

International Baccalaureate Middle Years Programme Subject Brief

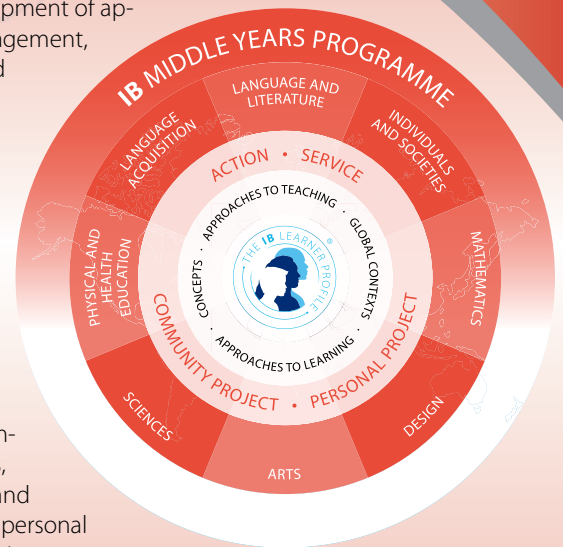
Language and literature

From 2014

The IB Middle Years Programme (MYP) is designed for students aged 11 to 16. It provides a framework of learning that emphasizes intellectual challenge and encourages connections between studies in traditional subjects and the real world. The MYP focuses on “learning how to learn” through the systematic development of approaches to learning (ATL) skills for communication, collaboration, organization, self-management, reflection, research, informational literacy, media literacy, creative and critical thinking, and transfer of learning. It also fosters intercultural understanding and global engagement—essential qualities for young people today.

Interdisciplinary teaching and learning builds a connected curriculum that addresses the developmental needs of students and prepares them for further academic study and life in an increasingly interconnected world. The MYP uses concepts and contexts as starting points for meaningful integration and transfer of knowledge across eight subject groups.

For students seeking a formal qualification at the end of the programme’s Year 5, the IB offers eAssessments that lead to the IB MYP certificate or course results for individual subject areas. To earn the MYP certificate, students must complete 2 hour on-screen examinations in each of the following: language and literature, individuals and society, sciences, mathematics and interdisciplinary learning; submit an ePortfolio in language acquisition and one of the following: design, arts or physical and health education; complete a moderated personal project; and complete school-based expectations for service as action (community service).



I. Course description and aims

II. Curriculum overview

III. Assessment criteria

IV. MYP eAssessment

I. Course description and aims

Language is fundamental to learning, thinking and communicating, as well as providing an intellectual framework to support conceptual development. It plays a central role in developing critical thinking, cultivating international-mindedness, exploring and sustaining personal development and cultural identity, and responsibly participating in local, national and global communities.

MYP language and literature courses equip students with linguistic, analytical and communicative skills that help to develop interdisciplinary understanding. Students develop skills in six domains—listening, speaking, reading, writing, viewing and presenting—both independently and with others.

MYP language and literature courses include a balanced study of genres and literary texts, including a world literature component. Students’ interactions with texts generate moral, social, economic, political, cultural and environmental insights. Through their studies, students learn how to form opinions, make decisions, and engage in ethical reasoning.

The aims of MYP language and literature are to encourage and enable students to:

- use language as a vehicle for thought, creativity, reflection, learning, self-expression, analysis and social interaction
- develop the skills involved in listening, speaking, reading, writing, viewing and presenting in a variety of contexts
- develop critical, creative and personal approaches to studying and analysing literary and non-literary texts

- engage with text from different historical periods and a variety of cultures
- explore and analyse aspects of personal, host and other cultures through literary and non-literary texts
- explore language through a variety of media and modes
- develop a lifelong interest in reading
- apply linguistic and literary concepts and skills in a variety of authentic contexts.

II. Curriculum overview

The MYP promotes sustained **inquiry** in language and literature by developing **conceptual understanding** in **global contexts**.

Key concepts such as *communication, connections, creativity* and *perspective* broadly frame the MYP curriculum.

Related concepts promote deeper learning grounded in specific disciplines. Examples of related concepts in MYP language and literature include *genre, purpose, context* and *style*.

Students explore key and related concepts through MYP **global contexts**.

- Identities and relationships
- Orientation in space and time
- Personal and cultural expression
- Scientific and technical innovation
- Globalization and sustainability
- Fairness and development

The MYP curriculum framework offers schools flexibility to determine engaging, relevant, challenging and significant content that meets local and national curriculum requirements. This inquiry-based curriculum explores factual, conceptual and debatable questions in the study of language and literature.

The MYP requires at least 50 hours of teaching time for each subject area in each year of the programme. For students participating in MYP eAssessment, the IB recommends 70 hours of guided learning each year in MYP years 4 and 5.

III. Assessment criteria

Each language and literature objective corresponds to one of four equally weighted assessment criteria. Each criterion has eight possible achievement levels (1–8), divided into four bands with unique descriptors that teachers use to make judgments about students' work.

Criterion A: Analysing

Students demonstrate an understanding of the creator's choices, the relationship between the various components of a text and between texts, and make inferences about audience responses and creators' purposes. Students use the text to support their own responses and reflect on different perspectives and interpretations.

Criterion B: Organizing

Students understand and organize their ideas and opinions using a range of appropriate conventions for different forms and purposes of communication. Students recognize the importance of maintaining academic honesty, respecting intellectual property rights and referencing all sources accurately.

Criterion C: Producing text

Students produce written and spoken text, focusing on the creative process itself and on the understanding of the connection between the creator and his or her audience. Students make choices aimed at producing texts that affect both the creator and the audience.

Criterion D: Using language

Students develop, organize and express themselves and communicate thoughts, ideas and information. They use accurate and varied language that is appropriate to the context and intention.

IV. MYP eAssessment

Students seeking IB MYP course results or the IB MYP Certificate must demonstrate their achievement of the subject group's objectives by completing an end-of-course on-screen examination.

Ideas and issues explored in MYP language and literature include:

- identity, heritage, culture, diversity
- communities, globalization, migration, displacement
- social history, civilizations, journeys
- media and mass communication
- childhood, adolescence, youth, rebellion, innocence and experience, human sexuality
- families, friendships, relationships

- systems, power and protest, justice, peace and conflict, freedom and independence
- health and well-being, environment, lifestyle
- social roles, norms and expectations, gender, inclusion, minorities, class
- utopias, dystopias, survival
- religion, faith, values, ritual, spirituality, taboos
- allegiance, betrayal, revenge, atonement, forgiveness.

Examination blueprints define the structure of tasks that simulate, replicate and sample formative internal assessments. In MYP language and literature courses, on-screen examinations comprise two tasks.

Task	Assessment criteria	Marks
Analysis	Assesses students' ability to analyse, compare and contrast two text extracts giving opinions and justifications, organize their work in a coherent and logical manner, and produce language demonstrating a high degree of linguistic and grammatical accuracy (criteria A, B and D).	50
Creative writing	Assesses students' ability to organize their work in a coherent and logical manner (criterion B), produce text that demonstrates engagement with the creative process and an awareness of impact on audience, and produce language demonstrating a high degree of linguistic and grammatical accuracy (criteria C and D).	70

MYP language and literature on-screen examinations are aligned with understanding and skills that prepare students for high levels of achievement in IB Diploma Programme courses in **studies in language and literature**.

Sample question (creative writing)

Students are presented with a visual image and write a response of 400–600 words using one of the following three prompts.

- **Write down** an internal monologue expressing the thoughts and feelings of a narrator involved in this scene.
- **Narrate** the events that follow on from the moment shown in the image.
- Imagine you are the person in this image. **Describe** what you can see.

About the IB: For over 45 years, the IB has built a reputation for high-quality, challenging programmes of education that develop internationally minded young people who are well prepared for the challenges of life in the 21st century and are able to contribute to creating a better, more peaceful world.

For further information on the IB Middle Years Programme, and a complete list of MYP subject briefs, visit: www.ibo.org/myp/.

Complete subject guides can be accessed through the IB online curriculum centre (OCC) or purchased through the IB store: <http://store.ibo.org>.

International Baccalaureate Middle Years Programme Subject Brief

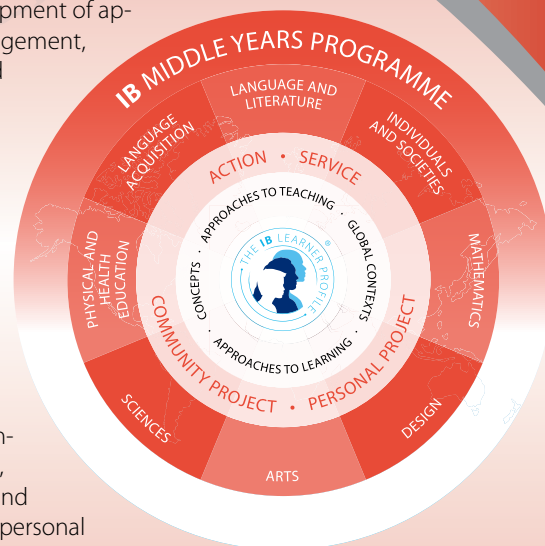
Individuals and societies

From 2014

The IB Middle Years Programme (MYP) is designed for students aged 11 to 16. It provides a framework of learning that emphasizes intellectual challenge and encourages connections between studies in traditional subjects and the real world. The MYP focuses on “learning how to learn” through the systematic development of approaches to learning (ATL) skills for communication, collaboration, organization, self-management, reflection, research, informational literacy, media literacy, creative and critical thinking, and transfer of learning. It also fosters intercultural understanding and global engagement—essential qualities for young people today.

Interdisciplinary teaching and learning builds a connected curriculum that addresses the developmental needs of students and prepares them for further academic study and life in an increasingly interconnected world. The MYP uses concepts and contexts as starting points for meaningful integration and transfer of knowledge across eight subject groups.

For students seeking a formal qualification at the end of the programme’s Year 5, the IB offers eAssessments that lead to the IB MYP certificate or course results for individual subject areas. To earn the MYP certificate, students must complete 2 hour on-screen examinations in each of the following: language and literature, individuals and society, sciences, mathematics and interdisciplinary learning; submit an ePortfolio in language acquisition and one of the following: design, arts or physical and health education; complete a moderated personal project; and complete school-based expectations for service as action (community service).



I. Course description and aims

II. Curriculum overview

III. Assessment criteria

IV. MYP eAssessment

I. Course description and aims

The MYP individuals and societies subject group incorporates disciplines traditionally studied under humanities and social sciences. This subject group encourages learners to respect and understand the world around them, and equips them with the necessary skills to inquire into historical, geographical, political, social, economic, and cultural factors that affect individuals, societies and environments.

The study of individuals and societies helps students to appreciate critically the diversity of human culture, attitudes and beliefs. Courses in this subject group are important for helping students to recognize that both content and methodology can be debatable and controversial, and for practising the tolerance of uncertainty.

The IB’s approach to this subject area includes a strong focus on inquiry and investigation. Students collect, describe and analyse data; test hypotheses; and learn how to interpret increasingly complex information, including original source material. This focus on real-world examples, research and analysis is an essential aspect of the subject group.

The aims of MYP individuals and societies are to encourage and enable students to:

- appreciate human and environmental commonalities and diversity
- understand the interactions and interdependence of individuals, societies and the environment
- understand how both environmental and human systems operate and evolve
- identify and develop concern for the well-being of human communities and the natural environment

- act as responsible citizens of local and global communities
- develop inquiry skills that lead towards conceptual understandings of the relationships between individuals, societies and the environments in which they live.

II. Curriculum overview

For MYP individuals and societies, schools develop courses in integrated humanities, history, economics, geography, philosophy, sociology/ anthropology, business management, psychology, and world religions.

The MYP promotes **inquiry** in these subjects by developing **conceptual understanding** within **global contexts**.

Key concepts such as *change, global interactions, time, place and space, and systems* broadly frame the MYP curriculum.

Related concepts promote deeper learning grounded in specific disciplines. Examples of related concepts in MYP individual and societies include *causality, globalization, culture and sustainability*.

Students explore key and related concepts through MYP **global contexts**.

- Identities and relationships
- Orientation in space and time
- Personal and cultural expression
- Scientific and technical innovation
- Globalization and sustainability
- Fairness and development

The MYP curriculum framework offers schools flexibility to determine

engaging, relevant, challenging and significant content that meets local and national curriculum requirements. This inquiry-based curriculum explores factual, conceptual and debatable questions in the study of individuals and societies.

The MYP requires at least 50 hours of teaching time for each subject area in each year of the programme. For students participating in MYP eAssessment, the IB recommends 70 hours of guided learning each year in MYP years 4 and 5.

III. Assessment criteria

Each individuals and societies objective corresponds to one of four equally weighted assessment criteria. Each criterion has eight possible achievement levels (1–8), divided into four bands with unique descriptors that teachers use to make judgments about students' work.

Criterion A: Knowing and understanding

Students develop factual and conceptual knowledge about individuals and societies.

Criterion B: Investigating

Students develop systematic research skills and processes associated with disciplines in the humanities and social sciences. Students develop successful strategies for investigating independently and in collaboration with others.

Criterion C: Communicating

Students develop skills to organize, document and communicate their learning using a variety of media and presentation formats.

Criterion D: Thinking critically

Students use critical-thinking skills to develop and apply their understanding of individuals and societies and the process of investigation.

IV. MYP eAssessment

Students seeking IB MYP course results or the IB MYP certificate must demonstrate their achievement of the subject group's objectives by completing an end-of-course on-screen examination. On-screen examinations are formal external examinations, and are available in **history**, **geography** and **integrated humanities**.

Topics explored in MYP individuals and societies on-screen examinations include:

- demographics and human movements
- settlement and urban morphology
- superpowers, empires, and supra-national alliances and organizations
- significant individuals
- warfare and peacekeeping
- rights and social protest
- trade, aid and exchange
- economic agents and their interests and role in the economy: consumers, producers, governments, banks
- measurements and trends
- ecological relationships
- industrialization and technological developments.

Examination blueprints define the structure of tasks that simulate, repli-

cate and sample formative internal assessments. In MYP individuals and societies courses, on-screen examinations comprise three tasks.

Task	Assessment criteria	Marks
Engagement with sources	Assesses students' ability to use sources to: identify key ideas/points; find contradictory evidence; find a counterclaim; and identify the origin, purpose, value and limitations to compare and contrast or evaluate values and limitations of sources. (Criteria A and D)	30
Investigation	Assesses students' ability to use a variety of sources to respond to structured questions. (Criteria B and C)	30
Extended response	Assesses students' ability to engage in the activity of producing a piece of extended writing or communicating creatively. (Criteria A, B, C and D)	60

MYP individuals and societies on-screen examinations are aligned with understanding and skills that prepare students for high levels of achievement in IB Diploma Programme courses in **individuals and societies**.

Sample question (from history eAssessment)

The following questions relate to a range of written and rich media stimulus material:

- paragraph from a scholarly study of war and human conflict
- excerpt from a speech by a political leader in World War II (1943)
- graphical analysis of the causes of civil war in Liberia published by an international NGO (1989–2003)
- photograph of a cemetery from World War I
- internet encyclopedia entry on the US Civil War (1861–1865)

- Using these sources, **identify** two causes and three consequences of conflict.
- **Outline** the purpose, values and limitations for sources (i) and (ii).
- "Individual people are the main cause of wars and conflicts." **To what extent** do you agree with this claim? Answer with reference to sources (i)–(v), as well as with reference to the conflicts you have studied in MYP history.

About the IB: For over 45 years, the IB has built a reputation for high-quality, challenging programmes of education that develop internationally minded young people who are well prepared for the challenges of life in the 21st century and are able to contribute to creating a better, more peaceful world.

For further information on the IB Middle Years Programme, and a complete list of MYP subject briefs, visit: www.ibo.org/myp/.

Complete subject guides can be accessed through the IB online curriculum centre (OCC) or purchased through the IB store: <http://store.ibo.org>.

International Baccalaureate Middle Years Programme Subject Brief

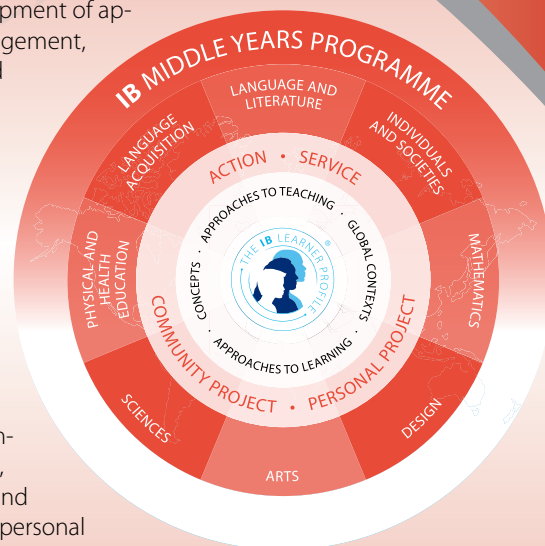
Mathematics

From 2014

The IB Middle Years Programme (MYP) is designed for students aged 11 to 16. It provides a framework of learning that emphasizes intellectual challenge and encourages connections between studies in traditional subjects and the real world. The MYP focuses on “learning how to learn” through the systematic development of approaches to learning (ATL) skills for communication, collaboration, organization, self-management, reflection, research, informational literacy, media literacy, creative and critical thinking, and transfer of learning. It also fosters intercultural understanding and global engagement—essential qualities for young people today.

Interdisciplinary teaching and learning builds a connected curriculum that addresses the developmental needs of students and prepares them for further academic study and life in an increasingly interconnected world. The MYP uses concepts and contexts as starting points for meaningful integration and transfer of knowledge across eight subject groups.

For students seeking a formal qualification at the end of the programme’s Year 5, the IB offers eAssessments that lead to the IB MYP certificate or course results for individual subject areas. To earn the MYP certificate, students must complete 2 hour on-screen examinations in each of the following: language and literature, individuals and society, sciences, mathematics and interdisciplinary learning; submit an ePortfolio in language acquisition and one of the following: design, arts or physical and health education; complete a moderated personal project; and complete school-based expectations for service as action (community service).



I. Course description and aims

II. Curriculum overview

III. Assessment criteria

IV. MYP eAssessment

I. Course description and aims

The framework for MYP mathematics outlines four branches of mathematical study.

1. Number
2. Algebra
3. Geometry and trigonometry
4. Statistics and probability

The study of mathematics is a fundamental part of a balanced education. It promotes a powerful universal language, analytical reasoning and problem-solving skills that contribute to the development of logical, abstract and critical thinking. The MYP mathematics and extended mathematics courses promote both inquiry and application, helping students to develop problem-solving techniques that transcend the discipline and are useful in the world outside school.

Mathematics in the MYP is tailored to the needs of students, seeking to intrigue and motivate them to want to learn its principles. Students should see authentic examples of how mathematics is useful and relevant to their lives and be encouraged to apply it to new situations.

The aims of MYP mathematics courses are to encourage and enable students to:

- enjoy mathematics, develop curiosity and begin to appreciate its elegance and power
- develop an understanding of the principles and nature of mathematics
- communicate clearly and confidently in a variety of contexts
- develop logical, critical and creative thinking

- develop confidence, perseverance and independence in mathematical thinking and problem-solving
- develop powers of generalization and abstraction
- apply and transfer skills to a wide range of real-life situations, other areas of knowledge and future developments
- appreciate how developments in technology and mathematics have influenced each other; the moral, social and ethical implications arising from the work of mathematicians and the applications of mathematics; the international dimension in mathematics; and the contribution of mathematics to other areas of knowledge
- develop the knowledge, skills and attitudes necessary to pursue further studies in mathematics
- develop the ability to reflect critically upon their own work and the work of others.

II. Curriculum overview

For MYP mathematics, schools can develop courses at two level of challenge: **standard** and **extended**.

Standard mathematics aims to provide a sound knowledge of basic mathematical principles. **Extended mathematics** supplements the standard curriculum with additional topics and skills, providing greater breadth and depth of study.

The MYP promotes sustained **inquiry** in mathematics by developing **conceptual understanding** within **global contexts**.

Key concepts such as *form*, *logic* and *relationships* broadly frame the MYP curriculum.

Related concepts promote deeper learning grounded in specific disciplines. Examples of related concepts in MYP mathematics include equivalence, measurement, quantity and justification.

Students explore key and related concepts through MYP **global contexts**.

- Identities and relationships
- Orientation in space and time
- Personal and cultural expression
- Scientific and technical innovation
- Globalization and sustainability
- Fairness and development

The MYP curriculum framework offers schools flexibility to determine engaging, relevant, challenging and significant content that meets local and national curriculum requirements. This inquiry-based curriculum explores factual, conceptual and debatable questions in the study of mathematics.

The MYP requires at least 50 hours of teaching time for each subject area in each year of the programme. For students participating in MYP eAssessment, the IB recommends 70 hours of guided learning each year in MYP years 4 and 5.

III. Assessment criteria

Each mathematics objective corresponds to one of four equally weighted assessment criteria. Each criterion has eight possible achievement levels (1–8), divided into four bands with unique descriptors that teachers use to make judgments about students' work.

Criterion A: Knowing and understanding

Students select and apply mathematics to solve problems in both familiar and unfamiliar situations in a variety of contexts, demonstrating knowledge and understanding of the framework's branches (number, algebra, geometry and trigonometry, statistics and probability).

Criterion B: Investigating patterns

Students work through investigations to become risk-takers, inquirers and critical thinkers.

Criterion C: Communicating

Students use appropriate mathematical language and different forms of representation when communicating mathematical ideas, reasoning and findings, both orally and in writing.

Criterion D: Applying mathematics in real-life contexts

Students transfer theoretical mathematical knowledge into real-world situations and apply appropriate problem-solving strategies, draw valid conclusions and reflect upon their results.

IV. MYP eAssessment

Students seeking IB MYP course results or the IB MYP Certificate must demonstrate their achievement of the subject group's objectives by completing an end-of-course on-screen examination. On-screen examinations are formal external examinations, and are available in **mathematics** and **extended mathematics**.

On-screen examinations address all four branches of mathematical study and may include any topics or skills in the MYP mathematics framework.

Examination blueprints define the structure of tasks that simulate, replicate and sample formative internal assessments. In MYP mathematics courses, on-screen examinations comprise three tasks.

Task	Assessment criteria	Marks
Knowing and understanding	Assesses knowledge and understanding of mathematics and communication of the approaches/method used (criteria A and C).	40
Investigating patterns	Assesses investigative skills in mathematics and the interpretation of findings using appropriate communication techniques (criteria B and C).	40
Applying mathematics in real-life contexts	Assesses ability to apply mathematics in a real-life, likely global, context. Students may be required to produce pieces of extended writing to evaluate and justify the validity of mathematics models (criteria C and D).	40

MYP mathematics on-screen examinations are aligned with understanding and skills that prepare students for high levels of achievement in IB Diploma Programme courses in **mathematics**.

Sample question

From a video recording, a researcher notes how many cars pass through a junction in Mexico City over a period of minutes, creating a data table that is also visualized as a graph.

The data can be modelled using the equation

$$y = -0.05x^2 + x + 6$$

where y represents the number of cars and x represents the time period in minutes.

- **Use** the equation to **calculate** the number of cars passing through the junction during [an indicated period].
- **Comment** on the validity of the answer(s) to your calculations.
- Use the equation **solved** for x to find the time when there are no cars passing the junction [extended mathematics assessment only].

About the IB: For over 45 years, the IB has built a reputation for high-quality, challenging programmes of education that develop internationally minded young people who are well prepared for the challenges of life in the 21st century and are able to contribute to creating a better, more peaceful world.

For further information on the IB Middle Years Programme, and a complete list of MYP subject briefs, visit: www.ibo.org/myp/.

Complete subject guides can be accessed through the IB online curriculum centre (OCC) or purchased through the IB store: <http://store.ibo.org>.

International Baccalaureate

Middle Years Programme Subject Brief

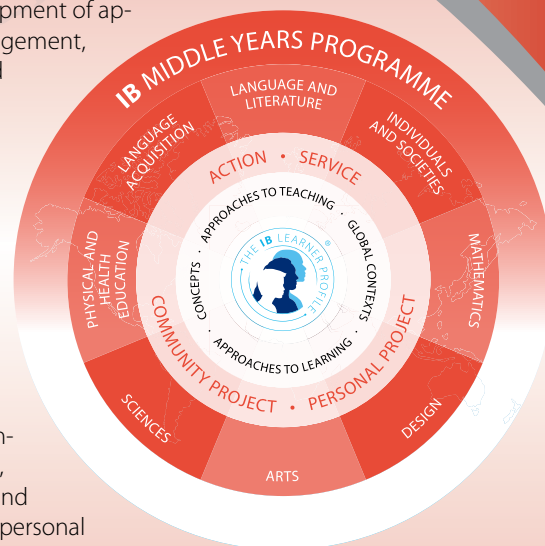
Sciences

From 2014

The IB Middle Years Programme (MYP) is designed for students aged 11 to 16. It provides a framework of learning that emphasizes intellectual challenge and encourages connections between studies in traditional subjects and the real world. The MYP focuses on “learning how to learn” through the systematic development of approaches to learning (ATL) skills for communication, collaboration, organization, self-management, reflection, research, informational literacy, media literacy, creative and critical thinking, and transfer of learning. It also fosters intercultural understanding and global engagement—essential qualities for young people today.

Interdisciplinary teaching and learning builds a connected curriculum that addresses the developmental needs of students and prepares them for further academic study and life in an increasingly interconnected world. The MYP uses concepts and contexts as starting points for meaningful integration and transfer of knowledge across eight subject groups.

For students seeking a formal qualification at the end of the programme’s Year 5, the IB offers eAssessments that lead to the IB MYP certificate or course results for individual subject areas. To earn the MYP certificate, students must complete 2 hour on-screen examinations in each of the following: language and literature, individuals and society, sciences, mathematics and interdisciplinary learning; submit an ePortfolio in language acquisition and one of the following: design, arts or physical and health education; complete a moderated personal project; and complete school-based expectations for service as action (community service).



I. Course description and aims

II. Curriculum overview

III. Assessment criteria

IV. MYP eAssessment

I. Course description and aims

With inquiry at the core, the MYP sciences framework aims to guide students to independently and collaboratively investigate issues through research, observation and experimentation. The MYP sciences curriculum explores the connections between science and everyday life. As they investigate real examples of science applications, students discover the tensions and dependencies between science and morality, ethics, culture, economics, politics, and the environment.

Scientific inquiry fosters critical and creative thinking about research and design, as well as the identification of assumptions and alternative explanations. Students learn to appreciate and respect the ideas of others, gain good ethical-reasoning skills and further develop their sense of responsibility as members of local and global communities.

The MYP sciences group aims to encourage and enable students to:

- understand and appreciate science and its implications
- consider science as a human endeavour with benefits and limitations
- cultivate analytical, inquiring and flexible minds that pose questions, solve problems, construct explanations and judge arguments
- develop skills to design and perform investigations, evaluate evidence and reach conclusions
- build an awareness of the need to effectively collaborate and communicate
- apply language skills and knowledge in a variety of real-life contexts
- develop sensitivity towards the living and non-living environments
- reflect on learning experiences and make informed choices.

II. Curriculum overview

Although schools may vary the structure of the curriculum throughout the five years of the programme, they generally develop discrete, modular or integrated science courses. Discrete sciences courses typically encompass biology, chemistry and physics, but may include other science disciplines, such as environmental sciences, life sciences or physical sciences. Modular sciences courses include two or more discrete sciences taught in rotation.

The MYP promotes **inquiry** in sciences by developing **conceptual understanding** within **global contexts**.

Key concepts such as *change*, *relationships* and *systems* broadly frame the MYP curriculum.

Related concepts promote deeper learning grounded in specific disciplines. Examples of related concepts in MYP sciences include *energy*, *movement*, *transformation* and *models*. Additional concepts may also be identified and developed to meet local circumstances and curriculum requirements.

Students explore key and related concepts through MYP **global contexts**.

- Identities and relationships
- Orientation in space and time
- Personal and cultural expression
- Scientific and technical innovation
- Globalization and sustainability
- Fairness and development

These same global contexts are discussed across the curriculum, supporting transfer and interdisciplinary learning.

The MYP curriculum framework offers schools flexibility to determine engaging, relevant, challenging and significant content that meets local and national curriculum requirements. This inquiry-based curriculum explores factual, conceptual and debatable questions in the study of sciences.

The MYP requires at least 50 hours of teaching time for each subject area in each year of the programme. For students participating in MYP eAssessment, the IB recommends 70 hours of guided learning each year in MYP years 4 and 5.

III. Assessment criteria

Each sciences objective corresponds to one of four equally weighted assessment criteria. Each criterion has eight possible achievement levels (1–8), divided into four bands with unique descriptors that teachers use to make judgments about students' work.

Criterion A: Knowing and understanding

Students develop scientific knowledge (facts, ideas, concepts, processes, laws, principles, models and theories) and apply it to solve problems and express scientifically supported judgments.

Criterion B: Inquiring and designing

Students develop intellectual and practical skills through designing, analysing and performing scientific investigations.

Criterion C: Processing and evaluating

Students collect, process and interpret qualitative and/or quantitative data, and explain conclusions that have been appropriately reached.

Criterion D: Reflecting on the impacts of science

Students evaluate the implications of scientific developments and their applications to a specific problem or issue. Varied scientific language is applied to demonstrate understanding. Students should become aware of the importance of documenting the work of others when communicating in science.

IV. MYP eAssessment

Students seeking IB MYP course results or the IB MYP certificate must demonstrate their achievement of the subject group's objectives by completing an end-of-course on-screen examination. On-screen examinations are formal external examinations, and are available in *biology*, *chemistry*, *physics* and *integrated sciences*.

Topics explored in MYP sciences on-screen examinations include:

- atomic structure and bonding
- cells
- cycles
- electromagnetism
- evolution
- interactions between organisms
- forces

- states and properties of matter
- metabolism
- organisms
- waves.

Examination blueprints define the structure of tasks that simulate, replicate and sample formative internal assessments. In MYP science courses, on-screen examinations comprise three tasks.

Task	Assessment criteria	Marks
Knowing and understanding	Assesses knowledge and understanding of science (criterion A).	30
Investigation	Assesses the skills involved in inquiring, designing, processing and evaluating. May involve a single investigation or a number of discrete scenarios. Students must formulate hypotheses, plan investigations and collect, present, interpret and evaluate data (criteria B and C).	60
Applying science	Requires students to reflect on the impact of science, and explain how science addresses real-life issues (criterion D).	30

MYP sciences on-screen examinations are aligned with understanding and skills that prepare students for high levels of achievement in IB Diploma Programme courses in **sciences**.

Sample questions (from biology eAssessment)

- **Outline** one advantage and one disadvantage of using a model to understand interaction between organisms.
- The designers of a water filter claim that particles up to $0.2\text{ }\mu\text{m}$ (micrometres) in size will be removed. From your measurements in parts (a) and (b) **deduce** whether the filter will remove both viruses and bacteria.
- **Evaluate** two methods for preparing drinking water. In an extended piece of writing:
 - explain what makes these methods effective
 - explain the strengths and limitations of each method

Use scientific knowledge and understanding to support your answer.

About the IB: For over 45 years, the IB has built a reputation for high-quality, challenging programmes of education that develop internationally minded young people who are well prepared for the challenges of life in the 21st century and are able to contribute to creating a better, more peaceful world.

For further information on the IB Middle Years Programme, and a complete list of MYP subject briefs, visit: www.ibo.org/myp/.

Complete subject guides can be accessed through the IB online curriculum centre (OCC) or purchased through the IB store: <http://store.ibo.org>.

International Baccalaureate Middle Years Programme Subject Brief

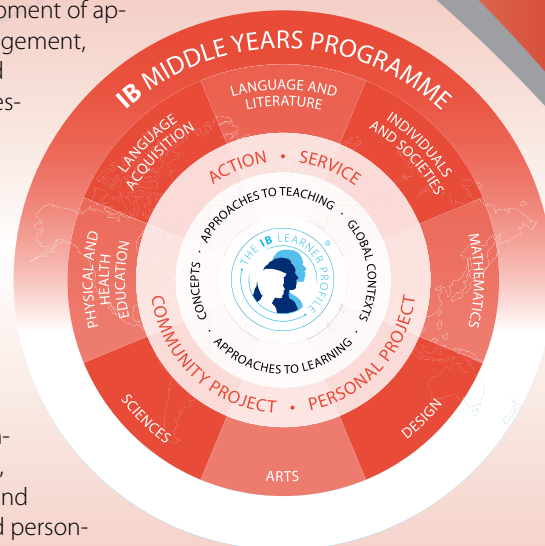
Interdisciplinary learning

From 2014

The IB Middle Years Programme (MYP) is designed for students aged 11 to 16. It provides a framework of learning that emphasizes intellectual challenge and encourages connections between studies in traditional subjects and the real world. The MYP focuses on “learning how to learn” through the systematic development of approaches to learning (ATL) skills for communication, collaboration, organization, self-management, reflection, research, informational literacy, media literacy, creative and critical thinking, and transfer of learning. It also fosters intercultural understanding and global engagement—essential qualities for young people today.

Interdisciplinary teaching and learning builds a connected curriculum that addresses the developmental needs of students and prepares them for further academic study and life in an increasingly interconnected world. The MYP uses concepts and contexts as starting points for meaningful integration and transfer of knowledge across eight subject groups.

For students seeking a formal qualification at the end of the programme’s Year 5, the IB offers eAssessments that lead to the IB MYP certificate or course results for individual subject areas. To earn the MYP certificate, students must complete 2 hour on-screen examinations in each of the following: language and literature, individuals and society, sciences, mathematics and interdisciplinary learning; submit an ePortfolio in language acquisition and one of the following: design, arts or physical and health education; complete a moderated personal project; and complete school-based expectations for service as action (community service).



I. Course description and aims

II. Curriculum overview

III. Assessment criteria

IV. MYP eAssessment

I. Course description and aims

Interdisciplinary learning can take place between different subject groups and between different disciplines within a subject group to encourage broader perspectives on complex issues and deeper levels of analysis and synthesis. Interdisciplinary connections must be meaningful.

In the MYP, interdisciplinary learning is the process by which students come to understand bodies of knowledge and modes of thinking from two or more disciplines and then integrate them to create a new understanding. Students demonstrate this by bringing together concepts, methods or forms of communication to explain a phenomenon, solve a problem, create a product or raise a new question in ways that would have been unlikely through a single discipline.

MYP schools must engage students in at least one collaboratively planned interdisciplinary unit in each year of the MYP in order to integrate knowledge and skills from two or more subject groups in an interdisciplinary manner.

The aims of interdisciplinary learning in the MYP are to:

- develop a deeper understanding of learning skills and apply them in meaningful contexts
- integrate conceptual learning, ways of knowing and methods of inquiring from multiple disciplines
- inquire into compelling issues, ideas and challenges by creating products or explaining phenomena
- reflect on and communicate understanding of the interdisciplinary learning process

- experience the excitement of intellectual discovery—including insights into how disciplines complement and challenge one another.

II. Curriculum overview

The MYP interdisciplinary curriculum is developed across a continuum in which disciplines borrow from each other, share common threads, combine in formal units of study or are organized into discrete courses.

The MYP promotes interdisciplinary **inquiry** by integrating discipline-based **conceptual understanding** within the following **global contexts**.

- Identities and relationships
- Orientation in space and time
- Personal and cultural expression
- Scientific and technical innovation
- Globalization and sustainability
- Fairness and development

There is no set number of interdisciplinary learning hours in each year of the MYP, but MYP subject-group teachers are responsible for developing meaningful and ongoing interdisciplinary teaching and learning opportunities throughout the programme.

III. Assessment criteria

Each interdisciplinary learning objective corresponds to one of four equally weighted assessment criteria. Each criterion has eight possible achievement levels (1–8), divided into four bands with unique descriptors that teachers use to make judgments about students' work.

Criterion A: Disciplinary grounding

Students must understand disciplinary concepts and skills—as framed by MYP subject-group objectives. This disciplinary grounding provides the foundation for interdisciplinary understanding.

Criterion B: Synthesizing

Students integrate knowledge from more than one discipline in ways that inform inquiry into relevant ideas, issues and challenges in order to explain phenomena or create products.

Criterion C: Communicating

Students select, integrate or innovate communication forms and strategies to explain the results of their inquiries. They develop the capacity to communicate effectively and responsibly with a range of audiences.

Criterion D: Reflecting

Students evaluate the role of disciplines, weighing their relative contributions and assessing their strengths and limitations in specific interdisciplinary applications. Students also explore various areas of knowledge and ways of knowing, and reflect on their ability to construct understanding across disciplinary boundaries.

IV. MYP eAssessment

Students seeking IB MYP course results or the IB MYP certificate must demonstrate their achievement of the above objectives by completing an end-of-programme on-screen examination. On-screen examinations are formal external assessments.

Prior to the examination, the IB announces one global context and two disciplines from language and literature, individuals and societies, sciences or mathematics to provide the foundation for the on-screen examination. While grounding in the selected disciplines is assessed, examinations emphasize interdisciplinary thinking.

Examination blueprints define the structure of tasks that simulate, replicate and sample formative internal assessments. MYP interdisciplinary learning on-screen examinations comprise three tasks.

Task	Assessment criteria	Points	
Disciplinary grounding	Assesses relevant knowledge and skills from the perspective of MYP language and literature, individuals and societies, mathematics or sciences. (Criterion A)	30	
Synthesis and communication of interdisciplinary understanding	Assesses students' ability to synthesize disciplinary knowledge in order to address a real-world challenge (Criterion B), using effective strategies to communicate interdisciplinary understanding. (Criterion C)	30	60
Reflecting	Assesses students' ability to evaluate the benefits and limitations of disciplinary and interdisciplinary knowledge, as well as their own strengths and weaknesses as interdisciplinary learners. (Criterion D)	30	

On-screen examinations for interdisciplinary learning help students prepare for the Diploma Programme interdisciplinary courses and **theory of knowledge**.

Sample task

The following questions relate to ten written and rich-media stimulus material including infographics, graphical data, a video of a personal story, articles from *The Economist* and *The Guardian* online, and two literary extracts.

- Source 3 and Source 8 both describe the positive effects access to education had on girls. State which source conveys this idea more effectively. Justify your opinion with evidence from both sources.
- Evaluate how effectively these social media posts synthesize disciplinary understanding to inform people about universal primary education.
- Using Source 10, identify five features of the report in which the author demonstrates scientific or mathematical thinking and explain the purpose of each.
- Explore how another discipline, excluding language and literature and individuals and societies, could help people understand the benefits of universal primary education. In your answer, reflect on the development of your own interdisciplinary understanding.

About the IB: For over 45 years, the IB has built a reputation for high-quality, challenging programmes of education that develop internationally minded young people who are well prepared for the challenges of life in the 21st century and are able to contribute to creating a better, more peaceful world.

For further information on the IB Middle Years Programme, and a complete list of MYP subject briefs, visit: www.ibo.org/myp/.

Complete subject guides can be accessed through the IB online curriculum centre (OCC) or purchased through the IB store: <http://store.ibo.org>.