

Analyzing a Scientific Claim

Objectives:

Students will:

1. Consider a scientific claim found online and determine the source of that claim.
2. Review the research on the relationship between eating carrots and eyesight by reading and discussing the article “Really? The Claim: Eating Carrots Improves Your Eyesight.”
3. Gather evidence about a different common scientific claim.

Resources / Materials:

-computers

-link to the article “Really? The Claim: Eating Carrots Improves Your Eyesight” (found online at http://www.nytimes.com/learning/teachers/featured_articles/20050503tuesday.html)

Procedures:

Read the article “Really? The Claim: Eating Carrots Improves Your Eyesight” (http://www.nytimes.com/learning/teachers/featured_articles/20050503tuesday.html), and consider the following questions:

- a. What scientific claim does the article address?
- b. What initial statement does the article make about the validity of the claim?
- c. What primary facts about carrots does the article include?
- d. According to the article, under what conditions is poor vision rampant?
- e. Why might people who eat carrots still need glasses?
- f. In what ways does the article support the assertion that carrots improve eyesight, and in what ways do they not have any effect?
- g. What was the purpose of the 1998 Johns Hopkins study? Who were the subjects? What were the findings?
- h. Does the 2003 study at Brigham and Women’s Hospital in Boston support or refute the 1998 research? How?
- i. What conclusion does the article draw with regards to the original claim?

Task:

You will be gathering evidence about a scientific claim and writing an article modeled after the “Really?” column article read in class.

The possibilities are nearly endless. Some claim ideas:

- Sitting in the sun ruins your skin.
- Cracking your knuckles causes arthritis.
- Using aerosol hairspray destroys the ozone layer.
- Reading in the dark damages the eyes.

Think about:

- What is the claim that you are attempting to prove or disprove?
- Look at the cause-and-effect relationship established by this claim. What basic fact does one need to know to understand this claim? (For example, if your claim is “milk builds strong bones,” what does one need to know about milk’s properties and about the structure of bones that link these two parts of the claim together?)
- What evidence is there that either supports or refutes this claim? In other words, what research has been done on this topic, and what does it show?
- What is the “bottom line” about this claim? To what degree is it true or false?

DO:

Synthesize the research and prepare a “Really?” column article about your claim. The article should state the claim as the headline, provide ample facts supporting or refuting the claim, and provide a bottom line summarizing the validity of the claim.

**Share your finished “Really?” article with Ms. Rosenthal:
rosenthal_d@4j.lane.edu**

Further Questions for Discussion:

- How do you know if information that you receive is true?
- When and why is it important to back up claims with evidence?
- How often do you conduct research on your own to determine if something you have heard or read is true? When do you not bother to research something?
- What sources can you consult to find evidence to back up information that you hear? How do you know if those sources are correct?

Evaluation / Assessment:

Students will be evaluated based on a thoroughly researched and thoughtfully written article supporting or refuting a scientific claim.