

Nature of Science

Lesson 1: What is science?

Today's focus

I will:

- Understand that science is the study of the natural world
- Understand how to be safe during lab activities
- Understand that scientific explanations are based on observations and evidence
- Recognize that science doesn't always follow a "scientific method"
- Identify appropriate forms of record keeping
- Make and record measurements as data

Bellinger: Engage Your Brain

Robert's teacher was discussing what all scientists have in common with the class. During the discussion, students were making predictions on what they thought all scientists have in common. Here are a few of the answers that were given, who should Robert agree with?

Sally said that all scientists are always doing experiments to try and discover new things.

Jasmine said that all scientists can't have the same thing in common because they all study different fields of science.

Omaria said that what all scientists have in common is that they are trying to answer questions about the natural world around them.

Who do you agree with? Why?

Reading:

- Here you will read while highlighting and underlining vocabulary words, definitions, and key terms. If you see a question as a title or as a heading, use that question to help guide what you choose to annotate as details in the text.

What Is Science?

Science is knowledge about or study of the natural world based on facts learned through experiments and observation.

How Do Students Learn Science?

Students learn science by actively engaging in the practices of science, including conducting investigations; sharing ideas with peers; specialized ways of talking and writing; mechanical, mathematical, and computer-based modeling; and development of representations of phenomena.

1. According to the text, what are two ways that scientists use in order to get evidence to answer questions about the natural world? _____
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Nature of Science

What is a scientific question?

Many questions that scientists ask begin with What, How, When, Where or Why. Scientific questions can be answered by gathering observations or measurements, called **data**.

What Do Scientists do?

Nature is full of questions and mysteries. Scientists look for answers to questions about the natural world. Scientists collect clues to nature's mysteries. Scientists try to figure out what the clues mean.

What does a Scientist do?

Scientists are constantly trying to understand and improve the world around them. In order to understand or improve the world he/she must first identify a problem. An example of this might be that one day while on the beach you notice lots of dead fish showing up on the sand. Is that a problem? Sure, dead fish being deposited on the sand shows a huge problem. Another example of defining a problem might be noticing that many women between the ages of 42 and 65 are dying of cancers? Is this a problem? Sure, Women shouldn't be dying at such a young age. Another example might be noticing that you are tired all of the time and can't get out of bed in the morning. Is this a problem? Sure it is. Therefore, Scientists' first job is to define the problem so they can better understand and improve the world.

Writing Prompt:

What is science and why is it important? _____

Exit Ticket:

Bryce and Jay were doing an experiment in school. They had completed their experiments and collected all their data. Now they were ready for the final step, except they could not remember what to do with all the information they had gathered. What should Bryce and Jay do with their information?

- A) Conduct a different experiment.
- B) Estimate what might happen in this experiment.
- C) Analyze the data and form a conclusion.
- D) Predict what will happen in a similar experiment.