SCIENCE PROCESS SKILLS

Reading to Evaluate and to Identify Bias

Have you ever been convinced by an argument, only to change your mind as soon as you have read an opposing viewpoint? Whenever you read something that tries to persuade you of a particular opinion, you must be able to evaluate the reading carefully. Often, readings that attempt to persuade do not rely on facts to change your opinion. You can use these questions to evaluate persuasive arguments:

• Do the facts presented support the conclusions?
• Are any of the statements unclear and vague?
• Are the claims supported by evidence or examples?
• Are both sides of the issue presented?

In addition, if you read two arguments that support opposite positions, look for statements that seem contradictory. If two statements contradict each other, they cannot both be correct. In this case, you may need to do more research to determine which is right. Also, while evaluating such statements, you may discover misleading evidence on one or both sides of the issue.

Read the two arguments below about the dangers and benefits of the substance dihydrogen monoxide. Then, answer the questions after the readings to evaluate the arguments presented in each.

Dihydrogen Monoxide — The Invisible Killer

Dihydrogen monoxide has no color, odor, or taste, but it kills thousands of people every year. Many people die from inhaling DHMO by accident, but the dangers do not end there. Exposure of the skin to solid DHMO can cause serious damage. If too much DHMO is swallowed, it can cause symptoms such as sweating, nausea, vomiting, and an electrolyte imbalance in the body. For people who become dependent on DHMO, withdrawal means certain death.

Dihydrogen monoxide:
• is a major component of acid rain.
• contributes to the greenhouse effect.
• causes many metals to corrode and rust more quickly.
• may cause electric power to fail.
• may make a car’s brakes less effective.
• has been found in cancerous tumors.

Despite its dangers, DHMO is still used:
• as an industrial solvent and coolant.
• in nuclear power plants.
• as a fire retardant.
• in animal research.
• in pesticides that are sprayed on crops.
• as a food additive.
1. Find statements in the previous passage that are unclear or not supported by evidence, and explain what additional information would clarify the statements. For example, does DHMO cause acid rain, or does it just happen to be found in acid rain?

Dihydrogen Monoxide—Your All-Natural Friend
You’ve probably heard of it: a colorless, odorless liquid; a powerful coolant and solvent; an easy-to-make compound that is used by industry, the armed forces, businesses, and even private individuals. This substance is dihydrogen monoxide (DHMO).

**DHMO is safe for the environment.**
When handled properly, DHMO is good for nature, and nature could handle even the worst DHMO accident. Research suggests that DHMO is a necessary part of Earth’s environment.

**DHMO occurs in nature.**
When you hear the term dihydrogen monoxide, you might think it is the product of laboratory research. This is not true. In fact, DHMO has been a part of nature for longer than we have.

**DHMO is good for you.**
You might think that DHMO is harmful to people. Nothing could be further from the truth. It has been shown that DHMO helps people to grow and be healthy.

2. Find statements that are unclear or not supported by evidence, and explain what additional information would clarify them.

3. Can you make an informed judgment about which side is correct from the two readings? If so, explain. If not, describe what additional information might help you resolve the issue.