

Spatial Measurement Levels: nominal, ordinal, interval, and ratio.

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Measurement is the method of designating a score to an observed incident according to an operational interpretation. The four levels of measurement are nominal, ordinal, interval, and ratio. On a ratio scale, an example of measurements would be things like the mineral content of soil or depth to water. Zero is absolute on a ratio scale. Zero of the mineral means there is none of the mineral, whether the units are in ppb or grams per metric ton. On the other hand, measurements on the interval scale do not have a true zero but are similar to ratio measurements due to the fact that the interval between units on the scale are the same. An excellent example of this is temperature, since zero temperature varies according to the units of measurement. A hot piece of metal at 300 degrees Fahrenheit is not twice as hot as a piece of metal at 150 degrees Fahrenheit. This is on account of the fact that the ratio of these values is different using Celsius. Measurements on the ratio and interval scales generate numbers that may be manipulated by arithmetic operators. Measurements using the nominal scale, which is also called the categorical scale, are merely numerical labels without a quantitative meaning. Values that are pointers that link a spatial object to the records of an attribute table are examples of numbers on a nominal scale. Measurements of the ordinal scale entail observations that are ranked according to relative location on a scale, with unequal intervals in between the units. Also, numbers on an ordinal scale may be compared with less than and greater than operators, but they cannot be added, subtracted, multiplied, or divided in a meaningful manner.