

Rationale document

Centre number	XX789
Centre name	ZZZ School
Level and title of syllabus	Cambridge International AS / A Level Mathematics
Syllabus code	9709

Why you must complete the Rationale Document for each syllabus

The Rationale Document explains how you have determined school-assessed grades for your candidates in the June 2021 series, by showing what evidence was chosen and how marks were awarded. The Rationale Document outlines the steps in considering candidate evidence and determining school-assessed grades for your candidates.

You must complete a Rationale Document for each syllabus. We will need to see the Rationale Document when we select your centre for quality assurance checks of the school-assessed grades that you send to us. Failure to complete and submit the Rationale Document correctly may result in delays to your candidates receiving grades.

Who completes the Rationale Document for each syllabus

The Rationale Document should be completed by the Head of Department for each syllabus (or by the teacher if there is no Head of Department), to explain to us how you have arrived at the school-assessed grades for your candidates for the June 2021 exam series.

When you must submit the Rationale Document for each syllabus

We will email you, explaining which syllabuses from your centre have been chosen for quality assurance checks. The email will explain how to upload the Rationale Document for these syllabuses and how to upload the relevant candidate work.

You must complete a Rationale Document for each syllabus for which you are submitting entries and keep them for your records. You only need to send us the Rationale Document for the syllabuses that we request. Do **not** send the Rationale Document or candidate work to us if you have not been asked to do so.

What your completed Rationale Document must include

The Rationale Document must provide information about the areas below as relevant to the syllabus and your centre.

- A Selection of work**
- B Coverage of syllabus content and assessment objectives**
- C Security and authenticity of work**
- D Managing your marking (standardisation)**
- E Awarding grades to your students**
- F Access arrangements and special consideration**

What happens after submitting the Rationale Document

We will use the Rationale Document and candidate evidence that you submit to check the school-assessed grades that you have submitted. Once we have reviewed the evidence that you have submitted, we will contact you by email if we require further information.

Private candidates

If you have accepted entries for private candidates, please explain how their work has been obtained, selected and authenticated, then go on to answer the rest of the questions in this Rationale Document.

We did not accept entries from private candidates.

The following questions apply to all candidates, including private candidates.

A Selection of work

You must make sure that each candidate is aware of the evidence used to determine their grade in advance of that grade being submitted to Cambridge. This transparency should enable candidates to raise any errors or circumstances relating to particular pieces of evidence to be taken into account in advance of submitting grades to us. You should take into account any statements they make in relation to the evidence. Although you may share marks associated with individual pieces of evidence, you must not share with students the grades submitted to us before results are released.

1. Please explain what pieces of work you have used for this syllabus and why you decided to include these in the evidence.

If you have used different pieces of evidence for different candidates, explain how and why this has been done.

We used Cambridge past papers for all the pieces of evidence for all our students. We were able to use these because we had finished covering the course content with all our students. We could be sure that the past papers related directly to the syllabus and we knew that we would be able to mark and grade the work accurately. We were confident that we could follow the mark schemes provided by Cambridge objectively and so get an accurate mark for each student.

We have a lot of students enter for Maths from our centre and they enter across different entry routes. The sample requested by Cambridge includes students who have been entered in different options. We have summarised below which past papers we used for each candidate in the sample.

Candidate number	Candidate name	Entry option	Entry type	Past papers used
0031	Hugo Lopez	DY	A Level staged (June AS carry-forward)	9709/32 (Jun 19); 9709/62 (Mar 19); 9709/62 (Jun 19)
0056	Lucas Torres	DY	A Level staged (June AS carry-forward)	9709/32 (Jun 19); 9709/62 (Mar 19); 9709/62 (Jun 19)
0001	Mateo Alonso	DY	A Level staged (June AS carry-forward)	9709/32 (Jun 19); 9709/62 (Mar 19); 9709/62 (Jun 19)
0098	Lucia Díaz	DY	A Level staged (June AS carry-forward)	9709/32 (Jun 19); 9709/62 (Mar 19); 9709/62 (Jun 19)
0075	Maria Rodríguez	HY	A Level staged (November AS carry-forward)	9709/32 (Jun 19); 9709/62 (Mar 19); 9709/62 (Jun 19)
0046	Julia Lopez	HY	A Level staged (November AS carry-forward)	9709/32 (Mar 19); 9709/62 (Nov19); 9709/52 (Nov 20)
0015	Leo Morales	HY	A Level staged (November AS carry-forward)	9709/32 (Jun 19); 9709/62 (Mar 19); 9709/62 (Jun 19)
0064	Sofia Pérez	HY	A Level staged (November AS carry-forward)	9709/32 (Jun 19); 9709/62 (Mar 19); 9709/62 (Jun 19)
0020	Mateo Hernández	LY	A Level All routes	9709/32 (Jun 19); 9709/62 (Mar 19); 9709/62 (Jun 19)

If our candidates had sat the exam, they would have sat papers 32 (Pure 3) and 52 (Statistics 1). The papers we used were from the 2019 series, when Statistics 1 was paper 62. Therefore, we used papers 32 and 62. We had also already used some of the other papers (e.g. 9709/31) as homework tasks for the students.

The requirement from Cambridge for the staged-route A Level is that the third piece of evidence also be at 'A2' standard. Therefore, we used a second past paper 62 for each student, rather than paper 12 or paper 42. Evidence for paper 12 and paper 42 comes from the students' AS grades (also shown). We took the same approach for Mateo Hernández (candidate 20) because this met the Cambridge evidence requirements for him and did not increase the number of different exams which we as a centre needed to set, mark and grade further.

We have included the AS grades of the students in the table because we used these to validate our final decisions for the school-assessed grades for the students. For the students in entry option DY, this was the grade we submitted to Cambridge in June 2020; for the students in HY this was their

exam grade from November 2020; and the student in LY had AS grades from both June 2020 (d) and November 2020 (e).

Julia Lopez (candidate 46) has her evidence shown in blue because she took different papers from the other students because she was in the North stream of students in the school. All the other students were in the South stream and they took the other combination of past papers. We have so many students for Maths that we need to split them into two separate streams with different teachers.

We saw Cambridge's advice about not using the grade thresholds for past papers from the November 2020 series. We thought about using a paper from 2018 for the North stream students but this seemed too long ago and we preferred to use the November 2020 question paper 52 and determine the grade thresholds ourselves. We have explained more about this in (12).

B Coverage of syllabus content and assessment objectives

We have said that evidence should cover as broad a range as possible of the assessment objectives and syllabus content.

2. For each candidate's portfolio for this syllabus, are all the major areas of syllabus content included?

Yes - but see comment below in (3)

3. If you have answered No, please explain why the major area of syllabus content is not included.

We have covered all the major syllabus areas. We did not include paper 12 or paper 42 in the evidence because these are AS papers. We also know that knowledge of paper 12 is required for students to progress to paper 32. The AS level results for these students indicate that they have previously covered the content of papers 12 and 42.

4. For each candidate's portfolio for this syllabus, are all the assessment objectives included?

Yes

5. If you have answered No, please explain why the assessment objectives were not included.

6. Have you informed each candidate about the choice of evidence and considered their responses?

Yes

C Security and authenticity of work

You must be able to confirm, with a reasonable degree of confidence, that the work included in every portfolio is authentic, which means that it is the candidate's own unaided work. A 'reasonable degree of confidence' does not mean absolute certainty. However, it does mean that you have taken reasonable steps to ensure that the work is authentic.

7. Please describe the conditions in which each type of piece of work was completed.

Fortunately, our school was open before the Easter break. In this period, we were able to run the three exams for each student in the classrooms with the students socially distanced from each other. We were not able to have all the students sit the exams at the same time because they took them in their Maths lessons and not all students have Maths at the same time on the timetable. The students in the North and South streams both took the exams in their lessons, although the timetable was different for the two streams.

In the classrooms, the class teachers invigilated the exams and made sure that the students worked in silence and that there was no cheating.

8. How have you authenticated each type of piece of work?

Refer to guidance on authenticity in the [Cambridge Handbook](#) and on our website.

For example, have you conducted interviews with candidates, was the work done in a supervised way in school? If the work was supervised, please give details.

As described in (7), the work was done under supervised conditions in school with the class teachers invigilating.

D Managing your marking (standardisation)

In cases where more than one teacher has used the same mark scheme, you are required to standardise your marking.

9. Was more than one teacher involved in awarding marks to the candidates for this syllabus?

Yes

10. If you have answered Yes, please describe the standardisation process that you used.

Include details of how you agreed the marks awarded, how you checked that you were all marking to the same standard, how you ensured that all the subject teachers involved applied assessment criteria and standards across the syllabus consistently.

We have 12 Maths teachers in our centre, all of whom teach more than one A Level class. Once each class in each stream had completed the exam paper, we collected all the papers together for the whole stream and divided them randomly and equally between the teachers for that stream. That meant that a teacher was not just marking the work of their own class. Then we used the published Cambridge mark schemes to mark each paper.

Once marking for a paper was complete, we asked the teachers to pair up and swap the exam papers from 10 students and re-mark them. The two teachers in the pair then discussed any differences in their marking and corrected the rest of their marking, if needed. If there was disagreement in the pairs, then the Head of Department made the final decision. The Head of Department also sampled the marking of 5 exam papers from each teacher to check on their accuracy of marking.

One of our teachers is very new and has not marked Cambridge exams before. We made sure that she paired with a more experienced teacher and that the Head of Department sampled more of her marking (10 of each of the different papers that she marked).

11. How did you ensure that your judgements about each candidate's level of performance were free from bias?

It is important that the marking of work is objective; when marking, teachers should only take account of the student's knowledge, skills and abilities which are evident in the piece of work. Refer to our guidance on avoiding bias.

We allocated the exam papers for each paper randomly across the teachers in our department. This helped prevent bias because a teacher was not just marking work from the students they had taught. Maths is a very objective subject and we were very careful to follow the Cambridge mark scheme exactly. We also instructed our teachers to pair up and compare marking (described in (10)). This allowed a teacher to identify if there seemed to be any bias in a colleague's judgement. We did not detect any bias during this process.

E Awarding grades to your students

Questions 12 and 13 are about how you awarded grades to your students. You don't need to give details

of your workings for each candidate, but you do need to explain your approach.

12. Please explain how you determined the grades for each type of piece of work.

For example, you may have referred to published grade thresholds for a particular examination paper, you may have used a percentage score, you may have used the published coursework thresholds for an adapted piece of extended work, you may have considered the grades awarded to your students in previous exam series.

We used the published grade boundaries on the Cambridge website to determine the grades for each paper for each student. This was possible because all the students had completed full question papers for Cambridge. Where there was not a grade A* shown on the Cambridge grade boundaries, then we worked one out as half-way between the grade A threshold and the maximum mark.

For the November 2020 paper we did not use the published grade thresholds (as per Cambridge's guidance). We looked at what the thresholds had been for paper 6 in November 2019 and June 2019 and we discussed how we thought the difficulty of the November 2020 question paper compared with these November 2019 and June 2019 papers. This helped us decide on the grades to award to our students in the North stream.

13. Please explain how you determined the overall grades for your candidates.

The table below shows the decisions we made to determine each student's overall grade. We referred to the guidance on the Cambridge website and did not award an overall grade outside the range suggested by the individual papers. We looked first at their results from the A2 past papers and then used the AS grade to validate our final decisions.

This was most useful for students who had a consistent grade profile on their A2 components. If it was hard to decide on the final grade, given the profile across the three A2 papers, then we generally gave more weight to paper 32 because it was out of 75 marks whereas papers 42, 52 and 62 are only out of 50 marks.

Candidate number	Candidate name	9709/32 (Jun 19)	9709/62 (Mar 19)	9709/62 (Jun 19)	AS grade	Final grade
0031	Hugo Lopez	b	a	b	b	B
0056	Lucas Torres	a	b	a	a	A
0001	Mateo Alonso	a*	a*	a	a	A*
0098	Lucia Díaz	b	c	c	c	C
0075	Maria Rodríguez	c	c	d	d	C
0046	Julia Lopez	b*	b*	b*	a	B
0015	Leo Morales	e	u	u	e	E
0064	Sofia Pérez	b	d	c	b	B
0020	Mateo Hernández	d	d	d	(d, e)	D

*Candidate 0046 was in the North stream and so these are her grades from 9709/32 (Mar 19); 9709/62 (Nov 19); and 9709/52 (Nov 20) respectively.

Some explanations for individual candidates

- Leo Morales (candidate 0015), has a profile of e/u/u. We gave him an E grade overall because he was very close to achieving an 'e' grade in both paper 6s (missed by 1 and 2 marks respectively). He also got an 'e' at AS Level. This candidate is entitled extra time (see (15)) but could not use it for 9709/62 (Mar 19). Since he only missed an 'e' grade by 1 mark, we think that his true ability is closer to 'e' for this paper.

Sofia Pérez (candidate 0064), has a profile of b/d/c. We gave her a B grade overall because she got 'b' in paper 32 (out of 75 marks), a 'b' at AS Level and her 'd' was very close to the grade threshold for a 'c'.

F Access arrangements and special consideration

Questions 14 and 15 are about access arrangements. Refer to the [Cambridge Handbook](#) section 1.3 for guidance about access arrangements.

14. Did any of your candidates require an access arrangement?

Yes

15. If you answered Yes, please give details of the access arrangements that were required, and how these were delivered.

Leo Morales (candidate 0015) is allowed extra time and rest breaks. Where possible, we made sure that he was able to take these during the exams when we held them in class time. His teacher has written on the top of his papers (submitted into his Evidence folders) how much extra time he took for each of the papers. The exception was the 9709/62 paper from Mar 19. He couldn't take the extra time because the lesson was at the end of the day and he needed to catch the school bus home

Questions 16 and 17 are about special consideration. Refer to the [Cambridge Handbook](#) section 5.5 for guidance about special consideration.

16. Did any of your candidates require special consideration?

No

17. If you answered Yes, please give details.

Thank you for completing the Rationale Document.

You must complete a Rationale Document for each syllabus for which you are submitting entries and keep them for your records. You only need to send us the Rationale Document for the syllabuses that we request. Do **not** send the Rationale Document or candidate work to us if you have not been asked to do so.

I confirm that the information in this Rationale Document accurately represents how student-assessed grades were determined.

Name

Position

Date