Evolution Exam Review

Review

- Somatic cells -
  i. Cells that _____, that are _____(sex/reproductive) cells.
  ii. Has a _____ number of chromosomes
  iii. Goes through _____ and cytokinesis

- Germ cells (sex cells)
  i. The _____cells; sperm and egg in mammals
  ii. Contain _____ the amount of DNA that is in somatic cells (_____)
  iii. Go through _____

Mutations

- Mutation is a _____in the _____ of a _____
- A nucleotide _____(s) is either deleted, inserted, substituted or switched
- Major source of _____

Question 1

- Say there is a deletion mutation in the somatic cell of an individual that causes this individual to develop a protein deficiency over their lifespan. If this individual decides to reproduce, will his/her offspring inherit this mutation? Why or why not?

- _____evolution – Process in which species that are _____to each other _____ evolve similar kinds of traits. Ex: hawks, bats and butterflies all have wings. But none of these organisms inherited these genes from any of the others. These independently evolved wings are called _____.

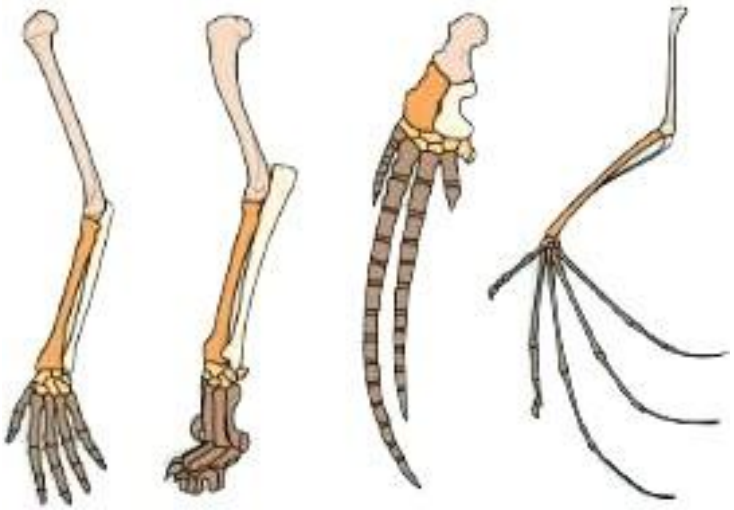
- _____evolution : can be difficult to distinguish from convergent evolution. Parallel evolution occurs when _____start with _____ _____, then evolve _____ _____. This kind of thing happens because the two different species, though they don't necessarily share a common ancestor, experience _____ _____ and survive only by undergoing similar adaptations. A classic example of parallel evolution is found among plants, in which several similar but distinct forms of leaf evolved in parallel and are evident today.

- _____evolution : process where _____ _____ evolves into _____ _____over time. A common example of divergent evolution is the _____ _____. Whale flippers, frog forelimbs, and your own arms most likely evolved from an ancient common ancestor. Because they share a _____ _____ _____, these are examples of _____*structures*.

- _____: when closely interacting species exert selective pressures on each other, so that they _____. Examples of coevolution are common among predator-prey and host-parasite pairs. A better example: hummingbirds and the flowers from which they seek nectar and unwittingly pollinate

- _____–
  In biological terms, a trait that has _____from an _____ state. The five digits of the human hand and foot are primitive traits inherited from earlier vertebrate ancestors.
- _____ traits –

A trait that has _____from an _____ state. The large human brain is a derived trait relative to the common ancestor of humans and apes.



- 1. The image illustrates what evolutionary concept?
  A)embryological similarities
  B)variation among species
  C)vestigial structures
  D)homologous structures

Natural Selection

- _____ proposed the theory of natural selection as the mechanism _____.
- _____– used to describe natural selection
- _____ – is a measure of an individual's _____to the _____.
- Adaptations – are _____ and populations tend to be well adapted to survive in their environments

The dog breeds we have today were developed through:

A) natural selection

B)artificial selection (selective breeding)

C)sexual selection

D)acquired selection

Something to think About

- The dog breeds we have today were developed through artificial selection, what could be some major implications of this?

Parts of Natural Selection

- _____– A species has more offspring that will survive until _____ (offspring need food, are vulnerable to _____and diseases)

- _____– The individuals of a population may _____such as size, color, strength, speed, ability to find food, or resistance to certain _____.

Parts of Natural Selection

- Struggle to survive – Individuals must compete with each other for limited resources. Some will be harmed by predation, diseases, or unfavorable conditions.

- Differential reproduction – Individuals that have certain traits are more likely to survive and reproduce than are individuals that lack those traits. Over time the favorable traits become more frequent in the population.

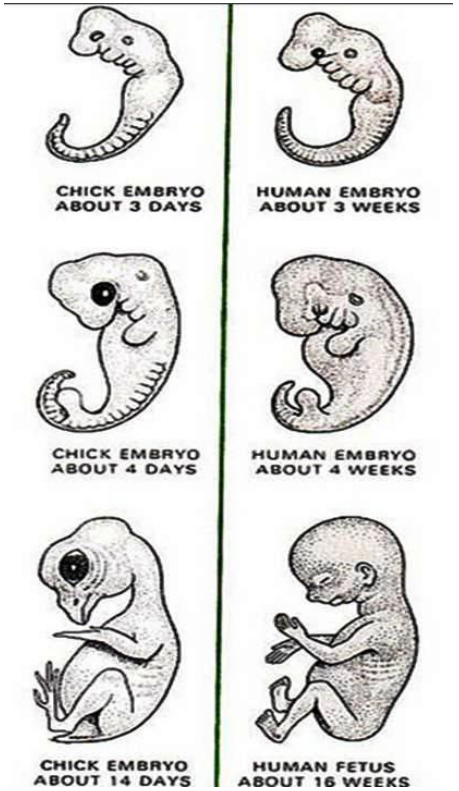
- True or false?
- Adaptation is the physiological change that occurs in an organism's lifetime.
- _____, an adaptation is a _____ that makes an individual _____

Evidence for Evolution

- **Fossil/Fossil Record** –evidence of organisms that lived on Earth in the past. Fossils show _____diversity over geologic _____.

- **Comparative anatomy** - the _____study of the _____of different species of animals in order to understand the _____they have undergone in the course of evolution from common ancestors.
  I. Homologous structures, analogous structures
  II. _____ structures - structures that have lost their function but are still present. Ex) legs of skinks, _____ in humans

Evidence for Evolution



- Comparative embryology – **comparing _____ of various species : point toward a _____.**

Biogeography - Biogeography is the study of the _____ _____. (Why does the Arctic have polar bears and Antarctica penguins?)

Evidence for Evolution

- _____–scientists look at the _____and other _____ that _____. While these molecules can evolve just as an entire organism can, some important molecules are _____among species. The slight _____ that occur over time in these conserved molecules, which are often called _____, can help shed light on past evolutionary events.
- _____ change – Changes in evolution we have directly observed.
- http://www.youtube.com/watch?v=9x8lFXgXmZI