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Geology

Assignment 2

What is Science:

Science is a way of answering questions with evidence. However science doesn’t say things are 100% true, it just gives you evidence that suggests something and lets you decide. They say that science is a way of learning or using comparative critical thinking. The scientific knowledge makes a couple of necessary assumptions like the world being real or natural processes being able to account for natural phenomena or events.

The Scientific Method:

The scientific method is comprised of a few things. Observation is the first and it is where we go observe an event due to interest, accident, or annoyance. Next the observations directs us to ask a question about the event we just observed. This question however needs to be answerable. After we figure out our question its necessary to make an educated guess, or a hypothesis that answers the question. A hypothesis should use dependent and independent variables. Next we test the question. It can be done in many places but it needs to be reproducible, meaning anyone should be able to get the same results that you get. After you perform the test you have to evaluate their findings usually by sharing it with others in the scientific community.

Definitions:

* Fact: A fact is something that is confirmed based on real occurrences
* Hypothesis: An educated guess that tries to answer a question asked
* Scientific Theory: An explanation of many facts that can be used to predict or explain phenomenon.

Science Through the Recent Ages:

Science has progressed a lot in the last few centuries. With brand new technological advances we are now able to do things we weren't able to do 200-300 years ago. An example in the text is the understanding of how the Earth, Sun, and Moon move in relation to each other. At first it was thought that everything rotated around the sun. However as science and technology advanced it was later discovered that everything actually rotates around the sun. These new advances lead to what was called the scientific revolution where a lot of our physics that we learn today were discovered.

Scientific Method and Earth Sciences

The scientific method is hard for geologists because the earth is always changing and isn't consistent. Instead of doing controlled and repeatable experiments in a laboratory like other scientists, they have to rely on historical data and circumstantial evidence. An example is the theory of plate tectonics. Wegner made a hypothesis based on evidence that couldn't be proved at his time, but guessed that the continents shifted away from each other. As science advanced it was later supported by many other pieces of evidence.

Conclusion:

Although we just learned about a very specific way of looking at science, it was brought up by Percy Bridgeman that science is different for actual working scientists. He said that they don't care to be exact all the time, always making sure that every single part of the scientific method is performed correctly, but rather he “is completely free to adopt any course that his ingenuity is capable of suggesting to him.”