

# WHAT IS SCIENCE?

## NATURE, PROCESS AND ADVANCEMENT OF SCIENCE

To understand how we know what we know about dinosaurs and paleontology, it is critical to gain an understanding about what science is, how science works and the process in which science advances our knowledge. The Museum of the Rockies basis its materials for teachers on the following guiding principles:

### THE NATURE OF SCIENCE

Science is a process by which we learn about the natural world using our senses and extensions of our senses. Science asks three basic questions:

- What's there?
- How does it work?
- How did it come to be that way?

### THE PROCESS OF SCIENCE

- Science follows a process guided by certain parameters.
- Science relies on the observation physical evidence from the natural world
- Physical evidence is examined and interpreted through logic.
- An observation is a description of the physical evidence based on what we see, feel, hear, smell, or taste.
- An inference is a logical conclusion based on observation of physical evidence.
- A hypothesis is a scientific idea supported by physical evidence.
- A theory, as used in casual conversation is different than a scientific theory.
- Scientific theories are based on testing explanations against observations of the evidence and are subject to peer review and replication.

### ADVANCEMENT OF SCIENCE

Science advances as scientific theories are supported, modified, or replaced as new evidence is found.

## DO YOU WANT TO LEARN MORE ABOUT SCIENCE?

Visit “Understanding Science” [\[LINK\]](#) developed by the University of California Museum of Paleontology in collaboration with its Advisory Boards and funded by the National Science Foundation.