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## READING ACTIVITIES (Answer key)

### 1.3. What was the contribution of Urey and Miller to the debate about the origin of life?

They demonstrate with its experiments that simple organic molecules, such as amino acids and nucleotides, the basic building blocks of life, could be formed in the conditions of the early Earth.

### 1.4. Name the main ideas of the theory of the prebiotic synthesis.

- 1º) The organic molecules came from simple inorganic compounds which were present in the primitive atmosphere of the Earth (**Abiogenesis**).
- 2º) Atmospheric gases of the early Earth (methane, ammonia, hydrogen and water vapour) reacted among them to form the first little biomolecules, thanks to the energy from solar radiation, electric storms and volcanic eruptions.
- 3º) The simple biomolecules formed in this way, were progressively accumulating and concentrating in the primitive oceans making a mixture called "primeval soup"

### 1.5. What role could some minerals such as clays and micas play in the abiotic formation of the first macromolecules?

Clays and micas could act as **catalytic converters**, attracting and concentrating on their surface the little organic molecules (amino acids and nucleotides) and making easier that they joined to form the first biologic macromolecules.

### 1.6. What advantages have deep sea vents to be the scenario of the origin of life?

This type of environment has several advantages over the surface of the Earth to be the place where first living beings appeared:

- The depth of the oceans would give protection against ultraviolet radiation
- The environment is reductor (without oxygen)
- They are rich in clay minerals
- The flow of geothermic energy is continuous and the reactions involved are exothermic (spontaneous)