AP Environmental NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 15 Guided Notes

Module 14 Biodiversity (PowerPoint slides)









MATH TIME ( page 152):

Review Questions: 1. \_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_ 4.\_\_\_\_\_\_\_\_\_\_\_\_\_

APES Module 15 Evolution

Vocabulary

* Biodiversity is the product of evolution
* Evolution: A change in the genetic composition of a population over time
* Microevolution: Evolution below the species level
* Macroevolution: Evolution above the species level that leads to a genera, phyla, etc.
* Speciation: Creation of a new species
* Gene: A physical location on a chromosome that codes for a specific protein
* Genotype: Complete set of an individual’s genes (Mostly analyzed via pedigrees and Punnett squares)
* Phenotype: Set of traits expressed by an individual as a result of its genotype and/or the surrounding environment
* Mutation: Random change in the genetic code produced by a mistake in the DNA replication process
* Recombination: The process by which one chromosome breaks off and attaches to another chromosome during reproductive cell division
* Evolution by artificial selection: The process in which humans determine which individuals breed, typically with a preconceived set of traits in mind (Eugenics, Selective Breeding, Artificial Insemination)
* Evolution by natural selection: The process by which nature determines which individuals survive and reproduce
* Fitness: An individual’s ability to survive and reproduce
* Adaptation: A trait that improves an individual’s fitness
* Gene Flow: The process by which individuals move from one composition of both populations
* Genetic drift: A change in the genetic composition of a population over time as a result of random mating
* Bottleneck effect: A reduction in the genetic diversity of a population caused by a reduction in its size
* Extinction: Death of last member of a species
* Founder effect: A change in the genetic composition of a population as a result of descending from a small number of colonizing individuals

Review Questions: 1. \_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_ 4.\_\_\_­\_\_\_ 5. \_\_\_\_\_\_\_ 6. \_\_\_\_\_\_\_\_ 7. \_\_\_\_\_\_\_

**APES Module 16 Speciation and the Pace of Evolution**

Vocabulary:

Geographic isolation-

Allopatric speciation-

Reproductive isolation-

Sympatric speciation-

GMO-

Debate the Issue:

Do the potential benefits of genetically modified organisms outweigh the unknown consequences and potential dangers?

Review Questions: 1. \_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_ 4.\_\_\_­\_\_\_

**APES Module 17 Evolution of Niches and Species Distributions**

Key Terms:

* Range of Tolerance: The limits to the abiotic conditions that a species can tolerate.
* Fundamental Niche: The suite of abiotic conditions under which a species can grow, survive, and reproduce.
* Realized Niche: The range of abiotic and biotic conditions under which a species actually lives.
* Distribution: Areas of the world in which a species lives.
* Niche Generalist: A species that can live under a wide range of abiotic or biotic conditions.
* Niche Specialist: A species that is specialized to live in a specific habitat or to feed on a small group of species.
* Mass Extinction: A large extinction of species in a relatively short amount of time.

Key points

* Examples of range of tolerance are temperature, humidity, salinity, and pH.
	+ Figure 17.1 illustrates range of tolerance with temperatures.
* Environmental change can cause species extinction.
	+ There have been 5 Global mass extinctions.
* Scientists believe that we are currently in a 6th mass extinction.
	+ Between 5-25% of species are going extinct by 2020
* Fossil records have been used to study evolution and extinctions.

Review Questions: 1. \_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_ 4.\_\_\_­\_\_\_ 5. \_\_\_\_\_\_\_

**Protecting the Oceans When They Cannot Be Bought**

Read the case study and answer the TWO critical thinking questions on page 175.

**ANSWER ALL Practice Test Questions**

p. 177-182