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. 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.
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. I 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.