

Case Studies in Natural Selection and Adaptive Radiation (CBC article):

1. A. What caused the percentage of no tusk elephants to increase in some populations?
- Hunters were killing the elephants with tusks (before reproduction) and not the elephants without the tusks
 - → therefore, elephants without tusks were able to contribute more genes for having no tusks into the gene pool

B. Explain how the requirements of natural selection were met:

1. Variation in traits- no tusk and with tusk
2. Differential reproduction- yes with tusk elephants were being killed before getting to reproduce
3. Hereditary- yes – passed on from parents
4. End- higher percentage of genes for no tusk elephants

2. What trait caused the population of ballworm pets to change over time? Explain how the requirements of natural selection were met.

→ mutation that gave them immunity to the cotton toxin

- ① Variation - immune non-immune
- ② DR - worms would die before reproduction if they were not immune.
- ③ Heredity - yes, mutation was passed on
- ④ End result - more immune bollworms in ^{new} population

3. Explain why different traits of clover were selected for in different environments. Explain how the process of natural selection took place in each environment. Did this result in adaptive radiation? Why?

Cold - non poisonous was selected for - so that it wouldn't poison itself

Warmer - poisonous was selected for - so that it wouldn't be eaten by predators

Adaptive radiation happened
 → based on the environment they were protected in different ways reproductive isolation in shelter

4. Based on the article, do you think that humans undergo natural selection? What features do you feel can be selected for? What inhibits the process of natural selection to take place naturally?
- prevents

Name: _____

Div: _____

Date: _____

Going against the trend:

1. What colour trait is usually selected for in Black Bears and why-- What rule is being broken that usually keeps the white colouration of bear populations down?
2. What are potential factors that result in Kermode Bears having a larger proportion of white bears than seen in Interior bears?
3. If you were to research this bear, what would you want to observe in order to see the contribution factors of this bear populations colouration?