Evolution: Natural Selection and Adaptation

Evolution is the \_\_\_\_\_\_\_\_\_\_\_\_\_ of features of an

over time. In 1809, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ proposed the theory of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This theory said that organisms evolve by keeping traits that their parents \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during their \_\_\_\_\_\_\_\_\_\_\_\_. For example, if your parents were \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, then you would be born with \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_. This theory was \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

In the mid- \_\_\_\_\_\_\_\_, an Englishman named \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ proposed the theory of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that we \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ today. In 1859, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ noticed that some individual organisms are able to \_\_\_\_\_\_\_\_\_\_\_\_\_\_ better than others. He felt this was because of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that they possess. Darwin found that animals with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ traits live to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ them on. He called this the theory of \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This is also known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The five factors Darwin identified that govern natural selection are:

1) Organisms produce offspring than can

2) Individuals of a species (in )

3) The contains things that organisms.

4) Some variations are better for and than others.

5) Over time, organisms with \_\_\_\_\_\_\_\_\_\_\_\_ traits make up of the population.

One of the points in Darwin’s theory of evolution is that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are found among \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a species. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the appearance of an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ trait that makes an individual \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from other members of the same \_\_\_\_\_\_\_\_\_\_\_ (A \_\_\_\_\_\_\_\_\_\_\_\_\_ is a group of organisms whose members \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reproduce among themselves.). Variations can be \_\_\_\_\_\_\_\_ (such as the differences in human \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_), or \_\_\_\_\_\_\_\_\_\_\_ (such as a fruit without \_\_\_\_\_\_\_\_). Variations are important in populations of organisms. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a group of organisms of one \_\_\_\_\_\_\_\_\_\_ that live in an area. If enough variations occur in a population as it produces new offspring, a new \_\_\_\_\_\_\_\_\_\_\_\_\_\_ may evolve from the existing species. It may take \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or even \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of generations for a new species to evolve.

Some sources of variation are more helpful than others. An \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is any variation that makes an organism \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to its environment. The variations that result in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be in an organism’s \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a protective adaptation that lets an organism \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ its environment. An organism whose color or shape provides camouflage is \_\_\_\_\_\_\_\_\_\_\_ likely to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. These types of variations result from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, changes in an organism’s \_\_\_\_\_\_\_\_. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ are the source of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ among organisms.

How fast does evolution occur? Scientists are debating that question. Most scientists hypothesize that evolution occurs very \_\_\_\_\_\_\_\_\_\_\_\_, perhaps taking tens or hundreds of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of years. Other scientists hypothesize that evolution may occur very \_\_\_\_\_\_\_\_\_\_\_\_, perhaps in a \_\_\_\_\_\_\_\_\_\_\_ years. Darwin hypothesized that the rate of evolution was \_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The model that describes evolution as a slow change of one species into another is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. In this theory, there should be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of all species.

However, gradualism doesn’t explain the evolution of some species, especially those in which few intermediate forms have been discovered. Another model, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ model, shows that \_\_\_\_\_\_\_\_\_\_ evolution of a species can come about by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of just a few \_\_\_\_\_\_\_\_. New species could appear as quickly as every few \_\_\_\_\_\_\_\_\_\_\_\_ years, and sometimes even faster. Antibiotics have only been available for about 50 years, and in that time, many bacteria have become resistant to this form of treatment. Some bacterial strains have evolved quickly, which is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Mutations produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a \_\_\_\_\_\_\_\_\_\_\_ period of time.

Coevolution happens when organisms together.

Example #1: Pacific snails have shells than Caribbean snails. Pacific crabs, which snails, have also evolved than Caribbean crabs to crush the snails.

Example #2: Cabbage plants evolved a way to produce , which is a to most insects. However, cabbage butterfly caterpillars have a way to mustard oils.

Example #3: The trees that feed on have evolved long .

In turn, giraffes have evolved a long, very tough .

When an animal adapt to the quickly enough, it becomes .