

# NATURAL SELECTION EXPLAINED

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colored moths began to stand out against the dirty dark tree bark which made them easier to spot by predatory birds. Only the darker moths were camouflaged enough to avoid being eaten. The industrial environment full of soot covered trees selected **for** the dark colored moth genes and **against** the light ones. In less than 100 years, almost the entire peppered moth population in cities were transformed from light to dark.

(6) As opposed to natural selection, artificial selection involves humans, instead of nature, as the agents of selection. In artificial selection, humans choose the traits they prefer the most to breed into plants and animals. When humans find plants or animals with traits

they prefer, these individuals are chosen for breeding because we want the offspring they produce to exhibit the traits we have selected. We have selected **for** traits like increased milk production in cows, increased sweetness and size in fruits, and certain physical features in purebred pets. Unlike natural selection, this type of selection does not usually make an organism better suited to surviving in the wild, it only makes them more attractive for human uses. For example, though bigger heads are desired in British bulldog purebreds, they have been bred to have such large heads that 80% have to be delivered by Caesarean section. The bulldog pups' heads are so large that they are easily trapped inside the birth canal which leads to the death of the mom and pups.

## Article Questions

- 1) What is Charles Darwin famous for proposing?  
He is famous for proposing the Theory of Evolution by Natural Selection which is an explanation of the mechanism (cause) behind how evolution works. (1)
- 2) What is natural selection?  
Natural selection is a process where factors in a population's environment select **for** the traits in a population that most benefit an organism's survival and reproductive opportunities in that environment. (2)
- 3) There is a certain type of fish in a lake. Fisherman can catch the largest of these fish using nets. They don't like the little fish and most of the smaller ones can get through the holes in the nets. After a few decades of this type of fishing, how do you think this fish population may change? Use the ideas explored in this article to give an explanation for your answer.  
Over time the entire population will decrease in size. This is because having a larger body is a disadvantage and having a smaller body is an advantage smaller body size allows you to escape the nets. Genes for smaller body size will be selected for in this situation and genes for large body size will be selected against. As more of the small fish survive, their small body genes get spread to the next generation.
- 4) You are a sheep farmer that sells the wool of the sheep for profit. Your farm can only support a certain number of sheep at any given time. What can you do to make sure that you will have the largest profit? Use ideas explored in this article to guide your answer.  
You can produce more wool by selecting the individuals in your flock with the most wool and breeding them. This will create offspring which have more wool than usual. Over several generations of this type of artificial selection and breeding, each member of your flock will produce more wool and give you the most profit.
- 5) Pick one trait in humans you think might be selected **for** in our modern day environment? Support your answer with evidence.  
Various answers. Many may involve the use of technology. You can throw in a monkey wrench by bringing up the fact that being fit in your environment should also increase your mating opportunities (not just survival advantage). Does their trait do this?