

Astronomy Terms

Astronomical Units

There are many terms you should know when studying astronomy. Measurements are much larger than those you are familiar with. For example, the astronomical unit (AU) is a measure of the distance between the Earth and the Sun.



$$1 \text{ AU} = 150000 \text{ 000 km}$$



- 1 The radius of Pluto's orbit is 6 000 000 000 km. Convert this to astronomical units.

- 2 If an object is 2 AU from Earth, how many kilometres away is it?

The Light Year

A light year is the distance it takes for light to travel (unobstructed) in one year, and the distance never changes.

Light travels at a rate of 300 000 kilometres per second.



$$1 \text{ light year} = 300000 \text{ km} \times 60 \times 60 \times 24 \times 365 = 9.46 \times 10^{12} \text{ km, or } 300 \text{ 000 m/s}$$



For example, if a star is 4 light years away, it is $4 \times 9.46 \times 10^{12} = 37.84 \times 10^{12}$ km from us.

- 3 The star Sirius is 8.7 light years from Earth. What is this distance in km? (Show your working.)

- 4 The star Vega is 26 light years from Earth. Which star is closer to Earth, Vega or Sirius?

- 5 How much closer to Earth is the star you named in Question 4 than the other star?

- 6 A parsec (short for 'parallax-second') is a unit derived from trigonometry. One parsec is equal to 3.26 light years. How many AU equal one parsec?

Research

- 7 Explain how the parsec is derived. Include a diagram.

SI Unit

Scientists around the world made the wise decision to adopt a uniform measure of units. The SI unit, or Systeme International d'Unites (French for International Unit System), was devised for this purpose. The SI units include those used in the metric (MKS) system.

- 8 Complete the table showing SI units.
The first one has been done for you.

Name	What It Measures	Abbreviation
metre	length	m
	mass	
second		
		k
ampere		
	light intensity	
		Mol or M
radian		

- 9 Which branch of science uses the mole?

Astronomical Numbers

Figures used in astronomy are often so huge that they have to be abbreviated.

- 10 Complete the table.
The first one has been done for you.

Power	Prefix	Abbreviation
10^3	kilo	k
10^6		
	giga	