

Darwin's Natural Selection Worksheet

Name \_\_\_\_\_

Read the following situations below and identify the 5 points of Darwin's natural selection.

1) There are 2 types of worms: worms that eat at night (nocturnal) and worms that eat during the day (diurnal). The birds eat during the day and seem to be eating ONLY the diurnal worms. The nocturnal worms are in their burrows during this time. Each spring when the worms reproduce, they have about 500 babies but only 100 of these 500 ever become old enough to reproduce.

a. What worm has natural selection selected AGAINST? Diurnal FOR? Eating

Darwin's 5 points: Identify the 5 points in the scenario above.

- Population has variations. nocturnal/diurnal eating habits
- Some variations are favorable. nocturnal eating
- More offspring are produced than survive. 500 born -> 100 survive
- Those that survive have the favorable traits. nocturnal eating offspring
- A population will change over time. progress to all nocturnal eating

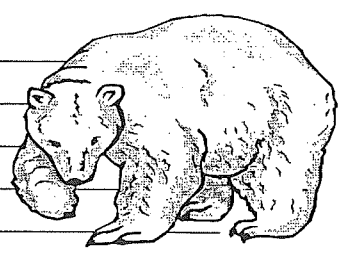


2) There are 3 types of polar bears: ones with thick coats, ones with thin coats and ones with medium coats. It is autumn, soon to be winter. The temperatures are dropping rapidly and the bears must be kept warm, or they will freeze to death. Many of the bears have had ~2 cubs each but due to the extreme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

a. What bear will natural selection select AGAINST? Thin coats FOR? Coat thickness

Darwin's 5 points: Identify the 5 points in the scenario above.

- Population has variations. Coat thickness
- Some variations are favorable. Thick coat
- More offspring are produced than survive. 2 cubs -> 1 survives
- Those that survive have favorable traits. Thick coat offspring
- A population will change over time. progress to all thick coat



3) In emus, there are 2 types: ones that run fast and those that run slowly. The fast birds can reach up to 40 kilometres an hour. Dingo love to eat emu, and they can reach speeds of up to 35-40 kilometres per hour. A flock of emu will lay ~ 10 eggs (each mother only lays 1), but many rodents break into the eggs and eat the fetus before they hatch.

a. What emu will natural selection select AGAINST? Slow runners FOR? running speed

Darwin's 5 points: Identify the 5 points in the scenario above.

- Population has variations. Running speed
- Some variations are favorable. faster runners
- More offspring are produced than survive. 10 per flock but few survive
- Those that survive have favorable traits. fast runner offspring
- A population will change over time. progress to all fast runners



Convergent: Ecological pressures cause a similarity in structure or function, but **not** from a common ancestor.

Divergent: Evolution arising out of differences in organism which had a **common ancestor**.

Coevolution: Evolution in which one organism causes another to change since they live in close association..

Punctuated equilibrium: Evolution is stable for a time and suddenly jumps to new forms

## TYPES OF EVOLUTION WORKSHEET

Directions: Read each description below and write the name of the type of evolution that is being described. Write the word in the appropriate box.

WORD BANK			
convergent evolution	divergent evolution	coevolution	punctuated equilibrium

	Description	Convergent evolution	Divergent evolution	Coevolution	Punctuated equilibrium
1	In the ocean surrounding Antarctica, there are fish that survive the cold water by using a molecule made of glycoproteins that circulates the blood and keeps it from freezing. Certain kinds of worms that live in the Arctic ocean also make antifreeze proteins that help them live in icy water.	✓			
2	Ants are the correct size and weight needed to open the flowers for the peony plant. The peony plant provides food for the ant and the ant fertilizes the peony's flowers			✓	
3	Horse evolution shows long stable periods of little evolution interrupted by brief periods of rapid change.				✓
4	A kit fox lives in the desert and has large ears with greater surface area that keep the fox from getting overheated. The red fox lives in the forest and has a red coat that keeps it camouflaged.			✓	
5	Hummingbirds have a beak just the right length to reach the nectar in a cardinal flower and as they feed their foreheads bump into the pollen structure. Cardinal flowers are red which hummingbirds can see but bees can't. Cardinal flower's pollen structure is just the right length for the hummingbird to pick up pollen as it feeds.			✓	
6	The <i>Galloti atlantica</i> and <i>Galloti galloti</i> lizards evolved through natural selection from a common ancestor into a wide variety of different looking lizards.		✓		
7	Whales, sharks, and penguins all have streamlined bodies and fins/flippers for moving in water even though they belong in different classes of animals (mammals, fish, and birds).	✓			
8	The Galápagos tortoises share a common ancestor, but have necks of different lengths to best reach the food they need in their environment.		✓	✓	