TOK: Knowledge Questions

In TOK there are two types of knowledge claims:

- Claims that are made within particular areas of knowledge or by individual knowers about the world. It is the job of TOK to examine the basis for these first-order claims.
- Claims that are made about knowledge. These are the second-order claims made in TOK that are justified using the tools of TOK, which usually involve an examination of the nature of knowledge.

Knowledge Questions are questions meant to examine and engage with Knowledge Claims associated with real life situations.

For the Prescribed Title and the Presentation, you must construct and engage with Knowledge Questions. In formulating your own Knowledge Question, you might consider phrasing the question in terms of Theory of Knowledge concepts and vocabulary (words in **bold**).

Beginning the question, “How can we **know**?”, or putting the word “**knowledge**” in the question. For example, “Is our knowledge in maths actually more certain than our knowledge in science?” More imaginative ways might include, “How far is it **justified**…” or “Is the **evidence** for x compelling… and on what reasonable grounds? Or, “Which **interpretation** is more compelling….x or y”, or, “Is the **assumption** that x well founded?”

Examples of TOK vocabulary include: **knowledge, justification, interpretation, judgment, evidence, theory, explanation, coherence, assumptions, implications, reason, emotion, sense perception, language and paradigm.**

An unsuitable choice for a presentation Knowledge Questions would be, “Should there be freedom of speech?” This is too general and not focused enough on TOK. You need to focus on knowledge. A better Knowledge Question might be more precise and couched in TOK vocab. For example, “What part might reason, emotion and language play in our interpretation of historical and contemporary events?”

Example: Future population growth in Africa

- Not a knowledge question: “How can we predict future population growth in Africa?” This is not a knowledge question because it is a technical question within the discipline of population studies.
- Good knowledge question: “How can a mathematical model give us knowledge even if it does not yield accurate predictions?” This is now sufficiently general and explores the purpose and nature of mathematical modeling.

Example: The placebo effect and its impact on the medical profession

- Not a knowledge question: “How does the placebo effect work?” An answer to this might involve a technical explanation in psychology rather than engaging knowledge creation.
- A good knowledge question: “How could we establish that X is an ‘active ingredient’ in causing Y?” This question is actually a rather general one about how we can know about causal links. It is a classic knowledge question.
Consider these alternative questions:

1. Can we trust the senses?
2. When can we trust the senses?
3. Should we trust the senses?
4. To what extent should we trust the senses?

All four questions are forms of Knowledge Questions, but they are varied in their impact and the quality of enquiry they generate.

Knowledge Questions of the first type are fairly ‘weak’ or ‘low level’. Notice how they start with the verb ‘can’. Questions which start with variations of this verb (‘is’, ‘do’, ‘will’, ‘have’ and so on) are ‘closed’ questions, to which you can usually answer ‘yes’ or ‘no’ without much further informed discussion.

Knowledge Questions of the second type are sound, but may end up in a more factual discussion of the topic instead of one that questions how knowledge is built. Notice how it starts with one of the 5 Ws, ‘when’.

Knowledge Questions of the third type are slightly stronger and more ‘open’ in their impact: the verb ‘should’ already introduces an ethical element to our thinking and encourages us to weigh up the strengths and weaknesses of our topic. Alternative starting expressions could be ‘might’, ‘could’, or ‘would’ either alone or in conjunction with one of the 5Ws.

Knowledge Questions of the fourth type are perhaps the strongest. Look at the command expression ‘To what extent…’ which challenges the reader us not only to explore the scale and depth of knowledge, but also to evaluate the methods of its construction. Other command expressions are ‘In what ways…’ (which allows the reader to compare and contrast how knowledge is built in different AOKs) and ‘How far…’ (which allows the reader to enquire into issues related to the limits of knowledge and its implications).

Examples of Knowledge Questions by AOK, WOK, and General

**History**
Are historical claims restricted by the language they use?
Is all history biased?
How important is the role of statistics in history?
Does history show we have made ethical progress?
To what extent does emotion play a role in historical interpretation?
Is historical objectively possible?
To what extent does historical knowledge change over time?
How is knowledge about the past different from other kinds of knowledge?
How does the language used to describe the past change how history is understood?

**Natural science**
(Key words: scientific method, Popper's principle of falsification, scientific revolution and paradigm shift)
Is language necessary for the construction of knowledge in the natural sciences?
Do scientists have ethical responsibilities?
How certain is scientific knowledge?
If all scientific experiments have 'uncertainty' how can we know 'truth' in science?
How certain is the theory of evolution?
How is knowledge in literature similar to knowledge in natural science?
To what extent does knowledge in science change?
Is previous knowledge more important than creativity in science?
How do we know when scientific conclusions are justified?
Does science allow for intuition?

**Human science**
(Key words: determinism, free will, Hawthorne effect, nature vs. nurture)
Is it true to say that the human sciences are less certain than the natural sciences?
What determines whether a theory in the human sciences is convincing?
How reliable are statistics in economics and business decisions?
To what extent should business decisions be based on ethical considerations?
Which is more important in advertising: reason, emotion, language or perception?
How true are economic models?
The law of supply and demand relies on the assumption of 'ceteris paribus'. To what extent does this exist in real life?
Can one model ever represent an entire economy accurately?
How reliable are geographic models?
What are the limits of statistics in the human sciences?

**Maths**
(Key words: axiomatic system, mathematical logic, a priori reasonings, rules of inference [applied to axioms], proof)
Does maths need language to be understood?
Is maths a language?
How far is intuition used in maths?
Is maths the most certain area of knowledge?
Is emotion irrelevant to the construction of Mathematical knowledge?
Can mathematicians trust their results?
To what extent does mathematics describe the real world?
How much statistical data should be used to determine the reliability of a result?
Does belief play a role in mathematics?
Are all mathematical statements either true or false?

**Arts**
Do all art forms (literature, painting, music, sculpture, architecture, dance etc) use a language?
How important is it that the artist intention be perceived or understood by the audience?
Should art be beautiful?
Must true art be recognized by experts?
Can art give us knowledge?
To what extent is creativity linked to reason?
Can art help us to understand individuals and societies?
Should the arts have an ethical function?
If an author justifies their work, can we trust the knowledge?
How true is it to say, 'what constitutes art is relative to the individual time and place'?
Does perception affect creativity?
How does prior learning or experience influence our interpretation of art?

**Language**
(Key words: Sapir-Whorf hypothesis)
Does all knowledge depend on language?
Do we need language in order to think?
Does language shape our thoughts?
Does religious experience come from a place beyond language?
Should offensive language be censored?
Can we really know a culture through its languages?

**Ethics**
(Key words: Moral relativism, religious absolutism, ethics, utilitarianism, self-interest theory, duty, ethics, consequentialism)
How important is it to be consistent in our moral reasoning?
Can ethical truths be as certain as mathematical truths?
Can our values change our perception of things?
To what extent does religion shape moral belief?
Is it true to say, ethical beliefs are more based on emotion than reason?
Can ethical knowledge be constructed without sensory perception?
Is moral belief constant?
Does ethical knowledge differ from other kinds of knowledge?
Does possession of knowledge carry an ethical responsibility?

**Emotion**
(Key words: conscience, empathy, knowledge by acquaintance, introspection, intuition, faith)
How true is it to say reason and sense perception are never free of emotion?
To what extent does the emotion of empathy build moral codes?
Does our language shape our emotions?
When, if ever, can emotion be rational?
To what extent does emotion hinder knowledge construction?
Does everyone experience the same satisfaction?
Is it possible to experience an emotion that cannot be expressed in words?
Is there any knowledge that can be attained solely through emotion?
Are faith and religion purely emotional, or is it possible to provide rational justifications for them?

**Perception**
(Key words: empiricism/empirical, brain filters)
Do humans have more than 5 senses?
To what extent is perception more trustworthy than reason?
What role does eyewitness testimony play in history?
What role do our senses play in the construction of reality?
What is the role of culture and language in the perceptual process?
What role does perception play in different areas of knowledge?

**Reason**
(Key words: inductive logic, deductive logic, rationalism)
Is reason at the core of knowledge construction in different areas of knowledge?
Is reason objective and universal?
Can reason and imagination work together?
Does all knowledge require some kind of rational basis?
How can beliefs affect our ability to reason?

**General**
(Key words: truth (Justified True Belief), Correspondence Theory, Pragmatic Theory, Coherence Theory, Relative truth and absolute truth, justification, evidence, certainty, all AOKs, all WOKs, media, perspective, technology, knowledge by authority, values, critical thinking, knower, belief, certainty, culture, society, experience, intuition, explanation, interpretation's role in constructing knowledge, knowledge questions, bias, knowledge claim, assumption, objective, subjective)
To what extent is faith a way of knowing?
How reliable is intuition as a way of knowing in different AOKs?
Can imagination be a WOK?
How far can belief be considered knowledge?
Does truth transcend culture?
Does some degree of unjustified belief exist in each area of knowledge?
To what extent is certainty attainable in different areas of knowledge?
What constitutes good evidence in different areas of knowledge?
What characteristics must an explanation have to be considered sufficient within the different areas of knowledge and ways of knowing?
What are the dangers of equating personal experience and knowledge?
How is learning from CAS different from other areas of knowledge encountered in IB?
Are some ways of knowing less open to interpretation than others?
Do new technologies affect the beliefs of a society?
What role does personal experience play in the formation of knowledge claims?