

TIME

DEFINITION: the accurate
measurement of repeating patterns

UNITS: seconds, years

We experience time every day, but it's not always easy to pin down a precise way to describe it. In science, we define time by our ability to measure it according to some regularly repeating event: the spinning of the Earth on its axis, a pendulum swinging back and forth, or the vibration of atoms under certain conditions. Time and our ability to measure it accurately is key for many frontiers of science.

COSMIC EXAMPLE

Age of the globular cluster 47 Tucanae: about 13 billion years
or 4×10^{17} sec

Globular clusters like 47 Tucanae are the oldest star systems in our Milky Way galaxy. Astronomers think they formed about 13 billion years ago (4×10^{17} sec).

OLYMPIC EXAMPLE

Cross Country Skiing:
The longest cross-country skiing event in the Olympic Games is now 50km for both men and women.

The current Olympic record at this distance is 1 hour 46 minutes 55.2 seconds.



EVERYDAY EXAMPLE

One minute: 60 seconds
One hour: 3,600 seconds
One year: 31,536,000 seconds

