

# Making Observations

## Guided Notes – Teacher Edition



Humans are naturally **curious**. This innate curiosity leads to noticing things around them and being able to perceive things through their **senses**. This is known as **observation** or the process of observing something or someone carefully in order to gain information.

Observation is an essential **process** in science. It often leads to asking **questions** and having the desire to **pursuit** answers to these questions. Through observations, scientists are able to propose educated **guess** and test it through **experiments**, then formulate **conclusions**.



Observation involves the use of **senses** in describing an object, a person or an event. Our senses include **vision**, **hearing**, **touch**, **smell**, and **taste**. We see with our **eyes**, hear with our **ears**, touch with our **hands**, smell with our **nose**, and taste with our **tongue**.

We can also extend our senses and our ability to make observations by using various **instruments** such as microscopes, telescopes, weighing scales, rulers, and thermometers. These tools allow for more **precise** and **accurate** observations. Tools also help gather information about things beyond our capability to experience firsthand.

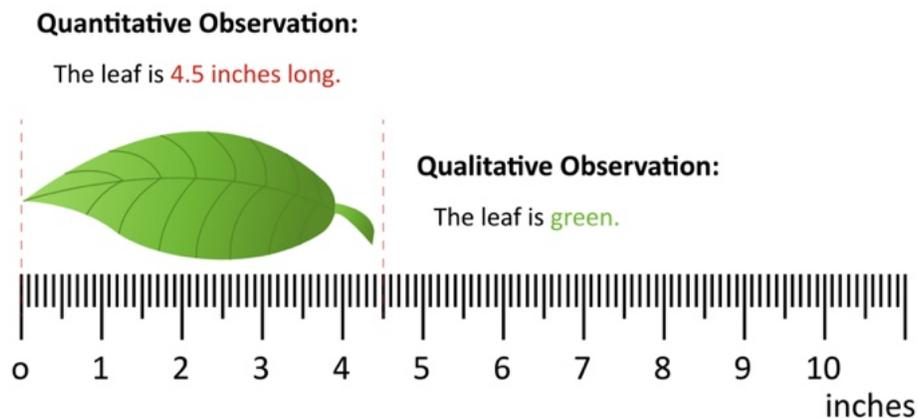
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### Qualitative vs. Quantitative Observations

There are two types of observation: **qualitative** and **quantitative**.

- **Qualitative** observation is a subjective gathering of information which focuses more on quality rather than its quantity. Thus, it mainly uses the **senses** alone in describing an object, a person, or an event.
- **Quantitative** observation is an objective gathering of information which focuses on numbers or measurements. This requires the use of **measuring instruments** to provide an accurate observation.



*In quantitative observation, the specific length of the leaf is obtained through the use of a ruler. On the other hand, the qualitative observation highlights the color which is a physical quality of the leaf.*

### Uses of Observation

Observations are used to gather **evidence**. Besides raising questions for investigations, observations play another role in scientific investigations which is to gather evidence or provide **factual** information that supports a certain **claim**.

Observations yield what scientists called **data**. Whether the observation is an experimental result or just noticing a certain event through senses – they are all data. Scientists **analyze** and **interpret** data in order to figure out how those data inform their educated guess and conclusion.



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Scientists interpret whether the data **support** one idea over others, help **refute** an idea, or **suggest** an entirely new explanation. Though data may seem complex and be represented by detailed graphs or complex statistical analyses, it is important to remember that at the most basic level, they are simply **observations**.

### Observation as a Skill

Like most skills, observation improves with **practice** and **knowledge**. One can be more scientific in observing when observations are prompted by appropriate **questioning** or when they are **connected** with growing background knowledge on the subject or object under observation.

Observation is an essential **skill**. It is a good way to learn something new or expand our knowledge. It is the key to understanding **objects** and **phenomena** as well as **interactions** between them.

The ability to make good observations is also essential to the **development** of the other science process skills such as communicating, classifying, measuring, inferring, and predicting. Making good observations requires one's appropriate use of **senses** and scientific **instruments** in gathering information.