

Evolution Introduction

Organisms have characteristics that help them survive well in their environment. For example, many animals have skin or fur that is the color of their surroundings or have thick fur in a very cold environment, etc.

These characteristics that help organisms survive (and reproduce) in their environment are called adaptations.

A species is a group of organisms that can mate to have fertile offspring (offspring that can have more offspring).

Evolution is basically, change over time. The bigger idea is that a species can go through so many changes that it becomes another species.

Diversity is a measure of the number of species an area contains.

How do we know about evolution?

1. Fossils

*The fossil record is all the fossils scientists have found. It shows evidence of past living things. Not every organism that scientist think existed can be found as fossils because most of the time dead organisms don't form fossils. Scientists can see that life has not always been the same.

2. Biogeography

Biogeography is how living things are arranged on the earth.

Similar species are found in similar places because they come from a common ancestor.

3. Vestigial Structures

* A vestigial structure is a part of an organism that was useful in the past but now is not. For example, whales have small bones which seem to have become smaller over time. These bones may be remnants of hind legs which whales no longer have.

4. Similar Anatomies

* Looking at the overall body and similar body parts. Example: Comparing eyes to eye and ears to ears.

* When we compare the skeletons of different animals, the structure of their bones looks very similar.

5. Genetics: Similar DNA

* DNA of organisms that are related (have evolved from one another) is similar. The DNA of closely related organisms is more alike than organisms that are not closely related.

6. Drug Resistance

- The bacteria Staphylococcus causes infections. People have used drugs like penicillin to kill off the bacteria and get rid of the infection.
- Some bacteria do not die and reproduce into bacteria that are not killed by drugs.

Also in the beginning stages of development embryos of many animals look very similar. Some scientists think this points to a common ancestor.



Name _____

Date _____

An Introduction to Evolution

Organisms have _____ that help them _____ well in their _____. For example, many animals have _____ that is the color of their _____ or have _____ in a very cold environment, etc.

These _____ that help organisms _____ (and reproduce) in their environment are called _____.

A _____ is a group of _____ that can mate to have _____ offspring (offspring that can have more _____).

_____ is basically, change over time. The bigger idea is that a _____ can go through so many _____ that it becomes another _____.

_____ is a measure of the _____ of species an area contains.

How do we know about evolution?

1. Fossils

- The fossil record is _____ the _____ scientists have ever found. The fossil _____ shows _____ of past living things. Not every _____ that scientists think _____ can be found as _____ because most of the time dead _____ don't _____ fossils. Scientists can see that _____ has not always been the _____.

2. Biogeography

- _____ is how living things are _____ on the earth.
- _____ species are found in similar places because they come from a common ancestor (come from the same living thing).

3. _____ Structures

- A _____ structure is a part of an _____ that was useful in the past but now is not. For example, _____ have small bones which seem to have become _____ over time. These bones may be remnants of _____ legs which whales no longer have.

4. Morphology: Similar _____

- _____ structures are parts that are similar because they have _____ (come from the same living thing).
- Looking at the _____ and similar body parts. For example: comparing eyes to eyes or ears to ears.
- One example: When we compare the _____ of different animals, the _____ of their _____ looks very similar.

5. Similar _____

- All _____ things have _____.
- _____ of organisms that are _____ (have evolved from one another) is _____. The DNA of closely _____ organisms is more _____ than organisms that are not _____ related.

6. Drug Resistance

- The _____ Staphylococcus causes _____.
- People have used _____ like penicillin to kill off the _____ and get rid of _____.
- Some bacteria do not _____ and _____ into bacteria that are not _____ by drugs.

Also in the beginning stages of _____, _____ of many animals look similar. Some scientists think that this points to a _____.