

Name: _____ Period: _____

Title: Separating Fact From Fiction

Background Information:

Good science can be hard to come by. We live in a media driven world. The internet and television constantly flash news stories. Many people take these as fact, without further investigation. Good science is based on fact. *A fact is something that is observable in nature*, either through physical observation or experimentation. Using facts, scientists can then make inferences. *An inference is a logical conclusion based on facts*. In a nut-shell, this is how science progresses. “Bad” science is either conclusions not based on real fact or illogical conclusions based on real facts. Bad science will often try to appeal to emotions. When emotions are involved people often forget about seriously examining the facts and conclusions. Another clue to deciphering good and bad science is by looking at the source of the information. Information from reliable source like a Scientific Journal or university or government website can usually be trusted. This information is peer-reviewed. Personal web-sites, clubs, and some magazines and newspapers cannot be trusted. Often there is a bias. *A bias is when a person or organization has a preference which prevents them from drawing objective conclusions*. People have biases for many reasons, they may be receiving money from someone or possibly they were raised with certain cultural or religious ideas.

Objective: In this activity you will be learning how to identify facts, inferences, illogical conclusions and bias.

Procedures:

1. Read the article titled “ Earth will be a Wasteland in just Five Years, Scientist’s Warn!”
2. Using a blue colored pencil, highlight 2 facts that you find in the article. Explain how you verified these facts in the margin next to your highlighted statement.
3. Using a yellow colored pencil, highlight 2 inferences.
4. Using a red colored pencil, highlight 2 illogical conclusions either based on fact or fantasy.
5. Answer the analysis questions by yourself or with a partner. Be prepared to discuss them with the class.

Analysis Questions:

1. What are 3 clues in this article that alert you to it being “good” or “bad” science?
2. What are 3 ways you can identify sound (good) scientific evidence from the bad?

3. Why might it be important to be cautious about some inferences? (Hint: Think about what they are based on)
4. What bias does the publisher of this article have? (Hint: The Weekly World News is a Tabloid.)
5. What cycle of matter does this article assess?
6. What true global threat does an increase in carbon dioxide concentrations pose? Does the article correctly assess the threat? What does this tell you about the author and his/her knowledge of science?

Extension Activity:

Write a 5-6 sentence paragraph discussing the Nitrogen cycle. You have been asked to write this paragraph for the "Weekly World News." Write another 5-6 sentence paragraph but this time as if you were writing for a Scientific Journal like NATURE. Be sure to include at least 3 facts, 3 inferences in each paragraph.