Summer 2021

Rewarding Learning

Summer 2021
Alternative Arrangements: AS and A level
Life and Health Sciences Subject Guidance

Version 2.0

Introduction

On 6 January 2021, the Minister of Education, Peter Weir MLA, cancelled all CCEA GCSE, AS and A2 examinations scheduled for January, February, May and June 2021. Instead, the approach to awarding grades in Summer 2021 will be based on teacher professional judgements, with moderation. CCEA has published *GCSE, AS and A Level Awarding Summer 2021 Alternative Arrangements – Process for Heads of Centre* to support teachers and school leaders in determining the appropriate Centre Determined Grades for each student.

In 2021, centres are asked to use a range of evidence to arrive at a professional and academic judgement of the standard at which each student is performing in the context of the specification for which they are entered and from this provide a grade to CCEA. This is different from 2020, when centres were asked to supply a centre assessment grade based on their judgement of the grade a student would likely have achieved if they had been able to complete examinations. It will require centres and CCEA to develop and use different processes from those used last year.

This document follows on from CCEA's *GCSE, AS and A Level Awarding Summer 2021 Alternative Arrangements – Process for Heads of Centre* and aims to provide further guidance to support teachers and Heads of Department in determining the appropriate Centre Determined Grade for each student entered for GCE AS or A level Life and Health Sciences.

Contents

1. Overview

Each Centre Determined Grade is a judgement of the final grade for a qualification. It must be based on a holistic review of a student's performance as indicated by assessment evidence, gathered and retained at centre level. In the interests of fairness within and across centres, each Centre Determined Grade must be a realistic, evidence-based judgement of the standard at which a student is performing, i.e. their demonstrated knowledge, understanding and skills in the content of the specification they have covered. This means students **do not** need to have completed a specified amount of content, or demonstrate skills, knowledge and understanding across every area of the specification, as they would normally. In this way, disruption to teaching and learning can be taken into account.

We must also acknowledge the decision taken in December 2020 by the Education Minister in respect of reducing the assessment burden in GCE AS and A level qualifications. The details in the table below will still be applicable in forming a Centre Determined Grade in Summer 2021. For example, teachers can consider evidence for:

- any 2 or more AS units for AS Single Award students;
- any 2 or more A2 units for A2 Single Award students;
- any 3 or more AS units for AS Double Award students; and
- any 3 or more A2 units for A2 Double Award students.

Subject	Current Arrangements	GCE Unit Omissions	Specification Adaptations
GCE Life and Health Sciences	**AS** Unit 1 internal assessment (6.7%/13.3%) Unit 2 external assessment (6.7%/13.3%) Unit 3 external assessment (6.7%/13.3%) Unit 4 internal assessment (6.7%) Unit 5 external assessment (6.7%) Unit 6 internal assessment (6.7%) **A2** Unit 1 internal assessment (10%/20%)	**AS Single Award** Students could choose to sit any combination of 2 or more AS units from units 1, 2 or 3. **AS Double Award** Students could choose to sit any combination of 3 or more AS units from units 1, 2, 3, 4, 5 or 6. **A2 Single Award** Students could choose to sit any combination of 2 or more A2 units from units 1, 2, 3, 4 or 5.	The requirement to conduct 12 experimental techniques is **reduced to 9**. Any **3 out of the 4** for each of the scientific areas. Please note: we appreciate that even with this adaptation, completion of content may not have been possible due to the current situation.

Subject	Current Arrangements	GCE Unit Omissions	Specification Adaptations
	Unit 2 external assessment (10%/20%) Unit 3 external assessment (10%/20%) Unit 4 external assessment (10%/20%) Unit 5 external assessment (10%/20%) Unit 6 internal assessment (10%) Unit 7 internal assessment (10%) Unit 8 internal assessment (10%) Unit 9 internal assessment (10%) Unit 10 internal assessment (10%)	**A2 Double Award** Students could choose to sit any combination of 3 or more A2 units from units 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10.	

2. Preliminary Considerations

In arriving at a Centre Determined Grade for a student, it is not necessary to assess every aspect of the specification exhaustively. A selection of key tasks or assessments carried out under appropriate conditions and with a suitable level of demand, which allows you to authenticate the work as the student's own, will give a good indication of the standard at which the student is performing in the qualification.

To make accurate judgements, you must have a clear understanding of:

- the range of skills, knowledge and understanding covered by the specification;
- the assessment requirements and the structure of the specification;
- the grade descriptions at key grades (see Section 5 and Appendix 1 and 2 in this document);
- the level of demand of the qualification assessments; and
- the weighting of each component/unit and the type of assessment.

For GCE Life and Health Sciences, information on these aspects can be found in the specification and further illustrated in the specimen assessment materials, past papers[1] and coursework Candidate Mark Records which are available on the CCEA website at **www.ccea.org.uk**

A piece of evidence has high validity and reliability if a student who performs well in the task would reasonably be expected to perform equally well in the qualification as a whole. Some considerations that may impact on evidence are noted below.

- **Specification Coverage**
  A piece of evidence that covers a greater breadth of the specification content, knowledge, understanding and skills from a unit (or units) may give a better indication of a student's standard of performance than a piece with lesser breadth. Evidence does not need to cover the entire specification content.

- **Similarity to Actual Qualification Assessments**
  Evidence that is similar to a CCEA assessment for the qualification will be more useful in determining a student's grade than evidence that is considerably different from the qualification assessment in terms of question structure, content and/or assessment arrangements.

- **Controls**
  If evidence is generated under less controlled conditions than a qualification assessment, its value may be less than a piece generated under conditions that are similar. Centres should keep a record of the conditions under which an assessment was completed, i.e. high, medium or limited levels of control – see **Appendix 3** for definitions.

  However, CCEA understands the difficult public health context in which schools have been working since March 2020, which has included two extended periods of remote learning. Schools may, therefore, need to utilise evidence generated within more limited levels of control, where they can authenticate this as the student's own.

- **Level of Demand**
  The evidence you gather must be set at an appropriate level of demand for it to be a good indicator of a student's standard of performance.

- **When Evidence Is Generated**
  It should be borne in mind that a student's knowledge, understanding and skills may develop over the period of a course of study; you should consider when any piece of evidence was generated and ensure, if possible, that evidence generated recently is taken into account.

[1] Past papers and mark schemes will be available for all CCEA GCSE, AS and A level qualifications subject to copyright clearance.

3. Evidence to Inform Centre Determined Grades

This section provides guidance on the information that centres should use in confirming Centre Determined Grades.

You should consider all the key evidence you have for each student and reflect on how much it tells you about the student's standard of performance, as measured against the requirements of the relevant specification. For example, this could be, but is not limited to:

- the consistency of a student's practical evidence;
- their depth or breadth of knowledge and understanding in relation to questions on key topics;
- their degree of analytical or evaluative skills demonstrated on key topics; and/or
- quality of student responses to discriminating questions or tasks.

Centres should be clear in their Centre Determined Grades policy what types of evidence will be used in determining the grade. Centres should also be clear with students the evidence that will be used to determine their grades. Where possible, centres should aim to use consistent sources of evidence for a qualification cohort. Some examples of evidence suitable for GCE AS and A level Life and Health Sciences you may choose to use are included in the following table:

Evidence
CCEA assessment resources for Units: • AS 2: Human Body Systems; • AS 3: Aspects of Physical Chemistry in Industrial Processes; • AS 5: Material Science; • A2 2: Organic Chemistry; • A2 3: Medical Physics; • A2 4: Sound and Light; and • A2 5: Genetics, Stem Cell Research and Cloning. When taken under high control conditions, where the public health situation allows, these assessments will be a good indicator of the standard of student performance as they are fully aligned to specification content and the level of demand of past papers. See Section 4 for more details.
Performance in any mock examinations taken – These are likely to be a good indicator of performance, particularly if they are taken under high control conditions and assess the skills, knowledge and understanding required by the CCEA specification or are similar to CCEA question papers.
Performance in CCEA past paper questions and mark schemes – These assessments are in the public domain and can be readily accessed by students. Therefore, in their entirety, they do not form strong evidence. However, elements of these can be incorporated into mock exams or class tests. You may wish to access grade boundaries and/or Chief Examiner's reports which relate to these papers, available at www.ccea.org.uk.
Records of each student's performance throughout their study – This includes, for example, progress review/tracking data, classwork, lab work and bookwork.
Performance in internally assessed units – This can be even if these have not been fully completed.
Performance in any class assessments taken throughout their study of the GCE Life and Health Sciences specification – This may consist of a variety of evidence types, produced under different conditions. Evidence of this kind is unlikely to form a strong evidence base on its own, but it may supplement other evidence types.
For resitting students, prioritise evidence generated during the 2020/21 academic year.

Assessment Objectives

Assessment objectives are the skills that are normally assessed through the completion of examinations or internally assessed tasks. They are the foundations on which a specification is developed, and a weighting is applied to each individual assessment objective to show the weighting of assessment associated with it. They may also prove to be a useful indicator of the level of demand of a task or assessment. As such, you should consider the assessment objectives that will be assessed when selecting evidence to form a holistic judgement of a student's performance. This information will be recorded in the Departmental Assessment Evidence Grid which is set out in Appendix 6 of CCEA's *GCSE, AS and A Level Awarding Summer 2021 Alternative Arrangements – Process for Heads of Centre*.

The assessment objectives for GCE Life and Health Sciences are:

AO1	demonstrate knowledge and understanding of scientific ideas, processes, techniques, and procedures.
AO2	apply knowledge and understanding of scientific ideas, processes, techniques and procedures: • in a range of theoretical and practical contexts; and • when handling qualitative and quantitative data, to solve scientific problems.
AO3	analyse, interpret and evaluate a range of scientific information, ideas and evidence to: • make judgements and reach conclusions (including in relation to issues); and • refine practical design and procedures.

Further information on assessment objectives, including weightings associated with individual units, can be found in Section 4: Scheme of Assessment in the subject specification.

Please note that where a unit omission has impacted on an assessment objective, it is *not necessary* to consider evidence for this objective; however, where reliable evidence exists, centres may still wish to consider it in forming a holistic judgement.

Using AS Evidence at A Level

For A level, AS evidence may be considered alongside A2 evidence; however, the differences between AS and A2 should be borne in mind. For example, the AS qualification is weighted at 40% of the overall A level and has different grade descriptions. There is also no A* grade at AS. If AS evidence is used, it must be assessed against the grade descriptions at A2 (see Appendix 2 for more details). If you do decide to use AS evidence to support judgements at A2, this should be reflected in the Centre Determined Grades policy for your centre and in the Candidate Assessment Record, and it should be included in evidence submitted to CCEA for sampling in the CCEA review stage.

4. Support

A range of subject-specific support is available on the CCEA website and can assist teachers in arriving at a fair and consistent judgement for students.

CCEA 2021 Assessment Resources

In 2020, many students seeking a GCSE or GCE qualification grade had been awarded notional unit grades or uniform mark scores in previous examination series, to use as evidence in determining centre assessment grades; however, this is not the case in 2021. In the absence of this information, CCEA will supply assessment resources to your centre. These will be quality assured question papers and mark schemes for **all** units that normally have examinations. They will contain new questions and tasks not previously released to centres and must therefore be stored securely. These materials are not to be seen as high stakes assessments but rather viewed as materials which could form part of the evidence used to inform Centre Determined Grades. Centres do not have to use all the assessment resources, but we advise centres to use at least one per qualification. We would encourage centres to use the assessment resources under high control conditions, where it is safe to do so, to ensure they have the greatest value. Mark schemes have been enhanced to ensure they are as accessible as possible.

We appreciate that decisions were taken in December 2020 in respect of unit omissions in AS and A level qualifications. We also acknowledge disruption to teaching and learning may mean that even in the context of these omissions, certain content may not have been covered. In such cases, the assessment resources may be adapted accordingly. In this way, it can be taken into account that some students have suffered more disruption to their learning than others. For example:

A centre decided to omit Unit A2 2 in line with the Education Minister's announcement in December 2020. Therefore, Centre Determined Grades may be based on evidence for Units A2 1 and A2 5: Genetics only.

- Student A has missed a significant amount of learning due to COVID self-isolation and disruptions and has not covered all of the content for Unit A2 5.
- Student A's Centre Determined Grade should be based on assessment of only the content they have covered.

Assessments adapted/Evidence gathered and reviewed based on Unit A2 5 Life and Health Sciences Content	
All Students	**Student A**
11.1 DNA and the genetic code 11.2 Process of DNA replication 11.3 Meiosis 11.4 The application of genetic engineering 11.5 Social, ethical and economic implications of genetic engineering 11.6 Gene therapy 11.7 Treatment of genetic conditions via gene therapy 11.8 Gene Cloning 11.9 Genetic fingerprinting 11.10 Stem cell technology	11.1 DNA and the genetic code 11.2 Process of DNA replication 11.3 Meiosis 11.4 The application of genetic engineering 11.5 Social, ethical and economic implications of genetic engineering

CCEA will provide mark schemes to centres. To support a standardised approach in the use of the assessment resources, we will provide guidance to accompany the mark scheme.

Summer 2021 Support Webinar

We will produce subject-specific support webinars for teachers to accompany this guidance document. These will include an overview of arriving at a Centre Determined Grade and additional guidance in using the CCEA assessment resources and existing support materials. Subject-specific webinars will be uploaded to the CCEA website from 26 March 2021.

Specimen Assessment Materials and Past Papers

Specimen assessment materials and past papers are available in the Support section of the qualification web page and are provided to give centres guidance on the structure and character of CCEA examination papers and assessments. Please note that if a past paper or mark scheme does not appear in this section, it is for copyright reasons.

You may also wish to create a question paper that is of a similar standard to a CCEA GCE question paper. In doing so, you should refer to the specimen question paper and mark schemes, and the past papers and mark schemes, available on the CCEA qualification web page. These illustrate the standard, structure and requirements of the question paper.

You can generate the most valid evidence by using assessments that replicate, as far as possible, the standard, duration, format and security of CCEA question papers.

Exemplification of Examination Performance (EEP)

EEP booklets are available in the Support section of the qualification web page and include exam questions from the Summer 2017 and 2018 papers, exemplar answers by students and a senior examiner commentary on the answers.

Agreement Trial Materials

The agreement trial for Summer 2021 is available at https://training.ccea.org.uk/course/view.php?id=131. Please note that some agreement trials were produced before the cancellation of examinations for 2021. However, they will still be useful in providing guidance on the requirements of internally assessed units and the CCEA standard to be applied in marking them.

Chief Examiner/Principal Moderator Reports

The reports for 2017–2019 Summer series are available in the Reports section of the qualification web page and outline the performance of students in all aspects of this qualification.

CCEA Grade Boundaries

Raw to uniform mark boundaries for past Summer series are available in the Support section of the qualification web page and may provide a reference point to support Centre Determined Grades.

CCEA Analytics

You can also avail of the data held in the CCEA Analytics application. Further information can be obtained by contacting CCEA at CCEA.Analytics@ccea.org.uk

5. Making Decisions about Centre Determined Grades

Before deciding Centre Determined Grades you should agree as a department the evidence you will review (see Section 3 for some examples). Once the decision has been made, this should be set out in your centre's Centre Determined Grades policy and be included in the Departmental Assessment Evidence Grid, referenced in Section 3, that will form part of the evidence base.

When making decisions, take into consideration the amount of specification coverage and if this applies to all students. Adapt as necessary for individual students the evidence you will review, to account for those students who may have encountered more significant disruption. Evidence does not have to be in the same format for every student, but teachers should be satisfied that the evidence is reliable to make an informed holistic judgement of that student's attainment.

Internal Standardisation

In subjects where there is more than one teacher and/or class in the department, it is a requirement to carry out internal standardisation. The purpose of internal standardisation is to provide teachers with confidence in the Centre Determined Grades they have assigned, to ensure fairness and objectivity of decisions, and to ensure consistency in the application of assessment criteria and standards.

Where more than one teacher is involved in marking the assessment, the application of the mark scheme must be agreed before marking begins.

When marking is complete, internal standardisation must be conducted to ensure all markers have applied the mark scheme consistently and accurately.

Internal standardisation should include cross-marking samples of work across the full range of attainment and include students' work from each class **to ensure a common standard within a department is applied.**

Grade Descriptions

Grade descriptions set out the characteristics of performance at key grades in the grade range for a qualification, in terms of both content covered and the skills developed (assessment objectives) over the course of study. These should be used to form the basis of your decisions on the Centre Determined Grades that will be awarded to your students in Summer 2021.

Grade descriptions are provided at Grades **A** and **E** in the GCE specification for both AS and A2 level, to give a general indication of the standards of achievement likely to have been shown by students awarded these grades. To support teachers in Summer 2021, we are providing an additional grade description at Grade C. Teachers should refer to these descriptions to support their judgements when arriving at their Centre Determined Grades for students**.**

Please note that shortcomings in some aspects of students' performance in assessments may be balanced by better performances in others.

Please see Appendices 1 and 2 for the Grade Descriptions at A, C and E for both AS and A level. These also include the type of assessment objective evidence you may wish to use and the key features associated with each grade.

Practical Application of Grade Descriptions

To select the most appropriate grade for a student, teachers may use the following approach:

1. Familiarise yourself with the grade descriptions for the subject.

2. Consider support materials such as those set out in Section 4 of this document.

3. Before you arrive at a holistic grade for a student's performance, review the evidence available. At this stage you may wish to make notes to record the qualities that are being looked for.

4. Consider the positive features of the evidence, based on the key features described in the Appendix.

5. Using the descriptions for Grades A, C and E, based on the principle of 'best fit', select the grade you believe comes closest to encapsulating the overall achievement of the student as demonstrated by the evidence. Using this grade as a benchmark, work **either up or down** using the table below to find the final grade.

   For example for a grade C at AS – Student has demonstrated knowledge and understanding of a sound range of principles, concepts and facts (C grade standard). They have selected some relevant information (below C grade standard) and have organised and presented information clearly in appropriate forms using scientific terminology (above C grade standard). Best fit grade is C grade.

   If you are of the view that the candidate's evidence meets the description for grade C, consider this first; if the supporting evidence is strong, you may then wish to go up to the grade above and decide if the evidence meets this, and so on, until you have a best fit between the grade description and the student's work; or

   a) *if you are of the view that the candidate's evidence <u>does not</u> meet the description for grade C, then go down to the grade below and decide if it meets this, and so on, until you have a best fit between the grade description and the student's work.*

The table below summarises this approach:

Grade	Description/Advice
A* ***(A2 only)***	Candidates at grade A* clearly demonstrate all of the features associated with performance at 'A' but in many areas elements of the evidence presented are exceptional, i.e. beyond that which would reasonably be expected of a candidate working at grade 'A'.
A	*See Grade A Description.*
B	Candidates at grade 'B' may demonstrate some elements of grade 'A' performance in the evidence presented but, because of limitations in other aspects of their work, not to the extent that an assessor could confidently award a grade 'A'.
C	*See Grade C Description.*
D	Candidates at grade 'D' may demonstrate some elements of grade 'C' performance in the evidence presented but, because of limitations in other aspects of their work, not to the extent that an assessor could confidently award a grade 'C'.
E	*See Grade E Description*.

6. Further Advice and Information

Summer 2021 presents us with significant challenges, particularly for teachers and students, and we hope the information set out in this document supports you through the process of awarding Centre Determined Grades this year. The information in this document will be supplemented with a webinar, which amongst other things will provide additional guidance on how to apply grade descriptions to the process of arriving at Centre Determined Grades for each of your students.

If in the interim you require further information, please contact:

CCEA Helpline	Email: helpline@ccea.org.uk Telephone: **028 9026 1220**. The helpline is operational each day from 9am to 5pm, Monday to Friday, for centres with queries in relation to Summer 2021. All other queries should be directed to centresupport@ccea.org.uk
CCEA Entries	entriesandresults@ccea.org.uk
Subject Officer	Paul Wright pwright@ccea.org.uk
Specification Support Officer	Nola Fitzsimons nfitzsimons@ccea.org.uk

Appendix 1

AS Grade Descriptions and Key Features – Life and Health Sciences

Assessment Objective	AO1		
Grade Descriptions	**A**	**C**	**E**
	Candidates characteristically: • demonstrate knowledge and understanding of most principles, concepts and facts from the AS units; • select relevant information from the AS units; and • organise and present information clearly in appropriate forms using scientific terminology.	Candidates characteristically: • demonstrate knowledge and understanding of a sound range of principles, concepts and facts from the AS units; • select mainly relevant information from the AS units; and • organise and present information in a sound manner through the satisfactory use of relevant forms and scientific terminology.	Candidates characteristically: • demonstrate knowledge and understanding of some principles, concepts and facts from the AS units; • select some relevant information from the AS units; and • present information using basic terminology from the AS units.
AO1 Evidence	**Grade A Key Features**	**Grade C Key Features**	**Grade E Key Features**
Evidence for this objective includes: Short answer recall type questions/coursework demonstrating knowledge and understanding of scientific ideas, processes, techniques and procedures: • Coursework reports • CCEA past papers • Mock Exams • CCEA Assessment Resources • Homework/online assignments • Classwork/labwork etc	• Candidates demonstrate excellent knowledge and understanding of scientific theories, concepts, laws, processes, techniques and procedures. • Candidates use scientific terminology accurately and with confidence. • Candidates' responses/diagrams/methods are very well organised and show a high degree of clarity, coherence and independence. • Spelling, punctuation and grammar are of a high standard and they use a form and style of writing that is appropriate to the complex subject matter.	• Candidates demonstrate sound knowledge and understanding of scientific theories, concepts, laws, processes, techniques and procedures. • Candidates use scientific terminology fairly accurately and with some confidence on most occasions. • Candidates' responses/diagrams/methods are generally well organised and their work is usually clear and coherent with some guidance required. • Spelling, punctuation and grammar are of a satisfactory standard and they use a form and style of writing that is often appropriate to the complex subject matter.	• Candidates demonstrate limited knowledge and understanding of scientific theories, concepts, laws, processes, techniques and procedures. • Candidates' use of scientific terminology is often basic and inaccurate. • Candidates' responses/diagrams/methods are often poorly organised and their work sometimes lacks clarity and coherence or requires significant guidance. • Spelling, punctuation and grammar are of a limited standard and they use a basic form and style of writing that is sometimes appropriate to the complex subject matter.

Assessment Objective	AO2		
	A	**C**	**E**
Grade Descriptions	Candidates characteristically: • apply biological, chemical and physical principles and concepts in familiar and new contexts; • apply skills, knowledge and understanding of processes, techniques and equipment; • demonstrate safe and skilful practical techniques; • make observations with appropriate precision and record these methodically; • describe significant trends and patterns shown by data presented in tabular or graphical form; • explain and interpret phenomena with few errors and present arguments and evaluations clearly; • comment critically on statements, conclusions or data; • carry out most structured calculations specified for AS accurately; • use a range of chemical equations; and • translate data presented as prose, diagrams, drawings, tables or graphs successfully from one form to another.	Candidates characteristically: • apply some biological, chemical and physical principles and concepts in familiar and new contexts; • apply a sound range of skills, knowledge and understanding of processes, techniques and equipment; • demonstrate safe practical techniques with satisfactory skill; • make and record observations with mainly appropriate precision; • describe a range of trends and patterns shown by data presented in tabular or graphical form; • explain and interpret phenomena with some errors and present arguments and evaluations in a mainly clear manner; • comment critically on statements, conclusions or data; • carry out calculations specified for AS in a mostly accurate manner; • use chemical equations satisfactorily; and • translate a range of data presented in different contexts mainly successfully from one form to another.	Candidates characteristically: • apply given biological, chemical and physical principles and concepts in familiar and new contexts; • apply some skills, knowledge and understanding of processes, techniques and equipment; • demonstrate safe practical techniques; • make and record observations and measurements; • describe some trends and patterns shown by data presented in tabular or graphical form; • provide basic explanations and interpretations of some phenomena, presenting very limited evaluations; • comment critically on statements, conclusions or data; • carry out some steps within calculations; • use simple chemical equations; and • translate data presented from one form to another, in some contexts.

AO2 Evidence	Grade A Key Features	Grade C Key Features	Grade E Key Features
Evidence for this objective includes: Answers, solutions, problem solving, calculations, graphs or tables requiring application of knowledge and understanding of scientific ideas, processes techniques and procedures in theoretical and practical contexts. • Coursework reports • CCEA past papers • Mock Exams • CCEA Assessment Resources • Homework/online assignments • Classwork/labwork etc	• Candidates demonstrate excellent application of their knowledge and understanding of scientific ideas, processes, techniques and procedures in both theoretical and practical contexts. • Candidates demonstrate a high level of competence when handling and recording quantitative and qualitative data. • Tabular/graphical formats used are appropriate and are accurately labelled with correct units. • Candidates can describe and explain fully trends and patterns shown by data in graphs and tables. • Calculations are almost always carried out efficiently, accurately and appropriately. • Candidates' responses are very well organised and show a high degree of clarity, coherence and independence. • Candidates can reflect critically on their own work and can see the strengths and weaknesses in the arguments put forward by others. • Spelling, punctuation and grammar are of a high standard and they use a form and style of writing that is appropriate to the complex subject matter.	• Candidates demonstrate with proficiency the application of their knowledge and understanding of scientific ideas, processes, techniques and procedures in both theoretical and practical contexts. • Candidates demonstrate competence when handling and recording quantitative and qualitative data. • Tabular/graphical formats used are mostly appropriate and accurately labelled with correct units. • Candidates can describe and explain trends and patterns shown by data in graphs and tables, although sometimes the descriptions and explanations are incomplete. • Calculations are usually carried out efficiently, accurately and appropriately. • Candidates' responses are quite well organised and show some clarity, coherence and independence. • Candidates only occasionally reflect critically on their own work and can see some of the strengths and weaknesses in the arguments put forward by others. • Spelling, punctuation and grammar are of a satisfactory standard and they use a form and style of writing that is often appropriate to the complex subject matter.	• Candidates demonstrate a limited ability to apply their knowledge and understanding of scientific ideas, processes, techniques and procedures in both theoretical and practical contexts. • Candidates demonstrate limited competence when handling and recording quantitative and qualitative data. • Tabular/graphical formats used are not always appropriate or accurate with correct labels and units often missing. • Candidates show only a limited ability to describe and explain trends and patterns provided by data in graphs and tables, and often the descriptions and explanations are incomplete. • Calculations are often carried out inaccurately. • Candidates' responses are poorly organised, with limited clarity, coherence and independence. • Candidates seldom reflect critically on their own work and usually fail to see the strengths and weaknesses in the arguments put forward by others. • Spelling, punctuation and grammar are of a satisfactory standard and they use a form and style of writing that is often appropriate to the complex subject matter.

Assessment Objective	AO3		
	A	**C**	**E**
Grade Descriptions	Candidates characteristically: • analyse and offer a valid evaluation of scientific information, issues and viewpoints; • devise and refine experimental and investigative activities, selecting appropriate techniques; • demonstrate safe and skilful practical techniques; • make observations and measurements with appropriate precision and record these methodically; • interpret, explain, evaluate and communicate the results of their own and others' experimental and investigative activities, in appropriate contexts; and • reach valid conclusions and communicate findings clearly and in a structured manner appropriate to the task.	Candidates characteristically: • analyse and offer a reasonable evaluation of scientific information, issues and viewpoints; • devise and refine some experimental and investigative activities, selecting mainly appropriate techniques; • demonstrate safe practical techniques with satisfactory skill; • make observations and measurements with mainly appropriate precision and recording; • interpret, explain, evaluate and communicate most results of their own and others' experimental and investigative activities, in mainly appropriate contexts; and • reach conclusions and communicate findings clearly and in a manner that is mainly appropriate to the task.	Candidates characteristically: • offer some limited evaluation of scientific information, issues and viewpoints; • devise and plan some aspects of experimental and investigative activities; • demonstrate safe practical techniques; • make and record observations and measurements; • interpret, explain and communicate some aspects of the results of their own and others' experimental and investigative activities, in appropriate contexts; and • draw some limited conclusions and communicate findings.

AO3 Evidence	Grade A Key Features	Grade C Key Features	Grade E Key Features
Evidence for this objective includes: Answers or outcomes requiring analysis, interpretation or evaluation of scientific information to make judgements, reach conclusions, adjust/refine plans or procedures. • Coursework reports (eg. risk assessments, conclusions and evaluations) • CCEA past papers • Mock Exams • CCEA Assessment Resources. • Homework/online assignments • Classwork/labwork etc	• Candidates' analysis, interpretation and evaluation of scientific information, ideas and evidence are excellent. • Candidates demonstrate considerable ability to make judgements and reach conclusions based upon empirical evidence. • Candidates show skill and ingenuity in refining practical design and procedures. • Candidates' responses are presented and organised with a high degree of clarity and coherence. • Spelling, punctuation and grammar are of a high standard and they use a form and style of writing that is appropriate to the complex subject matter. • Candidates are able to work with a high degree of independence. • Harvard referencing (where applicable) is mostly accurate.	• Candidates' analysis, interpretation and evaluation of scientific information, ideas and evidence are very good. • Candidates demonstrate some ability to make judgements and reach conclusions based upon empirical evidence. • Candidates show some ability to refine practical design and procedures. • Candidates' responses are presented and organised with clarity and coherence. • Spelling, punctuation and grammar are of a satisfactory standard and they use a form and style of writing that is often appropriate to the complex subject matter. • Candidates are able to work with some independence. • Harvard referencing (where applicable) has been attempted with some inaccuracy.	• Candidates' analysis, interpretation and evaluation of scientific information, ideas and evidence are usually quite weak. • Candidates demonstrate limited ability to make judgements and reach conclusions based upon empirical evidence. • Candidates show limited skill and ingenuity in refining practical design and procedures. • Candidates' responses are often poorly organised, with limited clarity and coherence. • Spelling, punctuation and grammar are of a limited standard and they use a basic form and style of writing that is sometimes appropriate to the complex subject matter. • Candidates may requires a high degree of guidance and demonstrate limited independence. • Referencing (where applicable) is missing or inaccurate.

Appendix 2

A2 Grade Descriptions and Key Features – Life and Health Sciences

Assessment Objective	AO1		
	A	**C**	**E**
Grade Descriptions	Candidates characteristically: • demonstrate detailed knowledge and understanding of most principles, concepts and facts from the specification; • select relevant information from the specification; • organise and present information clearly in appropriate forms using scientific terminology; and • write equations for chemical reactions in the specification.	Candidates characteristically: • demonstrate sound knowledge and understanding of a range of principles, concepts and facts from the specification; • select mainly relevant information from the specification; • organise and present information in a mainly clear manner through the satisfactory use of relevant forms and scientific terminology; and • write some equations for chemical reactions in the specification.	Candidates characteristically: • demonstrate knowledge and understanding of some principles, concepts and facts from the specification; • select some relevant information from the specification; and • present information using basic terminology from the specification.

AO1 Evidence	Grade A Key Features	Grade C Key Features	Grade E Key Features
Evidence for this objective includes: Short answer recall type questions/coursework demonstrating knowledge and understanding of scientific ideas, processes, techniques and procedures: • Coursework reports • CCEA past papers • Mock Exams • CCEA Assessment Resources • Homework/online assignments • Classwork/labwork etc	• Candidates demonstrate excellent knowledge and understanding of scientific theories, concepts, laws, processes, techniques and procedures. • Candidates use scientific terminology accurately and with confidence. • Candidates' responses are very well organised and show a high degree of clarity and coherence. • Candidates' spelling, punctuation and grammar are of a very high standard and they use a form and style of writing that is appropriate to the complex subject matter.	• Candidates demonstrate sound knowledge and understanding of scientific theories, concepts, laws, processes, techniques and procedures. • Candidates use scientific terminology fairly accurately and with some confidence on most occasions. • Candidates' responses are generally well organised and their work is usually clear and coherent. • Candidates' spelling, punctuation and grammar are of a satisfactory standard and they use a form and style of writing that is often appropriate to the complex subject matter.	• Candidates demonstrate limited knowledge and understanding of scientific theories, concepts, laws, processes, techniques and procedures. • Candidates' use of scientific terminology is often basic and inaccurate. • Candidates' responses are poorly organised and their work sometimes lacks clarity and coherence. • Candidates' spelling, punctuation and grammar are of a limited standard and they use a basic form and style of writing that is sometimes appropriate to the complex subject matter.

Assessment Objective	AO2		
	A	**C**	**E**
Grade Descriptions	Candidates characteristically: • apply biological, chemical and physical principles and concepts in familiar and new contexts; • apply skills, knowledge and understanding of processes, techniques and equipment; • demonstrate safe and skilful practical techniques; • make observations with appropriate precision and record these methodically; • describe significant trends and patterns shown by data presented in tabular or graphical form; • explain and interpret phenomena with few errors and present arguments and evaluations clearly; • critically evaluate statements, conclusions or data; • carry out complex calculations specified for A level accurately; • use chemical equations in a range of contexts; • translate data presented as prose, diagrams, drawings, tables or graphs from one form to another successfully; • select a wide range of facts, principles and concepts; and • link together appropriate facts, principles and concepts from different areas of the specification.	Candidates characteristically: • apply some biological, chemical and physical principles and concepts in familiar and new contexts; • apply a sound range of skills, knowledge and understanding of processes, techniques and equipment; • demonstrate safe practical techniques with satisfactory skill; • make and record observations with mainly appropriate precision; • describe a range of trends and patterns shown by data presented in tabular or graphical form; • explain and interpret phenomena with some errors and present arguments and evaluations in a mainly clear manner; • critically evaluate statements, conclusions or data; • carry out complex calculations specified for A level in a mostly accurate manner; • use chemical equations in certain contexts; • translate a range of data presented in different contexts mainly successfully from one form to another; • select a range of facts, principles and concepts; and • mostly link together appropriate facts, principles and concepts from different areas of the specification.	Candidates characteristically: • apply given biological, chemical and physical principles and concepts in familiar and new contexts; • apply some skills, knowledge and understanding of processes, techniques and equipment; • demonstrate safe practical techniques; • make and record observations and measurements; • describe and provide a limited explanation of trends and patterns shown by complex data presented in tabular or graphical form; • identify, when directed, inconsistencies in conclusions or data; • critically evaluate statements, conclusions or data; • carry out some steps within calculations; • use some chemical equations; • successfully translate data from one form to another in some contexts; • select some facts, principles and concepts; and • put together some facts, principles and concepts from different areas of the specification.

AO2 Evidence	Grade A Key Features	Grade C Key Features	Grade E Key Features
Evidence for this objective includes: Answers, solutions, problem solving, calculations, graphs or tables requiring application of knowledge and understanding of scientific ideas, processes techniques and procedures in theoretical and practical contexts. • Coursework reports • CCEA past papers • Mock Exams • CCEA Assessment Resources • Homework/online assignments • Classwork/labwork etc	• Candidates demonstrate excellent application of their knowledge and understanding of scientific ideas, processes, techniques and procedures in both theoretical and practical contexts. • Candidates demonstrate a very high level of competence when handling and recording quantitative and qualitative data. • Candidates can describe and explain fully trends and patterns shown by data in graphs and tables. • Complex calculations are almost always carried out efficiently and accurately. • Candidates' responses are very well organised and show a high degree of clarity, coherence and independence. • Candidates can reflect critically on their own work and can see the strengths and weaknesses in the arguments put forward by others. • Candidates' spelling, punctuation and grammar are of a very high standard and they use a form and style of writing that is appropriate to the complex subject matter.	• Candidates demonstrate with proficiency the application of their knowledge and understanding of scientific ideas, processes, techniques and procedures in both theoretical and practical contexts. • Candidates demonstrate competence when handling and recording quantitative and qualitative data. • Candidates can describe and explain trends and patterns shown by data in graphs and tables, although sometimes the descriptions and explanations are incomplete. • Calculations are usually carried out efficiently and accurately. • Candidates' responses are quite well organised and show some clarity, coherence and independence. • Candidates occasionally reflect critically on their own work and can see some of the strengths and weaknesses in the arguments put forward by others. • Candidates' spelling, punctuation and grammar are of a satisfactory standard and they use a form and style of writing that is often appropriate to the complex subject matter.	• Candidates demonstrate a limited ability to apply their knowledge and understanding of scientific ideas, processes, techniques and procedures in both theoretical and practical contexts. • Candidates demonstrate limited competence when handling and recording quantitative and qualitative data. • Candidates show only a limited ability to describe and explain trends and patterns provided by data in graphs and tables, and often the descriptions and explanations are incomplete. • Calculations are often carried out inaccurately. • Candidates' responses are poorly organised, with limited clarity, coherence and independence. • Candidates don't reflect critically on their own work and usually fail to see the strengths and weaknesses in the arguments put forward by others. • Candidates' spelling, punctuation and grammar are of a satisfactory standard and they use a form and style of writing that is often appropriate to the complex subject matter.

Assessment Objective	AO3		
	A	**C**	**E**
Grade Descriptions	Candidates characteristically: • devise and plan experimental and investigative activities, selecting appropriate techniques; • demonstrate safe and skilful practical techniques; • make observations and measurements with appropriate precision and record these methodically; and • interpret, explain, evaluate and communicate the results of their own and others' experimental and investigative activities, in appropriate contexts.	Candidates characteristically: • devise and plan some experimental and investigative activities, selecting mainly appropriate techniques; • demonstrate safe practical techniques with satisfactory skill; • make observations and measurements with mainly appropriate Precision and recording; • interpret, explain, evaluate and communicate most results of their own and others' experimental and investigative activities, in mainly appropriate contexts.	Candidates characteristically: • devise and plan some experimental and investigative activities; • demonstrate safe practical techniques; • make and record observations and measurements; and • interpret, explain and communicate some aspects of the results of their own and others' experimental and investigative activities, in appropriate contexts.

AO3 Evidence	Grade A Key Features	Grade C Key Features	Grade E Key Features
Evidence for this objective includes: Answers or outcomes requiring analysis, interpretation or evaluation of scientific information to make judgements, reach conclusions, adjust/refine plans or procedures. • Coursework reports (eg. risk assessments, conclusions and evaluations) • CCEA past papers • Mock Exams • CCEA Assessment Resources • Homework/online assignments • Classwork/labwork etc	• Candidates' analysis, interpretation and evaluation of scientific information, ideas and evidence are excellent. • Candidates demonstrate considerable ability to make judgements and reach conclusions based upon empirical evidence. • Candidates show skill and ingenuity in refining practical design and procedures. • Candidates' responses are presented and organised with a high degree of clarity and coherence. • Candidates' spelling, punctuation and grammar are of a very high standard and they use a form and style of writing that is appropriate to the complex subject matter. • Candidates are able to work with a high degree of independence. • Harvard referencing is to a high standard and mostly accurate.	• Candidates' analysis, interpretation and evaluation of scientific information, ideas and evidence are very good. • Candidates demonstrate some ability to make judgements and reach conclusions based upon empirical evidence. • Candidates show some ability to refine practical design and procedures. • Candidates' responses are presented and organised with clarity and coherence. • Candidates' spelling, punctuation and grammar are of a satisfactory standard and they use a form and style of writing that is often appropriate to the complex subject matter. • Candidates are able to work with some independence. • Harvard referencing has been attempted with some inaccuracy.	• Candidates' analysis, interpretation and evaluation of scientific information, ideas and evidence are usually quite weak. • Candidates demonstrate limited ability to make judgements and reach conclusions based upon empirical evidence. • Candidates show limited skill and ingenuity in refining practical design and procedures. • Candidates' responses are often poorly organised, with limited clarity and coherence. • Candidates' spelling, punctuation and grammar are of a limited standard and they use a basic form and style of writing that is sometimes appropriate to the complex subject matter. • Candidates may requires a high degree of guidance and demonstrate limited independence. • Referencing is missing or inaccurate.

Appendix 3

Definitions of Levels of Control

Levels of control for the conditions under which students have completed assessments that are internally marked in school are defined as High, Medium and Limited at GCSE. These definitions also align with the conditions of control for GCE and other CCEA qualifications. In recording the levels of control for evidence to be used in Centre Determined Grades for Summer 2021, the following should be used.

High	The use of resources is tightly prescribed. The centre must ensure that: • all students are within direct sight of the teacher/supervisor throughout the session(s); • display materials which might provide assistance are removed or covered; • there is no access to email, the internet or mobile phones; • students complete their work independently; • interaction with other students does not occur; and • no assistance of any description is provided.
Medium	Students do not need to be directly supervised at all times. The use of resources, including the internet, is not tightly prescribed. Centres should ensure that: • there is sufficient evidence to ensure that the individual work can be authenticated; and • the work an individual student submits for assessment is their own. If work has been completed in groups, teachers must ensure that they can determine and assess the individual student's contribution to the work. If work has been completed remotely, it may be useful to ask questions about what they did and how/why they did it, to help authenticate the work.
Limited	Work is completed without any direct supervision and would not normally contribute to assessable outcomes.

COUNCIL FOR THE **CURRICULUM, EXAMINATIONS** AND **ASSESSMENT**
29 Clarendon Road, Clarendon Dock, Belfast BT1 3BG
Tel: +44(0)28 9026 1200 Email: info@ccea.org.uk
Web: www.ccea.org.uk

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