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I have always believed that the world of biology is fascinating, but I did not have to chance to explore it deeply until this moment. This course was very interesting thanks to all the efforts that have been taken to make it successful.

## **The purpose of the DEB theory**

There is no doubt that the DEB theory offers a new approach for modeling many life processes. Its purpose is to describe the physiological processes independently of the considered specie.

The specific hypotheses regarding the DEB model are the following:

- Organizations whose surface is proportional to the volume
- Propagation of individuals by mitosis, division into two equal parts has a fixed size
- Homogeneous mixture of chemostat
- The reserves of prey is not digested

## **Reference scale**

The reference scale used for this is the individual and more precisely the physiological level, to avoid complex models. The individual is natural because it is easy to measure the masses and energies at this organization scale.

In addition, understanding the individual allows understanding the population as sum of individuals.

## **Basics**

The theory is based on the lower active phenomena such as synthesis units dealing with enzymes kinetics and thermodynamics dealing with the future of the energy level.

Higher level phenomena are also included as relationships from between area and volume or temperature.

## Essay about the DEB theory

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This approach takes into account some important modeling considerations on the use of dimensions or the link between the testability of a model and assessment of parameters.