

TOK Unit 1, Nature and Problems of Knowledge, Socratic Seminar Plan

1. Hand out and review seminar reflection sheet
2. Split class in $\frac{1}{2}$ and assign 1 $\frac{1}{2}$ "Science" and the other $\frac{1}{2}$ "Uncertainty"
3. Student close read and mark with post-it notes their assigned reading
4. As students finish reading and marking the text, they should complete the seminar reflection sheet sections "Pre-seminar thoughts" and "Contribution goals"
5. Explain that each seminar will run for 20 minutes and that each participant will have an observer on the outside
6. Arrange the desks into 2 concentric circles
7. Those participating in "Science" hand their seminar reflection sheet to their observer in the outer ring and bring their text to the inner ring
8. Facilitator remind participants of posted seminar norms (posters on walls)
9. Facilitator pose opening question (which observers will write in on seminar reflection sheet)

Opening ? for "Science"

"What assumptions underlie this text?"

OR

"About what are Heinrich and his father really arguing?"

Opening ? for "Uncertainty"

"How do you interpret the passage, 'The inscrutable, which includes us, seems patient of endless interpretation'?"

OR

"How justifiable is the claim that, 'secure knowledge can never be found'?"

Socratic Seminar Prep Work

Title of Piece to be discussed:

Author/Director:

Source Info:

Issues, Ideas, and Values

Great/Interesting ideas Presented	Key Tone Words Associated with piece

Favorite/Most Important Quotations

1.
Justification
2.
Justification
3.
Justification

What is the Central Point the Author/Director is trying to make?

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What is YOUR overall reaction to the piece? What new thoughts has it generated within you? What questions has it left you with?

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Socratic Seminar Evaluation

Please use complete sentences

Pre-seminar thoughts (My assumptions about the text are . . . , What puzzles me is . . . , What this/these big idea(s) mean(s) to me is . . . , I have questions about . . . , I'd like to explore the possibility of . . . , This question / text relates to my life in that . . .):

My participation goal for today is to:

Opening ?:

Post-seminar thoughts (Now I think that . . . , I changed my mind about _____ because . . . , My feelings / thoughts about _____ have been reinforced because . . . , I hadn't considered that . . . , When I look at this now I see / think . . . , I understand _____ more deeply because . . .):

In terms of SPACE and my participation goal, I noticed that I . . .

In terms of giving SPACE, I noticed that the group . . .

THE UNCERTAINTY OF KNOWLEDGE

According to this article, written in 1987 by Edward Harrison, a professor of physics and astronomy at the University of Massachusetts, contemporary scientists stand no closer to the ultimate 'truths' than their forebears did.

Perhaps you have noticed that few people are speechless when it comes to answering the burning questions. The person without answers is a nobody. In our writings, lectures, conversations and pronouncements over the dining table we tell one another that life would be much better if only people were more educated, had more faith in religion, devoted greater effort to the cure of diseases, supported more vigorously social reform, dieted, exercised more, flossed their teeth and voted for this or that political party. On every side can be heard the clamour of voices claiming to know what must be believed and what must be done.

With a sigh of relief we escape from this confusion of beliefs into the quietness and certainty of the natural sciences. Here, in this lofty museum of secure knowledge... may be found the right answers on display for all to see and examine. Exhibits and working models reveal the truth with the utmost clarity. Some of the latest exhibits, naturally, are not quite ready for public view and require finishing touches. Some display cases – but not many – still remain empty: but judging by the activity around them, they will not stay empty for long. Soon the screens will be pulled aside, unveiling to the public view answers that will explain what the Universe is all about.

Visitors come away feeling convinced that the end of the search for knowledge in the natural sciences is now in sight. The final pieces in

the cosmic jigsaw puzzle are about to take their place. Even the staff seem convinced. One or two subatomic particles remain to be tracked down, a few items – such as quantising gravity to make us universally wise and controlling DNA to make us physiologically perfect – remain to be developed, and then everything fundamental, genuinely worth knowing, will be revealed for us to see, as it was, is and will be, forever and ever, amen.

Confronted with this inspiring challenge, the humanities, arts, social sciences and professions, not relishing the idea of being left far behind, are hastening to make their own contributions to the wisdom of the 20th century. At last, after groping our way in the darkness for millennia, we see light at the end of the tunnel.

It all sounds terribly familiar. The pages of history are covered with equivalent certainties and crystalline clarities. Yet all have vanished into thin air like the celestial-angelic spheres of medieval astronomy and the luminiferous ether of Victorian physics. Human beings of all societies in all periods of history believe that their ideas on the nature of the real world are the most secure, and that their ideas on religion, ethics and justice are the most enlightened. Like us, they think that final knowledge is at last within reach. Like us, they pity the people in earlier ages for not knowing the true facts. Unfailingly, human beings pity their ancestors for being so ignorant and forget that their

descendants will pity them for the same reason.

Light always gleams ahead. The end to the search for true knowledge always looms in sight. The one invariant characteristic of rational inquiry is the imminence of final knowledge.

Dare I say – contrary to the popular belief – that secure knowledge can never be found? That our boundless ignorance explains why we feel so confident of success in bounded knowledge? That each discovery creates in the long run more mystery than it solves? That we stand no closer to the ultimate 'truths' than did our forebears? And that we are no better intellectually and morally than the people who lived a thousand and even ten thousand years ago?

We have this overwhelming belief that we are rapidly filling in the detail of the cosmic picture. Unfortunately, the picture keeps changing. One landscape with figures melts away and a new landscape with figures emerges

requiring fresh paintwork. The picture keeps growing bigger and we cannot help occasionally noticing how gaps on the canvas are spreading faster than dabs of paint.

Let me say how I view the uncertainty of knowledge. Knowledge must forever change otherwise it withers. The quest for knowledge is endless and its greatest joy is constant surprise. We forever reshape the scheme of things nearer to the heart's desire. Permanent enlightenment cannot be secured by bringing down from the mountaintop infallible laws engraved in stone. We project our desires and figure our designs on the face of the inscrutable, and the inscrutable, which includes us, seems patient of endless interpretation. We represent reality seeking to understand itself.

I feel liberated by this philosophy. I find comfort in the thought that the creative mind fashions the world in which we live. For it means that the mind and reality are more profound than we normally suppose.



Reading Resources

SCIENCE'S FINEST HOUR

The following dialogue is taken from a novel called *White Noise* by Don DeLillo. A father is driving his 14-year-old son, Heinrich, to school. Heinrich begins the conversation.

'It's going to rain tonight.' - Son
'It's raining now', I said. - Father

'The radio said tonight.' ... - Son

'Look at the windshield', I said. 'Is that rain or isn't it?' - Father

'I'm only telling you what they said.' - Son

'Just because it's on the radio doesn't mean we have to suspend belief in the evidence of our senses.' - Father

'Our senses? Our senses are wrong a lot more often than they're right. This has been proved in the laboratory. Don't you know about all those theorems that say nothing is what it seems? There's no past, present or future outside our own mind. The so-called laws of motion are a big hoax. Even sound can trick the mind. Just because you don't hear a sound doesn't mean it's not out there. Dogs can hear it. Other animals. And I'm sure there are sounds even dogs can't hear. But they exist in the air, in waves. Maybe they never stop. High, high, high-pitched. Coming from somewhere.' - Son

'Is it raining', I said, 'or isn't it?' - Father

'I wouldn't want to have to say.' - Son

'What if someone held a gun to your head?' - Father

'Who, you?' - Son

'Someone. A man in a trenchcoat and smoky glasses. He holds a gun to your head and he says, "Is it raining or isn't it? All you have to do is tell the truth and I'll put away my gun and take the next flight out of here."' - Father

'What truth does he want? Does he want the truth of someone traveling at almost the speed of light in another galaxy? Does he want the truth of someone in orbit around a neutron star? Maybe if these people could see us through a telescope we might look like we were two feet two inches tall and it might be raining yesterday instead of today.' - Son

'He's holding the gun to your head. He wants your truth.' - Father

'What good is my truth? My truth means nothing. What if this guy with a gun comes from a planet in a whole different solar system? What we call rain he calls soap. What we call apples he calls rain. So what am I supposed to tell him?' - Son

'His name is Frank J. Smalley and he comes from St Louis.' - Father

'He wants to know if it's raining now, at this very minute?' - Son

'Here and now. That's right.' - Father

Socratic Seminar Evaluation

Text:		Date:	Name:
Seminar Participation / Self-Evaluation			
I demonstrated the following seminar behaviors . . .		Evidence for these claims is . . . (from self or observing partner)	
S	Provided <u>silence</u> by waiting after other speakers finish, before voicing my own thoughts and yielding to others who have contributed less often when we step on each others' lines		
P	<u>Paraphrased</u> other speakers accurately to make sure I understood what they said		
A	Used <u>accepting</u> language, avoided slang terms and judging others' contributions		
C	Asked <u>clarifying</u> questions		
E	Explored for <u>evidence</u> and <u>examples</u> from this text, from other texts, or from relevant personal experience		