Case History: Source Reliability and Climate Change **Name**_____

*When evaluating scientific sources, it is important to look at the **C**urrency, **R**elevance, **A**uthority, and **P**urpose - C.R.A.P.*

A) Currency - How recent is the work? Has it been updated in the last 4 years?

B) Reliability - Is it a primary or secondary source? Primary sources are like YouTube, personal websites, & Facebook memes - self-published. Also included are scientific works like pre-prints & white papers that have not been peer reviewed. Once work has been peer-reviewed by others in the field & published in a journal, it is a secondary source. Are methods or references provided? Is the information source public? Does all of the information apply to the topic or only part of it? Does the information advocate a position or simply provide facts? Is the information balanced or biased? Who funded the research.

C) Authority/Authorship - A single person or several people? Was it a corporation or organization? Are the author's credentials provided? What is the reputation or expertise of the author(s)? Is the author an expert in this field? Where was the author educated?

*D) Purpose/Point of View - Who is the intended audience? Is the information intended to inform **or** to persuade, sell, entertain, stir emotion? Is this a first-hand account of an event or research? Does the author have a financial interest in the topic?*

We will use the C.R.A.P. model to examine 2 climate change sites. First let's look quickly at the 2 sites - a brief overview.

***Site 1 - Skeptical Science* Quick Overview - Look around. Examine the page carefully.**

1. According to the Skeptical Science website, what is skepticism and why is skepticism desirable in science?

The home page is divided into three parts - the center with a white background and the margins on the left and right featuring icons and links. For the next 2 questions, focus on the margins.

2. List 2 marginal icons /links that catch your attention. Provide a brief description. Are they science or ads?

A

B

3. View the global warming and climate change myths in the left margin. Pick two myths. List them and summarize "What the science says" for each *briefly*. (Don't choose the same one you used in your case report.)

A

B

***Site 2 - Center for Industrial Progress (CIP)* Quick Overview - Look around. Examine the page carefully.**

4. List the goal of the CIP and tell who runs it. Is this a for-profit site?

5. Brief describe 2 icons/links in the right margin. Are they focused on profit & advocacy (ads) or science?

A

B

6. On the main part of the web page (not the menu or margin), look at "Issues". Click on one of the 6 graphic buttons (Oil & Gas, Coal, Fracking, etc.) and describe where it leads you.

Let's examine each site using the CRAP framework. Place your answers for the following questions in the data table below. Really. Look at the data table on the next page.

Return to the Skeptical Science site. The next 8 questions refer to the Skeptical Science site only.

7. Currency - How recent is the information on the Skeptical Science site? (Answer in box 7 in the data table below.)

8. Reliability - Are the sources provided on the Skeptical Science site *primary* or *secondary* source? The difference is important. A primary source is self-published. Examples would be Bob's Web Page or a YouTube video. Those sources do not have to be checked for reliability. The author can publish any claim, no matter how outlandish. Secondary sources require expert peer-review, a method of checking for errors. Are methods or references provided? Is the source of the information public? Does all of the information apply to the topic, or only part of it? Is the information general or detailed? Is the information balanced or biased? (Answer in box 8.)

9. Authorship - Click *ABOUT*. Read about John Cook. Research his education. Then find the other two under About/Team. List their educational credentials and background. Does the person have science degrees in this area or does the person simply call themselves an expert? Where did he/she study? Do you want a pilot flying you through a rainstorm to Hawaii to be trained by YouTube videos? Do you want a surgeon trained only by reading editorials, Instagram memes and Facebook posts? (Answer in box 17.)

10. Purpose - What is the mission or purpose of the Skeptical website? (Do a search for "mission" or "purpose".)

11. Does this website emphasize peer-reviewed science opinion? Are provided references from *experts*, people with decades of work in the particular field of work, or just from those who feel strongly? (*Answer in box 11.)*

12. Is the information presented in a neutral tone or does it seem designed to trigger emotions / reactions? Explain.

13. How is this site funded? Do they sell or market any product? Do they ask for donations? Explain. *(Data table.)*

14. Record at least 1 other observation or comment about the Skeptical Science website. *(Data table.)*

Return to the Center for Industrial Progress (CIP) Site. (Home page is iffy.) The next 8 questions refer to the CIP site only.

15. Currency - How recent is the information on the CIP site? (Write your answer in box 15 below.)

16. Reliability - Are the sources provided on the CIP site *primary* or *secondary* source? Are methods or references provided? Is the source of the information public? Does all of the information apply to the topic, or only part of it? Is the information general or detailed? Is the information balanced or biased? (Answer in box 16.)

17. Authorship - Click *ABOUT*. Find the listed leaders of the CIP. List the related educational degrees and background. Does the person have science degrees in this area or does the person simply call themselves an expert? Where did he/she study? Do you want a pilot flying you through a rainstorm to Hawaii to be trained by YouTube videos? Do you want a surgeon who trained only by reading editorials and facebook posts? (Answer in box 17.)

18. Purpose - What is the purpose of the CIP website? Is is for-profit? (Read the home page.) Is it selling things? (*Box 18.)*

19. Does this website emphasize peer-reviewed science or opinion? Are provided references from *experts*, people with decades of work in the particular field of work, or just from those who feel strongly? Explain. (*Box 19.)*

20. Is the information presented in a neutral tone or does it seem designed to trigger emotions / reactions? Explain.

21. How is this site funded? Do they sell or market any product? Do they ask for donations? Explain.

22. Record at least 1 other observation or comment about this CIP website.

Criteria	Skeptical Science Website	CIP Website
Currency	**7.**	**15**
Reliability / Relevance	**8.**	**16.**

Author's Academic Background & Credentials / Climate Scientist (YES/NO)	**9. See *About/Team* for these 3 active authors.** **Peter J** **John Cook** **Robert Way**	**17.** **Alex Epstein** **Don Watkins** **Steffe Henne**
Purpose **Is this to disseminate science or for profit?**	**10.**	**18.**
Is this site driven primarily by science or opinion? Explain. Look carefully. One of the sites uses words very slyly.	**11.**	**19.**
Neutral Tone vs. Emotional Tone / Explain,	**12.**	**20.**

Funding Sources	**13.**	**21.**
One Other Observation	**14.**	**22.**

23. Based on a side-by-side comparison in the data table above, which site has higher-quality *scientific* information & which makes *unsubstantiated claims founded in advocacy rather than science*? Justify your answer with data from the two sites.

Summary - Describe three ways to distinguish between scientific and non-scientific sources.

A

B

C

Extra Credit - 5 Points

Watch Fossil Fuels: The Greenest Energy (5:00) from PragerU. ("PragerU," despite implying that it is a university, is not a university but an advocacy organization.) The creator of the video is Alex Epstein, the creator of CIP.

1. Share 3 through observations or thoughts about this video as it relates to science, observed trends.

A

B

C

2. Read the comments. Do they agree with your observations and thoughts in question 1 above? Explain.

3. Does this appear to be "greenwashing" or something else? Explain your answer.