**ANSWER KEY.**

ZornScience
zornscience.org

# Development of Evolutionary Theory

Biology | ANSWER KEY

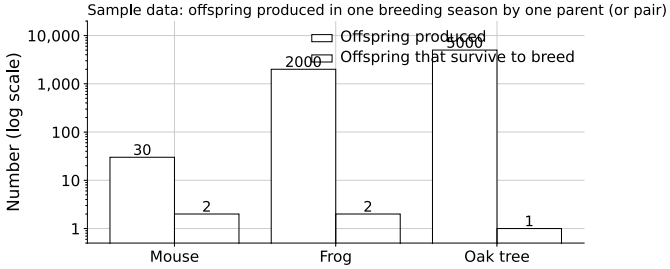
Answer in complete sentences. Use the graph and model as evidence.

**1.** Write the name of the scientist who proposed each idea. Choose from: Hutton, Malthus, Lamarck.

| Idea | Scientist |
|---|---|
| Earth is very old and was shaped by slow processes (1788) | **Hutton** |
| Populations can grow faster than their food supply (1798) | **Malthus** |
| Traits gained during an organism's life are passed to its offspring (1809) | **Lamarck** |

Hutton and Lyell showed that Earth is very old. Malthus influenced Darwin's thinking about competition.

**2.** The graph shows sample data for offspring produced and offspring that survive to breed.




(a) For the mouse, how many times more offspring are produced than survive to breed?

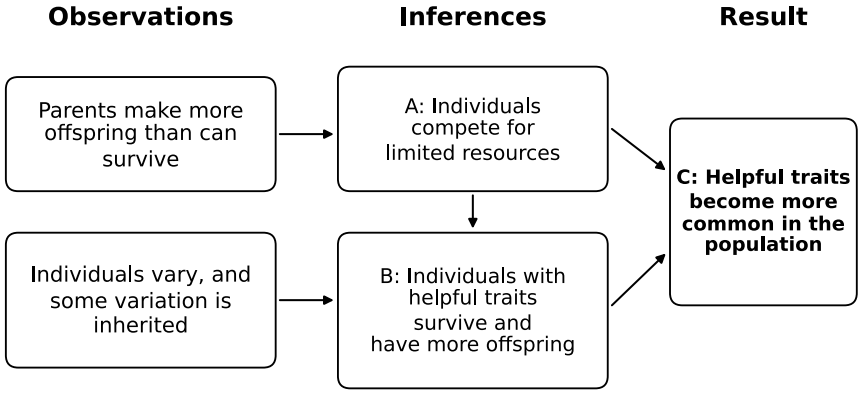
(b) What does this pattern suggest happens to most offspring? Name the cause.

(a) 30 ÷ 2 = **15 times** as many

(b) **Most offspring die before they breed, because of competition for limited resources** such as food, space, and mates.


CC BY-NC-SA 4.0 | zornscience.org

**3.** The model shows Darwin's logic. Fill in the three blanks, A, B, and C.




(a) Blank A

(b) Blank B

(c) Blank C

(a) **compete** (individuals compete for limited resources)

(b) **survive** (helpful traits help individuals survive and have more offspring)

(c) **more** (helpful traits become more common in the population)

**4.** Some people once thought that a giraffe stretches its neck to reach high leaves, and that its stretched neck is passed on to its offspring.

(a) Which scientist proposed this kind of idea?

(b) Explain how natural selection explains why giraffes have long necks. Use the words *variation* and *offspring*.

(a) **Lamarck**

(b) **Giraffes in a population vary in neck length, and the variation is inherited. Longer-necked giraffes reach more food, survive, and have more offspring, so long necks become more common over generations.**


CC BY-NC-SA 4.0 | zornscience.org