

**Introduction to Anthropology, Science, Evolutionary Theory: Chapter 1**

adaptation	culture	paradigm	theory
anthropology	critical thinking	primate	belief systems
archaeology	holism	primatology	pseudoscience
artifacts	biological	scientific method	scientific
cultural anthro	anthropology	hypothesis	creationism
ethnology	paleoanthropology	fact	

1. Describe the subject matter of anthropology and describe the four main subfields of anthropology.
2. Identify the main research areas within physical anthropology.
3. Describe the scientific method. Define hypothesis, fact, and theory. What does hypothesis testing involve?
4. Explain the difference between scientific theory and belief systems.
5. Explain holism and why it is important in anthropology.
6. Explain the argument that scientific creationism is a pseudoscience and why it should not be taught in science classes.

**History of Evolutionary Ideas: Intro and Chapter 1**

essentialism	catastrophism	continental drift	fitness
Grand Design	strata	Pangea	reproductive
Great Chain of Being	stratigraphy	taxonomy	success
fossils	uniformitarianism	adaptation	
	plate tectonics	natural selection	

<u>Key People:</u> Linneaus	Charles Darwin
Malthus	Alfred Russel Wallace
Lamarck	

1. Trace the development of evolutionary thought, particularly, describe the contributions of Malthus, Wallace, and Darwin. Contrast the concepts of Grand Design and Great Chain of Being with the scientific perspective.
2. Explain the importance of the concepts of geologic time and uniformitarianism for evolution. How old is the universe, the earth, life on earth?
3. Describe the role of fossils in the development of evolutionary thought.

4. What is meant by adaptation? Distinguish between Lamarck's and Darwin's ideas of species change or adaptation.
5. Explain natural selection and reproductive success using the example of Darwin's finches.
6. How did Wallace and Darwin come to develop a theory of natural selection at the same time, yet independently of each other?

### **Genetics and Heredity: Chapter 2**

#### Genetics:

nucleotide bases

allele

gene

genome

codon

chromosomes

DNA

RNA, messenger RNA

proteins

protein synthesis

amino acids

meiosis

mitosis

recombination

crossing over

linkage

somatic cells

gametes

sex chromosomes

zygote

#### Heredity:

Gregor Mendel

segregation

independent assortment

homozygous/heterozygous

genotype / phenotype

dominant / recessive /

codominant

polygenic

pleiotropic

sickle cell anemia

#### **Genetic sources of variation:**

1. Describe the structure and function of DNA and RNA.
2. Explain the process of protein synthesis. Why is it important for understanding human evolution?
3. Define a gene and what it does.
4. Explain how a mutation occurs.
5. Describe the process of mitosis and meiosis and their differences. What is important about meiosis for understanding evolution?
6. Know the difference between a somatic cell, a gamete, and a zygote.

#### **Heredity:**

1. Explain Mendel's Principle of Segregation and the Principle of Independent Assortment.
2. Describe the difference between Mendelian traits and polygenic traits.
3. Explain the patterns of inheritance for autosomal dominant, recessive traits and sex-linked traits. Explain the interaction between dominant and recessive genes.
4. Perform simple matings using a Punnett square.