

ELC

Science

Entry Level Certificate **R591**

OCR Report to Centres June 2014

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It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support, which keep pace with the changing needs of today's society.

This report on the examination provides information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the specification content, of the operation of the scheme of assessment and of the application of assessment criteria.

Reports should be read in conjunction with the published question papers and mark schemes for the examination.

OCR will not enter into any discussion or correspondence in connection with this report.

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Introduction

2014	boundary	80	60	40
R591	cumulative %	19.9	56.3	91.4

The moderation of centres in 2014 was final moderation and centres were contacted by OCR with the name of their moderator and the numbers of the candidates whose work made up the sample to be sent to the moderator

A list of what is required in 2015 from a centre is:

- 1 A Centre Authentication Form (CAF).
- 2 A photocopy of the Candidate Record Card (CRC) for each of the candidates in the sample selected. These must be correctly totalled for all sections and with the final marks transferred to the cover sheet. **This must be checked carefully.**
- 3 ALL marked End-of-Item tests for the requested candidates arranged in test order.
- 4 One Practical Task representing each requested candidate's best total mark with the completed cover sheet stapled to the front.
- 5 The final mark should be rounded down and transferred to the MS1, a copy of which should be included (or a copy of the electronic version).

It would be useful to the moderator if the following pieces of information were also supplied:

- 1 A headed piece of paper with the name of the teacher responsible and preferably including **an email address** as well as a telephone number and centre address.
- 2 A letter stating how standardisation was carried out in the centre. This may be included on the headed paper. This is especially useful if there is more than one teacher involved or more than one set of candidates.

After moderation all the work will be returned to the centre except for the work of candidates that is retained for use by OCR in Awarding, Archiving and Training.

When the results are sent to centres in August they will also receive:
a copy of the Moderator's Report and
any adjustments made to the points totals.

The Entry Level Science course still continues to be very successful despite changing its format over the years. This must be due to the popularity of the course with both the candidates and the teachers. Teachers have appreciated the training events that have taken place around the country. The possibility of using the course as a pre-requisite to Gateway Science or Twenty First Century Science has also not escaped the notice of centres who have also double entered candidates for Entry Level Science and a GCSE Science.

There will be half-day Accreditation training meetings taking place every year and there is a charge for attendance. These are called Get-Started courses. There will be a repeat of the R591 meetings and details are available on line from the OCR website www.ocr.org.uk.

Click on Training and then Science (not on Entry Level Basic Skills). Also available (free of charge) are the booklets 'Distance Learning Support for Accreditation' and 'Practical Activities Support'

Copies of both can be obtained from OCR, 1 Hills Road, Cambridge, CB1 2EU.

The training events for 2014 – 2015 are proposed as follows:

Training 2014 – 2015

OCR Entry Level Certificate Science Plus (R591): Get started – successful first delivery

Date	Venue
Nov 29	London
Nov 5	Birmingham
Dec 4	Manchester
Nov 18	Leeds

The popularity of the course is indicated by the entry numbers and this year over 3000 candidates were entered from over 300 centres

Moderation procedure

Internal moderation should take place in centres before submission to the moderator. A piece of headed note paper should contain information to say how this internal moderation has occurred even if it states that there is only one teacher and the marks are checked by the Head of Department. It is preferable to include the email address of the teacher responsible.

Administration

The Centre Authentication Form (CAF) must be included with any coursework from a centre to a moderator. Part of internal moderation within a centre should be checking that marks have been correctly added and transferred to the Candidate Record Cards as working documents throughout the course. Filling these in at the last minute can lead to errors.

Many of these errors and omissions remain similar to those noted over previous years.

- The centre must send all the End-of-Item Tests as well as the Practical Task.
- Not enclosing a covering letter with the sample giving the name of the contact teacher or not saying in the covering letter how internal standardisation was carried out (if the course is taught by one teacher than the letter should simply say this).
- Not putting candidate names or candidate numbers on tests or assessed work which causes serious problems over identification of work.
- Submitting End-of-Item Tests for moderation that had not been entered on a Candidate's Record Card, or had not been marked.
- Incorrect totalling of points for End-of-Item Tests on page 4 of the record card.
- Rounding-up the Final Total of End-of-Item test marks and/or Final Total of Can-do tasks to whole numbers rather than to one decimal place.
- Not submitting Practical Tasks.
- Not rounding-down the final mark.
- Counting more than 35 End-of-Item tests. Candidates can take more than the 35 tests up to the maximum of 39 but only the best 35 are counted.
- Not counting the best 10 Can-do tasks (or counting more than 10).
- Not putting forward the Practical Task as a question or using discrete variables. It is difficult to award marks under Aspect C if there is not an identifiable trend or pattern.
- The End-of-Item Tests must be marked in red.
- **Allowing a candidate to take a test more than once. Only the original mark from the first undertaking of the test will be counted.**

End of Item Tests

It is most useful if the End-of-Item Tests are in numerical order.

Please note the End-of-Item Tests for 2015 should have the code R591 at the top.

Tests cannot be taken more than once by a candidate.

Moderators select and remark a sample of 7 End-of-Item Tests per candidate chosen from the whole range of tests attempted by the centre so that a balanced overview of the centre's marking is obtained.

Most centres had marked the End-of-Item Tests following the published mark schemes and had marked in accordance with the instructions on the front cover of the schemes. Centres are to be thanked for the care that they put in to this part of the assessment.

In a question that has a True/False answer then if the candidate writes something different but it is clear what was meant then the mark can be awarded.

Errors that did occur with the assessment of End-of-Item Tests included:

- Marking the tests in colours other than red (especially green which the moderator uses).
- Marking 'list' type questions incorrectly.
- Circling totals at the end of each question (Use the one tick - one mark method).
- Incorrect transfer of points to record cards.
- Failing to record the End-of-Item Test on the record card.
- Recording a mark for an End-of-Item Test not sent as part of the portfolio.

If a teacher thinks an answer that a student has given is correct but is not covered by the mark scheme, the teacher should annotate the copy of the mark scheme and apply it to all the candidates from their Centre. It is acceptable to mark such an answer correct but there should be annotation on the script to explain why the mark has been given. (even if only BOD – Benefit Of Doubt).

Can-Do Tasks

Some centres had candidates completing several End-of-Item Tests and Practical Activities but ticked very few Can-Do Tasks; this was even though the Practical Task carried out must have involved the candidate demonstrating some Can-Do Tasks successfully.

Only the best 10 Can-Do Tasks can be chosen so the maximum is 10 three point tasks = 30 which is then divided by 3 to give a total out of 10 points. The result should be to one decimal point. Low level tasks can be used for training and allowing candidates to show their progress, but opportunities need to be given to allow candidates to perform some of the higher level tasks. Can-do Tasks cannot be given part marks.

A centre cannot award 1 or 2 marks for a Level 3 task.

Practical Task

It is advisable that centres use a continuous variable so that a trend can be identified.

Many centres used writing frames and these can be useful to guide candidates. However, if too much guidance is given then Strand A, **Planning to collect data**, may not be awarded the maximum 4 marks. General headings such as "What will I do?" ; "The equipment I will need is"; and "How will I make it safe?" are acceptable. The safety aspect should relate to the actual task. However, the candidates may then go on to gain marks for Strand B, **Processing the data**, if they put results into a table. Here again if the table is given or the graph axes are given with labelled axes this limits the mark they should be awarded. Many centres have been awarding 4 graph or bar chart.

There were some repeats of the Practical Tasks as in the guide or as discussed at Inset Training Sessions but some new ones appeared that were interesting such as “Dunking Biscuits”.

There was a return to investigational experiments of the type “Does the thickness of fabric affect the heat loss?”, “Does the rate of reaction depend on the temperature?” “Does the number of coils affect the number of paper clips picked up by an electromagnet?” but in a lot of the tasks Strand D, **Interpreting the data**, proved difficult to assess. This should not be a re-statement of the trend or pattern which is Strand C but requires the candidate to relate the trend or pattern to the relevant science. Sensible ideas for explaining the pattern can score 2 marks but for more marks some basic science ideas are needed. Common sense ideas might lead to 2 marks.

Strand E, **Reviewing the method**, also proved problematical. It requires candidates to comment on how suitable the method used was and how it affects the quality of the data collected. Ideas for improvements are not part of the criteria so do not count. Also some centres were awarding high marks for saying repeat when they already have a good set of results. The data has to be linked to quality.

If the Practical Task is a collaborative effort then it would be useful if centres annotated work so that an individual’s contribution is identified.

A list of Practical Tasks that have been seen in 2014

- Rate of reaction between thiosulfate and acid (disappearing X).
- Rate of reaction (Footballer getting more injured in a 7-a-side game than a 3-a-side game).
- Investigate the effect of speed and ‘weight’ on the size of craters.
- Investigate the effect of exercise on pulse rate. (Beware of over marking because of the simplistic nature).
- Investigating the effect of exercise on breathing. (Again beware of the simplistic nature of the experiment leading to over marking.)
- Investigation of the rise of cup cakes and the amount of baking powder added.
- Investigate the effect of temperature on rate of reaction.
- Investigate the strength of bridges using paper or cardboard.
- Investigate the effect of length or thickness of wire on a current.
- Investigate how to make an electromagnet stronger.
- Relating stretching force to extension and thickness for elastic bands.
- Investigate the insulation of various materials and keeping something cool.

Whatever Practical Task is chosen the centre should check that is appropriate for their candidates and that they have the resources for their candidates to tackle the task. The most important question to ask is “Can Strand C be fully answered?” ie is there a trend or pattern that can be found? The variables therefore should not be discrete ones.

Candidate Record Card

Please note that there is an electronic version of the Candidate Record Card which automatically adds up the marks and converts them to points but please make sure the centre uses the version that has a box that indicates the number of End-of-Item Tests taken on the front cover.

If the Centre does use the electronic version of the Candidate Record Card and then adds marks at a late stage please make sure this is done electronically. If marks are just added to the sheet by hand the totals must be checked manually.

The latest revised version can be downloaded from the link, please refresh your cookies to ensure you are downloading the latest version.

<http://www.ocr.org.uk/Images/81816-candidate-record-card-interactive.pdf>

R591 and 2014

The Specification content includes 39 End-of-Item Tests

- 13 Biology
- 13 Chemistry
- 13 Physics

The Assessment Components

- End-of-Item Tests 70 points
- Can-Do Tasks 10 points
- Practical Task 20 points

Final certification is as follows:

(All mark schemes have been written to address the following targeted thresholds:)

- Entry Level 1 40 points
- Entry Level 2 60 points
- Entry Level 3 80 points

The End-of-Item Tests are converted to points as follows:

A maximum of 35 can be “counted” and they have 15 marks each. Each End-of-Item Test has a maximum of 2 points and the overall weighting is 70%. The marks are converted to points as follows:

Marks	Points
12 – 15	2
8 – 11	1.5
5 – 7	1
2 – 4	0.5

Note that the conversion of marks to points is different from the previous R482 tests which should not be used. If the specification has been taken over a number of years and R482 tests have been used at the start then the conversion of marks to points should be as in R591.

The Can-Do Tasks have been arranged as 1 mark, 2 mark and 3 mark tasks and the best 10 count. Therefore the maximum mark is $10 \times 3 = 30$ marks and this is divided by 3 to give the maximum 10 points.

No marks are awarded for a task only partially completed.

The Practical Task is a question that the candidates are given to answer and they will need to:

- Plan a procedure to arrive at an answer
- Collect and display appropriate data
- Process the data and identify trends
- Interpret the data and link it to the science
- Comment on the data and the procedure

The Practical Task will be teacher devised with some exemplars provided and

- Teacher assessed
- Five defined Performance Descriptions
- Each marked from 0 to 4
- Total marked out of 20
- Directly converted into points

Some innovative Practical Tasks were in evidence this year such as

- There are more injuries in a 7-a-side game than in a 3-a-side game. More chance of a collision – leading to a rate of reaction Practical Task
- Rate of reaction between thiosulfate and hydrochloric acid and the cloudiness obscuring a cross.
- An investigation to find out the effects of adding varying amounts of bicarbonate of soda to making cup cakes and the height they rise to before eating the end product.
- Does the temperature of water rise when it is heated? This was felt to be too simplistic an exercise.

What was again in evidence this year was the large number of digital photographs used. These were very useful in showing how the investigation was carried out but should not include the candidate.

There are two options for entry R591/01 and R591/02. Please note that R591/01 is to use the Repository option where all the candidates' work needs to be scanned by the Centre. R591/02 is postal moderation.

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