




The 12 TOK Concepts:

A Method for Structuring the ToK Course

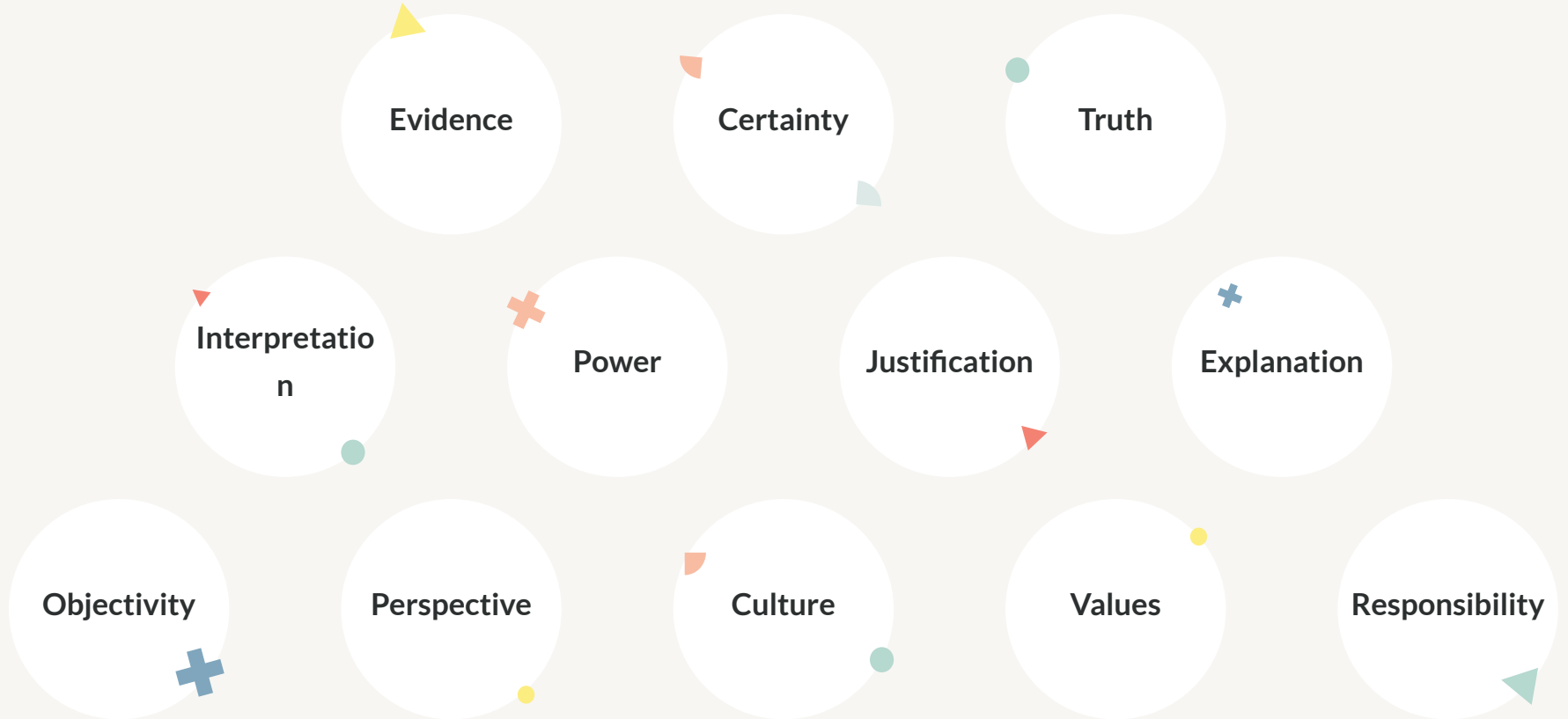


One thing we know...

“The following 12 concepts have *particular prominence within, and thread throughout*, the ToK course. 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.” (Guide, p.6)



The 12 ToK Concepts



So...

...Instead of approaching the study of each Optional Theme and Area of Knowledge *separately*, in order to recognize the “particular prominence” of the 12 central ToK concepts, one possibility is to organize *units of work based on each of the concepts*.


In that way we can ‘compare and contrast’ the understanding of those concepts within and between the various options and areas of knowledge, and it will provide an anchor for the core theme, ‘Knowledge and The Knower.’



The second thing we know is that...

« 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?”. » (Guide, p.5)

The ToK Guide provides example knowledge questions for each option and area of knowledge. In what follows, I have used these, but you are free to write your own.



- There is *no obligation* to structure the course in a certain way. This means that...
- There is *no obligation* to have (say) a unit of work for each option chosen, nor a unit of work for each area of knowledge chosen, another unit of work for the core theme (etc.) (although, as we shall see, we can (continue to) do it that way and *still* place emphasis on the 12 concepts...)
- As teachers, we are *free to structure and deliver our ToK course however we wish*.

The third thing we know is that...

« While these (knowledge) questions may initially seem slightly intimidating, they become much more accessible when considered with reference to *specific examples* within the TOK course. » (Guide, p.5)

Arguably the best way to do this is by providing examples taken from the students' *other Diploma classes, their CAS engagements and their extended essay work*, given that one of the main aims of the course is

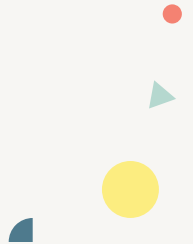
«to encourage students to make connections between academic disciplines by exploring underlying concepts and by identifying similarities and differences in the methods of inquiry used in different areas of knowledge» (Guide, p.8)

Knowledge Questions and the 12 ToK Concepts

	EVIDENCE	CERTAINTY	TRUTH	INTERPRETATION	POWER	JUSTIFICATION	EXPLANATION	OBJECTIVITY	PERSPECTIVE	CULTURE	VALUES	RESPONSIBILITY
Knowledge and Technology	artificial intelligence restricted to accessing information or not also low machines to acquire knowledge?	To what extent is the internet changing what it means to know something?	Does technology just allow us to arrange existing knowledge in different ways, or is this arrangement itself knowledge in some sense?	To what extent do technologies, such as the microscope and telescope, merely extensions to the human senses, or do they introduce radically new ways of seeing the world?	technology had an impact on how we browse, search and filter data and information? Can algorithms be biased?	help people to process data and information to gain knowledge?	developments had the greatest impact on what we know, how we know, or how we store knowledge?	that we use shape the knowledge that we produce?	reinforce our existing perspective rather than boosting engagement with diverse perspectives?	How might technology exacerbate or mitigate unequal access, and divides in our access, to knowledge?	What impact has the fact that English is the primary language of the internet had on knowledge sharing?	Should we hold people responsible for the applications of technologies they develop/create?
Knowledge and Language	it the case that if we cannot express something, we don't know it?	Can all knowledge be expressed in words or symbols?	How can we know if language is intended to deceive or manipulate us?	Do ethical statements simply convey our feelings/emotions rather than making claims?	In what ways can language be used to influence, persuade or manipulate people's emotions?	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?	What role does language play in allowing knowledge to be shared with future generations?	To what extent do the classification systems we use in the pursuit of knowledge affect the conclusions that we reach?	In what ways do values affect our representations of the world, for example, in language, maps or visual images?	If a language dies, does knowledge die with it?	How do our values and assumptions influence the language in which we express our ideas?	Do professional interpreters and translators have any special ethical obligations?
Knowledge and Politics	what ways is actual evidence memes used, used, dismissed and ignored in politics?	What kinds of knowledge inform our political opinions?	Why do facts sometimes not change our minds?	Given access to the same facts, how is it possible that there can be disagreement between experts on a political issue?	In what ways may statistical evidence be used and misused to justify political actions?	To what extent can polls provide reliable knowledge and accurate predictions?	To what extent are our political views shaped by society, family backgrounds, education or social class?	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?	To what extent do museums package past knowledge to serve the needs of contemporary political systems and authorities?	What role do political authorities and institutions play in knowledge-creation and distribution?	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?
Knowledge and Religion	What role do authority and testimony play in the pursuit of knowledge?	Is certainty any more or less attainable in religion than it is in the arts or human sciences?	If knowledge is a map, what is the territory that religion represents?	Is the point of knowledge to produce meaning and purpose in our lives?	What role do religious leaders and authority figures play in influencing ethical debates?	Does religion provide a way to systematize concepts of right and wrong?	Are those outside a specific religious tradition really able to understand its key ideas?	Are religious beliefs rational?	How has our understanding and perception of religious knowledge changed over time?	Can there be religious knowledge that is independent of the culture that produces it?	What difficulties are presented by using human language to discuss religious claims?	If religion is intimately connected with ethics, should we expect those with religious knowledge to act more ethically than those without it?
Knowledge and Indigenous	Does what is seen to constitute "good evidence" vary	How reliable are oral traditions in preserving knowledge in	Does a neutral position exist from which	To what extent does the fact that most early literature on indigenous societies was written from a non-	Does the term "indigenous" knowledge" necessarily	As an "outsider", can we know and speak about the knowledge held by a	Does the emphasis on holistic knowledge found in some indigenous societies	To what extent are we aware of the impact of our culture(s) on what	Can the practices of one individual or culture be judged with any validity by	Does our culture determine what we	Is there a difference between moral values and	Is there any knowledge that a person or a society has a responsibility to acquire,



	EVIDENCE	CERTA
Knowledge and Technology	Is artificial intelligence restricted to processing information or can it also allow machines to acquire knowledge?	To what the interr changing means to somethin



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Knowledge and Technology	Is artificial intelligence restricted to processing information or can it also allow machines to acquire knowledge?	To what extent is the internet changing what it means to know something?	Does technology just allow us to arrange existing knowledge in different ways, or is this arrangement itself knowledge in some sense?	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?	How has technology had an impact on how we browse, search and filter data and information? Can algorithms be biased?
Knowledge and Language	Is it the case that if we cannot express something, we don't know it?	Can all knowledge be expressed in words or symbols?	How can we know if language is intended to deceive or manipulate us?	Do ethical statements simply convey our feelings/emotions rather than making claims?	In what ways can language be used to influence, persuade or manipulate people's emotions?
Knowledge and Politics	In what ways is factual evidence sometimes used, abused, dismissed and ignored in	What kinds of knowledge inform our political opinions?	Why do facts sometimes not change our minds?	Given access to the same facts, how is it possible that there can be disagreement between experts on a political issue?	In what ways may statistical evidence be used and misused?

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Knowledge and Politics	In what ways is factual evidence sometimes used, abused, dismissed and ignored in politics?	What kinds of knowledge inform our political opinions?	Why do facts sometimes not change our minds?	Given access to the same facts, how is it possible that there can be disagreement between experts on a political issue?	In what ways may statistical evidence be used and misused to justify political actions?
Knowledge and Religion	What role do authority and testimony play in the pursuit of knowledge?	Is certainty any more or less attainable in religion than it is in other domains?	If knowledge is a map, what is the territory that it represents?	Is the point of knowledge to produce meaning and purpose in our lives?	What role do religious leaders and authorities play in the pursuit of knowledge?

Exemplifying the Knowledge Questions

- Ideally, in order to embed the skills and knowledge that it is the aim of the ToK course to promote and encourage, and to prepare students for the two assessments, we might structure our lessons thus:

- Overarching concept;
- Knowledge question (this orientates the discussion, as well as providing for Journalling or homework opportunities);
- Stimulus for discussion.

- For example:

- Concept: Evidence
- Knowledge question: Is artificial intelligence restricted to processing information or can it also allow machines to acquire knowledge?
- Stimulus: ITGS Case Study: A Doll Called Alicia

Information technology in a global society

Case study: A Doll Called Alicia

For use in May and November 2018

Instructions to candidates

- Case study booklet required for higher level paper 3 information technology in a global society examinations.

40 **The first meeting**

At the team's first meeting, Mark introduced the key AI concepts. There was a long discussion, as everybody seemed to have a slightly different understanding of these key concepts, but eventually the team agreed on the working definitions below. These working definitions will be used in this case study.

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- **Machine learning** uses a supervised environment to teach the computer and requires human intervention. For example, for image recognition the computer would receive feedback from humans to confirm that the image was identified correctly.
 - **Deep learning** is an advanced form of artificial intelligence, where computers are able to automatically collect feedback from the results of their processing and improve their performance by using this to refine the algorithms they use. Deep learning occurs in an
- 50
- **Neural networks** are used by deep learning. They aim to mimic the way that the human brain processes raw data into meaningful information so that it can learn more effectively. This is particularly useful when incomplete data is available and the software needs to use
- 55
- **Deep learning techniques** to provide **pattern recognition**.

Perhaps there are students in your school that study either Computer Science or Information Technology in a Global Society (ITGS), in which case either the students themselves, or their teacher, could provide you with a suitable stimulus,, material which is actually used for teaching and learning, rather than theoretical examples which look as though they ‘fit the bill.’

Alternatively, you can search for your own. You will find suitable examples in Kognity textbooks, as well as in the so-called ‘real world.’

As a teacher of Philosophy as well as ToK, I would use a stimulus from my Philosophy core theme class, <https://www.moralmachine.net/>

It is described thus: «“Moral Machine is an online platform that generates moral dilemmas and collects information on the decisions that people make between two destructive outcomes..the information collected would be used for further research regarding the decisions that machine intelligence must make in the future. For example, as artificial intelligence plays an increasingly significant role in autonomous driving technology, research projects like Moral Machine help to find solutions for challenging life-and-death decisions that will face self-driving vehicles.»

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	EVIDENCE	CERTAINTY	TRUTH
History	What methods do historians use to gain knowledge?	On what criteria can a historian evaluate the reliability of their sources?	Is truth the goal of a historical inquiry?
The Human Sciences	How does the use of numbers, statistics, graphs and other quantitative	What forms of protection against research error and bias are available to human	Is it possible to discover laws of human behavior



Evaluating Sources

- **Concept:** Evidence
- **Knowledge question:** What methods do historians use to gain knowledge ?
- **Stimulus:** OPVL chart for preparing for History Paper 1, primary source analysis

O	P	V	L
Origin	Purpose	Value	Limitation
<ul style="list-style-type: none">✓ Who created this source?✓ When was it written or published?✓ Where was the source produced?✓ What type of document is it?	<ul style="list-style-type: none">✓ Why was this source written?✓ Who is the audience?✓ What ideas or feelings was the author trying to express or evoke?✓ Is the point of view impartial?	<ul style="list-style-type: none">✓ How does this document help you understand the topic?✓ How useful is it to my topic?✓ Are you able to verify the information in another source?	<ul style="list-style-type: none">✓ Why should you be careful trusting or using this source?✓ Are there biases (personal, political, religious, etc.)?✓ What does the text omit that is important to you research?

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ption erlie	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?	Do researchers have different ethical responsibilities when they are working with human subjects compared to when they are working with animals?
ods n the n es?		<i>Ethical considerations for internal assessments in psychology (video)</i> https://resources.ibo.org/dp/subject-group/Psychology/videos/dp-psych-ethical-considerations/ https://resources.ibo.org/data/d_4_gen4d_anex_1504_1_e.pdf
does cial ct of ific affect	Do we tend to exaggerate the objectivity of scientific facts and the subjectivity of moral values?	How might developments in scientific knowledge trigger political controversies or controversies in other areas of knowledge?
ods		

A stimulus/example for discussing 'Responsibility' in the Human Sciences



A stimulus/example for discussing 'Perspective' in Knowledge & Politics

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<p>, family</p>	<p>When exposed to numerous competing ideologies and explanations, what makes an individual settle on a particular framework? Is there ever a <u>neutral</u> position from which to write about politics or from which to judge political opinions?</p>	<p>To what extent do museums package past knowledge to serve the needs of contemporary political systems and authorities?</p>	<p>What role do political authorities and institutions play in knowledge-creation and distribution?</p>	<p>Can knowledge be embedded in the process of creating it?</p>
		<p>https://www.latimes.com/world-nation/story/2019-10-31/belgium-confronts-colonial-past</p>		
<p>e to understand its</p>	<p>Are religious beliefs rational?</p>	<p>How has our understanding and perception of religious knowledge <u>changed</u> over time?</p>	<p>Can there be religious knowledge that is independent of culture?</p>	<p>What difficulties are there in translating human language to other languages?</p>

A stimulus/example for discussing 'Explanation' in Knowledge & Language

<p>argoramin-ander-jire-jor-suspected-bias-idUSKCN24M29L</p>			
<p>In what ways can language be used to influence, persuade or manipulate people's emotions?</p>	<p>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?</p>	<p>What role does language play in allowing knowledge to be shared with future generations?</p>	<p>To what extent do the classification systems we use in the pursuit of knowledge affect the conclusions that we reach?</p>
		<p>https://www.youtube.com/watch?v=eDMzWmUEftA&fbclid=IwAR1h6-p2D1PV9jo0Bp71nz9hFf6ReOrEh9VydMxEoxLsv94HtAiCUYYvOPo&ah_channel=TantaoNews and https://www.economist.com/china/2020/09/05/chinas-efforts-to-boost-mandarin-use-in-schools-angers-ethnic-mongols?fbclid=IwAR1h6-p2D1PV9jo0Bp71nz9hFf6ReOrEh9VydMxEoxLsv94HtAiCUYYvOPo</p>	
<p>In what ways may statistical evidence be used and misused to justify political actions?</p>	<p>To what extent can poll provide reliable knowledge and</p>	<p>To what extent are our political views shaped by society, family backgrounds, education or social class?</p>	<p>When exposed to numerous competing ideologies and</p>

Structuring the course: Horizontal (by concept) or Vertical (by option and area of knowledge)?

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