Why study biology?

Hmm, because life is happing all around you everyday.

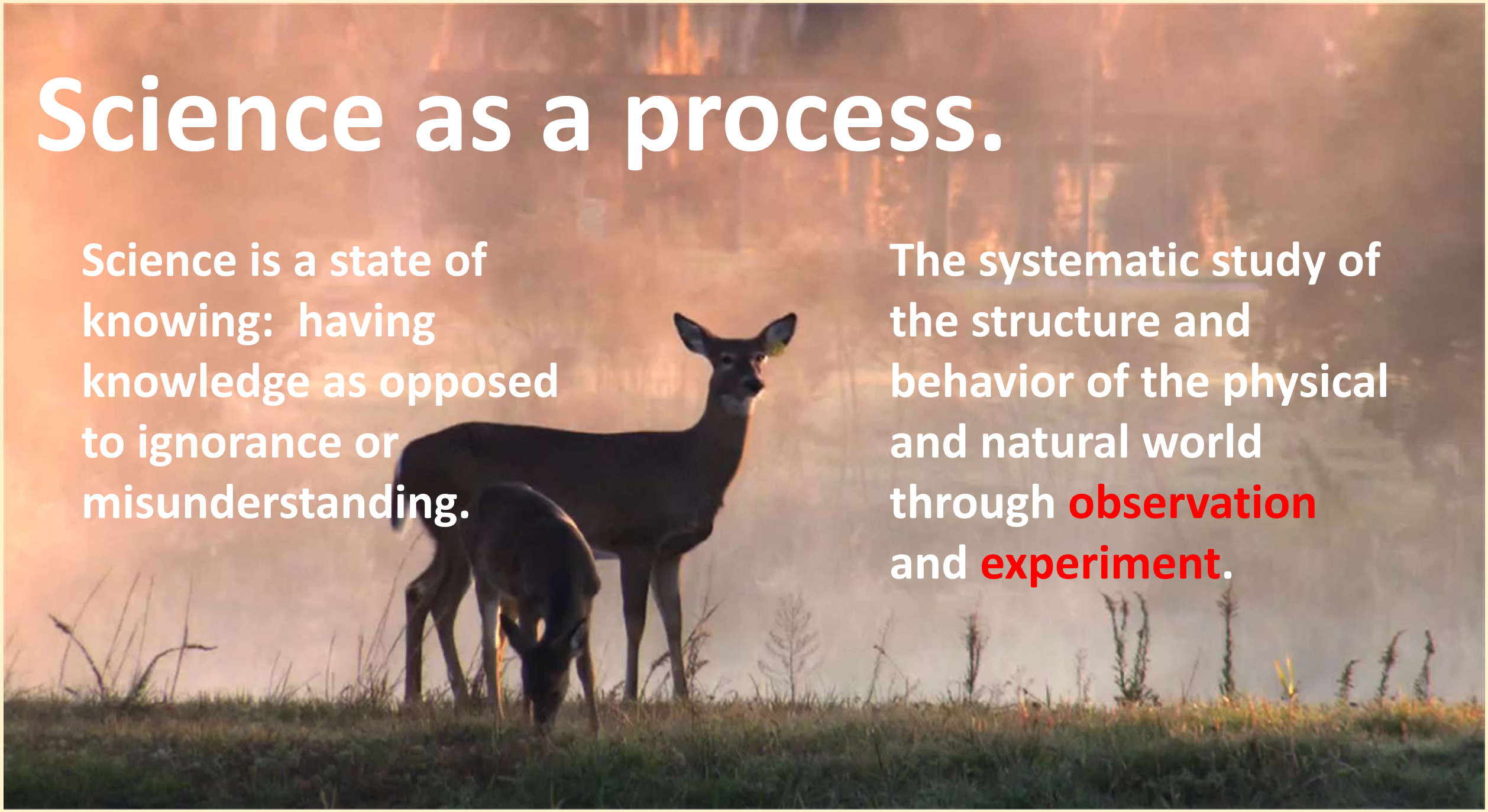
- you must breath, eat, and expel wastes
- you taste the food you eat
- you feel pain when injured, you bleed when cut
- your muscles get sore, your back aches
- you tire, sleep, and awaken
- you get sick, you get well
- you form complex relationships
- you interact with other living and non-living things
- 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

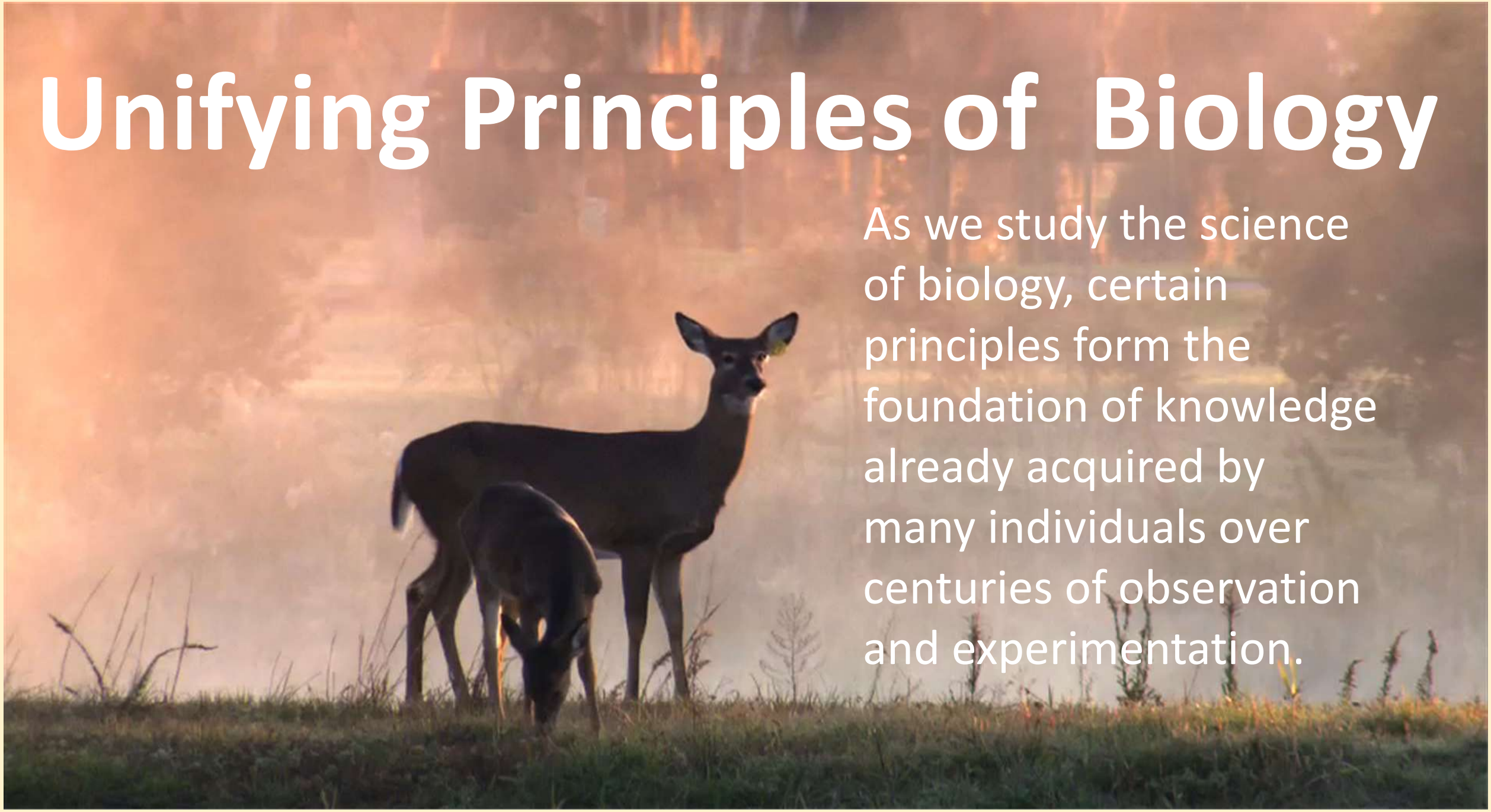
Science as a process.



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

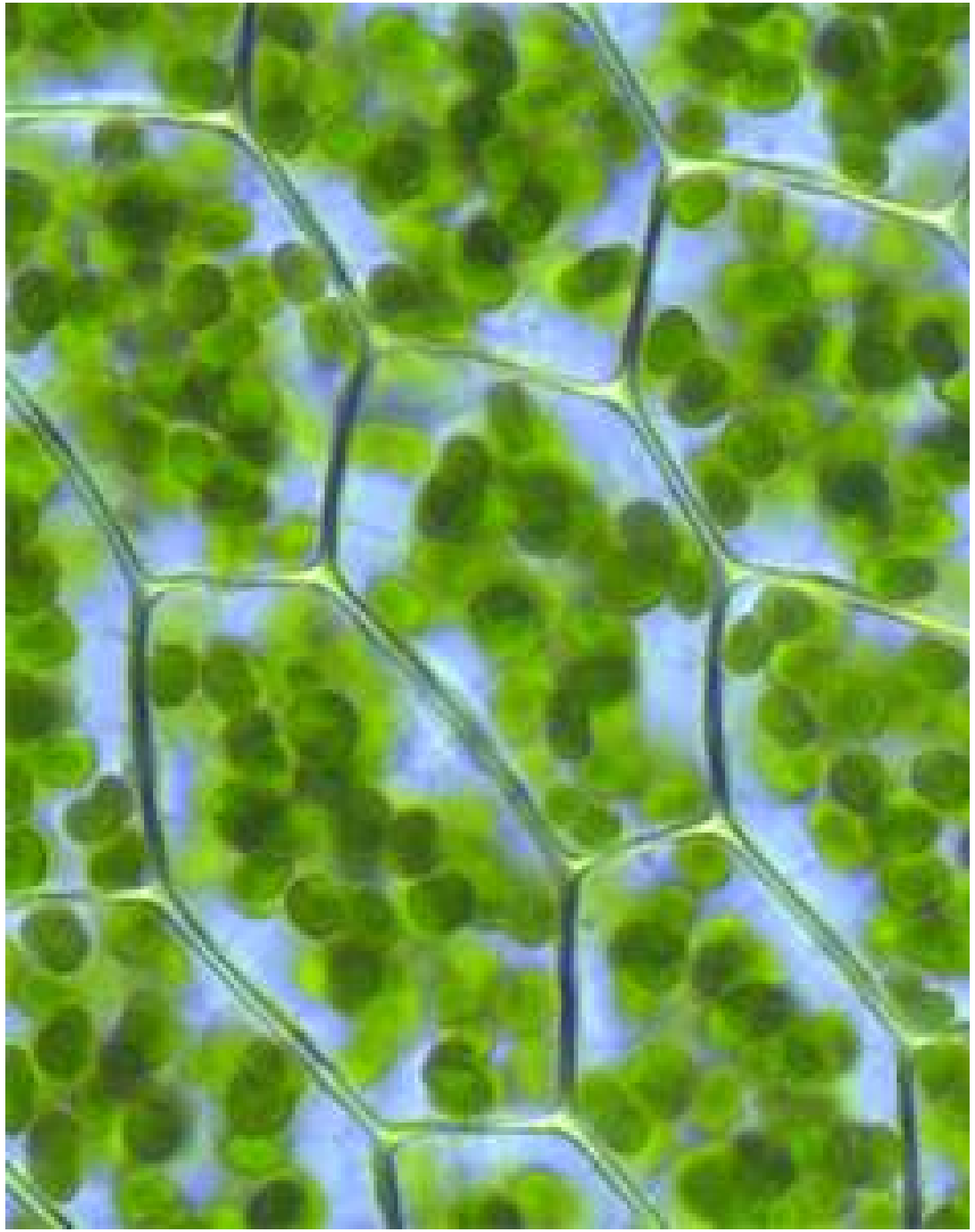
The systematic study of the structure and behavior of the physical and natural world through **observation** and **experiment**.

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.

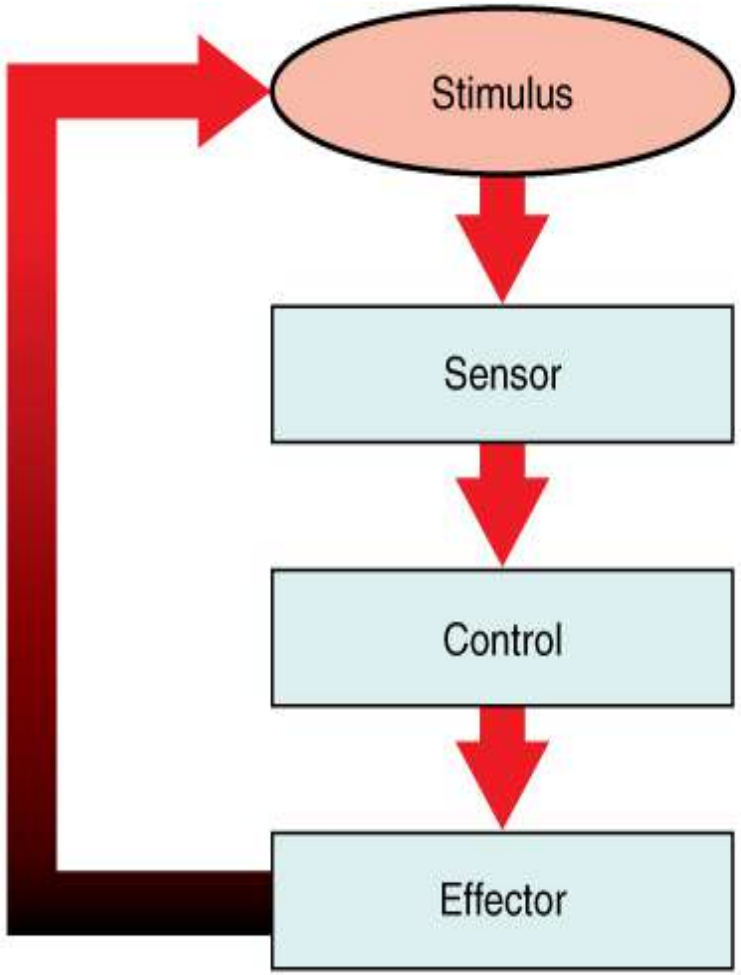
Unifying Principles of Biology



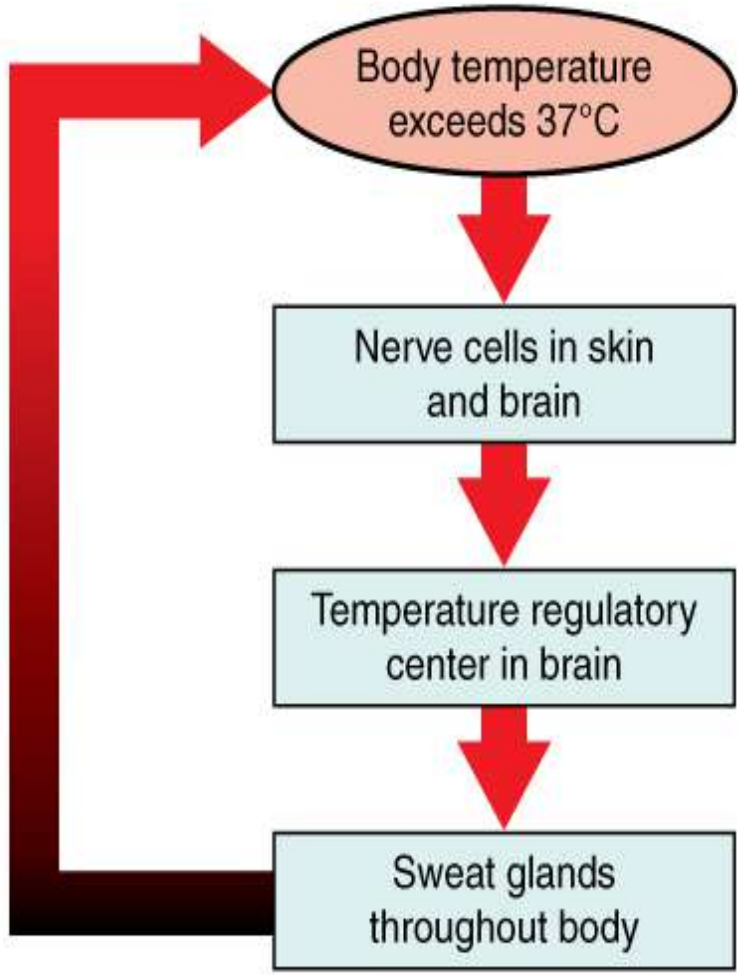
The Cell Theory

The Gene Theory

Homeostasis

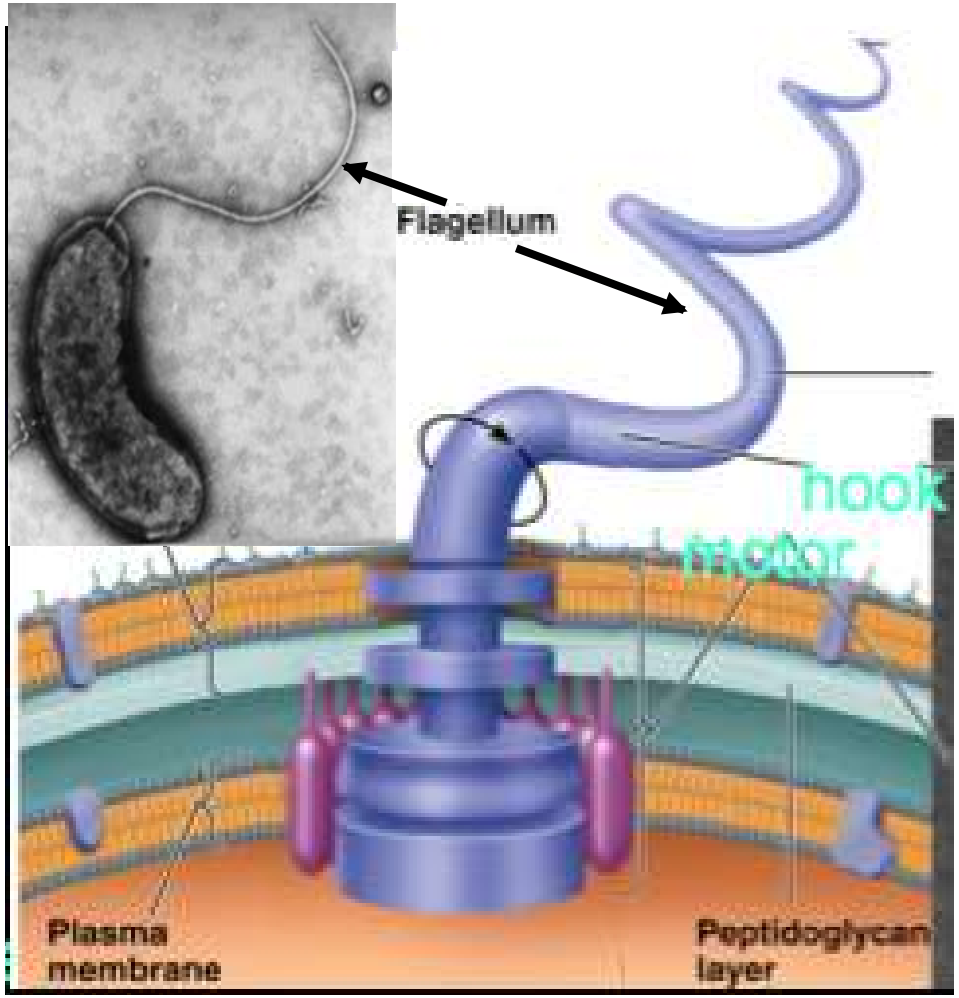


(a) Negative feedback loop



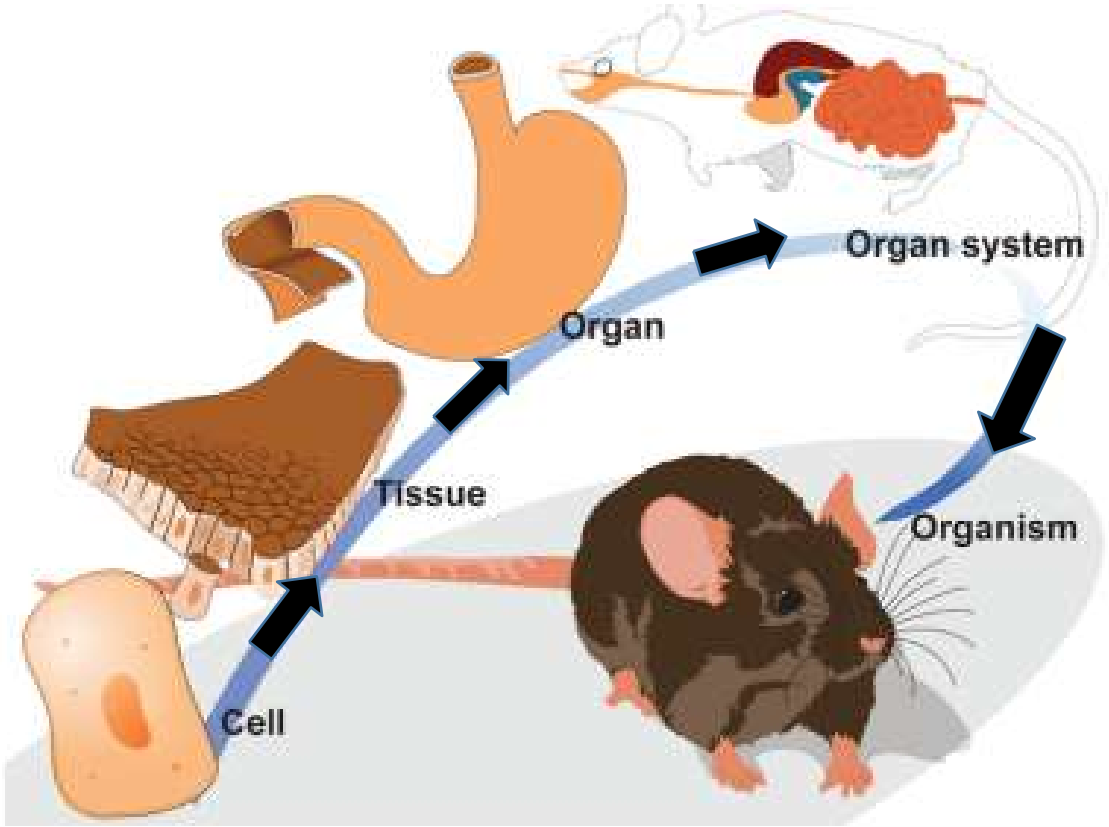
(b) Body temperature regulation

Structure = whip-like tail with a motor
Function = movement (locomotion)



Flagellum = singular
Flagella = plural

Structure and Function



Levels of Organization

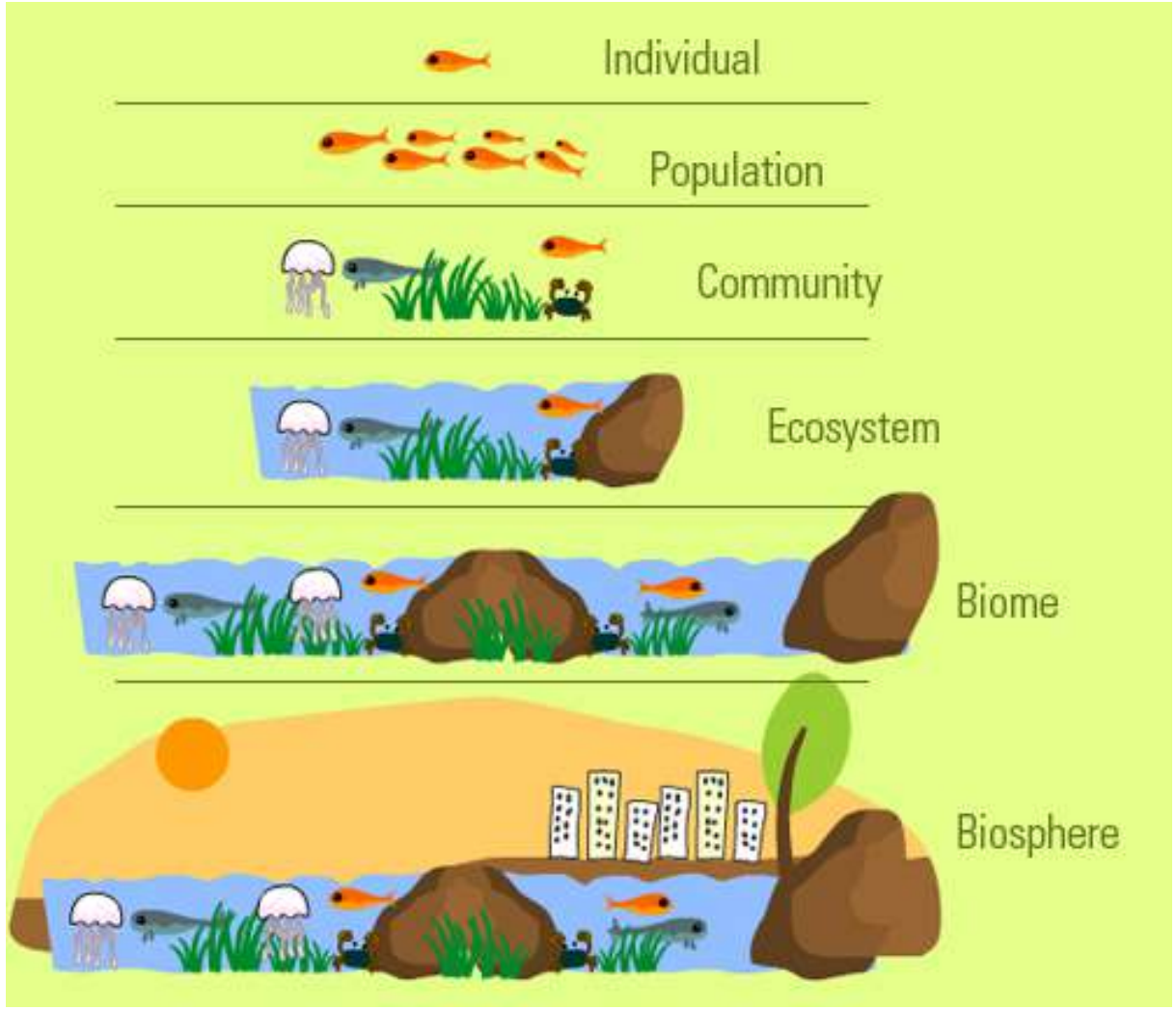
1. _____

_____

_____

_____

Like cells form ➡ Several tissues form ➡ Several organs form an ➡ Several organ systems form an



Levels of Organization (con't)

2._____

_____

_____

_____

_____

Interdependence of Living Things

What benefit do the birds get?

Answer: _____

_____

What benefit does the deer get?

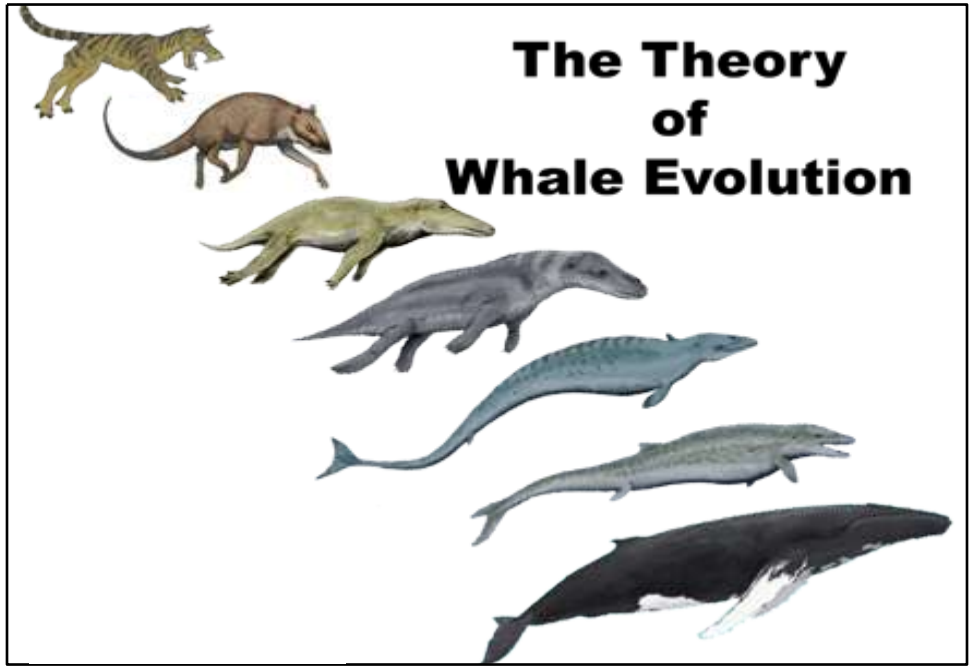
Answer: _____

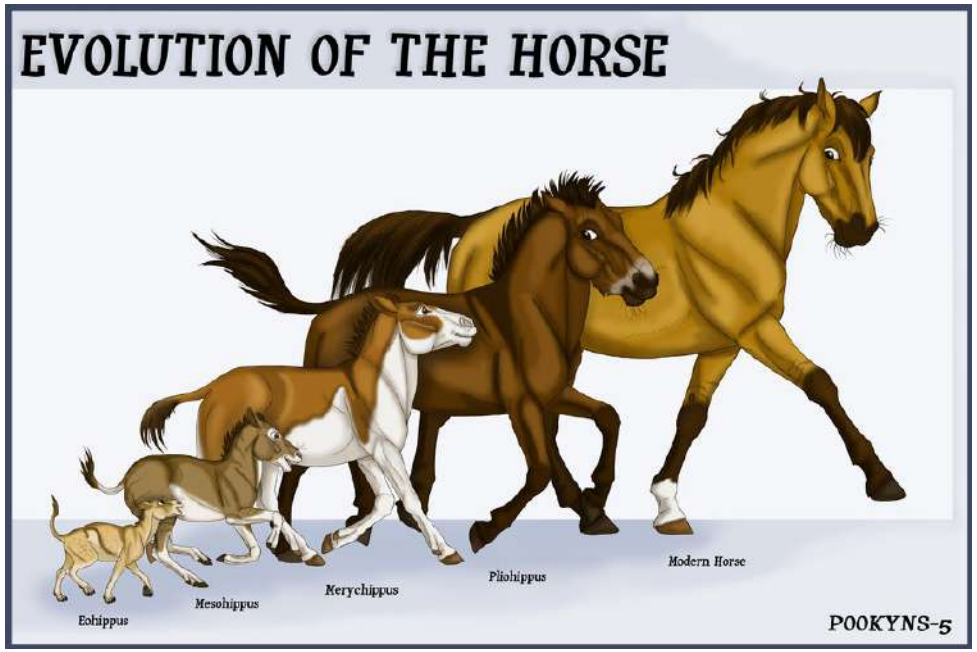
_____

Symbiosis = singular

Symbioses = plural

Evolution


The Theory
of
Whale Evolution


EVOLUTION OF THE HORSE
Eohippus
Mesohippus
Merychippus
Pliohippus
Modern Horse
POOKYNS-5

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.