Interdisciplinary teaching and learning in the MYP

For use from August 2021/January 2022

International Baccalaureate®
Baccalauréat International
Bachillerato Internacional

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For use from August 2021/January 2022

Middle Years Programme
Interdisciplinary teaching and learning in the MYP

IB mission statement

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

To this end the organization works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment.

These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

IB learner profile

The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

As IB learners we strive to be:

INQUIRERS

We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.

KNOWLEDGEABLE

We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.

THINKERS

We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.

COMMUNICATORS

We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.

PRINCIPLED

We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.

OPEN-MINDED

We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.

CARING

We show empathy, compassion and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us.

RISK-TAKERS

We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.

BALANCED

We understand the importance of balancing different aspects of our lives—intellectual, physical, and emotional—to achieve well-being for ourselves and others. We recognize our interdependence with other people and with the world in which we live.

REFLECTIVE

We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development.

The IB learner profile represents 10 attributes valued by IB World Schools. We believe these attributes, and others like them, can help individuals and groups become responsible members of local, national and global communities.

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Purpose of this guide

The guide is for use from August 2021 or January 2022 depending on the start of the school year.

Interdisciplinary teaching and learning in the MYP guides schools and teachers in their efforts to structure meaningful interdisciplinary inquiry: planning, delivering and assessing interdisciplinary units. This guide must be used in combination with the teacher support material (TSM) for interdisciplinary teaching and learning. Like Middle Years Programme (MYP) subject-group guides, this guide presents specific aims, objectives and criteria for assessing interdisciplinary units.

The guide also presents and explains an interdisciplinary version of the MYP unit planner. In the appendices there is an alternative unit planner template that may better reflect the teaching flow of an interdisciplinary unit in your school.

Note that the unit planner templates included in the appendices are not mandatory. Schools can adapt the templates to reflect their own needs. For example, if your school develops science, technology, engineering and mathematics (STEM) or science, technology, engineering, arts, and mathematics (STEAM) projects, it might be beneficial to amend the interdisciplinary unit planner to include multiple disciplinary learning experiences and formative tasks.

Acknowledgments

The International Baccalaureate (IB) gratefully acknowledges the generous contributions of IB World Schools and a global community of educators who collaborate in the development of the MYP interdisciplinary teaching and learning.

The nature of MYP interdisciplinary teaching and learning

One of the key features of the MYP is its emphasis on interdisciplinary teaching and learning. This trait emerges from the challenges and opportunities of educating students in, and for, a highly interconnected world. Younger learners often naturally make connections between knowledge domains to understand the world around them—in some cases, because they have not yet been socialized into the disciplinary perspectives that organize the academic world. Although secondary education usefully organizes learning into disciplinary compartments (as a response to increasing specialization), an ever-changing world also demands education that empowers people to integrate disciplines in novel and creative ways. As knowledge and information multiply, critical thinkers must successfully integrate disciplinary perspectives to understand real-world issues, ideas and challenges, and to take action to promote positive changes in societies.

Four main elements capture what interdisciplinary learning is.

1. The integration of subject-specific knowledge and synthesis of understanding.

2. The idea that the subjects of this synthesis must be drawn from multiple, bounded, identifiably different areas of knowledge (usually labelled with the traditional term "disciplines" or "subjects").

3. That the conceptual definition of interdisciplinarity almost always includes some notion of utility—a need to identify a reason for seeking such a synthesis.

4. Most importantly, from the student's perspective, that interdisciplinary learning must have a clearly articulated purpose that structures the "learning space" of the students—in terms of the contribution of disciplinary knowledge, the synthesis achieved and the interdisciplinary understanding developed. Students need to be aware of why they are doing an interdisciplinary unit and what they are expected to know, understand and do or create from the beginning of the unit.

In the MYP, interdisciplinary teaching and learning is grounded in individual subject groups and disciplines but extends disciplinary understanding in ways that are integrative and purposeful. Interdisciplinary learning is oriented towards bringing together concepts, methods or modes of communication from two or more established areas of expertise to develop new perspectives. It connects disciplines to develop new understanding, create products or address real-world issues in ways that would have been unlikely through a single approach. Teachers will operationalize curriculum integration through specific interdisciplinary unit planning and implementation requirements (that can be externally assessed in MYP year 5 through an on-screen examination). The MYP encourages teachers to plan collaboratively most of the unit key elements, except for the disciplinary knowledge and learning process.

Interdisciplinary teaching and learning does not replace MYP subject groups; rather, it selects and reorganizes disciplinary objectives in meaningful and connected ways.

Meaningful interdisciplinary teaching and learning experiences can have positive effects on students, teachers and schools. Interdisciplinary teaching and learning offers the benefits shown in table 1.

Table 1

Benefits of interdisciplinary teaching and learning

| **Benefits for students**	Interdisciplinary teaching and learning: • allows students to use knowledge domains creatively to foster new understanding • develops mental flexibility that prepares students to be lifelong learners • promotes intellectual rigour by providing a holistic approach to the study of real-world issues, ideas and challenges

Interdisciplinary teaching and learning in the MYP

	• models the importance of collaboration and teamwork across disciplines (an important life skill)
	• supports and promotes transfer of understanding
	• creates opportunities for students to take ownership of their learning
	• engages students with authentic tasks that they will be expected to perform as citizens and contributors to society
	• facilitates high-order cognitive processing by motivating students to engage in deep learning.
Benefits for teachers	Interdisciplinary teaching and learning: • develops a holistic understanding of disciplinary concepts and contexts • increases collaboration across subject groups and fosters collegiality • allows subject groups to share responsibility for developing content, skills and processes (managing time effectively), and offers opportunities for rich and authentic professional development with colleagues from other disciplines or subject groups • re-evaluates disciplines themselves in terms of presuppositions about methods, strategies and theories.
Benefits for schools	Interdisciplinary teaching and learning: • creates opportunities to develop a more integrated curriculum • fosters the appreciation of diverse ideas and perspectives, enhancing international-mindedness and global contexts in class integration • uses interdisciplinary units as a way to: develop further a specific element of the curriculum (eg service as action) create opportunities for student learning in areas that are not explicit in the MYP programme (eg social and emotional learning) develop further an area of interest for the school (eg student agency) • fosters collaboration among teachers • examines the long-term impact of interdisciplinary learning on school culture and organization, embracing the developmental model of the new programme standards and practices 2020.

Curriculum integration in the MYP

The programme model of the MYP places the learner at its centre. This underscores the IB's belief in educating the whole person, and it places importance on student inquiry. The eight subject groups ensure a balanced and varied learning experience. Each subject group has its disciplinary foundations and its own shared methodologies and perspectives. Approaches to teaching and learning, concepts and global contexts are reflected as central elements of the programme that guarantee a "common language" for all subject groups and enable interdisciplinary connections across disciplines. These elements establish meaningful connections between what students learn inside the classroom and the world beyond. Contexts and concepts are essential components for promoting holistic learning.

Figure 1

MYP programme model
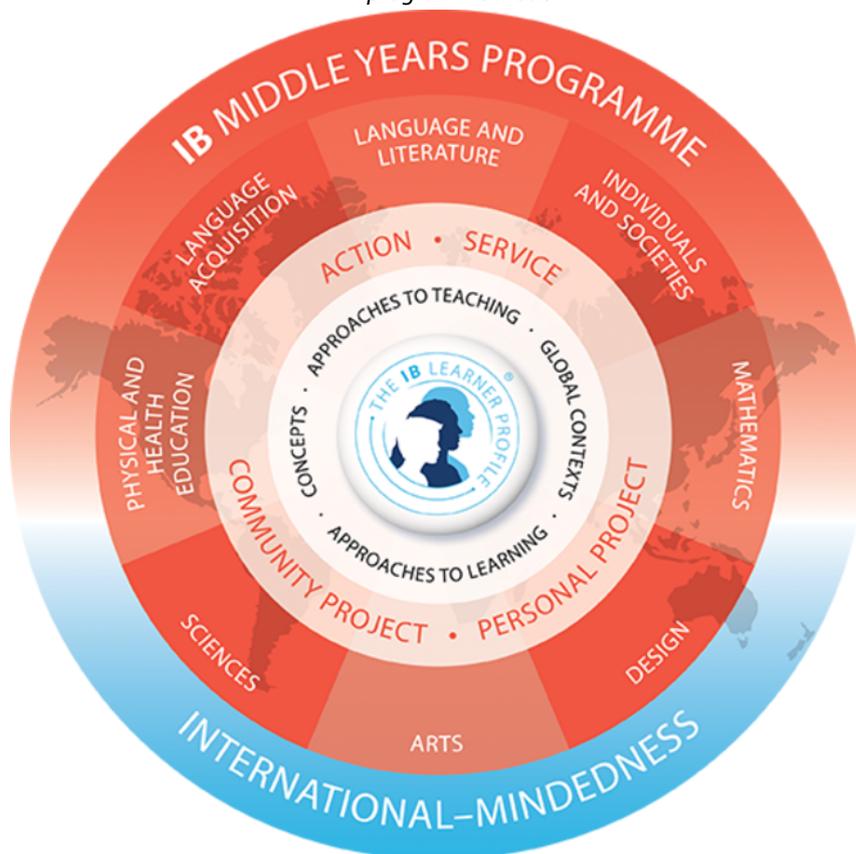
The MYP is designed to help students develop disciplinary and interdisciplinary understanding through independent courses in each subject group in each year of the programme. Schools can structure interdisciplinary learning using multiple strategies.

Integrated courses

Integrated courses blend knowledge from multiple disciplines within the subject group into a sustained period of learning that approaches a subject holistically. The MYP formally recognizes integrated courses in:

- sciences (including biology, chemistry and physics)
- humanities (including economics, geography and history)
- design (including digital design and product design)
- performing arts (including music, drama and/or dance)
- visual arts (including visual art and media).

Subject-group guides provide additional information about options for integrating specific disciplines into recognized MYP courses.

In schools, teachers can collaboratively develop courses that combine disciplines across subject groups. These authentically integrated courses must continue to:

- meet programme requirements for minimum teaching hours in each subject group
- allow students to reach the highest achievement levels in all subject-group objectives
- report student achievement against all subject-group criteria.

Combined subject groups

If local circumstances impose scheduling constraints that prevent the programme model's implementation, schools may combine subject groups in MYP years 1–3, provided certain conditions are met as explained in *MYP: From principles into practice* (May 2014). Courses in which subject groups are combined can develop an exclusively intermittent or modular approach, but they can also offer important opportunities for developing interdisciplinary understanding.

Note that this arrangement is designed as an exception for schools where a genuine need exists due to unavoidable scheduling constraints. In MYP years 4–5, schools have the possibility of implementing subject-group flexibility to meet local requirements or individual student needs.

Connected curriculum across IB programmes

Beane (1995) invited educators to think of students' curricular experiences through the metaphor of a jigsaw puzzle, in the sense that students often move from one course to another and are confronted with disassociated and unconnected facts or activities that lack relevance or meaning to them. In traditional educational models, meaningful interconnections between and across disciplines are scarce, resulting in students lacking a sense of purpose or coherence in their schooling experience. Nevertheless, the existence of subjects based on disciplines is not arbitrary as disciplines consist of real identifiable epistemological and social entities. As Rényi (2000: 41) has pointed out, "rocks, trees, poems and kinships differ" remarkably, and disciplines allow people to represent and comprehend the complexity of human and natural life.

IB programme standards and practices promote collaborative planning so that students can make connections across courses and integrate their learning with previous experiences in a coherent way. All IB programmes offer a broad and balanced, conceptual and **connected** curriculum that articulates and links disciplinary domains, which can sometimes be presented as distinct or even incompatible.

Education professionals use a variety of terms to describe how curriculum planning connects academic disciplines. While these terms are sometimes difficult to distinguish, they imply different approaches to teaching and learning that can be described as:

- multidisciplinary
- interdisciplinary
- transdisciplinary.

Table 2 highlights the difference between these three approaches to teaching and learning. While in multidisciplinary approaches, disciplines are juxtaposed with one another, interdisciplinary teaching implies integration. At the same time, interdisciplinary teaching involves the presence of disciplinary learning as well as interdisciplinary learning. Although interdisciplinary teaching and learning is present in the MYP, Diploma Programme (DP), and Career-related Programme (CP), the Primary Years Programme (PYP) is based on a transdisciplinary approach that fully integrates diverse knowledge domains, transcending disciplinary boundaries.

Table 2

Approaches to connected curriculum

Term	Definition	Examples	Visual representation
Multidisciplinary	Working with multiple disciplines, maintaining boundaries Multiple but distinct disciplinary perspectives that explore a topic, issue or idea (concurrent or sequential)	Traffic safety council (automobile engineers, city planners, psychologists) Comparative MYP study of classical civilizations: legal institutions (history), number systems (mathematics) and discoveries (sciences)	Perspectives on a topic, issue or idea
Interdisciplinary	Working between more than one discipline, blurring boundaries	Informatics (social sciences and information technology) MYP unit that explores opportunities for	Integrated understanding

Term	Definition	Examples	Visual representation
	Interaction among disciplines to achieve new, integrated understanding	principled action in response to climate change (geography and design)	
Transdisciplinary	Working across and beyond disciplines, eliminating boundaries Transcends the confines of disciplines to explore an issue using a shared approach for inquiry	Hospital patient well-being team A PYP unit of inquiry into the theme "Who we are"	Transdisciplinary theme

The MYP is flexible enough to accommodate the demands of most national or local curriculum requirements. It builds upon the knowledge, skills and attitudes developed in the PYP and prepares students to meet the academic challenges of the DP and CP.

Connected curriculum in the PYP: Transdisciplinary learning

One of the key components of the PYP is transdisciplinary teaching and learning. The programme defines transdisciplinary themes that identify areas of human commonalities and have a real meaning for individuals from different cultures in addressing global significant issues. Transdisciplinarity "concerns that which is at once between the disciplines, across different disciplines, and beyond all the disciplines" (*Learning and teaching* 2018: 2).

Even though it is sometimes difficult to distinguish clearly between transdisciplinary and interdisciplinary understanding, the key difference between the two approaches lies in the fundamental components of the learning and the role of disciplinary expertise. In the PYP, the starting point is the transdisciplinary themes, knowledge, conceptual understanding, and skills, from the traditional subject areas. While transdisciplinary units might relate to disciplinary knowledge, they are not grounded in it. In the MYP, even though the entry point to a unit could be a concept or a context, teachers start from the subject groups (and disciplines); units are always grounded in the disciplines and then integrated in meaningful ways. The choice of a transdisciplinary approach over others in the PYP is rooted in the nature of the curriculum, human development and the organization of primary schools, which is often articulated around a year level classroom with one teacher who draws on several disciplinary tools to explore relevant themes.

Within the IB continuum of education, disciplinary learning takes many forms and these complement each other and reflect the aims of the programmes at different age levels. As students become older, the curriculum becomes increasingly more disciplinary in nature.

Although it might be beneficial for students to have participated in the PYP, it is not necessary for students to have previously followed the PYP in order to participate in the MYP.

Connected curriculum in the DP

The DP is primarily discipline-based, as the programme is structured around academic disciplines that provide theoretical and methodological frameworks that students learn to understand and use. However, concurrency of learning, which is a vital organizational component of the MYP and DP, provides one important means of supporting interdisciplinary learning. Additionally, teachers and students find several opportunities to foster interdisciplinary understanding.

A key way that students make connections between their individual subject disciplines is through the study of the DP theory of knowledge (TOK) course. The TOK course plays a special role in the DP by providing an opportunity for students to reflect on the nature of knowledge and to make connections between different areas of knowledge. In this way, students become more aware of their own perspectives and of those of the

various groups whose knowledge they share. TOK supports the development of interdisciplinary understanding by providing a forum to explore questions about the nature of knowledge, the process of knowing and the similarities and differences in how knowledge is gained in different disciplines. Links to TOK are identified in all DP subject guides, and all DP teachers are encouraged to help students to discuss TOK knowledge questions in their subject lessons.

The DP also provides students with the opportunity to undertake a world studies extended essay that invites students to conduct an in-depth, **interdisciplinary** investigation into an issue of contemporary global importance. Through the selection of global issues, students are required to bring aspects of different disciplines together and synthesize them to advance understanding.

Finally, the DP offers students the possibility to enroll in interdisciplinary courses—environmental systems and societies (ESS), and literature and performance. ESS is an interdisciplinary course between individuals and societies, and sciences, which enables students to explore the interrelationship between ESS through the evaluation of the scientific, ethical and sociopolitical aspects of environmental issues or problems. The literature and performance course is an interdisciplinary synthesis of language and literature, and theatre. It incorporates essential elements of literature and performance with the aim of exploring the dynamic relationship between the two.

Many other DP courses contain substantial interdisciplinary elements. For example, psychology, geography, computer science, digital society (replacing information technology in a global society (ITGS) from August/ September 2022, for first assessment May 2024) and design technology all include concepts, methods and forms of communication from multiple disciplines. However, these courses remain grounded in a single DP subject.

Connected curriculum in the CP

The CP is an innovative education framework for students aged 16 to 19 incorporating the vision and educational principles of the IB in a unique programme tailored for students who wish to engage in career-related learning. The CP core comprises personal and professional skills, a reflective project, language development and service learning. Personal and professional skills and career-related courses in the CP enable students to build understanding across traditional academic subjects that are connected to their career paths.

Interdisciplinarity is a vital component of the CP's reflective project. The ethical dimension of this research challenges students to explore ways of solving problems and answering questions that cannot be satisfactorily addressed by using single methods or approaches. Engaging with multiple disciplines allows students to synthesize understandings to draw their own conclusions (often critiquing the limits of an exclusively disciplinary or academic approach). Interdisciplinarity is also present in the career-related study as students explore academic theories and concepts through practical application and experience.

Table 3 summarizes this connectivity across IB programmes.

Table 3

Connected curriculum in IB programmes

| PYP	MYP	CP	DP
(3–11 years old)	(11–16 years old)	(16–19 years old)	(16–19 years old)
Transdisciplinary	**Disciplinary and Interdisciplinary**	**Disciplinary and Interdisciplinary**	**Disciplinary and Interdisciplinary**
Six subject areas Six transdisciplinary themes • Who we are • Where we are in place and time	Eight subject groups integrated through key concepts, global contexts and approaches to learning The MYP community project and personal	Core elements, DP courses and career studies	Disciplinary study supported by the DP core, including the world studies extended essay, TOK and specific interdisciplinary courses

PYP	MYP	CP	DP
• How we express ourselves • How the world works • How we organize ourselves • Sharing the planet	project also provide opportunities to develop interdisciplinary understanding		

Requirements

In each year of the programme, MYP schools are responsible for engaging students in at least one collaboratively planned interdisciplinary unit that involves at least two disciplines either from the same subject group (for example, history and geography) or from two different subject groups (for example, visual arts from arts, and biology from sciences). In each year of the programme, schools must address all three objectives (every strand) of interdisciplinary learning at least once per year.

Beyond this requirement, the IB encourages schools to make connections between subject groups so that learners are exposed to a more integrated learning experience throughout their journey in the MYP, even when this is not formally assessed.

Figure 2

Organizing interdisciplinary learning
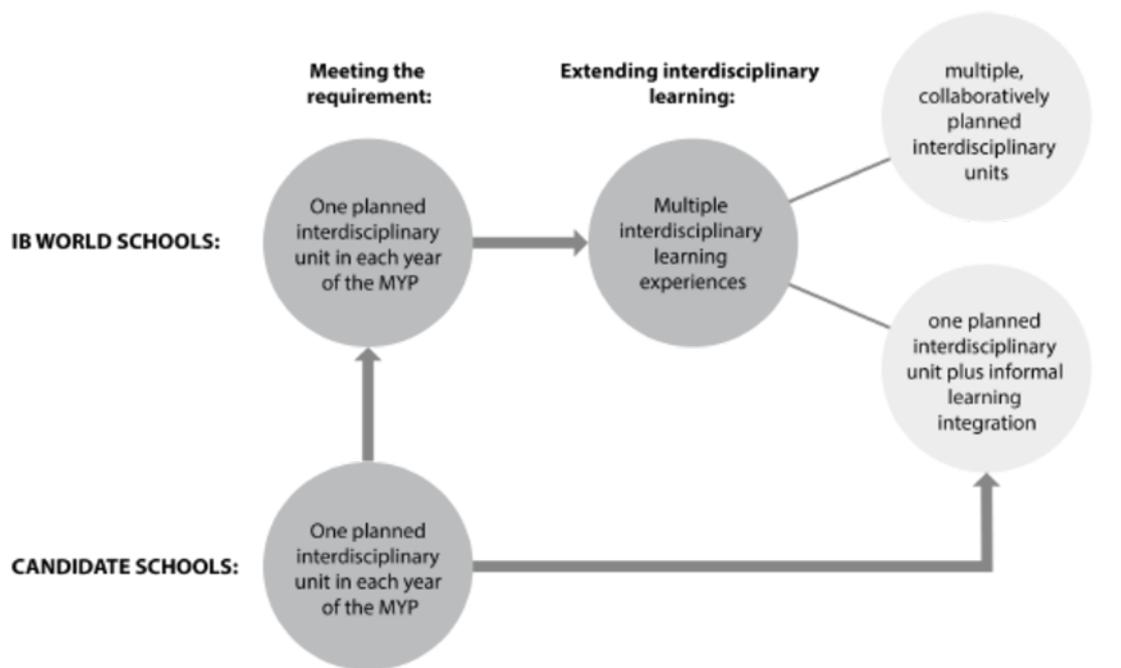
Using interdisciplinary units to grow school culture

The programme standards and practices framework allows schools more freedom in describing the processes of design and development of IB programme(s) in their unique school context. For evaluation purposes, schools will be asked to provide evidence of progress in at least **one area for programme development**.

Areas for programme development reflect the school's context and strategic goals. As such, they represent a multi-year process that involves different actors within the school and in the community to enhance school growth. The ultimate goal is to develop further the interconnection between the planned, delivered and assessed curriculum to create a more coherent curriculum and an authentic learner experience.

The area for programme development shared here focuses on some aspects that the school may identify as its focus for programme evaluation. It is not prescribed; it is an indication only. It is up to schools to devise their own areas of programme development.

Imagine a specific scenario. In an MYP school that has developed collaborative practices, collaborative planning time is scheduled in the teachers' timetable (but not specific planning time for interdisciplinary units yet). However, as one of the strategic goals for the subsequent years, the school is taking further steps to enhance collaboration among staff by creating small research teams to address the most needed issues in the school community. At the top of the most needed issues is, as reported by parents, the students' social and emotional well-being. The pedagogical leadership in school agreed to use the set of interdisciplinary units (the school is a MYP 1–5 variant) to address the social and emotional needs of the students. Table 4 outlines the approach taken.

Table 4

Example of an area of programme development

Area of programme development **Using interdisciplinary units to enhance social and emotional learning as a key strand of the school culture**	Practices	Developmental questions	Indicators of highly developed practice
Setting the conditions The school aims to strengthen social and emotional learning and it expands the school culture through the implementation of a set of interdisciplinary units	**Student support 3:** The school fosters the social, emotional and physical well-being of its students and teachers (0202-03) **Coherent curriculum 1:** The school plans and implements a coherent curriculum that organizes learning and teaching within and across the years of its IB programme (0401-01)	How does the school identify and allocate appropriate resources for its context to provide support for students' social, emotional and physical well-being? How can the school schedule time for collaborative planning and curriculum development for **all practitioners** involved in learning and teaching?	Students' social, emotional and physical well-being are nurtured and supported by ample resources across the learning environment The school has evaluated the processes and systems that work best in its context and through them can demonstrate how the curriculum reflects both the letter and the spirit of school, local, state or national education requirements

Area of programme development	Practices	Developmental questions	Indicators of highly developed practice
Using interdisciplinary units to enhance social and emotional learning as a key strand of the school culture			
Who is responsible Pedagogical leaders set relevant time for collaborative planning, allocate resources for whole-school meetings, and target professional development on social and emotional learning	**Teacher support 3:** The school provides time and other resources for teachers to collaborate effectively in the implementation of IB programme(s) (0203-03) **Coherent curriculum 2:** Teachers collaborate to design, plan and deliver the school's IB programme (0401-02)	What provision is in place for staff's ongoing professional development? How do teachers use professional communities of learning and practice to extend and strengthen collaboration?	There are examples and artifacts that evidence collaboration with scholars and professionals to improve and expand learning and teaching The school has established systematic and ongoing training, and mentoring programmes build vibrant professional learning communities
How the school develops a connection between interdisciplinary units and social and emotional learning The school ensures that specific collaborative planning time for interdisciplinary units is scheduled for teachers, involving the counselling staff as well	**Approaches to teaching 4:** Teachers promote effective relationships and purposeful collaboration to create a positive and dynamic learning community (0403-04)	How can teachers and pedagogical leaders increase their understanding and effective implementation of collaborative learning engagements and teaching strategies?	Teacher–student research partnerships are encouraged throughout the school community
Why the school selected this connection as a focus for development Available research evidences increasing levels of stress among middle-school students. The senior leadership team is looking for opportunities to maximize social and emotional learning to enhance the well-being of the school community	**Lifelong learners 1:** Students identify and foster healthy relationships, understanding of shared responsibility, and the ability to collaborate effectively (0402-03) **Lifelong learners 7:** Students pursue opportunities to explore and develop their personal and cultural identities (0402-07)	How does the school community support students to develop healthy relationships? How does the school community develop and support students in communicating their needs and emotions?	Members of the school's community can share examples of ways in which their choices and behaviours have fostered positive relationships and enabled effective collaboration Students are articulate in talking about their personal and cultural identities and how these identities make them successful learners

Aims and objectives

Aims

The MYP interdisciplinary teaching and learning aims state what a teacher may expect to teach and what a student may expect to experience and learn as a result of undertaking interdisciplinary units. These aims, moreover, suggest how the student may be changed by the learning experience.

The aims of the teaching and study of MYP interdisciplinary units are to encourage students to:

- develop, analyse and synthesize knowledge from different disciplines to generate deeper understanding

- explore (and integrate) different and diverse perspectives through inquiry

- reflect on the unique ways interdisciplinary learning allows us to communicate and act.

Objectives

The MYP interdisciplinary objectives state the specific targets that are set for interdisciplinary learning. They define what the student will be able to accomplish as a result of undertaking interdisciplinary units.

A: Evaluating

In interdisciplinary units, disciplinary understanding is explicitly taught and assessed. Students must understand the concepts and skills of the selected disciplines as framed in subject-group objectives. Evaluating disciplinary knowledge provides the foundation for interdisciplinary synthesis and understanding.

To address real-world and contextual issues and ideas, students will:

- analyse disciplinary knowledge

- evaluate the interdisciplinary perspectives.

B: Synthesizing

Through the development of holistic learning, students will integrate knowledge from more than one discipline in ways that inform inquiry into real-world issues, ideas and challenges. Students demonstrate the integration of factual, conceptual and procedural knowledge from more disciplines within the same subject group or from more than one subject group to explain phenomena or create products.

To address real-world and contextual issues and ideas, students will:

- create a product that communicates a purposeful interdisciplinary understanding

- justify how their product communicates interdisciplinary understanding.

C: Reflecting

When undertaking units of interdisciplinary learning, students will engage in a process of ongoing reflection and evaluation of the role of disciplines, weighing their relative contributions and assessing their strengths and limitations in specific interdisciplinary applications. Students will also consider their own ability to construct understanding across disciplinary boundaries, and extend their learning to consider future action or even to take action depending on the school context and the students' learning goals.

To address real-world and contextual issues and ideas, students will:

- discuss the development of their own interdisciplinary learning

- discuss how new interdisciplinary understanding enables action.

Figure 3
The MYP interdisciplinary objectives
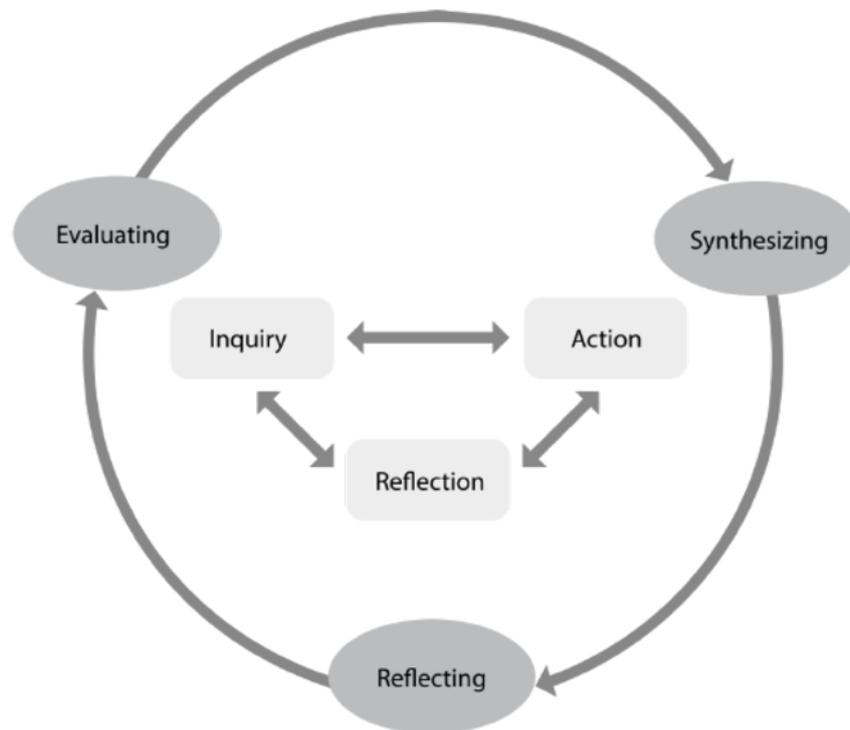
The visual representation of MYP interdisciplinary objectives (figure 3) indicates how the objectives can be used when collaboratively planning formal interdisciplinary units, and illustrates the objectives' close connection with the inquiry cycle that characterizes teaching and learning in IB programmes.

The three objectives for interdisciplinary learning work together in a holistic process that envisions students engaging all three criteria in every formal interdisciplinary unit. In practice, teachers may highlight specific objectives for some units in order to develop students' skills and provide formative feedback for subsequent, more complex units. For students in MYP years 1–3 especially, it may be appropriate to introduce criteria separately to allow for a specific focus on one of the objectives in a given unit. Teachers might scaffold the approach to an objective so that their students can reach the highest achievement levels in subsequent units.

Only when all three objectives are addressed in a unit of work are all the aims of interdisciplinary learning met. Working collaboratively, teachers should design summative assessment tasks (performances of understanding) that address multiple objectives whenever possible.

In each year of the programme, schools must address all three objectives (every strand) of interdisciplinary learning.

MYP projects

The MYP community project (for students in years 3 or 4) and MYP personal project (for students in year 5) aim to encourage and enable sustained inquiry (which may be connected to a global context) that generates new insights and deeper understanding. In these culminating experiences, students develop confidence as principled, lifelong learners. They grow in their ability to consider their own learning, communicate effectively and take pride in their accomplishments.

Interdisciplinary units complement the opportunities offered for students to demonstrate learning through the MYP projects. The MYP personal project and interdisciplinary learning complement each other in showing student understanding of key elements of the programme, with a stronger focus of the personal project on the development of approaches to learning (ATL) skills, while interdisciplinary learning is closely connected to a global context. Moreover, a closer link between interdisciplinarity and service as action is intentionally drawn through criterion C in the assessment model to embed practices already present in many MYP schools.

Interdisciplinary units represent a unique opportunity for schools to integrate service learning meaningfully into the classroom. Service as action experiences developed through interdisciplinary units empower students to learn the value of community participation and gain a deeper understanding of the real-world issues facing their immediate surroundings. The focus should not be on **creating** change-makers—the change-makers are already here. The real focus should be on providing an education that cultivates the skills and abilities in students to channel learning and experience into purposeful action and participation.

Through MYP projects, students experience the responsibility of completing a significant piece of work over an extended period of time as well as the need to reflect on their learning and on the outcomes of their work; these are key skills that prepare students for further study, the workplace and the community. In particular, the personal project provides an opportunity for students to undertake an independent and age-appropriate exploration of an area of personal interest. Through the process of inquiry, action and reflection, students are encouraged to demonstrate and strengthen their ATL skills.

A continuum of interdisciplinary learning

Depending on students' preparation, the unit's learning objectives and the school plan, interdisciplinary teaching can take different forms. Teaching designs vary depending on their purpose and content focus, the selection of disciplines involved, students' prior knowledge, as well as the required scope and forms of teacher collaboration. Recognizing this diversity enables teachers to find comfortable opportunities for interdisciplinary explorations with their colleagues and students.

The MYP proposes that schools understand interdisciplinary curriculum design as a continuum (see figure 4).

Figure 4

Interdisciplinary learning continuum
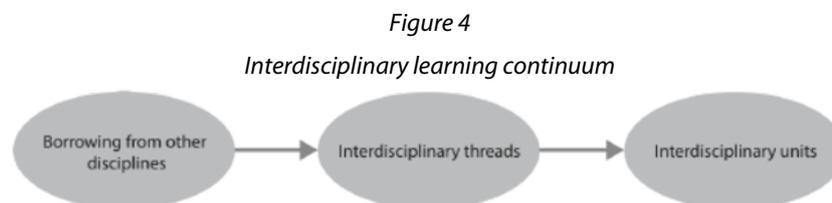
Borrowing from other disciplines

Frequently, teachers find that bringing knowledge, concepts or skills from another discipline can enrich their students' understanding of the disciplines they teach. For example, a biology teacher may "borrow" selected lessons in still life drawing to further students' capacity to observe during fieldwork. A mathematics teacher may invite students to create fractal computer art with the intention of building the visual thinking necessary to translate functions into two- and three-dimensional spaces. Similarly, a history teacher might draw on statistics or economics to explain the impact of a social crisis in a specific setting. These examples illustrate how courses that are primarily disciplinary can benefit from high-quality, natural forays into neighbouring disciplines.

Integrating interdisciplinary threads

Other teachers may prefer to weave an interdisciplinary thread throughout their disciplinary courses. For instance, throughout an academic year, a history teacher may revisit the question of how monuments, artwork and propaganda use visual symbols to tell stories about many societies, preparing students to create informed historical monuments of their own as a culminating project. A biology teacher may include selected concepts in ethics or moral philosophy to invite students to reflect on the human responsibility towards the environment and other species. These threads can be introduced by individual teachers or by colleagues visiting from other disciplines or departments.

Designing formal interdisciplinary units

Finally, some teachers may dedicate a sizeable unit of work to a topic that demands an interdisciplinary approach. For instance, the study of globalization could invite students to learn to think like economists, sociologists and natural scientists. A unit on how to mitigate and adapt to climate change may need insights from the natural sciences as well as from economics, public health and political science. Schools

need to dedicate time and effort in collaborative planning when developing formal interdisciplinary units of inquiry. The MYP interdisciplinary planner provides guidance in that process.

Schools can also identify an overall learning objective(s) for the interdisciplinary units they develop, depending on the number of years of MYP adoption (whether a school does four to five years of the MYP, or fewer). The IB encourages schools to see interdisciplinary units not only as stand-alone elements that the IB prescribes to implement but also as a foundational element of the learning offered in school. In some contexts, it can be meaningful for a school to develop stand-alone interdisciplinary units only; in other cases, a school can benefit from an overall objective(s) that drives the development of several interdisciplinary units. Hence, schools can use this as an opportunity to focus on a specific aspect of learning and teaching that they plan to enhance in their context (social and emotional learning, well-being, indigenous knowledge and cultures, connection between nature and self, service learning, etc).

Overall, the IB encourages schools to see interdisciplinary learning as an opportunity to foster collaborative practices among teachers as well as a culture of collaboration in school, as an opportunity to design a strategy for teacher professional development, and as a learning developmental process that guides teachers from a less integrated level of disciplinary knowledge and understanding to fully integrated units.

Progression of learning

Throughout the programme, students should engage with the curriculum and will be expected to demonstrate their understanding at increasing levels of sophistication. Students should become more self-directed in their interdisciplinary inquiry over time. It is suggested that in the first years of the MYP, depending on the context and the student's prior learning, inquiry can be more teacher-determined and directed. As learners progress through the programme, interdisciplinary inquiry may be more student-led and open, for example, by focusing on inquiry questions generated by students as well as teachers, and/or by including tasks that allow students to be **agents of change** in creating a more sustainable, interconnected and peaceful world that brings the IB mission to life.

Possible entry points to interdisciplinary planning

Teachers can begin to form ideas for and to plan interdisciplinary units from multiple points of entry. One of the most powerful starting points could be a local, community-focused, global or interpersonal problem, issue or challenge that requires the knowledge or skills from multiple disciplines to be addressed. Other inspirations for developing interdisciplinary units include MYP key concepts, global contexts or content that invites integration with multiple disciplines.

Entering through concepts

One way to make disciplinary connections clear for students is to explore a shared key concept. These broad ideas invite students to make connections between key concepts from multiple disciplines in order to ask new questions and develop new understanding about the relationship between ideas across disciplines. Some key concepts are closely related to others (for example, global interactions represent forms of relationships, systems and change), providing additional opportunities to explore connections between and across conceptual domains in ways that can foster deep understanding. Definitions for MYP key concepts are in the "Appendices" section.

The MYP identifies **16 key concepts** to be explored across the curriculum. These key concepts, shown in table 5, represent understandings that reach beyond the eight MYP subject groups from which they are drawn.

Table 5

MYP key concepts

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

Interdisciplinary units can also be developed by exploring opportunities for integration among related concepts through a shared global context and statement of inquiry. A list of related concepts can be found in the "Appendices" section.

MYP subject-group guides contain detailed information about these related concepts.

Table 6 illustrates how key and related concepts can be used as entry points into interdisciplinary units.

Table 6

Examples of using concepts as entry points

Using concepts	Example statements of inquiry and summative assessments
Achieve an interdisciplinary understanding about a key concept using two or more disciplines.	Global economic systems are dynamic but seek equilibrium; if one part of the system changes, the whole can be disrupted (key concept: **systems**): an inquiry into how economic exchange in the global market has altered specific ecosystems, such as the Amazon River basin (geography and economics). Students will create a campaign to raise awareness about the issue in their local community and explore alternative solutions.
	By modelling the relationships between key variables, statisticians can predict future performance (key concept: **relationships**): an inquiry into patterns of

Using concepts	Example statements of inquiry and summative assessments
	world records in Olympic competition (physical and health education (PHE) and mathematics). Students will model and predict which world records are likely to be broken at the Olympic Games.
Explore the relationship between related concepts from different disciplines to achieve new interdisciplinary understandings.	Revolutionary art uses aesthetics to transform politics and society (related concepts: **innovation** (visual arts) and **revolution** (history)): an inquiry into social or political injustice. Students will create a work of art that provokes responsible action in addressing a contemporary social issue.
	Cultural interactions foster intercultural communication that can spark economic, cultural, and intellectual change (related concepts: **exchange** (history) and **narrative** (music)). Students will explore how music can be a powerful form of narrative that communicates ideas, events, and feelings across cultures. Students will create a script for a play in which they dramatize their understanding of the causes, processes, and results of collaborative exchange and innovation along the Silk Route.
	Civilizations have developed different number systems to explain relationships in the world around them (key concepts: **systems** and **relationships**): an inquiry into ancient mathematical ways of knowing. Students will create a presentation that proposes hypotheses about the relationship between Babylonian, Greek, Roman and Incan history and their civilizations' respective number systems.

Entering through global contexts

Concepts are powerful ideas that have broad application, but the meaning of concepts can change as people experience and interpret them in different contexts. Contexts offer the possibility of new perspectives, additional information, and refinements of understanding. Contexts also help to create productive discussion within and outside the classroom, often identifying inquiries that are meaningful and relevant to students.

MYP global contexts provide a common language for learning, identifying specific settings, events or circumstances that provide more concrete perspectives for inquiry, and they offer common points of entry for an ongoing exploration of what it means to be internationally minded. A list of global context and global context explorations can be found in the "Appendices" section.

Table 7 provides some examples of how contexts can be used to establish connections across disciplines.

Table 7

Using global contexts as entry points

Global context	Focus question(s) and description	Example explorations	Examples of potential interdisciplinary units based on the global contexts
Identities and relationships	Who am I? Who are we? Students will explore identity; beliefs and values; personal, physical, mental, social and	• Competition and cooperation; teams, affiliation and leadership	Understanding ourselves through an exploration of the needs of individual versus team sports (PHE and sciences)

Global context	Focus question(s) and description	Example explorations	Examples of potential interdisciplinary units based on the global contexts
	spiritual health; human relationships including families, friends, communities and cultures; what it means to be human.	• Identity formation; self-esteem; status; roles and role models • Personal efficacy and agency; attitudes, motivation, independence; happiness and the good life	Measuring the level of happiness in teenagers (mathematics and psychology)
Orientation in space and time	What is the meaning of "where" and "when"? 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.	• Civilizations and social histories, heritage, pilgrimage, migration, displacement and exchange • Epochs, eras, turning points and "big history" • Scale, duration, frequency and variability • Peoples, boundaries, exchange and interaction	Studying different ideas and mechanisms for measuring time (mathematics and history)
Personal and cultural expression	What is the nature and purpose of creative expression? 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.	• Artistry, craft, creation, beauty • Products, systems and institutions • Social constructions of reality; philosophies and ways of life; belief systems; ritual and play	Experimenting with the role and use of language (language and literature, language acquisition and arts) Demonstrate creative expression through the investigation of indigenous societies' connection to nature and emotional learning (sociology, visual arts and PHE)
Scientific and technical innovation	How do we understand the world in which we live? Students will explore the natural world and its laws; the interaction between people and the natural world; how humans use their	• Systems, models, methods; products, processes and solutions • Adaptation, ingenuity and progress	Exploring the role that control over our environments has played in the lives and well-being of human populations (biology and individuals and societies)

Global context	Focus question(s) and description	Example explorations	Examples of potential interdisciplinary units based on the global contexts
	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.	• Opportunity, risk, consequences and responsibility • Modernization, industrialization and engineering • Digital life, virtual environments and the Information Age	
Globalization and sustainability	How is everything connected? 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.	• Markets, commodities and commercialization • Human impact on the environment • Commonality, diversity and interconnection • Consumption, conservation, natural resources and public goods • Population and demography • Urban planning, strategy and infrastructure	Investigating waste management and designing an effective recycling campaign for the school (design, chemistry, economics and psychology) Designing a promotional campaign to raise awareness about the role and responsibility of individuals in sustainable consumption (business management, digital design, chemistry)
Fairness and development	What are the consequences of our common humanity? 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 resolution.	• Democracy, politics, government and civil society • Inequality, difference and inclusion • Human capability and development; social entrepreneurs • Rights, law, civic responsibility and the public sphere	Understanding the nature of development for a specific region (geography, economics and mathematics) Organizing a workshop to enhance intra-cultural understanding between communities in conflict (language and literature, history)

Entering through content that invites the integration of multiple disciplines

Not all topics are equally suited for quality interdisciplinary inquiry. Some topics, however, defy single disciplinary treatment. Real-world issues, ideas and challenges invite students to integrate two or more bodies of knowledge. For example, understanding how to improve gymnastic performance might involve PHE, physics, biology and dance. Complex phenomena are often inherently engaging for students, and they offer rich opportunities for formal and informal interdisciplinary inquiry.

The examples in table 8 illustrate the types of issues that call for interdisciplinary planning.

Table 8

Using content and real-world issues, ideas and challenges as entry points

Example	Subject groups
Understanding of cultural heritage through performance	**Individuals and societies**—exploring indigenous knowledge, culture and the effect of globalization on them **Arts**—developing skills and exploring ideas related to the representation of indigenous cultures
Conflict resolution through learning spaces	**Language and literature**—understanding conflict and resolution in literary texts; developing negotiation skills **Design**—exploring conflict through the creation of effective learning environment
Influence of social norms on our beliefs	**Language and literature**—exploring themes of appearances, isolation and coming of age through a comparative study of novels **PHE**—regulation of our beliefs through lifestyle choices

How to plan an interdisciplinary unit

Collaboratively planning an interdisciplinary unit requires time. In figure 5, you can find a visual that identifies the main processes in planning an interdisciplinary unit. Teachers should pay particular attention to:

- the identification of the purpose of integration
- the disciplinary knowledge, understanding and skills needed
- the disciplinary formative and summative task(s) (which are linked to subject-specific objectives)
- the interdisciplinary learning engagements (inclusive of formatives), and
- the summative task(s) (using the interdisciplinary criteria).

Articulating a clear connection between these elements is paramount for a meaningful learner experience.

Figure 5

How to plan an interdisciplinary unit

BRAINSTORMING
What real-world issue are we trying to address? What product are students going to create?

PURPOSE OF INTEGRATION
Identify shared concepts (key concepts and related concepts), conceptual ideas, global context and exploration

Feedback loop

Feedback loop

SHARED STATEMENT OF INQUIRY (SOI)

DISCIPLINARY GROUNDING 1
Identify subject-specific content, understanding, and skills critical to the interdisciplinary purpose of integration

DISCIPLINARY GROUNDING 2
Identify subject-specific content, understanding, and skills critical to the interdisciplinary purpose of integration

INTERDISCIPLINARY LEARNING & TEACHING ENGAGEMENT
(including interdisciplinary formatives)

Disciplinary formative and mini-summative (linked to subject-specific objectives)

Disciplinary formative and mini-summative (linked to subject-specific objectives)

INTERDISCIPLINARY SUMMATIVE TASK
(using interdisciplinary criteria)

Using the interdisciplinary unit planner

In the context of the MYP curriculum, a unit can be defined as a period of study that concludes with a summative assessment. The MYP unit planning process supports inquiry-based, concept-driven teaching and learning in all MYP subjects, as well as interdisciplinary studies.

The MYP **interdisciplinary unit planner** helps to organize interdisciplinary teaching and learning. Reflecting the unique nature of interdisciplinary study, the interdisciplinary planner is designed as a stand-alone planning document. The interdisciplinary unit planner promotes the effective teamwork and collaboration that can lead towards more meaningful and rigorous student learning. An interdisciplinary unit plan template and an alternative one is included in the "Appendices" section. We advise teachers to use the one that best reflects their teaching flow in developing an interdisciplinary unit plan.

When engaging students in formal, collaboratively planned interdisciplinary units, schools must use the interdisciplinary unit planning process.

Teachers are encouraged to focus on the following driving questions that support the planning and teaching of interdisciplinary units.

- If one of the specific disciplines was not included in the unit, what would be missing, if anything?

- What does each discipline add to the **purpose of integration**?

- Does each discipline add a **unique perspective** in understanding a topic, a concept or statement of inquiry?

- Are the inquiry questions **transferable**? Could each inquiry question be used as a prompt for student inquiry in both disciplines?

- Do students engage with the inquiry questions and begin to **evaluate the strengths and limitations** of each discipline's content and perspective?

- When and how will students **reflect** on their development as interdisciplinary learners?

- When and how are students provided with opportunities to weigh the relative contribution of each discipline by assessing the **benefits and the limitations of disciplinary and interdisciplinary knowledge** as they consider the integrated purpose of the unit?

- Can the **product** or **outcome(s)** of the summative task(s) create a **real-world impact**?

- Does the summative task(s) allow students to **connect with** and **influence** a **real-world audience**?

- Does this task(s) allow students to be agents of change in creating a more sustainable, interconnected and peaceful world?

Teachers can use this section in conjunction with the "Evaluating MYP interdisciplinary unit plans" section in the Appendices.

The IB encourages teachers to read this section together with the interdisciplinary exemplary unit plan "Is life satisfaction measurable?". To see what this planning principle might look like in practice, refer to the TSM.

Inquiry: Establishing the purpose of the unit

The "Inquiry" section of the planner asks, "What is the purpose of our work together? How can we ensure that the purpose of integration is clear and meaningful?". This part of the planning process explains the unit's alignment with MYP philosophy and requirements. It outlines how the unit integrates disciplines to promote the development of new understanding.

In many cases, before establishing the purpose of the unit, teachers will brainstorm ideas related to what real-world issue they want to address and what product the students will create. This is a powerful step to ensure that teachers who are planning a unit collaboratively have a clear understanding of the student's learning process, including the reason for integrating disciplinary knowledge and the product created by students.

Teachers may start from a concept, a shared global context, or a real-world issue or challenge that offers opportunities to develop new understanding through the integration of multiple disciplines.

Purpose of integration

The purpose of integration is the driving force of interdisciplinary units. As such, it must be clearly explained. Integration must be meaningful and not just a statement of superficial connections. Teachers can include a brief description of how each participating subject contributes to the integrated purpose, what synthesis is achieved (why it is worth understanding the real-world issue or idea from an interdisciplinary perspective), and the interdisciplinary learning process developed (what students will do).

Purpose of integration
Ask yourself: Why is it worth understanding this real-world issue or idea from an interdisciplinary perspective? What is the specific contribution of each participating discipline in the purpose of integration? What synthesis is developed?

Concepts and global context
Ask yourself: What concepts offer opportunities for integrated exploration through multiple disciplines?
Select at least two concepts (one must be a key concept) that both or all participating disciplines can explore during the unit.
Why does the global context matter? How does it connect to my students? What is its relevance and significance?
Select one of the six MYP global contexts or develop another shared context for teaching and learning.
Identify a specific global context exploration.

Statement of inquiry

The statement of inquiry should:

- include a transferable conceptual understanding that describes a meaningful relationship between at least two concepts (one must be a key concept)
- explicitly refer to the unit's global context exploration
- explore transferable ideas developed across a range of facts and topics.

Statement of inquiry
Ask yourself: What understanding do I seek to explore? How can I express this understanding in a way that effectively integrates concepts and context? To what extent can the conceptual idea be transferred across a range of facts and topics?
Write a statement that describes the contextualized understanding that you want students to construct through their engagement with this interdisciplinary unit.

Inquiry questions

Inquiry questions frame the scope of a unit of study without limiting student-initiated inquiries. Inquiry questions are used to unpack the statement of inquiry. Teachers of the disciplines participating in an interdisciplinary unit can collaboratively develop a set of shared, transferable, factual, conceptual and debatable questions that can be explored from the unique perspective of each discipline, and/or from a synthesized interdisciplinary perspective. Questions can be developed that help students inquire into each

of the elements expressed in that statement: the concepts, the relationship between the concepts, the context and/or the relationship between the conceptual understanding and the global context exploration. Inquiry questions can be classified as factual, conceptual and debatable.

Interdisciplinary inquiry questions
Ask yourself: What do we want to learn? What do we need to consider? What background knowledge or prior learning can we use to pursue our inquiry? What do students already know about the key or related concepts and global context exploration expressed in the statement of inquiry?
Identify questions that are open-ended, student-friendly and essential for inviting critical and creative thinking about the statement of inquiry. Good interdisciplinary questions foster both deep disciplinary understanding, and integration and synthesis. Create questions that span the structure of knowledge from both or all participating disciplines to include facts, concepts and debatable propositions.

Summative assessment (interdisciplinary performance(s) of understanding)

Summative interdisciplinary performances enable students to build and demonstrate their understanding of the statement of inquiry. These performances—such as a final paper, a presentation, a simulation or a portfolio—also make visible students' interdisciplinary understanding of the topic and/or how they address a real-world issue These performances allow students to bring disciplines together in ways that develop and demonstrate their understanding of a real-world issue and enable action.

Summative assessment (interdisciplinary performance(s) of understanding)	
Identify interdisciplinary criteria that will be addressed in the summative assessment—usually, all of them.	Ask yourself: What will students do to make interdisciplinary understanding of issues and ideas visible? How does this assessment reflect the unit's statement of inquiry? How will students' achievement be evaluated?
	Create a task that allows students to demonstrate how they can integrate disciplinary knowledge, skills and attitudes to demonstrate new understanding.

Approaches to learning

Teachers should select the specific ATL skills that students will develop through their engagement with the interdisciplinary unit. For interdisciplinary teaching and learning, the horizontal and vertical articulation of skills is vitally important. Effective ATL planning can confirm which ATL skills have been (or are concurrently being) developed in other units so that teachers can introduce, reinforce and build on them as needed. All the objectives for interdisciplinary learning are closely related to ATL skills. A table of the ATL skills framework is included in the "Appendices" section.

Approaches to learning
Ask yourself: What skills are identified and integrated with the unit's objectives, learning engagements and assessment tasks? What skills are explicitly taught and what specific strategies are practised?

Action: Teaching and learning through interdisciplinary inquiry

The "Action" section of the unit planner identifies the taught curriculum by asking, "How will we support students in the development of their interdisciplinary understanding? What will students do? What opportunities for practice will we provide?". Teachers use this section to focus on **how** students will learn. This section should record a plan for active inquiry. It prompts teachers to gather information on students'

prior learning, plan possible learning experiences and consider the availability and applicability of challenging teaching strategies, tools and resources.

Teachers should refer to the interdisciplinary statement of inquiry to ensure that the quest for conceptual understanding drives the unit's planned learning experiences. Everything that teachers and students do should serve the integrative purpose of the interdisciplinary unit, leading students towards the synthesis of new understanding. Using the unit's inquiry questions to frame the unit's learning engagements can promote a depth of understanding of each element in the statement of inquiry, and the statement of inquiry as a whole. As students inquire into the unit's concept(s) and context-phrased questions, they can be better prepared for demonstrating their understanding of the statement of inquiry in the unit's summative task(s).

Disciplinary grounding

In the disciplinary grounding section of the planner, teachers describe significant subject-specific content that is necessary to develop interdisciplinary understanding as expressed in the statement of inquiry. Content from each discipline may include:

- factual knowledge: disciplinary facts, topics, terminology or vocabulary, time periods, people, places
- conceptual knowledge: disciplinary conceptual ideas such as models, theories, generalizations, principles
- procedural knowledge: disciplinary skills, techniques, methods, procedures.

If applicable, national or local standards might be identified separately or they might be aligned within the categories in the above bullet points. When more than two subjects or subject groups are participating in the interdisciplinary unit, teachers can add additional columns or pages that describe the necessary disciplinary grounding. This particularly applies to STEM/STEAM units or projects. It is advisable in these cases to add pages rather than columns to make the planning process more manageable and the unit planner readable.

Disciplinary grounding
Ask yourself:
What disciplinary grounding is necessary to ensure that students can achieve interdisciplinary understanding?
What disciplinary knowledge and skills will students need in order to engage with the unit's statement of inquiry and inquiry questions?
What subject-specific objectives will we address?
Are there any relevant related concepts that we can explore?
How will students explore the benefits and limitations of disciplinary knowledge?
What strategies will be used to help students connect factual, conceptual and procedural knowledge?
Identify the concepts, content and objectives that the unit will incorporate from each participating subject. In some units, discipline-specific related concepts might also be identified in the Disciplinary grounding section of the unit planner and explored during the disciplinary learning process to strengthen disciplinary grounding.

Disciplinary and interdisciplinary teaching strategies and learning experiences

Disciplinary teaching and learning experiences focus more narrowly on grounding students in the ideas and modes of thinking of a particular discipline. They provide some of the tools that students need for the more complex interdisciplinary work, ensuring that students understand related disciplinary concepts. In disciplinary performances of understanding, students examine and apply targeted concepts, skills or attitudes in a unit, receiving informative feedback from teachers.

Interdisciplinary teaching and learning experiences allow students to begin to connect and draw on disciplines in an integrated way. Fostering interdisciplinary performances of understanding during the development of the unit helps students see connections among multiple aspects of a topic or real-world issue or a challenge typically studied by different disciplines. Placed early or midway in a unit, these practice performances help students learn how to make the essential connections between disciplines, which form the basis of authentic interdisciplinary understanding. At the same time, this will help to reconsider disciplinary knowledge, methods and tools.

Disciplinary and interdisciplinary learning experiences and teaching strategies
Disciplinary learning experiences and teaching strategies Ask yourself: What disciplinary teaching and learning experiences are necessary? What kind of learning engagements will help students achieve disciplinary grounding? **Interdisciplinary learning experiences and teaching strategies** Ask yourself: What will students do and in what order to achieve integrative understanding? What will students do to explore interdisciplinary concepts and context? When and how will students reflect on the development of interdisciplinary understanding? Describe how you will create a learning environment and inquiry-based learning that develops both disciplinary and interdisciplinary understanding. Align learning experiences, ATL skills development and formative assessment with the factual, conceptual and procedural knowledge that students need to synthesize multiple disciplinary approaches to demonstrate their understanding of the unit's statement of inquiry.

Formative assessment (disciplinary and interdisciplinary)

Formative assessment (assessment **for** learning) provides teachers and students with insights into the ongoing development of knowledge, understanding, skills and attitudes. Ongoing formative assessment, carried out during the course of the unit, can provide teachers and students with insights into the development of disciplinary and interdisciplinary understanding and the effectiveness of the unit's plan for disciplinary integration. Through formative assessment, teachers and students also explore personal learning styles and individual student differences that offer opportunities for differentiation. Although formative assessment is included as a separate section in the unit planner, it is suggested that teachers, to respect the work flow in the teaching of an interdisciplinary unit, can incorporate formative assessment(s) in these two sections of the unit planner: Disciplinary learning experiences and teaching strategies, and Interdisciplinary learning experiences and teaching strategies.

Formative assessment
Ask yourself: How will we use formative assessment during the unit to give students feedback about their developing integrated perspectives? How will students know "what good looks like" in their performances of understanding? Devise multiple ways of providing ongoing, specific feedback on students' knowledge, skills and attitudes. Provide repeated opportunities for practice. Divide complex tasks into discrete steps with interim markers of progress. Consider strategies for self- and peer review.

Differentiation

Differentiation (planning 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. All students should be able to access the curriculum through the unit's design and through the strategies that teachers employ. Although differentiation is included as a separate section in the unit planner, it is suggested that teachers, to respect the workflow in the teaching of an interdisciplinary unit, can incorporate differentiation in these two sections of the unit planner: Disciplinary learning experiences and teaching strategies, and Interdisciplinary learning experiences and teaching strategies.

Differentiation
Ask yourself: How are we differentiating teaching and learning to address individual student learning needs? How can we provide a variety of input, processing strategies and output options that allow students to demonstrate their interdisciplinary understanding?
Consider appropriate accommodations for students with learning support requirements. Build on students' strengths and abilities. Use groups to support student learning. Work with an awareness of students' language profiles.

Resources

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

Resources
Ask yourself: What visual and written texts can support students' growing understanding? What community resources might enrich and extend our interdisciplinary understanding? What media and internet sources can provide multiple perspectives on interdisciplinary issues and ideas?
Consider the language and life experiences that students bring to the inquiry. Inventory possible resources and develop a plan for sharing them. Collaborate with colleagues from other disciplines to generate possibilities and innovative solutions.

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

The "Reflection" section of the planner prompts critical reflection throughout the process of planning, teaching and reviewing the success of interdisciplinary units. Throughout the unit, teachers should explicitly teach, model and provide meaningful feedback on the process of reflection.

Prior to teaching the unit	During teaching	After teaching the unit
Ask yourself:		

Ask yourself:

- Did the disciplines we chose provide meaningful opportunities for integration?
- Have our approaches to teaching supported the development of students' interdisciplinary understanding?
- How effectively have we structured the logistics of interdisciplinary collaboration?
- What might we do to strengthen our own understanding of the MYP interdisciplinary unit planning process?
- What will we keep and what will we change when or if we teach this unit again?
- What evidence do we have that demonstrates how students have developed new interdisciplinary understanding?
- What type of action have students taken in response to their engagement with this interdisciplinary unit?
- How have we developed attributes of the IB learner profile that are shared across disciplines?

Create regular opportunities for reflection on the unit, including important milestones in its teaching. Be mindful of students' engagement and progress, noting possible changes in the course and ideas for improvement. Review the unit's purpose and the extent to which you and your students achieved it. Work collaboratively to evaluate student achievement.

Organizing interdisciplinary learning

In MYP schools, collaborative planning is vital. Time for collaborative planning must be managed systematically and effectively, and it must involve all teachers. Meeting time is especially important for developing horizontal and vertical articulation of the curriculum. Depending on resources, school timetable and context, exclusive time allocated to interdisciplinary planning can benefit schools by creating more integrated interdisciplinary units and learning.

As teachers plan collaboratively to explore global contexts and develop inquiry into key concepts within their subjects, opportunities will emerge in which two or more subject groups can join together to create an integrated inquiry. As teachers identify complementary content, skills and concepts, they can plan MYP units that build on this potential integration.

Schools can decide to go further than collaboratively planning one interdisciplinary unit per year as per the requirement. In contexts where MYP schools are providing or planning a more integrated curriculum and learner experience, it may be beneficial to develop more interdisciplinary opportunities even if not all of the units or projects are formally assessed. Creating deeper connections between subject groups and concepts will benefit learners by promoting a transferral of understanding and by nurturing their curiosity in addressing real-world issues.

School leadership plays an important role in prioritizing interdisciplinary learning and teaching. Providing collaborative planning time and specific professional development opportunities related to interdisciplinary planning ensures that teachers understand disciplinary and interdisciplinary learning processes, and that they are well supported in developing meaningful, authentic and engaging interdisciplinary units. Collaborative planning time and teacher understanding are the two most important factors that guarantee high-level implementation of interdisciplinary units.

An example of a school organizing an interdisciplinary unit that can facilitate collaborative planning between and among subjects is included in table 9. Depending on the timetable, schedule and subjects that are being integrated, the key driver is to create a more coherent curriculum. Table 9 presents the organization of an interdisciplinary unit in which the subjects being integrated are taught concurrently. The IB strongly encourages this method of delivering interdisciplinary units as it is effective in allowing students to consider the strengths and the limitations of the contributions of each discipline to the interdisciplinary purpose. However, in some cases concurrent teaching might not be possible. Table 10 presents how the teaching of the same unit plan can be organized when the integrating subjects are not taught concurrently.

This MYP year 5 unit in the TSM integrates arts and individuals and societies. The statement of inquiry is "Aesthetic productions of a determined time and space may reflect and/or modify power relationships existing in a society". The overall goal of the unit is for students to understand the relationship between art production and the socio-economic, political context in which art is generated, and how at times art can change the social and political context.

The summative task consists of two parts. In part 1 students will create a piece of art related to a specific topic (criterion Bi). Taking into consideration the specific topic, students will organize a curator space; the artist will develop a short text to explain the relationship between his or her intention and the product (criterion Ai). In the exhibition, each piece of art must be accompanied by a text that justifies the relationship between form and content (criterion Bii). In part 2, once the exhibition has concluded, students will select a specific format from a list to reflect on the impact of the exhibition on the audience and community. Students will reflect on the learning development throughout the unit (criterion Ci) and how they will use interdisciplinary understanding to take action (criterion Cii).

In table 9, teachers would identify some common teaching around the interdisciplinary purpose of the unit, in addition to the necessary disciplinary grounding support. The inquiry questions can be used as anchor points within and across the subjects to establish meaningful connections and to develop the teaching and

learning experiences. The weeks and hours provided are presented for exemplification purposes, but it would depend on the length of the unit.

You can access this interdisciplinary unit plan in the TSM.

Table 9

Example of concurrent teaching of an interdisciplinary unit

Week	Hours	Arts	Interdisciplinary	Individuals and societies
1	2	Introduction		
1	2	Artistic area		Social area
2	2	Interactions between power areas		
2	2	How form makes the content	Introductions of the topics and criteria	How content makes the form
3	2	Effectiveness of the artistic form		Artistic production as primary source
3	2	Determine the context and the exploration of the criteria (formatives)		
4	4	Value of the artistic opera Key characteristics of art representation starting from the following levels: metaphorical, symbolic and/or allegoric	Debate: Arts or social activism	Social protest movements Paradigmatic works of historical landmarks
5	2	Curatorial and exhibition text Field trip: Museum, gallery or arts fair		
5/6	4	Individual or group production		
6	2	Conclusion of the project: exhibition		
7	4	Reflection and final evaluation		

Teachers may be working on the disciplinary knowledge at different times of the year (non-concurrently) because of national restrictions on the order of the content into which they can inquire with students or for logistical, schedule constraints. If this is the case, teachers can plan to explore the necessary disciplinary knowledge with students during different times of the year, while ensuring that students have ample opportunities to connect and synthesize the learning of the different subjects. Teachers can use an organizer such as the one in table 10 to organize and plan for the work ahead.

Table 10

Example of non-concurrent teaching of an interdisciplinary unit

Project Name—Timeline			YEAR																										
			April				May				June					July				August				September					
Interdisciplinary elements	Subjects	Duration (weeks)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Interdisciplinary introduction to unit		1	3																									
Inquiry question 1	Subject 1	2	1	1																								
Disciplinary grounding teaching and learning	Subject 1	1				1																						
Disciplinary grounding teaching and learning	Subject 1	3				1	1	1																				
Interdisciplinary mid-way synthesis		1					3																					
Inquiry question 2	Subject 1	1					1																					
Disciplinary assessment	Subject 1	1						1																				
Inquiry question 3	Subject 1	1							1																			
Interdisciplinary journal individual inquiry		7								3	3	3	3	3	3	3											
Disciplinary grounding teaching and learning	Subject 2	3															2	2	2								
Inquiry question 1	Subject 2	1																	2								
Inquiry question 2	Subject 2	1																2	2								
Interdisciplinary final synthesis	Subject 1	4																		3	3	3	3				
Inquiry question 3	Subject 2	2																					2				
Summative task	Subject 1 and 2	1																					3				

Legend		
1	Subject 1	
2	Subject 2	
3	Interdisciplinary journal entry	

Download large-format table (PDF)

From activities to performances of understanding

Performances of understanding represent learning experiences that encourage flexible thinking in unfamiliar situations. They go beyond activities like "going on a field trip" or "gathering information about our city". Learning experiences become performances when students are asked to use information deliberately to create new understandings. For example, the field trip may be part of a unit on endangered species, and students may be asked to identify evidence of predator–prey interactions during their trip in order to build hypotheses about possible threats to the local ecosystem.

Performances of understanding allow students both to build and demonstrate their understanding in and across subjects. They are based on a philosophy of education in which understanding is not something students **have**—like a set of facts we possess—but rather something that students **do**. (Note that the term "performances" does not emphasize, and is not limited to, "stage performances" such as plays or concerts. Rather, it refers to opportunities to consider what students understand through action. Performances might include a group presentation, an essay, a mental computation in response to a challenging question, or many other examples of student work.)

The IB does not mandate specific types of summative assessment tasks (performances of understanding). When developing a performance of understanding, the fundamental quest is to gather the evidence needed to assess student understandings and the goals of the unit and/or task(s) against the interdisciplinary assessment criteria.

Making interdisciplinary understanding visible

MYP interdisciplinary units emphasize the process of learning, while also attending to its results. When determining how performances will demonstrate interdisciplinary understanding, teachers need to identify how interdisciplinary understanding will be made visible (table 11). Teachers should also plan how they will help students structure and document their interdisciplinary inquiry process.

Table 11

Making interdisciplinary understanding visible

Teachers should consider:	Examples of tools to make understanding visible
• the product that students will create as a result of undertaking the interdisciplinary unit	Website, essay, dance performance, experiment, investigation, oral presentation, infographics
• the process by which the end product was achieved	Observation protocol, process journal, checklist, experiment report, action plan
• student reflection about learning throughout the interdisciplinary process.	Commentary, presentation, journal, visual organizer, blog, personal learning log, shared digital notes and workspaces, script, cartoons

In summary, high-quality interdisciplinary experiences invite students to engage in a rigorous process in which they:

- integrate disciplinary expertise and knowledge and understanding to address a real-world issue, idea or challenge

- inquire into the disciplines to select relevant methods, concepts, theories and tools that can be used to achieve a clear purpose within a specific global context

- synthesize disciplines to advance their own interpretation and consider possible courses of action

- create a product to communicate interdisciplinary understandings
- reflect on the significance of their work and evaluate limitations and possibilities of integrating disciplines in ways that develop new understanding
- reflect on the action(s) that can be taken to extend interdisciplinary understanding or on the action(s) taken during the development of disciplinary and interdisciplinary learning.

Disciplinary and interdisciplinary teaching process

Disciplinary learning engagements and teaching strategies

This section describes what students will do to develop disciplinary grounding in subject 1 and subject 2 (and others, as applicable) and in what order. The disciplinary learning process needs to be evidenced in the relevant section of the unit plan. Depending on the participating subjects, the nature of the disciplinary formative or summative task(s), and the overall length of the unit, teachers can evidence the number of hours that count for disciplinary knowledge. One way to structure the disciplinary grounding that supports the integrated purpose is to sequence the learning experiences and teaching strategies week by week with the "big picture" unit's inquiry questions being explored from the unique perspective of this discipline as the main driver. This is not a prescribed strategy; however, especially in cases where an interdisciplinary unit is taught concurrently, this will structure the development of the disciplinary learning process through inquiry-based learning engagements that are used to explore the inquiry questions. The section should also include the "when" and "how" students explicitly evaluate the benefits and limitations of exploring the topic, real-world issue, idea or problem from the point of view of this discipline.

Disciplinary formative or mini-summative assessments

Formative assessment, carried out during the unit, can provide teachers and students with insights into the development of disciplinary understanding for the purpose of integration. Disciplinary formative assessments and feedback occur during the disciplinary learning process for a specific purpose. Teachers can use a range of informal and formal methods to provide formative feedback, including discipline-specific assessment criteria and strands to inform achievement. Formatives can be a prompt in the reflection journal, a student survey or any other type of activity or task that supports the development of disciplinary knowledge, skills and concepts.

Disciplinary mini-summative tasks can take many forms—one option is for a mini-inquiry into the topic or idea investigated in each individual subject to be integrated in the interdisciplinary unit. Disciplinary summative tasks can be assessed with subject-group assessment criteria and strands. Student achievement levels in subject-group criteria can be recorded as subject-specific marks; they are not used to determine student achievement in MYP interdisciplinary criteria. For an exemplification of both disciplinary formatives and summative assessments, please refer to the exemplary unit plan in the TSM, "Is life satisfaction measurable?", which integrates mathematics and language and literature subject groups.

Interdisciplinary formative assessments

Interdisciplinary formative assessments, occurring during the interdisciplinary learning process, support students in developing synthesis and help students to prepare the interdisciplinary summative task. Depending on the nature of the summative task and the purpose of integration, synthesis can be achieved through students debating a related concept that has been investigated in both the subjects being integrated. Overall, this section on Interdisciplinary formative assessments captures:

- what students will do to develop an interdisciplinary understanding
- when and what opportunity students are given to reflect on the development of interdisciplinary understanding

- the weight of the relative contribution of each discipline by assessing the benefits and limitations of disciplinary and interdisciplinary knowledge as students consider the integrated purpose of the unit.

Clarity can be provided for students if the interdisciplinary learning process occurs **after** the concurrent disciplinary learning processes. In this case, teachers of all participating disciplines need to plan how the interdisciplinary learning engagements and completion of the integrated summative task will be divided across the class time in all participating disciplines.

If the interdisciplinary learning process is embedded in the disciplinary learning processes, the distinct interdisciplinary learning engagements must be clearly identified, both in the unit plan and in the teaching of the unit plan. This structure of clearly distinguishing the disciplinary and interdisciplinary learning engagements can support students in the metacognitive process of considering how we come to know, understand and take action on a topic, issue or problem. Each discipline provides a unique way of approaching, communicating about and acting on a topic, issue or problem, and when those ways are combined, a synthesized, more holistic approach can be developed. Making this process explicit is one of the main purposes of interdisciplinary learning in the MYP. Students can practise consciously combining the perspectives of multiple disciplines in order to develop new approaches to thinking, communicating and problem-solving.

Guidance for teachers new to MYP interdisciplinary learning

Teachers new to the MYP programme or MYP interdisciplinary units require support to develop an understanding of the interdisciplinary learning process, disciplinary learning processes, disciplinary formative or summative assessments, and the connections between these fundamental processes. Planning interdisciplinary units requires, when the context allows, exclusive time allocated to it. Limited collaborative planning time is the most frequently reported barrier to more integrated interdisciplinary units. At the same time, specific professional development opportunities related to interdisciplinary planning and the presence of interdisciplinary coordinators ensure a higher level of teacher understanding, making interdisciplinary units a priority for the school.

When planning an interdisciplinary unit, new teachers are encouraged to review collaboratively the "beginning" level of the unit plan provided in the TSM suite "Is life satisfaction measurable?", and to compare this unit with the "sharing" level of the same unit plan provided in the TSM suite. These types of activities represent considerable opportunities for the independent and school-based professional development of which teachers should take advantage.

The "beginning" level unit plan includes guidance for developing an understanding of how to plan an interdisciplinary unit and the processes involved in it. The aim of this guidance is to enhance progressively the quality of each section of the unit plan over time, therefore refining the process of teaching and learning. Although only one unit needs to be collaboratively planned to meet the requirement in each year of the MYP, schools may develop multiple interdisciplinary units to offer a more integrated curriculum.

Discussing the probing questions included in each section of the example unit plan during collaborative planning time will help new teachers to deepen their understanding of the interdisciplinary learning process; brainstorm possible ideas for the key concept, related concept(s), global context, and exploration that can structure the interdisciplinary unit; and develop authentic and meaningful summative task(s).

The purpose of integration is fundamentally important in interdisciplinary efforts. The purpose of integration should:

- contain a meaningful rationale, including the perspectives of each participating discipline
- summarize the synthesis of interdisciplinary understanding, briefly explaining why it is worth understanding this issue or idea from an interdisciplinary perspective
- clarify what students will do during the interdisciplinary learning process.

The purpose of integration can be shared with students so that they understand the learning space of the interdisciplinary unit and the benefits of interdisciplinary learning. The purpose of integration will also provide a sense of ownership of the learning process once students can see its direction and its sense of utility in addressing a real-world issue to solve a problem or to raise new understanding.

MYP assessment practice

In interdisciplinary units, teachers must assess the integration of disciplines using the MYP interdisciplinary criteria. This assessment is carefully informed by important ATL skills and the process of disciplinary and interdisciplinary teaching and learning described in this guide.

Crafting quality assessments requires careful attention to the strategies through which teachers gather information about student learning, including the criteria by which they measure progress and the feedback they give to help students develop further understanding. Here are some practical guidelines for rigorous interdisciplinary assessment of student learning.

1. Assessment is carefully planned**:** In planning a course or unit of work, teachers develop an assessment strategy that is an integral part of teaching and learning. For example, they define a final performance of understanding, and based on its demands, decide which learning experiences to engage and how to sequence them over time.

2. Assessment is formative and summative**:** In addition to the unit's summative assessment, teachers assess skills and understanding before and throughout the unit. For example, early in a unit, teachers may invite students to solve a problem or brainstorm ideas about the unit's topic in order to assess and build students' background knowledge. Throughout the unit, teachers design disciplinary and interdisciplinary learning engagements that develop these early understandings and scaffold students' growing understanding.

3. Assessment is aligned with MYP interdisciplinary aims and objectives**:** In planning and conducting their units, teachers use the interdisciplinary MYP aims, objectives and achievement level descriptors for each criteria as guideposts.

4. Assessment is based on evidence of student work**:** In the MYP, assessment builds on close analysis of student work. Teachers select relevant pieces of student work for assessment and are able to point out accomplishments or misunderstandings in student products or performances.

5. Assessment offers informative feedback**:** Viewed as an opportunity to support further learning, assessment does not seek to expose students in their mistakes but rather to help students recognize, and have evidence of, both their accomplishments and their misconceptions. Effective feedback always includes the development of strategies to improve performance.

Collecting evidence

In the MYP, teachers are encouraged to employ a variety of assessment strategies, tasks and tools to monitor and empower student learning. For example, teachers can gather information about student interdisciplinary understanding that includes making classroom observations, reading and responding to student journals, and jointly analysing portfolios of student work.

Collaborative assessment

While interdisciplinary teaching can be done by a single teacher, most typically it is a collaborative effort. In terms of assessment, the collaboration matters because it enables teachers to draw on their particular areas of expertise and their subject-specific goals to assess student work. To move from a multidisciplinary assessment (in which teachers only consider the perspective of their individual subjects) towards an interdisciplinary approach, teachers can engage in collaborative assessments of student work. Analysing students' interdisciplinary learning entails an important professional development opportunity for teachers who begin to understand how MYP subjects and subject groups interact, overlap, challenge and

complement one another. MYP criteria for interdisciplinary learning provide the starting place for these powerful conversations.

For determining achievement levels for evaluating (criterion A, strand i), teachers can consider subject-specific criteria but must determine the appropriate achievement level based on evidence from all participating disciplines.

Recording and reporting interdisciplinary assessment

Schools can design systems and processes to report MYP achievement levels for interdisciplinary learning that meet the needs of their students and local requirements. Some possibilities include:

- a dedicated individual report on interdisciplinary learning

- a section that contains achievement levels for each criterion in all formally developed interdisciplinary units, as part of the school's regular reporting process

- an annual summative report that contains a cumulative "best-fit" judgment about the student's achievement in interdisciplinary learning (including criterion level total)

- regular communication to students and parents about formal interdisciplinary units and the student's achievement with respect to each criterion (eg an explanatory letter, mark-scheme and assessed work that students can discuss with their parents or guardians)

- conversations about interdisciplinary learning in student conferences and/or student–parent conferences.

Schools must report student achievement in interdisciplinary learning to students and parents.

External assessment of interdisciplinary learning

The MYP features a robust assessment design that includes rigorous, criterion-related internal assessment (coursework) for all subject groups, as well as an optional range of externally marked on-screen assessments. Details of these assessments are available in the annual *Middle Years Programme Assessment procedures*, found on the MYP resources home page in the programme resource centre.

Schools that register candidates for MYP eAssessment in interdisciplinary learning must devise a procedure for determining and reporting students' predicted grades. Students participating in MYP eAssessment for interdisciplinary learning should take part in at least two formal interdisciplinary units in MYP years 4 and 5.

Interdisciplinary assessment criteria

The following assessment criteria have been established by the IB for interdisciplinary units in the MYP. All interdisciplinary assessment in each year of the MYP must be based on the developmentally appropriate version of these assessment criteria as provided in this section.

Criterion A	Evaluating	Maximum 8
Criterion B	Synthesizing	Maximum 8
Criterion C	Reflecting	Maximum 8

For each assessment criterion, a number of band descriptors are defined. These describe a range of achievement levels with the lowest represented as 0.

The descriptors concentrate on positive achievement, although failure to achieve may be included in the description for the lower levels.

In order to measure a student's progress in terms of his or her capacity to undertake interdisciplinary projects, three criteria have been established that correspond directly to the three objectives identified in this guide.

Using the assessment criteria

Assessment criteria for interdisciplinary learning have been provided. **As students progress from MYP years 1 to 5, they can demonstrate their achievement against these criteria in increasingly complex contexts and tasks.** Teachers must establish how each level can be demonstrated in the context of the unit when clarifying the criteria (see below). Schools may also add other criteria, in addition to the MYP criteria, in response to national requirements, and report on these internally to parents and students.

When engaging students in formal collaboratively planned interdisciplinary units, schools must use the interdisciplinary assessment criteria to inform formative assessment and to determine achievement levels for summative assessment tasks.

Interdisciplinary assessment should be done collaboratively by all teachers involved in the interdisciplinary units.

Clarifying published criteria

The final assessment criteria as published must be used when awarding achievement levels. However, teachers can also define specific expectations.

These expectations might be in the form of:

- a task-specific clarification of the criteria, using the published criteria but with some wording changed to explain the task
- an oral discussion of the task and explanation of various achievement levels (including exemplars from a range of accomplishments)
- a task sheet that explains performance expectations.

It is important for teachers to specify the expected outcomes at the beginning of each assessment task so that students understand the task's detailed requirements. When clarifying expectations for students, teachers need to ensure that they do not alter the standard expected in the published criteria or introduce additional requirements.

Interdisciplinary learning assessment criteria

Criterion A: Evaluating

Maximum: 8

In order to address real-world and contextual issues and ideas, students will be able to:

- analyse disciplinary knowledge
- evaluate interdisciplinary perspectives.

Achievement level	Level descriptor
0	The student does not achieve a standard described by any of the descriptors given below.
1–2	The student: • attempts to analyse by identifying disciplinary knowledge • attempts to evaluate by stating the strengths or limitations of interdisciplinary perspectives.
3–4	The student: • partially analyses by outlining the disciplinary knowledge • partially evaluates by outlining the strengths or limitations of interdisciplinary perspectives.
5–6	The student: • analyses by describing disciplinary knowledge • evaluates by describing the strengths and limitations of interdisciplinary perspectives.
7–8	The student: • fully analyses by explaining disciplinary knowledge • fully evaluates by explaining the strengths and limitations of interdisciplinary perspectives.

Note: Evaluating is based on disciplinary knowledge that describes factual, conceptual and procedural knowledge that students develop from their study of MYP subjects. Teachers can use subject-group specific criteria to support their judgment of student achievement in analysing disciplinary knowledge. These judgments can be based on specific summative assessments within the context of the interdisciplinary unit itself or they may be determined by related disciplinary assessment tasks.

Levels awarded for this criterion should represent the joint assessment of collaborating teachers from all subjects participating in the interdisciplinary inquiry. When student achievement varies in applying knowledge from different disciplines, teachers should use "best-fit" professional judgment to determine an appropriate level that represents each student's overall disciplinary knowledge.

Criterion B: Synthesizing

Maximum: 8

In order to address real-world and contextual issues and ideas, students will be able to:

- create a product that communicates a purposeful interdisciplinary understanding
- justify how their product communicates interdisciplinary understanding.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	The student: • creates a product that selects disciplinary knowledge in an attempt to communicate some interdisciplinary understanding • states how his or her product communicates interdisciplinary knowledge.
3–4	The student: • creates a product that applies disciplinary knowledge to partially communicate interdisciplinary understanding • outlines how his or her product communicates interdisciplinary knowledge.
5–6	The student: • creates a product that develops disciplinary knowledge to communicate interdisciplinary understanding • describes how his or her product communicates interdisciplinary knowledge.
7–8	The student: • creates a product that synthesizes disciplinary knowledge to communicate effectively purposeful interdisciplinary understanding • justifies how his or her product communicates interdisciplinary knowledge.

Note: For this criterion, strand i should be adapted to be task-specific to the purpose of integration and the product.

Criterion C: Reflecting

Maximum: 8

In order to address real-world and contextual issues and ideas, students will be able to:

- discuss the development of their own interdisciplinary learning
- discuss how new interdisciplinary understanding enables action.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	The student: • states the development of his or her own interdisciplinary learning • states how new interdisciplinary understanding enables future action.
3–4	The student: • outlines the development of his or her own interdisciplinary learning • outlines how new interdisciplinary understanding enables action.
5–6	The student: • describes the development of his or her own interdisciplinary learning

Achievement level	Level descriptor
	• describes how new interdisciplinary understanding enables action.
7–8	The student: • discusses the development of his or her own interdisciplinary learning • discusses how new interdisciplinary understanding enables action.

For this criterion, action refers to "future" action that students have not yet taken but that they may plan to take to extend their interdisciplinary understanding, or action taken during the interdisciplinary learning process. Teachers can also encourage students to "take" action depending on school context and resources available.

MYP eAssessment

Optional eAssessment of interdisciplinary learning is by on-screen examination.

Overview

The interdisciplinary learning on-screen examination explores each assessment session's chosen global context through disciplinary and interdisciplinary lenses for two of the following subject groups:

- Language and literature
- Individuals and societies
- Sciences
- Mathematics.

These two subjects are explored in detail in the examination, although questions may be featured that require another subject to be considered and that include the opportunity to incorporate arts, design, PHE and language acquisition.

Pre-release material will be published on the programme resource centre on 1 April for May sessions and on 1 October for November sessions to facilitate a deep analysis of the global context and to provide a focus for the interdisciplinary learning on-screen examination. The two subject groups, which will be the focus of the session's interdisciplinary examination, will be announced with the pre-release material.

The pre-release material comprises multimedia stimulus material and/or case studies related closely to the session's global context. Through the pre-release material, students can engage with the global context and begin making connections with what they have studied in MYP subject groups and in their own individual learning.

Interdisciplinary learning examination blueprint

MYP on-screen examinations are constructed as a series of tasks that samples, simulates or replicates internal assessment practices. The assessments follow an agreed structure that provides a clear framework for developing each examination. The distribution of marks within each eAssessment may vary by no more than three marks from those displayed in the blueprint.

As part of an ethical assessment model, these assessment blueprints ensure consistency and transparency, and they guarantee a balanced approach in measuring students' achievement with respect to MYP objectives. MYP on-screen examination blueprints document the close connection of large-scale assessment with subject-group objectives, classroom learning engagements and the programme's rigorous internal assessment requirements.

These blueprints enable teachers and students to review the nature and purpose of MYP eAssessment. They provide an important resource for helping students to prepare for on-screen examinations, focusing attention on subject-group criteria and assessment strategies in each subject group.

Table 12 illustrates how interdisciplinary assessment is structured.

Table 12

Interdisciplinary assessment blueprint

Task	Marks	Main criteria assessed	Criterion marks
Evaluating and reflecting	18	A and C	12 and 6
Synthesizing and reflecting	18	B and C	12 and 6

Task	Marks	Main criteria assessed	Criterion marks
Total	**36**		

Examination sources, tools and tasks

Sources

A variety of sources will feature in both the assessment and the pre-release material and could include the following.

• Primary/secondary	• Static images
• Fiction/non-fiction	• Photomations
• Articles	• Videos
• Journals	• Animations
• Blogs	• Charts
• Data tables	• Graphs

Task details

The interdisciplinary learning on-screen examination (two hours) has two tasks; students should spend roughly one hour on each task. The structure of the examination ensures that students have time to provide comprehensive responses that demonstrate their creative and critical skills in an interdisciplinary setting. Reflecting will be assessed; however, the strand that will be assessed should not be limited to a specific task; it will depend on the context.

Evaluating and reflecting

The first task assesses students' ability to analyse the interdisciplinary work and/or approach of someone else through source material. In their analysis, students will also evaluate the perspectives of the disciplinary and interdisciplinary approach in relation to a real-world issue present in the stimulus material.

Synthesizing and reflecting

The second task assesses students' ability to synthesize disciplinary knowledge to demonstrate interdisciplinary understanding and their ability to use appropriate strategies to communicate interdisciplinary understanding effectively. Students create their own, original, interdisciplinary piece(s) of work and explain the approach they have taken in doing so.

Questions in this task could require students to:

• reflect on learning experiences from relevant subject groups

• justify their choice of disciplines

• describe what understandings disciplines can bring to a real-world issue, idea or challenge, and how they challenge or complement each other

• outline the nature of new understanding

• apply new subject combinations to new contexts or topics/themes

• apply existing subject combinations to related context or topics/themes

• identify future actions they can take to extend their learning beyond the classroom

• evaluate their own strengths and weaknesses as a learner.

Interdisciplinary learning subject-specific grade descriptors

Subject-specific grade descriptors serve as an important reference in the assessment process. Through careful analysis of subject-group criteria and the general grade descriptors, they have been written to capture and describe in a single descriptor the performance of students at each grade for each MYP subject group.

For on-screen examination subjects, teachers are required to submit predicted grades. When considering predicted grades, teachers should consider their own assessment of students during MYP 4 and the first part of MYP 5 and, allowing for subsequent academic development, teachers are asked to predict the outcome of eAssessment for their students with reference to the subject-specific grade descriptors. This prediction helps the IB to check the alignment between teachers' expectations and the IB's assessment outcome and, as such, forms an essential strategy for ensuring reliable results.

Subject-specific grade descriptors are also the main reference used to select grade boundaries for each discipline in each assessment session. During this process, the grade award team compares student performance against descriptors of achievement at grades 2 and 3; 3 and 4; and 6 and 7 (other boundaries are set at equal intervals between these key transitions). The grade award process is able to compensate for variations in challenge between examinations and in standards applied to marking (both between subjects and for a particular subject across sessions) by setting boundaries for each discipline and examination session, with reference to real student work.

Subject-specific grade descriptors tie eAssessment to criterion-related assessment and to MYP assessment criteria and level descriptors, which put the programme's criterion-related assessment philosophy into practice.

Grade	Descriptor
7	Produces high-quality, frequently insightful work. Communicates comprehensive, nuanced interdisciplinary understanding of concepts and contexts through effective exploration of real-world issues, ideas and/or challenges. Consistently demonstrates sophisticated critical and creative thinking to synthesize and create new understandings and reflect on personal development. Frequently transfers interdisciplinary knowledge and discusses action taken or to be taken in unfamiliar situations.
6	Produces high-quality, occasionally insightful work. Communicates extensive interdisciplinary understanding of concepts and contexts through effective exploration of real-world issues, ideas and/or challenges. Demonstrates critical and creative thinking to synthesize and create new understandings and reflect on personal development, frequently with sophistication. Transfers interdisciplinary knowledge and explains action taken or to be taken in unfamiliar situations.
5	Produces generally high-quality work. Communicates good interdisciplinary understanding of concepts and contexts through effective exploration of real-world issues, ideas and challenges. Demonstrates critical and creative thinking to synthesize and create new understandings and reflect on personal development, sometimes with sophistication. Usually transfers interdisciplinary knowledge and explains action taken or to be taken in unfamiliar situations.
4	Produces good-quality work. Communicates basic interdisciplinary understanding of most concepts and contexts through appropriate exploration of real-world issues, ideas and challenges, with few misunderstandings and minor gaps. Often demonstrates critical and creative thinking to make connections between disciplines, create new understandings and reflect on personal development. Transfers some interdisciplinary knowledge and outlines action taken or to be taken in familiar situations.

Grade	Descriptor
3	Produces work of an acceptable quality. Communicates basic interdisciplinary understanding of many concepts and contexts with occasional evidence of appropriate exploration of real-world issues, ideas and challenges, with occasional significant misunderstandings or gaps. Begins to demonstrate some basic critical and creative thinking to make connections between disciplines, create new understandings and reflect on personal development. Begins to transfer interdisciplinary knowledge and outlines action taken or to be taken with little insight.
2	Produces work of limited quality. Communicates limited understanding of some concepts and contexts. Demonstrates limited evidence of critical and creative thinking to make connections between disciplines and reflect on personal development. Limited evidence of transfer of interdisciplinary knowledge and reflection on actions taken or to be taken.
1	Produces work of a very limited quality. Conveys many significant misunderstandings or lacks understanding of most concepts and contexts. Very rarely demonstrates evidence of critical or creative thinking to make connections between disciplines and reflect on personal development. Very inflexible, rarely shows evidence of knowledge, skills or action taken or to be taken.

Interdisciplinary teaching and learning in the MYP

MYP key concepts: Definitions

Key concepts are powerful abstract ideas that have many dimensions and definitions. They have important interconnections and overlapping concerns. The following broad descriptions apply across subject groups, and MYP subject-group guides will suggest further discipline-specific understandings.

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

Key concept	Definition
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	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	The exchange or transfer of signals, facts, ideas and symbols. Communication requires a sender, a message and an intended receiver. It involves the activity of conveying information or meaning. Effective communication requires a common "language" (which may be written, spoken or non-verbal).
Communities	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	Links, bonds and relationships among people, objects, organisms or ideas.
Creativity	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	The act or process of growth, progress or evolution, sometimes through iterative improvements.
Form	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, global interactions focus on the connections between individuals and communities, as well as their relationships with built and natural environments, from the perspective of the world as a whole.
Identity	The state or fact of being the same. Identity 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	A method of reasoning and a system of principles used to build arguments and reach conclusions.

Key concept	Definition
Perspective	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	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 like human societies and the planetary ecosystem.
Systems	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.
Time, place and space	An intrinsically linked concept that 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").

MYP related concepts

Language and literature			
Audience imperatives	Character	Context	Genre
Intertextuality	Point of view	Purpose	Self-expression
Setting	Structure	Style	Theme

Language acquisition			
Phases 1–2			

Context	Convention	Form
Meaning	Message	Purpose
Patterns	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

Individuals and societies			
Economics			
Choice	Consumption	Equity	Globalization
Growth	Model	Poverty	Power
Resources	Scarcity	Sustainability	Trade
Geography			
Causality (cause and consequence)	Culture	Disparity and equity	Diversity
Globalization	Management and intervention	Networks	Patterns and trends
Power	Processes	Scale	Sustainability
History			
Causality (cause and consequence)	Civilization	Conflict	Cooperation
Culture	Governance	Identity	Ideology

Individuals and societies			
Innovation and revolution	Interdependence	Perspective	Significance
Integrated humanities (drawn from economics, geography and history)			
Causality (cause and consequence)	Choice	Culture	Equity
Globalization	Identity	Innovation and revolution	Perspective
Power	Processes	Resources	Sustainability

The MYP *Individuals and societies guide* contains suggested related concepts for business management, philosophy, psychology, sociology/anthropology, political science/civics/government, and world religions.

Sciences			
Biology			
Balance	Consequences	Energy	Environment
Evidence	Form	Function	Interaction
Models	Movement	Patterns	Transformation
Chemistry			
Balance	Conditions	Consequences	Energy
Evidence	Form	Function	Interaction
Models	Movement	Patterns	Transfer
Physics			
Consequences	Development	Energy	Environment
Evidence	Form	Function	Interaction
Models	Movement	Patterns	Transformation
Modular sciences (drawn from biology, chemistry and physics)			
Balance	Consequences	Energy	Environment
Evidence	Form	Function	Interaction
Models	Movement	Patterns	Transformation

Mathematics			
Approximation	Change	Equivalence	Generalization
Models	Patterns	Quantity	Representation
Simplification	Space	Systems	Validity

Arts			
Visual arts			
Audience	Boundaries	Composition	Expression
Genre	Innovation	Interpretation	Narrative
Presentation	Representation	Style	Visual culture

Arts			
Performing arts			
Audience	Boundaries	Composition	Expression
Genre	Innovation	Interpretation	Narrative
Play	Presentation	Role	Structure

Physical and health education			
Adaptation	Balance	Choice	Energy
Environment	Function	Interaction	Movement
Perspective	Refinement	Space	Systems

Design			
Adaptation	Collaboration	Ergonomics	Evaluation
Form	Function	Innovation	Invention
Markets and trends	Perspective	Resources	Sustainability

MYP global context and exploration

Global context	Focus question(s) and description	Example explorations
Identities and relationships	Who am I? Who are we? 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.	Possible explorations to develop • Competition and cooperation; teams, affiliation and leadership • Identity formation; self-esteem; status; roles and role models • Personal efficacy and agency; attitudes, motivation, independence; happiness and the good life • Physical, psychological and social development; transitions; health and well-being; lifestyle choices • Human nature and human dignity; moral reasoning and ethical judgment; consciousness and mind
Orientation in space and time	What is the meaning of "where" and "when"? 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.	Possible explorations to develop • Civilizations and social histories, heritage, pilgrimage, migration, displacement and exchange • Epochs, eras, turning points and "big history" • Scale, duration, frequency and variability • Peoples, boundaries, exchange and interaction • Natural and human landscapes and resources • Evolution, constraints and adaptation • Indigenous understanding
Personal and cultural expression	What is the nature and purpose of creative expression? 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.	Possible explorations to develop • Artistry, craft, creation, beauty • Products, systems and institutions • Social constructions of reality; philosophies and ways of life; belief systems; ritual and play • Critical literacy, languages and linguistic systems; histories of ideas, fields and disciplines; analysis and argument • Metacognition and abstract thinking

Global context	Focus question(s) and description	Example explorations
		• Entrepreneurship, practice and competency
Scientific and technical innovation	How do we understand the world in which we live? 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.	Possible explorations to develop • Systems, models, methods; products, processes and solutions • Adaptation, ingenuity and progress • Opportunity, risk, consequences and responsibility • Modernization, industrialization and engineering • Digital life, virtual environments and the Information Age • The biological revolution • Mathematical puzzles, principles and discoveries
Globalization and sustainability	How is everything connected? 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.	Possible explorations to develop • Markets, commodities and commercialization • Human impact on the environment • Commonality, diversity and interconnection • Consumption, conservation, scarcity; natural resources and public goods • Population and demography • Urban planning, strategy and infrastructure • Data-driven decision-making
Fairness and development	What are the consequences of our common humanity? 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 resolution.	Possible explorations to develop • Democracy, politics, government and civil society • Inequality, difference and inclusion • Human capability and development; social entrepreneurs • Rights, law, civic responsibility and the public sphere • Justice, peace and conflict management • Ecology and disparate impact • Power and privilege • Authority, security and freedom • Imagining a hopeful future

ATL skills framework

Communication	
I. Communication skills	
How can students communicate through interaction?	**Exchanging thoughts, messages and information effectively through interaction** • Give and receive meaningful feedback • Use intercultural understanding to interpret communication • Use a variety of speaking techniques to communicate with a variety of audiences • Use appropriate forms of writing for different purposes and audiences • Use a variety of media to communicate with a range of audiences • Interpret and use effectively modes of non-verbal communication • Negotiate ideas and knowledge with peers and teachers • Participate in, and contribute to, digital social media networks • Collaborate with peers and experts using a variety of digital environments and media • Share ideas with multiple audiences using a variety of digital environments and media
How can students demonstrate communication through language?	**Reading, writing and using language to gather and communicate information** • Read critically and for comprehension • Read a variety of sources for information and for pleasure • Make inferences and draw conclusions • Use and interpret a range of discipline-specific terms and symbols • Write for different purposes • Understand and use mathematical notation • Paraphrase accurately and concisely • Preview and skim texts to build understanding • Take effective notes in class • Make effective summary notes for studying • Use a variety of organizers for academic writing tasks • Find information for disciplinary and interdisciplinary inquiries, using a variety of media • Organize and depict information logically • Structure information in summaries, essays and reports

Social	
II. Collaboration skills	

Social	
How can students collaborate?	**Working effectively with others** • Use social media networks appropriately to build and develop relationships • Practise empathy • Delegate and share responsibility for decision-making • Help others to succeed • Take responsibility for one's own actions • Manage and resolve conflict, and work collaboratively in teams • Build consensus • Make fair and equitable decisions • Listen actively to other perspectives and ideas • Negotiate effectively • Encourage others to contribute • Exercise leadership and take on a variety of roles within groups • Give and receive meaningful feedback • Advocate for one's own rights and needs

Self-management	
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	

How can students manage their own state of mind?	**Managing state of mind**
	• Mindfulness awareness
	    Practise focus and concentration
	    Practise strategies to develop mental focus

Self-management	
	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

Research	
V. Information literacy skills	
How can students demonstrate information literacy?	**Finding, interpreting, judging and creating information**
	• Collect, record and verify data
	• Access information to be informed and inform others
	• Make connections between various sources of information
	• Understand the benefits and limitations of personal sensory learning preferences when accessing, processing and recalling information
	• Use memory techniques to develop long-term memory
	• Present information in a variety of formats and platforms
	• Collect and analyse data to identify solutions and make informed decisions
	• Process data and report results
	• Evaluate and select information sources and digital tools based on their appropriateness to specific tasks
	• Understand and use technology systems
	• Use critical-literacy skills to analyse and interpret media communications

Research	
	• Understand and implement intellectual property rights
	• Create references and citations, use footnotes/endnotes and construct a bibliography according to recognized conventions
	• Identify primary and secondary sources

VI. Media literacy skills

How can students demonstrate media literacy?	**Interacting with media to use and create ideas and information**
	• Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media (including digital social media and online networks)
	• Demonstrate awareness of media interpretations of events and ideas (including digital social media)
	• Make informed choices about personal viewing experiences
	• Understand the impact of media representations and modes of presentation
	• Seek a range of perspectives from multiple and varied sources
	• Communicate information and ideas effectively to multiple audiences using a variety of media and formats
	• Compare, contrast and draw connections among (multi)media resources

Thinking	

VII. Critical-thinking skills

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

VIII. Creative-thinking skills

Thinking	
How can students be creative?	**Generating novel ideas and considering new perspectives** • Use brainstorming and visual diagrams to generate new ideas and inquiries • Consider multiple alternatives, including those that might be unlikely or impossible • Create novel solutions to authentic problems • Make unexpected or unusual connections between objects and/or ideas • Design improvements to existing machines, media and technologies • Design new machines, media and technologies • Make guesses, ask "what if" questions and generate testable hypotheses • Apply existing knowledge to generate new ideas, products or processes • Create original works and ideas; use existing works and ideas in new ways • Practise flexible thinking—develop multiple opposing, contradictory and complementary arguments • Practise visible thinking strategies and techniques • Generate metaphors and analogies
IX. Transfer skills	
How can students transfer skills and knowledge across disciplines and subject groups?	**Using skills and knowledge in multiple contexts** • Use effective learning strategies in subject groups and disciplines • Apply skills and knowledge in unfamiliar situations • Inquire in different contexts to gain a different perspective • Compare conceptual understanding across multiple subject groups and disciplines • Make connections between subject groups and disciplines • Combine knowledge, understanding and skills to create products or solutions • Transfer current knowledge to learning of new technologies • Change the context of an inquiry to gain different perspectives

MYP unit planners

The MYP unit planner templates can be found on the programme resource centre as editable Microsoft Word documents. There are two documents:

Interdisciplinary unit planner 1

Interdisciplinary unit planner 2

Evaluating MYP interdisciplinary unit plans

This document is a tool that can be used for self-assessment, collaborative peer review and organizing feedback from the IB's Building Quality Curriculum school service. Characteristics of effective implementation are arranged according to a developmental scale that moves from **emergent** to **capable** to **exemplary**. Moving from lower to higher levels, this continuum generally parallels terminology that all MYP learners can use to describe increasing levels of competence.

In educational terms, feedback based on this document is designed to be formative—it should be given and received with the intention of prompting further personal and organizational growth.

> **Beginning/developing: emergent** implementation that may require substantial revision in order to create an effectively planned and documented unit of inquiry. These units may benefit from extended collaboration that improves clarity, provides greater detail and develops greater coherence.
>
> **Using: capable** implementation that demonstrates confidence in planning and documenting inquiry using the MYP collaborative unit planning process.
>
> **Sharing: exemplary** implementation that provides a model of good practice.

1. Purpose of integration

Beginning/developing	Using	Sharing
The purpose of integration: • is identified in a limited way • suggests only superficial connections between disciplines.	The purpose of integration: • is clearly defined • includes some rationale for the integration.	The purpose of integration: • explains why it is worth understanding this issue or idea from an interdisciplinary perspective • provides a meaningful rationale for including the perspectives of each participating discipline in the integrated purpose.

2. Statement of inquiry

Beginning/developing	Using	Sharing
The statement of inquiry: • may not include a clearly identifiable key concept, related concept(s) and global context • states an understanding that links disciplines in a limited way • has limited integration, focusing mainly on disciplinary understanding • uses language that might overwhelm students, limit	The statement of inquiry: • includes a key concept, related concept(s) (if appropriate) and a specific global context exploration • states an understanding that connects two or more disciplines • expresses an idea that is relevant for the selected disciplines	The statement of inquiry: • includes a key concept, related concept(s) (if appropriate) with explicit reference to an interdisciplinary exploration of a global context • proposes an integrative understanding to be developed through the interdisciplinary unit • considers multiple relevant disciplines and explores

2. Statement of inquiry		
their ability to engage with the inquiry or to articulate for themselves its purpose and value.	• communicates in student-friendly language that invites inquiry and engagement.	multifaceted, transferable ideas across a range of facts and topics • represents creativity and appropriate complexity in its synthesis of concepts and global context.

3. Inquiry questions		
Beginning/developing	**Using**	**Sharing**
Inquiry questions: • show limited understanding of the distinction between factual, conceptual and debatable questions • may have minimal connection with each other and the purpose of the unit as described in the statement of inquiry • may represent a single approach into the unit's subject matter or topic • develop too many or too few questions that may be too simple or too complex for the intended learners.	Inquiry questions: • include examples of factual, conceptual and debatable questions • are connected to the concepts and global context included in the statement of inquiry • describe multiple pathways into the unit's subject matter or topic and are appropriately rigorous.	Inquiry questions: • demonstrate clear understanding of the relationship between facts, concepts and debates that helps students to deepen connections between disciplines • develop deep interdisciplinary understanding of concepts and global context • offer pathways for diverse learners into the unit's subject matter or topic • represent appropriate complexity that can help to develop critical and creative thinking to support synthesis • include teacher- and student-generated inquiries • help to prepare students to undertake summative assessment.

4. Summative assessment—interdisciplinary performance(s) of understanding		
Beginning/developing	**Using**	**Sharing**
The summative assessment task(s): • has a limited connection with the statement of inquiry • may not use MYP interdisciplinary criteria as designed • may be based on some but not all of the selected disciplines	The summative assessment task(s): • connects with an integrative statement of inquiry • uses MYP interdisciplinary assessment criteria appropriately • includes opportunities to demonstrate disciplinary and interdisciplinary understanding	The summative assessment task(s): • thoughtfully connects with the statement of inquiry, bringing disciplinary and interdisciplinary insights together with coherence and creativity • uses the MYP interdisciplinary assessment criteria to explain how

4. Summative assessment—interdisciplinary performance(s) of understanding

• may not clearly describe what students will do to demonstrate their understanding • may offer limited scope for differentiation to meet diverse learning needs.	• clearly describes what students will do to make their interdisciplinary understanding visible • can be differentiated to meet diverse learning needs.	student achievement will be evaluated • provides balanced opportunities to move between disciplinary and interdisciplinary understanding • thoroughly explains what students will do to demonstrate comprehensive understanding of issues and ideas in ways that are meaningfully integrated • provides access to reasonable adjustments and inclusive assessment arrangements.

5. Approaches to learning (ATL)

Beginning/developing	Using	Sharing
ATL skills in this unit: • provide students with limited support for achieving the unit's objectives • offer students limited opportunities to develop skills that support independent learning • include brief identification of how the skills are supported in the unit • have some connection with a larger plan for developing students' ATL skills within and across disciplines.	ATL skills in this unit: • are specifically identified and provide support for achieving the unit's objectives • provide a focus for student self-evaluation and reflection on personal growth and development • include descriptions of how the skills are explicitly taught and practised in the unit • support progression of learning across MYP years within and across disciplines.	ATL skills in this unit: • are specifically identified, and integrate meaningfully with unit's objectives, learning engagements and assessment tasks • offer students opportunities to develop responsibility for their own learning through independent practice • include descriptions of how the skills are explicitly taught and specific strategies are practised • support a clearly identified progression of learning across MYP years through their articulation within and across subject groups, year levels, school-wide plans (documented in the school's ATL chart) • help students reach higher levels of achievement for the unit's objectives through related summative assessment task(s).

6. Disciplinary grounding		
Beginning/developing	**Using**	**Sharing**
Disciplinary grounding: • includes knowledge and skills that are not clearly connected with the selected disciplines or that relate to the statement of inquiry in a limited way • may not identify relevant subject-group aims and objectives (and related concepts) • features general teaching strategies that may not build effectively towards interdisciplinary learning engagements • provides limited opportunities for students to develop their ability to evaluate disciplinary knowledge (and ways of knowing) • focuses on teacher-centred classroom activities.	Disciplinary grounding: • includes disciplinary knowledge and skills that clearly relate to an integrated statement of inquiry • identifies subject-group aims and objectives (and related concepts) that develop necessary disciplinary grounding • includes teaching strategies that support interdisciplinary learning • helps students to develop their ability to evaluate disciplinary knowledge • includes some inquiry-based teaching strategies.	Disciplinary grounding: • includes disciplinary knowledge and skills that support transferable understanding and an integrated statement of inquiry • aligns clearly with subject-group aims and objectives (and related concepts) that develop disciplinary grounding and inspire further inquiry • is developed through active, inquiry-based teaching strategies that build purposefully towards interdisciplinary learning • challenges students to explore the benefits and limitations of disciplinary knowledge • uses a variety of inquiry-based strategies for teaching and learning that helps students connect factual, conceptual and procedural knowledge.

7. Interdisciplinary learning process		
a. Interdisciplinary learning experiences and teaching strategies		
Beginning/developing	**Using**	**Sharing**
Interdisciplinary learning experiences and teaching strategies: • may require further development and additional details about what students will do and in what order • may need to clarify how students will explore interdisciplinary concepts and contexts • may not be developmentally appropriate	Interdisciplinary learning experiences and teaching strategies: • describe in sufficient detail what students will do and in what order • indicate how students will explore interdisciplinary concepts and context • are developmentally appropriate • include some inquiry-based teaching strategies.	Interdisciplinary learning experiences and teaching strategies: • describe with clarity and specific detail what students will do and in what order • indicate how students will explore interdisciplinary concepts and context through a variety of learning experiences • are developmentally appropriate, thought-provoking and engaging

7. Interdisciplinary learning process		
• focus on teacher-centred classroom activities.		• use a variety of inquiry-based strategies for teaching and learning that helps students connect factual, conceptual and procedural knowledge • build on prior disciplinary and interdisciplinary learning.

b. Formative assessment

Beginning/developing	Using	Sharing
Formative assessment: • may not be clearly connected with the knowledge, understanding and skills required for success in interdisciplinary summative assessment • provides limited opportunity to monitor and support students' disciplinary and interdisciplinary learning • may not create evidence that teachers can use to adjust planned learning experiences and teaching strategies.	Formative assessment: • aligns with knowledge, understanding and skills required for success in interdisciplinary summative assessment • provides opportunities for explicit feedback that supports students' disciplinary and interdisciplinary learning • creates some evidence that teachers can use to adjust teaching and learning in ways that promote student achievement.	Formative assessment: • comprehensively aligns with knowledge, understanding and skills required for success in the interdisciplinary summative assessment • provides varied opportunites for practice and detailed feedback for students' disciplinary and interdisciplinary learning • creates meaningful evidence that teachers can use to make adjustments to planned experiences and teaching strategies • divides complex tasks into discrete steps with interim markers of progress in disciplinary and interdisciplinary understanding • includes opportunities for peer assessment and self-assessment.

c. Differentiation

Beginning/developing	Using	Sharing
Differentiation: • documents few or generic strategies that meet the needs of diverse learners • addresses in a very limited way students' diverse language profiles and learning support requirements	Differentiation: • documents specific strategies that meet the needs of diverse learners in terms of content, process or product • addresses students' diverse language profiles and learning support requirements	Differentiation: • documents specific strategies for accommodating learning diversity in terms of content, process and product • addresses students' diverse language profiles and learning support requirements in ways that

7. Interdisciplinary learning process

• offers limited opportunity for students to pursue and achieve learning goals.	• offers opportunities for students to pursue and achieve learning goals.	use diversity as a resource for all students' learning • allows each student to develop, pursue and achieve appropriate learning goals.

8. Resources

Beginning/developing	Using	Sharing
Resources: • provide some of the information and learning environments necessary for achieving the unit's purpose • may not support effective differentiation • may not support the development of multiple points of view • may not consider appropriate technology integration.	Resources: • provide information and learning environments necessary for achieving the unit's purpose • support differentiated learning through learning support or extension • represent some culturally appropriate and diverse points of view • integrate appropriate technology • acknowledge students' life experiences and multi-literacies.	Resources: • represent a range of entry points to interdisciplinary learning environments that creatively achieve the unit's purpose • promote student inquiry through learning support and extension • provide diverse and culturally responsive points of view on interdisciplinary issues and ideas • use students' life experiences and multi-literacies to inspire learning • create opportunities for action and real-world learning • include meaningful opportunities for interaction with people, organizations and facilities in the community.

9. Reflections before, during and after teaching the unit

Beginning/developing	Using	Sharing
Reflection before, during and after teaching the unit: • documents partial reflection on the planning, process or impact of the inquiry • notes limited connections with other programme components (international-mindedness, IB learner profile, ATL skills, interdisciplinary understanding, student-led action and service learning)	Reflection before, during and after teaching the unit: • documents reflection on the planning, process and impact of the inquiry • notes possible links with other programme components (international-mindedness, IB learner profile, ATL skills, interdisciplinary understanding, student-led action and service learning)	Reflection before, during and after teaching the unit: • documents thorough and meaningful reflection throughout the teaching and learning process, including how well the chosen disciplines provided opportunities for integration • documents the unit's connection with the IB's philosophy of education (international-mindedness, IB

9. Reflections before, during and after teaching the unit		
• captures general observations about what went well and what might be improved • considers general student motivation and engagement with the unit.	• specifically notes what went well and proposes ideas for future development • reports on student motivation and engagement with respect to specific learning engagements or assessment tasks.	learner profile, ATL skills, interdisciplinary understanding, student-led action and service learning) • details potential future development based on student achievement data • documents the unit's impact on students' intrinsic motivation and ownership of their own learning • considers impact and future development of the interdisciplinary planning process, teacher collaboration and the logistics of interdisciplinary learning • includes information about standardization of assessment and student achievement data • considers horizontal and vertical articulation • is mindful of teachers' personal response, social-emotional learning and professional growth.

MYP command terms for interdisciplinary learning

Command term	Definition
Analyse	Break down in order to bring out the essential elements or structure. (To identify parts and relationships and interpret information to reach conclusions.)
Apply	Use knowledge and understanding in response to a given situation or real circumstances. Use an idea, equation, principle, theory or law in relation to a given problem or issue. (See also "Use".)
Describe	Give a detailed account or picture of a situation, event, pattern or process.
Discuss	Offer a considered and balanced review that includes a range of arguments, factors or hypotheses. Opinions or conclusions should be presented clearly and supported by appropriate evidence.
Evaluate	Make an appraisal by weighing up the strengths and limitations.
Explain	Give a detailed account including reasons or causes.
Identify	Provide an answer from a number of possibilities. Recognize and state briefly a distinguishing fact or feature.
List	Give a sequence of brief answers with no explanation.
Outline	Give a brief account or summary.
Recognize	Identify through patterns or features.
Reflect	Think about deeply; consider.
State	Give a specific name, value or other brief answer without explanation or calculation.
Synthesize	Combine different ideas in order to create new understanding.
Use	Apply knowledge or rules to put theory into practice. (See also "Apply".)

On-screen examinations in interdisciplinary learning will draw from the full list of MYP command terms that is available in *MYP: From principles into practice.*

Frequently-asked questions

Which unit will count as an interdisciplinary unit: a unit integrating different disciplines within the same subject group or from different subject groups?

The MYP requires schools to have one interdisciplinary unit that "counts" each year, and that is between two different subject groups (as in the examination) or from different disciplines within the same subject group. For example, integrating history from individuals and societies and biology from sciences will count as an interdisciplinary unit in the same way as integrating history and geography.

Is it necessary to include all criteria for each subject in interdisciplinary units?

For criterion A: evaluating, you can use the relevant disciplinary criteria to demonstrate disciplinary knowledge and understanding. For example, if you are integrating individuals and societies (anthropology) and arts (music), you need to specify which individuals and societies criteria and arts criteria contribute to disciplinary knowledge for criterion A: evaluating. This will obviously depend on the type of summative task developed. As for criteria B and, C, the interdisciplinary criteria must be used.

Do all MYP interdisciplinary units need to assess all three criteria or could a student have criterion A and B assessed in one task or project, then criterion C assessed in another project?

If your school runs one interdisciplinary unit per year per year group, then all interdisciplinary criteria must be assessed in that unit. However, if you run more interdisciplinary units, you can assess some criteria in one task or project and other criteria in a different task or project.

My teachers have some amazing interdisciplinary units. They have taught and reflected on them, but we have never used the interdisciplinary rubrics; we have used their subject-specific rubrics only. I would appreciate some guidance on this. I have read the IB publication on interdisciplinary planning but still have questions.

The use of interdisciplinary assessment criteria is compulsory: "When engaging students in formal collaboratively planned interdisciplinary units, schools must use the interdisciplinary assessment criteria to inform formative assessment and to determine achievement levels for summative assessment tasks" (see "Interdisciplinary assessment criteria" section). Teachers have the option to use subject-specific disciplinary criteria to inform the assessment of interdisciplinary criterion A.

Can we use the pre-release material as inspiration to create our own interdisciplinary unit and meet the requirement?

Yes, we encourage schools to use the resources on the programme resource centre for their own needs. It is also a great preparation for MYP 4 students should your school do the eAssessment.

Do the subjects involved in an interdisciplinary unit count towards the hours for their subject group?

Yes, the time spent on interdisciplinary learning experiences "count" towards disciplinary hours. This can be evidenced in the unit planner in the relevant section (the number of hours of disciplinary learning engagements and teaching strategies). It can also be evidenced in the subject-group overview. It is also important to "count" at least some of the interdisciplinary time as disciplinary hours because it could be more difficult to integrate subjects such as design, arts and possibly PHE in an interdisciplinary unit if there is not a way to evidence this. Besides, if a school decided to plan several interdisciplinary units each year as a way to develop a more integrated curriculum, this challenge could expand to other subjects.

Should all students across a year group engage in an interdisciplinary unit?

Yes.

I am looking to develop a STEAM project. It is actually a course more than a project. The course covers the areas of science, design, maths and geography. In terms of planning, can we adapt the

interdisciplinary unit planner to account for multiple disciplinary content and learning engagements?

Yes. One suggestion would be to add "Disciplinary engagement" in additional pages rather than in columns. Columns work for a typical integrated unit combining two subjects.

How many subjects can I integrate in an interdisciplinary unit?

The minimum is to integrate at least two disciplines. Depending on the unit length, resources and collaborative planning time available, teachers need to ensure that the subjects being integrated create meaningful learning space for learners and enhance the transfer of understanding. The subjects will help students achieve necessary disciplinary grounding and integrative understanding, and they will all contribute towards the purpose of integration.

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This bibliography lists the principal works used to inform the curriculum review. It is not an exhaustive list and does not include all the literature available: judicious selection was made in order to better advise and guide teachers.

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