

PQ1W6a

CLASSNOTES: fill in blanks in class

MEASUREMENTS are different from ordinary OBSERVATIONS

MEASUREMENTS:

describe physical properties

are exact(precise) and accurate (true)

use _____ and _____ (dimensions)

are obtained using instruments

are obtained by _____ object to something

are objective (not opinion)

tell the _____ of something

UNITS: Every measurement has one!

A number without a unit is like a naked number!

How do we decide on units?

_____ for example, day, year

_____ : meter, foot, gram

To have a worldwide system of units, everyone must agree on a standard for the unit (1 object that has that exact measurement of that property) OR use a scale (several objects that each have an even number for that property) that all agree upon.

1 meter used to be a length of metal stored in the International Bureau of Standards in Paris, now it is defined as 1650763.73 times one wavelength of the orange light emitted by a Krypton-66 atom.

1 second is 9,192,631,770 periods of radiation of an atom of Cesium-83.

1 kg is the mass of a block of metal sealed away in a vault in France.

PQ1W6b

ANCIENT MEASUREMENTS:

FOOT: Emperor Charlemagne's (800 AD) foot, later in 14th century England it was 36 barleycorns laid end to end.

POUND: A Stone in England

CARAT: the weight of a carob seed, used for gems.

MILE: 1000 double steps or paces by a Roman soldier

GALLON: Queen Anne of England's wine jug

CUBIT: length of an Egyptian man's arm from elbow to fingertip.

INCH: length of the tip of the first joint on a man's thumb

YARD: distance from nose to fingertips of King Henry I of England.

FATHOM: distance from fingertip to fingertip on outstretched arms of a Viking.

ACRE: The area of the amount of land that two oxen could plow in a day.

KNOT: or 1 nautical mile per hour, how many knots of a rope could be fed out in a specific time by a sailor on a ship.

HOMEWORK

Invent and write down at least 4 more standards or scales for measuring physical properties... (NOT length or weight).

Make up units and give a standard, such as described above, or devise a scale for measuring a property like the examples from class:

Example: Fluffiness: scale of 1 to 10

my teddy bear is a 10, my table is a 1

Example: Temperature in degrees Celsius

freezing water is a 0, boiling water is an 100

Bouncability: compared to my favorite spongebob toy dropped from 1 meter.