

Name: _____

7.14 and 7.18 Artificial and Natural Selection Reading Notes

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1. In selective breeding, _____ can influence certain characteristics of organisms by choosing desired parental traits to be passed on to _____.
2. What are some characteristics of dogs that we breed for?
3. What other animals do you think have been selectively bred?
4. This process is called _____. Humans select the trait they find most desirable and specifically mate organisms that have that _____.

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5. What are some benefits of artificially breeding plants?
6. Whose research gives us the knowledge to artificially breed organisms?
7. _____ is a combination of 2 or more organisms or types of species to create a unique offspring.
8. _____, or GMOs, are created in a laboratory setting. Genetic engineers manipulate the _____ of an organisms to produce a new living organism that could not exist by natural means.
9. Give examples of a GMOs and describe what modifications they have.

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10. Artificial selection can also have _____ impacts.

11. By increasing the human desired traits, we can also _____ other "good" traits or increase the prevalence of _____ traits.

12. Describe two examples of the negative impacts of artificial selection:

a. Hip Dysplasia-

b. Tomatoes-

13. _____ is still very rare in humans, but it has been tried to treat _____ disorders and cancer.

14. For gene therapy, scientists must _____ the genes and place in humans. Cells add the packages to their own _____. Sometimes the cells add the genes in the wrong place which leads to _____ as a side effect. Other times, the cells with new genes don't _____ or they do not help the _____ get well.

Page 366-Complete the chart below using the instructions and information in your book.

Desired Trait	Offspring Trait
A plant that is more resilient to infection.	
A sturdy animal that can carry heavy loads over difficult terrain.	
A plant that can grow in harsh, dry conditions.	
An animal that produces more milk than typical.	

15. All organisms need to _____ to changes in their environment.
16. Changes in a species appearance or behavior over generations are _____.
17. _____ is the mechanism driving these changes
18. Natural selection takes advantage of _____ among individuals in a population.
19. Some individuals _____ better in a particular environmental condition than others. Those are better _____ to survive and are able to reproduce and pass their _____ on to the next generation. This improves their _____ chances of survival. Over time, the _____ of a whole population can change.
20. The stickleback fish grow _____ to protect against predators. Fossils of stickleback fish show a _____ in the number of spines in the past. Scientists infer that there were _____ in the ancient lake and the stickleback fish didn't need as many _____. This is an example of _____.

21. Describe the deer mice have adapted to different environments.
22. What do you think would happen to coat color over time if a population of light colored mice were moved to the wooded area with darker soil?
23. Describe the adaptations of the field mustard plants in California.

24. Natural selection also applies to _____.
25. _____ are medicines that kill bacteria.
26. The overuse of antibiotics have created bacterial populations that are _____ to antibiotics. (Antibiotics don't successfully destroy the bacteria)
27. If someone DOESN'T take antibiotics, the _____ bacteria will have no advantages over the non-resistant. The resistant trait will not be _____ and passed on to offspring.
28. If someone DOES take antibiotics, the resistant bacteria will survive and _____ and the non-resistant will die. Eventually, most of the population will carry the trait for _____.
29. If antibiotics are take rarely, the population will not have time to _____.
The more often antibiotics are taken, the more chances bacteria will have to develop _____.

Page 482-Complete the chart below (more instructions are in your textbook)

Environmental Change	Sample Adaptation in Plants	Sample Adaptation in Animals
Persistent Drought		
River Changing Course		
Air Pollution		
Melting Glaciers		

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