



STUDY GUIDE

Follow the Science

KEY TERMS:

science
evidence

knowledge
provisional

wisdom
theory

Detail Focus: Complete this section <u>during</u> the video.	Main Summary Focus: Complete this section <u>after</u> the video.
<p>1. Which groups supported eugenics?</p> <p>2. How many scientists wrote a book explaining why Einstein's Theory of Relativity was wrong?</p> <p>3. Richard Feynman said that a good scientist should always maintain a healthy amount of what?</p>	<p>1. How does science work?</p> <p>2. What is science about?</p>

Discussion & Review Questions

1. Towards the beginning of the video, Professor Keating shares with us that, “... when I hear someone somberly intone ‘science says’ or ‘follow the science,’ I get very nervous. Science doesn’t belong to any ideology. Science is the never-ending search for new knowledge... That’s what science means in Latin, by the way- knowledge. Not wisdom. Not morality. Not social policy. Knowledge. What we do with that knowledge is where wisdom, morality, and social policy enter the picture.” Considering that knowledge is the understanding of information to some degree, why do you think that some people confuse and/or conflate science with wisdom (which is understanding of the truth) and with morality? Explain. What do you think Professor Keating means when he states that science ‘doesn’t belong to any ideology?’ Explain.
2. As part of explaining that even great scientists can get things wrong, Professor Keating gives the example that, “In the 20th century some of the most respected scientists in the world, including Nobel prize winners, believed in eugenics, the reprehensible idea that the human race could be improved by selective breeding. The National Academy of Sciences, the American Medical Association, and the Rockefeller Foundation supported it. By the middle of the century it had been thoroughly rejected as quackery. No reputable scientist would have anything to do with this idea.” Why do you think that anyone, especially respected industry boards, supported eugenics? Explain. What do you think contributed to the later changed mindset of the scientific community towards the subject? Explain.
3. Professor Keating goes on to point out that, “... we all need to get over this notion that just because someone, be it a politician, a bureaucrat, or even a scientist, employs the phrase ‘science says’ means whatever they’re saying is right. It might be right. But it might also be wrong. And if it’s wrong, it won’t necessarily be a bunch of scientists who say it’s wrong. It might be one guy.” Why do you think that some people fall for this notion? Explain.
4. Later in the video, Professor Keating contends that, “As Richard Feynman, one of the most eminent physicists of the 20th century famously said ‘Science is the belief in the ignorance of experts...’ What Feynman is saying is that a good scientist should always maintain a healthy amount of skepticism. Science is by its nature provisional. Science would stagnate if we merely accepted proclamations of past authorities.” What do you think Professor Keating means when he states that science is ‘provisional?’ Explain. Why do you think a good scientist should be reasonably skeptical? Explain.
5. Towards the end of the video, Professor Keating notes that, “It’s human nature to want definitive answers. But science can’t always offer those. Furthermore, science is not concerned with fashion, authority, or majority opinion. ‘Case closed’ is not a scientific expression. Science is never closed. If it was closed after Newton, you’d never have Einstein. Science has to be, first and always, about pursuing knowledge- not about advancing a social agenda, no matter how noble it might be.” Why can’t science always provide definitive answers? Explain. What is so important about the fact that science is not concerned with authority or majority opinion? Explain. What do you think Professor Keating means when he states that science is ‘not about advancing a social agenda?’ Explain.

Extend the Learning:

Case Study ecopocalyptic predictions

INSTRUCTIONS: Read the article “Climate Alarm: Failed Prognostications,” then answer the questions that follow.

1. How long has it been since the alarm bell was sounded for manmade global warming caused by modern industrial society? What has happened to the predictions made on that day and ever since? Who is James Hansen, and what did he do? What is the status of the predictions of global warming and sea-level rise? What is the current trend in climate-related deaths? What is the current trend of sea-level rise? Who is Judith Curry, and what does she say about sea-level rise? By how much did Al Gore claim the sea-level could rise? What have Al Gore and James Hansen responded to the world hitting their predicted ‘point of no return?’ Who is Peter Wadhams, what was his prediction, and what was his response when it didn’t happen? What did British Prime Minister Gordon Brown predict back in 2009, and what became of his prediction? Who is Bill McKibben, and what did he declare at the beginning of the 2016 Trump campaign? Who did Mr. McKibben compare his opponents to? What did professor Michael Klare argue about the election in relation to climate change? What absurd exaggeration did Noam Chomsky make about President Trump in regards to climate policy? What did Judith Curry tell Congress about the scientific community? What did Fred Krupp say about the environmental community, and why did he say it? What is the author’s conclusion in the article?
2. Why do you think that academics make scientific predictions? Do you think that academics should be taken seriously after their predictions turn out not to be true? Why or why not? Why do you think that so many average people fall for such alarmism and exaggeration, even though so many predictions have not come to pass? Explain. Considering that the behavior of the environmental alarmists scared Greta Thunberg so badly that she went on the world stage and exposed her ignorance, would you characterize the behavior of the alarmists as irresponsible? Why or why not?
3. Do you think that Professor Keating’s skeptical and open-minded approach to science should be the norm? Why or why not? Why isn’t it the norm, and what do you think could be done to help the scientific community find its way back to seeking knowledge and staying out of politics? Explain.

Climate Alarm: Failed Prognostications

By Robert L. Bradley, Jr.

June 22, 2018

“If the current pace of the buildup of these gases continues, the effect is likely to be a warming of 3 to 9 degrees Fahrenheit [between now and] the year 2025 to 2050.... The rise in global temperature is predicted to ... caus[e] sea levels to rise by one to four feet by the middle of the next century.”

— Philip Shabecoff, **“Global Warming Has Begun.”** *New York Times*, June 24, 1988.

It has been 30 years since the alarm bell was sounded for manmade global warming caused by modern industrial society. And predictions made on that day—and ever since—continue to be falsified in the real world.

The predictions made by climate scientist James Hansen and Michael Oppenheimer back in 1988—and reported as model projected by journalist Philip Shabecoff—constitute yet another exaggerated Malthusian scare, joining those of the population bomb (Paul Ehrlich), resource exhaustion (Club of Rome), Peak Oil (M. King Hubbert), and global cooling (John Holdren).

Erroneous Predictive Scares

Consider the opening global warming salvo (quoted above). Dire predictions of global warming and sea-level rise are well on their way to being falsified—and by a lot, not a little. Meanwhile, a CO₂-led global greening has occurred, and climate-related deaths have plummeted as industrialization and prosperity have overcome statism in many areas of the world.

Take the mid-point of the above’s predicted warming, six degrees. At the thirty-year mark, how is it looking? The increase is about one degree—and largely holding (the much-discussed “pause” or “warming hiatus”). And remember, the world has *naturally* warmed since the end of the Little Ice Age to the present, a good thing if climate economists are to be believed.

Turning to sea-level rise, the exaggeration appears greater. Both before and after the 1980s, decadal sea-level rise has been a few inches. And it has not been appreciably accelerating. “The rate of sea level rise during the period ~1925–1960 is as large as the rate of sea level rise the past few decades, noted climate scientist Judith Curry. “Human emissions of CO₂ mostly grew after 1950; so, humans don’t seem to be to blame for the early 20th century sea level rise, nor for the sea level rise in the 19th and late 18th centuries.”

The sky-is-falling pitch went from bad to worse when scientist James Hansen was joined by politician Al Gore. Sea levels could rise twenty feet, claimed Gore in his 2006 documentary, *An Inconvenient Truth*, a prediction that has brought rebuke even from those sympathetic to the climate cause.

Now-or-Never Exaggerations

In the same book/movie, Al Gore prophesied that unless the world dramatically reduced greenhouse gasses, we would hit a “point of no return.” In his book review of Gore’s effort, James Hansen unequivocally stated: “We have at most ten years—not ten years to decide upon action, but ten years to alter fundamentally the trajectory of global greenhouse emissions.”

Time is up on Gore’s “point of no return” and Hansen’s “critical tipping point.” But neither has owned up to their exaggeration or made new predictions—as if they will suddenly be proven right.

Another scare-and-hide prediction came from Rajendra Pachauri. While head of a United Nations climate panel, he pleaded that without drastic action before 2012, it would be too late to save the planet. In the same year, Peter Wadhams, professor of ocean physics at the University of Cambridge, predicted “global disaster” from the demise of Arctic sea ice in four years. He too, has gone quiet.

Nothing new, back in the late 1980s, the UN claimed that if global warming were not checked by 2000, rising sea levels would wash entire countries away

There is some levity in the charade. In 2009, then-British Prime Minister Gordon Brown predicted that the world had only 50 days to save the planet from global warming. But fifty days, six months, and eight years later, the earth seems fine.

Climate Hysteria hits Trump

The Democratic Party Platform heading into the 2016 election compared the fight against global warming to World War II. “World War III is well and truly underway,” declared Bill McKibben in the *New Republic*. “And we are losing.” Those opposed to a new “war effort” were compared to everything from Nazis to Holocaust deniers.

Heading into the 2016 election, *Washington Post* columnist Eugene Robinson warned that “a vote for Trump is a vote for climate catastrophe.” In *Mother Jones*, professor Michael Klare similarly argued that “electing green-minded leaders, stopping climate deniers (or ignorers) from capturing high office, and opposing fossil fueled ultranationalism is the only realistic path to a habitable planet.”

Trump won the election, and the shrill got shriller. “Donald Trump’s climate policies would create dozens of failed states south of the U.S. border and around the world,” opined Joe Romm at Think Progress. “It would be a world where everyone eventually becomes a veteran, a refugee, or a casualty of war.”

At *Vox*, Brad Plumer joined in:

Donald Trump is going to be president of the United States.... We're at risk of departing from the stable climatic conditions that sustained civilization for thousands of years and lurching into the unknown. The world's poorest countries, in particular, are ill-equipped to handle this disruption.

Renewable energy researcher John Abraham contended that Trump's election means we've "missed our last off-ramp on the road to catastrophic climate change." Not to be outdone, academic Noam Chomsky argued that Trump is aiding "the destruction of organized human life."

Falsified Alarms, Compromised Science

If science is prediction, the Malthusian science of sustainability is pseudo-science. But worse, by not fessing up, by doubling down on doom, the scientific program has been compromised.

"In their efforts to promote their 'cause,'" Judith Curry told Congress, "the scientific establishment behind the global warming issue has been drawn into the trap of seriously understating the uncertainties associated with the climate problem." She continued:

This behavior risks destroying science's reputation for honesty. It is this objectivity and honesty which gives science a privileged seat at the table. Without this objectivity and honesty, scientists become regarded as another lobbyist group.

Even DC-establishment environmentalists have worried about a backfire. In 2007, two mainstream climate scientists warned against the "Hollywoodization" of their discipline. They complained about "a lot of inaccuracies in the statements we are seeing, and we have to temper that with real data." To which Al Gore (the guilty party) responded: "I am trying to communicate the essence [of global warming] in the lay language that I understand."

"There has to be a lot of shrillness taken out of our language," remarked Environmental Defense Fund's Fred Krupp in 2011. "In the environmental community, we have to be more humble. We can't take the attitude that we have all the answers."

Most recently, Elizabeth Arnold, longtime climate reporter for National Public Radio, warned that too much "fear and gloom," leading to "apocalypse fatigue," should be replaced by a message of "hope" and "solutions" lest the public disengage. But taxes and statism don't sound good either.

Conclusion

If the climate problem is exaggerated, that issue should be *demoted*. Enter an unstated agenda of deindustrialization and a quest for money and power that otherwise might be beyond reach of the climate campaigners. It all gets back to what Tim Wirth, then US Senator from Colorado, stated at the beginning of the climate alarm:

We have got to ride the global warming issue. Even if the theory of global warming is wrong, we will be doing the right thing in terms of economic policy and environmental policy.

“Right thing” in terms of economic and environmental policy? That’s a fallacy to explode on another day.



QUIZ

Follow the Science

1. What does Science mean in Latin?

- a. wisdom
- b. morality
- c. social policy
- d. knowledge

2. The brilliant astrophysicist _____ believed the universe existed in a steady state forever and had no beginning.

- a. Sir Isaac Newton
- b. Sir William Hamilton
- c. Sir Fred Hoyle
- d. Sir George Gabriel Stokes

3. How many scientists wrote a book explaining why Einstein's Theory of Relativity was wrong?

- a. 1
- b. 10
- c. 50
- d. 100

4. The philosopher Karl Popper said that a subject is scientific if and only if it can be _____.

- a. proven
- b. falsified
- c. repeated
- d. measured

5. Science is never closed.

- a. True
- b. False



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