

Name \_\_\_\_\_

Date \_\_\_\_\_

### Study Guide 10.3: Theory of Natural Selection

#### KEY CONCEPT

Darwin proposed natural selection as a mechanism for evolution.

#### VOCABULARY

<b>artificial selection</b>	<b>natural selection</b>	<b>fitness</b>
<b>heritability</b>	<b>population</b>	

**MAIN IDEA:** Several key insights led to Darwin's idea for natural selection.

1. Why did artificial selection interest Darwin?

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2. Why must selected traits be heritable?

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3. In natural selection, what must be true of traits that are passed down through generations?

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4. What important idea from Thomas Malthus inspired Darwin?

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**MAIN IDEA:** Natural selection explains how evolution can occur.

<b>variation</b>	<b>overproduction</b>	<b>adaptation</b>	<b>descent with modification</b>
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- \_\_\_\_\_ 5. producing many offspring, some of which may not survive
- \_\_\_\_\_ 6. individual differences that may be heritable
- \_\_\_\_\_ 7. a structure well-suited for the environment
- \_\_\_\_\_ 8. a heritable trait becoming common in a population

Use an organism of your choice to sketch the four principles of natural selection.

9. overproduction	10. variation
11. adaptation	12. descent with modification

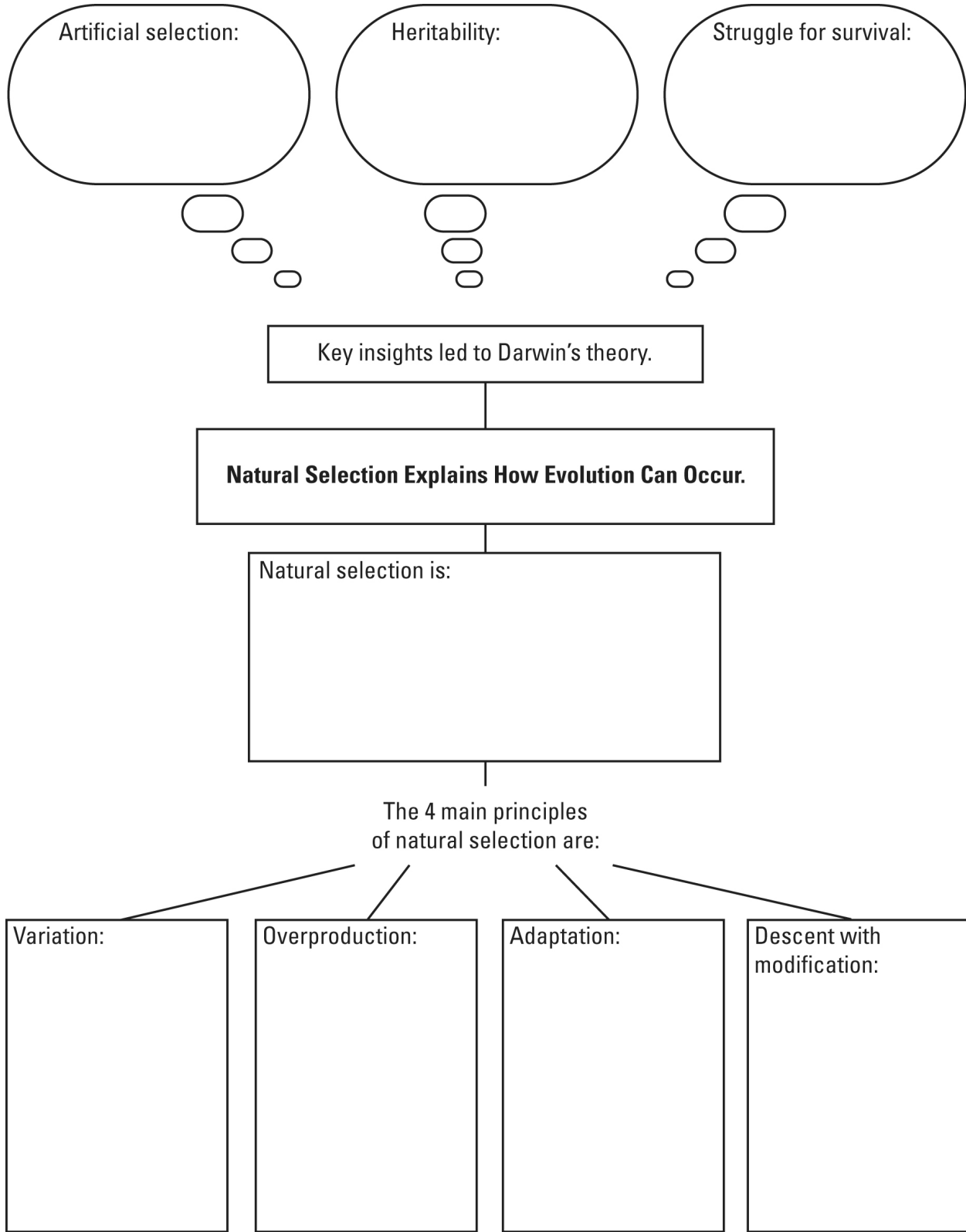
**MAIN IDEA: Natural selection works on existing variation.**

13. Peter and Rosemary Grant observed natural selection acting on traits within a population of finches on the Galápagos Islands. A drought reduced the number of small, soft seeds but left plenty of large, tough-shelled seeds intact. The next year there was a(n) \_\_\_\_\_ (increase, decrease) in the number of large-beaked hatchlings.
14. After several years, the supply of large seeds went down after an unusually wet period. The increase in small, soft seeds brought a(n) \_\_\_\_\_ (increase, decrease) in the number of large-beaked hatchlings the following year.

### Vocabulary Check

15. *Humans* are the selective agent in which type of process, artificial selection or natural selection?  
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16. *The environment* is the selective agent in which type of process, artificial selection or natural selection?  
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17. What is the measure of the ability to survive and produce more offspring relative to other members of the population called?  
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18. What is the ability of a trait to be passed down from one generation to the next called?  
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19. What are all the individuals of a species that live in an area called?  
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# PowerNotes 10.3: Theory of Natural Selection



Artificial selection:

Heritability:

Struggle for survival:

Key insights led to Darwin's theory.

**Natural Selection Explains How Evolution Can Occur.**

Natural selection is:

The 4 main principles of natural selection are:

Variation:

Overproduction:

Adaptation:

Descent with modification: