

Natural Selection Worksheet

Name \_\_\_\_\_ Date \_\_\_\_\_

1. Read the following situations below and identify the key concepts of Darwin's Natural Selection.

There are 3 types of polar bears: ones with thick coats, ones with thin coats and ones with medium coats. It is fall, soon to be winter. The temperatures are dropping rapidly and the bears must be kept warm, or they will freeze to death. Many of the bears have had ~2 cubs each but due to the extreme temperatures, many mothers only have one cub left.



Which polar bear will not benefit from natural selection?

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Identify the type of variation in the polar population.

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Who is the most fit in her environment?

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Gene pool is a phrase used to describe the genetic variance in a population, that shows all the possible traits in that population.

Predict how the gene pool will change over time.

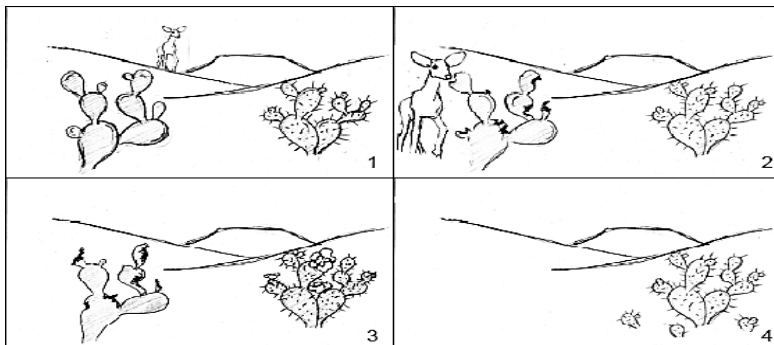
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2. Below is a series of pictures representing changes in the population of cacti over many generations.



Why would a deer be more likely to eat the left cactus than the right cactus?

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In figure 3, the right cactus has flowers, but the cactus that has been eaten by the deer is too damaged to make flowers. Figure 4 shows the situation several months later. What has happened?

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Do you think that evolution by natural selection is occurring in this cactus population? Explain why or why not.

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What adaptation seems to increase the fitness of the cacti on the right?

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How do you think this adaptation increases the ability of cacti on the right to survive and reproduce?

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3. There is a species of beetle that has two different colors, either a green variant or a brown variant. The beetles live on trees, climbing the trunks, they also lay their eggs in the trunks of the trees and then hanging out on the underside of the leaves. The beetles predators are visual based predators.



Which color beetle is more likely to be caught by a predator as it climbs the trunk and why?

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Which color beetle will become more and more common and why? \_\_\_\_\_

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What would happen if the beetles started spending more time on the tops of the leaves instead of the bottoms of them?

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