

Monday, January 23

Announcements

- Today: Introductions, 190 home page, Chapter 1
- Handouts for today are on the front desk.

**“Science is built up with facts,
as a house is with stones.
But a collection of facts is no
more a science than a heap of stones
is a house.”**

**-Jules Henri Poincaré
Famous French Scientist**

Biology 190

**Chapter 1 Notes (Text only)
Introduction: Exploring Life**

I. What is Biology?

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I. What is Biology?

- 1. Huge size scales in Biology
- 2. Theories in biology are continuously being modified and refined

I. What is Biology?

- 3. Biology has unifying themes

I. What is Biology?

4. Understanding biology requires a strong imagination.

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II. Levels of Biological Organization

- Atoms
- Complex biological molecules
- Subcellular organelles
- Cells-basic unit of life.

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II. Levels of Biological Organization

- Tissues
- Organs
- Organ systems
- Complex organism

II. Levels of Biological Organization

There are levels of organization beyond the individual organism:

- Population
–
- Community
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II. Levels of Biological Organization

- Ecosystem
–
- Biosphere
–

Question 1.1

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III. Emergent Properties of Life

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III. Emergent Properties of Life

- Reductionism-

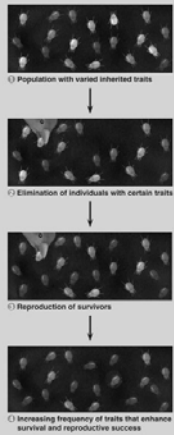
- Systems Biology-

**IV. Examples of Life's Properties
(Page 3 in Campbell)**

- a) Order
- b) Regulation (Homeostasis)
- c) Energy Processing
- d) Reproduction
- e) Growth and Development
- f) Evolutionary Adaptation
- g) Response to the Environment

Fig 1.21

Evolutionary
Adaptation:
The organism DOES
NOT evolve, the
species evolves.



V. Exploring Life Across a Diversity of Species

A. Biodiversity => Biological diversity

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V. Exploring Life Across a Diversity of Species

B. Carolus Linnaeus helped to develop the field of taxonomy in the 1700's.

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V. Exploring Life Across a Diversity of Species

C. Three Domain System

- 1)
- 2)
- 3)

Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species

V. Exploring Life Across a Diversity of Species

D. Domain: Bacteria

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V. Exploring Life Across a Diversity of Species

E. Domain: Archaea

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V. Exploring Life Across a Diversity of Species

F. Domain: Eukarya (true nucleus)

– Kingdoms include:

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V. Exploring Life Across a Diversity of Species

F. Domain: Eukarya

Protista	Plantae	Fungi	Animalia
unicellular/ multicellular	multicellular	unicellular/ multicellular	multicellular
Producers/ Consumers	Producers	Decomposers	Consumers
"protozoa, algae "	"plants"	"molds, yeast, mushrooms"	"flatworms to humans"

Question 1.2

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