Columbus County Schools *6th Grade Science Curriculum Guide*		
SUBJECT: Science	**GRADE LEVEL:** 6th	**GRADING PERIOD:** 3rd Nine Weeks
Module(s): D- Ecology and the Environment	Time Frame: 6 weeks	**Unit: Four**
Essential Standard: 6. L.2 Understand the flow of energy through ecosystems and the responses of populations to the biotic and abiotic factors in their environment.		

Lessons:	Technology and Literacy Standards and Tasks	Academic Vocabulary:	Assessment(s):	Additional Resources:
Lesson Name: Biomes and Ecology **Clarifying Objective:** 6. L.2.1 Summarize how energy derived from the sun is used by plants to produce sugars (photosynthesis) and is transferred within food chains and food webs (terrestrial and aquatic) from producers to consumers to decomposers. 6. L.2.3 Summarize how the abiotic factors (such as temperature, water, sunlight, and soil quality) of biomes (freshwater, marine, forest, grasslands,	WTL- **Science 6 7.5 How do ecosystems change?** **Literacy Standards:** CCSS.ELA-Literacy.RST.6-8.1 Cite specific textual evidence to support analysis of science and technical texts. CCSS.ELA-Literacy.RST.6-8.4. Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions. **Technology Standards:**	Populations Ecosystem Biome food web (chain terms) symbiotic relationships eutrophication biodiversity pioneer species succession wetland estuary marine predator prey competition bacteria community carrying capacity	Formative: Write to Learn- **Science 6 7.5 How do ecosystems change?** **Science Fusion- Ecology and the Environment Teachers Edition**- pg 107, pg 137 Where are examples of freshwater ecosystems found? Where are examples of marine ecosystems found? Possible Project-Pick one aquatic species and explain how it has	http://switchzoo.com/games/habitatgame.htm http://sciencereviewgames.com/srg/games/hs.php?id=87 ** http://science.pppst.com/biomes/index.html Biomes PPT Biomes of the World Biomes Currituck County Schools Ecosystems Franklin Institute Ecosystems Foodchain Game http://teacher.scholastic.com/activities/explorer/ecosystems/be_an_explorer/map/foodweb_play.htm http://kids.nceas.ucsb.edu/biomes/index.ht

desert, Tundra) affect the ability of organisms to grow, survive and/or create their own food through photosynthesis. **Time Frame:** 5 Weeks **Essential Question:** How are organisms dependent upon their environment? How does energy and matter move throughout the ecosystems? **"I Can" Statements:** ▪ I can trace the flow of energy in a food chain; sun, producers, consumers and decomposers. ▪ I can develop an energy pyramid that shows how the amount of energy changes on each level. ▪ I can create a model to show the abiotic factors found in different biomes. ▪ I can identify the physical conditions in any biome that affect the growth and survival of an organism. ▪ I can examine an ecosystem and identify its limiting factors.	6. SI.1 Analyze resources to determine their reliability, point of view, bias, and relevance for particular topics and purposes. 6.SI.1.1 Analyze resources in terms of their reliability (which can be determined by currency, credibility, or authority, depending on the topic or purpose)	Water Cycle Nitrogen Cycle Energy Pyramid Carbon Cycle	adapted to its environment. **Science Fusion- Ecology and the Environment Teachers Edition**- pg 185 What are some ways that the sun supports life? What are some ways that water supports life? **Summative:** **Science Fusion- Ecology and the Environment Teachers Edition**- pg 107 – aquatic ecosystem tic – tac-toe, pg 137 Changes in Ecosystems **Science Fusion- Ecology and the Environment Teachers Edition**- pg 185- Earth's support of Life **Examview test creator**- end of unit test- online resource S.T.E.M. performance based task pg 144-146 Design an Ecosystem	ml#games http://www.kidsgeo.com/geography-for-kids/0170-deciduous-forest.php http://switchzoo.com/games/habitatgame.htm http://sciencereviewgames.com/srg/games/hs.php?id=87 ** http://science.pppst.com/biomes/index.html Video The Nature of Ecosystems 6th grade McDougal Book- Unit D- Chapters 1-3 **Science Fusion- Ecology and the Environment Teachers Edition**- Unit 1 and 2 Additional Resources in Dropbox

Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Lesson: Ecology Intro.	**Lesson:** Ecology Intro	**Lesson:** Food webs/chains	**Lesson:** Food webs/chains	**Lesson:** Food webs/chains
Clarifying Objective: 6.L.2.3 **Academic Vocabulary:** ecology, biotic factor, abiotic factor, population, species, community, ecosystem, biome, habitat, niche	**Clarifying Objective:** 6.L.2.3 **Academic Vocabulary:** ecology, biotic factor, abiotic factor, population, species, community, ecosystem, biome, habitat, niche	**Clarifying Objective:** 6.L.2.1 **Academic Vocabulary:** energy, producer, consumer, herbivore, carnivore, omnivore, decomposer, food chain, food web	**Clarifying Objective:** 6.L.2.1 **Academic Vocabulary:** energy, producer, consumer, herbivore, carnivore, omnivore, decomposer, food chain, food web	**Clarifying Objective:** 6.L.2.1 **Academic Vocabulary:** energy, producer, consumer, herbivore, carnivore, omnivore, decomposer, food chain, food web
Bell Ringer: What are the basic needs shared by almost all living things? **Instructional Tasks:** Science Fusion PowerPoint notes on their website- Ecology and the Environment Unit 1 Lesson 1 (under lesson teacher support). Copy and paste to a word document to create skeleton notes. Discuss each PowerPoint as you go through them **Exit Ticket:** How is a habitat like a person's address? How is a niche like a person's job? (TE pg 24)	**Bell Ringer:** How do plants and animals differ in the ways they interact with biotic and abiotic factors to meet the basic need of food? (TE pg 21) **Instructional Tasks:** Finish the PowerPoint presentation if not completed. **Option 1-** Digital Lesson online **Option 2-** Virtual Lab Classifying Biomes Online (TE pg 15) **Option 3-** Activities from TE pg 14 **Option 4-** Choose one abiotic and one biotic factor and explain how humans would be affected if those items were removed from the environment. Discussion	**Bell Ringer:** How do you think plants and animals get the energy they need for growth and other activities (TE pg 28) **Instructional Tasks:** Science Fusion PowerPoint notes on their website- Ecology and the Environment Unit 1 Lesson 2 (under lesson teacher support). Copy and paste to a word document to create skeleton notes. Discuss each PowerPoint as you go through them **Exit Ticket:** What is the lowest possible feeding level that can be occupied by a carnivore in a food chain? (Answer: secondary consumer)	**Bell Ringer:** Explain how carnivores might be affected if the main plant species in a community were to disappear (TE pg 37) **Instructional Tasks:** Finish the PowerPoint presentation if not completed. **Option 1-** Digital Lesson online **Option 2-** Mathematics Connection (TE pg 34) **Option 3-** Give each student an organism. Have them create a food chain first then create a food web as a class. Can use yarn to show the connections. **Option 4-** Have students create a food web containing at least 10 organisms and have them write an explanation of how energy is	**Bell Ringer:** Teacher Choice **Instructional Tasks:** **Option 1-** Write to Learn Science 6 7.2 How do organisms get energy? **Option 2-** Teacher's Choice **Option 3-** Complete an option from previous lesson that has not already been done **Exit Ticket:** Teacher Choice

	following **Option 5-** Lesson Review **Exit Ticket:** Why might an organism's habitat change at different stages of its life?		transferred. Label each organism as producer, tertiary consumer, etc. **Option 5-** Lesson Review **Option 6-** Review concepts if necessary **Exit Ticket:** Give an example of competition for a food resource that may occur in an ecosystem near you.	
Assessment: Exit Ticket	**Assessment:** Varies	**Assessment:** Exit Ticket	**Assessment:** Varies	**Assessment:** Varies

Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
Lesson: Population Dynamics	**Lesson:** Population Dynamics	**Lesson:** Community Interactions	**Lesson:** Community Interactions	**Lesson:** Community Interactions
Clarifying Objective: 6.L.2.3 **Academic Vocabulary:** carrying capacity, limiting factor, immigration, competition, emigration, cooperation	**Clarifying Objective:** 6.L.2.3 **Academic Vocabulary:** carrying capacity, limiting factor, immigration, competition, emigration, cooperation	**Clarifying Objective:** 6.L.2.3 **Academic Vocabulary:** predator, prey, mutualism, symbiosis, mutualism, parasitism, commensalism, competition	**Clarifying Objective:** 6.L.2.3 **Academic Vocabulary:** predator, prey, mutualism, symbiosis, mutualism, parasitism, commensalism, competition	**Clarifying Objective:** 6.L.2.3 **Academic Vocabulary:** predator, prey, mutualism, symbiosis, mutualism, parasitism, commensalism, competition
Bell Ringer: Engage your Brain TE pg 50 **Instructional Tasks:** Science Fusion PowerPoint notes on their website- Ecology and the Environment Unit 1 Lesson 3 (under lesson teacher support). Copy and paste to a word document to create skeleton notes. Discuss each PowerPoint as you go through them **Exit Ticket:** What are two ways in which the environment can influence population size?	**Bell Ringer:** Create a Venn Diagram comparing and contrasting cooperation and competition (TE pg 54) **Instructional Tasks:** Finish the PowerPoint presentation if not completed. **Option 1-** Digital Lesson online **Option 2-** Lesson Review **Option 3-** Discussion: Biotic or Abiotic? (TE pg 44) **Option 4-** Activity: Interaction Poster (TE pg 44) **Option 5-** Take it Home Worksheet (Online Lesson Student Resources) **Option 6-** Quick Labs (Online Lesson Student Resources) **Exit Ticket:** Make an analogy between an ant colony and sports team. How does each group work together to achieve a goal?	**Bell Ringer:** What are some ways that different animals interact with each other? (TE pg 56) **Instructional Tasks:** Science Fusion PowerPoint notes on their website- Ecology and the Environment Unit 1 Lesson 4 (under lesson teacher support). Copy and paste to a word document to create skeleton notes. Discuss each PowerPoint as you go through them **Exit Ticket:** Explain how interactions can be both beneficial and harmful to the organisms in a community.	**Bell Ringer:** Create a venn-diagram comparing and contrasting predators and prey. **Instructional Tasks:** Finish the PowerPoint presentation if not completed. **Option 1-** Digital Lesson online **Option 2-** Lesson Review **Option 3-** Think outside the Book on pg 65 **Option 4-** Symbiosis Game TE pg 62 **Exit Ticket:** True/False TE pg 42	**Bell Ringer:** Teacher Choice **Instructional Tasks:** **Option 1-** Unit 1 Lessons 1, 2, and 4 online quizzes **Option 2-** Write to Learn Environmental Science: 1.3 Interactions Among Living Things **Option 3-** Teacher Choice/Catch Up **Exit Ticket:** Teacher Choice
Assessment: Exit Ticket	**Assessment:** Exit Ticket	**Assessment:** Exit Ticket	**Assessment:** Varies	**Assessment:** Varies

Day 11	**Day 12**	**Day 13**	**Day 14**	**Day 15**
Lesson: Ecology	**Lesson:** Land Biomes	**Lesson:** Land Biomes	**Lesson:** Land Biomes	**Lesson:** Aquatic Biome
Clarifying Objective: 6.L.2.1, 6.L.2.3 **Academic Vocabulary:**	**Clarifying Objective:** 6.L.2.3 **Academic Vocabulary:** biome, taiga, deciduous tree, grassland, tundra, desert, coniferous tree	**Clarifying Objective:** 6.L.2.3 **Academic Vocabulary:** biome, taiga, deciduous tree, grassland, tundra, desert, coniferous tree	**Clarifying Objective:** 6.L.2.3 **Academic Vocabulary:** biome, taiga, deciduous tree, grassland, tundra, desert, coniferous tree	**Clarifying Objective:** 6.L.2.3 **Academic Vocabulary:** wetland, estuary
Bell Ringer: Teacher Choice **Instructional Tasks:** Teacher Choice **Exit Ticket:** Teacher Choice	**Bell Ringer:** How are the abiotic and biotic factors in our area different from those in other parts of the world? **Instructional Tasks:** Science Fusion PowerPoint notes on their website- Ecology and the Environment Unit 2 Lesson 1 (under lesson teacher support). Copy and paste to a word document to create skeleton notes. Discuss each PowerPoint as you go through them **Exit Ticket:** Explain the difference between an ecosystem and a biome.	**Bell Ringer:** TE pg 97 Visualize it with the grasslands and fire **Instructional Tasks:** Finish the PowerPoint presentation if not completed. **Option 1-** Digital Lesson online **Option 2-** Lesson Review **Option 3-** Unit 2 Lesson 1 Take Home Worksheet (found online under Lesson Student Resources) **Option 4-** Graphic Organizer TE pg 92 **Option 5-** Four Square Notes with biomes **Exit Ticket:** Describe what might happen to the organisms in a desert if the climate changed and rainfall increased.	**Bell Ringer:** Teacher Choice **Instructional Tasks:** **Option 1-** Write to Learn Science 6 6.2 What are Earth's biomes? **Option 2-** Choose from previous list **Option 3-** Teacher Choice **Exit Ticket:** Teacher Choice	**Bell Ringer:** Engage your Brain TE pg 108 **Instructional Tasks:** Science Fusion PowerPoint notes on their website- Ecology and the Environment Unit 2 Lesson 2 (under lesson teacher support). Copy and paste to a word document to create skeleton notes. Discuss each PowerPoint as you go through them **Exit Ticket:** Why do most plants live near the edge of the pond or float on its surface? (TE pg 109)
Assessment: Varies	**Assessment:** Exit Ticket	**Assessment:** Varies	**Assessment:** Varies	**Assessment:** Exit Ticket

Day 16	**Day 17**	**Day 18**	**Day 19**	**Day 20**
Lesson: Aquatic Biome	**Lesson:** Aquatic Biome	**Lesson:** Energy in Ecosystems	**Lesson:** Energy in Ecosystems	**Lesson:** Energy in Ecosystems
Clarifying Objective: 6.L.2.3 **Academic Vocabulary:** wetland, estuary	**Clarifying Objective:** 6.L.2.3 **Academic Vocabulary:** wetland, estuary	**Clarifying Objective:** 6.L.2.1 **Academic Vocabulary:** energy, matter, law of conservation of energy, law of conservation of mass, energy pyramid, water cycle, nitrogen cycle, carbon cycle	**Clarifying Objective:** 6.L.2.1 **Academic Vocabulary:** energy, matter, law of conservation of energy, law of conservation of mass, energy pyramid, water cycle, nitrogen cycle, carbon cycle	**Clarifying Objective:** 6.L.2.1 **Academic Vocabulary:** energy, matter, law of conservation of energy, law of conservation of mass, energy pyramid, water cycle, nitrogen cycle, carbon cycle
Bell Ringer: What types of adaptations might plants and animals have living in a steep rocky stream? **Instructional Tasks:** Finish the PowerPoint presentation if not completed. **Option 1-** Digital Lesson online **Option 2-** Lesson Review **Option 3-** Write to Learn Science 5 5.3 What are water ecosystems? **Option 4-** Think Science Interpreting Circle Graphs (TE pg 115, Student Edition pg 86-87) **Option 5-** Graphic Organizer TE pg 106	**Bell Ringer:** Teacher Choice **Instructional Tasks:** Choose another option from the previous day **Exit Ticket:** Teacher Choice	**Bell Ringer:** How does energy flow from the sun throughout a food web? **Instructional Tasks:** Science Fusion PowerPoint notes on their website- Ecology and the Environment Unit 2 Lesson 3 (under lesson teacher support). Copy and paste to a word document to create skeleton notes. Discuss each PowerPoint as you go through them **Exit Ticket:** Table (#6 Infer) on TE pg 125	**Bell Ringer:** Create a Venn-diagram comparing and contrasting energy and matter (TE pg 125) **Instructional Tasks:** Finish the PowerPoint presentation if not completed. **Option 1-** Digital Lesson online **Option 2-** Lesson Review **Option 3-** Activity Modeling an Energy Pyramid TE pg 118 **Option 4-** Activity Carbon In and Out TE pg 118 **Option 5-** Reinforcing Vocabulary TE pg 121 **Option 6-** Virtual Lab Investigating the Carbon	**Bell Ringer:** Teacher Choice **Instructional Tasks:** Choose another option from the previous day **Exit Ticket:** Teacher Choice

Option 6- Activity: Aquatic Amusement Carousel (TE pg 106) **Option 7-** Alternative Assessment TE pg 107 **Exit Ticket:** Visualize It TE pg 112			Cycle online (TE pg 119) **Option 7-** Alternative Assessment TE pg 123 **Option 8-** S.T.E.M. performance based task pg 144-146 Design an Ecosystem **Exit Ticket:** Describe how energy flows through each level in an energy pyramid. Is all the matter and energy from one level transferred to the next level? (TE pg 126)	
Assessment: Varies	**Assessment:** Varies	**Assessment:** Exit Ticket	**Assessment:** Varies	**Assessment:** Exit Ticket

Day 21	**Day 22**	**Day 23**	**Day 24**	**Day 25**
Lesson: Energy in Ecosystems	**Lesson:** Ecology	**Lesson:** Ecology	**Lesson:** Ecology	**Lesson:** Ecology
Clarifying Objective: 6.L.2.1 **Academic Vocabulary:** energy, matter, law of conservation of energy, law of conservation of mass, energy pyramid, water cycle, nitrogen cycle, carbon cycle	**Clarifying Objective:** 6.L.2.1, 6.L.2.3 **Academic Vocabulary:**	**Clarifying Objective:** 6.L.2.1, 6.L.2.3 **Academic Vocabulary:**	**Clarifying Objective:** 6.L.2.1, 6.L.2.3 **Academic Vocabulary:**	**Clarifying Objective:** 6.L.2.1, 6.L.2.3 **Academic Vocabulary:**
Bell Ringer: Teacher Choice **Instructional Tasks:** **Option 1-** Unit 1 Lessons 1, 2, and 4 online quizzes **Option 2-** Teacher Choice/Catch Up **Exit Ticket:** Teacher Choice	**Bell Ringer:** Teacher Choice **Instructional Tasks:** Teacher Choice/Catch Up **Exit Ticket:** Teacher Choice	**Bell Ringer:** Teacher Choice **Instructional Tasks:** Review **Exit Ticket:** Teacher Choice	**Bell Ringer:** Teacher Choice **Instructional Tasks:** Review **Exit Ticket:** Teacher Choice	**Bell Ringer:** Teacher Choice **Instructional Tasks:** Review **Exit Ticket:** Teacher Choice
Assessment: Varies	**Assessment:** Varies	**Assessment:** Varies	**Assessment:** Varies	**Assessment:** Varies

Day 26	**Day 27**
Lesson: Ecology	**Lesson:** Ecology
Clarifying Objective: 6.L.2.1, 6.L.2.3 **Academic Vocabulary:**	**Clarifying Objective:** 6.L.2.1, 6.L.2.3 **Academic Vocabulary:**
Bell Ringer: Teacher Choice **Instructional Tasks:** Review **Exit Ticket:** Teacher Choice	**Bell Ringer:** Teacher Choice **Instructional Tasks:** UNIT TEST **Exit Ticket:** Teacher Choice
Assessment: Varies	**Assessment:** Varies