Process Skills – Observations/Inferring

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p. 13 in ILL

Process Skills - Observations

Definition	**Any data recorded during an experiment. Done with our own senses or a variety of tools such as a microscope or thermometer.**
Purpose	**To create and test hypotheses**

Process Skills - Observations

Two Types of Observations	Qualitative and Quantitative
1) Qualitative	Qualitative—uses only words to describe shape, texture, color, smell, taste, sound, quality or kind Ex: smooth, clear, rectangular, odorless, red, bumpy, thin*, microscopic* *although thin and microscopic describe size, they are not precise and therefore qualitative

Process Skills - Observations

Two Types of Observations	Qualitative and Quantitative
2) Quantitative	Quantitative—can be expressed in numbers and is most likely measured or counted Ex: 5 balloons, 30 g, 5 km, 2 hours, 22ºC, 300 million

Process Skills - Observations

Practice

Using the picture below make as many observations as you like. Classify them into qualitative and quantitative:

Process Skills - Inferring

Definition	**Provides an explanation for events we experience or observations that we make**
Purpose	**Scientists infer to help make sense of their environment**

Process Skills - Inferring

Things to remember	***the only rule is to be logical and reasonable** ***based on observations** ***inferences can change when new information becomes available** ***there may be more than one logical inference for any situation** ***used to make predictions**

Process Skills - Inferring

Example	**Tom was working on his lab in class when the lights went out and the teacher told everyone to return to their seats. He inferred that the _____ went out and the teacher didn't want anyone to get _____.**

Process Skills - Inferring

Practice	**Provide a reasonable inference for the following observations:** ***You heard your neighbor setting off fireworks during the July 4th holiday in their backyard. The next morning, you noticed their storage shed in the backyard had burned down.*** ***Your lock was missing from your locker when you returned from electives.*** ***The car belonging to the family across the street has not been in their driveway for the last week but you have seen them at home.***