Course: Biology Grade L	evel: 10 Quarter: 1 Period(s):
Topic: Cellular Biology	
 21st Century Graduation Expectation(s): 1.1 Acquiring and applying knowledge and skills 1.2 Analyzing and evaluating information 1.3 Applying technology as a learning tool acros 2.1 Working cooperatively and/or independently 2.2 Applying problem solving strategies 2.3 Utilizing resources and time effectively 2.4 Accessing, compiling, interpreting and prese 3.1 Making informed life and career decisions 3.2 Recognizing and respecting the diversity and 3.3 Understanding and accepting the benefits and 4.1 Reading widely and critically 4.2 Writing clearly, concisely and persuasively 4.3 Speaking, listening and interpreting effective 	s within and across the curriculum s all disciplines nting data and information l individuality of others d consequences of his/her behavior
Next Generation Science Standards: • HS-LS1-1 • HS-LS1-2 • HS-LS1-3	Common Core State Standards: • RST.9-10.1 • WHST.9-10.1 • RST.9-10.2 • WHST.9-10.2 • RST.9-10.3 • WHST.9-10.3 • RST.9-10.4 • WHST.9-10.4 • RST.9-10.5 • WHST.9-10.5 • RST.9-10.6 • WHST.9-10.6 • RST.9-10.7 • WHST.9-10.9 • RST.9-10.8 • WHST.9-10.10 • RST.9-10.10 • WHST.9-10.10

Essential Question(s):

- How does the structure of DNA determine the structure of proteins used to carry out the essential functions of life?
- How does the birdetate of Diff adtermine the structure of proteins used to early out the essential functions of inter How does the hierarchal organization of interacting systems provide specific functions to multicellular organisms?
- How do feedback mechanisms maintain homeostasis?

Content Topics:

- Form and function of proteins, organelles and cells within multicellular organisms
- Homeostasis and feedback mechanisms

- The student will construct an evidence based explanation of how the structure of DNA determines the structure of proteins used to carry out the essential functions of life
- The student will explain how the hierarchal organization of interacting systems provide specific functions to multicellular organisms
- The student will assess how feedback mechanisms maintain homeostasis

- Student text
- Complementary texts
- Charts and graphs
- Labs and demonstrations
- Simulated demonstrations
- PowerPoint presentations
- Interactive white board
- Video clips
- Documentaries

- Entrance/exit slips, etc.
- Class discussions
- Homework
- Quizzes
- Lab activities/reports
- Teacher generated tests
- Presentations/projects

	Course: Biology	Grade Level: 10	Quarter: 1	Period (s):
Topic: Growth and De	evelopment of Organis	sms		
 21st Century Graduati 1.1 Acquiring 1.2 Analyzing 1.3 Applying t 2.1 Working c 2.2 Applying p 2.3 Utilizing re 2.4 Accessing, 3.1 Making int 3.2 Recognizin 3.3 Understand 4.1 Reading w 4.2 Writing cle 4.3 Speaking, 	ion Expectation(s): and applying knowled and evaluating inform echnology as a learnin ooperatively and/or in problem solving strate esources and time effe , compiling, interpretin formed life and career ng and respecting the o ding and accepting the idely and critically early, concisely and po-	lge and skills within a nation ng tool across all disc dependently gies ectively ng and presenting data decisions diversity and individu e benefits and consequ ersuasively ing effectively	and across the curr plines a and information ality of others bences of his/her b	iculum ehavior
Next Generation Scier • HS-LS1-4	nce Standards:	Commo • F • F • F • F • F • F • F • F • F	on Core State Stat ST.9-10.1 ST.9-10.2 ST.9-10.3 ST.9-10.4 ST.9-10.5 ST.9-10.6 ST.9-10.7 ST.9-10.7 ST.9-10.8 ST.9-10.9 ST.9-10.9 ST.9-10.10	ndards: • WHST.9-10.1 • WHST.9-10.2 • WHST.9-10.3 • WHST.9-10.4 • WHST.9-10.5 • WHST.9-10.6 • WHST.9-10.9 • WHST.9-10.10

Essential Question(s):

• How does the role of cellular division (mitosis) and differentiation produce and maintain complex organisms?

Content Topic(s):

- Mitosis
- Differentiation

Student Learning Tasks and Opportunities:

• The student will summarize how the role of cellular division (mitosis) and differentiation produce and maintain complex organisms

Instructional Resources and Equipment:

- Student text
- Complementary texts
- Charts and graphs

- Labs and demonstrations
- Simulated demonstrations
- PowerPoint presentations
- Interactive white board
- Video clips
- Documentaries

- Entrance/exit slips, etc.
- Class discussions
- Homework
- Quizzes
- Lab activities/reports
- Teacher generated tests
- Presentations/projects

	Course: Biology	Grade Level: 10	Quarter: 1	Period (s):
Topic: Photosynthesi	s and Cellular Respira	tion		
21 st Century Gradua 1.1 Acquiring 1.2 Analyzing 1.3 Applying 2.1 Working 2.2 Applying 2.3 Utilizing 2.4 Accessing 3.1 Making in 3.2 Recogniz 3.3 Understan 4.1 Reading v 4.2 Writing c 4.3 Speaking	tion Expectation(s): g and applying knowled g and evaluating inforr technology as a learni cooperatively and/or in problem solving strate resources and time effe g, compiling, interpreti nformed life and career ing and respecting the nding and accepting the widely and critically learly, concisely and p , listening and interpre	dge and skills within and nation ng tool across all discipl ndependently egies ectively ing and presenting data a r decisions diversity and individual e benefits and consequer ersuasively ting effectively	across the curric ines nd information ty of others aces of his/her bel	culum havior
Next Generation Scio HS-LS1-5 HS-LS1-6 HS-LS1-7	ence Standards:	Common • RS • RS	Core State Stand 5T.9-10.1 5T.9-10.2 5T.9-10.3 5T.9-10.4 5T.9-10.5 5T.9-10.6 5T.9-10.7 5T.9-10.8 5T.9-10.8 5T.9-10.9 5T.9-10.10	 WHST.9-10.1 WHST.9-10.2 WHST.9-10.3 WHST.9-10.4 WHST.9-10.5 WHST.9-10.6 WHST.9-10.9 WHST.9-10.10

Essential Question(s):

- In what way does photosynthesis transform light energy into stored chemical energy?
- What amino acids and/or other large carbon based molecules are created using carbon, hydrogen and oxygen from sugar molecules?
- What is cellular respiration and how is it utilized in the transfer of energy?

Content Topic(s):

- Photosynthesis
- Cellular respiration
- Creation of amino acids and other carbon based molecules

- The student will analyze how photosynthesis transform light energy into stored chemical energy
- The student will summarize how amino acids and/or other large carbon based molecules are created using carbon, hydrogen and oxygen from sugar molecules
- The student will summarize the concept of cellular respiration and the transfer of energy

- Student text
- Complementary texts
- Charts and graphs
- Labs and demonstrations
- Simulated demonstrations
- PowerPoint presentations
- Interactive white board
- Video clips
- Documentaries

- Entrance/exit slips, etc.
- Class discussions
- Homework
- Quizzes
- Lab activities/reports
- Teacher generated tests
- Presentations/projects

Course: Biology Grade Level: 10 **Quarter:** 2 **Period**(s): **Topic:** Structure and Function of DNA & Inheritance of Traits 21st Century Graduation Expectation(s): 1.1 Acquiring and applying knowledge and skills within and across the curriculum 1.2 Analyzing and evaluating information 1.3 Applying technology as a learning tool across all disciplines 2.1 Working cooperatively and/or independently 2.2 Applying problem solving strategies • 2.3 Utilizing resources and time effectively • 2.4 Accessing, compiling, interpreting and presenting data and information 3.1 Making informed life and career decisions • 3.2 Recognizing and respecting the diversity and individuality of others • • 3.3 Understanding and accepting the benefits and consequences of his/her behavior 4.1 Reading widely and critically • 4.2 Writing clearly, concisely and persuasively • 4.3 Speaking, listening and interpreting effectively **Next Generation Science Standards: Common Core State Standards:** HS-LS3-1 RST.9-10.1 WHST.9-10.1 • • RST.9-10.2 WHST.9-10.2 RST.9-10.3 WHST.9-10.3 RST.9-10.4 WHST.9-10.4 • RST.9-10.5 WHST.9-10.5 • RST.9-10.6 WHST.9-10.6 • RST.9-10.7 WHST.9-10.9 RST.9-10.8 WHST.9-10.10 RST.9-10.9 RST.9-10.10

Essential Question(s):

• What is the relationship between the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring?

Content Topic(s):

- Traits/genes/alleles
- Genetic variation
- DNA replication
- Transcription/translation

Student Learning Tasks and Opportunities:

• The student will explain the relationship between DNA/chromosomes and coding for characteristics passed from parents to offspring.

- Student text
- Complementary texts
- Charts and graphs
- Labs and demonstrations
- Simulated demonstrations
- PowerPoint presentations
- Interactive white board
- Video clips
- Documentaries

- Entrance/exit slips, etc.
- Class discussions
- Homework
- Quizzes
- Lab activities/reports
- Teacher generated tests
- Presentations/projects

	Course: Biology	Grade Level: 10	Quarter: 2	Period (s):
Topic: Variation of	of Traits			
21 st Century Grad 1.1 Acquir 1.2 Analyz 1.3 Applyi 2.1 Worki 2.2 Applyi 2.3 Utilizi 2.4 Access 3.1 Makin 3.2 Recog 3.3 Under 4.1 Readir 4.2 Writin 4.3 Speak	luation Expectation(s): ring and applying knowled zing and evaluating infor- ing technology as a learn ng cooperatively and/or i ing problem solving strat ng resources and time eff sing, compiling, interpret ig informed life and careed nizing and respecting the standing and accepting the guidely and critically ing clearly, concisely and j ing, listening and interpret	edge and skills within and mation ing tool across all disciple independently egies fectively ting and presenting data a er decisions diversity and individual he benefits and consequen persuasively eting effectively	d across the curric ines and information ity of others nees of his/her bel	ulum navior
Next Generation S HS-LS3-2 HS-LS3-3	Science Standards:	Common	Core State Stand ST.9-10.1 ST.9-10.2 ST.9-10.3 ST.9-10.4 ST.9-10.5 ST.9-10.6 ST.9-10.7 ST.9-10.8 ST.9-10.9 ST.9-10.9 ST.9-10.10	lards: • WHST.9-10.1 • WHST.9-10.2 • WHST.9-10.3 • WHST.9-10.4 • WHST.9-10.5 • WHST.9-10.6 • WHST.9-10.9 • WHST.9-10.10

Essential Question(s):

- How does evidence support that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors?
- How do statistics and probability explain the variation and distribution of expressed traits in a population?

Content Topic(s):

- Sexual reproduction
- Chromosomes
- Meiosis
- Mutations
- Punnett squares
- Patterns of inheritance
- Pedigrees

- Student text
- Complementary texts
- Charts and graphs
- Labs and demonstrations
- Simulated demonstrations
- PowerPoint presentations
- Interactive white board
- Video clips
- Documentaries

- Entrance/exit slips, etc.
- Class discussions
- Homework
- Quizzes
- Lab activities/reports
- Teacher generated tests
- Presentations/projects

		Course: Biology	Grade Level: 10	Quarter: 3	Period (s):	
Topic:	Evidence of	Common Ancestry and	Diversity			
21 st Ce:	ntury Gradus 1.1 Acquirin 1.2 Analyzir 1.3 Applying 2.1 Working 2.2 Applying 2.3 Utilizing 2.4 Accessin 3.1 Making 3.2 Recogniz 3.3 Understa 4.1 Reading 4.2 Writing 4.3 Speaking	ation Expectation(s): ag and applying knowle ag and evaluating inform g technology as a learning cooperatively and/or in g problem solving strate resources and time eff and, compiling, interpret informed life and caree zing and respecting the anding and accepting the anding and accepting the widely and critically clearly, concisely and p g, listening and interpret	dge and skills within and mation ing tool across all discipl ndependently egies ectively ing and presenting data a r decisions diversity and individual e benefits and consequer persuasively tting effectively	l across the curric ines nd information ty of others aces of his/her beł	ulum navior	
Next G	eneration Sci HS-LS4-1 HS-LS4-2	ience Standards:	Common • RS • RS	Core State Stand 5T.9-10.1 5T.9-10.2 5T.9-10.3 5T.9-10.4 5T.9-10.5 5T.9-10.6 5T.9-10.7 5T.9-10.8 5T.9-10.9 5T.9-10.9 5T.9-10.10	lards: • WHST.9-10.1 • WHST.9-10.2 • WHST.9-10.3 • WHST.9-10.4 • WHST.9-10.5 • WHST.9-10.6 • WHST.9-10.9 • WHST.9-10.10	

Essential Question(s):

- How is common ancestry and biological evolution supported by multiple lines of empirical evidence?
- What four lines of evidence contribute to the explanation of the process of evolution?

Content Topic(s):

- Common ancestry via DNA/Amino Acid comparisons
- Embryological evidence of evolution
- Heritable genetic variation
- Competition

- The student will communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.
- The student will construct an explanation based on evidence that the process of evolution primarily result from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals

in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.

Instructional Resources and Equipment:

- Student text
- Complementary texts
- Charts and graphs
- Labs and demonstrations
- Simulated demonstrations
- PowerPoint presentations
- Interactive white board
- Video clips
- Documentaries

- Entrance/exit slips, etc.
- Class discussions
- Homework
- Quizzes
- Lab activities/reports
- Teacher generated tests
- Presentations/projects

		Course: Biology	Grade Level: 10	Quarter: 3	Period(s):	
Topic:	Mechanisms	of Selection				
21 st Ce • • • •	ntury Gradua 1.1 Acquirin, 1.2 Analyzin 1.3 Applying 2.1 Working 2.2 Applying 2.3 Utilizing 2.4 Accessin 3.1 Making i 3.2 Recogniz 3.3 Understa 4.1 Reading 4.2 Writing c 4.3 Speaking	ation Expectation(s): g and applying knowle g and evaluating inform g technology as a learn cooperatively and/or i g problem solving strate resources and time eff g, compiling, interpret informed life and caree zing and respecting the nding and accepting the widely and critically clearly, concisely and p g, listening and interpret	edge and skills within and mation ing tool across all discipl ndependently egies fectively ing and presenting data a er decisions diversity and individual he benefits and consequen persuasively eting effectively	l across the curric ines and information ity of others nees of his/her beh	ulum navior	
Next G	eneration Sci HS-LS4-3 HS-LS4-4	ence Standards:	Common	Core State Stand ST.9-10.1 ST.9-10.2 ST.9-10.3 ST.9-10.4 ST.9-10.5 ST.9-10.6 ST.9-10.7 ST.9-10.7 ST.9-10.8 ST.9-10.9 ST.9-10.10	lards: • WHST.9-10.1 • WHST.9-10.2 • WHST.9-10.3 • WHST.9-10.4 • WHST.9-10.5 • WHST.9-10.6 • WHST.9-10.9 • WHST.9-10.10	

Essential Question(s):

- How do statistics and probability support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait?
- What explanation, based on evidence, determines how natural selection leads to adaptation of populations?

Content Topic(s):

- Mechanisms of evolution
- Natural selection
- Types of selection

- The student will 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.
- The student will construct an explanation based on evidence for how natural selection leads to adaptation of populations.

- Student text
- Complementary texts
- Charts and graphs
- Labs and demonstrations
- Simulated demonstrations
- PowerPoint presentations
- Interactive white board
- Video clips
- Documentaries

- Entrance/exit slips, etc.
- Class discussions
- Homework
- Quizzes
- Lab activities/reports
- Teacher generated tests
- Presentations/projects

Course: Biology Grade Level: 10 **Quarter:** 3 **Period**(s): Topic: Environmental Impact on Evolutionary Adaptation 21st Century Graduation Expectation(s): 1.1 Acquiring and applying knowledge and skills within and across the curriculum 1.2 Analyzing and evaluating information 1.3 Applying technology as a learning tool across all disciplines 2.1 Working cooperatively and/or independently • • 2.2 Applying problem solving strategies • 2.3 Utilizing resources and time effectively 2.4 Accessing, compiling, interpreting and presenting data and information • 3.1 Making informed life and career decisions 3.2 Recognizing and respecting the diversity and individuality of others • • 3.3 Understanding and accepting the benefits and consequences of his/her behavior 4.1 Reading widely and critically • 4.2 Writing clearly, concisely and persuasively 4.3 Speaking, listening and interpreting effectively **Next Generation Science Standards: Common Core State Standards:** HS-LS4-5 RST.9-10.1 WHST.9-10.1 • • RST.9-10.2 WHST.9-10.2 RST.9-10.3 WHST.9-10.3 RST.9-10.4 WHST.9-10.4 RST.9-10.5 WHST.9-10.5 • RST.9-10.6 WHST.9-10.6 • RST.9-10.7 WHST.9-10.9 RST.9-10.8 WHST.9-10.10 RST.9-10.9 RST.9-10.10

Essential Question(s):

• How does evidence support 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

Content Topic(s):

- Species adaptation
- Population diversion
- Extinction vs. diversion

Student Learning Tasks and Opportunities:

• The student will 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

- Student text
- Complementary texts
- Charts and graphs
- Labs and demonstrations
- Simulated demonstrations
- PowerPoint presentations
- Interactive white board
- Video clips
- Documentaries

- Entrance/exit slips, etc.
- Class discussions
- Homework
- Quizzes
- Lab activities/reports
- Teacher generated tests
- Presentations/projects

Course: Biology Grade Level: 10 **Quarter:** 3 **Period**(s): **Topic:** Biodiversity and Humans 21st Century Graduation Expectation(s): 1.1 Acquiring and applying knowledge and skills within and across the curriculum 1.2 Analyzing and evaluating information 1.3 Applying technology as a learning tool across all disciplines 2.1 Working cooperatively and/or independently • • 2.2 Applying problem solving strategies 2.3 Utilizing resources and time effectively • 2.4 Accessing, compiling, interpreting and presenting data and information • • 3.1 Making informed life and career decisions 3.2 Recognizing and respecting the diversity and individuality of others • 3.3 Understanding and accepting the benefits and consequences of his/her behavior • 4.1 Reading widely and critically • 4.2 Writing clearly, concisely and persuasively • 4.3 Speaking, listening and interpreting effectively **Next Generation Science Standards: Common Core State Standards:** HS-LS4-6 RST.9-10.1 WHST.9-10.1 • • RST.9-10.2 WHST.9-10.2 RST.9-10.3 WHST.9-10.3 RST.9-10.4 WHST.9-10.4 • • RST.9-10.5 WHST.9-10.5 • • • RST.9-10.6 WHST.9-10.6 • RST.9-10.7 WHST.9-10.9 • • RST.9-10.8 WHST.9-10.10 • RST.9-10.9 • RST.9-10.10

Essential Question(s):

• What solution could be created/revised and tested to mitigate adverse impacts of human activity on biodiversity?

Content Topic(s):

- Biodiversity
- Overpopulation
- Overexploitation
- Habitat destruction
- Pollution
- Introduction of invasive species
- Climate change

Student Learning Tasks and Opportunities:

• The student will create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity

Instructional Resources and Equipment:

- Student text
- Complementary texts
- Charts and graphs
- Labs and demonstrations
- Simulated demonstrations
- PowerPoint presentations
- Interactive white board
- Video clips
- Documentaries

- Entrance/exit slips, etc.
- Class discussions
- Homework
- Quizzes
- Lab activities/reports
- Teacher generated tests
- Presentations/projects

Course: Biology Grade Lev	rel: 10 Quarter: 4	Period (s):
Topic: Interdependent Relationships in Ecosystems		
 21st Century Graduation Expectation(s): 1.1 Acquiring and applying knowledge and skill 2.2 Analyzing and evaluating information 1.3 Applying technology as a learning tool across 2.1 Working cooperatively and/or independently 2.2 Applying problem solving strategies 2.3 Utilizing resources and time effectively 2.4 Accessing, compiling, interpreting and prese 3.1 Making informed life and career decisions 3.2 Recognizing and respecting the diversity and 3.3 Understanding and accepting the benefits an 4.1 Reading widely and critically 4.2 Writing clearly, concisely and persuasively 4.3 Speaking, listening and interpreting effective 	s within and across the curr s all disciplines , nting data and information l individuality of others d consequences of his/her b	iculum Dehavior
Next Generation Science Standards: • HS-LS2-1 • HS-LS2-2	Common Core State Sta	ndards: • WHST.9-10.1 • WHST.9-10.2 • WHST.9-10.3 • WHST.9-10.4 • WHST.9-10.5 • WHST.9-10.6 • WHST.9-10.9 • WHST.9-10.10

Essential Question(s):

- What mathematical and/or computational representations are used to support explanations of factors that affect carrying capacities of ecosystems at different scales?
- What mathematical representations are used to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales?

Content Topic(s):

- Carrying capacity
- Independent factors affecting carrying capacity (i.e. boundaries, resources, climate and competition)
- Mathematical representations of carrying capacity

- The student will use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.
- The student will use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.

- Student text
- Complementary texts
- Charts and graphs
- Labs and demonstrations
- Simulated demonstrations
- PowerPoint presentations
- Interactive white board
- Video clips
- Documentaries

- Entrance/exit slips, etc.
- Class discussions
- Homework
- Quizzes
- Lab activities/reports
- Teacher generated tests
- Presentations/projects

Course: Biology G	rade Level: 10	Quarter: 4	Period(s):
Topic: Cycles of Matter and Energy Transfer	in Ecosystems			
 21st Century Graduation Expectation(s): 1.1 Acquiring and applying knowledg 2.2 Analyzing and evaluating informa 3 Applying technology as a learning 2.1 Working cooperatively and/or inde 2.2 Applying problem solving strategi 2.3 Utilizing resources and time effect 2.4 Accessing, compiling, interpreting 3.1 Making informed life and career d 3.2 Recognizing and respecting the div 3.3 Understanding and accepting the b 4.1 Reading widely and critically 4.2 Writing clearly, concisely and personal 	e and skills within a tion tool across all disci ependently es tively and presenting data lecisions versity and individua benefits and consequ suasively ng effectively	nd across the curr plines a and information ality of others ences of his/her b	iculum	
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Essential Question(s):

- What evidence lends to the explanation of cycling of matter and flow of energy in aerobic and anaerobic conditions?
- How do mathematical representations support claims for the cycling of matter and flow of energy among organisms in an ecosystem?
- How does the role of photosynthesis and cellular respiration play into the cycling of carbon among the biosphere, atmosphere, hydrosphere and geosphere?

Content Topic(s):

- Aerobic vs. anaerobic conditions via photosynthesis/cellular respiration
- Trophic levels
- Food chain
- Food web
- Conservation of matter and energy
- Carbon cycle (i.e. exchange of carbon within the biosphere, atmosphere, oceans and geosphere using chemical, physical, geological and biological processes)

Student Learning Tasks and Opportunities:

- The student will construct and revise and explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.
- The student will use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.
- The student will develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere and geosphere.

Instructional Resources and Equipment:

- Student text
- Complementary texts
- Charts and graphs
- Labs and demonstrations
- Simulated demonstrations
- PowerPoint presentations
- Interactive white board
- Video clips
- Documentaries

- Entrance/exit slips, etc.
- Class discussions
- Homework
- Quizzes
- Lab activities/reports
- Teacher generated tests
- Presentations/projects

		Course: Biology	Grade Leve	el: 10	Quarter: 4	Period	l(s):
Topic:	Ecosystem I	Dynamics, Functioning	g and Resilience	e			
21 st Cer	ntury Gradu 1.1 Acquiri 1.2 Analyzi 1.3 Applyir 2.1 Workin 2.2 Applyir 2.3 Utilizin 2.4 Accessi 3.1 Making 3.2 Recogn 3.3 Underst 4.1 Reading 4.2 Writing 4.3 Speakin	nation Expectation(s) ng and applying know ing and evaluating info ng technology as a lear g cooperatively and/or ng problem solving stra g resources and time e ing, compiling, interpri- informed life and card izing and respecting the tanding and accepting g widely and critically g clearly, concisely and ng, listening and interpri-	: ledge and skills ormation ming tool across independently ategies effectively eting and preser eer decisions he diversity and the benefits and l persuasively reting effectivel	s within an s all discip nting data individual l conseque ly	d across the cur lines and information lity of others ences of his/her	rriculum n behavior	
Next G	eneration So HS-LS2-6 HS-LS2-7 HS-LS2-8	cience Standards:		Common	Core State Sta ST.9-10.1 ST.9-10.2 ST.9-10.3 ST.9-10.4 ST.9-10.5 ST.9-10.6 ST.9-10.7 ST.9-10.8 ST.9-10.8 ST.9-10.9 ST.9-10.10	andards: • • • • •	WHST.9-10.1 WHST.9-10.2 WHST.9-10.3 WHST.9-10.4 WHST.9-10.5 WHST.9-10.6 WHST.9-10.9 WHST.9-10.10

Essential Question(s):

- What claims, evidence and reasoning explain 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?
- What solution can be designed, evaluated and refined to reduce the impacts of human activities on the environment and biodiversity?
- What evidence evaluates the role of group behavior on individual and species' chances to survive and reproduce?

Content Topic(s):

- Population ecology
- Ecosystem disruption
- Animal behavior (social interactions and group behavior)
- Speciation
- Extinction

Student Learning Tasks and Opportunities:

- The student will evaluate 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.
- The student will design, evaluate and refine a solution for reducing the impacts of human activities on the environment and biodiversity
- The student will evaluate evidence for the role of group behavior on individual and species' chances to survive and reproduce.

Instructional Resources and Equipment:

- Student text
- Complementary texts
- Charts and graphs
- Labs and demonstrations
- Simulated demonstrations
- PowerPoint presentations
- Interactive white board
- Video clips
- Documentaries

- Entrance/exit slips, etc.
- Class discussions
- Homework
- Quizzes
- Lab activities/reports
- Teacher generated tests
- Presentations/projects