

Canon Paleo Curriculum
Unit: Nature of Science
Lesson Plan: 9

Activity Name: Qualitative Vs. Quantitative

Supplies:

Qualitative Vs. Quantitative Worksheet

Preparation:

Copy worksheet for students
Review definitions of qualitative and quantitative

Concept:

Students learn to distinguish between qualitative and quantitative. Later they will be apply these ideas to their hypothesis.

Activity:

Have students fill out worksheet
Review answers

Conclusions:

Students begin to discern between measurable data and subjective data.

Time: 20-25 Minutes

QUALITATIVE VS. QUANTITATIVE WORK SHEET

All of the observations in this worksheet were qualitative; that is, you observed 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. 1 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.

KEY FOR TEACHER

QUALITATIVE VS. QUANTITATIVE WORK SHEET

All of the observations in this worksheet were qualitative; that is, you observed 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. 1 ate a pound of potatoes.

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

1. **Quant.** The cup had a mass of 454 grams.
2. **Quant.** The temperature outside is 25° C.
3. **Qual.** It is warm outside.
4. **Quant.** The tree is 30 feet tall.
5. **Quant.** The building has 25 stories.
6. **Qual.** The building is taller than the tree.
7. **Qual.** The sidewalk is long.
8. **Quant.** The sidewalk is 100 meters long.
9. **Qual.** The race was over quickly.
10. **Quant.** 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. **I** It is summertime.
2. **O** It is daytime.
3. **O** They saw birds.
4. **I** They saw seagulls.
5. **I** They went swimming.
6. **I** One friend's name was Bob.
7. **O** It was a warm day.
8. **O** The birds were black and white.
9. **I** They ate lunch and drank Coca-Cola&.
10. **I/O** The people are friends.