

## Autumn 2017 Hub meeting



# Agenda

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- Entry decisions
- Discussion workshops
  - Practical questions
  - AO2 – balancing teaching and learning of AOs
- Outline of how awarding works
- GCSE and A-level updates
- Focus for Spring Hub

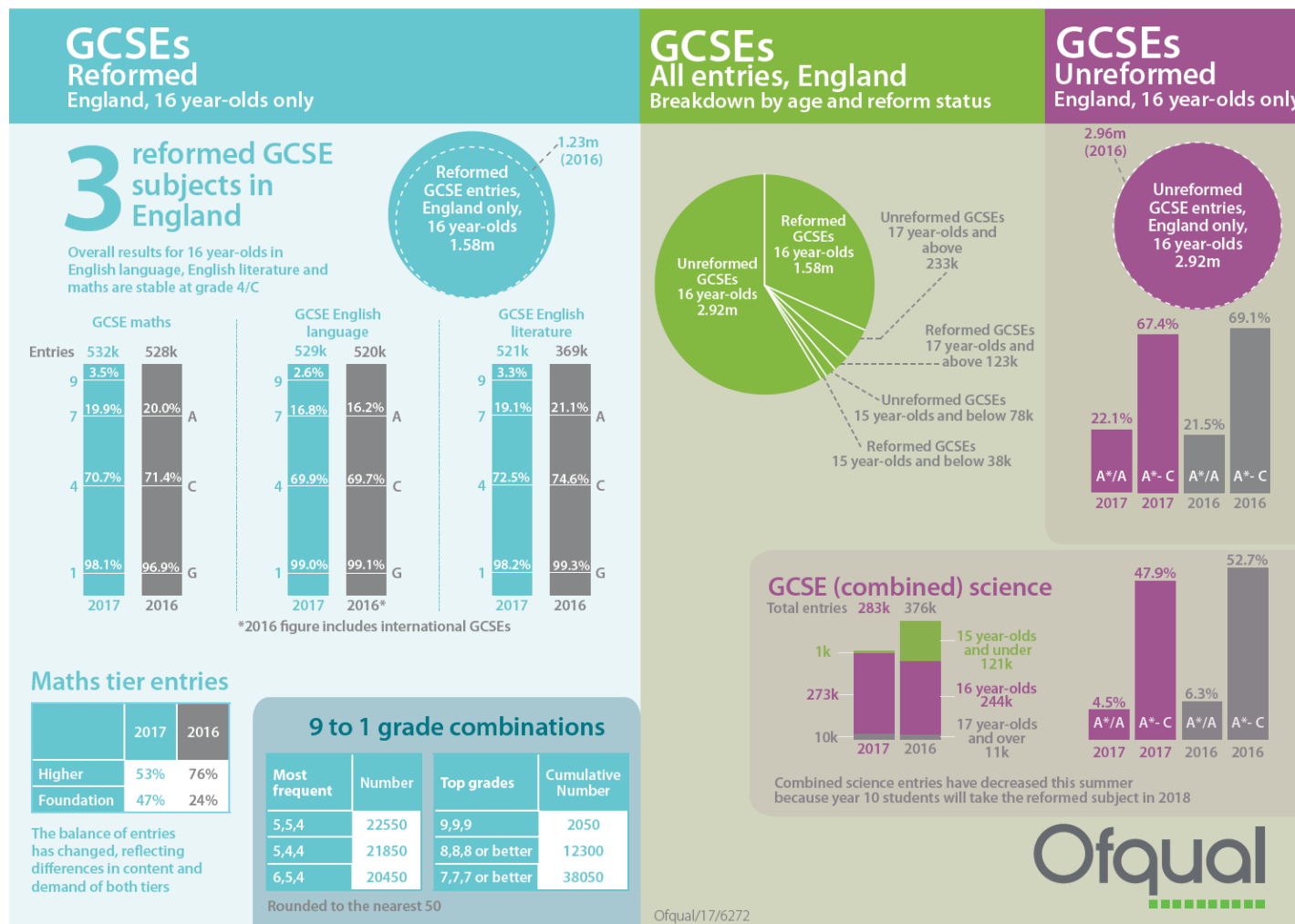
# GCSE tier of entry

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Some points to consider:

- Shift from 'C/D border line' to 'C/B border line' as grade 5 is awarded on Foundation Tier paper
- Resilience – longer papers and 40:60 split standard to high demand
- No mixed tiers for Combined Science – need to perform in all sciences
- Performance on
  - standard demand SAMs
  - extended answer questions
- Maths GCSE performance
- Historic contribution of ISA marks
- We have seen a change in tier of entry in Maths GCSE

# GCSE results 2017



[gov.uk/government/publications/infographic-gcse-results-2017](http://gov.uk/government/publications/infographic-gcse-results-2017)

# Entry fees

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- Entries deadline **21 February**.
- It is free to change the tier of entry up to **21 April**. After 21 April an amendment fee will be charged.
- Change of entry from Separates to Combined up to **21 April**  
– a centre will be charged a new entry fee which is double the original one, but would receive the original fee back for the withdrawn subject.

# Discussion workshops

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- Practical questions
- How to balance AO1 and AO2 teaching and learning

# Practical questions

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- Look at the examples of the updated student sheets from the practical handbooks. We have added a few questions to help tie in the practical activity to the specification content, the ATs or some aspect of working scientifically.
- How would you improve or add to these questions?
- If you were teaching this RP what would be the context you could set it in?
- What working scientifically focus could you have for this lesson?
- Can you think of some generic questions you could use to address some of the subject specific vocabulary

accuracy

precision

uncertainty

types of error

reproducible

resolution

control

# Student exemplars summer 2017

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- Look at the student exemplars. How could you use these to reinforce good exam techniques?
- How could the executive summaries be used with your teachers to highlight areas of improvement needed in their practical teaching?



# Required practical handbook statement:

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The required practical activities listed in the GCSE Combined Science specifications (8464 and 8465) have been written to ensure that students have the opportunity to experience all of the apparatus and techniques (AT) criteria required by Ofqual.

In this guide we suggest methods for carrying out the required practical activities to give ideas and guidance to help you plan the best experience for your students. None of these methods are compulsory. What you do have to do is make sure that you do a sufficient variety of practical work to give your students the opportunity to experience all aspects of the AT criteria required by Ofqual. The methods we have suggested will enable you to do this, but we strongly encourage you to adapt them to fit the needs of your students and the resources you have available.

# Teaching and learning: balance of AOs

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- What does AO2 really mean ?

It is a fundamental part of science. It is how scientists use knowledge to explain phenomena. It is not an 'add on' but something scientists do all the time.

- Look at some examples of questions that are assessing AO2
  - what aspect of AO2 is it assessing?
  - what would you have needed to have taught to enable your students to tackle the question with confidence?
  - how would you approach teaching this so students could confidently access this type of question?

# Some examples of types of A02 questions

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- applying knowledge and understanding to an unfamiliar context or an aspect of a required practical to explain phenomena or behaviour
  - command words – explain, suggest, give a reason
- calculations/equations/formula
- graph work
  - explaining why you have chosen a specific type of graph
  - drawing graphs and drawing lines of best fit
  - reading points off a graph
  - drawing tangents to the curve
  - analysing the pattern
- identifying variables
- using specialist diagrams

# Teaching strategies

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- Think about the topic you are teaching at the moment.
- What different teaching strategies could teachers adopt to provide opportunities to support students with AO2?

# GCSE subject level guidance for Combined Science

AO2: Apply knowledge and understanding of:			40%
<ul style="list-style-type: none"> <li>scientific ideas</li> <li>scientific enquiry, techniques and procedures.</li> </ul>			
Strands	Elements	Coverage	Interpretations and definitions
1 – Apply knowledge and understanding of scientific ideas.	This strand is a single element.	<ul style="list-style-type: none"> <li>Full coverage in each set of assessments (but not in every assessment).</li> </ul>	<ul style="list-style-type: none"> <li><b>Scientific ideas</b> are aspects of the subject content. They include the subject-specific requirements and the requirements for Working Scientifically as set out in the Content Document – for example, theories, models and the use of relevant mathematics.</li> <li><b>Scientific enquiry, techniques and procedures</b> encompasses, but is broader than, knowledge and understanding of the core practical activities. In the context of this assessment objective, it involves applying such knowledge and understanding to a given context.</li> <li>The emphasis in this assessment objective is on Learners applying their knowledge and understanding to provide meaning or explanation – for instance, to connect theory with particular contexts, stimuli or materials. This application should relate principally to:               <ul style="list-style-type: none"> <li>novel situations that are not clearly indicated in the specification;</li> <li>developing further material that is covered in the specification;</li> <li>making links between such types of material, which are not signalled in the specification.</li> </ul> </li> <li>Application of knowledge should also involve determining how to make sense of connections and linkages within data, information and detail – although not to the extent of drawing conclusions or making judgements.</li> </ul>
2 – Apply knowledge and understanding of scientific enquiry, techniques and procedures.	This strand is a single element.		

This information is lifted directly from Ofqual's GCSE Subject Level Guidance for Combined Science (July 2015) available in full here: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/443984/gcse-9-to-1-subject-level-guidance-for-combined-science.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/443984/gcse-9-to-1-subject-level-guidance-for-combined-science.pdf)

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# How is a grade boundary decided?

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## **The ‘statistical’ element**

Our Centre for Education Research and Compliance (CERP) use a range of statistics to make predictions which suggest the most appropriate statistically recommended grade boundaries. These are based on how comparable students have performed in previous series, KS2 data and matched data.

## **The ‘judgemental’ element**

The awarding meeting use a balance of judgemental and statistical evidence to make recommendations. The committee will look at a range of scripts for each ‘judgemental grade boundary’ (7, 4 and 1 for GCSE).

## **Making the grades - a guide to awarding**

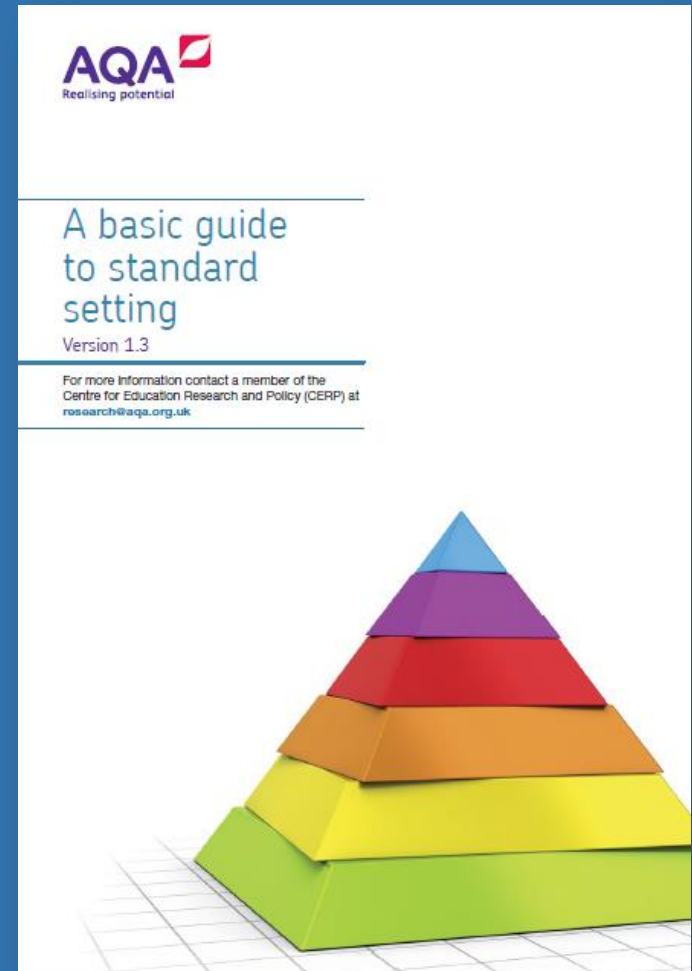
[aqa.org.uk/about-us/what-we-do/getting-the-right-result/how-exams-work/making-the-grades-a-guide-to-awarding](https://www.aqa.org.uk/about-us/what-we-do/getting-the-right-result/how-exams-work/making-the-grades-a-guide-to-awarding)

# What exactly is awarding?

Awarding is the process by which the grade boundary marks are determined at subject level.

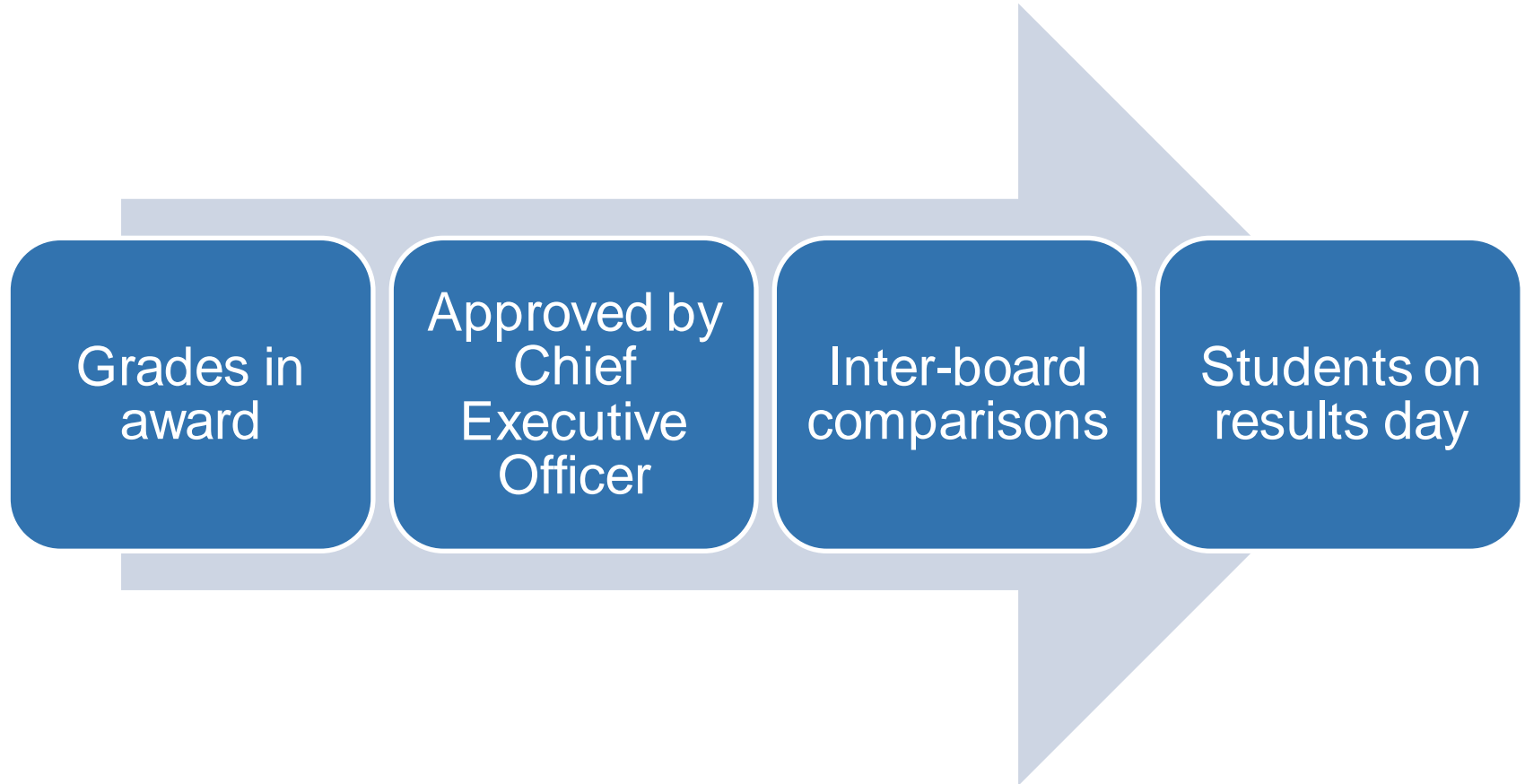
We do this in a way that ensures the standard will be comparable with previous series and with that of other awarding organisations.

[aqa.org.uk/about-us/what-we-do/getting-the-right-result/how-exams-work/making-the-grades-a-guide-to-awarding](http://aqa.org.uk/about-us/what-we-do/getting-the-right-result/how-exams-work/making-the-grades-a-guide-to-awarding)



# The bigger process

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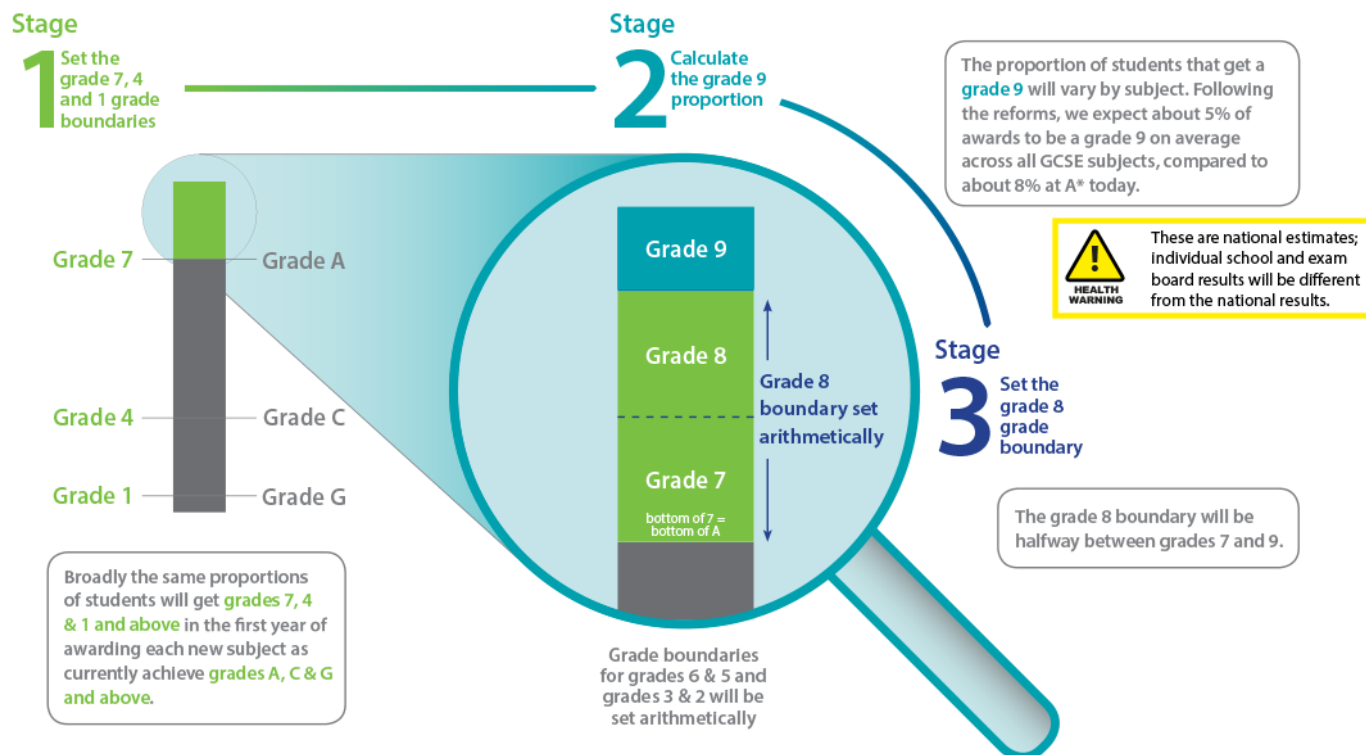




# Setting grades 8 and 9 in the first year of new GCSEs

## How grades 9 and 8 will be set in the first year of awarding new GCSEs

Ofqual



[ofqual.blog.gov.uk/2017/04/05/setting-grade-9-in-new-gcse/](https://ofqual.blog.gov.uk/2017/04/05/setting-grade-9-in-new-gcse/)

# GCSE and A-level updates

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- Arrangements for monitoring visits – timeline for practical work.
- Contact our technician advisers for any support with GCSE or A-level practical work delivery in the classroom.
- Second set of specimen assessment materials
  - Uploaded on to SKM on 30 November
  - Model live papers of summer 2018 - can cover any aspect of the spec
  - Use as staggered mock
    - Dec/Jan Paper 1
    - Spring term Paper 2
    - April final push using papers not previously used

# Updates: GCSE

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Exam timetable now on the website (separates and Trilogy same sessions)

Paper	Date	Session
Biology P1 Synergy P1	15 May	pm
Chemistry P1	17 May	am
Physics P1 Synergy P2	23 May	pm
Biology P2 Synergy P3	11 June	am
Chemistry P2 Synergy P4	13 June	am
Physics P2	15 June	am

**Entries deadline: 21 February.**

# Provisional GCSE results summer 2017

## Provisional GCSE results (All UK Candidates)

The figures in brackets are the final national figures for 2016 Ref: Ofqual/16/6094

	Number sat	C and above	A and above
Core Science	283390 (375654)	47.9 (52.7)	4.5 (6.3)
Additional	376347 (368033)	58.2 (59.7)	9.1 (9.4)
Biology	143340 (144148)	90.4 (90.5)	42.2 (41.4)
Chemistry	141867 (141245)	89.9 (90.3)	42.4 (42.3)
Physics	141977 (139805)	90.8 (90.9)	41.9 (42.8)

# Provisional outcomes summer 2017

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A comparison of provisional 2017 GCE AS with 2016 AS results in the same subjects for 17 year olds.

The figures in brackets are the equivalent provisional figures for 2016.

	A	C	E
Biology	18 (18.9)	52.1 (57.8)	84.4 87
Chemistry	20.7 (22.4)	53.7 (61.5)	84.2 (87.5)
Physics	22.6 (22.9)	55 (59.5)	83.8 (86.4)

# Provisional outcomes summer 2017

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A comparison of provisional 2017 GCE A-level results with 2016 GCE results (all UK Candidates).

The figures in brackets are the equivalent provisional figures for 2016.

	A	C	E
Biology	26.2 (27.1)	70.8 (72.6)	96.8 (97.2)
Chemistry	31.7 (31.9)	75.6 (77)	97.0 (97.3)
Physics	29.2 (29.6)	69.7 (71.4)	95.8 (96.4)

# Feedback from the summer 2017 end of Year 10 test

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# Areas of challenge for students:

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- revision of material
- basic exam techniques: repeating the information in the question not adding to it
- conversion of units
- not using equations given
- quality of written answers and precise use of language
- application of knowledge to unfamiliar context
- linking information given in a question to what they know and then constructing an answer



# Areas of challenge for students:

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- may have carried out the practical work but learning is not embedded
- importance of the apparatus and techniques is being missed
- describing patterns
- lines of best fit can be a curve
- maths skills
  - not familiar with some of new applications of maths
  - not showing working out clearly

# Model of distribution for all papers

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Trilogy Foundation mark (max 90)	Trilogy Higher mark (max 90)	Percentage of cohort
16	15	Top 80%
25	26	Top 50%
35	39	Top 20%
41	46	Top 10%

# Skills area

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Marks can be assigned to more than one skill area and some marks don't cover one of the skills we have identified. Average marks have been rounded to a full mark.

	Foundation		Higher	
	Av mark	Total mark	Av mark	Total mark
AO1	12	39	8	28
AO2	10	38	13	38
AO3	4	13	6	24
Maths	5	18	6	18
WS	13	41	15	50
Practical	3	16	4	15
Extended response	1	10	5	18

# Useful Ofqual links

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- Ofqual analytics – Variability in GCSE and A-level results, distribution of GCSE 9-1 grades:  
[analytics.ofqual.gov.uk/](https://analytics.ofqual.gov.uk/)
- Factsheet – new 9-1 grading scale: [gov.uk/government/publications/gcse-new-grading-scale-factsheets](https://gov.uk/government/publications/gcse-new-grading-scale-factsheets)
- Blog – Setting 9 for the new linear GCSEs:  
[ofqual.blog.gov.uk/2017/04/05/setting-grade-9-in-new-gcses/](https://ofqual.blog.gov.uk/2017/04/05/setting-grade-9-in-new-gcses/)
- Blog – Levelling the playing field, ensuring exam board outcomes are comparable: [ofqual.blog.gov.uk/2017/03/24/levelling-the-playing-field/](https://ofqual.blog.gov.uk/2017/03/24/levelling-the-playing-field/)
- Downloadable graphics about reforms:  
[gov.uk/government/publications/your-qualification-our-regulation-gcse-as-and-a-level-reforms](https://gov.uk/government/publications/your-qualification-our-regulation-gcse-as-and-a-level-reforms)

Thank you

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