INTEGRATED SEGMENT: EVOLUTION EXPLAINS LIFE'S UNITY AND DIVERSITY

Integrated Phenomenon: Faster cheetahs catch more food than slower cheetahs do.

1. What questions do you have about this phenomenon? How might you investigate to find answers?

2. In the space below, come up with an initial model that attempts to explain this phenomenon.

3. After you complete each lesson, return to the table below and add what you learned that relates to or might help explain part of the phenomenon: *Faster cheetahs catch more food than slower cheetahs do.*

Lesson	Questions to Consider	What I Learned to Help Explain Part of the Phenomenon
Darwin's Theory of Evolution Through Natural Selection	What is Darwin's Theory of Natural Selection? How is it different than evolution? How is it related to adaptations?	
Observing Natural Selection in Action	How can natural selection lead to traits that increase survival? Could the ability to run faster to catch more prey impact an animal's ability to survive? Explain.	
Genes and Natural Selection	How are genes related to traits? What is an allele? What is a mutation and how can it affect traits? What might happen if a mutation caused a cheetah to have bigger leg muscles?	

Lesson	Questions to Consider	What I Learned to Help Explain Part of the Phenomenon
Evolutionary Relationships	What is a species? Are cheetahs that can run fast only able to mate with other cheetahs that can run fast? Explain.	
Forms of Energy	What is energy and how can food give energy to a living thing? How is energy related to matter? What are the two forms of energy? What kind of energy is present in a cheetah that is moving very fast?	
Measuring Kinetic Energy	What is the relationship between kinetic energy and mass? What is the relationship between kinetic energy and speed? If one cheetah runs faster than another cheetah the same size, which has greater kinetic energy?	
Potential Energy in Systems	What kind of potential energy is in food? Describe this type of energy. How is it released from food? How do cheetahs use the energy in food?	

4. In the space below (or on your original model in question 2), revise your model based on what you learned throughout the lessons.

5. Use what you have learned, and the final model that you developed, to explain the phenomenon: *Faster cheetahs catch more food than slower cheetahs do.* Fill in *Handout A: Claim, Evidence, and Reasoning Planner* to plan your explanation. Then write it out in the space below.

6. How does this explanation relate to questions that have come up in your own life experience?