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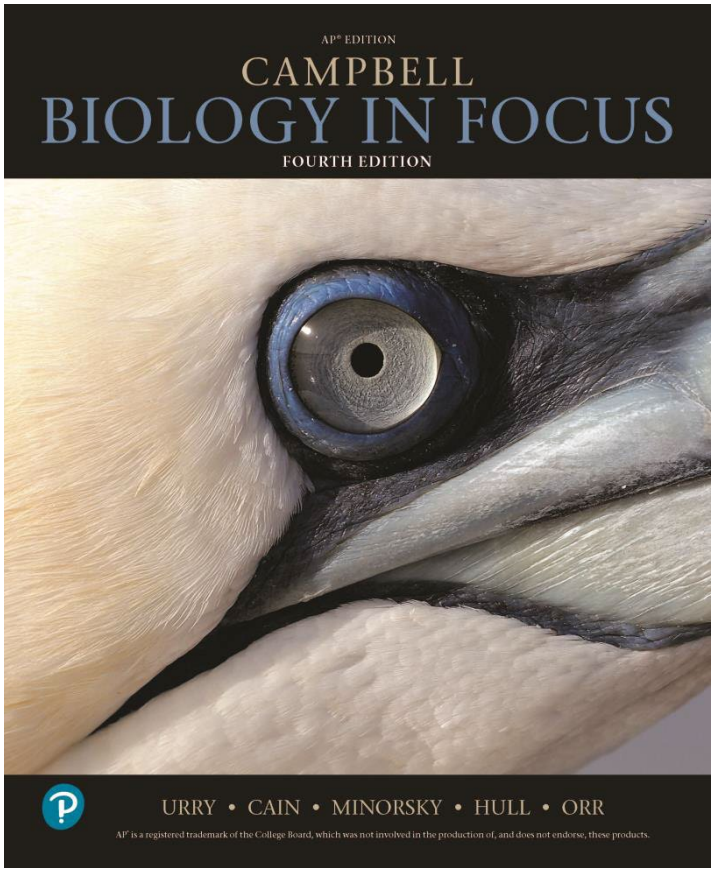

to the

Next Generation Science Standards (2013)
Life Science
Grades 9-12

Pearson

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(HS-LS1) From Molecules to Organisms: Structures and Processes	
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(HS-LS1-3) Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.	**Chapter 32: The Internal Environment of Animals: Organization and Regulation** Concept 32.3: Feedback control maintains the internal environment n many animals, pp. 701-706 Concept 32.4: A shared system mediates osmoregulation and excretion in many animals, pp. 706-710 Concept 32.5: The mammalian kidney's ability to conserve water is a key terrestrial adaptation, pp. 711-714 **Chapter 33: Animal Nutrition** Concept 33.5: Feedback circuits regulate digestion, energy allocation, and appetite, pp. 730-734

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(HS-LS2) Ecosystems: Interactions, Energy, and Dynamics	
(HS-LS2-1) Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.	**Chapter 40: Population Ecology ad the Distribution of Organisms** Concept 40.5: The exponential and logistic models describe the growth of populations, pp 890-894 **Chapter 43: Conservation Biology and Global Change** Concept 43.5: The human population is no longer growing exponentially but is still increasing rapidly, pp. 964-966

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(HS-LS2-6) Evaluate the claims, evidence and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.	**Chapter 23: Broad Patterns of Evolution** Concept 23.2: The rise and fall of groups of organisms reflect differences in speciation and extinction rates, pp. 479-487 Concept 23.3: Major changes in body form can result from changes in the sequences and regulations of developmental genes, pp. 487-490 **Chapter 40: Population Ecology and the Distribution of Organisms** Concept 40.5: The exponential and logistic models describe the growth of populations, pp. 890-894 **Chapter 41: Ecological Communities** Concept 41.3: Disturbance influences species diversity and composition, pp. 911-914 **Chapter 43: Conservation Biology and Global Change** Concept 43.1: Human activities threaten Earth's biodiversity, pp, 943-947
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(HS-LS3) Heredity: Inheritance and Variation of Traits	
(HS-LS3-1) Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.	**Chapter 1: Introduction: Evolution and the Foundations of Biology** Concept 1.1: The study of life reveals unifying themes, pp. 3-9 **Chapter 3: Carbon and the Molecular Diversity of Life** Concept 3.7: Genomics and proteomics have transformed biological inquiry and applications, pp. 68-69 **Chapter 10: Meiosis and Sexual Life Cycles** Concept 10.1: Offspring acquire genes from parents by inheriting chromosomes, pp. 208-209 **Chapter 11: Mendel and the Gene Idea** Concept 11.1: Mendel used the scientific approach to identify two laws of inheritance, pp. 222-228 **Chapter 12: The Chromosomal Basis of Inheritance** Concept 12.1: Mendelian inheritance has its physical basis in the behavior of chromosomes, pp. 245-247
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(HS-LS4) Biological Evolution: Unity and Diversity	
(HS-LS4-1) Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.	**Chapter 19: Descent with Modification** Concept 19.3: Evolution is supported by an overwhelming amount of scientific evidence, pp. 404-407 **Chapter 20: Phylogeny** Concept 20.1: Phylogenies show evolutionary relationships, pp 413-416
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(HS-LS4-3) Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.	**Chapter 1: Introduction: Evolution and the Foundations of Biology** Concept 1.2: the Core Theme: Evolution accounts for the unity and diversity of life, pp. 9-13 **Chapter 10: Meiosis and the Sexual Life Cycles** Concept 10.4: Genetic variation produced in sexual life cycles contributes to evolution, pp. 218-219 **Chapter 19: Descent with Modification** Concept 19.2: Descent with modifications by natural selection explains the adaptations of organisms and the unity and diversity of life, pp. 398-403 **Chapter 21: The Evolution of Populations** Concept 21.4: Natural selection is the only mechanism that consistently causes adaptive evolution, pp. 443-450 **Chapter 41: Ecological Communities** Concept 41.1: Interactions between species my help, harm, or have no effect on the individuals involved, pp. 901-907
(HS-LS4-4) Construct an explanation based on evidence for how natural selection leads to adaptation of populations.	**Chapter 1: Introduction: Evolution and the Foundations of Biology** Concept 1.2: The Core Theme: Evolution accounts for the unity and diversity of life, pp. 9-13 **Chapter 19: Descent with Modification** Concept 19.2: Descent with modification by natural selection explains the adaptations of organisms and the unity and diversity of life, pp 398-403 **Chapter 21: The Evolution of Populations** Concept 21.4: Natural selection is the only mechanism that consistently causes adaptive evolution, pp. 443-450

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(HS-LS4-5) Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.	**Chapter 21: The Evolution of Populations** Concept 21.4: Natural selection is the only mechanism that consistently causes adaptive evolution, pp. 443-450 **Chapter 23: Broad Patterns of Evolution** Concept 23.2: The rise and fall of groups of organisms reflect differences in speciation and extinction rates, pp. 479-487 **Chapter 27: The Rise of Animal Diversity** Concept 27.7: Animals have transformed ecosystems and altered the course of evolution, pp. 594-597 **Chapter 40: Population Ecology and the Distribution of Organisms** Concept 40.5: The exponential and logistic models describe the growth of populations, pp. 890-894 **Chapter 43: Conservation Biology and Global Change** Concept 43.1: Human activities threats Earth's biodiversity, pp. 943-947 Concept 43.4: Earth is changing rapidly as a result of human actions, pp. 955-964
(HS-LS4-6) Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.	**Chapter 42: Ecosystems and Energy** Concept 42.5: Restoration ecologists return degraded ecosystems to a more natural state, pp. 935-937 **Chapter 43: Conservation Biology and Global Change** Concept 43.1: Human activities threaten Earth's biodiversity, pp. 942-947 Concept 43.3: Landscape and regional conservation help sustain biodiversity, pp. 952-955 Concept 43.4: Earth is changing rapidly as a result of human actions, pp. 955-964