



TOK Nov 2025 Essay Guide

Contents

General Advice for TOK:.....	3
Overall Structure:.....	3
Introduction:.....	3
Body Paragraphs:.....	3
Conclusion:	5
Final, General Considerations:	6
Title 1: For historians and artists, do conventions limit or expand their ability to produce knowledge? Discuss with reference to history and the arts.	7
Title 2: What is the relationship between knowing and understanding? Discuss with reference to two areas of knowledge.....	10
Title 3: Should knowledge in an area of knowledge be pursued for its own sake rather than its potential application? Discuss with reference to mathematics and one other area of knowledge. ...	13
Title 4: To what extent do you agree that however the methods of an area of knowledge change, the scope remains the same. Answer with reference to two areas of knowledge.....	16
Title 5: In the pursuit of knowledge, is it possible or even desirable to set aside temporarily what we already know? Discuss with reference to the natural sciences and one other area of knowledge.....	19
Title 6: Is empathy an attribute that is equally important for a historian and a human scientist? Discuss with reference to history and the human sciences.	22
Conclusion:	25

Mug
NoMore

General Advice for TOK:

The key to doing well in TOK is to express oneself clearly. You don't need world shaking revelations, or be as profound as Kant or Hume. In fact, we want to be their exact opposite. If an essay is profound yet unreadable, your examiner is simply not motivated enough to scrutinise every line of your essay and give you the score you deserve. If an essay is clear, it will be refreshing and evaluated more favourably. We want to make well-illustrated points that are crystal clear and will get you a good score.

Overall Structure:

The TOK essay has a word limit of 1600 words. I personally find that 200 words each for the Introduction and Conclusion, and about 300 words per body paragraph, is ideal.

The central importance here is one of **balance** – there should be **four body paragraphs** and all the body paragraphs should be **about the same length**. To achieve level 5 of the marking rubrics, you need an “investigation of different perspectives” (as opposed to a mere “acknowledgement” for level 4), and you also need counterclaims to be “extensively explored” (as opposed to merely “identified and explored” for level 4).¹ I reiterate. All the body paragraphs should be **about the same length** to achieve this criterion to reach level 5.

For those aiming for full marks, the order in which your body paragraphs come in is very important. They should tell a story. The easiest way to test for this is if you rearrange your body paragraphs; your essay should make less sense, or stop making sense altogether. One way you can consider arranging your paragraphs is in the form of a Hegelian dialectical².

Introduction:

There are only two mandatory things to do here. First, define any important terms in a helpful manner. This does not mean use a dictionary; rather, find a relevant definition, usually from some philosopher's work. Second, is to have your thesis statement, which should outline all the arguments that you will subsequently make in your body paragraphs.

Hooks are optional extras that you only add after everything else is settled.

Body Paragraphs:

There are many ways to write body paragraphs. Many of us do not have the experience necessary to use those advanced techniques. Let us stick to the basics of PEEL. It may seem rudimentary, but it is the simplest way of achieving our goals of a readable essay.

P – Point. At the start of your paragraph, state exactly what the paragraph is arguing. This should be a **direct answer** to the essay title you are answering. P provides clear framing for your body paragraph, and is indispensable.

E – Elaboration. This should be a theoretical argument supporting your P. Think of P as a conclusion, this first E as your reasoning, from a theoretical basis, on how you reached P from axioms. You can think of it as a string of syllogisms, daisy-chaining from first principles to conclusion.

¹<http://mrhoyestokwebsite.com/Essays/Compulsory%20Documentation/TOK%20Essay%20Mark%20Scheme.pdf>. Your teacher should have given you one as well. Please read it.

² Which implies a synthesis in the conclusion.

MugNoMore

E – Example.³ This means find a real-world example to back up your point **that mirrors exactly the elaboration you have just argued.**

L – Link. Simply rephrase your point, and have it as your final sentence of your paragraph. It is surprisingly easy for a lay reader to lose track of your argument as the paragraph progresses, so having a Link helps to once more contextualise what you have just argued within the essay title.

In the spirit of PEEL, I provide an exemplar of a single body paragraph below. That year, I chose to write an elaborate, convoluted (and I like to think profound) essay while my dear friend (fellow MugNoMore tutor) wrote a simple, yet clear one. He, rather gallingly, did just as well as I.

Is following experts unquestioningly as dangerous as ignoring them completely? Discuss with reference to the human sciences and one other area of knowledge.

The AOK of human science comprises many disciplines involved in the study of human behaviour, two of which are economics and psychology. Economics possesses greater degrees of complexity and variability, making economists' findings less absolute than those in psychology and more dangerous to follow.

In economics, blindly following economists' findings is more dangerous than ignoring them completely when there is no comparable historical precedent for economists to rely on when making economic predictions. According to economist Ezra Solomon, "the only function of economic forecasting is to make astrology respectable", underscoring the unreliability of economic predictions[1]. This stems from the ever-changing nature of economics, which is subject to fluctuations driven by technological advancements, changes in human behaviour and geopolitical shifts. Most economic events are unique, with little comparable historical precedent for economists to draw upon to make accurate predictions[2]. Therefore, economists rely on subjective interpretation when formulating economic predictions, inadvertently introducing bias that impedes the accuracy of the predictions. Hence, economists' predictions not based on comparable historical precedent are likely inaccurate and more epistemically dangerous to follow blindly.

One example would be the Dot-Com bubble in the 1990s. During this period of rapid development in the Internet industry, investors heavily invested in the stocks of these companies, leading to soaring stock prices. However, economists struggled to predict the Dot-Com bubble given the novelty of the internet, which had no historical precedent. This made it challenging for economists to assess the true value of internet assets, causing them to rely on their interpretations to determine whether stocks were overvalued or undervalued. Academic Economist Kevin Hassett authored a book titled *Dow 36000*, which postulated that the stocks were undervalued and encouraged people to invest in the stocks to capitalise on their growth, advice that many blindly followed[3]. However, Hassett's predictions were wrong as Internet companies were overvalued, with individuals who bought the stocks suffering significant financial loss, estimated at \$5 trillion[4]. Therefore, following economists blindly is epistemically and financially more dangerous than not.

There are two final considerations to make when writing a body paragraph. The first is references. Note that this paragraph has 4, which I consider as about enough. It makes you look professional and makes the paragraph look well-researched.

The second is that the marking rubrics call for "implications [to be] drawn" to achieve a Level 5. This is the only level to mention implications.⁴ In other words, be profound. Make some really cool meta-

³ I was taught to put Example first, then Elaboration. I prefer this way, but that is a matter of personal taste, to go from the general to the specific. Some prefer to generalise from the specific to the general, and that is perfectly acceptable as well.

commentary. Or something. I have no notes on how to write a profound body paragraph. However, we can at least attempt to be profound in our conclusion, which we will now discuss.

Conclusion:

A conclusion can be a simple restatement of points already made. Mirroring your Introduction, the conclusion should be your essay in a nutshell. However, if you want to be “profound”, you could have a synthesis, attempting to reconcile the various arguments and counterarguments you have made with a common conclusion. The easiest way to do this is to have it be one of the 12 TOK concepts (my favourite is culture, or zeitgeist)⁵. I again attach an example (from a different essay title) for your perusal.⁶

If “the mathematician’s patterns, like the painter’s and the poet’s, must be beautiful” (G.H. Hardy), how might this impact the production of knowledge? Discuss with reference to mathematics and the arts.

Since the aims of the two areas of knowledge are strikingly similar, to elucidate hidden truths, beauty’s impact on the production of knowledge is similar too. If only Aristotle’s definition of beauty were applied, deeper insights into any field of Mathematics or the Arts might be found. This was the case for Ngo’s work on the fundamental lemma. If cultures have additional conceptions about beauty, this might stimulate the discovery of deeper insights within the cultural conceptions, by stimulating exploration, as is the case for the Renaissance’s influence on Da Vinci. However, cultural conceptions of beauty may also restrict the production of knowledge. For the ancient Greeks, this prevented them from doubling the cube. For pre-Romantic poets, their works ran contrary to the ideals of the Enlightenment and were thus suppressed.

One returns to the question posed at the beginning of this essay. What is beauty? As evidenced by the analytical approach to mathematics, as well as the works of Menaechmus and Young, knowledge that is produced need not be beautiful by their contemporary standards. Thus, our very definition of beauty is flawed. It is not static and instead depends on the zeitgeist, the spirit of the age. Yet, spirits change, and what we consider beautiful changes with it. Works previously deemed ugly may now be beautiful, and those insights out of reach might yet be discovered.

⁴ The other side of the coin is that there is no use being profound unless you can hit all the other criteria of (at least) level 4, pushing you to level 5. For example, an incredibly profound essay from a modern day Kant that is wildly imbalanced and has no real world examples will still not get full marks because it doesn’t fulfil the other criteria. It is capped (at max) at level 4. This means you don’t have to worry too much about “implications”, and it should not be a central concern in writing your essay.

⁵ <https://www.tokresource.org/12-tok-concepts>. However, you are (most commonly) considering values, culture, perspectives and responsibilities.

⁶ Note how dense and heavy these paragraphs feel compared to the earlier example. Attempting to be profound makes the whole thing feel stodgy, because there are simply so many ideas to articulate. It would take a better writer than I (or a person with a better grasp of philosophy) to make the exemplar conclusion crystal clear.

Final, General Considerations:

- DO NOT READ THE TITLE SPECIFIC GUIDES OR ANY OTHERS. Yes, you heard me. Take a piece of paper, write out the prompt, and sketch out your ideas WITHOUT REFERRING TO ANYTHING ELSE. Only after you run dry do you read guides.
- In coming up with points, there are two schools of thought. Mine is to think of examples, then derive points from there. Some people are able to think of points on the spot, like Kant's *a priori* knowledge. This guide is written in the first style. If you can use the second, you don't really need this guide.⁷
- Your English needs to be intelligible. Minimise the use of subject-specific vocabulary where the only goal is to prove you are smart. Use only where appropriate, and then sparingly. This applies ESPECIALLY to philosophy terms. No one is impressed by your use of "general will" or "categorical imperative".
- Definitions are very important. Even if you do not define them in your introduction, have a **consistent definition** you are willing to commit to. Do not let the definition of a term suddenly change in the middle of an essay. You aren't Rousseau, and this isn't the *Social Contract*.
- Do not use the same old examples. If everyone uses the same examples, the examiner will get bored when they get to your essay. I find that the internet tends to regurgitate the same examples over and over, so consult encyclopaedias or specific books. I cannot recommend Durant's 11-part series *The Story of Civilisation* enough. For easier reads, any survey of history will do. Better still, if it is a subject-specific survey, like *The Emperor of All Maladies* for cancer.
- Don't plagiarise, especially not from this guide, which is on the internet and will definitely show up on Turnitin.
- Do not narrate. Some writing styles are more prone to this. It is safer to use the PEEL structure.
- Start early, and revise your work over and over. Give it to your friends (whom you trust) to read. It needs to be intelligible without rereading. TOK teachers are too overworked to put too much effort into parsing your work.
- Read through every sentence of your essay. Does this sentence have a purpose? Is it only setting context? Context sentences should be cut to a bare minimum.
- Finally, have about four references per PEEL, even if you did not consult that many, or about 1 per sentence of fact. It gives an impression of professionalism and meticulousness. The Wikipedia page associated with those facts should contain appropriate sources for your consideration.

⁷ The reason I arrange my Es in PEEL in the opposite manner, theory then example, is it the common style amongst older philosophers (like Aristotle's *Poetics*). Just personal preference.

Title 1: For historians and artists, do conventions limit or expand their ability to produce knowledge? Discuss with reference to history and the arts.

Initial thoughts:

Like most of the questions this year, it looks like it's nice and doable, with not particularly many traps. Unfortunately, it is heavily constrained, meaning everyone will have roughly the same essay, making standing out harder. Everything will hinge on how we define "conventions".

Definitions:

Does "conventions" mean⁸:

- (a) Decorum? By this, I broadly mean physical barriers to accessing the tools/materials needed to produce knowledge. Women/ People of Colour are not being allowed to attend University, denial of Western historians from accessing Soviet archives, and so on and so forth.
- (b) Conventional thought processes? By this, I broadly mean mental barriers to accessing the tools/materials needed to produce knowledge. Refusing to use the historical archives of another nation, refusing to entertain anything but the classical art styles, and so on and so forth.
- (c) Avoidance of taboo subjects? This hardly needs definition.

Another thing to look at would be how to define "knowledge in the arts". For this question, weigh carefully whether the content of the art is the knowledge, or the style it is in, is more important.⁹

Approaches to the Question:

This will depend entirely on the definition that you choose.

- (a) If we are talking about physical barriers to access, were people able to get the foundational knowledge that they needed to progress? If they were unable to access certain archives, what did they do? Did they perhaps look at more commonly accessible primary sources, instead of venerable commentaries/ government reports, accessible only in national libraries?¹⁰ Did they guess and get it right? Was there work incomplete?

On the other hand, because they did not have a conventional education, did they come up with some radical new technique? Basquiat or Pollock, for example, came up with wonderful new artistic techniques precisely because they are non-establishment figures.

⁸ I heavily recommend you pick either, not both. Would make the essay very confusing if your definition switches halfway.

⁹ Of course you can use either/both. But it would be easier to restrict your scope.

¹⁰ There's a case to be made that Ranke's early work outside of Berlin heavily influenced his later work, eschewing the traditional reliance on commentaries, favouring primary sources instead. The importance of this shift cannot be overstated.

At the same time, it seems fairly obvious that there are merits to a classical education; if not, no one would bother with it. Shakespeare is an excellent example. Since he lacks a (full) classical education (he was poorer and thus excluded from the very best schools.¹¹ He did not really follow the Greek tragic conventions, leading to better plays. At the same time, there are noticeable flaws. He calls Theseus a duke, puts Hector in the 11th century and Aristotle in the 3rd BCE, and lets a character in *Coriolanus* (set in the 5th century BCE) quote Cato (who lived in the 1st). There are, of course, a multitude of other inaccuracies, but these are tied most closely to his lack of a classical education. Miles Davis is another example; despite dropping out of the Juilliard school, he credited it with “teaching him music theory and improving his trumpet technique”.

(b) On the other hand, we have psychological conventions, things that make historians/ artists work a certain way. This can be summed up as the prevailing *zeitgeist* dictating that certain topics be explored, and others be marginalised. This turns the essay into a discussion about the *zeitgeist* and how it affects knowledge production.

(i) For the arts, developing the conventions to the fullest limits can produce monuments like *The Birth of Venus*, *David* and *Oedipus Rex*. At the same time, slavishly following conventions can produce such “classics” as *The Rape of the Lock*, which eventually died an ignominious death, because the conventions it adhered to became unpopular, and it had no other staying power. Can this case be generalised to art in general?

In the Hegelian tradition, progress can only be achieved through dialectic conversation, the airing of opposing views and eventually the formation of a synthesis. A case can be made both ways here. Do conventions stimulate the development of opposing views, or do they strangle opposing views in the crib?

(ii) For history, and historiography in particular, conventions are just as important as in the arts, but are perhaps less tied to the *zeitgeist*¹². It is fairly obvious that conventions can be restrictive – our priorities change, and so does the way we view and use history. The modern reader hardly wants to know why the Gods had caused such and such an event to occur (the style of Herodotus’s *Histories*), nor is a dry chronology of events desired (after the fashion of the 春秋). Perhaps more subtly, a shift towards the usage of primary sources (in the style of Gibbon’s *Decline and Fall*) ensures accuracy, and an emphasis on the development of civilisation over the deeds of kings (Voltaire’s *Age of Louis XIV*) is all things to be applauded.

At the same time, conventions are hugely important. To avoid being a dry chronology, many historians will use a narrative to frame the events of history, be this historical materialism in the case of Marx, *zeitgeist* in the case of Hegel or Great Man theory in the case of Durant. How does using a specific convention help the reader? Does it contextualise the changes in history? Does it draw attention to certain developments?

¹¹ His Greek and Latin were truly horrible. Ben Jonson, a contemporary playwright says “Thou hadst small Latin and less Greek”.

¹² There is a view that it is more closely to political history; Do have a good look at the wiki page, it is wildly informative on the changes in the way we have written history throughout history.
<https://en.wikipedia.org/wiki/Historiography>

MugNoMore

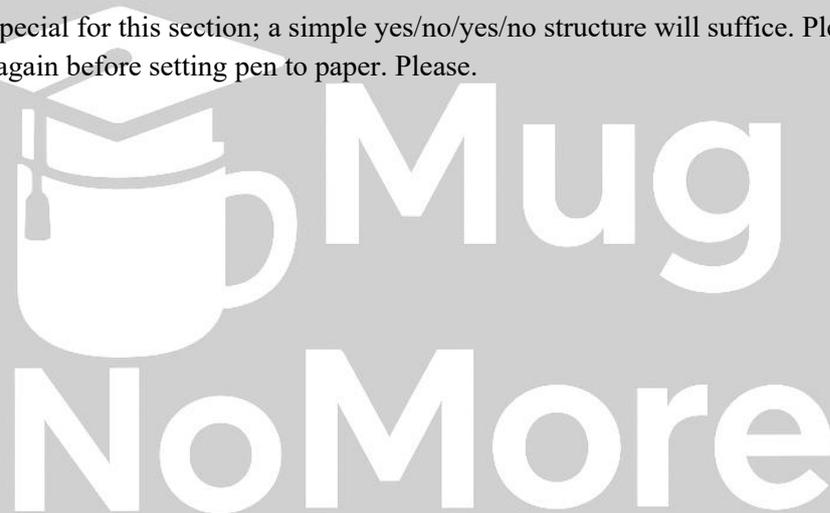
- (c) The zeitgeist can easily cause some subject material to be rendered more taboo than others; Muslim artists do not paint the image of their God, Enlightenment writers preferred stoic reason to emotions, which led to the farce that is *The Rape of the Lock*. Do artists find ways around this? How did the effect of the prohibition on idolatry affect Muslim architecture?

In history, it is sometimes taboo to document the errors of a king; two different kingdoms might have contradicting documentation of the same event; it might even be encouraged to falsify events to strengthen one's position. The downsides of this way of writing history are fairly obvious.

It is difficult to conceive of the advantages of avoiding certain subjects, but we believe in a culture of free speech. You can certainly use the historical justifications, but those feel, to us, weak and feeble. You might reasonably pair definition (c) with (a) if you do not have sufficient content for either, but this is not advisable.

Outline:

There is nothing special for this section; a simple yes/no/yes/no structure will suffice. Please read the general guidance again before setting pen to paper. Please.



Title 2: What is the relationship between knowing and understanding? Discuss with reference to two areas of knowledge.

Initial thoughts:

Without a doubt, the hardest title of the six. It is also deeply linked to epistemology, the most convoluted of the branches of philosophy, and also a branch I'm not intimately familiar with. If you are seriously thinking of attempting this question, you hardly need a guide.¹³

Suggested readings:

I would not normally recommend philosophical texts for a TOK essay, but this question is difficult enough to warrant it. Fortunately for us, this topic has been part of the Great Conversation of Western Philosophy; I would date the first important text to Descartes.

Discourse on the Method (1637) – Descartes

Book IV is most relevant here, although II and III explain how he arrives at the eponymous method.

An Essay Concerning Human Understanding (1689) – Locke

Only Book IV is relevant to this essay title.

A Treatise of Human Nature (1739) – Hume

Book I is the most relevant section to the title.

Critique of Pure Reason (1781) – Kant

The sections on transcendental logic strike me as most useful. Or you could read Chapter VI, Section III of Durant's *Story of Philosophy* if Kant is too difficult to comprehend.

However, this is not a question of philosophy, and thus, we are free to do what we will with the ideas presented. For example, we can solve Hume's Missing Blue problem by allowing complex ideas to generate simple ideas, and damn the unorthodoxy. The formal justification for this heresy is that the best ideas come of a Hegelian dialectic of opposing viewpoints, and that only through it may we synthesise truth.

Definitions:

Knowledge – The most conducive definition for our essay would be that knowledge is raw, unfiltered sensory perception, or at most, what Locke would term the first degree of knowledge, data processed not consciously. You can also use Hume's impressions, though they strike me as largely the same concept.

Understanding – The way we understand "understanding" is perhaps closest to what Locke would call demonstrative knowledge, and Hume's ideas.

Approaches to the Question:

1. Can understanding exist independently of knowledge? The most celebrated example is *cogito ergo sum*. Here is where we choose our definitions judiciously. If we were to define

¹³ Nevertheless I shall bring to bear all the resources at my possession, though I fear the results will be mediocre.

knowledge as sensory input, as Locke seems to have done, then a lot of Math can exist purely of understanding, and not of knowledge. So as not to stretch credulity, use simple examples here, well backed up by Kant and his ilk. The other path is to use the Human Sciences as the AOK and leverage *cogito ergo sum* to argue that the foundation of psychology, the sense of self, necessarily exists without any knowledge of the outside world.

2. We can begin with the obvious. Understanding is the association, grouping and ordering of knowledge.¹⁴ Whether this process is automatic or conducted by some innate spirit is up to you to elaborate. Next, we need to find an example to substantiate this claim. Locke provides some perfunctory talk of triangles and angles, but most AOKs can be used to substantiate this, for example, the simple grouping of language families or Historians' collective grouping of the "Revolutions of 1848".
3. What are the impacts of understanding? Perhaps the synthesis of new ideas? Through the association of knowledge, the impressions overlap, perhaps to create some new pattern. In Poincaré's view,¹⁵ A proof is but a chain of syllogisms linked together, one impression layered upon another, but some selecting agent is required to choose the correct pieces, to draw the correct analogies. Could we further say that understanding allows this selecting agent to choose more discerningly?
4. Perhaps we gain new perspectives on the knowledge we already possess? In the association of impressions, we draw parallels between different pieces, allowing us insights into an impression based on the analogies we draw, understanding it to a new depth. There is an implication of recursion here, to refine our knowledge and, consequently, our understanding infinitely.

AOKs:

This is important to approach with subtlety. While theoretically all AOKs are viable, I would immediately discard the Arts because it is too complex an AOK to dissect properly while still juggling the theoretical framework of our points.

Mathematics is nearly a given; even putting aside the ease of analysis of this AOK, it is also the only field that can reasonably lay claim to *a priori* knowledge. I find Poincaré's *Mathematical Creation* to be an excellent introduction to this AOK.

History is certainly possible, and I have a soft spot for it. One needs to strongly consider what one assumes is the point of history; is it to chronicle, to show causation, to narrate or to judge? Not all of these are suitable for this title. The article "History" in Diderot's *Encyclopédie* is an excellent example of the philosophy of History, roughly mirroring Poincaré's essay, if slightly more anachronistic.

Natural Sciences as an AOK is very similar to Mathematics. It too uses the same processes, but requires knowledge from our senses to do its work. I hesitate to strongly recommend it like Mathematics because the pairing of the two will result in a more stale and predictable essay; if you are choosing this question, you are hardly likely to take the easy path out.

¹⁴ Bound up in here is of course the idea that understanding can only come from a firm grasp of knowledge

¹⁵ *Mathematical Creation*

MugNoMore

Human Sciences is very interesting as a middle ground between the vagaries of the Arts and the certainty of Mathematics. It will make for a very interesting choice indeed.

Outline:

Since we have already invoked Locke, Hume and Kant, we want to spread our points as widely as possible, to make our essay and its conclusions as general as possible. I would recommend choosing contrasting AOKs, and to lace your PEELs in an AOK₁/AOK₂/AOK₁/AOK₂ format to give the impression of universality.

There is, of course, nothing to agree or disagree with in the question, merely an exploration of perspectives.

Concluding Thoughts:

It may appear that I've provided a lot of guidance for this title, but it isn't nearly enough to carry an essay. To really use said guidance, you will need to go through the suggested readings carefully. If you attempt to wing it based on what's written here alone, it will be half-baked and painfully obvious. Once again, I reiterate to please not ask this question unless you know what you are doing.



Title 3: Should knowledge in an area of knowledge be pursued for its own sake rather than its potential application? Discuss with reference to mathematics and one other area of knowledge.

Initial thoughts:

I'm somewhat surprised that mathematics is the AOK prescribed for this question; the one that immediately comes to mind is the Arts. Nevertheless, there is a substantial amount to discuss. This question feels more treacherous than I would like; there is a lot hidden behind very simple phrasing. With the American government taking an axe to NIH grants, public research funds and similar, there has been a substantial amount of discourse back and forth about this topic. This makes it easy to research, but difficult not to turn your essay into a minefield.

Definitions:

What does "should" mean? Are we making a moral claim that the pursuit of knowledge for profit should be censored by society? Are we making a political claim that the government should fund certain pursuits over others? Or is it an ontological claim that certain types of knowledge are superior to others, and hence should be pursued? This is a question about *intentions*, not necessarily the end results.¹⁶ The rest of the question is pretty self-evident, so let's look at the AOKs before we consider approaches.

AOKs:

- A) Mathematics: What is "knowledge...for its own sake"? What are "potential applications"? If one develops the cubic formula to win a mathematical duel, is that for its own sake or for potential applications? Is developing the "infinitesimal method" to calculate π for knowledge's sake, or is it practical¹⁷The word "potential" also needs to be differentiated from "practical"; theorems have been developed to solve arcane problems with no clear link to reality. Rarely does one develop a tool with no goal in mind.
- B) Art: The two most famous quotes on this subject are:
- "There is in fact no such thing as art for art's sake, art that stands above classes, art that is detached from or independent of politics." – Mao Zedong
 - "There is no such thing as a moral or an immoral book. Books are well written or badly written. That is all." – Oscar Wilde
- Mao could, quite rightly, criticise Wilde for embodying the decadence of Victorian England, promoting a capitalist and wasteful lifestyle. Wilde could, in turn, say that Mao is missing the point and that to intervene in politics at all is to sully the purity of Art.

Yet again, we encounter the problem of what knowledge is in the Arts. For this question, perhaps "knowledge" is what part of the human condition a particular piece of Art has

¹⁶ Accidentally curing non-Hodgkin's lymphoma while investigating a flower is knowledge for its own sake, actively testing a flower's compounds for a cytotoxic effect is knowledge for its potential applications.

¹⁷ You don't actually need pi to any more accuracy than 22/7, the Romans thought pi = 3.14 sufficient for many of their arches and domes, some of which still stand.

exposed¹⁸.

C) Human Science: What is the purpose of studying Shakespeare? Why are gender studies research papers funded? Certain disciplines have very obvious applications, like economics, but the impact of the 25th Marxist re-reading of *A Doll's House* is certainly more subtle. I would personally have great difficulty discussing this topic in the current political climate without stepping on someone's toes, but there is an enormous amount of discourse online about this topic.

D) Natural Science: Perhaps the most obvious one, if one does not want to touch Art. There is a lot of talk about researching the basics, like string theory, muons, quarks and such, for which there is no obvious recompense. One is reminded of Franklin's words on viewing a hot air balloon: What use is a newborn baby? One could defend fundamental research in the same way, although the question is whether that is for knowledge's own sake. Sabine Hossenfelder has some very strong words on fundamental research; one can start one's investigation from there.¹⁹ One could, of course, fall back on a deontological imperative, but that feels like hand-waving the problem away.

E) History: Here, too, we are reminded of Mao²⁰, who would claim all histories promulgate a certain narrative. By extension, they push a certain historical view. In other words, **the sheer act of choosing** what to include and what to exclude, and the way one arranges one's narrative, has a **political purpose**. There are certainly historians, like Ranke, who tried to stand apart, but they were criticised for suspected biases nonetheless.

Approaches to the question:

1. Having looked at the AOKs, it becomes clear that there is no real purity of purpose, of knowledge for knowledge's sake. It therefore becomes very important to draw our lines carefully. Would a "potential application" be something that is used outside the lab/study/drawing room? What about new techniques to better use lab tools, like lowering the wavelength of light to improve the clarity of microscopes? Is this too restrictive for Mathematics, where so many theorems and tools are developed to solve conjectures and postulates, none of which ever leave the study? Ultimately, it is up to you to decide.
2. Let us discuss how to approach Mathematics in some detail, since it's a requirement for this question. Could we contrast an ontological claim of "beauty" against a claim of practicality? This would then pair very well with the Arts, although you could extend it as an argument that knowledge should be pursued because understanding is beauty to other AOKs. Or we could discuss "future applications" against "immediate applications", which would pair very well with the other AOKs.
3. We further note some common themes between various fields. The problem of funding. This is the central question of the title. On what basis does one fund fundamental research, or

¹⁸ Notice how my definition of Art shifts from question to question; definitions are hardly static, please take your time to choose an appropriate one. It will make or break your essay.

¹⁹ https://www.youtube.com/watch?v=htb_n7ok9AU&t=806s

²⁰ Lately I've been heavily influenced by socialist literature, but it is entirely possible to refute this view, and write an essay with history as the other AOK.

MugNoMore

knowledge for its own sake? What is the opportunity cost?²¹ Is such an opportunity cost quantifiable at all? If you use any AOK other than Art, you almost certainly have to answer this question.

Perhaps the argument that the knowledge may be useful one day is relevant? Or that someone may find it inspiring? Kant's Critique of Pure Reason was written purely to rebut Hume, but amongst other things, it forced a change in the zeitgeist, away from the Enlightenment.

More practically, you need potential applications because that's what drives progress in society, at least in the Natural Sciences.

4. Your conclusion will likely be some flavour of "balance is best", which is boring. How do we elevate it? Or could you swing it one way or another? Some of the more famous philosophers have commented on this topic before; it might be worth your time to read them for your conclusion.

Outline:

There are various ways to do this, but I will highlight two.

- A standard yes/no/yes/no structure, with mirrored points. If you use beauty vs. practicality, you mirror it exactly into the other AOK.
- Again, yes/no/yes/no, but you don't mirror the points. You use beauty vs. practicality for the first AOK, then future gains vs. immediate gains for the next.²² You can make a more general conclusion, although this can be more difficult to pull off and can well hurt your essay.

Conclusion:

The balance would be dependent on the community of knowers, their values, and, of course, the prevailing *zeitgeist*.

²¹ There is a really meta-level problem in that no scientist (who writes papers) audits other scientists' work for usability, and anyone who isn't a scientist doesn't have the expertise to the auditing, while the dissatisfied scientists don't have a platform (like papers) to air their grievances. It's very catch-22.

²² You could make some pithy comments about the dangers of capitalist short-sightedness. This would be very funny especially if you quote Mao.

Title 4: To what extent do you agree that however the methods of an area of knowledge change, the scope remains the same. Answer with reference to two areas of knowledge.

Initial thoughts:

To quote dear Sir Humphrey Applebee: *Tempora mutantur, nos et mutamur in illis.*²³ My knee-jerk reaction is to say that there is no case where things remain unchanging over 5 millennia of civilisation. The word “scope” feels like quicksand to me, but then again, my epistemology is lacking.

Definitions:

There are no terms in this title that need to be defined explicitly in my view, but I include them here for your consideration.

- Methods: I personally see this as similar to tools, meaning the ways and means of investigation in an AOK, differentiated by meaning a procedure instead of a physical object (although very similar in Mathematics).
- Scope: What is a scope? If the scope of the U.S. Department of Defence is “defence”, then the acquisition of a Navy/Air Force/Space Force does not change the scope. However, if its scope is instead “the administration of the Armed Forces, comprising the Army, Navy, and Air Force”, then the founding of the Space Force is indeed an expansion in scope. Even with something written down as clearly as the scope of the DoD, we can quibble about whether its scope was expanded. Perhaps it’s a matter of *perspective* more than a formal definition.

Approaches to the Question:

1. What really causes a change in scope? To answer this question, we need to examine *when* scopes have changed. Of course, we have the changes that Voltaire spearheaded in the Enlightenment for history writing, a turning away from mysticism, the deeds of kings and battles towards a chronicle of the advancement of learning, culture and the arts; of methods he proposed a more critical reading of sources and the usage of primary over secondary sources.²⁴ Phrased in this manner, it is difficult to see how methods can influence scope, and changes seem to be attributed to the zeitgeist. However, could it not be argued that his critical reanalysis of medieval and classical sources allowed him to differentiate between the *sacred history* (of the church) and the *profane history* (of the modern Historian), thus freeing History from religious influences?²⁵

²³ Times change, and we change with them. It can be interpreted as saying all things are in flux.

²⁴ I would almost call Voltaire’s article *History* in Diderot’s *Encyclopaedia* required reading for this question if you are doing History as an AOK. <https://quod.lib.umich.edu/cgi/t/text/text-index?c=did;cc=did;rgn=main;view=text;idno=did2222.0000.088>

²⁵ What I’m getting at is that this is a very muddy question where the terms are difficult to define; it is relatively easy to twist the evidence whichever way suits your purposes.

MugNoMore

2. More advanced tools definitely allow us to investigate things more closely; whether that qualifies as expanding scope is up to you to define. Is the ability of biology to study DNA an expansion in scope, or is it still biology?
3. In the same vein, the scope of natural philosophy has always been what we know of as physics, but it used to involve metaphysical dribble like Spinoza's pantheism. However, the scope has not changed despite us moving to more rigorous scientific methods (or maybe it has? Spinoza would hardly know about nebulae, neutron stars or quarks)
4. The most obviously profound thing (probably in the conclusion) is that it is not only the methods that change the scope, but that the scope spurs changes in methods too. When Francis Bacon desired the reform of the sciences, he published first *The Advancement of Learning* (1605) to outline his scope, only after which did he embark upon the *Novum Organum*, a comprehensive review, exposition of scientific methods and critique of Aristotle's *Organon* (1620). Only when we have a demand for a tool do we create it; rarely are tools created without a task in mind.

AOKs:

All the AOKs should be fair game, so play to your strengths. It is generally a good idea to avoid the Arts, as it is harder to write about with expertise.

History: Western history has progressed from cultural anthropology (creation myths) to a more scientific view of the past, and the methods have changed as well. Voltaire is an excellent example, but consider also Herodotus, Ranke and the Scholastic Historians of the Church.

Mathematics: The biggest scope change in recent years in the (attempted) melding of geometry and number theory; this was built upon the back of Harish-Chandra's *Philosophy of Cusp Forms*. On the other hand, computer-assisted proofs haven't really changed scope; they've merely made more problems solvable.

Natural Sciences: See above. Does modern bioinformatics represent an expansion of scope, or just a more in-depth exploration? Has the scope of natural philosophy changed over the years?

Arts: This is tricky. The things that come immediately to mind are things like photography, film, new paints, etc. They've certainly opened up new modes of artistic expression, but whether they've changed the scope of the Arts is less certain. What we want from the Arts seems to be more closely linked to zeitgeists, and the tools are merely that, tools.

Human Sciences: Experimental psychology as a field is relatively young, as late as the 1750 Kant claimed that "the empirical doctrine of the soul can also never approach chemistry even as a systematic art of analysis or experimental doctrine, for in it the manifold of inner observation can be separated only by mere division in thought, and cannot then be held separate and recombined at will (but still less does another thinking subject suffer himself to be experimented upon to suit our purpose), and even observation by itself already changes and displaces the state of the observed object." However, we have many more scientific tools now, but the scope has remained largely the same. In many ways, this mirrors the progression of the Natural Sciences from philosophical pontificating to empiricism.

MugNoMore

Outline:

Since this is a TWE question, the structure is slightly different as well. It would be a bad idea to say yes or no definitively, whatever your knee-jerk reactions are. There is also no need to answer in either the positive or negative for one's opening statement of each body paragraph, since the question does not demand it. You would instead say "To a large extent, that however the methods of an area of knowledge change, the scope remains the same", or "On the other hand, the more methods change, the more the scope changes", or something to that effect.

There are several different points you must discuss:

- Methods change, things change
- Methods change, things don't change
- (To a lesser extent) methods don't change, things change

I would therefore recommend doing two each of the first two bullet points, one set for each AOK, and to cover the last bullet point in your conclusion, but without an example, so it's not a full PEEL and does not take up too much space.



Title 5: In the pursuit of knowledge, is it possible or even desirable to set aside temporarily what we already know? Discuss with reference to the natural sciences and one other area of knowledge.

Initial thoughts:

This is one of the more open-ended titles. There are multiple things to discuss, possible/not possible, desirable/ not desirable. While the content is relatively simple, I foresee that structuring this will be difficult.

Definitions:

There is nothing here that requires definition. However, do take note of the word “temporarily”.

Approaches:

1. What do we already know? Certainly, there is an accumulated corpus of facts, but there are also many opinions or assumptions that are bound up within these facts. For example, a common justification for doing something in an experimental procedure is “based on established literature” or “to facilitate comparisons to literature”. Does that necessarily mean that that particular procedure is best?
2. Why would setting this aside be desirable? New perspectives? Better production of knowledge? What evidence would you use to justify this? When choosing an example, there is a very fine line between seeking new perspectives and being a crackpot. Cold fusion is such an example, where research into it is shunned for historical reasons, but there could be something interesting to be found there.
3. Why would it not be desirable? Newton once remarked that “If I have seen further, it is by standing on the shoulders of giants.” In the same manner, production of complex knowledge could reasonably require a foundation; to disregard it could mean we cannot study the most complex topics.
4. Is it possible to set aside what we already know? Perhaps we can identify and ignore our conscious biases, but are there deeper, subconscious ones that are more difficult to pinpoint and ignore? The AOKs for which this is easiest to argue would be the Arts/History, where biases and other conventions play a very large, well-documented role in knowledge production. That is not to say that biases and conventions do not play a role in Mathematics/Natural Sciences/ Human Sciences, merely that the effects are more subtle and difficult to pinpoint.
5. What are the connotations of the word temporarily? Does it imply, for example, a classical education, but we build off it in a different direction? Does it mean we are still part of the scientific establishment, but merely take the path less taken for this particular piece of knowledge? How would this be different from someone who has no classical training at all? Could it temporarily be even longer-term than that? Is the setting aside of classicism in favour of scholasticism in the Middle Ages for half a millennium “temporary”, before the rebirth of classicism in the Renaissance?

MugNoMore

AOKs:

- History: I think this is one of the easier ones. Our history is littered with historians who looked at things from a different perspective, and hence came upon a spectacular ruin or ancient city. Simultaneously, sometimes we cannot forget everything that has come before; we still need some basis to build off of. Knorosov could hardly have had a different perspective on Mayan scripts if research into cuneiform had not come before.
- Arts: This is also very interesting. The importance of classical training cannot be denied; it imparts a rigour to one's techniques. Mondrian could hardly have made his famous pieces without his rigorous training, but it is precisely because he could "forget" some of it that he was able to come up with neo-plasticism.
- Natural Sciences: So much in the natural sciences is born of new perspectives, for example, the "shotgun" sequencing method arising out of the more methodical Human Genome Project. However, I would be very wary of pseudoscientific claims. Please verify if something is merely new and not literal magic.
- Human Sciences: This should combine much of what we see in the History/Arts and the Natural Sciences. Once more, be wary of pseudoscientific claims that would ruin the credibility of your claims.
- Mathematics: I probably sound like a broken recorder, but I would still recommend a read of Poincaré's *Mathematical Creation*. Mathematics is as much about choosing the correct formulae as applying them, and is what distinguishes the very best from the mediocre. Terence Tao was able to see differently and develop the Green-Tao theorem for primes; others were able to refine it (numerically). All this is to say that the ability to set aside the well-trodden path for a new one is very important for Mathematics, but so is a firm grasp of all the theorems we already have.

Structure:

The demands of the question can be grouped in the following manner:

- Possible, Desirable
- Possible, undesirable
- Impossible, undesirable
- Impossible, desirable

Grouping them in this manner, we have four thesis statements and 4 PEELs to write. However, it appears difficult to achieve balance using all four possible thesis statements. I would recommend eliminating "impossible, desirable" and doubling up on either "possible, desirable" or "impossible, undesirable".

I would not recommend ignoring either of the two (possible/desirable), as you would then not have met the demands of the question. However, it is probably possible to ignore "temporarily", or better still, use it in your conclusion.

MugNoMore

Conclusion:

Throughout my musings, I have repeatedly hinted that some level of forgetfulness is desirable, but not total amnesia. This, of course, plays into the word “temporarily”. Could we say something about how the best path is only forgetting approaches, but not the basics of the knowledge we already possess? Obviously, the extent to which this is possible is highly dependent on the AOK.



Title 6: Is empathy an attribute that is equally important for a historian and a human scientist? Discuss with reference to history and the human sciences.

Initial thoughts:

What a fun question! The word “equally” strikes me as quite the trap. There is a **necessity of comparison** between history and the human sciences, which can be found in no other question. Simultaneously, this question demands a deep understanding of historiography and the humanities.

Definitions:

Empathy – One of the few times it’s ok to use the dictionary definition, which is coincidentally how Schopenhauer defined it. However, what he has to say on the subject is very interesting: “Only insofar as an action has sprung from compassion does it have moral value; and every action resulting from any other motives has none.” Does moral value matter? No? What about precisely the opposite view, that empathy is a way to gain power over others? Is empathy purely about extracting the maximum possible value, as expounded by Nietzsche?²⁶

Important – This is a deceptively important word, where we need some firm yardstick. What does it mean? What is important to a historian/ human scientist? More accurate knowledge? Different perspectives?

AOKs:

There are no choices here, but there are a few interesting morsels to ponder before we seriously approach the question – aperitifs, if you will. I consider these men to be leaders of their fields, and their examples will much better convey my intentions than my words can.

V. was a historian and philosopher. He had great empathy for the case of Calas, a Protestant in the Catholic France. The latter was subject to a kangaroo trial on a trumped-up charge, whereupon he was subsequently lynched. V. was incensed, publishing pamphlet after pamphlet (including the epochal *Traité sur la Tolérance*) to try and get justice for Calas.²⁷ This was one of the early cases that began his campaign against the excesses of the Catholic Church. What are the instances of empathy here?

M. was a historian and economist. He saw how a political system oppressed the masses, fuelling massive inequality, and feeling great sympathy for the plight of the common man, he decided to analyse the historical basis of capitalistic power structure, analyse how it came to be, and therefore

²⁶ It is entirely possible to write an essay where you argue that empathy is necessary to get your sources to talk, to get people to collaborate with you and so on, but the amount of revulsion generated for that essay probably is not worth the risk.

²⁷ Pg 727 – 737, Chapter 12, *The Age of Voltaire*, Will Durant, 1st ed. Can I just rant about how horrifyingly difficult it is to find a reputable source for the motivations of great men online, Google presents so much information without linking the information together, it takes a historian to tell us a tale of why those events are significant. Much to my regret, Durant’s *Story of Civilisation* only covers up to 1815.

MugNoMore

how to dismantle it²⁸. What are the instances of empathy here? Does empathy show only as an impetus to action, or does it also show in his analysis? What about the solutions proposed?

Approaches to the question:

1. What is the question asking? Is it asking a binary question of whether empathy is important, or is it asking to what degree empathy is important for those two AOKs? These two would have very different ways of framing your answers, if not completely different points. Furthermore, how do we address “equally”? Do we write the essay as per normal, and then do the comparison only in a slightly extended conclusion? Or do we do it in every body paragraph? Perhaps a blended approach? The structure for this essay requires perhaps the most thought amongst the titles for this year.
2. I put it to you that the clear distinction between historian and human scientist is primarily a modern one, just as the distinction between mathematician and physicist is also a modern one. Since this question is one of motivation, if we choose our examples with care by going back far enough, the motivations should be largely congruent, making comparisons easier.
3. Having sampled the aperitifs, let us move quickly to the main course.²⁹ What is the role of empathy in a historian/ human scientist’s work?
 - Is it the motivator that inspires them to choose a certain cause to support, a certain area to research, a certain hill to die upon?
 - How does it show in the work that they produce? Does it cause the Historian to frame their subject a certain way, or emphasise certain events over others?³⁰ Perhaps they might choose a different frame to investigate the subject?³¹ Do they consider different perspectives? Does it cause the Human Scientist to propose certain solutions, or work to falsify dominant paradigms?
 - Does it simultaneously reduce objectivity, because said works are inflamed by passions? Are certain perspectives given more weight than is necessary? Are dominant paradigms unfairly maligned? Does this make the work less valid? Does this only have epistemological consequences or real-world ones, too?
4. Are there aspects of a Historian/ Human Scientist’s work that require no empathy? Could an economist, for example, perform all his work without a drop of empathy? Can a Historian write an entire history without interacting with the outside world, only with his datasets?

²⁸ With sufficient context, the Communist Manifesto is something everyone should read, not as a how-to manual, but as a piece of literature. Feel the desperation of the proletariat, and the desperation for a solution. While it does not make the revolutions that followed justifiable, they are certainly understandable.

(M. and V. are Marx and Voltaire respectively)

²⁹ Yes I’m aware I’m missing a starter.

³⁰ For example, the *Essai sur les mœurs et l’esprit des nations* showed remarkable empathy for Muslims, and the cultures of the Far East in a time of that emphasised European supremacy.

³¹ See the philosophy of history wiki page

MugNoMore

Outline:

This will be more hands-on than for the other titles, simply because I believe it's difficult to get correct.

- A) PEEL 1: Empathy is important for Historians because
PEEL 2: Empathy is equally important for the Human Scientist, for the same reason as the Historian.
PEEL 3: However, empathy could be less/more important for historians because....
PEEL 4: At the same time, empathy could be less/more important for Human Scientists because...³²
Conclusion: A standard conclusion will do, but remember to take a stance on whether one is superior or they are equal.

- B) PEEL 1: Empathy is important for the Historian because....
PEEL 2: Empathy could be less important for the Historian because....
PEEL 3: Empathy is important for the Human Scientist because...³³
PEEL 4: Empathy could be less important for the Human Scientist because....
Conclusion: An argumentative conclusion, tilting the argument one way or another.



³² You want to write PEELs 3 and 4 in a way where the essay remains balanced; either consider 2 reasons they could be less important, or 2 reasons why they could be more important

³³ I would recommend mirroring the point from PEEL 1, to facilitate a basis of comparison for your conclusion. However, there is the tradeoff that you cover fewer perspectives.

Conclusion:

In this guide, I have tried my best to correct some of the failings of the online guides I have seen. There is as concrete advice as I can possibly give without encouraging plagiarism.

If my examples prove unsatisfactory, please consider using Will Durant's 11-part series *The Story of Civilisation*. Obtain an e-copy legally (do not, for example, download them off Libgen), and search up your keywords, such as "wonder" for question 6. He has more examples than the internet can readily give you. (Although I do realise that this guide has been very Euro-centric).

If the ideas I provide are unpalatable, consider the TOK 12 core concepts as a starting point: Certainty, Truth, Interpretation, Power, Justification, Explanation, Objectivity, Perspective, Culture, Values and Responsibility. You will see that a lot of my suggested syntheses all fall neatly into one of these categories.

I hope that this guide has been sufficient to get you started. If you need more help, please consider getting the consultation or draft marking services on our website <@joshua chen insert here>. I would be more than happy to help you look it over.

In parting: *Caveat Emptor*.

While I have no malicious intent, do be careful in applying what I say.

