QUALITATIVE VS. QUANTITATIVE OBSERVATIONS

Many of the observations on this worksheet are qualitative; that is, you observe a quality about an object (it smelled good, it was green, etc.). Another type of observation is quantitative, meaning that it can be described or measured in concrete numerical terms.

The following observations are quantitative:
There are 30 students in my class. I weigh 98 pounds. I ate a pound of potatoes.

Determine which of the following statements are quantitative and which are qualitative.

1. The cup had a mass of 454 grams.
2. The temperature outside is 25° C.
3. It is warm outside.
4. The tree is 30 feet tall.
5. The building has 25 stories.
6. The building is taller than the tree.
7. The sidewalk is long.
8. The sidewalk is 100 meters long.
9. The race was over quickly.
10. The race was over in 10 minutes.

CONSTRUCTING INFERENCES FROM OBSERVATIONS

Suppose your friends went to the beach at noon on a warm day. They saw some black and white birds. Which of the following statements are observations and which are inferences? Indicate your answer with either the letter "O" for an observation or the letter "I" for an inference.

1. It is summertime.
2. It is daytime.
3. They saw birds.
4. They saw seagulls.
5. They went swimming.
6. One friend's name was Bob.
7. It was a warm day.
8. The birds were black and white.
9. They ate lunch and drank Coca-Cola.
10. The people are friends.
Qualitative vs Quantitative Observations

**Qualitative** observations use your senses to observe the results. (Sight, smell, touch, taste and hear.)

**Quantitative observations** are made with instruments such as rulers, balances, graduated cylinders, beakers, and thermometers. These results are measurable.

Read the following examples and then decide if the example is qualitative (1) or quantitative (2).

1. It is light green in color. ________ (1 or 2)
2. It taste sour. ______ (1 or 2)
3. One leaf is 9 cm long. ____ (1 or 2)
4. It makes a loud pop sound. ____ (1 or 2)
5. The mass of the computer is 1 1/2 kg. ____ (1 or 2)
6. It smells sweet. ____ (1 or 2)
7. The temperature of the room increases by 8 degrees C. ____ (1 or 2)
8. It gets darker over a period of time. ____ (1 or 2)
9. The flower clusters in 3 blooms. ____ (1 or 2)
10. Feels very rough. ____ (1 or 2)
11. The plant is short. ____ (1 or 2)
12. Leaves are stiff. ____ (1 or 2)
13. The veins are 3 mm wide. ____ (1 or 2)

14. Write a *qualitative* example:

15. Write a *quantitative* example:

16. What type of observation do you think is more scientific and why?