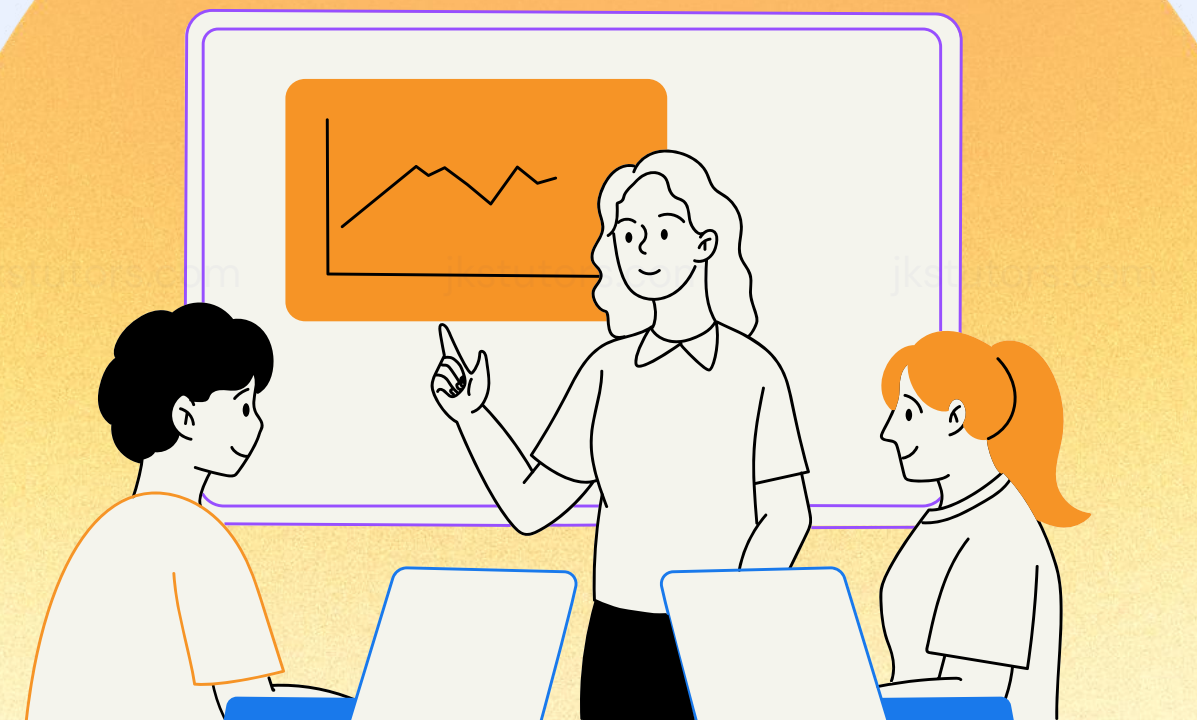


German Curriculum → IB Maths AA: What Students Should Know Before Making the Transition



The mathematics may be familiar

The language of mathematics may not be

Students moving from the German curriculum into IB Maths AA often aren't starting from zero. They may already have a strong mathematical foundation. What can take time is adapting to the way IB questions are written, the terminology used, the structure of questions and what examiners expect to see in a solution. These are some of the differences I have noticed when working with students making this transition.

01 Mathematical notation

02 Mathematical vocabulary

03 Question wording

04 Question structure

05 Working & marks

Learning to read the question as an IB student →



03 · NOTATION

The same mathematics can look different.

Small conventions can create hesitation when a student is already working under exam pressure.

GERMAN CONVENTION

7,23

[1; 1,4]

IB CONVENTION

7.23

[1, 1.4]

"These aren't difficult mathematical differences, but they're exactly the sort of small conventions that can make a student stop and think when they're already under pressure."

Other conventions worth checking include functions, vectors, probability, exact versus approximate values, rounding, derivatives, sets and calculator display.



You can know the mathematics and still not know what the question is saying.

A student may recognise the mathematical idea immediately in German, but hesitate when the same idea appears in English.

GERMAN

Steigung

Ableitung

Nullstelle

Wendepunkt

Definitionsmenge

Wertebereich

Umkehrfunktion

Schnittpunkt

ENGLISH / IB

Gradient

Derivative

Root of a function / Zero

Point of inflection

Domain

Range

Inverse function

Point of intersection

Steigung → Gradient. You may then encounter: 'Find the gradient of the curve...' The translation is only the first step. The student also needs to recognise what the terminology means in context.

IB Maths has its own language.

Words such as these are not decoration, they tell you something about the response the question is looking for.

CALCULATE

DETERMINE

SHOW

HENCE

EXPLAIN

DEDUCE

HENCE

The question is directing you to use information or a result from earlier work.

SHOW

The mathematical reasoning leading to the stated result needs to be demonstrated.

The subtlety is knowing what that means when you're actually sitting in front of a question.



Can you spot what the question is asking?

The aim is not to reproduce an entire question, but to make the language visible.

SOLVE

What mathematical process is required?

HENCE

What previous result or information should you use?

SHOW

What needs to appear in the reasoning?

"Students can know the mathematics but still lose time because they haven't yet learned to read the question in the way the examiner intended."



IB questions can build a chain of reasoning.

A multi-part question is seldom a collection of unrelated exercises. Later parts of the question usually depend on ideas, results or relationships established earlier.

(a) Start with the first result

(b) Use or interpret the result

HENCE Carry the idea forward

(c) (d) (e)... Build on what has already been established

"One thing I work on with students is recognising that structure before they start calculating. It changes how they approach the question."

Fundamental knowledge gaps between English Maths students and German students of the same age

Students need to be able to dedicate significant time to close inevitable knowledge gaps.

- 01 **Focus on essential content gaps (e.g trigonometry, algebra, functions, statistics and probability)**
EXPLAIN — What does it mean?
- 02 **Master foundational and prerequisite topics**
- 03 **Build confidence for IB-level work**
- 04 **Achieve higher scores through personalised support**

Recommended time commitment

~approx. 4 To 6 Hours Per Week

Number of sessions tailored to student's availability, background and goals.



Knowing the answer isn't always the same as showing the answer.

The amount and type of working required depends on the question and its marking criteria.

ANSWER

$$x = 2.37$$

WORKING

The mathematical steps that justify the result.



"When I mark a student's work, I'm not only interested in whether they reached the right number. I want to know whether they understood what the question was asking and whether their method communicates that clearly."

Two students the same age can have very different starting points.

Age alone doesn't tell you how prepared a student is for IB Maths AA. Previous school, curriculum and course choices can all influence what a student has encountered before.

ALGEBRA — Manipulation · equations · indices

FUNCTIONS — Notation · transformations · inverse functions

TRIGONOMETRY — Radians · identities · graphs

CALCULUS — Differentiation · integration · interpretation

A student can be mathematically capable and still have specific gaps caused by a change of curriculum. Identifying those gaps is more useful than assuming what a student should already know.



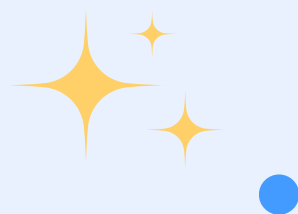
So how do you know what you need to work on?



A useful transition assessment should look beyond grades and ask whether a student is comfortable with the language and structure of IB questions.

- Recognise common IB command terms
- Follow multi-part questions where later parts depend on earlier results
- Be comfortable with English mathematical terminology
- Give answers to the required accuracy
- Clearly communicate mathematical reasoning

If several of these are unfamiliar, that doesn't necessarily mean you're weak at maths. It may simply mean you haven't encountered this style of mathematics before.



Understanding the difference is only the first step.

Students need opportunities to recognise, practise and apply those differences themselves.

- 01 IDENTIFY — What's unfamiliar?
- 02 EXPLAIN — What does it mean?
- 03 DEMONSTRATE — How does it appear in an IB question?
- 04 PRACTISE — Can the student recognise it themselves?
- 05 REVIEW — Would the approach satisfy the question's requirements?

This is about the process rather than a one-size-fits-all checklist. The areas a student needs to work on depend on their starting point.

The transition is learnable.

Students coming from the German system don't need to start again from the beginning. The mathematical knowledge they already have is valuable. The challenge is often learning how that knowledge is expressed and assessed in IB Maths AA. Once students become familiar with the terminology, notation, question structure and expectations around mathematical working, the unfamiliar starts to become familiar.

Preparing to move from the German curriculum into IB Maths AA HL or SL?

Julian can assess a student's current foundations and identify the areas that may need attention before they start.



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