Science Unit 1- Plan 7th Grade

Unit Time Frame: September 9, 2014 to November 25, 2014



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Science Unit 1 Grade 7

Unit Overview

Scientists often inquire, "What makes something alive?" Sets of rules help us to organize objects into categories of living or nonliving. These rules also allow us to group items into organized systems. Scientists use classification systems to classify the millions of different organisms and objects on Earth. Understanding that many ingredients combine to make up Earth's environment and all items housed here lends to the idea that Earth is alive. Life can be found in places where you least expect it. This unit covers are series of topics including: 1) Ecosystems. Students discover how energy from the Sun is beneficial to ecosystems, and how ecosystems are related to higher levels of organization such as populations and the biosphere. Students learn that all living things need energy, and that food chains and food webs are a means for plants and animals to obtain energy and recycle matter in an ecosystem. Additionally, students explore how organisms interact within populations and communities. 2) Water. Students learn that cells are the basic units of structure and function in living organisms. Students analyze similarities and differences among cells and study cell theory. They also differentiate prokaryotic and eukaryotic cells. Students identify evidence that proof that living organisms are unable to survive without energy, and more specifically that cells within living things need energy.

 Enduring Understanding: Students will understand that Living organisms are often described in terms of length, mass, or other measurable quantities. Science is a process (scientific method) Complex relationships exist between living and non-living parts in an ecosystem. Ecosystems are disrupted when their physical environment changes or when non-native species are introduced. Students will understand the dependence of organisms on one another and their environments 	 <u>Unit Essential Questions:</u> Are human body parts at specified ratios to show a relationship? How can scientist use details of both internal and external structures to classify organisms? Explain why life is often referred to as "carbonbased". How do living and non-living parts of an ecosystem interact? Why are the relationships among the parts of an ecosystem so complex? How are ecosystems affected by physical changes in the environment?
environments.	• How are ecosystems affected by the introduction of non-native species?
Knowledge:	Skills:
 That the scientific process is a continuous method of investigation. How an independent and dependent variable work together in the scientific process. The difference between a direct and inverse relationship among results of an experiment Ecosystem is formed by the interaction of a community of organisms with their physical environment. Food web show how energy is transferred from one organism to another All organisms on Earth only survive by becoming a participant in a food chain and a food web which keeps the ecosystem in balance. Many factors including changes in weather, disease, introduction of a new organism, human interactions, impact ecosystems. 	 Identify limiting factors for a given species Differentiate between interactions within an ecosystem. Describe an ecosystem. Explain the relationship between sunlight and photosynthesis. Distinguish among a producer consumer, and decomposer. Distinguish between a food chain and food web. Explain how energy flows in food chains. Describe an energy pyramid. Distinguish between population and communities, and describe how interactions create balance. Identify the factors that affect population growth. Describe the types of interactions among species in a community.

 Living organisms are exposed to different pollutants. Populations of a group of individuals of the same species living in a given area. All cells have a cell membrane, organelles, cytoplasm and /DNA Cli Cli Idd function of the same species living in a given area. Cli Example of the same species living in a given area. Cli Cli Example of the same species living in a given area. Cli Cli Cli Cli Example of the same species living in a given area. Cli Cl	xplain the importance of water quality. xplain that cells are the basic unit of structure and inction in all living organisms. xplore cell theory and analyze similarities and ifferences among cells. ifferentiate between cell structure and function. lassify living cells as prokaryotic or eukaryotic. lentify and describe parts of cell and their inctions. ompare and contrast animal and plant cells. xplain the structure and functions of the cell membrane. rescribe the processes of diffusion and osmosis. xplain why cells are so small. rescribe how organisms acquire energy from unlight. ompare and contrast cellular respiration and hotosynthesis.		
Evidence of Understanding.			

New Vocabulary

producer, consumer, herbivore, carnivore, omnivore, decomposer, food chain, energy pyramid, food web, competition, predators, prey, symbiosis, population growth rate, pollutant, cell theory, cell membrane, organelle, cytoplasm, prokaryote cell, eukaryotic cell, mitochondria, vacuole, endoplasmic reticulum, ribosome, golgi body, lysosome, cytoskeleton, chloroplast, cell wall, diffusion, osmosis, active transport, photosynthesis, pigment, chlorophyll, cellular respiration, ATP

Assessments	Assessment due to District for Analysis
Pre- Assessment	
Notebook and Journal Entries	Pre-Assessment
Performance Assessments	Note Book Entries Lab 5B
Reading/ Writing Prompts	Chapter 5 Assessment
Student Observation/Anecdotal Notes	My Journal Entries 7.1 (See page 14)
Homework	Chapter 7 Assessment
Readorium	Note Book Entries Chapter 8
I-Check Assessments	Lab investigation 8B
Unit Assessment	Chapter 8 Assessment

Preconception /Misconceptions

Ecosystems/Food Chains and Food Webs

- Varying the population size of a species may not affect an ecosystem because some organisms are not important.
- Ecosystems are not a functioning whole but simply a collection of organisms.
- Ecosystems change little over time.
- Species coexist in ecosystems because of their compatible needs and behaviors; they need to get along.
- Food webs are interpreted as simple food chains.
- Organisms higher in a food web eat everything that is lower in the food web.
- There are more herbivores than carnivores because people keep and breed herbivores.
- Food chains involve predator and prey, but not producers.
- Decomposers release some energy that is cycled back to plants.
- Carnivores have more energy or power than herbivores do
- Carnivores are big or ferocious, or both. Herbivores are small and passive.

List other that you discover in your class:

Cell Structure and Function

- All cells are same size and shape.
- There are no single cell organisms.
- Some living parts of an organism are not made of cells.
- Plants are not made of cells.
- Cells of living organisms do not make molecules for their own growth and repair.
- Cells do not need a way to eliminate their waste.
- Animal and plant cells do not extract energy from food.
- Cells are not organized into the body structure of the organism they are part of.
- Cells do not need water to function.

List other that you discover in your class:

Before beginning unit administer pretest. (Week of 9/8/2014) Check that all materials are available, usable, and ready

Materials Provided:

Materials are supplied by the Teacher or School Site: Be aware that the classroom teacher or school site must supply a few items. Here is a summary of those items needed for chapters 5, 7-8.

Chapter5:	Chapter 7:	Chapter 8:
 Food web cards 	 Dropper bottles 	 beakers (50, 600mL)
 Ball of string 	 Pond waster 	 Wax pencils
 Sample brine shrimp 	 Distilled water 	 Balance
populations	 Microscope s 	 Vinegar
 Rubbing alcohol 	 Slides 	 Tablespoon
 Mild 	 Cover slips 	 Fresh eggs
 Hydrogen peroxide 	 Tweezers 	 Paper plates
 Sugar solution 	 Piece of onion 	 Distilled water
 Unknown solution 	 Iodine stain 	 Corn syrup
 Yeast solution 	 5 pairs prepared slides 	
 Vinegar 	 Flat toothpicks 	
 Ammonia solution 	 Live Ulothrix 	
 Microscope 	 Methylene blue stain 	
 Graduated beaker 	 Colored pencils 	
 Measuring spoon or cup 	 Sanitizing beaker (bleach 	
 Plastic droppers 	water)	
 Slides 	 Large sheets of construction 	
 Depression slides 	paper	
 Cover-slips 	 Metric ruler 	
	 calculator 	

New Jersey Common Core Standards

5.1	All students will understand that science is both a body of knowledge and an evidence-based, model-building
Science	enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands
Practices	encompass the knowledge and reasoning skills that students must acquire to be proficient in science.
Strand A	Understand Scientific Explanations: Students understand core concepts and principles of science and
	use measurement and observation tools to assist in categorizing, representing, and interpreting the
	natural and designed world. Who, what, when, where, why, and how questions form the basis for young
	learners' investigations during sensory explorations, experimentation, and focused inquiry
5.1.4.A.1	Fundamental scientific concepts and principles and the links between them are more useful than discrete facts.
5.1.4.A.2	Outcomes of investigations are used to build and refine questions, models, and explanations.
Strand B	Generate Scientific Evidence Through Active Investigations: Observations and investigations form
514D1	young learners' understandings of science concepts.
5.1.4.B.1	Building and refining models and explanations requires generation and evaluation of evidence.
5.1.4.B.2	Tools and technology are used to gather, analyze, and communicate results.
5.1.4.B.3	Evidence is used to construct and defend arguments
5.1.4.B.4	Reasoning is used to support scientific conclusions.
Strand C	Reflect on Scientific Knowledge: Interacting with peers and adults to share questions and explorations
51401	about the natural world builds young learners' scientific knowledge.
5.1.4.C.1	Scientific understanding changes over time as new evidence and updated arguments emerge.
5.1.4.C.2	for evolutions of predictions and explanations occur when new arguments emerge that account more completely
Strand D	Tor available evidence.
Stranu D	cliphoards, making rubbings, or charting the growth of plants
514D1	Science has unique norms for participation. These include adopting a critical stance, demonstrating a
J.1.4.D.1	willingness to ask questions and seek help, and developing a sense of trust and skenticism
514D2	In order to determine which arguments and explanations are most persuasive, communities of learners work
5.1.1.D.2	collaboratively to pose refine and evaluate questions investigations models and theories (e.g. scientific
	argumentation and representation).
5.1.4.D.3	Instruments of measurement can be used to safely gather accurate information for making scientific
	comparisons of objects and events.
5.3 Life	Life Science: All students will understand that life science principles are powerful conceptual tools for
Science	making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural
	systems arises in accordance with rules that govern the physical world, and the order of natural systems
	can be modeled and predicted through the use of mathematics.
Strand A	Organization and Development: Living organisms are composed of cellular units (structures) that carry
	out functions required for life. Cellular units are composed of molecules, which also carry out biological
	functions
5.3.8.A.1	All organisms are composed of cell(s). In multi-cellular organisms, specialized cells perform specialized
	functions. I issues, organs, and organ systems are composed of cells and function to serve the needs of cells for
52012	1000, all, allo waste removal.
3.3.8.A.2	burning the early development of an organism, cens differentiate and multiply to form the many specialized
Strand R	Matter and Energy Transformations: Food is required for energy and building cellular materials
Strand D	Organisms in an ecosystem have different ways of obtaining food and some organisms obtain their food
	directly from other organisms
5.3.8.B.1	Food is broken down to provide energy for the work that cells do, and is a source of the molecular building
C C C C C C C C C C C C C C C C C C C	blocks from which needed materials are assembled.
5.3.8.B.2	All animals, including humans, are consumers that meet their energy needs by eating other organisms or their
	products.
Strand C	Interdependence: All animals and most plants depend on both other organisms and their environment
	to meet their basic needs.
5.3.8.C.1	Symbiotic interactions among organisms of different species can be classified as: Producer/consumer,
	Predator/prev Parasite/host Scavenger/prev and Decomposer/prev

Next Generation Science Standards

Performance Expectations

LS1-1 Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

LS1-2 Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.

LS1-3 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

LS1-6 Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.

LS1-8 Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

NGSS Science and Engineering Practices

Developing and Using Models

Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.

*Develop and use a model to describe phenomena. (MS-LS1-2)

*Develop a model to describe unobservable mechanisms. (MS-LS1-7)

Planning and Carrying Out Investigations

Planning and carrying out investigations in 6-8 builds on K-5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or solutions.

*Conduct an investigation to produce data to serve as the basis for evidence that meet the goals of an investigation. (MS-LS1-1)

Engaging in Argument from Evidence

Engaging in argument from evidence in 6-8 builds on K-5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world(s).

*Use an oral and written argument supported by evidence to support or refute an explanation or a model for a phenomenon. (MS-LS1-3)

Obtaining, Evaluating, and Communicating Information

Obtaining, evaluating, and communicating information in 6-8 builds on K-5 experiences and progresses to evaluating the merit and validity of ideas and methods.

*Gather, read, and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence. (MS-LS1-8).

Disciplinary Core Ideas

LS1.A: Structure and Function

- All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multi-cellular). (MS-LS1-1)
- Within cells, special structures are responsible for particular functions, and the cell membrane forms the boundary that controls what enters and leaves the cell. (MS-LS1-2)
- In multi-cellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions. (MS-LS1-3)

LS1.C: Organization for Matter and Energy Flow in Organisms

• Plants, algae and many microorganisms use the energy from light to make sugars (food) from carbon dioxide from the atmosphere and water through the process of photosynthesis which also releases oxygen. These sugars can be used immediately or stored for growth or later use. (LS1-6)

LS1.D: Information Processing

• Each sense receptor responds to different inputs (electromagnetic, mechanical, chemical), transmitting them as signals that travel along nerve cells to the brain. The signals are then processed in the brain, resulting in immediate behaviors or memories. (MS-LS1-8)

Cross Cutting Concepts

Cause and Effect: Cause and effect relationships may be used to predict phenomena in natural systems. (MS-LS1-8)

Scale, Proportion, and Quantity: Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1)

Systems and System Models: Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems. (MS-LS1-3)

Structure and Function: Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts; therefore complex natural structures/systems can be analyzed to determine how they function. (MS-LS1-2)

Energy and Matter

Within a natural system, the transfer of energy drives the motion and/or cycling of matter. (LS1-6)

Interdependence of Science, Engineering, and Technology

- Engineering advances have led to important discoveries in virtually every field of science and scientific discoveries have led to the development of entire industries and engineered systems. (LS1-1)
- Use an oral and written argument supported by evidence to support or refute an explanation or a model for a phenomenon. (LS1-3)

Obtaining, Evaluating, and Communicating Information

Obtaining, evaluating, and communicating information in 6-8 builds on K-5 experiences and progresses to evaluating the merit and validity of ideas and methods. Gather, read and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and method used, and describe how they are supported or not supported by evidence. (LS1-8)

Scientific Knowledge is Based on Empirical Evidence

Scientific knowledge is based on logical connections between evidence and explanations. (LS1-6)

CCSS: English Language Arts			
Reading Informational Text			
RST.6-8.1	Cite specific textual evidence to support analysis of science and technical texts.		
RST.6-8.2	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.		
RST.6-8.3	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.		
	CCSS: Writing-		
W7.1	Write arguments to support claims with clear reasons and relevant evidence.		
W7.2	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.		
	CCSS: Speaking and Listening:		
SL.7.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.		
SL.7.2	Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, and orally) and explain how the ideas clarify a topic, text, or issue under study.		
SL.7.3	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.		
SL.7.4	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.		
SL.7.5	Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.		
SL.7.6	Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 7 Language standards 1 and 3 herefor specific expectations.)		
CCSS: Mathematics			
6-EEC.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time		

Chapter 5

<u>Summary</u>

5.1 Students build upon introductions to ecosystems and learn how energy from the Sun is beneficial to ecosystems.Students also study how ecosystems are related to higher levels of organization such as populations and the biosphere.Students identify and differentiate among the living parts of an ecosystem and discuss biotic and abiotic factors.5.2 All living things need energy. Students explore food chains and food webs as means for plants and animals to obtain energy and recycle matter in an ecosystem.

5.3In this part students learn how organisms interact within populations and communities. Students focus on factors that affect population growth and explore predator-prey relationships, symbiosis, and competition, Students also learn about water quality tests and the importance of clean water to living organisms.

Core Ideas/Understandings		<u>S&E Practices</u> Alignment	<u>CC Concepts</u> Alignment
 Organisms in a given ecosystem depoways. Living organisms are exposed to diff Populations of a group of individuals in a given area. 	end on each other in a lot of Cerent pollutants. s of the same species living	<u>NGSS</u> Constructing Explanations and Designing Solutions	<u>NGSS</u> Energy and Matter
	Focus Questions		
What are the ingredients of life?Why is life referred to as "carbon-based"	sed"?		
What are the variables, including conWhat is an ecosystem?	npounds that affect living syst	tems?	
What is a common way to show "whWhy are ecosystems in a "delicate ba	o eats whom" in an ecosysten alance"?	1?	
 How do plants and animals survive in 	n the desert?		
<i>New Vocabulary</i> producer, consumer, herbivore, carnivore, omnivore, decomposer, food chain, energy pyramid, food web, competition, predators prev symbiosis population growth rate pollutant			
Teacher Preparations	Body of	Evidence	Time Frame
 -Prepare materials for the week -Administer pre-assessment for chapter 5 -Read: "Motivate", "Explore", "Explain", "Extend", and "Assess" Complete activities 5A Organizing Living Things, and5B -Food Webs, and Testing Pollutants -End of chapter 5 administer post assessment Scores sent to District Data to be recorded in Genesis 	 Pre-Assessment Notebook Investigation Lab Investigation 5A Lab Investigation 5B Chapter Review Questing My Journal Entries provide the system of the	on Entries stions gs. 89, 92, & 96* Anecdotal Notes tts (Page 14)	6 sessions 1 session = 80 minutes
Homework/Center Activities/Extra Practices			
 Rising Readorium Chapter "Challenges" pgs. 84 & 101 Chapter "Solve It" Activitypg, 91 Chapter Connection pg. 102-104 Chapter Activity pg. 104 	 Word wall Informatic Suggested Spelling C 	l activities onal Text -Reading websites ?ity(vocab.)	

Chapter 7

<u>Summary</u>

7.1 Students learn that cells are the basic units of structure and function in living organisms. They discover how the invention of the microscope helped scientists identify and learn more about cells. They explore cell theory and analyze similarities and differences among cells. They also differentiate prokaryotic and eukaryotic cells.

7.2Students take deeper look at plant and animal cells. Students learn to identify organelles and describe how they function. They also compare plant and animal cells.

<u>Core Ideas/Understan</u>	<u>dings</u>	<u>S&E Practices</u>	<u>CC Concepts</u> Alignment
• All cells have a cell membrane, organ and /DNA	nelles, cytoplasm	NGSS *Developing and Using Models *Planning and Carrying out Investigations	<u>NGSS</u> *Scale, Proportions, and Quantity *Structure and Function *Interdependence of Science, Engineering, and Technology
• What is a cell and how do we know o	<i>Focus Questi</i> cells exist?	ions	
 Are human cells, animal cells, and pl What is inside a cell, and how is a cell 	ant cells all the same? Il like a cookie factory	<i>r</i> ?	
<u>New Vocabulary</u> cell theory, cell membrane, organelle, cytoplasm, prokaryote cell, eukaryotic cell, mitochondria, vacuole, endoplasmic reticulum ribosome golgi body lysosome cytoskeleton chloroplast cell wall			
Teacher Preparations	B	ody of Evidence	Time Frame
-Prepare materials for the week -Administer pre-assessment for chapter 7 -Read: "Motivate", "Explore", "Explain", "Extend", and "Assess" Complete Investigations: 7A <i>Examining</i> <i>Onion Tissue, 7B Animal and Plant Cells</i> -Administer post assessment	 Notebook In Lab Investige Lab Investige My Journal F Chapter Reve Student Obse Chapter 7 As 	vestigation Entry ation 7A ation 7B Entries pgs. 141, 144* iew Questions ervation/Anecdotal Notes ssessments	4 sessions
Scores sent to District *see My Journal Entries (Page 14) Data to be recorded in Genesis *see My Journal Entries (Page 14)			
Homework/Center Activities/Extra Practices			
 Rising Readorium Chapter "Challenges" pgs. 141, 149 Chapter Connection pg. 150-151 Chapter Activity pg. 152 		 Word wall activities Informational Text -Read Suggested websites Spelling City(vocab.) 	ding

Chapter project: Ecosystem Research. See end of Chapter for details.

Chapter 8

<u>Summary</u>

8.1 The cell membrane performs many functions that are important to a cell's survival. This lesson focuses on the structure and function of the cell membrane.

8.2 Living organisms are unable to survive without energy. More specifically cells within living things need energy. In this lesson students learn how cells use chemical reactions, like photosynthesis and cellular respiration, to get the energy they need to keep organisms.

Core Ideas/Understandings		<u>S&E Practices</u>	<u>CC Concepts</u>
 Diffusion is the movement of molecules across a membrane. Molecules move from higher concentration to lower concentration. Osmosis is a type of diffusion specific to water. How do things move in and out of cells? How do cells get energy? Why are plants green? Why are plants green? <i>New Vocabulary</i> diffusion, osmosis, active transport, photosynthesis, pigment, chlorophyll, of Teacher Preparations Prepare materials for the week Administer pre-assessment for chapter 7 Read: "Motivate", "Explore", "Explain", "Extend", and "Assess" Complete Investigations: 8A Diffusion and Osmosis, & 8B Photosynthesis and Color Administer post assessment Scores sent to District Pata to be recorded in Genesis 		Alignment Alignment Alignment Alignment NGSS Constructing Explanations and Designing Solutions Engaging in Argument from Evidence gation Entry(1 due to district) 8A 8B es pgs. 157, 166* Questions on/Anecdotal Notes nents (Page 14)	Alignment Alignment NGSS Systems and System Models Energy and Matter Image: System of the system Models Energy and Matter Image: System of the system Image: System of the system Systems and System Models Energy and Matter Image: System of the system Image: System s
Homework/Center Activities/Extra Practices			
 Rising Readorium Chapter "Challenges" pgs. 161, 167 Chapter "Solve It" pg. 167 Chapter Connection pg. 168-169 Chapter Activity pg. 170 		Word wall activities Informational Text -Reading Suggested websites Spelling City(vocab.)	

Culminating Activity: Complete work on projects and students present them.

My Journal Entries

Chapter 5

5.1 The Sonoran Desert covers about 120,000 square miles in southwestern Arizona, southeastern California, and parts of Mexico. Divide your journal page into two columns labeled Producers and Consumers. Do some research and list five different common producers and consumers in the Sonoran Desert.

5.2The food web members pictured on this page are: seaweed, worm, zooplankton (tiny floating animals that eat producers), snail, crab, sardine (small fish), striped bass (large fish), seal, and gull. Make a sketch of each simple food chain that makes up the web, and label each member with its common name.

5.3 A species of barnacle is a parasite of the green crab in its native community (Europe and North Africa). The barnacles weaken some of the crabs and prevent them from reproducing. This helps keep the green crab's population in balance in its native environment. Use this information to propose a way of controlling the green crab population in the United States. Write down the pros and cons of your proposal.

Chapter 7

7.1 Write a paragraph that agrees or disagrees with the following statement: "Muscle cells are completely different than nerve cells." Give the reasons for why you agree or disagree in your answer. 2. Explain three differences between molecules and cells.3. Conduct Internet research to find out about the largest cell in the world. Site your source.

7.2 Cells are not flat objects like they appear in this text. They are three-dimensional just like you are. Find everyday objects that remind you of the different organelles inside of a cell. Collect those objects and make a table listing the objects and the organelle it reminds you of.

Chapter 8

8.1Observing diffusion: 1. Fill a clear glass with water.2. Carefully add a drop of food coloring to the water.3. Observe the glass every 2 minutes and record your observations in your journal.4. What happens to the food coloring? Explain what is happening at the molecular level.5. You observed a process called diffusion. How might the cell membrane use diffusion to move molecules in or out?

8.2 Write the story of a carbon atom as it travels through photosynthesis and cellular respiration. Include the following information in your story:• the molecules in which the carbon atom is found.• the organisms, cells, and organelles through which it travels. Be creative!

Unit Resources:

Content books

Websites:

*United streaming:

http://www.discoveryeducation.com//?ref=streaming&returnUrl=http%3A%2F%2Fstreaming%2Ediscoveryeducation%2 Ecom%2Findex%2Ecfm

*Readorium

App.risingreader.com