



EXAMINERS' REPORTS

**ENTRY PATHWAYS
SCIENCE TODAY**

SUMMER 2015

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Chief Examiner: Miss S. Moore

In May 2015 83 centres submitted a variety of units for moderation. Samples of all units between 6200 and 6212 were submitted at both Entry level 2 and Entry level 3. A number of centres have previously submitted the same or different units for moderation, but there were also a number of new centres submitting units for moderation for the first time.

The following observations were made as a result of the moderation process.

General Comments

1. Good practice

In the main the moderators agreed with the majority of assessment decisions made by centres and the vast majority of units submitted were accepted.

In most instances the evidence provided by centres for moderation was well presented and the work was well organised by unit. This makes it much easier for moderators to locate evidence and confirm that particular Assessment Criteria have been achieved by candidates.

There were some excellent examples of creative assessment activities within the submitted evidence. A number of centres provided an excellent range of evidence for individual units, this included photographs, reports, diaries, leaflets, posters, presentations and witness statements.

In the best evidence submitted, centres had provided candidates with task sheets or assignment briefs which **clearly matched the required assessment criteria**. The use of such task sheets ensured that learning and assessment activities were separated, candidates were clear about what was required of them and the work submitted could easily be moderated and approved.

Generally the correct assessment records had been completed for each candidate and authentication sheets for each candidate were provided. The best centres presented evidence that was clearly annotated and labelled. In the best centres there was clear evidence that internal moderation had taken place .

Many centres showed marked improvements in both the way evidence was submitted and the quality of the evidence provided. These centres had clearly taken note of the individual centre report sent to them and had acted upon this report accordingly. All centres are strongly encouraged to read their individual centre report carefully and act on recommendations made. In some instances failure to act could result in units not being accepted in future submissions.

2. Areas for further improvement

Entries and Administration

Centres are reminded that only the work of candidates that have been entered can be submitted for moderation. If incorrect entries are made, for example candidates are entered for a unit at E2, but the work submitted has been marked at E3, moderation will not be possible. Such units will be returned to the centre and these will need to be correctly entered and resubmitted in the next moderation series.

There were a number of instances where authentication sheets were missing when samples were submitted for moderation. There must be a completed authentication sheet for every candidate whose evidence is submitted. Moderation cannot take place without these authentication sheets.

The sample is now generated electronically via the WJEC secure website. Centres are reminded that this is based on numbers of candidates completing particular units at **each level**.

Assessment Criteria

Centres are reminded that this qualification is assessed at Assessment Criteria (A.C) level; it is through achievement of individual assessment criteria that candidates demonstrate knowledge/understanding/skill of a particular learning outcome. All marking must be by individual Assessment Criteria, not by overall Learning Outcome.

The condition of all such qualifications is that in order to achieve a unit, a candidate must meet the requirements of every A.C within a unit, not some of the A.C'S. or part of an A.C. The qualification does not operate on a "best fit or compensatory model". **If there are 6 Assessment Criteria in a unit, evidence must be presented that demonstrates achievement of all 6 Assessment Criteria.**

Centres are encouraged to read the Assessment Criteria for each unit—for each level (either E2 or E3) very carefully. Centres should then plan what tasks/activities will be set and undertaken by candidates to generate evidence that will clearly demonstrate achievement of the individual Assessment Criteria.

Assessment criteria must not be altered in any way from those specified in the unit, as this can lead to incorrect evidence being produced. Wherever possible, centres should make use of the assessment records provided in the qualification units and guidance, rather than retyping or producing their own versions of these assessment records. Centres must ensure that they are using the most up to date version of the units which can be found on the Entry Pathways Science Today page of the WJEC website.

Centres should read all the assessment criteria for a unit carefully to ensure that assessed activities do match the requirements of the criteria. Centres should make use of the amplification of content provided for each unit to help them develop assessment activities that accurately match the requirements of the assessment criteria. In particular centres should take notes of "plurals" in assessment criteria, such as body systems or natural factors. Centres should also make particular note of the command words used in assessment criteria—describe, requires more than just a list, compare requires more than just a table, candidates must make some simple comparison, explanation is more than a description, candidates should be encouraged to use "because" in an explanation.

The differences between the assessment criteria at E2 and E3 do not always make it appropriate or possible to set the same tasks or activities. Centres need to ensure that assessment criteria at the level for which they are submitting a portfolio have been met. There are occasions where the assessment criteria required at E2 are not the same as E3 and tasks set to achieve E3 criteria will not automatically achieve E2 criteria if E3 is not met. In a number of instances the difficulty in locating evidence was caused by a difference in the requirements between E2 and E3, whilst it is appreciated that providing candidates with the opportunity to achieve at the highest level is a good thing—this can lead to A.Cs not being covered. A specific example of this is 604 Science and our universe, where A.C's at E3 do not necessarily cover A.Cs at E2.

Evidence

In some instances centres provided portfolios of work which contained everything a candidate had completed for a unit. Evidence submitted should be of **assessed work only**, i.e. the particular tasks or activities which demonstrated achievement of the assessment criteria. **Only one piece of evidence** which demonstrates achievement of each assessment criteria is required to be submitted, it is possible that one piece of evidence may demonstrate achievement of more than one assessment criterion. Centres need to make use of specific tasks and activities to generate evidence that is clearly linked to assessment criteria.

There were examples in submitted evidence that a candidate was working at the required level, however the task/activity they had been set did not provide the opportunity for them to meet the requirements of the assessment criteria and consequently they could not be accredited with having achieved that particular assessment criterion, which would mean they did not achieve a unit.

In some instances it was not clear how a particular piece of evidence had been generated, i.e. how had candidates “come up” with the answers? Did they use a text book? Watch a video? Complete independent research? Answer questions on-line and print the answers out, or were pages printed directly from a website? In such instances, a simple annotation on the work such as “worksheet answered after candidate watched a class video” would ensure the validity and authenticity of the evidence.

Photographs are an acceptable form of evidence, however centres continue to provide photographs which make it very difficult for moderators to confirm achievement of assessment criteria:

- Photographs should show a particular candidate (in a group is acceptable-but annotated), carrying out a particular task specified in the assessment criteria –i.e. weeding, harvesting, completing an experiment.
- Photographs of “a seed tray” or “a lettuce” are not sufficient—these either need to be annotated by the candidate— “this is the lettuce I produced, which I harvested on 5th May” or an individualised witness statement needs to accompany such photographs.

Witness statements are an acceptable form of evidence for a number of assessment criteria; however they need to be used correctly and appropriately. Witness statements should be written for every individual candidate and whilst there would be some similarities between these for a group of candidates, they should not all be identical, as it is unlikely that candidates would complete a task or activity in exactly the same way, or produce identical outcomes. Witness statements should always identify which assessment criteria they are addressing and the task/activity they are being used for should be described. Witness statements must include the outcomes achieved by a candidate. A statement which reads “Johnny was asked to assist with the care of the chickens” is not evidence of achievement, a statement which reads “Johnny assisted with the care of the chickens for 4 days” is a statement of achievement. Often witness statements indicate that a candidate has correctly answered questions—what questions? Questions should be included so moderators can confirm achievement of an assessment criterion.

Witness statements are generally most appropriate for A.Cs that relate to “be able to” Learning Outcomes. Witness statements work well together with other evidence, such as photographic evidence. **A unit portfolio of only witness statements is unlikely to be acceptable evidence.**

3. Unit specific observations

The comments below for individual units are examples only of issues identified. Previous moderation reports give further examples of issues identified within units.

Unit 6200: Introduction to plant care

At E3 candidates are asked to “select” tools, whilst at E2 they are asked to “identify” tools. It is important therefore that at E3 candidates are provided with inappropriate tools and then select the correct ones. This could be demonstrated in a worksheet or photographs and a witness statement regarding the selection of tools could be provided.

Unit 6201: Introduction to Land Maintenance

A.C. 1.1 at E2 requires candidates to **identify** tools; often the evidence provided demonstrated **use** of tools, this does not meet the requirements of the A.C.

A.C 3.1 at E3 requires candidates to design an area for planting; often no example “designs” were submitted or those submitted were of poor quality. The planted area for this design can include: hanging baskets, flower bed, window box etc, wherever possible this should then link to an actual area for plating—but this is not essential.

Unit 6202: Introduction to Animal Care

For A.C 1.1, the basic animal needs are for animals in general—food, water, shelter etc.

For A.C 2.1,2.3 and 2.4 the requirements are for a specific animal.

A.C 3.1 Candidates are required to state (E2) or describe (E3) the purpose of selective breeding. This A.C is asking for a reason—why do we selectively breed animals? Descriptions of the specific characteristics obtained through selective breeding do not meet the requirements of this A.C. To meet the requirements of this A.C candidates should complete an activity which allows them to demonstrate knowledge of the purpose of selective breeding—to improve yield, to get more milk, to get bigger eggs, to produce crops that can survive a drought etc.

6204: Science and our universe

For A.C's 1.1 and 1.2 at both E2 and E3 it is important that candidates make reference to all the bullet points noted in the assessment criteria. For A.C 1.2 candidates could be provided with images of several galaxy types for them to identify the spiral galaxy (E2) and identify the different types of galaxies (E3).

For A.C 2.1 (E2 and E3) candidates should be provided with images to identify—drawings are not acceptable evidence for this criterion.

For A.C 2.2 candidates often state disadvantages but not advantages.

For Learning Outcome 3 of this unit, the requirements of the assessment criteria at E2 and E3 are not the same. There were examples where a candidate was submitted as E2, but had been asked to complete activities that provided evidence for E3 for this Learning Outcome—they did not then meet the requirements for E2 and so could not be awarded the unit.

6206: Science and the Human Body

For A.C 1.1 at E3, candidates are required to outline the structure of major body systems; the best evidence for this is labelled diagrams of at least two major body systems. Candidates could be given the diagrams and labels and then they must correctly locate these. This A.C is different at E2 where they need to identify the function of major body systems.

A.C 2.1 requires candidates to either state (E2) or describe (E3) different factors. **In too many cases the only factor discussed was smoking.** As indicated in the amplification of content other factors could include lifestyle: diet, exercise, alcohol, abuse of drugs, sexual activity, Environmental, such as housing, workplace, temperature etc.

6209: Variation and Adaptation

For A.C 1.2 (at E3 only) candidates need to state causes of variation—there are two causes of variation for candidates to consider: inherited and environmental. If presented with a table of particular variations candidates should be able to state the cause of the variation. For example in humans: Eye colour (inherited or environmental?), Height, shoe size etc... Higher achieving candidates may be able to extend this and include evidence on environmental factors, evolution etc.

Often the evidence presented for A.C 2.1(E2 and E3) and A.C 2.2 and 2.3 for this unit was weak. For A.C 2.1 Candidates need to identify **natural factors** that affect **the range of organisms** in an environment. Candidates could be provided with photographs/images of different environments and asked to identify the factors that would affect the range of organisms, for example if shown a photograph of a desert they could identify water as a factor, if shown a forest with dense tree coverage they could identify light as a factor etc. For A.C 2.2 and A.C 2.3 candidates need to extend this activity to **describe** how external factors have affected a **particular plant** and a **particular animal**.

For A.C 3.1 at E3 it is important that candidates demonstrate understanding of all 5 terms listed in the A.C-producers, consumers, carnivores, herbivores and omnivores. All five should be correctly shown on a food web. Please note that at E2 only a food chain is required, identifying predator and prey.

For Learning Outcome 4 there is an expectation that candidates will undertake some form of identification/collection of organisms and that recorded/collected information is then presented in tables/charts/graphs/posters (A.C 4.2). If centres have particular concerns/restrictions in terms of identifying organisms within a habitat then alternative ways to undertake this assessment criteria will need to be considered. It would be possible to set up different “habitats” within a classroom, so that organisms could be identified, recorded and data presented.

6211: Energy in the home and workplace

For A.C 1.1, Candidates should either identify (E2) or state (E3) three different **forms of energy**. This should be potential, electrical, kinetic and should not be confused with sources of energy, e.g.-wind, solar etc.

6212: Chemical Products used in the Home and their Environmental impact

In order to ensure the requirements of the assessment criteria for this unit are met, teachers should carefully read the amplification of content. Often for this unit the evidence submitted was of a very “general” nature and did not meet the requirements of the assessment criteria. The focus of this unit is on **chemical products**, not products in general.

A.C 1.2 (at E3) requires candidates to link properties of chemical products to their use, so a table with the chemical product, it’s properties and it’s use would be suitable evidence. Often a range of products (not chemical products) were linked to a particular use, for example wood for building.

For A.C1.1 at E3, candidates are required to **classify** different types of chemical products used in a home. The expectation here is that candidates are able to correctly sort chemical products into some classification system. This could be natural/organic products vs. synthetic products, or acids vs. alkalis – this activity can be linked to A.C 1.3.



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