Amoeba Sisters | Video Recap

NAME: _____

Amoeba Sisters Video Recap: *Natural Selection*

1. Populations can have variety, despite being made up of the same species. If a population has different expressed traits, this can be due to different inherited **alleles**. The frogs below are the same species, but they have different shades of green based on their inherited **alleles**. In a particular environment, lighter green frogs are easier to see by predators. Explain how natural selection could lead to a change in **allele frequency**.

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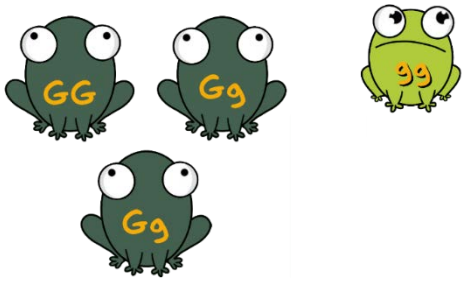

2. **Natural selection** is an example of a mechanism of **evolution**. Does this mechanism produce a change in **individuals** or **populations**? Explain!

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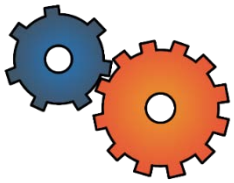
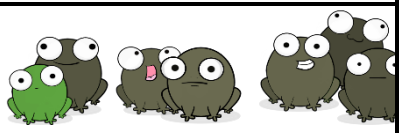


3. A major point of understanding natural selection is that not all organisms in a population get to reproduce. Consider the term **fitness** as used in biology. How does this term relate to **natural selection**?



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4. Based on your answer above, do organisms with higher **fitness** mean that they have survived to an advanced age? Why or why not?

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5. Does **fitness** (as used in biology) and survival have the same meaning? Why or why not?

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6. If an organism has high biological **fitness** in one environment, does that mean that it would also have high biological fitness in another environment? Why or why not?

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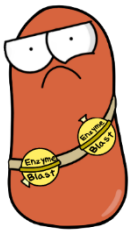
7. Two students are discussing natural selection in bacteria and how it can relate to antibiotic resistance in bacteria.



Bernadette states that when antibiotics are used, bacteria can respond by developing traits to help them defeat the antibiotic, which then may increase their fitness.

Dominique states that there is already a variety of traits among the bacteria. Bacteria that have traits that allow them to survive the antibiotic and reproduce may have higher fitness.

Which individual's reasoning do you agree with more and why? _____

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8. A major misconception about natural selection is that this mechanism "gives organisms what they want or need so they can adapt to an environment." Explain why this is not correct.

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9. Consider a major environmental change. If there are not organisms in a population that have traits that allow them to still continue to survive to reproduce, what would likely happen to that population?

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