Year 8 Science: Evidence for evolution, variation and natural selection

Name: _____ Date: _____

Try these without your notes first, then check the answer key.

Practice

1. Give two kinds of evidence that species change over time.

2. Is a tattoo heritable variation? Explain.

3. In a dry year, only finches with thick, strong beaks can crack the remaining hard seeds. What is the selection pressure?

4. In Room 7's activity, what would you expect if the toothpicks were scattered on red carpet instead?

5. Give one way habitat destruction can cause extinction.

Fix the mistake

6. Correct this statement: "A theory in science is just a hunch."

7. Correct this statement: "A giraffe that stretches its neck will have longer-necked babies."

8. Correct this statement: "Animals choose to change so they can survive a new environment."

9. Correct this statement: "The strongest individual always survives natural selection."

Answer key (for parents and tutors)

1. Give two kinds of evidence that species change over time.
   Any two of: fossils in rock layers, shared features such as the same limb bones, similar DNA.
2. Is a tattoo heritable variation? Explain.
   No, because it is gained during a lifetime and is not in the genes.
3. In a dry year, only finches with thick, strong beaks can crack the remaining hard seeds. What is the selection pressure?
   Shortage of soft food, so only hard seeds are left.
4. In Room 7's activity, what would you expect if the toothpicks were scattered on red carpet instead?
   Red toothpicks would survive better and green ones would be found more often.
5. Give one way habitat destruction can cause extinction.
   Species lose their food and shelter, so if they cannot move or adapt, every individual dies.
6. Correct this statement: "A theory in science is just a hunch."
   A scientific theory is a well-tested explanation supported by many lines of evidence.
7. Correct this statement: "A giraffe that stretches its neck will have longer-necked babies."
   Changes gained during a lifetime are not passed on; only heritable variation is inherited.
8. Correct this statement: "Animals choose to change so they can survive a new environment."
   Variation already exists by chance, and the environment selects which variations survive and breed.
9. Correct this statement: "The strongest individual always survives natural selection."
   The best-suited survive, which might mean the best camouflaged or the one that copes with cold, not the strongest.