Natural Selection Review Sheet

Natural Selection

1. **Natural Selection** is the process by which organisms with the most favorable traits for survival live to reproduce and pass those traits onto their offspring.
2. Individuals with less favorable traits do not survive to reproduce.
3. This is how evolution causes new species to arise.
4. Members of the same **species** share a large number of characteristics and look alike.
5. They can mate and produce offspring, which are capable of reproduction.
6. **Variation** is differences within a population of the same species (cats/people/apples look different).
7. Variation occurs by:
   - **Sexual reproduction**- parents contribute genetic information to create a new, unique individual.
   - **Mutation**- a mistake in copying a gene, which changes the information in the gene.

Charles Darwin

8. **Charles Darwin** hypothesized that evolution was the process by which species change over time and evolve.
9. Organisms are products of historical change, and new species gradually develop from previous species.
10. Natural selection works on a **population**, or a group of individuals of the same species living in a particular area.
11. There are 4 conditions that natural selection is based on:
   - **Overproduction**- Living things produce more young than an environment can sustain. Populations tend to stay the same over a period of time, despite the number of young produced.
   - **Limited Resources**- Food, water, space, and other resources are limited. Members of a population compete for these limited resources. Darwin called this the struggle for existence.
   - **Variation**- Not all individuals of a population are exactly the same. These variations can be passed from parents to offspring, if they arise genetically.
   - **Advantage of some variation**- The advantage of some variations can determine which individuals will survive the struggle for existence and reproduce.

Galapagos Islands

12. 600 miles off the coast of **Ecuador** in the Pacific Ocean.
13. The islands have many unique species of animals and plants not found anywhere else in the world.
14. Each island has slightly different organisms from the other ones.
15. They came to be this way by speciation, This is the process where one species evolves into another species.
16. This occurs when part of a population is isolated from the rest of the population by physical or geographical features.
17. Mutations occur in the isolated population.
18. Over time, members of the isolated population become different from the rest.

Environmental Pressure
19. Natural selection is induced by a change in the environment. This change is called the environmental pressure.
20. Remember that the environmental pressure does not have to be a naturally occurring phenomenon; it can be human interaction with the environment, as well.