Diploma Programme

Theory of knowledge guide

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The International Baccalaureate Organization (known as the IB) offers four high-quality and challenging educational programmes for a worldwide community of schools, aiming to create a better, more peaceful world. This publication is one of a range of materials produced to support these programmes.

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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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Contents

About this publication

First assessment 2022

This resource is intended to guide the planning, teaching and assessment of the International Baccalaureate (IB) Diploma Programme (DP) Theory of knowledge (TOK) course. TOK teachers are the primary audience, although it is expected that teachers will also use the information in this guide to inform students and parents about the subject.

This guide can be found on the programme resource centre at resources.ibo.org, a password-protected website designed to support IB teachers. Additional publications, such as teacher support material, subject reports and grade descriptors, can also be found on the programme resource centre.

Teachers are also encouraged to check the programme communities for additional resources created or used by other teachers. Teachers can provide details of useful resources, such as websites, books, videos, journals or teaching ideas.

About the IB

The IB consists of four programmes: the Primary Years Programme (PYP) (ages 3–11), the Middle Years Programme (MYP) (ages 11–16), the Diploma Programme (DP) (ages 16–19), and the Career-related Programme (CP) (ages 16–19).

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. The programmes aim to inspire a lifelong quest for learning hallmarked by enthusiasm and empathy.

Any school, or group of schools, wishing to offer the IB programmes must first be authorized to do so by the IB Organization.

For more information about the IB, see the following resources.

- The IB mission statement
- *What is an IB education?*
- *Programme standards and practices*

About inclusion

Inclusion is an ongoing process that aims to increase access and engagement in learning for all students by identifying and removing barriers. For more information about inclusion, see the following resources.

- *Access and inclusion policy*
- *Learning diversity and inclusion in IB programmes*
- *Meeting student learning diversity in the classroom*
- *The IB guide to inclusive education: a resource for whole school development*
- *Using Universal Design for Learning (UDL) in the IB classroom*

The Diploma Programme

The Diploma Programme (DP) is a rigorous pre-university course of study designed for students in the 16 to 19 age range. It is a broad-based two-year course that aims to encourage students to be knowledgeable and inquiring, but also caring and compassionate. There is a strong emphasis on encouraging students to develop intercultural understanding, open-mindedness and the attitudes necessary for them to respect and evaluate a range of points of view.

Students are required to choose one subject from each of the six academic areas (although they can, instead of an arts subject, choose two subjects from another area). Additionally, every DP student must complete the three core components that lie at the heart of the programme: theory of knowledge (TOK), creativity, activity, service (CAS), and the extended essay (EE).

DP pedagogy is underpinned by the "approaches to teaching and learning"—deliberate strategies, skills and attitudes that permeate the teaching and learning environment. The five categories of approaches to learning skills (developing thinking skills, social skills, communication skills, self-management skills and research skills) along with the six approaches to teaching (teaching that is based on inquiry; focused on conceptual understanding; developed in local and global contexts; focused on effective teamwork and collaboration; designed to remove barriers to learning; informed by assessment) help to encourage students, empower teachers and enhance the coherence and relevance of students' DP experience.

At the end of their DP courses, students' abilities are measured by means of external assessment. Many subjects contain some element of coursework assessed by teachers. All coursework—including work

submitted for assessment—is to be authentic, based on the student's individual and original ideas, with the ideas and work of others fully acknowledged. Assessment tasks that require teachers to provide guidance to students or that require students to work collaboratively must be completed in full compliance with the detailed guidelines provided by the IB for the relevant subjects.

Diploma Programme model

The programme is presented as six academic areas enclosing a central core (see figure 1). In each of the academic areas, students have flexibility in making their choices, which means they can choose subjects that particularly interest them and that they may wish to study further at university.

Figure 1

Diploma Programme model

Essential DP publications

- *Diploma Programme: From principles into practice*
- *Diploma Programme Approaches to teaching and learning website*
- Diploma Programme *Assessment procedures* (updated annually)

The DP core

The DP core lies at the heart of the programme and reflects the IB's strong commitment to the principle of developing the whole person.

The three elements of the core individually and collectively illuminate what it means to experience a DP education, and are driven by the IB's mission "to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect" (IB mission statement).

The core strives to make a difference to the lives of students. It should provide opportunities for students to think about their own values and actions, to deepen their understanding of their place in the world and to sensitively consider the contexts and views of others.

Every DP student must complete the three core elements.

- **Theory of knowledge (TOK)** explores questions about knowledge and the process of knowing. TOK emphasizes comparisons and connections between areas of knowledge and encourages students to become more aware of their own perspectives and the perspectives of others.
- **Creativity, activity, service (CAS)** provides students with the chance to participate in a range of experiences alongside their academic studies. The three strands of CAS are creativity (arts, and other experiences that involve creative thinking), activity (physical exertion contributing to a healthy lifestyle) and service (an unpaid collaborative and reciprocal engagement with the community).
- The **extended essay (EE)** presents students with an opportunity to explore a topic of special interest, either through one of their six DP subjects or through an interdisciplinary approach. The EE helps students to develop the self-regulated research and writing skills that they need to fulfill their aspirations at university.

There should be close links between these core elements and the rest of the DP. It is important that teachers give careful consideration to how TOK, CAS and the EE can feed into a deeper understanding of the academic subjects, as well as how these subjects can enrich the core.

Aims of the DP core

The three elements of the DP core are intended to complement each other and to work together to achieve three common aims. These are:

- to foster international-mindedness and encourage students to become responsible and actively involved global citizens
- to develop students' self-awareness and sense of identity, and provide an opportunity for reflection on their development of the attributes of the IB learner profile
- to enrich and add value to students' overall learning experiences through the core—supporting, and being supported by, their academic studies in the rest of the programme.

The TOK course "at a glance"

The TOK course provides students with an opportunity to **explore and reflect on the nature of knowledge and the process of knowing**. It is a core element of the DP to which schools are required to devote at least 100 hours of class time.

In TOK, students reflect on the knowledge, beliefs and opinions that they have built up from their years of academic studies and their lives outside the classroom. The course is intended to be challenging and thought-provoking—as well as empowering—for students.

The course centres on the **exploration of knowledge questions**, which are a key tool for both teachers and students. These are contestable questions about knowledge itself, such as: "What counts as good evidence for a claim?", "Are some types of knowledge less open to interpretation than others?", or "What constraints should there be on the pursuit of knowledge?". While these questions may initially seem slightly intimidating, they become much more accessible when considered with reference to specific examples within the TOK course.

The TOK curriculum is made up of three deeply interconnected parts.

- **The core theme—Knowledge and the knower:** This theme encourages students to reflect on themselves as knowers and thinkers, and to consider the different communities of knowers to which we belong.
- **Optional themes:** This element provides an opportunity to take a more in-depth look at two themes of particular interest to teachers and students. The given themes all have a significant impact on the world today and play a key role in shaping people's perspectives and identities. Teachers select two optional themes from a choice of five: knowledge and technology; knowledge and language; knowledge and politics; knowledge and religion; and knowledge and indigenous societies.
- **Areas of knowledge:** The areas of knowledge (AOK) are specific branches of knowledge, each of which can be seen to have a distinct nature and sometimes use different methods of gaining knowledge. In TOK, students explore five compulsory areas of knowledge: history; the human sciences; the natural sciences; mathematics; and the arts.

To help teachers and students explore these three parts of the TOK curriculum, guidance and suggested knowledge questions are provided. These suggested knowledge questions are organized into a **framework of four elements: scope**, **perspectives**, **methods and tools**, and **ethics**. This "knowledge framework" encourages a deep exploration of each theme and AOK. Having these common elements run throughout the different parts of the curriculum also helps to unify the course and helps students to make effective connections and comparisons across the different themes and areas of knowledge.

There are **two assessment tasks** in the TOK course.

- **The TOK exhibition** assesses the ability of the student to show how TOK manifests in the world around us. The exhibition is an internal assessment component; it is marked by the teacher and is externally moderated by the IB.
- **The TOK essay** engages students in a more formal and sustained piece of writing in response to a title focused on the areas of knowledge. The essay is an external assessment component; it is marked by IB examiners. The essay must be a maximum of 1,600 words and must be on one of the six prescribed titles issued by the IB for each examination session.

The TOK course **can be structured in a variety of ways** and can start from a variety of different entry points. Teachers are encouraged to exercise flexibility, creativity and innovation in the design and delivery of their TOK course, and to provide a diverse range of examples that meet the specific needs and interests of their own students. Further guidance and examples relating to the teaching, learning and assessment of TOK can be found in the *Theory of knowledge teacher support material*.

Nature of the subject

The TOK course plays a special role in the DP by providing an opportunity for students to reflect on the nature, scope and limitations of knowledge and the process of knowing. In this way, the main focus of TOK is not on students acquiring new knowledge but on helping students to reflect on, and put into perspective, what they already know.

TOK underpins and helps to unite the subjects that students encounter in the rest of their DP studies. It engages students in explicit reflection on how knowledge is arrived at in different disciplines and areas of knowledge, on what these areas have in common and the differences between them. It is intended that through this holistic approach, discussions in one area will help to enrich and deepen discussions in other areas.

The course is an opportunity for teachers and students to engage in interesting conversations that cross the boundaries of individual disciplines and that help students to reflect on the knowledge they have acquired from both their academic studies and their lives outside the classroom. Students are encouraged to examine the evidence for claims and to consider, for example, how we distinguish fact from opinion, or how we evaluate the credibility of claims that we are exposed to in the media. They explore different methods and tools of inquiry and try to establish what it is about them that makes them effective, as well as considering their limitations.

The following 12 concepts have particular prominence within, and thread throughout, the TOK course: **evidence**, **certainty**, **truth**, **interpretation**, **power**, **justification**, **explanation**, **objectivity**, **perspective**, **culture**, **values** and **responsibility**. Exploration of the relationship between knowledge and these concepts can help students to deepen their understanding, as well as facilitating the transfer of their learning to new and different contexts.

The TOK course embraces the exploration of tensions, limitations and challenges relating to knowledge and knowing. However, it is also intended that TOK discussions will encourage students to appreciate and be inspired by the richness of human knowledge—and to consider the positive value of different kinds of knowledge. Consideration should be given to the benefits of this kind of reflection on knowledge and knowing; for example, in terms of its potential to help us think more subtly, to be more aware of our assumptions, or to overcome prejudice and promote intercultural understanding.

Knowledge in TOK

Knowledge is the raw material of the TOK course. Throughout the TOK course, there should be ongoing conversations about the nature, scope and limits of knowledge. However, a detailed technical philosophical investigation into the nature of knowledge is not appropriate in a TOK course. For example, there is no expectation that TOK students will be familiar with specific philosophers or philosophical texts. However, it is useful for students to have a rough working idea of what is meant by "knowledge" at the outset of the course—this can then become more refined throughout the discussions.

There are various ways of thinking about knowledge, but one useful way to help students think about knowledge in TOK can be through the metaphor of knowledge as a map. Since a map is a simplified representation of the world, items that are not relevant to the purpose of the map are left out. For example, we would not expect to find detailed street names on a map of a city metro system. This metaphor can help students to see the importance of considering the context in which knowledge has been sought and constructed.

A metaphor such as this can support rich discussions about knowledge and accuracy, about how knowledge grows and changes, and about the difference between producing and using knowledge. It can also prompt interesting wider reflections on the cultural assumptions behind our understanding of what

maps are or should be, or the way that the cartographer's perspective is reflected in a map. Maps and knowledge are produced by, and in turn produce, a particular perspective.

TOK and international-mindedness

The term "international-mindedness" is used by the IB to refer to a way of thinking, being and acting characterized by an openness to the world and a recognition of our deep interconnectedness to others.

The TOK course places a great deal of emphasis on elements that are central to the development of international- mindedness. For example, it encourages students to consider the diversity and richness of different perspectives, as well as exploring the interdependent influence of knowledge and culture.

The course encourages students to be curious about, and to think deeply and carefully about, complicated issues. It encourages students to avoid shallow and polarized thinking, and to avoid making quick judgments. It highlights that sometimes there really are no simple answers, and "that tensions between conflicting points of view have to be lived with, argued about and frequently left unresolved" (Walker 2004: 135).

Through their explorations in TOK, students are encouraged to discover and articulate their own views on knowledge. They are encouraged to share their ideas with others, and to listen to and learn from what others think. Through this process of dialogue and discussion, their own understanding is enriched and deepened as they become more engaged with different beliefs, values and experiences, as well as with alternative ways of answering questions.

TOK also challenges students to be intellectual risk-takers and to question what they hold to be true. In this way, it encourages intellectual humility and encourages students to gain and apply their knowledge with greater awareness and responsibility. Reflecting on how we may be wrong and how the world may seem to someone else helps students to become more aware of the assumptions and values that influence our thoughts and actions. In this way, the course helps students to reflect on their growing understanding of themselves and of the world around them.

Aims

The aims of the TOK course are:

- to encourage students to reflect on the central question, "How do we know that?", and to recognize the value of asking that question
- to expose students to ambiguity, uncertainty and questions with multiple plausible answers
- to equip students to effectively navigate and make sense of the world, and help prepare them to encounter novel and complex situations
- to encourage students to be more aware of their own perspectives and to reflect critically on their own beliefs and assumptions
- to engage students with multiple perspectives, foster open-mindedness and develop intercultural understanding
- to encourage students to make connections between academic disciplines by exploring underlying concepts and by identifying similarities and differences in the methods of inquiry used in different areas of knowledge
- to prompt students to consider the importance of values, responsibilities and ethical concerns relating to the production, acquisition, application and communication of knowledge.

Assessment objectives

Having completed the TOK course, students should be able to:

- demonstrate TOK thinking through the critical examination of knowledge questions
- identify and explore links between knowledge questions and the world around us
- identify and explore links between knowledge questions and areas of knowledge
- develop relevant, clear and coherent arguments
- use examples and evidence effectively to support a discussion
- demonstrate awareness and evaluation of different points of view
- consider the implications of arguments and conclusions.

Course outline

Course elements	Minimum teaching hours
Core theme: Knowledge and the knower This theme provides an opportunity for students to reflect on themselves as knowers and thinkers, and on the different communities of knowers to which we belong.	32
Optional themes Students are required to study **two** optional themes from the following five options. • Knowledge and technology • Knowledge and language • Knowledge and politics • Knowledge and religion • Knowledge and indigenous societies	
Areas of knowledge Students are required to study the following **five** areas of knowledge. • History • The human sciences • The natural sciences • The arts • Mathematics	50
Assessment Students are required to complete **two** assessment tasks. • TOK exhibition (internally assessed) • TOK essay on a prescribed title (externally assessed)	18
Total minimum teaching hours	**100**

Knowledge questions

The TOK curriculum centres around the exploration of knowledge questions. Knowledge questions are crucial to effective TOK discussions as they help to make sure that students are focusing on questions about knowledge itself and about how we know things. Knowledge questions help students to move beyond subject-specific questions or specific real-life situations into the realm of TOK.

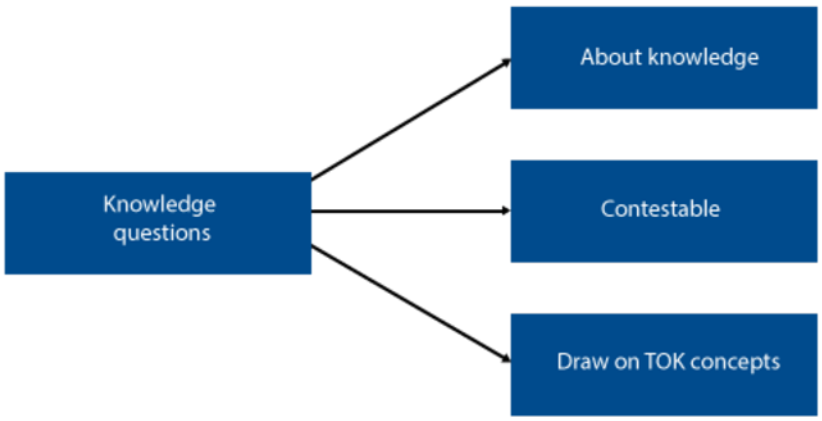
Knowledge questions are questions **about knowledge**—about how knowledge is produced, acquired, shared and used; what it is and what it is not; who has it and who does not; and who decides the answers to these questions. Instead of focusing on subject-specific content or specific examples, students focus on how knowledge is constructed and evaluated. In this sense, knowledge questions are distinct from many of the questions that students encounter in their other subjects.

Knowledge questions are **contestable** in that there are a number of plausible answers to them. Dealing with these open contestable questions is a key feature of TOK, although some students can find the lack of a single "right" answer slightly disorienting. In TOK discussions, it is perfectly conceivable that answers to a question may differ—what matters is that the analysis is thorough, accurate and effectively supported by examples and evidence.

Knowledge questions also **draw on TOK concepts** and terminology, rather than using subject-specific terminology or specific examples. Knowledge questions draw on central TOK concepts such as evidence, certainty, values, and interpretation.

Figure 2

Knowledge questions



Knowledge questions underlie much of the knowledge that we take for granted and are often the motivation for many disagreements and controversies. Exploration of knowledge questions can therefore help us to have a deeper understanding of how knowledge is constructed and evaluated in different areas, as well as helping us to make sense of the world around us.

Knowledge questions are the key tool for teaching and learning in TOK. The two assessment tasks—the TOK exhibition and TOK essay—centre on the exploration of knowledge questions as both the Internal Assessment (IA) prompts and the prescribed essay titles take the form of knowledge questions. It is therefore crucial that students engage with the exploration and discussion of knowledge questions throughout the TOK course.

Examples of knowledge questions

Knowledge questions play a crucial role in helping students to move beyond subject specific questions or specific real-life situations into TOK discussions that are focused explicitly on knowledge.

Specific situations/question	→	Knowledge question
Studying the views of two different historians in a DP history lesson	→	How can we decide between the judgments of experts if they disagree with each other?
A newspaper article on predicting future population growth in Africa	→	How can a model be useful even if it is obviously false?
A journal article detailing the outcomes of a medical trial of an experimental new drug	→	What ethical constraints should there be on the pursuit of knowledge?
A discussion of "Pascal's triangle" in a mathematics lesson	→	How significant have notable individuals been in shaping the development of mathematics as an area of knowledge?
Watching a video of a talk on compassion, happiness and inner peace by the Dalai Lama	→	Does some knowledge belong only to particular communities of knowers?
Should driverless cars be programmed to protect the passenger in the car or a pedestrian in the case of an accident?	→	In what ways do ethical judgments differ from other kinds of judgments?

Throughout this guide, examples of knowledge questions are suggested for each of the themes and areas of knowledge. In order to encourage and support students in making comparisons and connections across different elements of the course, the knowledge questions suggested for each theme and area of knowledge are organized into a "knowledge framework" consisting of four common elements: **scope**, **perspectives**, **methods and tools**, and **ethics**.

These four elements provide a structure to help students explore and analyse the different aspects of the course, as well as providing a common vocabulary to help encourage comparisons and connections. They can also provide a useful starting point to help non-TOK teachers make links to TOK in their other DP subjects.

The knowledge questions suggested in this guide for each theme and area of knowledge are suggested examples only; they are not prescriptive. Teachers are free to explore the themes and areas of knowledge using a variety of different examples and knowledge questions of their choice. However, teachers are required to ensure that, within their discussions of each theme and area of knowledge, they include discussion of examples and knowledge questions that relate to each of the four elements.

Scope

This element focuses on exploring the nature and scope of the different themes and areas of knowledge. It explores how each theme/area of knowledge fits within the totality of human knowledge, and also considers the nature of the problems that each theme/area of knowledge faces and tries to address.

Examples of knowledge questions relating to scope include the following.

- What motivates the pursuit of knowledge in these themes/areas of knowledge?
- What practical problems can be solved through the application of knowledge from these themes/areas of knowledge?
- What are the key current open/unanswered questions in these themes/areas of knowledge?
- What makes this theme/area of knowledge important?

Perspectives

This element focuses on the importance and influence of perspectives and context. This includes reflection on the students' own perspectives and what informs them, as well as how different people or groups view or approach knowledge in the different themes/areas of knowledge. It also includes reflection on historical perspectives and how knowledge changes over time.

Examples of knowledge questions relating to perspectives include the following.

- What is the significance of key historical developments within these themes/areas of knowledge?
- What do these themes/areas of knowledge identify about knowledge that is rooted in particular social and cultural groups?
- Are some types of knowledge less open to interpretation than others?
- Is an understanding of the perspective of other knowers essential in the pursuit of knowledge?

Methods and Tools

This element focuses on exploring the methods, tools and practices that we use to produce knowledge. This includes the building of conceptual frameworks, the establishing of traditions and practices, as well as the methodologies employed by formal disciplines. It also includes consideration of the cognitive and material tools that we have available to help us in the pursuit of knowledge, and of how these tools have changed as a result of technological developments.

Examples of knowledge questions relating to methods and tools include the following.

- What assumptions underlie the methods of inquiry used in these themes/areas of knowledge?
- Does what is seen to constitute "good evidence" vary from discipline to discipline and culture to culture? How is knowledge produced and communicated in these themes/areas of knowledge?
- How important are material tools in the production and acquisition of knowledge?

Ethics

This element focuses on exploring ethics and the ethical considerations that have an impact on inquiry in the different themes and areas of knowledge. This includes aspects such as the relationship between facts and values, and how ethical and epistemic values are built into the quest for knowledge. It also includes questions relating to knowledge and inequality and injustice. It is crucial that TOK discussions about ethics focus on the knowledge questions that are woven into, and implied, in the ethical issues being discussed, rather than the focus being on debating the ethical issues themselves.

Examples of knowledge questions relating to ethics include the following.

- Should the pursuit of knowledge in these themes/areas of knowledge be subject to ethical constraints?
- What responsibilities rest on the knower as a result of their knowledge in these themes/areas of knowledge?
- How can we know when we should act on what we know?
- Do established values change in the face of new knowledge?

Core theme: Knowledge and the knower

The core theme—knowledge and the knower—provides an opportunity for students to reflect on what shapes their perspective as a knower, where their values come from, and how they make sense of, and navigate, the world around them.

Importantly, this theme does not focus exclusively on the individual knower. It also considers aspects such as the impact of the different communities of knowers to which we belong, and how knowledge is

constructed, critically examined, evaluated and renewed by communities and individuals. This includes reflection on how our interactions with others and with the material world shape our knowledge.

This theme encourages careful and critical consideration of claims, provoking students to reflect on how we distinguish between claims that are contestable and claims that are not. It highlights the importance of not simply accepting claims at face value, and then explores how this can be reconciled with a recognition that many situations require us to make decisions without possessing absolute certainty.

The core theme has been explicitly designed to provide rich opportunities for teachers and students to make links to the IB learner profile. Students are encouraged to consider both the power and the limitations of the tools that they have at their disposal as knowers and thinkers, and to become more aware of their own biases and assumptions. They could also consider what it really means to be open-minded or consider the importance of caring about how knowledge is used and controlled.

Figure 3

Me as a knower and a thinker

An interesting focus for discussions in this theme could be misinformation and disinformation, deliberate deception and manipulation, and how we know who/what to trust. This could include reflection on which sources of knowledge (books, websites, personal experience, authority figures, and so on) students consider most trustworthy, and why. It could also include reflection on how advances in technology have brought these issues into sharper focus through, for example, discussion of "fake news" and its machinery.

Another interesting focus for discussions could be to explore how we perceive and construct our understanding of the world. This could include consideration of the way that culture can be seen as a lens through which we look at the world, or the impact of filters, image manipulation and propaganda. For example, students could consider at what point filters become more important than what really exists, or the influence of hidden assumptions in shaping us as knowers.

There are many possible ways to approach and structure the core theme in the classroom. For example, teachers may choose to "bookend" the TOK course with the core theme—using it as a way to start and end the course, as well as spiralling back to the theme at relevant moments throughout the optional themes and areas of knowledge. Additional guidance and examples on how the core theme could potentially be approached can be found in the *Theory of knowledge teacher support material*.

Whatever approach to the core theme is taken, it is crucial that the focus remains clearly on **knowledge**. Teachers must also ensure that within their exploration of the theme, they engage with the four compulsory elements required in every part of the TOK curriculum: **scope**, **perspectives**, **methods and tools**, and **ethics**. Suggested knowledge questions for each of these elements are provided in the following table, but these should not be taken as prescriptive or exhaustive.

	Examples of knowledge questions
Scope	• What criteria can we use to distinguish between knowledge, belief and opinion?

	Examples of knowledge questions
	• How do we distinguish claims that are contestable from claims that are not? • Are there situations where "knowing how" is more important than "knowing that"? • Why should we care about acquiring knowledge? • Why are the criteria for what counts as knowledge not obvious? • Can other people know us better than we know ourselves? • How do our interactions with the material world shape our knowledge?
Perspectives	• What shapes my perspective as a knower? • How much of our knowledge depends on our interactions with other knowers? • Is the truth what the majority of people accept? • How do empathy and imagination help us to understand other perspectives? • Presented with the belief system of a community of knowers, how can we decide what we personally believe? • Are there types of knowledge that are specifically linked to particular communities of knowers? • How can we know that current knowledge is an improvement on past knowledge?
Methods and tools	• How do we acquire knowledge? • What constitutes a "good reason" for us to accept a claim? • Are intuition, evidence, reasoning, consensus and authority all equally convincing methods of justification? • Does knowledge always require some kind of rational basis? • How do our expectations and assumptions have an impact on how we perceive things? • What are the advantages and disadvantages of requiring that all knowledge is verified by a group?
Ethics	• Are there responsibilities that necessarily come with knowing something or knowing how to do something? • As knowers, do we have a moral duty to examine our own assumptions and biases? • Under what circumstances, if any, do we have a moral duty to share what we know? • In what ways do ethical judgments differ from other kinds of judgments? • Is there knowledge that a person or society has a responsibility to acquire or not to acquire? • If moral claims conflict, does it follow that all views are equally acceptable? • What personal traits (such as taking seriously the knowledge of others) do we need in order to be ethical knowers?

Optional themes

The optional themes allow for a more in-depth look at two themes that are of particular interest to the TOK teacher and students.

Teachers must select **two** optional themes from the following five options.

- Knowledge and technology
- Knowledge and language
- Knowledge and politics
- Knowledge and religion
- Knowledge and indigenous societies

These five themes have been selected because of their contemporary real-world relevance and their rich potential to stimulate interesting and engaging TOK discussions around key areas, such as the justification of, and evidence for, claims.

It is intended that all five of these optional themes will have strong links to, and extend from, the core theme—Knowledge and the knower. Whereas the core theme focuses on the student and the particular communities of knowers that they belong to, the optional themes broaden the focus to five factors that have a huge impact on the world today and that play a particularly key role in shaping people's perspectives and identities. They raise issues that students are likely to encounter in their lives both within and, importantly, beyond their school experiences.

The following sections contain guidance on each of these five optional themes. It should be noted that the themes allow for a great deal of flexibility in how they are approached. There is opportunity for teachers to explore a wide range of concepts and issues, and to provide a wide variety of engaging examples. However, for each of the optional themes selected for study, teachers must ensure that the focus remains clearly on **knowledge** in that theme, and that they engage with the four compulsory elements required in every part of the syllabus: **scope**, **perspectives**, **methods and tools**, and **ethics**.

The following sections contain suggested knowledge questions that could be used to explore these four required elements in each optional theme; these are suggestions only and should not be taken as prescriptive or exhaustive.

Knowledge and technology

For many, advances in technology have provided easy access to massive amounts of data and information, and have facilitated unprecedented levels of global interaction. However, they have also raised important questions about how we engage with, and understand, information; about our understanding of the world; and about our understanding of ourselves.

This optional theme focuses on issues relating to the impact of technology on knowledge and knowers, and how technology helps and hinders our pursuit of knowledge. It examines the ways that technology can be seen to shape knowledge creation, knowledge sharing and exchange, and even the nature of knowledge itself.

This theme provides an opportunity for students to engage with highly topical and engaging issues, such as those relating to the impact of artificial intelligence on knowledge and knowing. For example, there could be discussion of whether humans are needed to create new knowledge; whether machines can know, think or learn; or whether a knower is always human.

It also provides excellent opportunities for discussions of ethical and power issues relating to emerging technologies. For example, students could consider examples relating to biometric data, or situations where people are unaware that their personal data is being collected. As in all elements of the course, it is

crucial that these discussions focus explicitly on the knowledge questions that are woven into these discussions, rather than debating the ethical issues themselves. For example, students could consider the example of driverless cars—as a 21st-century variation on the "trolley problem"—as a way to identify issues about the assumptions that underpin, and the criteria we use to make, our moral decisions.

Social networks are another rich source of examples that could be discussed in this theme. For example, there could be discussion of the impact of social networks on knowledge sharing, or of whether social networks create "echo chambers" that reinforce existing perspectives rather than boosting engagement with diverse perspectives.

In addition to examples arising from the "information age", this theme also provides an opportunity for discussion of the impact of historical technological developments on knowledge and knowing. For example, students could consider the impact of developments such as mass printing or machine translation on access to knowledge. They could also consider the impact of technological developments such as advances in navigational instruments and map-making, or developments in air travel, and how these have had an impact on the transmission of knowledge and have allowed us to gain greater knowledge of different places and cultures.

It is crucial that discussions within this optional theme stay focused explicitly on **knowledge** rather than consisting of general discussions about technology. The following examples of knowledge questions can help to ensure this focus.

	Examples of knowledge questions
Scope	• How has technology had an impact on collective memory and how knowledge is preserved? • What is the difference between "data", "information" and "knowledge"? • To what extent is the internet changing what it means to know something? • In what sense, if any, can a machine be said to know something? • Does technology allow knowledge to reside outside of human knowers? • Does technology just allow us to arrange existing knowledge in different ways, or is this arrangement itself knowledge in some sense? • Have technological developments had the greatest impact on what we know, how we know, or how we store knowledge?
Perspectives	• How are online or virtual communities similar to/different from "traditional" communities of knowers? • Do social networks reinforce our existing perspective rather than boosting our engagement with diverse perspectives? • What impact has the fact that English is the primary language of the internet had on knowledge sharing? • How has technology had an impact on how we browse, search and filter data and information? Can algorithms be biased? • Is big data creating a new cognitive paradigm?
Methods and tools	• How does technology extend or transform different modes of human cognition and communication? • To what extent are technologies, such as the microscope and telescope, merely extensions to the human senses, or do they introduce radically new ways of seeing the world? • Is artificial intelligence restricted to processing information or can it also allow machines to acquire knowledge? • How does computation help people to process data and information to gain knowledge?

	Examples of knowledge questions
	• What is the difference between computational thinking, algorithmic thinking and critical thinking? • How do the tools that we use shape the knowledge that we produce?
Ethics	• How might technology exacerbate or mitigate unequal access, and divides in our access, to knowledge? • Does the existence of the deep web influence our view on whether some knowledge should remain secret or largely inaccessible? • Should we hold people responsible for the applications of technologies they develop/create? • Are there situations where ignorance/lack of knowledge is an excuse for unethical behaviour? • On what criteria could we decide whether activities such as "hacktivism" are morally justifiable? To what extent have technological developments led to an increase in data being collected without people's consent or when they are unaware that it is being collected?

Making connections to the core theme

- How has increased access to images and other multimedia sources had an impact on what we know and how we know? (scope)
- How might personal prejudices, biases and inequality become "coded into" software systems? (perspectives)
- How does technology extend and modify the capabilities of our senses? (methods and tools)
- Do you use different criteria to make ethical decisions in online environments compared to in the physical world? (ethics)

Knowledge and language

Language is an essential part of our daily lives, with most of our knowledge coming to us linguistically encoded. It plays an important role in communicating and sharing knowledge and has a significant impact on the way that we experience the world. However, some see language as having an even more central role, arguing that language doesn't just describe our experiences of the world but, in fact, actually structures those experiences, limiting and shaping what we know.

This theme provides an opportunity for students to reflect on the role that language plays in our lives, and the influence it has on thought and behaviour. It also encourages students to draw on their personal experience of language-learning as part of their DP studies. For example, students could reflect on what knowledge of a language consists of, and how that is similar to, or different from, other forms of knowledge. They could also consider the extent to which how we know and what we know is dependent on, and differs according to, the language that we use.

This theme encourages students to reflect on the role of language in allowing knowledge to be shared with others. Language plays a key role in the communication and dissemination of knowledge; it also enables knowledge to be accumulated for, and passed down to, future generations. Language is also key to how claims are exposed to public scrutiny; it enables what we think to be communicated, debated, confirmed or refuted. These characteristics provide extremely rich material for TOK discussions.

One interesting focus for discussions in this theme could be language and power. For example, students could consider the role of language in sustaining relationships of authority by considering how control of written language can create or reinforce power structures, or by considering the way that we change our language depending on who we are speaking to. They could also consider the role of language in creating and reinforcing distinctions of class, ethnicity and gender.

Another interesting example that could be discussed in this theme is non-human communication. For example, students could explore how technological developments have affected the ways that language is used and the ways that communication takes place, or the nature and qualities of "machine language". This could also include wider discussion of what qualities and features other forms of communication, such as animal communication, might need to have in order to be considered a language.

It is crucial that discussions within this optional theme stay focused explicitly on **knowledge** rather than consisting of general discussions about language. The following examples of knowledge questions can help to ensure this focus.

	Examples of knowledge questions
Scope	• Can all knowledge be expressed in words or symbols? • Is it possible to think or know without language? • Is being able to speak a language an example of "knowing how" to do something? • What role does language play in allowing knowledge to be shared with future generations? • Are there differences in how knowledge itself is conceived of, or presented, in different languages? • Is it the case that if we cannot express something, we don't know it? • To what extent does language allow us to make our private experiences public? • How does language allow humans to pool resources and share knowledge?
Perspectives	• Does the transmission of knowledge from one person or generation to another depend on language? • What knowledge might be lost if the whole world shared one common language? • If a language dies, does knowledge die with it? • How do our values and assumptions influence the language in which we express our ideas? • Is ambiguity a shortcoming of language that must be eliminated, or can it also be seen as making a positive contribution to knowledge and knowing? • Do all people share some innate linguistic knowledge? If the categories that we use necessarily empower or marginalise, is it ever possible to produce knowledge that does not either reflect or challenge existing power structures?
Methods and tools	• How are metaphors used in the construction of knowledge? • If language works according to sets of rules and conventions, how much scope do we have as individuals to break the rules or challenge these conventions? • In what ways do values affect our representations of the world, for example, in language, maps or visual images? • To what extent do the classification systems we use in the pursuit of knowledge affect the conclusions that we reach? • In what ways can language be used to influence, persuade or manipulate people's emotions? • To what extent do the names and labels that we use help or hinder the acquisition of knowledge?
Ethics	• Does ethical language differ in any significant way from other types of language? • How can we know if language is intended to deceive or manipulate us?

	Examples of knowledge questions
	• Do ethical statements simply convey our feelings/emotions rather than making claims? • If ethical terms and concepts cannot be easily defined, does this mean that they are meaningless? • Can we define words such as good and bad in terms of objective features of the world? • Do professional interpreters and translators have any special ethical obligations?

Making connections to the core theme

- If you speak more than one language, is what you know different in each language? (scope)
- Do people from different linguistic or cultural backgrounds live, in some sense, in different worlds? (perspectives)
- What are the implications if we do not produce knowledge in language that respects people's preferred modes of self-identification? (methods and tools)
- Who decides whether language should be censored in films and TV shows, and using what criteria? (ethics)

Knowledge and politics

Knowledge itself has an intrinsically political dimension, as questions about how knowledge is constructed, used and disseminated are infused with issues relating to power and politics. Political issues and decisions also affect our daily lives in many different ways.

This theme provides an opportunity for discussions about the practice of politics and our everyday interactions with politics in the world around us. For example, this theme is intended to provide an opportunity to engage with high-profile contemporary debates and examples, such as those around "fake news" and "post-truth politics". It considers where our political views and values come from, and how these inform and influence other areas of our lives. It encourages students to consider the role and origin of their own political beliefs and positions, as well as exploring issues relating to how groups make decisions that affect large numbers of people.

Another key focus of this theme is the "politics of knowledge" and issues around knowledge, power and oppression. This could, for example, include discussion of the concept of "epistemic injustice" and situations where someone's knowledge or expertise may be dismissed because they are a member of a particular social group. It could also include exploration of examples relating to the control of knowledge; for example, cases where political leaders and groups (such as the Khmer Rouge in Cambodia) have attempted to eradicate specific bodies of knowledge, "rewrite" history or persecute educated elites.

Within this theme, there could be discussions around the impact of technology and the potential of new technologies to give political actors new powers. For example, students could consider the increasing focus on data analytics in shaping political policies and decision-making. They could also consider the impact of social media on political discussion, or the challenges of reducing complex political issues into media-friendly "sound bites".

Another interesting possible area of discussion could be around persuasion, manipulation, misinformation and propaganda. This could include discussion of examples where facts and knowledge have been systematically distorted for political gain, or where political actors have denied or subverted knowledge. It could also lead to a discussion of the differences between political rhetoric and propaganda, as well as interesting reflections on the role of think tanks, pressure groups, political activists, funded research and fact checkers.

It is crucial that discussions within this optional theme stay focused explicitly on **knowledge** rather than consisting of general discussions about politics or political issues. The following examples of knowledge questions can help to ensure this focus.

	Examples of knowledge questions
Scope	• In what ways is factual evidence sometimes used, abused, dismissed and ignored in politics? • Is being knowledgeable an important quality in a political leader? • How is the practice of politics distinct from the discipline of political science? • What issues does politics raise about the difference between knowledge and opinion? How might political controversies be triggered by developments in scientific knowledge? • Why have political leaders sometimes tried to control or eradicate specific bodies of knowledge? • With regards to politics, do we know as much as we think we know?
Perspectives	• What kinds of knowledge inform our political opinions? • To what extent are our political views shaped by society, family backgrounds, education or social class? • Why do facts sometimes not change our minds? • To what extent do museums package past knowledge to serve the needs of contemporary political systems and authorities? • Given access to the same facts, how is it possible that there can be disagreement between experts on a political issue? • When exposed to numerous competing ideologies and explanations, what makes an individual settle on a particular framework? Is there ever a neutral position from which to write about politics or from which to judge political opinions? • How might knowledge reflect or perpetuate existing power structures?
Methods and tools	• What impact has social media had on how we acquire and share political knowledge? • What role do reason and emotion play in the formation of our political affinities or in our voting decisions? • How might emotive language and faulty reasoning be used in politics to try to persuade and manipulate? • To what extent can polls provide reliable knowledge and accurate predictions? • What role do political authorities and institutions play in knowledge-creation and distribution? • Why are referendums sometimes regarded as a contentious decision-making tool? • In what ways may statistical evidence be used and misused to justify political actions?
Ethics	• Are political judgments a type of moral judgment? • Can knowledge be divorced from the values embedded in the process of creating it? • Do political leaders and officials have different ethical obligations and responsibilities compared to members of the general public? • When the moral codes of individual nations conflict, can political organizations, such as the United Nations (UN), provide universal criteria that transcend them?

	Examples of knowledge questions
	• On what criteria could we judge whether an action should be regarded as justifiable civil disobedience? • On what grounds might an individual believe that they know what is right for others? • Are new ethical challenges emerging from the increased use of data analytics in political activity and decision-making?

Making connections to the core theme

- How can we know whether we have sufficient knowledge before voting in an election? (scope)
- Has technology changed how and where our political views are shaped? (perspectives)
- Are objective facts or appeals to emotion more effective in shaping public opinion? (methods and tools)
- In a democratic system, do we have an ethical obligation to be knowledgeable about political issues and events? (ethics)

Knowledge and religion

For many people, religion has a major impact on how they understand the world. It permeates their thinking and influences their understanding of other areas, providing a backdrop to all of the other knowledge they possess. Religions themselves also generate specific claims about knowledge, as well as competing assertions and interpretations.

This theme provides an opportunity for students to think carefully, critically and respectfully about knowledge and religion, and to reflect on the significant impact that religion has on how we view the world. Religion is often regarded as a sensitive area in which discussions should be had with caution, in part because people have very personal and deeply held convictions regarding religious matters. Yet many of the features that make religion such a contentious topic are exactly the features that make it highly engaging for students and hugely relevant for a course such as TOK.

Religion provides rich ground for TOK discussions as religions are often complex systems of beliefs, practices, assumptions and values. Religions also raise interesting issues around the exchange of knowledge between individuals and groups. Within their discussions in this theme, students are encouraged to consider the diversity of perspectives within individual religions as well as across different religions; for example, considering fundamentalist, conservative and liberal perspectives within Christianity.

An example of a particularly interesting area of discussion in relation to this theme concerns the concept of evidence. Critics often argue that religions lack convincing evidence to support their claims and beliefs. However, others argue that criticism surrounding the evidence for religious claims is misplaced, arguing that religious knowledge is an example of a kind of knowledge that is not based on empirical evidence. Indeed, in some traditions belief that is not based on evidence is seen as superior to belief that is based on evidence, as the demand for concrete evidence is seen to signify a lack of faith or a misunderstanding of the nature of religion.

Another interesting area to consider could be the relationship between religion and morality, and whether religion and ethics are inextricably linked. For example, students could consider whether religion provides a way to systematize concepts of right and wrong, or whether religious claims carry any particular obligation or responsibility for the knower.

It is crucial that discussions within this optional theme stay focused explicitly on **knowledge** rather than consisting of general discussions about religion. The following examples of knowledge questions can help to ensure this focus.

	Examples of knowledge questions
Scope	• If knowledge is a map, what is the territory that religion represents?

	Examples of knowledge questions
	• What is the value of thinking about questions to which there are no definite answers? • Does religion try to resolve problems that other areas can't resolve? • Is the point of knowledge to produce meaning and purpose in our lives? • Is certainty any more or less attainable in religion than it is in the arts or human sciences? • To what extent do scientific developments have the power to influence thinking about religion? Is faith a prerequisite for religious knowledge?
Perspectives	• Can there be religious knowledge that is independent of the culture that produces it? • How has our understanding and perception of religious knowledge changed over time? • Are those outside a specific religious tradition really able to understand its key ideas? • What impact has forced religious conversion had on traditional knowledge and cultural diversity? To what extent is it legitimate for a non-believer to criticise the content of a religious belief? • To what extent do you agree that there is just as much diversity of perspectives within individual religions than there is across different religions?
Methods and tools	• Are religious beliefs rational? • Can theistic beliefs be considered knowledge because they are produced by a special cognitive faculty or "divine sense"? • What is the role of analogy and metaphor in the acquisition of religious knowledge? • Do ritual and habit play a special role in the formation of religious knowledge? • What difficulties are presented by using human language to discuss religious claims? • What role do authority and testimony play in the pursuit of knowledge? • How have language developments (such as the shift from Latin to the vernacular) had an impact on access to religious knowledge? • Are faith and reason interdependent?
Ethics	• Do we have an ethical responsibility to gain knowledge of different religions to help us better understand the world and those around us? • Does religion provide a way to systematize concepts of right and wrong? • Do religious knowledge claims carry any particular obligation or responsibility for the knower? • What role do religious leaders and authority figures play in influencing ethical debates? • If religion is intimately connected with ethics, should we expect those with religious knowledge to act more ethically than those without it?

Making connections to the core theme

- What kinds of knowledge can be gained through introspection? (scope)
- How does our own theism, atheism or agnosticism have an impact on our perspective? (perspectives)

- Do you agree with Carl Sagan's claim that "extraordinary claims require extraordinary evidence"? (methods and tools)
- To what extent does religion influence social norms and values? (ethics)

Knowledge and indigenous societies

In recent years there has been increasing global awareness of the historic and ongoing injustices that many groups of indigenous peoples have faced, and of how threats to indigenous societies can lead to a loss of traditional knowledge and cultural diversity. For example, in 2007 the UN adopted the "United Nations Declaration on the Rights of Indigenous Peoples", which includes the statement that "Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures".

This optional theme provides an opportunity to undertake a more detailed exploration of knowledge that is principally bound to a particular group, culture or society. It focuses on knowledge that is deeply embedded in the culture and traditions of particular communities of knowers, and how what might be seen as "traditional" indigenous knowledge and societies operate today.

In their discussions in this theme, it is important that students are encouraged to reflect critically on the category "indigenous societies" itself. For example, this could consist of discussion of the history and context of the emergence of the word "indigenous" and its contested meanings. It could also include discussion of the power relations that influence hierarchies of how knowledge is classified and validated.

Students should be encouraged to consider the diversity of indigenous societies, as well as the diversity within these societies, and to avoid the assumption that all members of a particular culture or society will share exactly the same outlook and values. Students should also be encouraged to engage with specific examples rather than generalizations; for example, they could explore the impact of the building of the Ok Tedi mine on the Wopkaimin people of Papua New Guinea, or the importance of music and traditional craftsmanship to the Namaqua people of Southern Africa.

This theme provides an opportunity for discussion of areas such as the focus in many indigenous societies on a holistic view of knowledge, and on the particularly long-standing and close relationships between many indigenous societies and the natural world. It provides an opportunity for rich conversations around examples such as the embodiment and transmission of knowledge in traditional artistic and cultural practices, rituals and objects.

Another interesting area of discussion within this theme could be the impact and legacy of colonialism on indigenous societies, or how external influences, such as globalization, have brought about changes and challenges in relation to the ownership and custodianship of knowledge in indigenous societies. There could be discussion of how some kinds of knowledge have often been devalued; for example, through an emphasis on the primacy of science, or the viewing of oral tradition as inferior to the written word.

It is crucial that discussions within this optional theme stay focused explicitly on **knowledge** rather than consisting of general discussions about indigenous societies. The following examples of knowledge questions can help to ensure this focus.

	Examples of knowledge questions
Scope	• Does our culture determine what we know? • In what ways does the loss of indigenous languages signify a loss of knowledge and cultural diversity? • Does the emphasis on holistic knowledge found in some indigenous societies avoid a limited understanding of reality resulting from the compartmentalization of knowledge? • Who owns knowledge? • How have government education policies and systems compromised the transmission of indigenous knowledge?

	Examples of knowledge questions
	• Why is there sometimes a strong connection between indigenous knowledge and cosmology?
Perspectives	• To what extent is our perspective determined by our membership of a particular culture? • To what extent does the fact that most early literature on indigenous societies was written from a non-indigenous perspective affect its credibility? • What values and assumptions underpin the use of the term "indigenous" knowledge? • Does a neutral position exist from which to make judgments about competing claims from different groups with different traditions? • As an "outsider", can we know and speak about the knowledge held by a different cultural group? • How might differences in their worldviews create challenges for collaboration between environmental scientists and holders of traditional environmental knowledge? • Does the term "indigenous" knowledge" necessarily suggest power divisions between a dominant and non-dominant group?
Methods and tools	• How reliable are oral traditions in preserving knowledge in indigenous societies? • What is the role of oral tradition in enabling knowledge to be handed down through generations? • What role do objects and artifacts play in the construction and sharing of knowledge? • Does what is seen to constitute "good evidence" vary from culture to culture? • What is the role of folklore, rituals and songs in acquiring and sharing knowledge? • What methods have indigenous peoples developed to support the recording, preservation and protection of their traditional knowledge?
Ethics	• Does the diversity of moral practices that we see in indigenous societies around the world support the case for moral relativism? • To what extent does deliberate disinformation by educational institutions and governments threaten indigenous knowledge? • Is cultural appropriation an example of a violation of collective intellectual property rights? • Is there a difference between moral values and cultural customs? • Is there any knowledge that a person or a society has a responsibility to acquire, or not to acquire? • Can the practices of one individual or culture be judged with any validity by applying the moral values of another generation or another culture?

Making connections to the core theme

- Is it possible to have knowledge of a culture in which we have not been raised? (scope)
- To what extent are we aware of the impact of our culture(s) on what we believe or know? (perspectives)
- How can we know when we should trust and defer to the authority of experts? (methods and tools)

- What ethical concerns are raised by the commercialisation of indigenous knowledge and cultures? (ethics)

Areas of knowledge

Areas of knowledge are structures within which much human knowledge is organized. In these areas there are often socially established methods for producing knowledge, as well as norms for what counts as a fact or a good explanation.

Students are required to study **all five** of the following areas of knowledge.

- History
- The human sciences
- The natural sciences
- The arts
- Mathematics

Within their discussions, students should be encouraged to think about, and draw examples from, specific individual academic disciplines that are included within the different areas of knowledge.

The following sections contain guidance and examples of knowledge questions for each of these five compulsory areas of knowledge. These are suggestions only and should not be taken as prescriptive or exhaustive. However, teachers must ensure that the focus remains clearly on **knowledge** in that area, and that they engage with the four compulsory elements required in every part of the syllabus: **scope**, **perspectives**, **methods and tools** and **ethics**.

Making comparisons across areas of knowledge

TOK discussions should explore the different areas of knowledge to deepen students' understanding of what it is that gives each area its character. Crucially, a key focus should then also be on encouraging students to make comparisons and connections across the areas of knowledge.

The "knowledge framework" is intended to help support comparisons across areas of knowledge. These four elements provide a useful vocabulary for making effective comparisons. For example, within "perspectives" students could compare how knowledge changes over time in the different areas of knowledge. Although knowledge in these areas is often highly structured and systematic in nature, it also changes and evolves over time. These changes may be slow and incremental, as areas of knowledge often possess a certain stability. However, changes can also be more sudden and dramatic shifts as an area of knowledge responds to, for example, new experimental results, advances in underlying theories or changes in technology.

It is important to note that comparing and contrasting the various areas of knowledge involves not only exploring features that they have in common, but also examining their differences. Comparison of different areas of knowledge is also an evaluative task, as opposed to being simply descriptive. It involves critical appraisal of similarities and differences between the areas of knowledge, rather than simply their identification.

More guidance on making effective connections across the areas of knowledge can be found in the *Theory of knowledge teacher support material*.

History

Studying history involves exploration and inquiry into the past. This raises questions about whether it is possible to talk meaningfully about a historical fact, or how far we can speak with certainty about anything in the past.

History provides particularly interesting material for TOK discussions because of the challenges presented by not being able to directly observe the past, and because the historian is unable to utilize some of the methods of inquiry that are used in other areas of knowledge. Studying history can also promote empathy with, and understanding of, people living in diverse places and at different times. These characteristics open up many interesting issues and questions that are unique, or particularly pertinent, to history as an area of knowledge.

As we cannot directly observe historical events, documentary evidence plays a vital role in helping historians to understand and interpret the past. This raises questions about the reliability of that evidence, particularly given that historical sources are often incomplete and that different sources can corroborate, complement or contradict each other.

In addition to being heavily evidence-based, history is also an interpretive discipline that allows for multiple perspectives and opinions. Students could be encouraged to consider the role and importance of historians, particularly in terms of why their interpretations may differ or how we evaluate conflicting interpretations of past events. Students could also consider why some might claim that there is always a subjective element in historical writing because historians are influenced by the historical and social environment in which they are writing—which unavoidably affects their selection and interpretation of evidence.

An interesting focus for discussions could be the concept of historical significance. For example, students could consider why particular aspects of history have been recorded and preserved whereas others have been lost or excluded from historical accounts. They could also consider the way that history is sometimes used to promote a particular dominant perspective or consider how specific groups, such as minorities or women, may have experienced events in the past differently. This could connect to reflection on recent controversies surrounding the historical events taught, and history textbooks used, in high school history lessons in various countries around the world. This could include how different textbooks can sometimes tell different versions of history.

Examples of knowledge questions arising from this area of knowledge are suggested below.

	Examples of knowledge questions
Scope	• Is it possible to have knowledge of the past? • Is knowledge about the past different from other kinds of knowledge? • Are all areas of knowledge concerned with knowledge of the past to some extent? • Why does history enjoy a privileged position as its own dedicated area of knowledge in the TOK curriculum? • Is all knowledge in some sense historical knowledge? • Is truth the goal of all historical inquiry? • Is certainty about the past more difficult to attain than certainty about the present or the future? • What counts as a fact in history?
Perspectives	• If it is difficult to establish proof in history, does that mean that all versions are equally acceptable? • Are historians' accounts necessarily subjective? • Is empathy more important in history than in other areas of knowledge? • How might the existence of different historical perspectives be beneficial to historical knowledge? • Can the historian be free of bias in the selection and interpretation of material? • Is it inevitable that historians will be affected by their own cultural context? • How can we gauge the extent to which history is being told from a cultural or national perspective?

	Examples of knowledge questions
	• Are we more prone to particular cognitive biases (such as hindsight bias) in some disciplines and areas of knowledge rather than others?
Methods and tools	• What methods do historians use to gain knowledge? • What is unique about the methodology of history compared to other areas of knowledge? • On what criteria can a historian evaluate the reliability of their sources? • If our senses are sometimes unreliable, does this mean that eyewitness testimony is an unreliable source of evidence? • Have technological developments enabled us to observe the past more directly? • What challenges does archive-based history emphasize about how knowledge is shared and preserved? • Is there less emphasis on collaborative research in history than there is between researchers in other areas of knowledge? • How do the methods and conventions of historians themselves change over time?
Ethics	• Is it unfair to judge people and actions in the past by the standards of today? • Should terms such as "atrocity" or "hero" be used when writing about history, or should value judgments be avoided? • Do historians have a moral responsibility to try to ensure that history is not misused and distorted by people for their own ends? • On what criteria could we decide whether people in the past have a right to privacy in the present? • Do historians have an ethical obligation not to ignore contradictory evidence?

Making connections to the core theme

- Is it possible to know who we are without knowledge of the past? (scope)
- How does the way that we identify with past events, such as military victories or defeats, shape our perspective? (perspectives)
- How might the methods of the historian help us to evaluate claims we are exposed to in the media today? (methods and tools)
- What ethical concerns are raised by the digitization and online publication of archive material containing people's personal images and documents? (ethics)

The human sciences

The human sciences include a diverse range of disciplines, such as psychology, social and cultural anthropology, economics, political science, and geography. These disciplines share a common focus on the study of human existence and behaviour.

The diversity of the disciplines included within the human sciences can itself be a stimulus for interesting TOK discussions, as can the coexistence of different approaches within a single discipline (for example psychodynamic versus behaviourist versus humanistic approaches in psychology).

One interesting focus for discussion could be, for example, whether there are fundamental differences between the human sciences and the natural sciences in terms of how they interpret the word "science", the methods they use for collecting data, or how they test the validity and reliability of hypotheses.

Another interesting focus for discussion could be the use of questionnaires and polls in the human sciences. This could include whether the results of questionnaires can be reliable given the challenges

around neutral language, leading questions, or sampling and selection effect. It could also include discussion of issues relating to respondents not being truthful or deliberately giving misleading responses.

Students could also be encouraged to consider the ways in which social, political, cultural or financial factors may affect the types of research that are supported and financed in the human sciences. For example, market research is often undertaken as a way for companies to increase their profits, and social science research sometimes seeks to influence public policy. This can raise interesting questions about the purpose and context within which knowledge is pursued in the human sciences.

Examples of knowledge questions arising from this area of knowledge are suggested below.

	Examples of knowledge questions
Scope	• How do we decide whether a particular discipline should be regarded as a human science? • Do the human sciences and literature provide different types of knowledge about human existence and behaviour? • Are predictions in the human sciences inevitably unreliable? • What are the main difficulties that human scientists encounter when trying to provide explanations of human behaviour? • Is human behaviour too unpredictable to study scientifically? • Do the boundaries between different disciplines and different areas of knowledge help or hinder understanding? • Is it possible to discover laws of human behaviour in the same way that the natural sciences discover laws of nature?
Perspectives	• To what extent is it legitimate for a researcher to draw on their own experiences as evidence in their investigations in the human sciences? • Is it possible to eliminate the effect of the observer in the pursuit of knowledge in the human sciences? • How might the beliefs and interests of human scientists influence their conclusions? How can we know when we have made progress in the search for knowledge in the human sciences? • If two competing paradigms give different explanations of a phenomenon, how can we decide which explanation to accept? • What forms of protection against research error and bias are available to human scientists?
Methods and tools	• What role do models play in the acquisition of knowledge in the human sciences? • Are observation and experimentation the only two ways in which human scientists produce knowledge? • What assumptions underlie the methods used in the human sciences? • To what extent are the methods used to gain knowledge in the human sciences "scientific"? • How does the use of numbers, statistics, graphs and other quantitative instruments affect the way knowledge in the human sciences is valued? • To what extent can the human sciences use mathematical techniques to make accurate predictions?
Ethics	• To what extent are the methods used in the human sciences limited by the ethical considerations involved in studying human beings? • Do researchers have different ethical responsibilities when they are working with human subjects compared to when they are working with animals?

	Examples of knowledge questions
	• What are the moral implications of possessing knowledge about human behaviour? • Should key events in the historical development of the human sciences always be judged by the standards of their time? • What values determine what counts as legitimate inquiry in the human sciences? Can knowledge be divorced from the values embedded in the process of creating it? • Is the role of the human scientist only to describe what the case is or also to make judgements about what should be the case?

Making connections to the core theme

- How does advertising utilize knowledge of human psychology to influence and persuade us? (scope)
- What is it about a theory that gives it the power to destabilize our view of ourselves and of the world? (perspectives)
- How might the language used in polls and questionnaires influence the conclusions that are reached? (methods and tools)
- What moral obligations to act or not act do we have if our knowledge is tentative, incomplete or uncertain (ethics)

The natural sciences

The natural sciences are often seen to rely on evidence, rationality and the quest for deeper understanding. Observation and experimentation play a key role, and terms such as "theory" have a special meaning in the natural sciences compared to how they are used in daily life and in other areas of knowledge.

A focus for discussions of the natural sciences could be what differentiates the scientific from the non-scientific or "pseudo-scientific". Many people would suggest that it is the methods used in the natural sciences that is the key distinguishing factor—which raises the question of what it is about these methods that means that the knowledge they generate is often regarded as being highly reliable. Students could also consider whether the word "science" means different things in different languages, or whether it has been used differently in different periods of history.

Another interesting focus for discussions could be scientific development, revolutions and paradigm shifts. This could include what is meant by a paradigm shift, whether scientific knowledge has always grown, or how technological developments have driven scientific progress and discoveries. It could also include reflection on whether we could ever reach a point where everything important to the natural sciences is known.

Students could also consider the role of consensus in the natural sciences, and the role and importance of the "scientific community". For example, they could consider the role of peer review as a method of scrutinizing scientific claims and the extent to which this is an effective and objective form of self-regulation. This could lead to discussions of whether or not scientific knowledge is, or should be, amenable to public scrutiny. It could also lead to wider reflection on whether there are commonly agreed values, methodologies and assumptions about knowledge that underpin all scientific inquiry.

Another rich source of material for TOK discussions relating to the natural sciences can come from the issue of funding. A great deal of scientific research is funded by private for-profit companies and by governments, which raises interesting questions around how the priorities for funding scientific research are determined and who it is that determines which research directions are pursued.

Examples of knowledge questions arising from this area of knowledge are suggested below.

	Examples of knowledge questions
Scope	• Why might some people regard science as the supreme form of all knowledge?

	Examples of knowledge questions
	• Should the natural sciences be regarded as a body of knowledge, a system of knowledge or a method? • Could there be scientific problems that are currently unknown because the technology needed to reveal them doesn't exist yet? • Is human knowledge confined to what the natural sciences discover, or are there other important inquiries that are not covered by the natural sciences? • What knowledge, if any, is likely to always remain beyond the capabilities of science to investigate or verify? • Do the natural sciences rely on any assumptions that are themselves unprovable by science? • Is prediction the primary purpose of scientific knowledge? • How might developments in scientific knowledge trigger political controversies or controversies in other areas of knowledge?
Perspectives	• How can it be that scientific knowledge changes over time? • What role do paradigm shifts play in the progression of scientific knowledge? • How does the social context of scientific work affect the methods and findings of science? • In what ways have influential individuals contributed to the development of the natural sciences as an area of knowledge? • Does the precision of the language used in the natural sciences successfully eliminate all ambiguity? • Does the list of disciplines included in, or excluded from, the natural sciences change from one era to another, or from one culture or tradition to another? • Does competition between scientists help or hinder the production of knowledge?
Methods and tools	• Is there a single "scientific method"? • What is the role of imagination and intuition in the creation of hypotheses in the natural sciences? • What kinds of explanations do natural scientists offer? • Why are many of the laws in the natural sciences stated using the language of mathematics? • What is the role of inductive and deductive reasoning in scientific inquiry, prediction and explanation? • Does scientific language have a primarily descriptive, explanatory or interpretative function?
Ethics	• Is science, or should it be, value-free? • Should scientific research be subject to ethical constraints or is the pursuit of all scientific knowledge intrinsically worthwhile? • Do we tend to exaggerate the objectivity of scientific facts and the subjectivity of moral values? • In what ways have developments in science challenged long-held ethical values? Can moral disagreements be resolved with reference to empirical evidence? • Do human rights exist in the same way that the laws of gravity exist?

	Examples of knowledge questions
	• Do scientists or the societies in which scientists operate exert a greater influence on what is ethically acceptable in this area of knowledge?

Making connections to the core theme

- How might we, as members of the public, judge whether to accept scientific findings if we do not have detailed scientific knowledge? (scope)
- How is it that scientific knowledge is often shared by large, geographically spread and culturally diverse groups? (perspectives)
- Is the depiction of the "scientific method" traditionally found in many school science textbooks an accurate model of scientific activity? (methods and tools)
- Do the natural sciences provide us with good examples of people who approach knowledge in a rigorous and responsible way? (ethics)

The arts

"The arts" is used in TOK to include a diverse range of disciplines such as visual arts, theatre, dance, music, film and literature. The forms and methods of these disciplines are often dissimilar, so the diversity within this single area of knowledge can itself be an excellent stimulus for TOK discussions.

The arts provide rich material for discussions of concepts such as interpretation. For example, students could consider how we ascribe meaning to works of art, or whether the intention of the artist is what determines meaning. During these discussions, students could be encouraged to draw on their experiences from their DP studies in language and literature classes, where they are required to understand and interpret a range of texts.

Students could also consider the role of the audience in the arts. This could include, for example, whether art requires a response from, or an emotional interaction with, an audience. It could also include the role of critics and experts, and whether everyone is an equally competent judge in the arts.

Another interesting focus for discussions could be the social character and function of the arts. This could include the way that the arts are often seen as helping to shed light on fundamental questions about the human condition, or how the arts are often regarded as having an important function as a medium for social criticism and a vehicle for social change.

Discussions of the arts could also focus on exploring whether there are, or should be, limits to what is acceptable in art. Students could consider examples of controversial works of art, such as Marco Evaristti's *Helena* or Sruli Recht's *Forget Me Knot*, considering whether there should be ethical constraints on the pursuit of knowledge in the arts, or whether artists or audiences have any particular ethical responsibilities.

Another focus for discussions could be the relationship between arts and culture. Students could explore art forms and art works that are strongly rooted in a particular culture or tradition, as well as reflecting on the diversity of the arts across time, cultures and contexts. Students could also explore examples of "outsider art" as a way to stimulate conversations about the potential for art to challenge established values.

Examples of knowledge questions arising from this area of knowledge are suggested below.

	Examples of knowledge questions
Scope	• Do the disciplines in the arts diverge from one another more fundamentally than disciplines within other areas of knowledge? • Does new knowledge in the arts always build on what is already known? • How have new technologies changed the nature and scope of the arts as an area of knowledge? • Are the arts best seen as a system of knowledge, a type of knowledge or a means of expressing knowledge?

	Examples of knowledge questions
	• Is artistic knowledge something that cannot be expressed in any other way? • Is the relationship between "knowing how" and "knowing that" different in the arts compared to other areas of knowledge? Does art enlarge what it is possible for us to think and know?
Perspectives	• Is there such a thing as "obsolete" knowledge in the arts? • Can a work of art have meaning of which the artist themselves is unaware? • How does knowing more about the social, cultural or historical context of a work of art have an impact on our knowledge of the work itself? • Can art change the way we interpret the world? • What are the justifications for, and implications of, claiming that there are absolute standards for "good art"? • Who determines what art is valued, and on what criteria? • Should your judgments about art be given the same weight as those of an expert? • What role does the history of an artform play in evaluating present work?
Methods and tools	• Does convention play a different role in the arts compared to other areas of knowledge? • Does sense perception perform a radically different role in the arts compared to other areas of knowledge? • If the language of an art form is non-verbal, does this free it from being limited to propositional knowledge? • Can some knowledge in the arts only be gained through experience? How does the medium used change the way that knowledge is produced, shared or understood? • To what extent are the methods of justification different in the arts compared to other areas of knowledge?
Ethics	• In what ways are moral judgments similar to, or different from, aesthetic judgments? • Do the arts play a role in the development of our personal value systems? • How important is the study of literature in our individual ethical development? • Is the production and enjoyment of art subject to ethical constraints? • On what criteria could it be decided if the state has the right to censor art that is deemed immoral or blasphemous? • Do the arts have the power to challenge established moral values? • Are moral and aesthetic judgments more a matter of taste than a matter of truth? • Can we separate the moral character of the artist from the value of the artwork?

Making connections to the core theme

- Does art provide knowledge of the artist or of ourselves? (scope)
- How is art used in advertising to affect the beliefs of individuals and groups? (perspectives)
- Does artistic creation rely more heavily on imagination than on other cognitive tools? (methods and tools)
- What moral responsibilities do we have regarding art that has been created or published by other people? (ethics)

Mathematics

Mathematics is sometimes seen to have a degree of certainty that is unmatched by other areas of knowledge or is seen to be founded on a set of more or less universally accepted definitions and basic assumptions. This makes mathematics an excellent source of material for TOK discussions.

One interesting focus for discussions could be the status of mathematics as an area of knowledge. Students could consider why disciplines in the human sciences are often keen to cast their conclusions in mathematical terms, or why mathematical treatments of a topic are often taken by many to be a sign of intellectual rigour. They could also consider why mathematics is often given a privileged position in many education systems.

Another rich source of material for TOK discussions can be the role of creativity, imagination, beauty and elegance in mathematics. Despite, or perhaps because of, the strict confines of mathematical logic, mathematics can be an enormously creative subject, asking its practitioners to make great leaps of imagination. This could lead to discussion of whether, or why, elegance and beauty should be relevant to mathematical value.

Another interesting focus could be the relationship between mathematics and the world around us. Mathematics is often used to model real-world processes. Yet, in some ways, mathematics can also seem quite abstract and detached from the real world, strongly focused on the application of reason rather than relying on experience and observation of the world.

Students could also consider the role and significance of proof in mathematics, and how this relates to concepts such as truth. They could reflect on whether the term "proof" is used differently in mathematics compared to how it is used in our everyday lives or in other areas of knowledge.

Examples of knowledge questions arising from this area of knowledge are suggested below.

	Examples of knowledge questions
Scope	• Why is mathematics so important in other areas of knowledge, particularly the natural sciences? • How have technological innovations, such as developments in computing, affected the scope and nature of mathematics as an area of knowledge? • Is absolute certainty attainable in mathematics? • Is there a distinction between truth and certainty in mathematics? • Should mathematics be defined as a language? • Is mathematics better defined by its subject matter or its method? • Does mathematics only yield knowledge about the real world when it is combined with other areas of knowledge? • Is there a hierarchy of areas of knowledge in terms of their usefulness in solving problems?
Perspectives	• What is it about mathematics that enables mathematical results to remain unchanged over time? • How significant have notable individuals been in shaping the nature and development of mathematics as an area of knowledge? • What is the role of the mathematical community in determining the validity of a mathematical proof? • Is mathematical knowledge embedded in particular cultures or traditions? • Does personal experience play any role in the formation of claims in mathematics? • Is progress harder to make in mathematics than in other areas of knowledge? • If mathematics is created by humans, is it still possible to accept mathematical truths as objective facts about the world?

	Examples of knowledge questions
	• Are all of the areas of knowledge in the TOK course themselves embedded in a particular tradition or bound to a particular culture?
Methods and tools	• Is mathematical reasoning different from scientific reasoning or reasoning in other areas of knowledge? • What is meant by the term "proof" in mathematics, and how is this similar to, or different from what is meant by this term in other areas of knowledge? • How do mathematicians reconcile the fact that some conclusions seem to conflict with our intuitions? • What does it mean to say that mathematics is an axiomatic system? • How is an axiomatic system of knowledge different from, or similar to, other systems of knowledge? • Do mathematical symbols have meaning in the same way that words have meaning? Is personal experience more important or less important in mathematics compared to other areas of knowledge?
Ethics	• If mathematical knowledge is highly valued, does this place special ethical responsibilities on mathematicians when they are making claims? • On what criteria could we decide whether mathematicians should be held responsible for unethical applications of their work? • How are unethical practices, such as "data dredging", used by statisticians to deliberately manipulate and mislead people? • Is it ethically justifiable for academic mathematicians to spend time doing research that does not have immediate useful applications? • Do mathematical judgments and ethical judgments face similar challenges in terms of the evidence available to support them? • Are mathematicians the people best placed to create codes of ethics for professional mathematicians?

Making connections to the core theme

- Why do you think mathematics enjoys a privileged status in many education systems? (scope)
- Who judges the validity of a proof? (perspectives)
- What steps can we take to help ourselves avoid being misled by statistics used in unclear or disingenuous ways in the media? (methods and tools)
- To what extent do you agree with the claim that mathematics "serves as a training that shapes thinking in an ethics-free and amoral way" (Paul Ernest)? (ethics)

Assessment in the DP

Assessment is an integral part of learning and teaching. The most important aims of assessment are that it should support curricular goals and encourage appropriate student learning.

Both external and internal assessments are used in the DP. IB examiners mark work produced for external assessment, while work produced for internal assessment is marked by teachers and externally moderated by the IB.

The approach to assessment used by the IB is criterion-related, not norm-referenced. This approach to assessment judges students' work by their performance in relation to identified levels of attainment, and not in relation to the work of other students.

Assessment-related resources

For more information about assessment in the IB, please refer to the following resources.

Assessment

- *Diploma Programme Assessment procedures* (updated annually)
- *Assessment principles and practice—Quality assessments in a digital age*
- *The conduct of Diploma Programme examinations* (updated annually)
- *Academic readiness 2019*
- *Programme standards and practices*

Assessment access and inclusion

- *Access and inclusion policy*
- *Learning diversity and inclusion in IB programmes*
- *General regulations: Diploma Programme*

Academic integrity

- *Academic honesty in the IB educational context*
- *Effective citing and referencing*
- *Diploma Programme: From principles into practice*
- *General regulations: Diploma Programme*
- *Academic integrity*

TOK assessment outline

Theory of knowledge: First assessment 2022	
Assessment component	**Weighting**
Internal assessment **Theory of knowledge exhibition (10 marks)** For this component, students are required to create an exhibition that explores how TOK manifests in the world around us. This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.	**1/3 (33%)**
External assessment **TOK essay on a prescribed title (10 marks)** For this component, students are required to write an essay in response to one of the six prescribed titles that are issued by the IB for each examination session. As an external assessment component, it is marked by IB examiners.	**2/3 (67%)**

TOK assessment details

The TOK exhibition

The TOK exhibition explores how TOK manifests in the world around us. For this reason it is strongly recommended that students base their exhibition on one of the TOK themes (either the core theme or one of the optional themes).

The TOK exhibition is an internal assessment component—it is marked by the teacher and is externally moderated by the IB. Internal assessment is an integral part of all DP courses. It enables students to demonstrate the application of their skills and knowledge, and to pursue their personal interests.

For this task, students are required to create an exhibition of three objects that connect to one of the 35 "IA prompts" provided in the "IA prompts" section of this guide. Students must select just **one** IA prompt on which to base their exhibition, and all three objects must be linked to the same IA prompt.

Students are required to create an exhibition comprising three objects, or images of objects, and an accompanying written commentary on each object. To enable their exhibition to be marked by their TOK teacher and for samples of student work to be submitted to the IB for moderation, students are required to produce a single file containing:

- a title clearly indicating their selected IA prompt
- images of their three objects
- a typed commentary on each object that identifies each object and its specific real-world context, justifies its inclusion in the exhibition and links to the IA prompt (maximum 950 words)
- appropriate citations and references.

Each student must create an individual exhibition. Group work may **not** be undertaken by students. Multiple students in the same TOK class are permitted to create exhibitions on the same IA prompt. However, students in the same class are not permitted to use any of the same objects.

The TOK exhibition task has been explicitly designed to be completed during the first year of the DP. To support DP students, it is important that schools have a clear overall schedule of internal deadlines for the completion of the internal assessment tasks for the different subjects. Within this schedule, teachers are strongly encouraged to complete the TOK exhibition in the first year of the programme.

Further guidance on the TOK exhibition task, including marked and annotated examples of student work, can be found in the *Theory of knowledge teacher support material*.

The TOK exhibition process

It is recommended that a total of approximately **eight hours** of teaching time should be allocated to the TOK exhibition task.

The TOK exhibition process consists of three key steps.

Summary of the TOK exhibition process

Step 1	Students begin their exhibition by **selecting one IA prompt and three objects**, or images of objects, that show how this question manifests in the world around us. Students must select **one** IA prompt as the basis for their exhibition. All three objects must be linked to the same prompt. To help them approach this task effectively, students are encouraged to root their exhibition in one of the TOK themes—either the core theme or one of the optional

	themes. This can help to provide an accessible starting point for students and can provide a focus to help students narrow down their choice of potential objects. Within the teaching time allocated to undertaking this task, teachers should ensure that they include time to explain the requirements of the task and ensure that students are familiar with the assessment instrument.
Step 2	**Students should produce a single file containing their TOK exhibition.** This must include: • a title clearly indicating their selected IA prompt • images of their three objects • a typed commentary on each object that identifies each object and its specific real-world context, justifies each object's inclusion in the exhibition and links to the IA prompt (maximum 950 words) • appropriate citations and references. Teachers are permitted to provide feedback on **one** draft of this work. They should provide oral or written advice on how the work could be improved, but should not edit the draft. Once complete, this file is submitted to the TOK teacher to be marked. Samples of student work are then submitted to the IB for moderation.
Step 3	Teachers are required to provide all students with an opportunity for their completed exhibitions to be showcased and exhibited to an audience. As this does not form part of the formal assessment task, teachers have a great deal of flexibility as to how they choose to hold these exhibitions—as in the following examples. • A class of TOK students could hold an exhibition within one of their regular TOK classes. • Two classes of TOK students in the same school, or different schools, could host exhibitions for each other. • A class of TOK students could host an exhibition for younger students in the school. • A school could host a TOK exhibition for parents and other members of the school community. • Students could display their TOK exhibitions in a "virtual exhibition" (by using an online virtual gallery space) • A school could host a combined event celebrating the PYP exhibition, MYP personal project and the TOK exhibition.

IA prompts

The IA prompts are a set of 35 high-level knowledge questions. Students must select **one** of the following IA prompts on which to base their exhibition, and all three objects must be linked to the same prompt. These IA prompts apply for all examination sessions for the life of this guide—they do not change from session to session.

Students are required to create an exhibition of three objects that connect to **one** of the following IA prompts.

1. What counts as knowledge?
2. Are some types of knowledge more useful than others?
3. What features of knowledge have an impact on its reliability?
4. On what grounds might we doubt a claim?
5. What counts as good evidence for a claim?

6. How does the way that we organize or classify knowledge affect what we know?
7. What are the implications of having, or not having, knowledge?
8. To what extent is certainty attainable?
9. Are some types of knowledge less open to interpretation than others?
10. What challenges are raised by the dissemination and/or communication of knowledge?
11. Can new knowledge change established values or beliefs?
12. Is bias inevitable in the production of knowledge?
13. How can we know that current knowledge is an improvement upon past knowledge?
14. Does some knowledge belong only to particular communities of knowers?
15. What constraints are there on the pursuit of knowledge?
16. Should some knowledge not be sought on ethical grounds?
17. Why do we seek knowledge?
18. Are some things unknowable?
19. What counts as a good justification for a claim?
20. What is the relationship between personal experience and knowledge?
21. What is the relationship between knowledge and culture?
22. What role do experts play in influencing our consumption or acquisition of knowledge?
23. How important are material tools in the production or acquisition of knowledge?
24. How might the context in which knowledge is presented influence whether it is accepted or rejected?
25. How can we distinguish between knowledge, belief and opinion?
26. Does our knowledge depend on our interactions with other knowers?
27. Does all knowledge impose ethical obligations on those who know it?
28. To what extent is objectivity possible in the production or acquisition of knowledge?
29. Who owns knowledge?
30. What role does imagination play in producing knowledge about the world?
31. How can we judge when evidence is adequate?
32. What makes a good explanation?
33. How is current knowledge shaped by its historical development?
34. In what ways do our values affect our acquisition of knowledge?
35. In what ways do values affect the production of knowledge?

The chosen IA prompt must be used exactly as given; it must not be altered in any way.

- If the IA prompt has been modified but it is still clear which IA prompt the student is referring to, the TOK exhibition should be marked as using the original IA prompt. Any lack of relevance in the student's response arising from this modification will be reflected in the score awarded.
- If it is clear that the TOK Exhibition is not based on one of the IA prompts listed, the TOK exhibition should be awarded a score of zero, in accordance with the TOK Exhibition assessment instrument.

Objects

An extremely wide variety of different types of objects are suitable for use in a TOK exhibition. Students are encouraged to choose objects that are of personal interest and that they have come across in their academic studies and/or their lives beyond the classroom.

It is **strongly recommended** that students base their exhibition on one of the themes (the core theme or one of the optional themes). This can be an extremely useful way to help students narrow down their choice of objects and give a focus to their exhibition.

Digital or physical objects

The objects may be digital rather than physical objects. For example, students could include a photograph of an object, such as a historical treaty, where it would not be practical/possible for them to exhibit the physical object. Students may also use digital objects such as a tweet by a political leader. However, they must be specific objects that have a specific real-world context—objects that exist in a particular time and place (including virtual spaces). They may be objects that the student has created themselves, but they must be pre-existing objects rather than objects created specifically for the purposes of the exhibition.

Context of an object

The specific real-world context of each object is extremely important to the task. It is, therefore, important that students identify specific objects to discuss rather than using generic objects and generic images from the internet. For example, a discussion and photograph of a student's baby brother is an example of an object that has a specific real-world context, whereas a generic image of "a baby" from an internet image search is not.

Examples of the diverse kinds of objects students could select include the following.

- A tweet from the President of the United States
- An image of the painting *Guernica* by Pablo Picasso
- The student's own extended essay (EE)
- A basketball used by the student during their physical education lessons
- The graphic novel *The Colour of Earth* by Kim Dong Hwa
- A painting that the student created in their DP visual arts course
- A refillable water bottle provided to each student in a school as part of a sustainability initiative
- A news article from the popular website *Buzzfeed*
- A photograph of the student playing in an orchestra

Further guidance on the role of objects in the exhibition and examples of student exhibitions can be found in the *Theory of knowledge teacher support material*.

Images of objects

The image of each object used in the exhibition must be appropriately referenced. If an object is the student's own original work (for example, a painting that they created in a visual arts class) then this should be identified and acknowledged to ensure that teachers and moderators are clear about the origins of the object.

Word count

The maximum overall word count for the TOK exhibition is **950 words**. This word count includes the written commentaries on each of the three objects. It does not include:

- any text contained on/within the objects themselves
- acknowledgments, references (whether given in footnotes, endnotes or in-text) or bibliography.

If an exhibition exceeds the word limit, then examiners are instructed to stop reading after 950 words and to base their assessment on only the first 950 words. Extended footnotes or appendices are not appropriate to a TOK exhibition.

Guidance and authenticity

The work submitted for internal assessment must be the student's own work. However, it is not the intention that students should be left to work on the internal assessment component without any support from the teacher. The teacher should play an important role during both the planning stage and the period when the student is working on the internally assessed work.

It is recommended that a total of approximately **8 hours** of teaching time should be allocated to the exhibition task. This should include:

- time for the teacher to explain the requirements of the task and ensure that students are familiar with the assessment instrument
- in-class time for students to ask questions and seek clarifications
- time for the teacher to review and monitor students' progress, and to check authenticity.

Students should be encouraged to initiate discussions with the teacher to obtain advice and information, and students must not be penalized for seeking guidance. Teachers should read and give advice to students on **one** draft of the work. They should provide oral or written advice on how the work could be improved, but they may not edit the draft. The next version handed to the teacher must be the final version for submission.

It is the responsibility of teachers to ensure that all students understand the basic meaning and significance of concepts that relate to academic honesty, especially authenticity and intellectual property. Teachers must ensure that all student work for assessment is prepared according to the requirements and must explain clearly to students that the internally assessed work must be entirely their own.

All work submitted to the IB for moderation or assessment must be authenticated by a teacher and must not include any known instances of suspected or confirmed misconduct. Each student must confirm that the work is his or her authentic work and constitutes the final version of that work. Once a student has officially submitted the final version of the work it cannot be retracted. The requirement to confirm the authenticity of work applies to the work of all students, not just the sample work that will be submitted to the IB for the purpose of moderation.

Authenticity may be checked by discussion with the student on the content of the work, and scrutiny of one or more of the following.

- The student's initial proposal
- The first draft of the written work
- The references provided
- The style of writing compared with work known to be that of the student
- The analysis of the work by a web-based plagiarism detection service

TOK essay on a prescribed title

The TOK essay engages students in a formal, sustained piece of writing in response to one of the six titles that are prescribed by the IB for each examination session. These titles take the form of knowledge questions that are focused on the areas of knowledge.

The TOK essay is an external assessment component. Each student's essay is submitted to the IB to be marked by IB examiners. The TOK Essay must be written in standard 12 type size and be double spaced. It is not primarily a research paper, but it is expected that specific sources will be used, and these must be acknowledged.

Essay titles

The IB releases a set of six prescribed titles for each examination session. These titles are published on the programme resource centre (**TOK**>**Assessment**>**Session-specific material**) six months before the submission deadline.

It is not intended that students will spend six months working on their essays—teachers should select a window within that six-month period for students to work on their essays that fits with the other commitments in their school calendars. It is suggested that **10 hours** of teaching time should be dedicated to working on the TOK Essay.

The chosen title must be used exactly as given; it must not be altered in any way.

- If the title has been modified but it is still clear which prescribed title for the current session it refers to, the essay will be marked against that prescribed title. Any lack of relevance in the student's response to the prescribed title arising from this modification will be reflected in the score awarded.

- If it is clear that the title bears no resemblance to any title for the current session, the essay will be awarded a score of zero, in accordance with the TOK essay assessment instrument.

Word count

The maximum length of the essay is **1,600 words**. Extended footnotes or appendices are not appropriate for the TOK essay.

The word count includes:

- the main part of the essay
- any quotations.

The word count does not include:

- any acknowledgments
- the references (whether given in footnotes, endnotes or in-text) and bibliography
- any maps, charts, diagrams, annotated illustrations or tables.

If an essay exceeds the word limit, then examiners are instructed to stop reading after 1,600 words and to base their assessment on just the first 1,600 words. Students are required to indicate the number of words when the essay is uploaded during the submission process.

Guidance and authenticity

The TOK essay must be the student's own work. However, the teacher plays an important role in supporting the student during the planning and writing of their essay. Teachers are expected to explain the requirements of the task and ensure that students are familiar with the assessment instrument, provide clarifications in response to students' questions, monitor students' progress, and check the authenticity of the student work.

For the TOK essay, three formal recorded interactions between the student and teacher are required. These three interactions must be recorded on the TOK essay *Planning and Progress Form* (TK/*PPF*). This form is not referred to by examiners when determining the mark awarded for the essay. However, it is submitted to the IB as important evidence that steps have been taken to help ensure the authenticity of the student's work; it also plays an important role in terms of helping to ensure that all students receive an appropriate level of support when completing their essays. The procedure for uploading the TOK Essay and forms can be found in the Diploma Programme *Assessment procedures* resource on the programme resource centre.

Three required teacher–student interactions for the TOK essay		
1. Discuss the list of prescribed titles with the student.	2. Discuss the student's initial exploration of their selected title (for example, an essay plan).	3. Comment on one draft of the student's essay.
The student should discuss the prescribed titles with the teacher. The final choice of title remains with the student, who should develop their own thinking and ideas.	After choosing the title and developing their initial ideas in relation to it, the student must discuss their initial work/ explorations with the teacher by sharing them in written form. For example, this could take the form of a set of notes and ideas that could then be turned into a more formal essay plan following the discussion with the teacher.	After this, the student is permitted to present one full draft of the essay to the teacher. The teacher should provide oral or written advice on how the work could be improved. This advice may take the form of written comments of a global nature, but teachers are not permitted to mark or edit this draft. While the student may seek further advice from the teacher, for example, on the appropriateness of a particular example or on the clarity of a section of writing, no further written advice on drafts is

Three required teacher–student interactions for the TOK essay		
		permitted. The next version handed to the teacher must be the final version for submission.

It is the responsibility of teachers to ensure that all students understand the basic meaning and significance of concepts that relate to academic honesty, especially authenticity and intellectual property. Teachers must ensure that all student work for assessment is prepared according to the requirements and must explain clearly to students that the work must be entirely their own.

All work submitted to the IB for moderation or assessment must be authenticated by a teacher and must not include any known instances of suspected or confirmed misconduct. Each student must confirm that the work is his or her authentic work and constitutes the final version of that work. Once a student has officially submitted the final version of the work it cannot be retracted.

Examples of ways that authenticity may be checked are through discussions with the student about the content of their work, scrutiny of the style of writing compared with work known to be that of the student, scrutiny of the references cited, or the analysis of the work by a web-based plagiarism detection service.

TOK assessment instruments

Global impression marking

The TOK exhibition and the TOK essay are both marked using a global impression marking approach. This means that the assessment of both tasks is envisaged as a process of holistic or global judgment rather than an analytical process of totalling the assessment of separate criteria.

The assessment instruments present five described levels of performance. These levels are to be seen as global and holistic descriptors rather than as a checklist of necessary characteristics. When marking, the aim is to find the descriptor that conveys most accurately the level attained by the student. It is not necessary for every single aspect of a level descriptor to be met for a mark in that level to be awarded.

When using the TOK assessment instruments, it is to be understood that:

- the described levels are not a checklist; it is the overall impression that is most important
- only whole numbers should be recorded; partial marks are not acceptable
- the highest level of the instruments does not imply faultless performance, and examiners and teachers should not hesitate to use the extremes if they are appropriate descriptions of the work being assessed
- teachers and examiners should not think in terms of grades, but should concentrate on identifying the appropriate level descriptor and mark
- the IB recommends that the assessment instruments be made available to students.

There are two marks available within each level of the assessment instruments. Teachers and examiners should award the upper mark if the student's work demonstrates the qualities described in that level to a great extent—in this case, the work may be close to achieving marks in the level above. They should award the lower mark if the student's work demonstrates the qualities described to a lesser extent—in this case, the work may be close to achieving marks in the level below.

If a piece of work seems to fall between two descriptors, teachers, moderators and examiners should re-read the driving question that underpins the global impression judgment and then read the two levels again. The level that more appropriately describes the overall holistic impression of the student's work should be chosen. If the decision is taken to place the response in the higher of the two levels being considered, then the bottom of the two marks in that band should be awarded. If the decision is taken to place the response in the lower of the two bands being considered, then the upper mark in the band should be awarded.

TOK exhibition assessment instrument

The TOK exhibition is an opportunity for students to explore links between knowledge questions and the world around us. The assessment of this task is underpinned by the following single driving question.

Does the exhibition successfully show how TOK manifests in the world around us?

The assessment instrument provided describes five levels of performance in response to this driving question. These levels are to be seen as holistic descriptors rather than as a checklist of characteristics.

Please note: If a student only provides images and accompanying commentaries for two objects, teachers should award a maximum of 6 marks. If a student only provides an image and accompanying commentary for one object, teachers should award a maximum of 3 marks.

Does the exhibition successfully show how TOK manifests in the world around us?					
Excellent **9-10**	**Good** **7-8**	**Satisfactory** **5-6**	**Basic** **3-4**	**Rudimentary** **1-2**	**0**
The exhibition clearly identifies three objects and their specific real-world contexts. Links between each of the three objects and the selected IA prompt are clearly made and well-explained. There is a strong justification of the particular contribution that each individual object makes to the exhibition. All, or nearly all, of the points are well-supported by appropriate evidence and explicit references to the selected IA prompt.	The exhibition identifies three objects and their real-world contexts. Links between each of the three objects and the selected IA prompt are explained, although this explanation may lack precision and clarity in parts. There is a justification of the contribution that each individual object makes to the exhibition. Many of the points are supported by appropriate evidence and references to the selected IA prompt.	The exhibition identifies three objects, although the real-world contexts of these objects may be vaguely or imprecisely stated. There is some explanation of the links between the three objects and the selected IA prompt. There is some justification for the inclusion of each object in the exhibition. Some of the points are supported by evidence and references to the selected IA prompt.	The exhibition identifies three objects, although the real-world contexts of the objects may be implied rather than explicitly stated. Basic links between the objects and the selected IA prompt are made, but the explanation of these links is unconvincing and/or unfocused. There is a superficial justification for the inclusion of each object in the exhibition. Reasons for the inclusion of the objects are offered, but these are not supported by appropriate evidence and/or lack relevance to the selected IA prompt. There may be significant repetition across the justifications of the different objects.	The exhibition presents three objects, but the real-world contexts of these objects are not stated, or the images presented may be highly generic images of types of object rather than of specific real-world objects. Links between the objects and the selected IA prompt are made, but these are minimal, tenuous, or it is not clear what the student is trying to convey. There is very little justification offered for the inclusion of each object in the exhibition. The commentary on the objects is highly descriptive or consists only of unsupported assertions.	The exhibition does not reach the standard described by the other levels or does not use one of the IA prompts provided.
Possible characteristics					
Convincing Lucid Precise	Focused Relevant Coherent	Adequate Competent Acceptable	Simplistic Limited Underdeveloped	Ineffective Descriptive Incoherent	

TOK essay assessment instrument

The TOK essay is an opportunity for students to engage in a formal, sustained piece of writing in response to a prescribed title focused on the areas of knowledge. The assessment of this task is underpinned by the following single driving question.

Does the student provide a clear, coherent and critical exploration of the essay title?

The assessment instrument provided describes five levels of performance in response to this driving question. These levels are to be seen as holistic descriptors rather than as a checklist of characteristics.

Does the student provide a clear, coherent and critical exploration of the essay title?					
Excellent **9-10**	**Good** **7-8**	**Satisfactory** **5-6**	**Basic** **3-4**	**Rudimentary** **1-2**	**0**
The discussion has a sustained focus on the title and is linked effectively to areas of knowledge. Arguments are clear, coherent and effectively supported by specific examples. The implications of arguments are considered. There is clear awareness and evaluation of different points of view.	The discussion is focused on the title and is linked effectively to areas of knowledge. Arguments are clear, coherent and supported by examples. There is awareness and some evaluation of different points of view.	The discussion is focused on the title and is developed with some links to areas of knowledge. Arguments are offered and are supported by examples. There is some awareness of different points of view.	The discussion is connected to the title and makes superficial or limited links to areas of knowledge. The discussion is largely descriptive. Limited arguments are offered but they are unclear and are not supported by effective examples.	The discussion is weakly connected to the title. While there may be links to the areas of knowledge, any relevant points are descriptive or consist only of unsupported assertions.	The discussion does not reach the standard described by the other levels or is not a response to one of the prescribed titles for the correct examination session.
Possible characteristics					
Insightful Convincing Accomplished Lucid	Pertinent Relevant Analytical Organized	Acceptable Mainstream Adequate Competent	Underdeveloped Basic Superficial Limited	Ineffective Descriptive Incoherent Formless	

Designing a TOK course

The TOK course offers teachers a great deal of flexibility and room for creativity in the design and delivery of their course. There are multiple possible entry points and ways to structure the course, and teachers have the opportunity to provide a diverse range of examples that best meet the needs and interests of their students.

This section contains examples of possible pathways through the course. It should be noted that these are suggestions only, intended simply to indicate some of the wide variety of possible pathways. More detailed guidance and examples of different course structures can be found in the *Theory of knowledge teacher support material*.

Example A: TOK course with the core theme as "bookends" at each end of the course			
START Knowledge and the knower: Initial explorations	Knowledge and technology	Areas of knowledge	Knowledge and indigenous societies
Areas of knowledge	TOK exhibition	Areas of knowledge	Areas of knowledge
Areas of knowledge	Areas of knowledge	TOK essay writing	Knowledge and the knower: Final reflections **END**

Example B: A TOK course starting with familiar examples drawn from students' other DP classes			
Part 1	Areas of knowledge and Knowledge and language	Areas of knowledge and Knowledge and language	Knowledge and politics
Part 2	Knowledge and the Knower	TOK exhibition	Areas of knowledge: A closer look at the arts
Part 3	Areas of knowledge: A closer look at mathematics	Areas of knowledge: A closer look at the human sciences	Areas of knowledge: A closer look at the natural sciences
Part 4	Areas of knowledge	TOK essay writing	Reflections

Example C: A TOK course organized around/framed through an exploration of concepts, with discussion of the themes and areas of knowledge embedded within each unit			
START Certainty and ambiguity	Perspectives and paradigms	Truth and objectivity	Tolerance and outrage
Culture and identity	Values and responsibilities	TOK exhibition	Justification and conviction
Evidence and proof	Interpretation and explanation	Power and authority	TOK essay writing **END**

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