

OXBRIDGE MATH TUTORS

PARENT EDITION

VOLUME 2 · THE DEEP-DIVE COMPANION

IB Diploma Maths

Course choice, the Internal Assessment
in depth, method marks,
and what help is allowed.

Facts last checked: October 2026

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If You Read Only One Page

IB maths has two big things most families underestimate: the marks for **working**, not just answers, and the **Internal Assessment**, a piece of independent writing that is a fifth of the grade.

The five things worth knowing

- **Four courses, not one.** Analysis & Approaches (AA) or Applications & Interpretation (AI), each at Standard Level (SL) or Higher Level (HL).
- **Which syllabus matters.** Students in Year 12 or 13 now are on the current course. A younger sibling starting in August 2027 will be on a revised one, first assessed in May 2029.
- **The split is 80/20.** Written exams make up 80% of the maths grade and the Internal Assessment makes up 20%.
- **Method marks are real.** A correct answer with no working can lose most of its marks.
- **The IA must be the student's own work.** There are firm limits on the help a teacher, parent or tutor may give.

Five questions to ask your child's school

- Which course and level is my child on, and could that change, and until when?
- When is the IA topic due, the draft due, and the final due?
- What does the school's IA process look like, and what is its academic-honesty policy?
- When are the mock exams, and how are they marked?
- How is calculator use taught, and which calculator is expected?

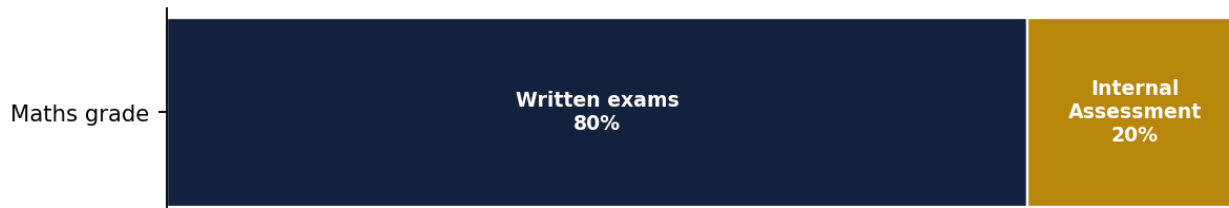
One thing to do this week

Ask your child what their Internal Assessment topic might be, and why it interests them. A clear, specific answer, or an honest "I'm still looking", tells you more than any deadline.

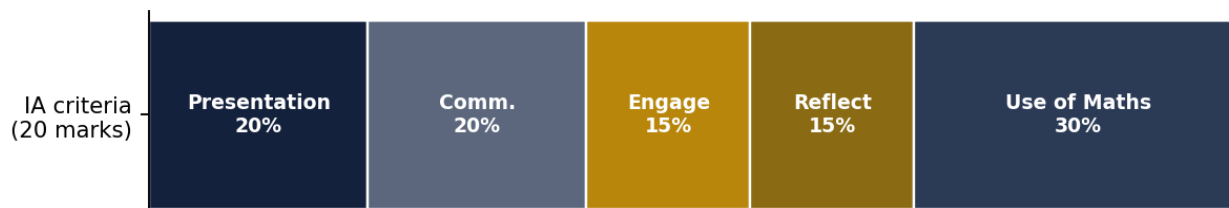
SECTION 1

The Course at a Glance

How the maths grade is built (current course)



Where the 20 IA marks sit (share of the 20 marks)



Current course only (final assessment November 2028): Presentation 4, Mathematical Communication 4, Personal Engagement 3, Reflection 3, Use of Mathematics 6.

A typical two-year rhythm (your school sets its own IA dates)



Which syllabus applies to my child?

The current courses (first assessed in 2021) run until their final assessment in November 2028. The revised courses are first taught from August 2027 and first assessed in May 2029, with rebuilt IA criteria. Do not apply advice written for one version to the other.

SECTION 2

Choosing the Course: AA or AI, SL or HL

There is no universally right answer. The right choice depends on the student's likely degree, their strengths and their school's offer. Universities set their own subject requirements, and some name the exact course and level. Read the entry requirements of every course your child is seriously considering **before** deciding.

	Analysis & Approaches (AA)	Applications & Interpretation (AI)
Feels like	Algebra, proof, calculus as a language	Modelling, statistics, technology in real situations
Tends to suit	Students who enjoy abstraction and exact working	Students who prefer data, context and technology
Common degree directions	Mathematics, physics, engineering, computer science, economics	Business, social sciences, psychology, design, some sciences
Paper 1	No calculator	Technology required
Watch out for	Heavy algebra demands without a calculator	Underestimating the reasoning needed in modelling questions

SL or HL?

Ask this	Lean toward
Does the target degree name HL maths in its entry requirements?	HL
Is maths one of the student's strongest subjects and one they enjoy?	HL is realistic
Is the student carrying several demanding HL subjects already?	Be honest about workload. SL can protect the other grades
Is maths a support subject, not central to the degree?	SL is usually enough

These are tendencies, not rules. The Diploma is a six-subject package, so workload across the whole programme matters as much as any single choice.

A conversation to have at home

Compare the student's interests and strengths with the school's AA/AI and SL/HL options. Check the exact university course requirements together. Keep IA topic choice, mathematical decisions and writing with the student, and agree any outside support with the school.

SECTION 3

The Internal Assessment: A Close Look

The IA is a mathematical exploration, typically 12 to 20 pages, on a topic the student chooses. It is marked by the school's teacher against the published criteria and moderated by the IB.

What help is allowed, in plain terms

Allowed	Not allowed
The teacher reads one draft and gives advice, orally or in writing.	The teacher editing or correcting the draft.
A parent or tutor asking questions about the mathematics.	Supplying the mathematics, or solving the problem.
Discussing topic ideas and what makes a topic interesting.	Choosing the topic for the student.
Reading for clarity, and saying where it is confusing.	Rewriting the text, or fixing errors directly.
Crediting any AI tool use as the school's policy requires.	Presenting AI-generated material as the student's own.

This follows the IB's guidance for the current course: one draft receives teacher advice, the next version handed in is the final one, and authenticity can be checked by discussing the work with the student. Your school will have its own rules. Follow those.

Weak and stronger topic ideas

Weak or risky	Why	Stronger direction	Why
"The mathematics of the Fibonacci sequence"	Very common, mostly description	Fitting a model to the student's own data on how fast a hot drink cools, and testing the assumptions	Own data, a real model, room for reflection
"Everything about the golden ratio"	Too broad, little personal voice	Optimising the dimensions of a container for a real purpose, with constraints	Clear question, genuine mathematics
"Using calculus in real life"	Too vague to investigate	Modelling a real set of measurements and justifying the choice of function	Focused question, links to the criteria

Topic ideas shown for illustration only. Whatever the topic, it must be the student's own choice.

SECTION 4

A Checklist for the IA Journey

Stage	What good looks like
Topic	A specific question the student can explain in two sentences, and a reason it interests them.
Research	The student can explain the relevant mathematics and why it suits the question. Going beyond the syllabus is not required.
First draft	Complete enough for the teacher to give useful advice. Reflection is built through the work, not saved for the end.
Revision	The student acts on the advice themselves and checks the mathematics line by line.
Final	Every line explainable aloud, unaided. Sources and any tool use credited. Submitted before the school's deadline.

Where marks are won and lost

- **Personal Engagement** is not a sentence saying the topic is fascinating. It shows in the student's own questions, choices and discoveries.
 - **Reflection** works best woven through the exploration, not as a closing paragraph.
- Use of Mathematics carries 6 of 20 marks. Use relevant mathematics at the course level and demonstrate understanding; beyond-syllabus content is not required.
 - Starting late can leave too little time to refine the question and check the mathematics.

The IA planner

Task	Date due	Done?	Notes

SECTION 5

What Method Marks Look Like

IB mark schemes award marks for method (usually written M), accuracy (A) and reasoning (R). The split below is an **illustration** of how a mark scheme thinks. It is not an official mark scheme.

Question. Find the equation of the tangent to the curve $y = x^2 \ln x$ at the point where $x = 1$.

Working. $dy/dx = 2x \ln x + x$ (product rule). At $x = 1$: $dy/dx = 2(1)(0) + 1 = 1$. When $x = 1$, $y = 1 \times 0 = 0$.
Tangent: $y - 0 = 1(x - 1)$, so $y = x - 1$.

Step	Mark type	What it rewards
Applying the product rule	M	Choosing a correct method
$dy/dx = 2x \ln x + x$	A	Correct derivative
Gradient = 1 at $x = 1$	A	Correct substitution
$y = 0$ at $x = 1$	A	Correct point
$y = x - 1$	A	Correct equation

A student who writes only " $y = x - 1$ " may be given the final mark, but is risking the rest. A student who writes the working and slips on the last line can still keep the method marks.

A practice routine

Session	What to do	Time
1. Technique	One topic. Ten minutes without a calculator, then four exam-style questions.	35 min
2. Paper practice	A section of a past paper, timed, with every step written. Mark against the official mark scheme, noting where method marks were gained or lost.	45 min
3. Technology	One technology-paper question, setting up the model and interpreting the output.	30 min

SECTION 6

What to Say, and What to Do When It Goes Wrong

When your child says	Try this	Avoid
"I don't know what to write the IA on."	"What have you noticed that you could not explain? What would you like to test?"	Suggesting a topic and expecting them to adopt it.
"Can you check my IA?"	"What do you want me to look for? Clarity, or maths?" Then read for clarity only.	Correcting the mathematics or rewriting sentences.
"I got the answer, why did I lose marks?"	"Show me the working line by line. Where would a marker see the method?"	Saying marking is harsh.
"I'm behind on the IA."	"What is the next small step, and when will you do it?"	Taking over or panicking.

Signs worth a conversation

What you see	Possible explanation	What helps
IA topic undecided well after the school expects one	Stuck on choosing	Short brainstorming, then pick a question to test
Strong in class, weak on full papers	Timing, or stamina	Timed paper sections, built up gradually
Big gap between calculator and non-calculator marks	Technique or tool gap	Practise each paper type separately
Correct answers, little working	Lost method marks	Writing every step, even on easy questions

SECTION 7

Is Foundation Algebra Ready? A 10-Question Check

No calculator. Treat r as a non-negative radius and denominators as non-zero. This is informal foundation practice.

#	Question
1	Expand and simplify $(x + 3)(2x - 5)$.
2	Factorise $x^2 - 5x - 6$.
3	Solve $3x - 7 = 2(x + 4)$.
4	Simplify the square root of 50.
5	Solve $x^2 - 4x - 12 = 0$.
6	Make r the subject of $A = \pi r^2$.
7	Solve $2x + y = 7$ and $x - y = 2$.
8	Evaluate 8 to the power $2/3$.
9	Simplify $(2x^3)^2 / (4x^2)$.
10	Evaluate log base 2 of 32.

Answer key

1. $2x^2 + x - 15$. 2. $(x - 6)(x + 1)$. 3. $x = 15$. 4. 5 times the square root of 2. 5. $x = 6$ or $x = -2$.
 6. $r = \text{the square root of } (A / \pi)$. 7. $x = 3, y = 1$. 8. 4. 9. x^4 . 10. 5.

Informal check: 9-10 secure; 7-8 revise; below 7 foundations. Not a placement test.

Glossary

Term	In plain English
AA / AI	Analysis & Approaches / Applications & Interpretation, the two maths courses.
SL / HL	Standard Level / Higher Level. HL covers more and adds a third paper.
IA	Internal Assessment: the mathematical exploration, 20% of the maths grade.
GDC	Graphic display calculator.
Method mark (M)	A mark for choosing and applying a valid method.
Accuracy mark (A)	A mark for a correct result from a correct method.
Moderation	The IB checking a sample of school-marked IAs for consistent standards.

Check before you rely on this volume

Confirm which syllabus (current or revised) your child is on.

Confirm the IA dates and the school's own IA and honesty policies.

Check each university's entry requirements for maths course and level.

Official Sources and Use Notes

Reviewed on 5 October 2026. This Volume 2 companion supplements the shorter parent guide. Confirm the student's exam session and specification with the school.

Worked examples and suggested mark allocations are teaching illustrations, not official scoring rubrics, promises of marks or material for assessed submissions. Readiness scores are informal discussion prompts, not validated course-placement tests.

The five IA criteria shown in this volume apply to the current course, with final assessment in November 2028. For first assessment in May 2029 the criteria become Problem specification (4), Abstraction (6), Computation (4) and Interpretation (6). IB's updates reduce HL Paper 3 from 75 to 60 minutes. Use the revised course's own guidance rather than carrying over the old rubric.

For the algebra readiness checks, treat r as a non-negative radius. Expressions with denominators require non-zero denominators; logarithms require positive arguments. The checks are foundation practice, not a complete entry test for every course.

Current AA course guide: exploration and permitted teacher feedback

IB AA: changes for first assessment in 2029

IB AI: changes for first assessment in 2029

Make an enquiry through the website

The diagnostic is 45 minutes: 30 minutes live plus 15 minutes independent. Launch price: AED 150. Written report within 24 hours; the full fee is credited if a programme starts within seven days.

Parent discussion tables offer possible explanations, not established causes. Work samples, observation and school context are needed before attributing a difficulty to a cause. Informal readiness bands do not validate a diagnosis or predict a grade.