientific paper/report in A level language) and will underpin around 20 marks.  Short structured questions and extended response questions, problem solving, calculations, practical and theory, including those marked using Level of Response (Banded) mark schemes. | **A Level Paper 2: Geological Principles and Processes: Sections F1–F4 & G1–G4**  90 marks, 30% of A Level  Written paper – 1 hour 45 minutes  Short answer (structured questions, problem solving, calculations, practical) and extended response questions, including those marked using Level of Response (Banded) mark schemes. |
| **A Level Paper 3: Practical Skills in Geology, Modules 1–7**  60 marks, 22% of A Level  Written paper – 1 hour 30 minutes  Emphasis on the indirect assessment of practical scientific and fieldwork skills in geological contexts, contains an A3 colour BGS map extract. Question styles include short structured questions and extended response questions, problem solving, calculations, practical and theory, including those marked using Level of Response (Banded) mark schemes. | **A Level Paper 3: Geological Applications: All sections including T1, T2 & T3–T5**  105 marks, 35% of A Level  Written paper – 2 hour  Section A **T1 Geohazards** short structured questions and extended response questions, problem solving, calculations, practical and theory, 30 marks.  Section B **F1–F4, G1–G4 & T1–T2** investigation of an area contained on an A3 colour BGS map extract. Short structured questions and extended response questions, problem solving, calculations, practical and theory, including those marked using Level of Response (Banded) mark schemes, 45 marks.  Section C **T3 or T4 or T5** short structured questions and extended response questions, problem solving, calculations, practical and theory, 30 marks. |
| **Practical Endorsement in geology**  Separately reported non–exam assessment, with candidates demonstrating competence in a range of skills and techniques, in a minimum of 12 assessed practical activities. Teacher assessment against the Common Practical Assessment Criteria. | **Practical Endorsement in geology**  Separately reported non–exam assessment, with candidates demonstrating competence in a range of skills and techniques, in a minimum of 20 assessed specified practical activities. Teacher assessment against the Common Practical Assessment Criteria. |