

Question Sheet for

Your Name _____

Class/Section _____

“Does Truth Matter? Science, Pseudoscience, and Civilization.”

an article by Carl Sagan

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“Science has beauty, power, and majesty that can provide spiritual as well as practical fulfillment. But superstition and pseudoscience keep getting in the way, providing easy answers, casually pressing our awe buttons, and cheapening the experience.”

Please respond on these sheets.

1. His quotation from Edmund Way Teale's 1950 book, *Circle of the Seasons*, describes well the foundation of the concern intellectuals have for superstition, pseudoscience and other culturally accepted weak forms of thinking. Write it out here *in toto*. (If the meaning of this Latin term is not clear to you, go to the last page and look at the bottom for its definition.)
2. Sagan quotes the philosopher Nietzsche to bring out one way science has been viewed to impact people's self-conception of humanity. Write the two quotations here.
3. But Sagan views this as self-satisfying delusion. What has science to offer us in its place?
4. Sagan points out that science is a part of our world now and for our own success and growth we have to come to terms with it. But what two related things get in our way of coming to terms with science?

5. What conspires to spread pseudoscience in our society? (list)
6. Which is easier to present to the public—science or pseudoscience? (circle)
7. Another advantage of pseudoscience that encourages its popularity is that it responds to what that science doesn't, at least so directly? (several things here)
8. Sagan makes clear how the absence of what understanding fosters ready acceptance of pseudoscience?
9. What often fosters pseudoscience beliefs?
10. What pseudoscientific/superstitious beliefs are either popular or have occurred in each of the following locations:
 - a. Algeria
 - b. Germany
 - c. Philippines
 - d. England
 - e. Japan
 - f. Thailand
 - g. South Africa
 - h. Haiti
 - i. India
 - j. China
11. Read the paragraph written by Leon Trotsky about Germany at the onset of Hitler's reign. Do you think the gist of the paragraph might be relevant for America today? (circle choice)

very much so somewhat not with any significance
12. Is there any superstition mentioned in the next paragraph on Russia's current sorry post-communist state that is not found commonly in our own country?
13. Do you think pseudoscientific beliefs are harmless—something only for idle intellectuals to tut-tut about? Even some species of rhinoceri are threatened with extinction merely by a single pseudoscientific belief. What is that belief?
14. In the mid-nineties, the Chinese government rang alarm bells about ignorance, superstition, and pseudoscience. In their statement, quoted in the article, they tied public understanding of science with what 3 aspects of society (as true here as there)?
15. What former president occasionally took credence in astrological advice?
16. Sagan sees a variety of types of thinking to be related in a continuum that doesn't lend itself

to clear boundaries between the types. Write this continuum here, starting with:

ill-practiced science →

17. Sagan points out what insightful connection between religion and pseudoscience?
18. What comparison between scientists and “proponents of mainstream religion” does Sagan make?
19. Summarize Sagan’s contrast of the practice of science with the practice of pseudoscience.
20. Sagan contrasts our mastery of physical motor skills with our vulnerability in our...
21. Wisdom lies in _____.
22. Sagan points out that just teaching the findings and products of science is insufficient to educating people to properly evaluate pseudoscience. What else must be taught?
23. The “supreme challenge” for science teachers is to make what clear?
24. He concludes by saying that what is more important than teaching the findings of science?

Sidebars

“Science as a Source of Spirituality”

25. Describe how science is a source of human spirituality.

“The Metaphysicist has no Laboratory”

26. How does science “get a handle” on truth that the speculators of realities beyond the physical cannot?

“The Siren Song of Unreason” (from *The Demon-Haunted World*)

27. How does Sagan describe science as successful?
28. What does he mean when he concludes the passage with, “The demons begin to stir.”?

“An Absence of Alien Artifacts”

29. With so many stories of sightings of and even encounters with UFOs, the casual reader can be forgiven for thinking we really may be visited constantly by extraterrestrial aliens. But if that is true, then we have a problem. What is it?
30. What else is missing besides what you answered in the previous question?
31. Finally, he gives the proper perspective on what the real response of scientists would be to learning of legitimate evidence of alien visitation. There would be no conspiracy; they would...

☆ ☆ ☆ ☆ ☆

“Extraordinary claims require extraordinary support.”

John Dewey

About UFOs: *“There are reports of things, but never the things themselves.”*

Carl Sagan

in toto means “in total” or “in totality”