



## THE EARTH, A LIVING AREA?

### I. General background

The solar system is composed of a star (the sun) around which many objects orbit.

- a. There are 4 rocky planets (Mercury, Venus, Earth and Mars) and 4 gaseous planets (Jupiter, Saturn, Uranus and Neptune)
- b. Asteroids
- c. Comets
- d. Satellites

### II. Characteristics of the Earth

- a. Using the software “3D planet”, find the characteristics of the planets and put the data into a grid using the following properties: diameter, distance to the sun, temperature, atmospheric gas, chemical composition, surface conditions.
- b. Expected conclusion: the Earth is a rocky planet with an atmosphere containing oxygen and liquid water on its surface.

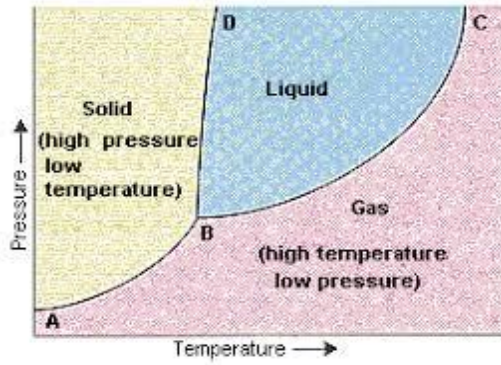
### III. Definition of a living zone around a star

- a. How the temperature varies as a function of the distance to the star (see previous grid).
- b. Impact of the atmosphere and that of the greenhouse effect.



Using the above document, explain what the greenhouse effect is.

c. State of water as a function of pressure and temperature.



On this graph, write the temperature and pressure of the Earth and the other planets. Using this information explain why the Earth is the only place in Solar system where we can find liquid water.

#### IV. Conclusion

Write a short text explaining where life is possible around a star.