



**General Certificate of Education
June 2013**

AS Archaeology 1011

ARCH2

Unit 2

Archaeological Skills and Methods

Final

Mark Scheme

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the students' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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SECTION A

Question 1

01 Study **Figure 2** and use your own knowledge.

Outline the documentary sources that archaeologists could use to find and study shipwrecks such as the Swan.

(6 marks)

(Target AO1: 6)

L1:	Generic sources or specific list.	1-2
L2:	L1 plus sound explanation or specific sources with thin explanation.	3-4
L3:	Specific sources with sound explanation. Must mention SMR/HER for 6.	5-6

Responses could include:

Previous archaeological work, historical records, reports of chance finds, RNLI journals, Admiralty charts, tide tables, weather reports, newspaper reports of chance finds and/or eye witness accounts, shipping records, antiquarian sources, diaries, maps, Lloyds of London insurance schedules, SMR/HER. Credit anything sensible.

NB. Do not penalise candidates for mentioning Scottish HERS/SMRS.

Question 2

02 Study **Figure 3** and use your own knowledge.

Outline the most appropriate excavation and spoil removal techniques for excavating sites under water.

(10 marks)

(Target AO1: 8, AO2 : 2)

L1:	Vague and/or listed/thin generic points.	1-2
L2:	More detailed generic points on one method or undeveloped points linked to the source.	3-5
L3:	More developed points for two methods linked to source or technique illustrated, with appropriate technical vocabulary.	6-8
L4:	Developed points linked to three methods of excavation and/or spoil removal, and linked to the source, with appropriate technical vocabulary. Must discuss issues of visibility for 10 marks, i.e., the disturbance of silt and how to deal with it.	9-10

Guidance:

Expect airlift, water dredge, water lance, fanning/wafting by hand and trowelling. Expect some reference to visibility and silt.

NB. students who only discuss problems but do not offer solutions (or who offer incorrect solutions) are limited to L2.

Question 3

03 Study **Figure 4(a) and 4(b)** and use your own knowledge.

What information can archaeologists reveal through the study of human remains such as those illustrated?

(12 marks)

(Target AO1: 10, AO2 :2)

L1: Description of information available from one element.	1-3
L2: Description of information available from two elements.	4-6
L3: Description of information available from three elements.	7-9
L4: As level three and some appreciation of sample size or populations.	10-12

Source links are implicit as candidates gain credit for discussing bones illustrated.

Guidance:

Expect a discussion of sex, age, stature, diet, disease, trauma and lifestyle.

Pelvis – sex and age.

Long bones – stature, disease, trauma, lifestyle, age.

Jaw – age, diet, disease. Credit, but do not expect, discussion of isotopic analysis (strontium and oxygen for origins and carbon/nitrogen for diet).

Vertebrae – lifestyle, disease, trauma.

Ribs – disease, trauma.

Accept references to DNA and dating.

Jaw and teeth count as two bones.

Some students may discuss the ‘time capsule’ nature of the remains, i.e., a precise provenance and date. This should be credited, but not expected.

Question 4

04 Study **Figure 4(a) and 4(b)** and use your own knowledge.

What issues should archaeologists address before excavating human remains?

(4 marks)

(Target AO1: 4)

L1: Vague response or list.	1
L2: One or two points developed.	2-3
L3: Two points developed and at least one other point.	4

NB. Students can gain four marks if they consider three ethical issues or three practical issues. They do not necessarily have to consider both sets of issues for full marks.

This question can be answered without reference to this site.

Guidance:

Relationship to present community, sensitivity to present community, police and/or coroner involvement, disease, time/expense, post excavation considerations, storage and/or reburial, suitably experienced team, presence of war graves, possible legal issues, hidden from public eye.

Generic answers on excavation (as opposed to the excavation of human remains) should not be credited.

Question 5

05 Study **Figures 5(a), 5(b) and 5(c)** and use your own knowledge.

Explain why archaeologists have produced both drawings and photographs of this wooden artefact.

(6 marks)

(Target AO1: 4; AO2: 2)

- L1: Either pros **or** cons of drawings **and** photographs OR pros **and** cons of drawings **or** photographs, with no appreciation of source. **1-3**
- L2: Balanced answers appreciating the value of doing both. **4-6**

NB. For top marks in each level there must be an appreciation of the source.

Guidance:

Expect discussion of lighting, bias, speed, the ability to emphasise particular parts of the drawing, the skill of the draughtsperson, ability to show thickness, etc. Better students might consider the importance of speedy recording before conservation has taken place and that because of the risk of decay, recording in as many ways as possible is important.

Question 6

06 Study **Figure 6** and use your own knowledge.

Explain why organic material such as that shown in **Figure 6** was preserved at this site.

(6 marks)

(Target AO1: 4; AO2: 2)

- L1: Vague, undeveloped answer or list, e.g., 'because it's wet'. **1-2**
- L2: Fuller explanation of **either** temperature **or** oxygen or burial by sediment or stable environment. **3-4**
- L3: Two parts of L2. Must use either the term anaerobic or anoxic for 6 marks. **5-6**

Guidance:

Students will mention the lack of oxygen as a factor in retarding bacterial and fungal action. Some will discuss temperature and the fact that the site is buried, thereby inhibiting bacterial activity and erosion. Accept insect/animal action if the response is clearly linked to lack of oxygen.

Some students may mention decay caused by anoxic bacteria. Credit where relevant.

Question 7

07 Study **Figures 5(a) and 5(b), and 7(a) and 7(b)** and use your own knowledge.

What post-excavation processes (excluding dating techniques) could archaeologists apply to artefacts such as those illustrated from the moment of their recovery?

(8 marks)

(Target AO1: 8)

- | | | |
|-----|--|------------|
| L1: | Vague responses or a list. | 1-2 |
| L2: | Thin outline of possible techniques with limited use of sources or fuller generic response. | 3-5 |
| L3: | Fuller responses on 3+ methods, and with appropriate reference to sources. | 6-8 |

NB. This question is **not** about what the post-excavation techniques can tell archaeologists, and students who focus on this aspect are unlikely to score highly.

Guidance:

Expect students to focus on the cleaning and recording of artefacts and visual analysis techniques, e.g., comparison with other, similar artefacts and use of a light microscope.

Credit, but do not expect, specific conservation techniques, characterisation techniques and experimental archaeology.

Question 8

08 Study the **Introduction, all the Figures** and use your own knowledge.

Outline the natural transforms and cultural transforms that might affect underwater sites such as the Swan.

(8 marks)

(Target AO1: 6; AO2: 2)

- | | | |
|-----|--|------------|
| L1: | Description of source (max 1 mark) or list. | 1-2 |
| L2: | Thin generic responses with either two factors briefly discussed or reference to the source. | 3-4 |
| L3: | Fuller responses focussing on underwater c- and n-transforms, with at least three factors discussed. | 5-8 |

Guidance:

Expect damage from wildlife, e.g., worm/shipworm (gribble, teredo) and barnacles, abrasion from sediment, currents and tides, looting/salvage, trawling, damage on exposure by archaeologists, corrosion of metals from salt water. Accept bacteria if clearly anoxic.

Students must identify which are cultural and which are natural transforms for more than 5 marks.

NB. Students **do not** have to refer explicitly to specific sources for level three marks, but should identify issues that are illustrated **by** the sources.

Do not accept excavation.

Unit ARCH2: Marking Section B essays

The knowledge-based approach of this section enables students to select content from a wide variety of contexts. As a result, highly specific mark schemes are inappropriate. The scheme must be sufficiently flexible that it can embrace whatever case studies that teachers and students may select to study in that particular year.

Marking guidance therefore falls into two main types. A broad hierarchy of levels based on the assessment objectives for all essays and then exemplification for each particular question. In the latter case the contexts and lists of expected content are simply for the sake of illustration. There are many other sets of evidence, which would provide equally good answers.

The balance of assessment objectives on this section between AO1 and AO2 is 33.3:66.6.

The primary aim of the assessments is to test students' understanding of key techniques and issues in practical archaeology (AO2). Depending on the questions chosen they will focus, to a greater or lesser extent, upon the basis of archaeological knowledge, its limitations, and the nature of the factors affecting continuity and change in the past.

Understanding of AO1 will also be a key factor in differentiating responses.

Good examining is, ultimately, about the consistent application of judgement. Levels of response mark schemes provide the necessary framework for exercising that judgement but cannot cover all eventualities. Where you are very unsure about a particular response, refer it to your team leader.

Generic Essay Levels Mark Scheme

Below Level 1 **0 marks**

Answers with no merit or relevance to the question set.

Responses at this level may be of reasonable length and may contain archaeological examples and material but they will not respond to demands of this specific question. The student may have incorrectly interpreted a concept or simply responded to a word or phrase in the question by writing all they can think of about that 'trigger'.

Level 1 **1-6 marks** **AO1 (2) AO2 (4)**

Weak or undeveloped answers.

Either: A Responses at the bottom of this level (1-3 marks) may provide some information which could be relevant to the question but it will be undifferentiated from irrelevant or inaccurate material – in other words it will randomly rather than purposely linked to the question. More typically (4-6 marks) the student will demonstrate some understanding of the thrust of the question but is unable to respond in an adequate manner. Some understanding may be shown by the selection of relevant material although this will be presented in a 'scattergun manner' with little discrimination, explanation or attempt to use it as part of a logical argument. The account will be superficial and may be within the context of a purely narrative or descriptive framework.

Or: B Alternatively the response may consist of a very weak description of technique(s) or a very thin account of a site(s), some of which may be relevant to the question but which are undeveloped. Nevertheless, some of these could have been developed into higher level responses.

At Level 1, where students submit full essays they are likely to display poor communication skills, work being characterised by disjointed prose, poor organisation and frequent lapses of spelling and grammar. This level also includes responses which do address the question but are only a few sentences in length or undeveloped lists or plans which had the potential to become higher level answers.

Level 2 **7-12 marks: AO1 (4) AO2 (8).**

Limited responses with some merit.

Either: Responses which demonstrate understanding by including some material relevant to the question. However, it is likely that the student has been unable to organise their work successfully in order to meet the demands of the question. Typically this may include the very basic description of techniques with little or no exemplification. Understanding of the issues in the question will be simplistic and there will be very little assessment of the data which will often be presented in a descriptive format.

Or: **B** Answers which do address the question and demonstrate some understanding of the issues, perhaps making several valid points. However, there will be very little or no relevant archaeological examples or explanation of technique(s) to support their case.

At Level 2, students are likely to display some poor communication skills. Some of their work may be characterised by disjointed prose, poor organisation and frequent lapses of spelling and grammar. This level also includes good, detailed essay plans and promising essays which have not been developed (e.g. very brief or truncated).

Level 3 **13-18 marks: AO1 (6) AO2 (12).**

Sound responses.

Either: **A** Responses which largely contains material relevant to this question and where the student has begun to organise and structure their work successfully in order to meet its demands. This may be of similar depth to Level 2 responses but will be largely focussed on issues raised by the question. Introductions and conclusions are likely to be limited at this level and appraisal will be simple.

Or: **B** Answers which address the question and demonstrate a reasonable understanding of many of the issues it raises. They will be able to reach sensible conclusions but provide limited explanation of archaeological technique(s) to support their case.
Include at this level: responses which are of Level 4 or 5 quality but which have only addressed half of a question which contains two main elements; good generic responses which include no exemplification; detailed accounts of archaeological sites which only partially address the question.

At Level 3 communication skills may remain limited and may be adequate at best. At the lower end of the level spelling and grammatical errors are likely to be frequent and answers will show limited powers of organisation. At the higher end there may still be insecure structuring of paragraphs and weaknesses of expression breaking the flow of the answer.

Introductions and/or conclusions are likely to be limited at this level and appraisal will be simple.

Level 4

19-24 marks: AO1 (8) AO2 (16).

Good responses.

Either: A Responses largely containing well focused, relevant material organised in the form of 1-2 explanations of techniques or a range of 3+ with some limited development. Reasonable exemplification will be present. The response must reach some conclusions – perhaps in the final paragraph. Depth of understanding of terms may be very good but commentary and argument will be underdeveloped.

Or : B Well-focused responses which address the question directly and demonstrate a good understanding of the issues raised by it. The account is likely to have a coherent structure and may be argued consistently. However, explanations of techniques will still be limited despite being supported by some examples. Detailed appraisal of specific techniques will not therefore be possible.

Introductions and/or conclusions are likely to be more developed at this level.

At Level 4 communication skills will generally be sound. Though spelling and grammar will be secure there may still be lapses with technical vocabulary Organisation will be sensible but there may be passages of less well directed writing or an overly schematic approach.

Level 5

25-30 marks: AO1 (10) AO2 (20)

Very good responses.

Either: A Responses containing considerable, well focused relevant material either in the form of 1-2 detailed explanations of techniques or a range of 3+ with relevant development. (Expect the equivalent of a couple of sentences on each.) Analysis will be present although at the bottom of this level this will not necessarily be consistent and not all the data will be necessarily appraised. Exemplification will be sound. Evaluation and assessment of the relative merits of different sources and lines of argument will be present. A conclusion will be reached about the main element in the question.

Or: **B** Responses which address the question directly and precisely, and demonstrate a very strong understanding of the issues raised by it. The account will be well-structured and should be argued consistently. Appraisal of specific case studies via supporting evidence will be sound.

Introductions and/or conclusions are likely to be fairly sophisticated at this level.

At Level 5 communication skills will be generally effective and organisation clear and logical. Spelling and grammar will be sound, though there may be occasional errors.

Deciding on marks within a level

One of the purposes of examining is to differentiate between responses in order to help awarders distinguish clearly and fairly between students. We want to avoid too much “bunching” of marks which can lead to regression to the mean. A key element here is the way examiners approach the work. Given the constraints of time and circumstance, students will not produce perfect work. Ideally you should take a ‘cup half full’ rather than ‘cup half empty’ approach to responses above Level 2. This should help you to use the full range of marks available. Start by allocating the essay to the level which best describes it even though it may not be a perfect fit. If you really cannot decide between a level, award the response the top mark of the lower level where the decision is between levels 1-2 or 2-3 and at the bottom of the higher level in all other cases.

Where you are confident about a level, you should start by placing the essay on one of the middle marks for that level. Next consider whether you feel that mark to be about right, slightly generous or slightly harsh in comparison with other responses at that level. In the latter cases move the essay out to the lower or higher mark in the level. In making decisions away from the middle of the level, examiners should ask themselves whether the response is:

- Precise in its use of factual information?
- Technically accurate?
- Appropriately detailed?
- Factually accurate?
- Appropriately balanced, or markedly better in some areas than in others?
- Generally coherent in expression and cogent in development (as appropriate to the level awarded)?
- Well-presented as to general use of syntax, including spelling, punctuation and grammar?

The latter two points indicate how the student’s quality of written communication might influence the award of marks within a given level of response and complement the information given elsewhere.

Question 9

- 09 Outline the geophysical methods archaeologists could use to investigate archaeological sites.

(30 marks)

Use generic levels mark scheme

Indicative content

Students will probably concentrate on resistivity, magnetometry and ground penetrating radar. However, techniques applicable to underwater sites are equally valid, such as magnetometry, sub-bottom profiling and side scanning sonar. Students may use 'big' sites like Wroxeter, the Mary Rose and the recent work at Pavlopetri, but expect local sites too.

NB. Do not accept LiDAR, photogrammetry or aerial photography.

Question 10

- 10 Outline the on-site methods that archaeologists could use to record excavations.

(30 marks)

Use generic levels mark scheme

Indicative content

Students will discuss drawing, photography and a range of written records. Answers are likely to cover section drawing, plan drawing and possibly elevation drawing, on site photography of features and working shots, context cards, site notebooks, skeleton cards, logbooks for drawings and photographs, sample sheets, iPads, PDAs, e.g., a Palm Pilot, and other relevant technology. Students should consider the process for all three categories to access level 4 and above. Students are most likely to use local sites known to them. **Aerial photography should not be accepted, unless clearly referring to low level shots for site overviews.**

NB. Answers which focus solely on artefact recording are limited to 12 marks.

Question 11

- 11 Outline the methods archaeologists could use to date **inorganic** materials from archaeological sites.

(30 marks)

Use generic levels mark scheme

Indicative content

Students will discuss techniques such as typology, thermoluminescence, stratigraphy, TPQ and TAQ. Credit, but do not expect other relevant methods such as inscriptions and iconography, faunal dating, seriation, ESR, and K-Ar. Students who do not clearly link the method to particular classes of artefact are unlikely to do well. Students could use a wide range of sites, but expect Boxgrove, Sutton Hoo, and other 'TV sites' to feature.

Marking Grid

Question Number	AO1	AO2
9	10	20
10	10	20
11	10	20

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) page of the AQA Website.

Converting Marks into UMS marks

Convert raw marks into Uniform Mark Scale (UMS) marks by using the link below.

UMS conversion calculator www.aqa.org.uk/umsconversion