

Why study biology?

Hmm, because life is happening all around you everyday.

- you must breathe, eat, and expel wastes
- you taste the food you eat
- you feel pain when injured, you bleed when cut
- your muscles get sore, your back aches
- you tire, sleep, and awaken
- you get sick, you get well
- you form complex relationships
- you interact with other living and non-living things
- you feel wind, see trees grow, and hear birds chirp
- you smell fresh cut grass
- you enjoy laughing with friends



You may say you are not interested in biology but life puts you center stage everyday!

We are going to try to explain the “why” and “how” some of these things occur in not only you, but in all living things!

Biology: The Science of Life



Science as a process.

A photograph of two deer in a field at sunset or sunrise. The deer are silhouetted against a bright, orange and yellow sky. One deer is standing upright, looking towards the right, while the other is partially visible behind it, appearing to graze. The foreground is filled with tall grasses and some small plants.

Science is a state of knowing: having knowledge as opposed to ignorance or misunderstanding.

The systematic study of the structure and behavior of the physical and natural world through **observation** and **experiment**.

Unifying Principles of Biology



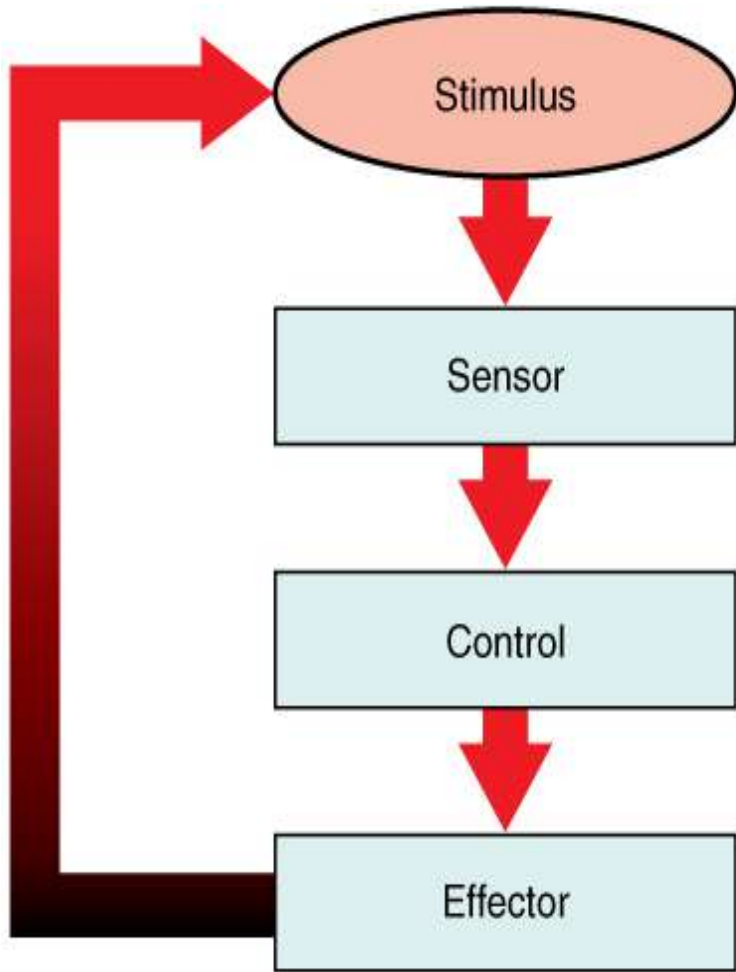
As we study the science of biology, certain principles form the foundation of knowledge already acquired by many individuals over centuries of observation and experimentation.

Unifying Principles of Biology

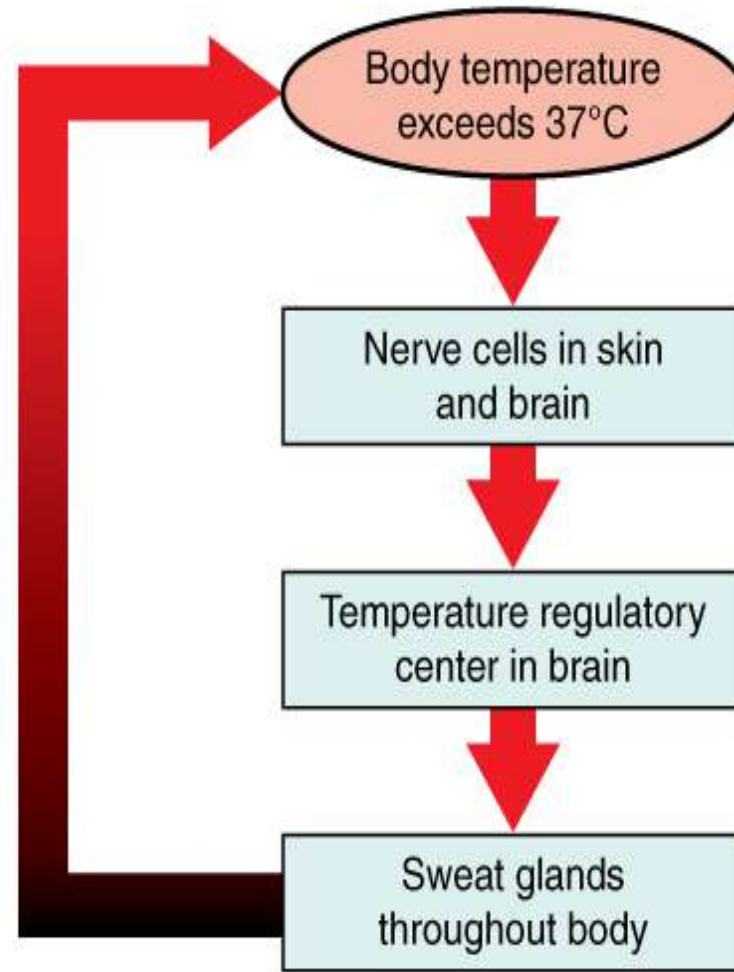


The Gene Theory

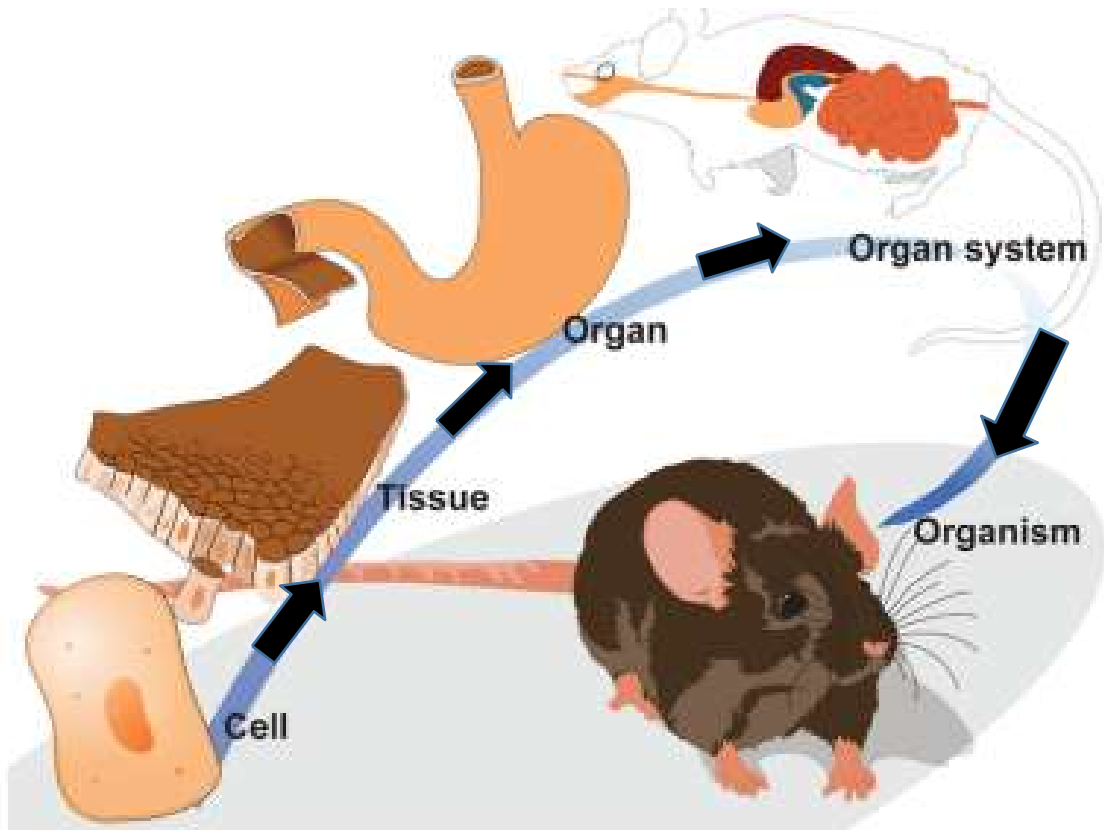
Homeostasis



(a) Negative feedback loop



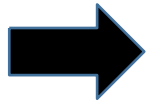
(b) Body temperature regulation



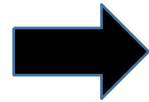
Levels of Organization

1. _____

Like cells
form



Several
tissues form

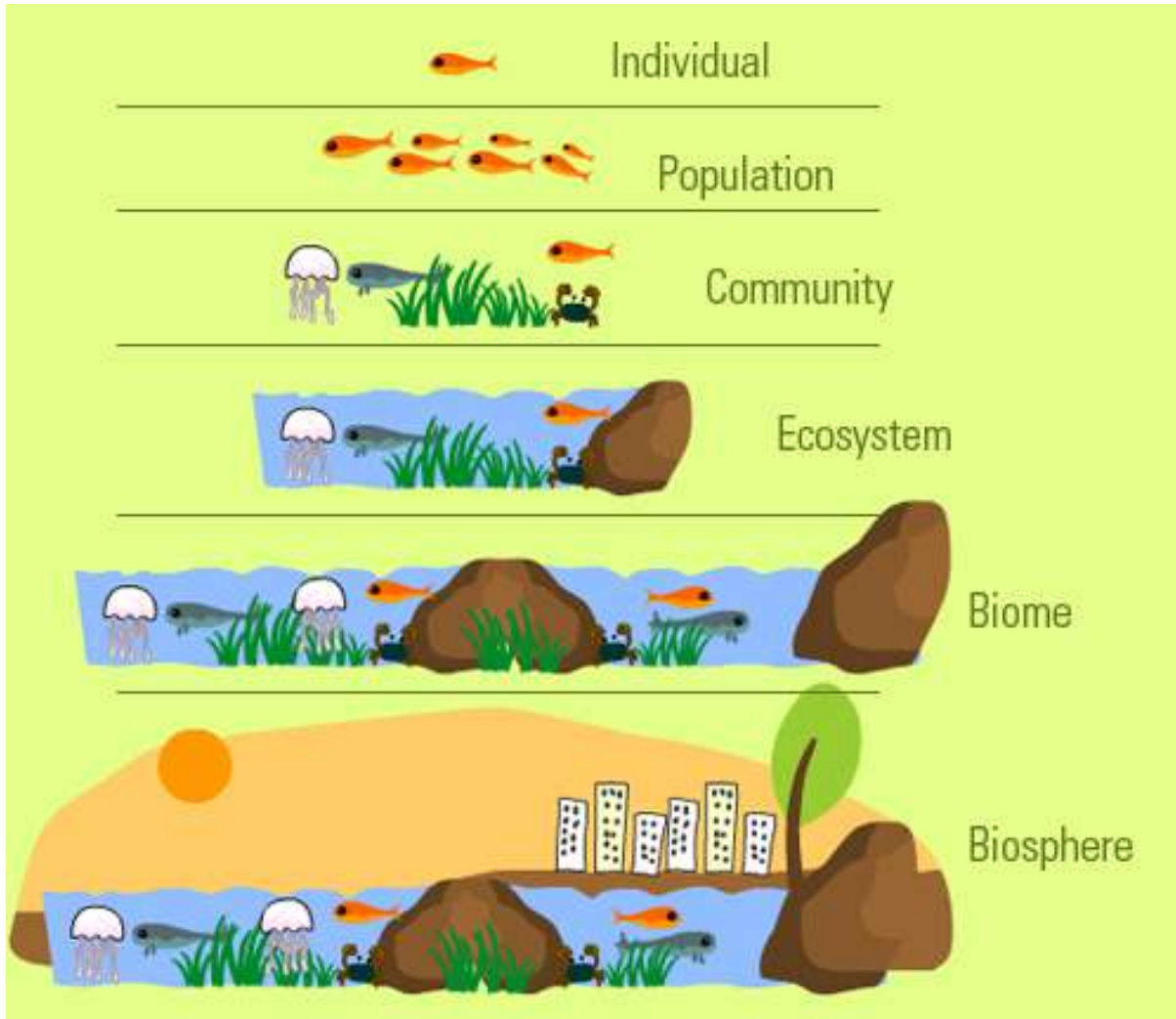


Several organs
form an



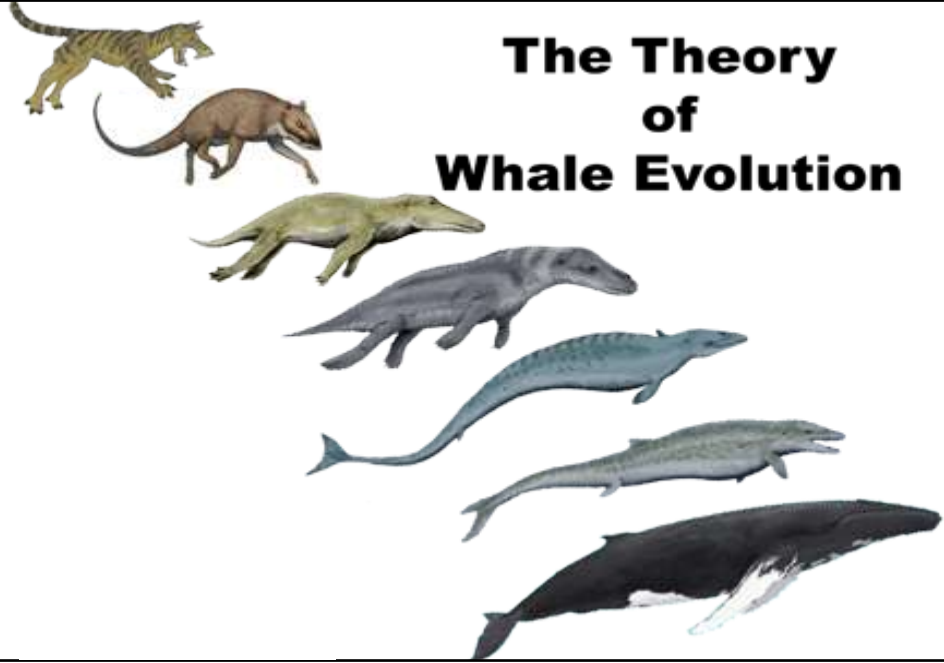
Several organ
systems form
an

Levels of Organization (con't)



2. _____

The Theory of Whale Evolution



Evolution

EVOLUTION OF THE HORSE





In Summary:

Science is the way to acquire knowledge in an organized way.

Biology goes on around us everyday and by studying it we get a better understanding of how it works.

Biology has some underlying principles that unify our ideas of Life.

All of these underlying principles are working together in nature and each depends upon the other.