# Cambridge Technicals

# Science

Level 2 Science Certificate/Extended Certificate/Diploma – **05783**, **05785**, **05788**

# OCR Report to Centres September 2017

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**OCR REPORT TO CENTRES**

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# Cambridge Technical Science Level 2 – 05783-05788

## 1 Overview:

Centres are using a number of delivery models: some centres are delivering one Unit at a time sequentially, others are delivering more than one Unit at a time using subject-specialist teaching staff.

Evidence has generally been presented in the form of written work produced by the candidate: this has taken the form of *PowerPoint* presentations, leaflets, posters, and reports. Where witness statements are used to support assessment evidence it is important that the witness statement is detailed and provides sufficient evidence and justification for the award of credit; as such, witness statements should be unique and specific to individual candidates.

Centres are encouraged to provide both formative and summative feedback to candidates as part of the assessment process, although feedback should not be overly-directive in terms of any improvements that candidates are required to make – feedback should identify weaknesses in candidates' evidence, not offer instructions as to how any weaknesses can be addressed.

OCR Unit Recording Sheets (URSs) must be used to record candidate achievement, these are available in the qualification area of the OCR website. These should be fully-completed, to include: the individual Assessment Criteria (AC) awarded for each Learning Outcome (LO) (P1, P2, M1, M2, D1, D2 etc.), the Grade awarded for each LO, some teacher comments to justify the AC/grade awarded (this can assist the Visiting Moderator in understanding how assessment decisions have been reached), and an indication as to the page number/location within the portfolio where the evidence can be found. Some centres provide very detailed URSs, but this standard is not being achieved consistently across all centres.

The majority of assessors are annotating candidate work to indicate where credit towards ACs has been given; alongside the signposting of evidence location on the URS this is very helpful to both Visiting Moderators and for internal standardisation. Visiting Moderators should not have to "re-mark" candidate work to locate assessment evidence: a combination of signposting relevant pages in the URS and annotation of those pages should direct the Visiting Moderator to the location of the assessment evidence.

It is a requirement of the qualification that internal standardisation of assessment decisions takes place – a guide to internal standardisation is available on the qualification area of the OCR website. Internal standardisation must cover all Units delivered, every assessor in a Unit, and all grades awarded. There is a field on the URS which should be completed to indicate which portfolios have been subject to internal standardisation. Records of internal moderation should be kept, and should be made available to the Visiting Moderator – for each Unit these should include dates of internal standardisation, candidates' names, name of internal moderator, outcomes of standardisation, and feedback to assessors. In many centres it is impossible for Visiting Moderators to see an overview of the internal standardisation process as there is no documentation kept to track the process, beyond annotating the relevant URSs; in a small number of centres there is no evidence of any internal standardisation process at all.

Centres are reminded that claims for moderation must be uploaded onto Interchange at least two weeks prior to the agreed moderation visit date. When entering candidate grades the member of staff responsible for assessing the evidence must be identified, as every assessor within a Unit must be sampled as part of the visiting moderation process – some centres are still entering the initials of the programme leader against every candidate.

## 2 General Comments

In general evidence presented for moderation was appropriate for level-2 in both depth and breadth and met the requirements of the specification. However, there is a tendency for centres to be lenient in their interpretation of the ACs when assessing candidates' work, and consequently some over-grading of candidates' work was noted by Visiting Moderators. It was evident that some centres had not referred to the Teaching Content within the Unit specifications when delivering content, and as a result candidates' evidence did not fully match the requirements of particular ACs.

Centres are reminded that the use of writing-frames, work-sheets, and other scaffolding is not permitted in the generation of assessment evidence, although they may be used for teaching purposes.

The majority of centres take care to ensure the authenticity of candidates' work, although Visiting Moderators have reported instances where candidates have downloaded material from the Internet and presented it as their own – centres must ensure that candidates properly reference sources of information, this remains frequently overlooked where diagrams/pictures are sourced from the Internet

## 3 Comments on Individual Units

Unit 1 – Science of the Earth (Core/Mandatory)

AC M1 (LO1) requires candidates to consider different ideas/theories about changes to the Earth's surface, no credit can be given for consideration of non-scientific theories such as creation theories; where alternative theories about changes are considered they are frequently described without any consideration of the supporting evidence available at the time of their currency. AC M2 (LO2) requires candidates to describe how scientists minimise the impacts of changes to the earth's surface/lithosphere in populated areas. The reference to scientists is often limited to making predictions, and the assessment evidence then focusses on how this can be used to assist in the response of the emergency services. There is a need for centres to place greater emphasis on the development of modelling and the development of materials and structures in the built environment that can withstand catastrophic impacts. Evidence for AC P3 (LO2) is often lacking in both depth and breadth, and tends to be an outline rather than a description of the composition of the Earth's atmosphere and its ability to support life. Similarly evidence for AC M3 (LO2) is frequently limited in terms of both the number of processes considered and the detail of each process. ACs P6 and M5 (LO3) both require consideration of water treatment before and after use, that latter is often omitted or given very cursory treatment: often M5 is awarded where P6 would have been more appropriate as the level of detail in the candidates evidence was more in line with an "outline" than an "explanation" – very rarely is there any historical or quantitative reference when considering why water treatment is necessary, and consideration of economising on the use of water invariably references only domestic consumption/recycling with no reference to the energy costs involved in water processing. Although the use of the atmosphere as a natural resource in the context of wind power is listed in the teaching content this is not a good example for candidates to use: it is difficult for candidates to address issues such as disposal of waste products or sustainability, which makes it hard for candidates to access M6 and D3 respectively.

ACs D1 (LO1) and D3 (LO3) require candidates to evaluate rather than describe the topics concerned. Centres are awarding these Assessment Criteria when there is minimal or no evaluation present: evaluation requires that candidates review relevant information/evidence including strengths/weaknesses and then reach a supported/justified judgement/conclusion about the topic concerned – this was identified as a weakness in both the 2014-15 and 2015-16 *Report to Centres*.

Unit 2 – Processing and Presenting Data in Science

Evidence for this Unit can be generated by collecting data from a series of experiments/investigations: the data should be processed and presented in the most appropriate format; the use of graphical approaches and the reliability/repeatability of the data should be discussed/"defended".

Centres could select a range of experiments/investigations from other Level-2 specifications (eg. GCSE science or OCR Level-2 Nationals or OCR Level-2 Cambridge National Certificates in Science/Science in the Workplace) and map the evidence provided against the ACs: by selecting appropriate experiments/investigations it should be possible to provide candidates with more than one opportunity to address each AC.

Unit 6 – Careers in Science (Optional)

AC P1 (LO1) simply requires candidates to identify areas of employment within the science sector, there is no requirement to describe the nature of organisations within identified areas. It is suggested that candidates start by identifying areas of employment locally, perhaps by identifying employing organisations, then work up to the national level, and then to the international level (again by identifying employing organisations). For AC M1 (LO1) it is not sufficient to simply state which of the identified areas are in growth or decline, there must be an evaluative/judgemental statement, ideally accompanied by quantitative data, as evidence.

AC P2 (LO2) requires that one organisation, and the job roles within it, is described: some centres are developing evidence for P1 and considering more than one organisation but to the detriment of the detail provided for any one – selection of a local organisation would allow for employer engagement here. AC M2 (LO2) should follow on from P2, by consideration of one of the job roles identified (some candidates are selecting job roles almost at random): there should be consideration of qualifications required for entry, further training/qualifications, professional qualifications, and career progression.

ACs P3 and M3 (LO2) are often poorly-differentiated, with the result that the evidence provided for both is confused and lacking in both depth and breadth. For P3 candidates should produce a step-by-step plan detailing the stages involved in a job-search (including reference to sources of relevant job advertisements); for M3 candidates should the produce a plan to apply for an identified job – this should include a skills audit, a plan to address any skills deficits, a CV, back-ground research on the company, list of possible interview questions and model answers.

Unit 8 – Science of Health (Optional)

In general evidence towards ACs in this Unit is appropriate for KS4 in terms of both depth and breadth. However, ACs D3 (LO2), and D4 (LO4) require candidates to "evaluate" rather than simply explain or describe: centres have been awarding these ACs when there is minimal or no evaluation present – evaluation requires that candidates review a range of information/evidence including strengths/weaknesses/alternative actions and bring it together to form a supported judgement/conclusion about the topic concerned.

AC M4 (LO3) requires that candidates "illustrate" how education can reduce the effects of STIs on society: this requires that candidates use as a case study one relevant health education campaign – it is not sufficient for candidates to write in general terms about the benefits of health education in the context of STIs. For AC P6 (LO4) three genetic disorders should be considered, the evidence can be presented in the form of a table. Candidates should be guided in their choice of disorders so that at least two can be diagnosed through screening – these can then be used to generate evidence towards M5, there is no need for candidates to consider a wide range of disorders when generating evidence towards M5.

## 4  Sector Update

The final deadlines for both registration and certification of candidates have were extended to 30th April 2019 and 31st August 2022, respectively, during the 2015-16 academic year – this will allow a final cohort to commence the qualification in September 2018, with three academic years to complete certification. The Level-3 Cambridge Technicals in Laboratory Skills offer a level-3 progression from this qualification.

The final assessment opportunity for OCR's Level-2 Cambridge National Certificates in Science/Science in the workplace is June 2018 – the final year-10 cohort start date was September 2016. The Level Cambridge Technicals in Science provide an alternative qualification for those centres with particular requirements and where KS4 performance points are not required.

The following resources are available on the OCR website:
- Centre Handbook
- Internal Standardisation Guide
- Unit Recording Sheets
- Candidate Authentication Statement
- Rules of Combination Calculator
- Learner Progress Tracker
- Student Guide
- Lost Centre-Assessed Work Form
- Unit Specifications
- Skills Guides
- OCR Reports to Centres
- Witness Statement
- Model Assignment – Unit 1
- Delivery Guide – Units 1, 3, 7, 10, 14
- Introductory Presentation – Units 1, 3, 7, 10, 14
- Resources Links – Units 1, 3, 7, 10, 14

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