

Principles of Natural Selection Pondered by Charles Darwin

Q & A Session ANSWER KEY:

- 1) **If all individuals that are born reproduced successfully (and were fertile) what would happen to their population size?**

Ex. Generation	# of People
1	2
2	4
3	8

The number of organisms would increase exponentially over time.

- 2) **Do most populations of organisms fluctuate significantly in size?**

No, most populations are stable in size but there may be some seasonal fluctuations.

- 3) **How would you describe the amount of natural resources existing today?**

Resources are limited, there is not an endless supply of resources existing.

- 4) **If the environment has limited resources so it cannot support all living organisms, what happens to the organisms it cannot support?**

They don't survive. If there are more individuals produced than the environment can support, a struggle for existence arises. Only a fraction of the population survives each generation.

- 5) **Are all individuals alike?**

No, no two organisms are exactly identical. They all have different characteristics.

- 6) **What causes individuals to vary or have different characteristics? Why are you different from your classmates?**

Genetics, your variation is inherited in your genes. Your genetic code makes you unique. (congenital-inherited from birth)

- 7) **If the environment cannot support all organisms, and all organisms have genetic variation, which gives them unique characteristics, how is it determined which organisms will live and which organisms will die?**

The organisms that are best suited for the environment will leave more offspring than less fit individuals. (genetic propensity- the amount of genetic material an organism leaves in a population)

8) If individuals are unique and therefore have different abilities to survive and reproduce what happens to the population?

Those that are more fit (have characteristics well suited to their environment) will survive and reproduce more thus causing a change in the population to increase favorable traits for the population.

9) What is natural selection? What is the product of natural selection?

Differential success in reproduction, and its product is adaptation of organisms to their environment.