UbD Template 2.0

Time frame: Dec-Feb	Unit title: Balance, Structure, and	Course name: Biology (CP and honors)	
	Function: Homeostasis Storyline and Case		
	Study		
Stage 1 Desired Results			
ESTABLISHED GOALS	Transfer		
LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. LS1-3 Plan and conduct an investigation to provide evidence that feedback mechanisms maintain	Students will be able to independently use their learning to describe relationships and needs of living organisms. interpret data from a NEW ecosystem involving the following		
homeostasis. LS1-7 Use a model to illustrate that cellular respiration	 biotic and abiotic factors limiting or expanding population sizes 		
is a chemical process whereby the bonds of food	predator / prey relationships		
molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net	Meaning		
bonds in new compounds are formed resulting in a net transfer of energy. LS2-1 Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales. LS2-2 Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales. LS2-3 Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions. LS2-4 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem. LS2-5 Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of	UNDERSTANDINGS Students will understand that Feedback mechanisms play a major role in how homeostasis is maintained. Cells and organisms establish and maintain internal environments that are different from their external environments. The highly complex organization of living systems requires constant input of energy and exchange of macromolecules. Regulation occurs at many levels of biological systems.	ESSENTIAL QUESTIONS Where have all the otters gone? How do biological systems maintain balance? How does interdependence of organisms lead to balance in an ecosystem? What is the role of feedback mechanisms? How have humans impacted the ecosystem and its communities?	
carbon among the biosphere, atmosphere, hydrosphere, and geosphere.	Acquisition		
LS2-6 Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in	Students will know	Students will be skilled at Students will be able to determine pH levels.	

stable conditions, but changing conditions may result in	-homeostasis happens on the organism and	(SWBAT)
a new ecosystem.	the ecosystem level.	SWBAT predict how any biological system
LS2-/ Design, evaluate, and refine a solution for reducing the impacts of human activities on the	-effects of pH on homeostasis.	(ecosystem, organism, cell) may change when
environment and biodiversity.	-how abiotic and biotic factors affect carrying	homeostasis is disrupted.
LS3-3 Apply concepts of statistics and probability to	capacity.	SWBAT plan a scientific investigation (with
explain the variation and distribution of expressed traits	-the different roles of producers and	variables, hypothesis, etc.)
In a population. LS4-3 Apply concepts of statistics and probability to	consumers and how they interact via	SWBAT understand mathematical and
support explanations that organisms with an	photosynthesis and cellular respiration.	computational information such as graphs.
advantageous heritable trait tend to increase in		charts tables mans and equations
proportion to organisms lacking this trait.		SWBAT distinguish biotic and abiotic factors
how natural selection leads to adaptation of populations		SWBAT distinguish biotic and abiotic factors.
LS4-5 Evaluate the evidence supporting claims that		SWBAT Shale data and ideas with peers.
changes in the environmental conditions may result in		
(1) increases in the numbers of individuals in some		
species, (2) the emergence of new species over time, and (3) the extinction of other species		
LS4-6 Create or revise a simulation to test a solution to		
mitigate adverse impacts of human activity on		
biodiversity.		