

1. MEASUREMENT

In this first unit, we look at some of the different ways of expressing the function of measurement. Why start with measurement? As Lord Kelvin¹ wrote in 1890, "without quantification there is no scientific subject", and it is true to say that the history of scientific progress has run parallel to, and been dependent on, the ever-increasing precision in measurement.

Self evaluation – entry test

■ Fill in the gaps in the sentences according to the definitions. The first two letters are given.

Example:

How **de** is the Pacific ocean? (distance from the surface to the bottom)

→ How **deep** is the Pacific ocean?

1. In 1841, Sir George Everest, a colonial official, recorded the location and the **he ight** of the most famous mountain in the world. (altitude)
2. GIS (geographic information systems) are designed to process massive **am ounts** of data. (quantities)
3. The hearing **ra nge** of bats is enormous; it goes from 50 to 100,000 cycles. (from the lowest to the highest limit, extent)
4. It is said that Galileo dropped objects from the leaning tower of Pisa to prove that the speed of fall is not proportional to **we ight** (a force measured in kg)
5. Colonial power depended on navigation. In 1714, the British Parliament offered a prize of £20,000 to the first man to develop an **acc urate** marine chronometer. (exact, precise)
6. A six-year-old, male alligator has a **length** of approximately 190 centimetres. (longitudinal dimension)
7. Xavier LePichon, a French seismologist, was able to **work out** the basic geometry of plate tectonics from seismic evidence. (calculate – 2 words)
8. As a meteorite enters the atmosphere, it **slows down** (decelerates – 2 words)
9. The **average** brain temperature of animals hibernating in the Arctic may drop to 6°C. (statistically normal, mean)
10. The notion of **square root** was invented in the 9th century by Arabian mathematicians. (a factor of a number that when multiplied by itself gives the number)

¹ Lord Kelvin: 1824-1907, British physicist who introduced the absolute scale of temperature.

THE WORD WEB – SUFFIXES

■ As we have seen in the Key points, suffixes can be used to transform adjectives into nouns and verbs. Complete the columns using the suffixes: -ment • -th • -ness • -en • Ø.