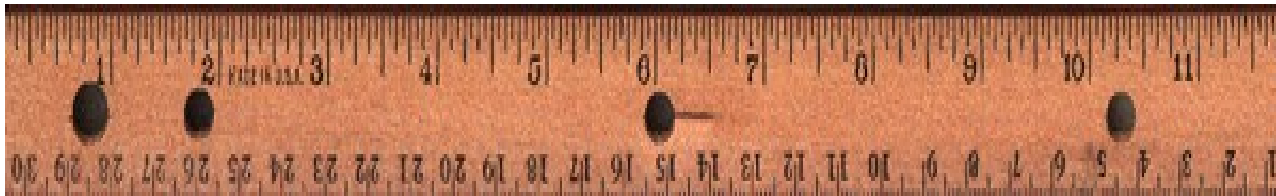


Units of length



Which units are used to measure length ?

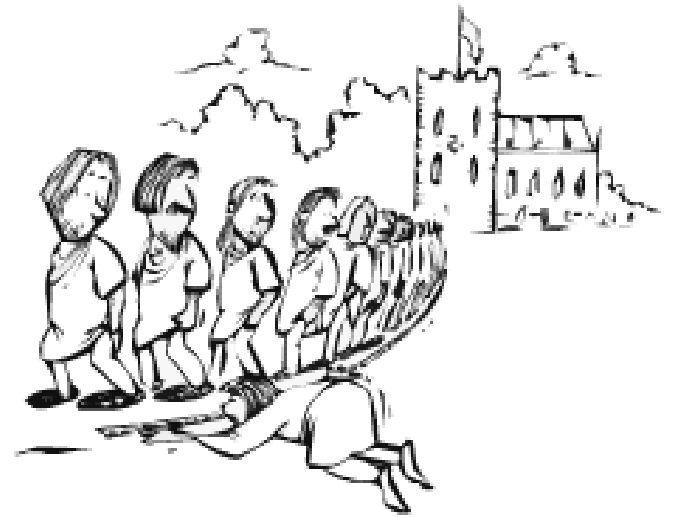
Do you know any history of measurement ?

Some old units of length

- Cubit was used most early to measure length last 3000 years.
- Cubit : the length of the arm, from the elbow to the tip of the middle finger.

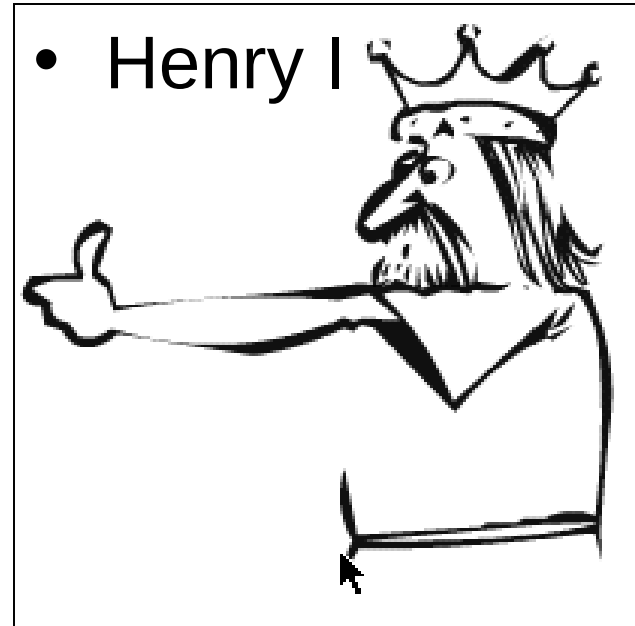


- Foot :
To Greek, foot : the width of 16 fingers.
To Romas, 1 foot = 12 inches



Measuring feet

- Yard : the distance from the tip of the nose to the thumb of King Henry I
- Yard : the arcumference of a person's waist.



**The yardstick
(Henry I, thumb to nose).**

Some different units:

- fermi (fm),
- angstrom,
- micron,
- RE (radius of Earth)
- AU (astronomical unit)
- LY (light year)

Arrange from smallest to great :

- inches
- feet
- yards
- miles

Definition of metre

- 1799, The meter standard, a platinum bar, is officially presented in Paris
- 1889, the length of that platinum bar with no longer reference to the Earth meridian.



Length measurement

- 1960, equal 1650763.73 wavelengths of the red-orange radiation of Krypton atom.
- 1983, metre is the distance travelled in vacuum by electromagnetic wave in $1 / 299792458$ of a second.

- 1960, equal 1650763.73 wavelengths of the red-orange radiation of Krypton atom
- 1989, metre is the distance travelled in vacuum by electromagnetic wave in $1/299792458$ of a second.
- And then, metre was used as mainly unit of length.

Metric system

- Metre, include centimetre, kilometre
- Non – SI unit :
 - fermi (fm) = 1 femtometre
 - angstrom = 100 picometres
 - micron = 1 micrometre
 - Swedish mile = 1000 metres

- Imperical unit

inch = 25.4 mm

foot = 12 inches = 0.3048 m

yard = 3 feet = 0.9144m

mile = 5282 feet = 1609.344m

- Astronomical units :
 - Earth radius (RE) : ~6370 kilometres
 - astronomical unit (AU) : ~ 149 gigametres
 - light year : ~ 9.46 petametres

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