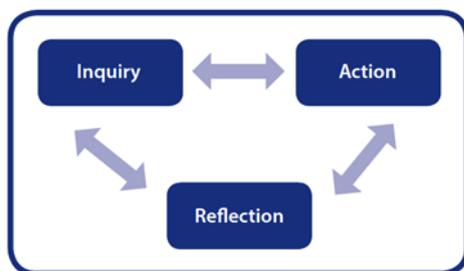


## Using the MYP unit planner

In the context of the Middle Years Programme (MYP) curriculum, a *unit* can be defined as a period of study that concludes with a summative assessment. This document describes the process of planning inquiry-based, subject-specific units (disciplinary learning) as organized by the MYP unit planner.

There are three aspects of developing an MYP unit: establishing the purpose of the unit; defining the process of teaching and learning through inquiry; and reflecting on the planning, process and impact of the inquiry. These aspects are developed by placing elements of “backwards planning” (Wiggins and McTighe 1998) in an MYP context. The relationship between these aspects of teaching and learning is dynamic, and any aspect might provide the point from which teachers begin their planning. In planning curriculum, teachers often move among inquiry, action and reflection; these inquiry-based aspects of curriculum planning are iterative and interrelated rather than strictly linear, as shown in Figure 1.



**Figure 1**

*The dynamic aspects of MYP unit development*

Unit plans are an essential component of MYP written curriculum and must include the following elements.

### **Inquiry: Establishing the purpose of the unit**

- Key and related concepts
- Global contexts
- Statement of inquiry
- Inquiry questions
- Subject group objectives
- Summative assessment
- Approaches to learning (ATL)

### **Action: Teaching and learning through inquiry**

- Content (selected or required)
- Description of the learning process
  - Learning experiences and teaching strategies
  - Formative assessment

- Differentiation
- Resources

### **Reflection: Considering the planning, process and impact of the inquiry**

- Prior to teaching the unit
- During teaching
- After teaching the unit

Teachers planning MYP units might begin with reflection on previously developed units of work, required content, a successful teaching strategy, an effective summative assessment, or an important ATL skill. From any of these starting points, teachers can use the unit planner to extend and coordinate their thinking about how to develop students' skills and understanding and how to meet the subject group's aims and objectives.

The MYP unit planning process helps teachers move collaboratively towards a fully developed written, taught and assessed curriculum. Many teachers find it helpful to use the MYP unit planner as an organizer for more detailed lesson plans developed in light of local teaching practices and requirements. Schools can adapt the specific format of unit planning to meet their needs and to promote effective teaching and learning in a variety of local and national circumstances.

## **Inquiry: Establishing the purpose of the unit**

The "Inquiry" section of the MYP unit planner identifies the purpose of the unit to ensure its alignment with MYP philosophy and requirements. The components of this section of the MYP unit planner are: concepts, global contexts, statement of inquiry, inquiry questions, subject group objectives, summative assessment and ATL.

### **Concepts**

#### **Conceptual understanding in IB programmes**

The International Baccalaureate (IB) values education more as the transformation of personal understanding and the collaborative construction of meaning, and less as the transmission of knowledge and rote memorization of facts. Consequently, conceptual understanding is a significant and enduring goal for teaching and learning in IB programmes.

IB programmes offer curriculum frameworks and courses that are broad and balanced, conceptual and connected. In the Primary Years Programme (PYP) and MYP curriculum frameworks, students engage with a defined set of key and related concepts. Each course in the Diploma Programme (DP) has a prescribed syllabus that outlines how students develop their conceptual understanding. Over time, students grow in the sophistication of their understanding as schools create challenging opportunities for them to encounter new ideas in engaging learning environments.

A *concept* is a big idea—a principle or conception that is enduring, the significance of which goes beyond aspects such as particular origins, subject matter or place in time (Wiggins and McTighe 1998). Concepts represent the vehicle for students' inquiry into issues and ideas of personal, local and global significance, providing the means by which the essence of a subject can be explored.

Concepts have an essential place in the structure of knowledge. They require students to demonstrate levels of thinking that reach beyond facts or topics. Concepts are used to formulate the understandings that students should retain in the future; they become principles and generalizations that students can use to understand the world and to succeed in further study and in life beyond school.

The exploration and re-exploration of concepts lead students towards:

- deeper understanding of the subject group
- appreciation of ideas that transcend disciplinary boundaries
- engagement with complex ideas, including the ability to transfer and apply ideas and skills to new situations (Erickson 2008).

Students gradually work towards a deepening of their conceptual understanding as they approach concepts from a range of perspectives. The concept-driven curriculum frameworks of the MYP help learners to co-construct meaning as they become increasingly competent critical and creative thinkers, able to transfer knowledge and take responsibility for their own learning.

Teaching through concepts encourages teachers to work across national and cultural boundaries. Concepts promote a broad approach to education that can encompass many ways of thinking, inspire a variety of experiences, and open doors to exciting and highly relevant interdisciplinary learning.

### The structure of conceptual understanding in the MYP

MYP programme design uses two kinds of concepts.

- *Key concepts*, contributed from each subject group, provide interdisciplinary breadth to the programme. Key concepts are broad, organizing, powerful ideas that have relevance within and across subjects and disciplines, providing connections that can transfer across time and culture.
- *Related concepts*, grounded in specific disciplines, explore key concepts in greater detail, providing depth to the programme. They emerge from reflection on the nature of specific subjects and disciplines, providing a focus for inquiry into subject-specific content.

Concepts can be interpreted differently and explored from various perspectives and at different levels of complexity. As students develop and deepen their understanding, they can use concepts to innovate, address challenges and solve problems.

#### Note

- The MYP identifies prescribed key and related concepts for each subject group and for selected subjects and disciplines. These concepts ensure the development of a rigorous curriculum and promote a shared community of practice among IB World Schools offering the MYP.
- These required concepts also form the basis of the curriculum externally assessed by (optional) MYP eAssessments, which can lead to MYP course results and contribute to the awarding of the MYP certificate.

### Key concepts

Key concepts are powerful, abstract ideas that have many dimensions and definitions. They have important interconnections and overlapping concerns. Key concepts engage students in higher-order thinking, helping them to connect facts and topics with more complex conceptual understanding. Key concepts create “intellectual synergy” (Erikson 2007) and provide points of contact for transferring knowledge and understanding across disciplines and subject groups.

The MYP identifies 16 key concepts to be explored across the curriculum. These key concepts, shown in Table 1 represent understandings that reach beyond the eight MYP subject groups from which they are drawn.

Aesthetics	Change	Communication	Communities
Connections	Creativity	Culture	Development
Form	Global interactions	Identity	Logic
Perspective	Relationships	Time, place and space	Systems

**Table 1**

*MYP key concepts*

Teachers use key concepts from their own subject group(s)—as well as key concepts from other subject groups—to plan disciplinary and interdisciplinary units of inquiry. Teachers identify one key concept that drives the unit’s development.

The following broad descriptions apply across subject groups, and MYP subject guides suggest further subject-specific understandings. These concepts are not only “key” in the sense of being important; they also provide a key—a way into a body of knowledge through structured and sustained inquiry. They place no limits on breadth of knowledge or on depth of understanding, and therefore provide access to every student, regardless of individual aptitudes and abilities.

Inquiry into MYP key concepts will further develop (and debate) the meaning of these significant ideas.

- *Aesthetics* deals with the characteristics, creation, meaning and perception of beauty and taste. The study of aesthetics develops skills for the critical appreciation and analysis of art, culture and nature.
- *Change* is a conversion, transformation or movement from one form, state or value to another. Inquiry into the concept of change involves understanding and evaluating causes, processes and consequences.
- *Communication* is the exchange or transfer of signals, facts, ideas and symbols. It requires a sender, a message and an intended receiver. Communication involves the activity of conveying information or meaning. Effective communication requires a common “language” (which may be written, spoken or non-verbal).
- *Communities* are groups that exist in proximity defined by space, time or relationship. Communities include, for example, groups of people sharing particular characteristics, beliefs or values as well as groups of interdependent organisms living together in a specific habitat.
- *Connections* are links, bonds and relationships among people, objects, organisms or ideas.
- *Creativity* is the process of generating novel ideas and considering existing ideas from new perspectives. Creativity includes the ability to recognize the value of ideas when developing innovative responses to problems; it may be evident in process as well as outcomes, products or solutions.
- *Culture* encompasses a range of learned and shared beliefs, values, interests, attitudes, products, ways of knowing and patterns of behaviour created by human communities. The concept of culture is dynamic and organic.
- *Development* is the act or process of growth, progress or evolution, sometimes through iterative improvements.
- *Form* is the shape and underlying structure of an entity or piece of work, including its organization, essential nature and external appearance.
- *Global interactions*, as a concept, focuses on the connections among individuals and communities, as well as their relationships with built and natural environments, from the perspective of the world as a whole.
- *Identity* is the state or fact of being the same. It refers to the particular features that define individuals, groups, things, eras, places, symbols and styles. Identity can be observed, or it can be constructed, asserted and shaped by external and internal influences.
- *Logic* is a method of reasoning and a system of principles used to build arguments and reach conclusions.

- *Perspective* is the position from which we observe situations, objects, facts, ideas and opinions. Perspective may be associated with individuals, groups, cultures or disciplines. Different perspectives often lead to multiple representations and interpretations.
- *Relationships* are the connections and associations between properties, objects, people and ideas—including the human community’s connections with the world in which we live. Any change in relationship brings consequences—some of which may occur on a small scale, while others may be far reaching, affecting large networks and systems such as human societies and the planetary ecosystem.
- *Systems* are sets of interacting or interdependent components. Systems provide structure and order in human, natural and built environments. Systems can be static or dynamic, simple or complex.
- The intrinsically linked concept of *time, space and place* refers to the absolute or relative position of people, objects and ideas. Time, place and space focuses on how we construct and use our understanding of location (“where” and “when”).

### Related concepts

Related concepts promote depth of learning and add coherence to the understanding of academic subjects and disciplines. They are grounded in specific subjects and disciplines, and they are useful for exploring key concepts in greater detail. Inquiry into related concepts helps students to develop more complex and sophisticated conceptual understanding. Related concepts may arise from the subject matter of a unit or the craft of a subject—its features and processes.

Related concepts for each subject are listed in Table 2. Subject guides contain definitions for related concepts as well as examples of how they are used to develop MYP units. Teachers can develop additional related concepts to meet the needs of students and local or national curriculum requirements. For each unit, teachers identify one or more related concepts that extend learning, lead to deeper understanding, or offer another perspective from which to understand the identified key concept.

Language and literature			
Audience imperatives	Character	Context	Genres
Intertextuality	Point of view	Purpose	Self-expression
Setting	Structure	Style	Theme
Language acquisition			
Phases 1–2			
Accent	Audience	Context	Conventions
Form	Function	Meaning	Message
Patterns	Purpose	Structure	Word choice
Phases 3–4			
Audience	Context	Conventions	Empathy
Function	Idiom	Meaning	Message
Point of view	Purpose	Structure	Word choice
Phases 5–6			
Argument	Audience	Bias	Context

Empathy	Idiom	Inference	Point of view
Purpose	Stylistic choices	Theme	Voice
<b>Individuals and societies</b>			
<b>Economics</b>			
Choice	Consumption	Equity	Globalization
Growth	Model	Poverty	Power
Resources	Scarcity	Sustainability	Trade
<b>Geography</b>			
Causality (cause and consequence)	Culture	Disparity and equity	Diversity
Globalization	Management and intervention	Networks	Patterns and trends
Power	Processes	Scale	Sustainability
<b>History</b>			
Causality (cause and consequence)	Civilization	Conflict	Cooperation
Culture	Governance	Identity	Ideology
Innovation and revolution	Interdependence	Perspective	Significance
<b>Integrated humanities (drawn from economics, geography and history)</b>			
Causality (cause and consequence)	Choice	Culture	Equity
Globalization	Identity	Innovation and revolution	Perspective
Power	Processes	Resources	Sustainability
The MYP <i>Individuals and societies</i> guide contains suggested related concepts for business management, philosophy, psychology, sociology/anthropology, political science/civics/government, and world religions.			
<b>Sciences</b>			
<b>Biology</b>			
Balance	Consequences	Energy	Environment
Evidence	Form	Function	Interaction
Models	Movement	Patterns	Transformation
<b>Chemistry</b>			
Balance	Conditions	Consequences	Energy

Evidence	Form	Function	Interaction
Models	Movement	Patterns	Transformation
<b>Physics</b>			
Consequences	Development	Energy	Environment
Evidence	Form	Function	Interaction
Models	Movement	Patterns	Transformation
<b>Integrated sciences (drawn from biology, chemistry and physics)</b>			
Balance	Consequences	Energy	Environment
Evidence	Form	Function	Interaction
Models	Movement	Patterns	Transformation
<b>Mathematics</b>			
Change	Equivalence	Generalization	Justification
Measurement	Model	Pattern	Quantity
Representation	Simplification	Space	System
<b>Arts</b>			
<b>Visual arts</b>			
Audience	Boundaries	Composition	Expression
Genre	Innovation	Interpretation	Narrative
Presentation	Representation	Style	Visual culture
<b>Performing arts</b>			
Audience	Boundaries	Composition	Expression
Genre	Innovation	Interpretation	Narrative
Play	Presentation	Role	Structure
<b>Physical and health education</b>			
Adaptation	Balance	Choice	Energy
Environment	Function	Interaction	Movement
Perspectives	Refinement	Space	Systems
<b>Design</b>			
Adaptation	Collaboration	Ergonomics	Evaluation
Form	Function	Innovation	Invention
Markets and trends	Perspective	Resources	Sustainability

**Table 2**

*Related concepts by subject*

### **Using key and related concepts**

Because key and related concepts describe the most important ideas for teaching in the subject, teachers can use them as a framework for vertically articulating the curriculum. For example, teachers can begin by identifying the key and related concepts that will be addressed in each year of the programme, and then map the development of those concepts with respect to MYP subject group objectives. Alternatively, teachers can begin by developing their understanding of subject group objectives over the years of the programme, then identify key and related concepts for specific units.

When planning a unit of work and determining the conceptual understandings for students to explore through the unit, it is important to note the following.

- Students need multiple opportunities to explore the concepts defined for each subject or discipline. Students should have meaningful inquiry into all of the key and related concepts for each relevant subject group at least once over the course of the MYP.
- Over the course of the programme, students need to develop an understanding of the key and related concepts at increasing levels of sophistication and abstraction.
- Summative assessments should offer students opportunities to reach the highest levels of achievement with regard to their conceptual knowledge and understanding.
- Related concepts can have different levels of abstraction and disciplinary specificity (Erickson 2008). In some cases, key concepts can function like related concepts. For example, in a unit “Balance in complex organisms requires the effective interaction of systems”, the related concepts balance and interaction bring disciplinary depth to the key concept of systems—and also deepen understanding of the subject.

## **Global contexts**

### **Global engagement**

In a world of increasing interconnection and complexity, learning in context provides students with opportunities to explore multiple dimensions of global challenges and encourages them to develop creative solutions. The MYP encourages teachers to design units around important global issues and ideas including climate change, international conflicts and international exchange and trade.

The complexity of real life requires interdisciplinary perspectives that can help students to:

- address biases and consider diverse interpretations and points of view
- engage personal interest and increase motivation for learning
- broaden their awareness of circumstances that have personal impact
- develop critical and conceptual thinking skills by gathering and evaluating relevant data, analysing alternatives, considering potential consequences, and drawing conclusions
- take action in ways that are age-appropriate and develop dispositions to take responsible action as adults to address global challenges.

Global contexts comprise a range of ideas and issues that can be personally, locally, nationally, internationally and globally significant. As adolescents develop their intellectual and social identities during the MYP years, they become increasingly aware of their place in the world. Working in global contexts requires a sophisticated combination of understanding, practical skills and personal dispositions that work together to define global competence (Boix-Mansilla and Jackson 2011). Global competence calls for deep,

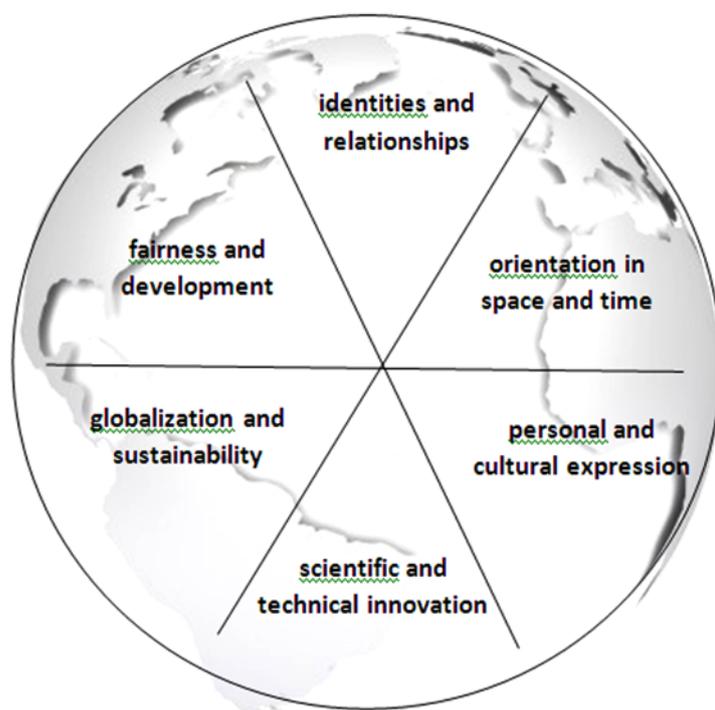
engaged learning. To prosper in the world, students must not only be able to understand globalization, but be able both to reflect critically on its promise and peril and to act responsibly to make that world a better place for themselves and for the communities in which they live.

### **The structure of global contexts in the MYP**

Teaching and learning in the MYP involves understanding concepts in context. Global contexts provide a common language for powerful contextual learning, identifying specific settings, events or circumstances that provide more concrete perspectives for teaching and learning. When teachers select a global context for learning, they are answering the questions:

- Why are we engaged in this inquiry?
- Why are these concepts important?
- Why is it important for me to understand?
- Why do people care about this topic?

MYP global contexts, illustrated in Figure 2, provide common points of entry for inquiries into what it means to be internationally minded, framing a curriculum that promotes multilingualism, intercultural understanding and global engagement. These contexts build on the powerful themes of global significance that structure teaching and learning in the PYP, creating relevance for adolescent learners.



**Figure 2**

#### *MYP global contexts*

These and other contexts for teaching and learning inspire explorations of our common humanity and shared guardianship of the planet. They invite reflection on local, national and global communities, as well as the real-life issues and concerns of 11- to 16-year-old students. For each MYP unit, teachers should identify one global context that establishes a focus for meaningful teaching and learning in a programme of international education. Over the course of their study, students should encounter all six global contexts.

Global context	Focus question(s) and description	Example explorations
Identities and relationships	<p>Who am I? Who are we?</p> <p>Students will explore identity; beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities and cultures; what it means to be human.</p>	<p>Possible explorations to develop</p> <ul style="list-style-type: none"> <li>• Competition and cooperation; teams, affiliation and leadership</li> <li>• Identity formation, self-esteem, status, roles and role models</li> <li>• Personal efficacy and agency; attitudes, motivations, independence; happiness and the good life</li> <li>• Physical, psychological and social development; transitions; health and well-being; lifestyle choices</li> <li>• Human nature and human dignity; moral reasoning and ethical judgment; consciousness and mind</li> </ul>
Orientation in time and space	<p>What is the meaning of “where” and “when”?</p> <p>Students will explore personal histories; homes and journeys; turning points in humankind; discoveries; explorations and migrations of humankind; the relationships between, and the interconnectedness of, individuals and civilizations, from personal, local and global perspectives.</p>	<p>Possible explorations to develop</p> <ul style="list-style-type: none"> <li>• Civilizations and social histories, heritage; pilgrimage, migration, displacement and exchange</li> <li>• Epochs, eras, turning points and “big history”</li> <li>• Scale, duration, frequency and variability</li> <li>• Peoples, boundaries, exchange and interaction</li> <li>• Natural and human landscapes and resources</li> <li>• Evolution, constraints and adaptation</li> </ul>
Personal and cultural expression	<p>What is the nature and purpose of creative expression?</p> <p>Students will explore the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic.</p>	<p>Possible explorations to develop</p> <ul style="list-style-type: none"> <li>• Artistry, craft, creation, beauty</li> <li>• Products, systems and institutions</li> <li>• Social constructions of reality; philosophies and ways of life; belief systems; ritual and play</li> <li>• Critical literacy, languages and linguistic systems; histories of ideas, fields and disciplines;</li> </ul>

		<p>analysis and argument</p> <ul style="list-style-type: none"> <li>• Metacognition and abstract thinking</li> <li>• Entrepreneurship, practice and competency</li> <li>•</li> </ul>
Scientific and technical innovation	<p>How do we understand the world in which we live?</p> <p>Students will explore the natural world and its laws; the interaction between people and the natural world; how humans use their understanding of scientific principles; the impact of scientific and technological advances on communities and environments; the impact of environments on human activity; how humans adapt environments to their needs.</p>	<p>Possible explorations to develop</p> <ul style="list-style-type: none"> <li>• Systems, models, methods; products, processes and solutions</li> <li>• Adaptation, ingenuity and progress</li> <li>• Opportunity, risk, consequences and responsibility</li> <li>• Modernization, industrialization and engineering</li> <li>• Digital life, virtual environments and the Information Age</li> <li>• The biological revolution</li> <li>• Mathematical puzzles, principles and discoveries</li> <li>•</li> </ul>
Globalization and sustainability	<p>How is everything connected?</p> <p>Students will explore the interconnectedness of human-made systems and communities; the relationship between local and global processes; how local experiences mediate the global; the opportunities and tensions provided by world-interconnectedness; the impact of decision-making on humankind and the environment.</p>	<p>Possible explorations to develop</p> <ul style="list-style-type: none"> <li>• Markets, commodities and commercialization</li> <li>• Human impact on the environment</li> <li>• Commonality, diversity and interconnection</li> <li>• Consumption, conservation, natural resources and public goods</li> <li>• Population and demography</li> <li>• Urban planning, strategy and infrastructure</li> <li>•</li> </ul>
Fairness and development	<p>What are the consequences of our common humanity?</p> <p>Students will explore rights and responsibilities; the relationship between communities; sharing finite resources with other people and with other living things; access to equal opportunities; peace and conflict</p>	<p>Possible explorations to develop</p> <ul style="list-style-type: none"> <li>• Democracy, politics, government and civil society</li> <li>• Inequality, difference and inclusion</li> <li>• Human capability and</li> </ul>

	resolution.	development; social entrepreneurs <ul style="list-style-type: none"> <li>• Rights, law, civic responsibility and the public sphere</li> <li>• Justice, peace and conflict management</li> <li>• Power and privilege</li> <li>• Authority, security and freedom</li> <li>• Imagining a hopeful future</li> <li>•</li> </ul>
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Table 3

*Global contexts and explorations*

The selected global context will inform the questions that teachers and students ask throughout the unit. However, many explorations of global contexts are closely related, and in the course of the unit, questions that relate to other global contexts may also be encouraged, developed and considered.

Inquiring into subject content through a global context enables students to develop a deeper understanding of both the subject and its application in the real world. Repeated cycles of inquiry, action and reflection can lead students from academic knowledge towards practical understanding, developing positive attitudes towards learning as well as a sense of personal and social responsibility.

### Statement of inquiry

Teachers construct the statement of inquiry for a unit by combining a key concept, one or more related concepts, and a global context for the unit into a meaningful statement that students can understand. This statement expresses the relationship between concepts and context; it represents a transferable idea supported by factual content. Statements of inquiry facilitate synergistic thinking, synthesizing factual and conceptual levels of mental processing and creating a greater impact on cognitive development than either level of thinking by itself (Erickson 2007 and Marzano 2010).

The statement of inquiry:

- represents a contextualized, conceptual understanding
- describes a complex relationship that is worthy of inquiry
- explains clearly **what** students should understand and **why** that understanding is meaningful
- can be qualified (using phrases such as “often”, “may” and “can”) if it is not true in all situations, but is still an important idea
- can be formulated at different levels of specificity.

Teachers can make very broad statements more specific, age-appropriate and focused by asking themselves “Why/how does this relationship or principle occur?” and “What are the implications of this understanding?” However, statements of inquiry should not be so specific that they cannot be transferable beyond the content of the unit.

### Inquiry questions

Inquiry questions are drawn from and inspired by the statement of inquiry. Teachers and students develop these questions to explore the statement of inquiry in greater detail. Students can develop their own

questions in ways that satisfy curiosity and deepen understanding. The strands of subject-specific objectives can also be helpful in formulating inquiry questions.

Inquiry questions give shape and scope to a unit of study, and they help to scaffold the objectives that students should strive to achieve. As the unit progresses, both teachers and students can develop additional questions to explore.

Table 4 lists some characteristics of factual, conceptual and debatable questions to consider when planning MYP units.

Factual questions	Conceptual questions	Debatable questions
<ul style="list-style-type: none"> <li>• Knowledge/fact-based</li> <li>• Content-driven</li> <li>• Skills-related</li> <li>• Supported by evidence</li> <li>• Can be used to explore terminology in the statement of inquiry</li> <li>• Frequently topical</li> <li>• Encourage recall and comprehension</li> </ul>	<ul style="list-style-type: none"> <li>• Enable exploration of big ideas that connect facts and topics</li> <li>• Highlight opportunities to compare and contrast</li> <li>• Explore contradictions</li> <li>• Lead to deeper disciplinary and interdisciplinary understanding</li> <li>• Promote transfer to familiar or less familiar situations, issues, ideas and contexts</li> <li>• Encourage analysis and application</li> </ul>	<ul style="list-style-type: none"> <li>• Enable the use of facts and concepts to debate a position</li> <li>• Promote discussion</li> <li>• Explore significant ideas and issues from multiple perspectives</li> <li>• Can be contested</li> <li>• Have tension</li> <li>• May be deliberately provocative</li> <li>• Encourage synthesis and evaluation</li> </ul>

Table 4

*Characteristics of factual, conceptual and debatable questions*

## Subject group objectives

Each MYP subject group framework encompasses specific aims and objectives. The aims of all MYP subjects state what teachers may expect to teach and what students may expect to experience and learn. The objectives of any MYP subject state the specific targets that are set for learning in that subject. They define what the student will be able to accomplish as a result of studying the subject. Each objective is elaborated by a number of **strands**; a strand is an aspect or indicator of the learning expectation.

The objectives of each subject group represent the use of knowledge, understanding and skills that must be taught. They encompass the factual, conceptual, procedural and metacognitive dimensions of knowledge. MYP objectives reflect and offer opportunities to develop attributes of the IB learner profile. The objectives for years 1, 3 and 5 of the programme are provided in MYP subject guides, and their use is mandatory.

## Summative assessment

Summative assessment tasks should be directly linked to the statement of inquiry and provide varied opportunities for students to demonstrate their knowledge, understanding and skills. In planning these assessments of learning, teachers should ask:

- How does this assessment task relate to the statement of inquiry?
- Which MYP objectives are being addressed?
- How can we create meaningful performances of understanding?
- What evidence of learning will there be?

- How can we collect evidence of learning?
- How will the assessment task demonstrate conceptual understanding?
- How will results be recorded and analysed?
- How and when will students receive feedback?

## Approaches to learning (ATL)

*Skills* are sets of strategies and techniques that people use to achieve a specific purpose. Through ATL in IB programmes, students develop skills that have relevance across the curriculum and help them “learn how to learn”. ATL skills can be learned and taught, improved with practice, and developed incrementally. They provide a solid foundation for learning independently and with others. ATL skills help students prepare for, and demonstrate learning through, meaningful assessment. They provide a common language that students and teachers can use to reflect on and articulate the process of learning. ATL skills are most powerful when teachers plan and students engage with them in connection with significant and relevant content knowledge to develop transferable understanding.

### Approaches to learning in the MYP

The focus of ATL in the MYP is on helping students to develop the self-knowledge and skills they need to enjoy a lifetime of learning. ATL skills empower students to succeed in meeting the challenging objectives of MYP subject groups and prepare them for further success in rigorous academic programmes such as the DP and the IB Career-Related Certificate.

In the MYP, ATL encompasses both general and discipline-specific skills. Many ATL skills are applicable to all MYP subject groups; these general “tools for learning” can be tailored to meet the specific needs of students and schools. To develop ATL skills that facilitate effective and efficient learning, students need models, clear expectations, developmental benchmarks (or targets), and multiple opportunities to practise. While ATL skills are not formally assessed in the MYP, they contribute to students’ achievement in all subject groups. Teachers should provide students with regular, specific feedback on the development of ATL skills through learning engagements and formative assessment.

Every MYP unit identifies ATL skills that students will develop through their inquiry and demonstrate in the unit’s formative, if applicable, and summative assessments. Many ATL skills directly support the attainment of subject group objectives.

The most effective way to develop ATL is through ongoing, process-focused disciplinary and interdisciplinary teaching and learning. Teachers can use key and related concepts along with global contexts as vehicles for teaching effective learning strategies. Likewise, ATL skills can be powerful tools for exploring significant content. This dual focus on content and process promotes student engagement, deep understanding, transfer of skills and academic success.

### The structure of ATL skills in the MYP

The MYP extends ATL skill categories into 10 developmentally appropriate clusters. ATL skills are interconnected; individual skills and skill clusters frequently overlap and may be relevant to more than one skill category. Table 5 represents the important ATL skills that students should develop in the MYP. Schools can use this list to build their own frameworks for developing students who are empowered as self-directed learners, and teachers in all subjects groups can draw from these skills to identify approaches to learning that students will develop in MYP units.

ATL skill categories	MYP skill clusters
Communication	I. Communication
Social	II. Collaboration
Self management	III. Organization

	IV. Affective
	V. Reflection
Research	VI. Information literacy
	VII. Media literacy
Thinking	VIII. Critical thinking
	IX. Creative thinking
	X. Transfer

**Table 5**

*ATL skill categories and MYP skill clusters*

In the MYP unit planner, teachers identify ATL skills—general as well as subject-specific—that students will need to develop, through their engagement with the unit’s learning experiences (including formative assessments), to meet the unit’s objectives. The skills that teachers identify in this section of the planner are used to develop horizontal and vertical planning of ATL to meet MYP requirements for the written curriculum. Students and teachers can also work to identify and develop additional important ATL skills.

ATL skills focus on the process of learning, helping students to become confident, independent, self-managed learners for life. Teachers should teach skills explicitly, and students should have structured opportunities to practise them. Table 7 describes some important ATL skills that students can develop in the MYP.

Communication	
I. Communication skills	
How can students communicate through interaction?	<p><b>Exchanging thoughts, messages and information effectively through interaction</b></p> <ul style="list-style-type: none"> <li>• Give and receive meaningful feedback</li> <li>• Use intercultural understanding to interpret communication</li> <li>• Use a variety of speaking techniques to communicate with a variety of audiences</li> <li>• Use appropriate forms of writing for different purposes and audiences</li> <li>• Use a variety of media to communicate with a range of audiences</li> <li>• Interpret and use effectively modes of non-verbal communication</li> <li>• Negotiate ideas and knowledge with peers and teachers</li> <li>• Participate in, and contribute to, digital social media networks</li> <li>• Collaborate with peers and experts using a variety of digital environments and media</li> <li>• Share ideas with multiple audiences using a variety of digital environments and media</li> </ul>

<p>How can students demonstrate communication through language?</p>	<p><b>Reading, writing and using language to gather and communicate information</b></p> <ul style="list-style-type: none"> <li>• Read critically and for comprehension</li> <li>• Read a variety of sources for information and for pleasure</li> <li>• Make inferences and draw conclusions</li> <li>• Use and interpret a range of discipline-specific terms and symbols</li> <li>• Write for different purposes</li> <li>• Understand and use mathematical notation</li> <li>• Paraphrase accurately and concisely</li> <li>• Preview and skim texts to build understanding</li> <li>• Take effective notes in class</li> <li>• Make effective summary notes for studying</li> <li>• Use a variety of organizers for academic writing tasks</li> <li>• Find information for disciplinary and interdisciplinary inquiries, using a variety of media</li> <li>• Organize and depict information logically</li> <li>• Structure information in summaries, essays and reports</li> </ul>
<p><b>Social</b></p>	
<p><b>II. Collaboration skills</b></p>	
<p>How can students collaborate?</p>	<p><b>Working effectively with others</b></p> <ul style="list-style-type: none"> <li>• Use social media networks appropriately to build and develop relationships</li> <li>• Practise empathy</li> <li>• Delegate and share responsibility for decision-making</li> <li>• Help others to succeed</li> <li>• Take responsibility for one's own actions</li> <li>• Manage and resolve conflict and work collaboratively in teams</li> <li>• Build consensus</li> <li>• Make fair and equitable decisions</li> <li>• Listen actively to other perspectives and ideas</li> <li>• Negotiate effectively</li> <li>• Encourage others to contribute</li> <li>• Exercise leadership and take on a variety of roles within groups</li> <li>• Give and receive meaningful feedback</li> <li>• Advocate for one's own rights and needs</li> </ul>
<p><b>Self Management</b></p>	

### III. Organization skills

How can students demonstrate organization skills?

#### **Managing time and tasks effectively**

- Plan short- and long-term assignments; meet deadlines
- Create plans to prepare for summative assessments (examinations and performances)
- Keep and use a weekly planner for assignments
- Set goals that are challenging and realistic
- Plan strategies and take action to achieve personal and academic goals
- Bring necessary equipment and supplies to class
- Keep an organized and logical system of information files/notebooks
- Use appropriate strategies for organizing complex information
- Understand and use sensory learning preferences (learning styles)
- Select and use technology effectively and productively

### IV. Affective skills

DRAFT

How can students manage their own state of mind?

### Managing state of mind

- Mindfulness
  - Practise focus and concentration
  - Practise strategies to develop mental focus
  - Practise strategies to overcome distractions
  - Practise being aware of body–mind connections
- Perseverance
  - Demonstrate persistence and perseverance
  - Practise delaying gratification
- Emotional management
  - Practise strategies to overcome impulsiveness and anger
  - Practise strategies to prevent and eliminate bullying
  - Practise strategies to reduce stress and anxiety
- Self-motivation
  - Practise analysing and attributing causes for failure
  - Practise managing self-talk
  - Practise positive thinking
- Resilience
  - Practise “bouncing back” after adversity, mistakes and failures
  - Practise “failing well”
  - Practise dealing with disappointment and unmet expectations
  - Practise dealing with change

V. Reflection skills

How can students be reflective?

**(Re-)considering the process of learning; choosing and using ATL skills**

- Develop new skills, techniques and strategies for effective learning
- Identify strengths and weaknesses of personal learning strategies (self-assessment)
- Demonstrate flexibility in the selection and use of learning strategies
- Try new ATL skills and evaluate their effectiveness
- Consider content
  - What did I learn about today?
  - What don't I yet understand?
  - What questions do I have now?
- Consider ATL skills development
  - What can I already do?
  - How can I share my skills to help peers who need more practice?
  - What will I work on next?
- Consider personal learning strategies
  - What can I do to become a more efficient and effective learner?
  - How can I become more flexible in my choice of learning strategies?
  - What factors are important for helping me learn well?
- Focus on the process of creating by imitating the work of others
- Consider ethical, cultural and environmental implications
- Keep a journal to record reflections

Research

VI. Information literacy skills

<p>How can students demonstrate information literacy?</p>	<p><b>Finding, interpreting, judging and creating information</b></p> <ul style="list-style-type: none"> <li>• Collect, record and verify data</li> <li>• Access information to be informed and inform others</li> <li>• Make connections between various sources of information</li> <li>• Understand the benefits and limitations of personal sensory learning preferences when accessing, processing and recalling information</li> <li>• Use memory techniques to develop long-term memory</li> <li>• Present information in a variety of formats and platforms</li> <li>• Collect and analyse data to identify solutions and make informed decisions</li> <li>• Process data and report results</li> <li>• Evaluate and select information sources and digital tools based on their appropriateness to specific tasks</li> <li>• Understand and use technology systems</li> <li>• Use critical literacy skills to analyse and interpret media communications</li> <li>• Understand and implement intellectual property rights</li> <li>• Create references and citations, use footnotes/endnotes and construct a bibliography according to recognized conventions</li> <li>• Identify primary and secondary sources</li> </ul>
<p><b>VII. Media literacy skills</b></p>	
<p>How can students demonstrate media literacy?</p>	<p><b>Interacting with media to use and create ideas and information</b></p> <ul style="list-style-type: none"> <li>• Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media (including digital social media and online networks)</li> <li>• Demonstrate awareness of media interpretations of events and ideas (including digital social media)</li> <li>• Make informed choices about personal viewing experiences</li> <li>• Understand the impact of media representations and modes of presentation</li> <li>• Seek a range of perspectives from multiple and varied sources</li> <li>• Communicate information and ideas effectively to multiple audiences using a variety of media and formats</li> <li>• Compare, contrast and draw connections among (multi)media resources</li> </ul>
<p><b>Thinking</b></p>	
<p><b>VIII. Critical thinking skills</b></p>	

How can students think critically?

**Analysing and evaluating issues and ideas**

- Practise observing carefully in order to recognize problems
- Gather and organize relevant information to formulate an argument
- Recognize unstated assumptions and bias
- Interpret data
- Evaluate evidence and arguments
- Recognize and evaluate propositions
- Draw reasonable conclusions and generalizations
- Test generalizations and conclusions
- Revise understanding based on new information and evidence
- Evaluate and manage risk
- Formulate factual, topical, conceptual and debatable questions
- Consider ideas from multiple perspectives
- Develop contrary or opposing arguments
- Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding
- Propose and evaluate a variety of solutions
- Identify obstacles and challenges
- Use models and simulations to explore complex systems and issues
- Identify trends and forecast possibilities
- Troubleshoot systems and applications

**IX. Creative thinking skills**

<p>How can students be creative?</p>	<p><b>Generating novel ideas and considering new perspectives</b></p> <ul style="list-style-type: none"> <li>• Use brainstorming and visual diagrams to generate new ideas and inquiries</li> <li>• Consider multiple alternatives, including those that might be unlikely or impossible</li> <li>• Create novel solutions to authentic problems</li> <li>• Make unexpected or unusual connections between objects and/or ideas</li> <li>• Design improvements to existing machines, media and technologies</li> <li>• Design new machines, media and technologies</li> <li>• Make guesses, ask “what if” questions and generate testable hypotheses</li> <li>• Apply existing knowledge to generate new ideas, products or processes</li> <li>• Create original works and ideas; use existing works and ideas in new ways</li> <li>• Practise flexible thinking—develop multiple opposing, contradictory and complementary arguments</li> <li>• Practise visible thinking strategies and techniques</li> <li>• Generate metaphors and analogies</li> </ul>
<p><b>X. Transfer skills</b></p>	
<p>How can students transfer skills and knowledge among disciplines and subject groups?</p>	<p><b>Utilizing skills and knowledge in multiple contexts</b></p> <ul style="list-style-type: none"> <li>• Utilize effective learning strategies in subject groups and disciplines</li> <li>• Apply skills and knowledge in unfamiliar situations</li> <li>• Inquire in different contexts to gain a different perspective</li> <li>• Compare conceptual understanding across multiple subject groups and disciplines</li> <li>• Make connections between subject groups and disciplines</li> <li>• Combine knowledge, understanding and skills to create products or solutions</li> <li>• Transfer current knowledge to learning of new technologies</li> <li>• Change the context of an inquiry to gain different perspectives</li> </ul>

Table 6  
Developing ATL skills

## Action: Teaching and learning through inquiry

The “Action” section of the planner identifies the taught curriculum. Teachers use this section to focus on how students will learn. Teachers plan and record the content, learning process and resources that they use in the course of the unit.

Inquiry-based teaching and learning is not a linear process; the information gathered about one aspect often affects other dimensions of the planning process. For example, a review of available resources might require teachers to plan for different assessment tasks. Similarly, a review of students’ prior learning may mean that teachers need to allocate more time for the development of skills and understanding than originally planned.

Teachers should refer to the statement of inquiry to ensure that concepts and context inform the selection of learning experiences, formative assessment and teaching strategies.

## **Content**

There is space in this section of the planner to list subject-specific content. This content may be mandated by state or national systems; it may come from school-based requirements or the school's curriculum overview; or it may be derived from required standards.

At the subject group overview level of planning, content constitutes the disciplinary knowledge, understandings and skills to be taught and learned in each year of the programme for each subject. Such an overview delineates a clear progression of learning. The subject group overview should articulate the knowledge and skills students have when they enter the programme as well as the required knowledge and skills needed when they leave the MYP.

The starting point for identifying significant content is students' current understanding. The goal of teaching and learning in the MYP is the active construction of meaning in which students build connections between their prior understanding and new information and experience that they gain through inquiry. "Front-loading" content (efficiently building background knowledge) can be important, introducing a base from which to teach skills or practise critical thinking. Effective inquiry often is not possible without facts and prior knowledge.

Schools that follow a national, state or local curriculum need to align its content standards (aims and objectives) or programme of study with MYP requirements. For schools with no required curriculum, teachers are responsible for choosing appropriate content that will enable students to reach MYP subject group aims and objectives. Schools can expand the scope of topics and depth of treatment according to their individual needs, preferences and possibilities.

## **Description of learning process**

As schools implement the MYP, teachers must design learning experiences that allow students across a range of needs to meet their subject group aims and objectives. Teaching and learning in all IB programmes is:

- based on inquiry
- focused on developing conceptual understanding
- developed in local and global contexts
- focused on effective teamwork and collaboration
- differentiated to meet the needs of all learners
- informed by assessment (formative and summative).

These pedagogical principles provide flexibility and empower teachers to develop their *approaches to teaching*. Teachers use a wide range of teaching strategies and approaches in the classroom to create student-centred learning that inspires confidence and personal responsibility. Students need to be actively engaged in learning, and the voices of both teachers and learners are essential in an IB education.

## **Learning experiences and teaching strategies**

Teachers should purposefully choose strategies and learning experiences that are aligned with the unit's statement of inquiry; that help students meet subject group objectives; that support the development of effective ATL skills; and that meaningfully prepare students to achieve high levels of performance in the unit's summative assessment. The specific learning experiences and teaching strategies devised by teachers depend on available resources, the content to be taught and on the subjects themselves.

Teachers should ensure that a range of learning experiences and teaching strategies is:

- embedded in the curriculum
- built upon prior learning
- age-appropriate, thought-provoking and engaging
- based on the differing needs of all students, including those who are learning in a language other than their mother tongue, and students with learning support requirements
- open-ended and involves teaching problem-solving skills

Teachers should choose strategies that provide for learning through disciplined inquiry and research; involve communication of ideas and personal reflection; and give students the opportunity to practise and apply their new understandings and skills.

### **Formative assessment**

Formative assessment can take place before, during and after the substance of a unit is taught. Teachers need to develop ways of ascertaining students' prior learning so that they can plan appropriate learning experiences and teaching strategies.

Teachers also need to consider how to monitor and support learning as students engage with the unit. Formative assessment (assessment **for** learning) provides teachers and students with insights into the ongoing development of knowledge, understanding, skills and attitudes. *Assessment for learning* is "the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there" (Assessment Reform Group 2002). Effective formative assessment also provides teachers and student with a way to explore personal learning styles as well as individual student strengths, challenges and preferences that can inform meaningful differentiation of learning.

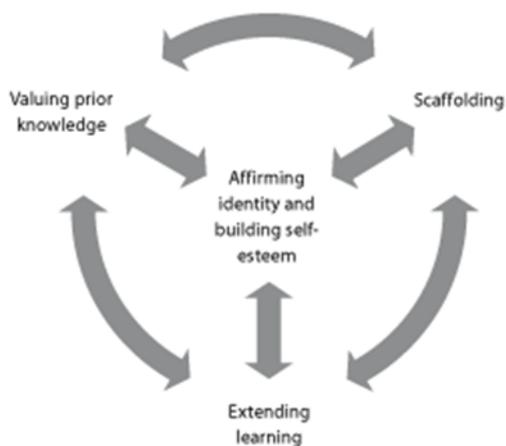
Formative assessment can also provide important opportunities for students to rehearse or refine performances of understanding as they prepare to complete summative assessment tasks.

Peer and self-assessment are often valuable formative assessment strategies.

### **Differentiation**

*Differentiation* (modifying teaching strategies to meet the needs of diverse learners) can build opportunities in which each student can develop, pursue and achieve appropriate personal learning goals. When considering pedagogical approaches to meeting individual learning needs, teachers also need to consider each student's language profile.

The IB identifies four important principles to promote equal access to the curriculum for all learners and to support the development of the whole person through differentiated teaching and learning, as illustrated in Figure 3.



**Figure 3**

*Principles of good practice for differentiated learning*

For detailed information, see *Learning diversity in the International Baccalaureate programmes* (2010) and *Language and learning in IB programmes* (2011). Universal design for learning also provides a set of principles for curriculum development that gives all individuals equal opportunities to learn.

Teachers can differentiate teaching and learning by providing examples (work samples or task-specific clarifications of assessment criteria); structuring support (advance organizers, flexible grouping, peer relationships); establishing interim and flexible deadlines; and adjusting the pace of learning experiences.

All students should be able to access the curriculum through the specific design of the unit and through the strategies that teachers employ to differentiate the content, process and outcomes of learning. Differentiation may include offering students various modes of interpreting materials, whether visually, aurally or kinaesthetically, and allowing students to choose alternate modes of presentation for their performances of understanding (for example, oral presentation, writing, or a practical method such as leading a peer-to-peer workshop).

## Resources

Teachers need to investigate available resources and consider what additional resources might be necessary for the unit. Important resources to consider include:

- instructional materials and classroom technologies
- textbooks and other written and visual texts
- teaching materials developed by businesses and not-for-profit organizations
- educational games and simulations
- teaching aids and manipulatives
- learning environments beyond the classroom
- students' diverse languages and cultures
- families, experts and other primary sources in the school and the community
- school, university and community libraries

- digital resources, including the internet.

## Reflection: Considering the planning, process and impact of the inquiry

The “Reflection” section of the MYP unit planner provides teachers with an invitation to record their reflection at three important periods in the unit’s development and implementation. Reflection in the unit planner can provide a starting point for collaborative planning, an ongoing reminder for reflective practice throughout the teaching process, and a format in which to evaluate teaching strategies and learning outcomes.

Reflection involves individual and collaborative consideration of the unit’s planning, process and impact. Reviewing each of the required elements of MYP unit planning is a valuable strategy for reflection. Teachers can profitably reflect prior to teaching the unit, during teaching, and after the unit has been taught. Including students in reflection on the unit is an important strategy to promote the student-centred approach to education valued in IB programmes.

Questions such as those outlined in Table 7 can inspire reflection that leads to effective teaching and learning.

Prior to teaching the unit
<ul style="list-style-type: none"> <li>• Why do we think that the unit or the selection of topics will be interesting?</li> <li>• What do students already know, and what can they do?</li> <li>• What have students encountered in this discipline before?</li> <li>• What does experience tell us about what to expect in this unit?</li> <li>• What attributes of the learner profile does this unit offer students opportunities to develop?</li> <li>• What potential interdisciplinary connections can we identify?</li> <li>• What do we know about students’ preferences and patterns of interaction?</li> <li>• Are there any possible opportunities for meaningful service learning?</li> <li>• What in the unit might be inspiring for community or personal projects?</li> <li>• Could we develop authentic opportunities for service learning?</li> <li>• How can we use students’ multilingualism as a resource for learning?</li> </ul>
During teaching
<ul style="list-style-type: none"> <li>• What difficulties did we encounter while completing the unit or the summative assessment task(s)?</li> <li>• What resources are proving useful, and what other resources do we need?</li> <li>• What student inquiries are emerging?</li> <li>• What can we adjust or change?</li> <li>• What skills need more practice?</li> <li>• What is the level of student engagement?</li> <li>• How can we scaffold learning for students who need more guidance?</li> <li>• What is happening in the world right now with which we could connect teaching and learning in this unit?</li> </ul>

- How well are the learning experiences aligned with the unit's objectives?
- What opportunities are we hearing to help students explore the interpretative nature of knowledge, including personal biases that might be retained, revised or rejected? (DP theory of knowledge skills development)

#### After teaching the unit

- What were the learning outcomes of this unit?
- How well did the summative assessment task serve to distinguish levels of achievement?
- Was the task sufficiently complex to allow students to reach the highest levels?
- What evidence of learning can we identify?
- What artifacts of learning should we document?
- Which teaching strategies were effective? Why?
- What was surprising?
- What student-initiated action did we notice?
- What will we do differently next time?
- How will we build on our experience to plan the next unit?
- How effectively did we differentiate learning in this unit?
- What can students carry forward from this unit to the next year/level of study?
- Which subject groups could we work with next time?
- What did we learn from standardizing the assessment?

**Table 7**

#### *Possible questions for reflection*

Teachers and students need not engage in reflection on every question; choosing a focus for reflection often leads to more meaningful results. Teachers and students should also consider other questions that can help to improve the planning, process and impact of inquiry in the MYP. Reflection will always be shaped by the specific needs of teachers and students in particular contexts.