EXPLORING SPACE
Measuring a Light-Year

Distances are so great in space that a special unit of measurement is used. It is called a light-year. This sounds like a measurement of time, but **it is a unit used to measure distance**. By definition a light-year is the distance that light travels in one year. To calculate the distance of one light-year, you determine the number of seconds in a year and then multiply that number by the speed of light. Light is the fastest thing we know of, as it travels at an incredible **300,000 kilometers per second.**

Your job is to identify the value of one light-year.

Calculate the number of seconds in one year. There are 3,600 seconds in an hour and a day has 24 hours. So get cracking and think… How many seconds are there in 365 days?

Calculate the number kilometers, in a light-year by multiplying the number of seconds you got in a year by 300,000 km. That's how many kilometers you have in **one light-year.**

Now that you know how many kilometers are in a light-year, determine the distance of these objects (round light-year to nearest trillion).

1. The closest star to Earth other than the sun is 4.3 light-years away.

2. The Andromeda galaxy is 2.2 million light-years away from Earth.

3. The diameter of the Milky Way galaxy is 100,000 light-years.