

1.- Complete each sentence by using an words from the list below:

| <i>words</i> | <i>pronunciation</i> | <i>times</i> |
|-----------------|---|--------------|
| nebula | — | once |
| stars | [http://en.wiktionary.org/wiki/stars] | three |
| Earth | [http://en.wiktionary.org/wiki/Earth] | once |
| speed | [http://en.wiktionary.org/wiki/speed] | once |
| clouds | [http://en.wiktionary.org/wiki/clouds] | once |
| light | [http://en.wiktionary.org/wiki/light] | twice |
| galaxy | — | twice |
| universe | [http://en.wiktionary.org/wiki/universe] | twice |

Sentences:

- 1) The _____ is whole cosmic system of matter and energy of which _____ is a part.
- 2) A _____ is any of the billions of systems of _____ and interstellar matter that make up the _____.
- 3) The _____ are massive celestial bodies of gas that shine by radiant energy (_____) generated inside its.
- 4) A _____ is composed of millions to trillions of _____.
- 5) A _____ is any of various tenuous _____ of gas and dust in interstellar space. Nebulae constitute only a small percentage of a galaxy's mass.
- 6) The _____ travels through empty space at a _____ of about 186,000 mi/sec (300,000 km/sec).

2.- Complete the next table:

| <i>Numbers</i> | <i>Catalan</i> | <i>English</i> |
|-------------------|----------------|----------------------|
| 1.000.000 | | million |
| 10.000.000 | | ten million |
| 100.000.000 | | one hundred million |
| 1.000.000.000 | | billion |
| 10.000.000.000 | | ten billions |
| 100.000.000.000 | | one hundred billions |
| 1.000.000.000.000 | | trillion |

Nom i cognoms:

Data:

Grup: E1D

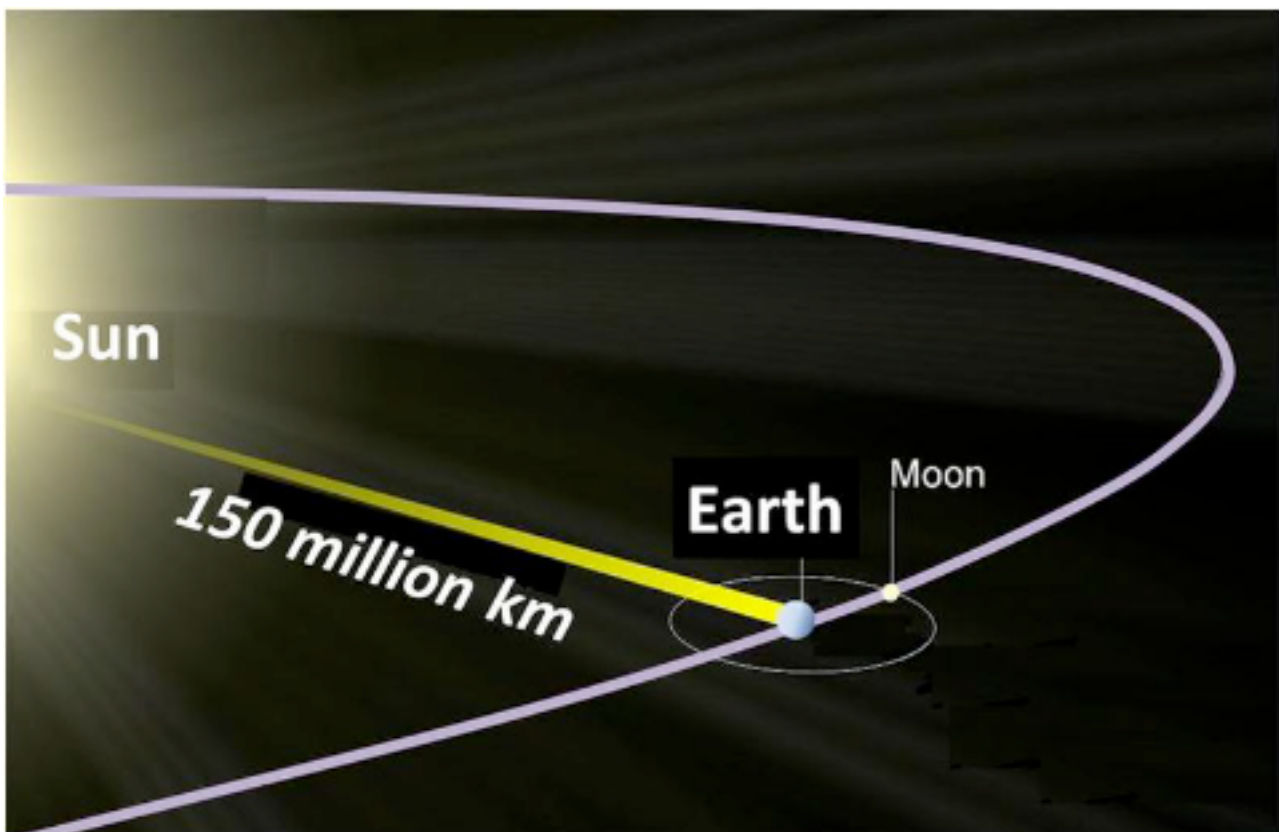
3.- Reading and pronunciation:

Stars are millions of kilometers away. To see a star, that star's light must travel across space to our eyes. They are so far away that standard units of measurement like miles and kilometers are awkward to measure these distances, therefore a unit known as the light year is used. If the star is five light years away, then the light we are seeing from that star took five years to travel to our eyes. It also means that what we see happening at that star is actually what happened five years ago, not what is happening in the star's present.

A light year is defined as the distance that light travels in one Earth year. Light moves extremely fast, 300.000 km/s or 180.000 miles/second. In one second light can travel around Earth almost seven and a half times.

<http://en.wiktionary.org/wiki/million>
<http://en.wiktionary.org/wiki/across>
<http://en.wiktionary.org/wiki/eyes>
<http://en.wiktionary.org/wiki/miles>
<http://en.wiktionary.org/wiki/measure>
<http://en.wiktionary.org/wiki/therefore>
<http://en.wiktionary.org/wiki/travel>
<http://en.wiktionary.org/wiki/extremely>

<http://en.wiktionary.org/wiki/travel>
<http://en.wiktionary.org/wiki/space>
<http://en.wiktionary.org/wiki/unit>
<http://en.wiktionary.org/wiki/awkward>
<http://en.wiktionary.org/wiki/distances>
<http://en.wiktionary.org/wiki/away>
<http://en.wiktionary.org/wiki/year>
<http://en.wiktionary.org/wiki/times>

**4.- Questions:**

4.1.- How far does light travel in one second?

4.2.- How far is a light year? *In 31.557.600 seconds light will travel a distance of ...*

Nom i cognoms:

Data:

Grup: E1D

5.- Complete the following table about 'Approximate light signal travel times' (choose the correct answer below):

| | |
|---|-------|
| <i>from Moon to Earth</i> | |
| <i>from Sun to Earth (1 AU)</i> | |
| <i>from Alpha Centauri to Earth</i> | |
| <i>from the nearest galaxy to Earth</i> | |
| <i>across the Milky Way</i> | |
| <i>from the Andromeda Galaxy to Earth</i> | |

[8.3 min - 25.000 years - 1.3 s - 2.5 million years - 100.000 years - 4.4 years]

6.- Mathematical problems:

6.1.- Suppose that child is born on Earth in the year 2000. You are on an imaginary planet that is 94.6 trillion kilometers from Earth and looking through a very high powered telescope and you witness this child's third birthday party. How old is the child on Earth at the time you are watching the child's third birthday party? (Hint: calculate the number of light years this planet is from Earth.)

6.2.- Imagine that there is a planet with intelligent beings on it that's 20 light years away from Earth. These beings have an extremely powerful telescope and can actually make out details of what is happening on Earth. If they aim their telescope at the *Moncloa Palace in Madrid* (Spain), who would they find living there as the Spanish president? (Hint: Google and Government of Spain, twenty years ago.)