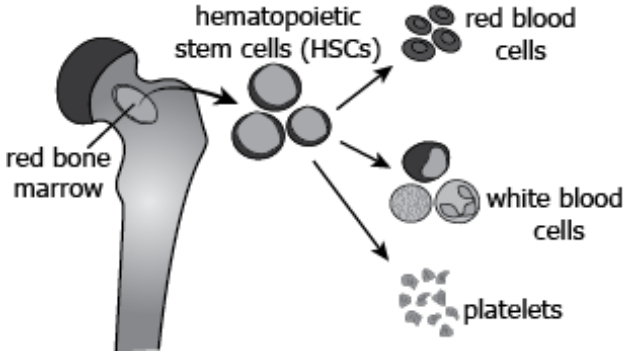
1. The diagram shows the formation of various types of blood cells within the body.



How are different types of blood cells formed from the same type of stem cell?

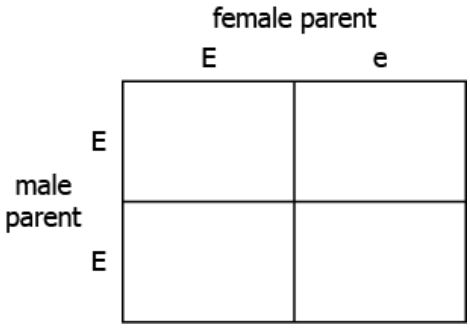
A Different regions of the DNA begin to mutate, resulting in different types of blood cells.

B The DNA sequence within the stem cells changes when the cells divide, resulting in different types of blood cells.

C Variations in the amount of DNA in each cell determine the type of blood cell that forms.

D The specific regions of the DNA that get expressed in the stem cells determine the type of blood cell that forms.

2. In pigs, the gene for ear type is determined by two alleles. The allele for erect ears E is dominant over the allele e for floppy ears. The incomplete Punnett square shows a cross between two parent pigs with erect ears.



What is the probability of producing offspring that have floppy ears?

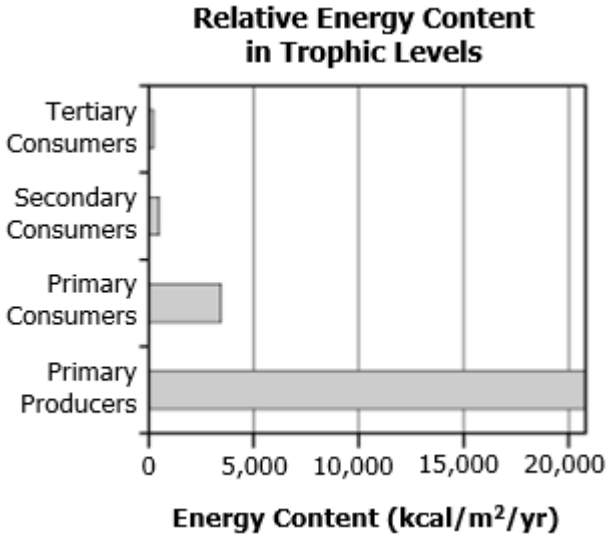
A 0%

B 25%

C 50%

D 100%

3. The graph shows the energy available at each trophic level.



Which conclusion does the graph support?

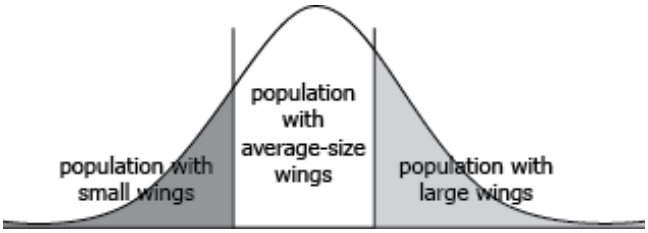
A Approximately 10% of energy is transferred from one trophic level to another.

B Approximately 1% of energy is transferred from one trophic level to another.

C Primary producers are at the lowest trophic level and contain the least amount of energy.

D Tertiary consumers are at the highest trophic level and contain the most amount of energy.

4. A bacterial species causes a disease that affects the flight muscles of a bird species. Birds with large wings are more susceptible to the disease, and birds with small wings are the least susceptible. The graph shows the different populations of the bird species.



If a sudden increase occurs in the pathogenic bacteria and the predators that feed on these birds, in which direction would the population of birds be favored by natural selection?

A The population would gradually shift to the left with a larger number of birds having small wings.

B The population would gradually shift to the right with a larger number of birds having large wings.

C The population would be concentrated in the center with a greater number of birds having average-size wings.

D The population would be evenly split on both ends with a lesser number of birds having average-size wings.