

Darwin's process of natural selection has four components.

1. Variation. Organisms (within populations) exhibit individual variation in appearance and behavior. These variations may involve body size, hair color, facial markings, voice properties, or number of offspring. On the other hand, some traits show little to no variation among individuals—for example, number of eyes in vertebrates.
2. Inheritance. Some traits are consistently passed on from parent to offspring. Such traits are heritable, whereas other traits are strongly influenced by environmental conditions and show weak heritability.
3. High rate of population growth. Most populations have more offspring each year than local resources can support leading to a struggle for resources. Each generation experiences substantial mortality.
4. Differential survival and reproduction. Individuals possessing traits well suited for the struggle for local resources will contribute more offspring to the next generation.

Read the following scenario and determine the four components of Natural selection.

There is a new version of humans on earth called ZZ Zombies. Instead of living in harmony with humans, they target and consume any human that is right handed. To avoid complete extinction of the human species, Darwin's natural selection process is working at hand. Prior to having the ZZ zombie invasion, there was a large population of humans with a large genetic diversity. Not all of the humans are right handed. Some of the offspring were right handed while others were left-handed. Since not all of the offspring could fully survive into adults of reproductive age (because they would be consumed by the ZZ Zombies), only the left-handed offspring can grow into adulthood. As more and more generations progress, the human population is now full of left-handed individuals in the population. The human population has now successfully naturally selected for the new adaptation of left-handedness. Perhaps, the left-handed humans can now live in harmony with ZZ zombies?

From the scenario, identify the 4 different components of Natural Selection.

1. Variation

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2. Inheritance

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3. High rate of population growth

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4. Differential survival and reproduction

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Now with a partner, come up with your own short scenario of Darwin’s Natural Selection that includes all of the 4 components.

Draw 4 separate diagrams to support your 4 components.

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