Segment 5 – Evolution Explains Life's Unity and Diversity

Integrated Phenomenon: Faster cheetahs catch more food than slower cheetahs do. Create an initial model to explain this phenomenon.

The Evolution of Life

Anchoring Phenomenon: Whales live in water and look like big fish, but they have traits of land-dwelling mammals.

24 **Darwin's Theory of Evolution Through Natural Selection**
Phenomenon: Darwin found many kinds of finches with different sized and shaped beaks on the different islands of the Galápagos.

25 **Observing Natural Selection in Action**
Phenomenon: In only 2 years, the average beak size of finches on Daphne Major got almost 1mm larger.

26 **Genes and Natural Selection**
Phenomenon: Lovebirds in captivity have unique colorations not found in the wild population.

27 **Evolutionary Relationships**
Phenomenon: Crayfish, spiders, and dragonflies may seem very different at first glance, but they have many similarities.

Performance Assessment: Evolutionary History of Whales
Anchoring Phenomenon: Whales live in water and look like big fish, but they have traits of land-dwelling mammals.

Kinetic and Potential Energy

Anchoring Phenomenon: One small action in a Rube Goldberg machine causes a chain reaction of effects.

28 **Forms of Energy**
Phenomenon: A pendulum boat ride cannot swing forever under the force of gravity.

29 **Measuring Kinetic Energy**
Phenomenon: A wrecking ball causes more damage when it's bigger or swung from further away.

30 **Potential Energy in Systems**
Phenomenon: A firework transforms from a small cardboard covered object to a large explosion of fire in the sky.

Engineering Challenge: Designing Musical Instruments

Performance Assessment: Analyzing a Chain Reaction Machine
Anchoring Phenomenon: One small action in a Rube Goldberg machine causes a chain reaction of effects.

Segment Wrap Up

Return to the model created at the beginning of the segment, and revise it based on what you learned about the evolution of life and kinetic and potential energy. Then, use your model to explain the Integrated Phenomenon.

ANCHORING PHENOMENON

Anchoring Phenomenon: Whales live in water and look like big fish, but they have traits of land-dwelling mammals.

1. Complete the first two columns of this chart.
   - List what you think you already know about this unit's phenomenon.
   - Then write at least three questions you have about this phenomenon.

   Return to this chart at the end of the unit. Add the key information you learned about this phenomenon. Give evidence!

Know	Want to Know	Learned