

Evidence for Evolution Google Sites Project Feedback

Here are some samples of questions and answers of every level: E, P, G, BN

If you would like to argue that your grade should be changed, take a look at the samples from the grade you think you should have gotten and write me a message explaining how yours is similar.

SAMPLE ANSWERS

What is natural selection?

E

Natural selection is the process in which you siblings have better traits to survive for a longer amount of time. This usually occurs when 2 organisms have produced sexually to create offspring with more genetic diversity which gives them better in order to survive and evolve to preserve its species. For example, A Hyena has less strong teeth with doesn't enable it to gather food. Its sibling on the other hand has the better trait, and was selected by nature because it has the stronger teeth to gather more food. The weak tooth ends up dying to its weak trait. It wasn't "Selected by nature".

- He is using complete sentences
- He is using science vocabulary.
- He gives an example.
- He explains it for a normal person to understand, not like it was copy/pasted off the internet.

P

Natural selection is a field in science. It defines the process of when organisms who adapt easily to there environment survive the best with out difficulties and are able to produce offsprings with out any harm. Natural selection is often mentioned as the main source of evolution, it was even found by Charles Darwin.

- Writing in complete sentences.
- Restate the question. "Natural selection is..." instead of "it is"
- The explanation is thorough. (complete) i'm not left with a lot of questions

Natural selection is something that happens when you are stronger than your siblings and you would be "selected by nature" and survive when your siblings wouldnt survive because they are weaker than you. When you are "selected by nature" you would pass on your traits to your offsping and maybe none or maybe one would get your strong traits and it keeps on happening

- Really unique, and in his own words.
- Complete sentences
- He's correct

Natural selections is the Action of leaving the animals with bad traits left for dead and the animals with good traits will stay and have their DNA passed in order for evolution to settle in and start working.

- Also really unique and well explained. Great example.

G

The process where the populations of living organisms adapt and change.

- I don't know what's being discussed. Not restating the questions.
- I have more questions. "The process where populations adapt and change...." But how????
- Not a complete sentence

When monkey can't get bananas on tree.. it dies. Then the epic tall monkey with money gets the banana and survives.

1 OF 5

- This is good, but needs more details.

BN

It is how a species changes over time, because of the environment.

- Needs a lot more information.
- This isn't wrong, but it's a good beginning.

Y

Monke

- Self explanatory

How does natural selection lead to evolution?

E

Natural selection is when a couple makes a kid and all the good traits go to the kid. And when that kid marries and reproduces with another perfect organism, The child would be the strongest. And evolution would happen with the best and the best reproducing making the best. And later in years the organism has evolved to the point where they are the strongest. While their unlucky siblings die. That is natural selection. The strongest wins

- I like his answer because he restated the question
- He uses complete sentences
- He uses vocabulary but not too much
- It's clearly his own idea, not from Google
- I understand what he means

P

Natural selection ensures that only the organisms with the traits and genetic material best suited to their environment will survive. Therefore, when producing offspring, the species will pass their best alleles down to their children, making sure that their genetic code is a combination of their parents best traits. The process will continue on until the population of the species increases and the evolves to harbor characteristics that best suit their environment.

I might add on: Species with less suitable (good) traits will die. For example we saw in the moth experiment that the moths which are the wrong color basically get eaten way easier. They are being selected against. They are dead and they cannot have children and they

cannot pass on their DNA.

On the other hand, the moths with the best traits (camouflage) live, have children, pass on their DNA. Their traits become more common in the population for that reason.

If this happens enough times over and over and over again, your species may have changed enough to be considered something else. This is evolution.

Reasons I like this one:

- Easy to understand
- Covers all parts of the question.

There are animals that have both good and bad traits a.k.a advantageous and harmful traits. Species with harmful traits may have a lesser chance of surviving and reproducing and the animals with good traits will have an advantage and they will be more likely to reproduce, therefore they might lead to more different variations. This process is called the survival of the fittest. When animals with good traits reproduce, then the offspring will get the best of every parent and they will likely live longer.

- I love this answer. I just wish you explained how there would be more variations.

Natural Selection leads to evolution in the way that "nature" selects animals to have better traits than others. Animals can easily adapt to these differences and eventually evolve to know how to deal with these problems.

- Great description, but HOW do they adapt to the differences.

Natural Selection leads to evolution through "Survival of the Fittest". An example would be a giraffe with a longer neck would be able to reach higher sources of foods while a shorter necked one couldn't. Over time, the giraffe with shorter necks would die out because they couldn't get food and would not have offspring. While the longer necked ones would have more babies and the shorter necked ones wouldn't have any and the species would have evolved to have longer necks.

- Great examples, uses vocabulary, complete sentences

When Natural selection happens enough times mutations/adaptations in the genes become more and more evident as time goes by and those will become evolved which will help the animal survive longer and prosper as a species.

- Everything is correct
- Could use more details
- I find myself asking "How" at the end of every sentence

Bn

Its survival of the fittest among populations. Whoever has more potential to survive is better off.

- If you say "it" and i don't know what "it" is..... that's bad
- Explain HOW whoever has more potential to survive is better off.

Y

because it changes overtime.

- Not a complete sentence
- Does not answer the question

Explain in your own words how natural selection could cause glyptodon, over millions of years, to develop into a modern armadillo.

(this question was changed slightly from what is in the project)

E

Natural selection caused the species with the traits less suited to the environment that the ancient armadillo died off while the ones with the more compatible alleles survived and reproduced, passing their traits onto their offspring. As the environment the ancient armadillo lived in shifted over time, the species was forced to adapt, meaning that it was very likely a lot of them died off because their traits were no longer relevant to their new surroundings. Those that did survive must've had slight quirks and traits that made them more compatible with the new environment, and those were passed to the offspring, who then adapted, survived, and reproduced, passing their newly acquired traits to their offspring. Based on what we are seeing, it is likely that the armadillos that were smaller in size were the ones who survived, perhaps because they were easier to see, and the environment didn't offer as much protection and coverage from predators. The process continued until the species evolved into this modern armadillo.

- Complete sentences
- She answered the entire question
- She used scientific vocabulary
- I'm not left with more questions
- I can understand her meaning

Natural selection causes the strong ones to survive and reproduce and pass down their beneficial gene. Well, overtime on the earth 1 million years ago its environments change so the Glyptodon might have to adapt to the changing environment. When the earth was changing, the glyptodon was too slow to get food, or they were eating more than they could find or couldn't hide from their predator or their slow speed allow them to be easily hunted. The smaller defected glyptodon would survive since they had the genetic advantage of being small. And would reproduce with another small glyptodon making small and big glyptodon. And over time the small glyptodon survive and the bigger one didn't and eventually, they were only the smaller glyptodon alive and existing.

- Fabulous. In his own words, complete sentences. I really get it after reading this.
- Includes examples and descriptions that i understand

Natural selection can determine the traits of an organism. So the traits of the armadillo may have been weak over time so it has gotten smaller. The size of the armadillo also must have been bad because of predators so they were easy to spot which was probably a bad trait.

- I like how she is giving an explanation for WHY large size may have been bad and why the large glyptodons may have died while the smaller ones lived.

The glyptodan was an animal that was living millions even billions of years ago. At that time, oxygen was a surplus so all the animals actually grew a lot in size. As time went by, first of all, food started decreasing and plus oxygen was lower and lower in supply. Plus they were being hunted very easily so over time, as the oxygen went by, reproduction kept on going, the reproduced species kept on getting smaller and smaller and that helped them live better because they needed less food for survival as well.

- Solid, but read the E one and you'll see why this one is P not E
-

G

As time went by the armadillo was easier and easier to spot by dinosaurs so they evolved into smaller armadillos they're becoming smaller to avoid getting spotted and getting preyed upon by predators.

- Missing an explanation for why they became smaller. For example, large ones died and did not have babies. Small ones lived and did have babies therefore passing on their DNA.

BN

They mutate over time because of natural selection and didn't survive as well that big so they mutated to something smaller.

1. Technically correct, but needs a lot more information

i think it became small to hide from predators or maybe it wasn't hunted very much and didn't need to be big so it shrank down

- How did this happen tho? How did it get smaller?

In your opinion, is there enough evolution to prove that **microevolution** is possible? For example, that a samotherium could turn into a giraffe?

E

Examples of evolution by natural selection that further proves that microevolution is possible are pesticide resistance, herbicide resistance, and antibiotic resistance. For instance, the evolution of mosquitoes that aren't affected by pesticides influence towards them, are often called pesticide resistant mosquitoes. When those type of resistant mosquitoes sexually reproduce next year, they produce there offsprings that have the pesticide-resistant trait. Then, that pattern continues on for generations. Darwin even expected that microevolution would be a simple process of continuous and gradual change within the genes. An example of herbicide resistance would be when its applied on weed plants. Some weed plants would die but some would survive. The ones that have herbicide-resistance would sexually reproduce. Then, over generations the genes in the weed population would be resistant to herbicide. Finally, an example of antibiotic resistance is enterococci bacteria. Enterococci bacteria often resists antibiotics because of the interchange of resistance-encoding genes carried on conjugative transposons, pheromone-responsive plasmids, and other broad-host-range plasmids.

- Notice how she explains her reasoning by providing evidence and then explaining how the evidence supports her claim.

Microevolution is the change of gene/allele frequencies in a population. It happens on a small scale, within a certain population, and is the most common form of evolution. In my opinion, and given everything we've just discussed about the different ways a species can adapt and evolve, I do think that microevolution is possible, especially since all the evidence we have just recorded *proves* that a samotherium did in fact change into a giraffe, through a slow change in genetics. Giraffes reproduce sexually, and through natural selection, we know that only the organisms with the traits best suited to the environment survive, so therefore, as the environment slowly shifted to become the one that we know now, the alleles that survived and got passed down also changed. This means that there had to be a shift in the gene frequency, and there had to be microevolution. Additionally, since giraffes typically live in the hot, barren grasslands where the sun beats down almost constantly, it is likely that a few members of the species developed a mutation due to all the UV (ultra violet) light, and the mutation was passed down, also creating a change in the genetic frequencies of the animal. Because of all this, I think that microevolution must have occurred, and is possible, even for species that aren't the giraffe.

P

In my opinion, there is enough evolution to prove that microevolution is possible to turn a samotherium into a giraffe because microevolution is the small changes in an organism so there could have been small changes in the genes of the samotherium that happened overtime that caused it to turn into a giraffe. When samotheriums started to evolve over time, there could have been other small changes in the DNA like mutations. Mutations can be good sometimes so one of the mutations could have been the height of the samotherium. The size of the samotherium could have changed because of mutations. To conclude, there could have been small changes in the samotheriums DNA that turned it into a giraffe through evolution which proves that there is enough evolution to prove macroevolution is possible to turn a samotherium into a giraffe.

In my opinion, the samotherium possibly turned into a giraffe over millions of years. I think the species known as the samotherium, actually could have been the ancient giraffe many and many years ago, though evolution occurred. The samotherium probably started off with similar features to a giraffe, though shaped or was used differently. For example, the samotherium could have had a short neck, but eventually adapted to a new environment where they required long necks in order to earn food. Evolution does prove this, which is the reason why I believe so.

G

Microevolution can be possible for a samotherium to turn into a giraffe because of its mutations and sexual reproduction evolving from generation upon generation of repeated inheritance. This also connects to sexual reproduction because of different species producing offsprings and the partners having different genetics, and how similar their anatomy is. Now for a fish to turn into a giraffe, I would say is impossible because, for many reasons, they have completely different genetics, and also their anatomy does not look similar once so ever. Even with sexual reproduction, there isn't a species a fish could have a offspring with and It looking like a giraffe, even from repeated inheritance.

In my opinion, it is possible for microevolution. But only after more than a million years, I think it is possible because of all the proof that we have now, in the modern world. There is a lot of evidence that supports the fact that this could happen, even the animals we know now may have came from an animal that we would have never expected. I also think macroevolution might be possible, I just don't think that there is much proof to support that. Anything is possible when it comes to evolution, but from what i've seen there is very little proof

BN

No because they are all different kind of species and it is impossible .

In MY opinion there's not at all enough evolution for a samotherium to turn into a giraffe or for this macroevolution thing to occur. That's just reversing life and giraffes aren't going to be evolving into samotheriums anytime soon. The trees won't get shorter and so giraffe necks will become smaller or anything like that. Modern Giraffes have mostly the best and have the best qualities to survive in this generation right now. \

- This person got a G for reasoning but a BN for evidence. Even though they share their thoughts, they do not provide any evidence.

In my opinion, think that micro evolution is definitely possible, for example the samotherium turning into the giraffe, there is a lot of evidence and similarities. And in my opinion, i think that we might need a little bit more evidence that macro evolution is a thing because it seems a bit much. But then again i think that it might be a possibility.

Other thoughts:

How does comparing the anatomy of modern species help scientists to determine the relationships of species:

Comparable life frameworks is a critical instrument that chooses formative associations among living creatures and whether they share standard begetters. Anatomical similarities between animals maintain the likelihood that these living creatures created from a common archetype.

Can anatomy prove that horses and giraffes have a more recent common ancestor than horses and dogs? How?:

Homologous developments offer evidence to ordinary family, while for all intents and purposes identical to structures show that tantamount explicit squeezing variables can make similar varieties (profitable features). Similarities and differences among common particles in the DNA progression of characteristics) can be used to choose species' relatedness.

What are homologous structures and what do they teach scientists?:

Researchers think about the life systems, undeveloped organisms, and DNA of living things to see how they advanced. Proof for development is given by homologous constructions. These are structures shared by related organic entities that were acquired from a typical precursor. Other proof for development is given by undifferentiated from structures.

- Way way wayyyy too much grammarly

Great one:

<https://sites.google.com/aisa.sch.ae/evidenceofevolution/natural-selection/samotherium-example?authuser=1>