



Free guide for parents

What is MYP Mathematics?

How maths is taught in the IB Middle Years Programme: the four branches, global contexts, Approaches to Learning and criterion-based assessment.



In the International Baccalaureate (IB) Middle Years Programme (MYP), Mathematics is about understanding the world through a mathematical lens. Designed for students aged 11 to 16, this programme invites learners to explore mathematics conceptually, inquire critically, and apply their knowledge in meaningful real-world contexts.

Watch a quick video here, or keep reading for more information.

Watch the video: youtube.com/watch?v=aAhePeOulWU

A framework of inquiry and understanding

MYP Mathematics focuses on conceptual understanding of the “big ideas” that transcend specific topics. Rather than memorizing formulas, students explore concepts through inquiry, identify rules as formulae, and solve problems. Learning is guided by **four branches of mathematics**:



Numerical and abstract reasoning

Exploring number systems and algebraic thinking.

Number

Algebra



Thinking with models

Working with functions, graphs, and representations.

Functions

Graphs



Spatial reasoning

Understanding shapes, space, and geometric relationships.

Geometry

Trigonometry



Reasoning with data

Using statistics and probability to interpret and analyze information.

Statistics

Probability

These branches are revisited and deepened across the years, building a progression of knowledge and skills.

Mathematics in context

Every unit in MYP Mathematics connects learning to global contexts: broad themes such as identities and relationships, globalization and sustainability, or scientific and technical innovation.

This encourages students to see mathematics as a tool for understanding and solving real-life challenges. For example, a geometry unit might explore how math helps archaeologists model ancient sites, or a statistics unit might investigate trends in climate data.

Identities and relationships

Orientation in space and time

Personal and cultural expression

Scientific and technical innovation

Globalization and sustainability

Fairness and development

Building learning skills: Approaches to Learning (ATLs)

The MYP doesn't stop at subject knowledge. Students also develop **Approaches to Learning (ATL) skills** across all MYP subjects, which include communication, thinking, research, self-management, and collaboration. These skills empower learners to become autonomous, reflective learners, and to thrive across disciplines.

While students learn these skills implicitly through learning tasks and activities in class, teachers are encouraged to explicitly teach these skills by integrating them in their lessons. Some examples of how ATLs can be developed in the Mathematics classroom are:

Approaches to learning skills (ATLs)	Examples in the MYP
Thinking skills Critical thinking, creative thinking, transfer skills	Develop flexible strategies for approaching unfamiliar problems.
Social skills Collaboration	Take on different roles during group work, such as a time manager, scribe, or the advocate.
Communication skills Written or oral	Organizing your work in a logical, clear and concise way using mathematical vocabulary and correct notation.
Self-management skills Affective skills, reflective skills	Develop resilience when working on difficult problems; make personalized annotations in notes to identify mistakes in the problem-solving process.
Research skills Information literacy, media literacy	Evaluate the reliability of mathematical sources, such as statistical databases, before using them.

Assessment with purpose

Rather than being marks-based, assessment in MYP Mathematics is criterion-based, providing students with clear feedback on how well they are achieving against specific learning objectives. The criteria are as follows:

Criterion A
Knowing and understanding

Criterion B
Investigating patterns

Criterion C
Communicating

Criterion D
Applying mathematics in real-life contexts

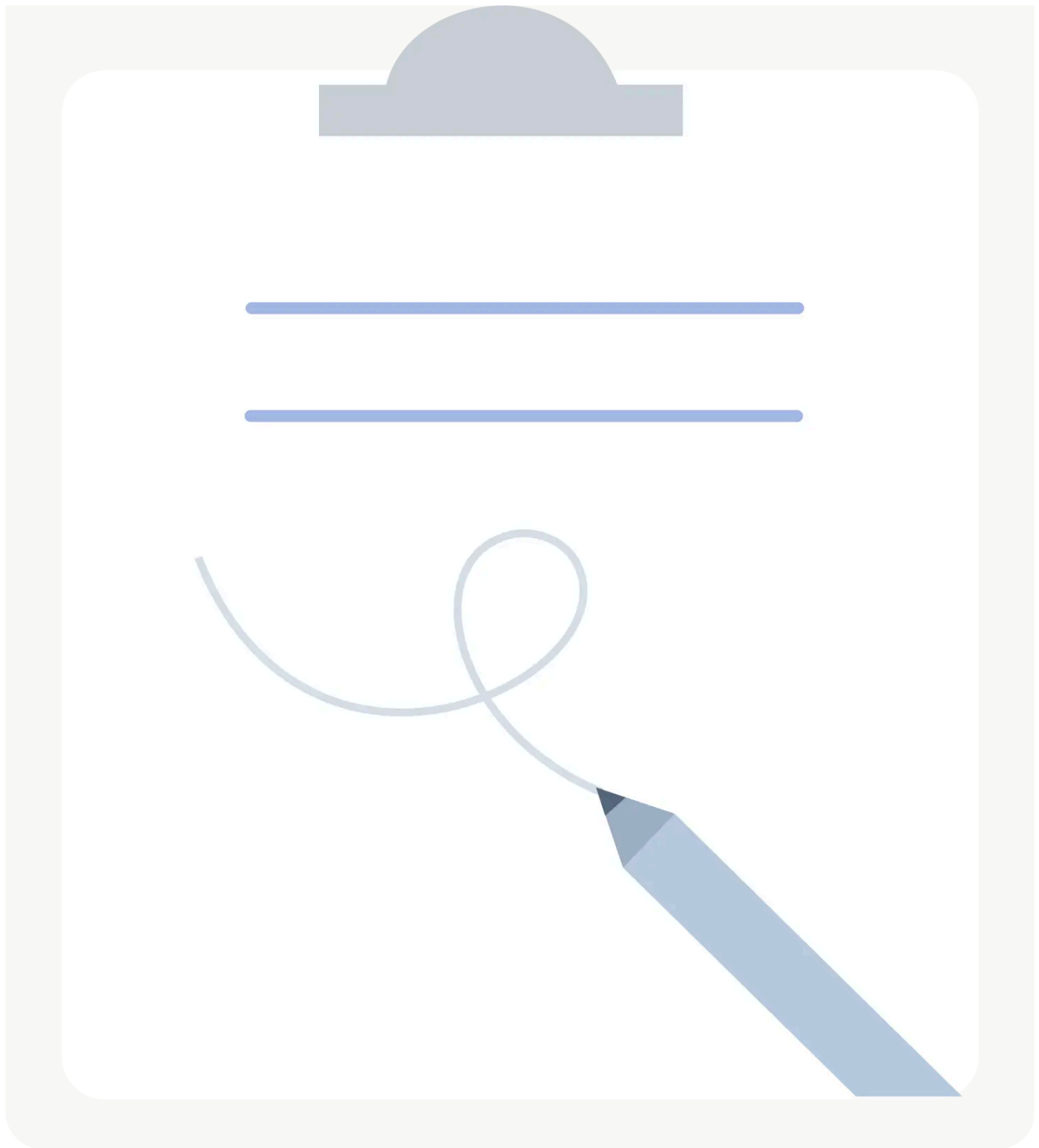
Assessment tasks generally assess one or two criteria at a time.

Example assessments

For example, in a unit on linear equations:

- Students might investigate relationships between the gradients of straight lines, identifying rules and verifying them (Criterion B).
- They communicate their findings using algebra, graphs, and tables, ensuring clarity and organization (Criterion C).

Later in the unit, they might use those same skills to model an urban-planning scenario, selecting strategies, solving spatial problems, and justifying the accuracy and validity of their conclusions (Criterion D).



A learning journey

Students may be unfamiliar with the criteria and ATLs at the beginning of their MYP experience, but over time, they will grow into them.

With the right support, they become reflective, open-minded problem-solvers, and build confidence to think critically, act responsibly, and engage with the world in meaningful, positive ways.

For questions or support, please reach out to info@mypmathtutor.com or visit www.mypmathtutor.com.



About the author

Shannon Mellon is a qualified IB educator who taught IB Mathematics at MYP and DP level at NAIS Dublin and the International School of Hamburg, and now leads business development at MYP Math Tutor.

[Meet the team](#)

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