

CARLISLE AREA SCHOOL DISTRICT

Carlisle, PA 17013

LIFE SCIENCE

GRADE 7

Date of Board Approval: February 16, 2017

**CARLISLE AREA SCHOOL DISTRICT
PLANNED INSTRUCTION COVER PAGE**

TITLE OF COURSE:	Life Science	SUBJECT:	Science	GRADE LEVEL:	7
COURSE LENGTH:	One Year	DURATION:	46 minutes	FREQUENCY:	6 days/ cycle
PREREQUISITES:	N/A	CREDIT:	1	LEVEL:	N/A

Course Description/Objectives: Life Science is an introductory science course that emphasizes various biological concepts. The students will focus on concepts such as; microbiology, cells, classification of life, genetics, theory of evolution, ecology and basic scientific principles. Students will explore these topics within both a laboratory and a classroom setting.

Text: Life Science ©2012; Glencoe Publishing

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COURSE TIME LINE

Unit 1: Safety	3 days
<ul style="list-style-type: none">• Lab Safety• Equipment	
Unit 2: Nature of Science	8 days
<ul style="list-style-type: none">• Scientific Method• Science and Society	
Unit 3: Characteristics of Life	12 days
<ul style="list-style-type: none">• Viruses• Common Characterisitcs of Life	
Unit 4: Cells	28 days
<ul style="list-style-type: none">• Microscopes• Cell theory/ Organelles• Cell Transport• Cell Energy	
Unit 5: Cell Reproduction	15 days
<ul style="list-style-type: none">• Asexual Reproduction• Mitosis• Meiosis	
Unit 6: DNA	11 days
<ul style="list-style-type: none">• Structure and history• Replication• Protein synthesis• DNA mutations	

Unit 7: Genetics

28 days

- Mendelian Genetics/Punnett Squares
- Alternate Forms of Inheritance
- Genetic Mutations
- Pedigrees
- Genetic Technology

Unit 8: Evolution

8 days

- Natural Selection/ Adaptations
- Evidence for Evolution

Unit 9: Anatomical Systems

10 days

- Human Anatomy
- Frog Anatomy

Unit 10: Ecology

28 days

- Flow of Energy
- Population Dynamics
- Aquatic and Terrestrial Biomes

Unit 11: Classification

6 days

- Dichotomous Keys
- Taxonomy
- Kingdoms
- Plant Characteristics

Total:

157 days

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	3 days
UNIT #1:	Safety (Essential)	GRADE:	7

STANDARDS:

PA Core Standards:

- CC.3.5.6-8.D • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.

PA Academic Standards:

- 3.4.7.D2 • Select and safely use appropriate tools, products and systems for specific tasks.

PSSA Eligible Content/Assessment Anchors:

- S.7.A.2.2 • Select and safely use appropriate tools and describe the information provided by each tool.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	3 days
UNIT #1:	Safety (Essential)	GRADE:	7

UNDERSTANDINGS

Students will understand how to work and conduct laboratory experiments safely in the lab setting.

COMMON ASSESSMENTS/CULMINATING ACTIVITY

Safety quiz

KNOW

- Identify appropriate lab behavior.
- Identify lab equipment.

DO

- Locate lab safety equipment in the classroom and understand how to appropriately use the safety equipment.
- Diagram the location of classroom safety equipment.
- Create safety posters for classroom.
- Determine the meaning of safety symbols.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	8 days
UNIT #2:	Nature of Science (Important)	GRADE:	7

STANDARDS:

PA Core Standards:

- CC.3.5.6-8.C • Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- CC.3.5.6-8.D • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
- CC.3.5.6-8.G • Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

PSSA Eligible Content/Assessment Anchors:

- S.7.A.1.1 • Explain, interpret, and apply scientific, environmental, or technological knowledge presented in a variety of formats (visuals, scenarios, graphs).
- S.7.A.2.1 • Apply knowledge of scientific investigation or technological design in different contexts to make inferences, solve problems, and/or answer questions.
- S.7.A.2.2 • Select and safely use appropriate tools and describe the information provided by each tool.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	8 days
UNIT #2:	Nature of Science (Important)	GRADE:	7

UNDERSTANDINGS

Scientific understanding is acquired through research and discovery.

COMMON ASSESSMENTS/CULMINATING ACTIVITY

Inquiry-based scientific method lab

KNOW

- Differentiate between independent vs. dependent variables.
- Differentiate between constants and controls.
- Identify parts of the scientific method in an experiment.

DO

- Follow steps of the scientific method in a lab experiment.
- Correctly utilize scientific method vocabulary while synthesizing a formal lab report (including graphical analysis).
- Be able to apply the steps of the scientific method in order to solve a problem.
- Select and use appropriate tools while performing a scientific investigation.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	12 days
UNIT #3:	Characteristics of Life (Important)	GRADE:	7

STANDARDS:

PA Core Standards:

- CC.3.5.6-8.C • Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- CC.3.5.6-8.D • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.

PA Academic Standards:

- 3.1.7.A1 • Describe the similarities and differences of physical characteristics in diverse organisms.
- 3.1.6.A1 • Describe the similarities and differences of major physical characteristics in plants, animals, fungi, protists, and bacteria.
- 3.1.7.A3 • Explain why the life cycles of different organisms have varied lengths.
- 3.1.6.A4 • Recognize that all organisms are composed of cells and that many organisms are unicellular and must carry out all life functions in one cell.
- 3.1.7.A5 • Explain how the cell is the basic structural and functional unit of living things.
- 3.1.6.A6 • Identify examples of unicellular and multicellular organisms.
- 3.1.7.A6 • Identify the levels of organization from cell to organism.
- 3.1.7.B2 • Compare sexual reproduction with asexual reproduction.

PSSA Eligible Content/Assessment Anchors:

- S.7.B.1.1 • Describe and compare structural and functional similarities and differences that characterize diverse living things.
- S.7.B.1.2 • Compare methods of reproduction.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	12 days
UNIT #3:	Characteristics of Life (Important)	GRADE:	7

UNDERSTANDINGS

All living things share common characteristics. Although viruses share many of these characteristics, they are not living things.

COMMON ASSESSMENTS/CULMINATING ACTIVITY

Unit test
Virus simulation activity

KNOW

- Define virus, unicellular, multicellular, autotroph, heterotroph, homeostasis, response to stimulus, sexual reproduction, asexual reproduction, growth, and development.
- List the six characteristics of life.
- Differentiate between response and adaptation.
- Differentiate between asexual and sexual reproduction.
- Differentiate between virus reproductive cycles (active vs. latent).

DO

- Apply the characteristics to determine if something is alive.
- Be able to identify a stimulus and the response.
- Explain why homeostasis is important to living organisms
- Explain why a virus is not a living thing.
- Compare and contrast between autotroph/heterotroph, unicellular/multicellular, asexual/sexual, stimulus/response, active cycle/latent cycle.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	28 days
UNIT #4:	Cells (Essential)	GRADE:	7

STANDARDS:

PA Core Standards:

- CC.3.5.6-8.C • Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- CC.3.5.6-8.D • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
- CC.3.5.6-8.G • Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

PA Academic Standards:

- 3.1.6.A2 • Describe how energy derived from the sun is used by plants to produce sugars (photosynthesis) and is transferred within a food chain from producers (plants) to consumers to decomposers.
- 3.1.6.A4 • Recognize that all organisms are composed of cells and that many organisms are unicellular and must carry out all life functions in one cell.
- 3.1.7.A4 • Explain how cells arise from pre-existing cells.
- 3.1.6.A5 • Describe basic structures that plants and animals have that contribute to their ability to make or find food and reproduce.
- 3.1.7.A5 • Explain how the cell is the basic structural and functional unit of living things.
- 3.1.7.A6 • Identify the levels of organization from cell to organism.
- 3.1.7.A7 • Compare life processes (e.g. growth, digestion) at the organism level with life processes at the cellular level.
- 3.1.6.A8 • Explain why the details of most cells are visible only through a microscope.

PSSA Eligible Content/Assessment Anchors:

- S.7.A.3.1 • Explain the parts of a simple system, their roles, and their relationships to the system as a whole.
- S.7.B.1.1 • Describe and compare structural and functional similarities and differences that characterize diverse living things.
- S.7.C.1.2 • Compare chemical and physical changes of matter.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	28 days
UNIT #4:	Cells (Essential)	GRADE:	7

UNDERSTANDINGS

The cell is the basic unit of structure and function of all living things.

COMMON ASSESSMENTS/CULMINATING ACTIVITY

Microscope lab
Cell model
Cell lab
Osmosis lab

KNOW

- Define cell structures, active transport, passive transport, and cellular processes.
- Differentiate between different types of microscopes.
- Differentiate between prokaryotic and eukaryotic cells.
- Differentiate between plant and animal cells.
- Describe the various cell parts and how their structures relate to their functions.
- Categorize types of cell transport.

DO

- Identify and label parts of a compound light microscope and understand their functions.
- Correctly use a compound light microscope to view cell structures.
- Create a model of a eukaryotic cell, properly identifying the cell parts and their functions.
- Compare and contrast passive and active transport using a graphic organizer.
- Describe levels of biological organization from cell to organism.
- Complete lab to demonstrate osmosis.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	15 days
UNIT #5:	Cell Reproduction (Essential)	GRADE:	7

STANDARDS:

PA Core Standards:

- CC.3.5.6-8.D • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
- CC.3.5.6-8.G • Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

PA Academic Standards:

- 3.1.7.A4 • Explain how cells arise from pre-existing cells.
- 3.1.7.B2 • Compare sexual reproduction with asexual reproduction.

PSSA Eligible Content/Assessment Anchors:

- S.7.A.3.3 • Describe repeated processes or recurring elements in natural, scientific, and technological patterns.
- S.7.B.1.2 • Compare methods of reproduction.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	15 days
UNIT #5:	Cell Reproduction (Essential)	GRADE:	7

UNDERSTANDINGS

All cells must come from pre-existing cells.

COMMON ASSESSMENTS/CULMINATING ACTIVITY

Mitosis lab
Mitosis simulation
Mitosis/Meiosis test

KNOW

- Describe the phases and purpose of mitosis.
- Describe the phases and purpose of meiosis.
- Compare and contrast asexual and sexual reproduction.

DO

- Construct the phases of mitosis and meiosis.
- Compare various basic sexual and asexual reproductive processes (budding, cuttings).
- Explain why the life cycles of different organisms have varied lengths.
- Explain how cells arise from pre-existing cells.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	11 days
UNIT #6:	DNA (Important)	GRADE:	7

STANDARDS:

PA Core Standards:

- CC.3.5.6-8.C • Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- CC.3.5.6-8.D • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
- CC.3.5.6-8.G • Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

PSSA Eligible Content/Assessment Anchors:

- S.7.B.2.2 • Explain how a set of genetic instructions determines inherited traits of organisms.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	11 days
UNIT #6:	DNA (Important)	GRADE:	7

UNDERSTANDINGS

The structure of DNA holds the key to understanding the genetic code of all living things.

COMMON ASSESSMENTS/CULMINATING ACTIVITY

DNA extraction lab

KNOW

- Define nucleic acids, nucleotides, and Central Dogma of Genetics.
- Understand the contributions of Rosalind Franklin, James Watson, and Francis Crick.

DO

- Describe the process of gene expression (DNA replication, transcription, translation).
- Construct a model of DNA .
- Debate the importance of the contributions made by Rosalind Franklin, James Watson, and Francis Crick.
- Extract DNA from a strawberry using appropriate laboratory techniques.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	28 days
UNIT #7:	Genetics (Essential)	GRADE:	7

STANDARDS:

PA Core Standards:

- CC.3.5.6-8.D • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
- CC.3.5.6-8.G • Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

PA Academic Standards:

- 3.1.7.B1 • Explain how genetic instructions influence inherited traits.
- 3.1.7.B4 • Describe how selective breeding and biotechnology can alter the genetic composition of organisms.
- 3.1.7.C2 • Explain why the extinction of a species may occur when the environment changes.
- Explain that mutations can alter a gene and are the original source of new variations in a population.
- 3.1.7.B5 • Compare and contrast observable patterns in the physical characteristics across families, strains and species.

PSSA Eligible Content/Assessment Anchors:

- S.7.B.2.2 • How a set of genetic instructions determines inherited traits of organisms.
- S.7.B.3.2 • Explain ways different variables may cause and/or influence changes in natural or human-made systems.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	28 days
UNIT #7:	Genetics (Essential)	GRADE:	7

UNDERSTANDINGS

Genetic traits are inherited in predicable ways.

COMMON ASSESSMENTS/CULMINATING ACTIVITY

Inheritance simulation lab

KNOW

- Define allele, dominant, recessive, genotype, phenotype, homozygous, heterozygous, Punnett square, codominant, incomplete dominance, sex-linked traits and pedigree.
- Understand Mendel's laws of inheritance.
- Differentiate between types of inheritance such as incomplete dominance, co-dominance, multiple alleles and sex linked traits.

DO

- Apply Mendel's laws of inheritance to predict genetic outcomes based upon parent genotypes.
- Differentiate between different types of inheritance.
- Create a pedigree using genetic information.
- Compare observable traits throughout species.
- Simulate the law of segregation using a pre-determined lab and identify ways in which mutations could occur.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	8 days
UNIT #8:	Evolution (Essential)	GRADE:	7

STANDARDS:

PA Core Standards:

- CC.3.5.6-8.C • Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- CC.3.5.6-8.D • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
- CC.3.5.6-8.H • Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.
- CC.3.5.6-8.I • Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

PA Academic Standards:

- 3.1.7.B4 • Describe how selective breeding and biotechnology can alter the genetic composition of organisms.
- 3.1.7.B5 • Compare and contrast observable patterns in the physical characteristics across families, strains and species.
- 3.1.6.C1 • Differentiate between instinctive and learned animal behaviors that relate to survival.
- 3.1.7.C1 • Describe how natural selection is an underlying factor in a population’s ability to adapt to changes.
- 3.1.8.C1 • Explain how reproductive success coupled with advantageous traits over many generations contributes to natural selection.
- 3.1.7.C2 • Explain why the extinction of a species may occur when the environment changes.
- Explain that mutations can alter a gene and are the original source of new variations in a population.
- 3.1.7.C3 • Identify evidence drawn from geology, fossils, and comparative anatomy that provides the basis for the theory of evolution.

PSSA Eligible Content/Assessment Anchors:

- S.7.A.1.3 • Identify and analyze evidence that certain variables may have caused easurable changes in natural or human-made systems.
- S.7.B.2.1 • Explain natural selection and its role in evolution.
- S.7.B.2.2 • Explain how a set of genetic instructions determines inherited traits of organisms.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	8 days
UNIT #8:	Evolution (Essential)	GRADE:	7

UNDERSTANDINGS

There is scientific evidence to support the theory of evolution by natural selection.
Evolution is a change in organisms over time.

COMMON ASSESSMENTS/CULMINATING ACTIVITY

Bird beak

KNOW

- Define evolution, analogous structures, natural selection, adaptation, homologous structures, and vestigial organs.
- Understand that natural selection selects for favorable traits that allow an organism to be better suited for its environment.
- Describe different types of evidence for evolution.
- Explain that adaptations within a species are developed over long periods of time.
- Identify and explain differences between inherited and acquired traits.
- Explain the evidence for the theory of evolution.

DO

- Simulate the process of natural selection (online bunny-wolf activity) .
- Identify evidence drawn from geology, fossils, and comparative anatomy that provides the basis for the theory of evolution.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	10 days
UNIT #9:	Anatomical Systems (Compact)	GRADE:	7

STANDARDS:

PA Core Standards:

- CC.3.5.6-8.C • Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- CC.3.5.6-8.D • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
- CC.3.5.6-8.G • Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

PA Academic Standards:

- 3.1.7.A7 • Compare life processes (e.g. growth, digestion) at the organism level with life processes at the cellular level.

PSSA Eligible Content/Assessment Anchors:

- S.7.A.3.1 • Explain the parts of a simple system, their roles, and their relationships to the system as a whole.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	10 days
UNIT #9:	Anatomical Systems (Compact)	GRADE:	7

UNDERSTANDINGS

There are similarities and differences in the internal and external anatomy of different types of animals.

COMMON ASSESSMENTS/CULMINATING ACTIVITY

Frog dissection lab

KNOW

- Describe a system as a group of related parts with specific roles that work together to achieve an observed result.
- Identify the basic systems in a frog.

DO

- Analyze how three adaptations of the frog's anatomy aid in its survival.
- Make an anatomical comparison between human and frog anatomy.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	28 days
UNIT #10:	Ecology (Essential)	GRADE:	7

STANDARDS:

PA Core Standards:

- CC.3.5.6-8.C • Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- CC.3.5.6-8.D • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
- CC.3.5.6-8.G • Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
- CC.3.5.6-8.I • Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

PA Academic Standards:

- 3.1.7.A2 • Describes how organisms obtain and use energy throughout their lives.
- 3.1.7.A3 • Explain why the life cycles of different organisms have varied lengths.
- 3.1.6.A5 • Describe basic structures that plants and animals have that contribute to their ability to make or find food and reproduce.
- 3.1.7.A8 • Apply the appropriate models to show interactions among organisms in an environment.
- 3.2.8.A3 • Explain how changes in matter are accompanied by changes in energy.

PSSA Eligible Content/Assessment Anchors:

- S.7.A.1.2 • Identify and explain the impacts of applying scientific, environmental, or technological knowledge to address solutions to practical problems.
- S.7.A.1.3 • Identify and analyze evidence that certain variables may have caused measurable changes in natural or human-made systems.
- S.7.A.3.1 • Explain the parts of a simple system, their roles, and their relationships to the system as a whole.
- S.7.B.1.1 • Describe and compare structural and functional similarities and differences that characterize diverse living things.
- S.7.B.1.2 • Compare methods of reproduction.
- S.7.B.3.1 • Compare the biotic and abiotic factors of different ecosystems and explain relationships between and these factors.
- S.7.B.3.2 • Explain ways different variables may cause and/or influence changes in natural or human-made systems.
- S.7.C.2.1 • Describe how energy flows through the living world.
- S.7.D.1.1 • Describe Earth structures and processes that characterize different biomes on Earth.
- S.7.D.1.2 • Describe characteristic features and significance of Earth’s water systems.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	28 days
UNIT #10:	Ecology (Essential)	GRADE:	7

UNDERSTANDINGS

Organisms interact with their environment. Living things are interdependent and are impacted by the flow of nutrients and energy in their environments. Humans modify the world’s ecosystems through their actions.

COMMON ASSESSMENTS/CULMINATING ACTIVITY

Letort Stream Study – water chemistry, macro-invertebrate identification, watershed decisions simulation, physical assessment
Carrying capacity simulations: bear, deer, mice

KNOW

- Define biosphere, ecology, abiotic, biotic, population, community, ecosystem, population density, limiting factor, carrying capacity, predation, symbiosis, mutualism, commensalism, parasitism, habitat, niche, food web, food chain, ecological pyramid, producer, consumer, decomposer, scavenger, herbivore, carnivore, omnivore, primary succession, secondary succession, pioneer community, climax community, and biome.
- Describe how energy flows through an ecosystem.
- Describe the process of succession.
- Explain the limiting factors that determine the carrying capacity of an ecosystem.
- Describe relationships between organisms and different ecosystems such as symbiosis.
- Explain the importance of diversity within an ecosystem.
- Describe how human interactions within an environment impact an ecosystem.
- Explain how small impacts found in the headwaters of a stream can greatly compound its effects as you travel down the waterway into the greater watershed (LeTort–Chesapeake Bay).

DO

- Participate in a meaningful watershed activity within the Letort watershed.
- Research a biome identifying biotic and abiotic factors.
- Simulate a carrying capacity activity.
- Conduct a LeTort Stream Study to determine overall health of the ecosystem and its subsequent impact on the aquatic and benthic environments.
- Understand and assess the impact that local watershed decisions can have on the Chesapeake Bay.
- Construct a food web.
- Dissect an owl pellet to exemplify predator and prey relationships.
- Create a symbiotic classified ad.
- Analyze the water quality of the LeTort Stream to determine the health of the waterway.
- Distinguish between the major biomes and describe their characteristic biotic and abiotic factors including soil types.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	6 days
UNIT #11:	Classification (Compact)	GRADE:	7

STANDARDS:

PA Core Standards:

- CC.3.5.6-8.A • Cite specific textual evidence to support analysis of science and technical texts.
- CC.3.5.6-8.B • Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.
- CC.3.5.6-8.C • Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- CC.3.5.6-8.D • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
- CC.3.5.6-8.G • Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
- CC.3.5.6-8.H • Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.
- CC.3.5.6-8.I • Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
- CC.3.5.6-8.J • By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.

PA Academic Standards:

- 3.1.6.A1 • Describe the similarities and differences of major physical characteristics in plants, animals, fungi, protists, and bacteria.
- 3.1.6.A5 • Describe basic structures that plants and animals have that contribute to their ability to make or find food and reproduce.
- 3.1.6.A6 • Identify examples of unicellular and multicellular organisms.

PSSA Eligible Content/Assessment Anchors:

- S.7.A.3.3 • Describe repeated processes or recurring elements in natural, scientific, and technological patterns.

KNOW, UNDERSTAND, DO

COURSE:	Life Science	TIME FRAME:	6 days
UNIT #11:	Classification (Compact)	GRADE:	7

UNDERSTANDINGS

Students will be able to identify and use the taxonomy system to classify organisms.

COMMON ASSESSMENTS/CULMINATING ACTIVITY

Use a dichotomous key to identify an organism.
LeTort Stream Study –identification of macro-invertebrates using a dichotomous key

KNOW

- Define autotroph, heterotroph, vascular, non-vascular, bacteria, fungus, protist, plant, animal, dichotomous key, and taxonomy.
- Identify basic characteristics of each kingdom.

DO

- Use a dichotomous key to identify an organism based on physical and/or structural attributes.
- Identify macro-invertebrates found within the LeTort Stream ecosystem to determine the overall health of the waterway.
- Place organisms in the correct kingdom based on identifying characteristics.

Adaptations/Modifications for Students with I.E.P.s

Adaptations or modifications to this planned course will allow exceptional students to earn credits toward graduation or develop skills necessary to make a transition from the school environment to community life and employment. The I.E.P. team has determined that modifications to this planned course will meet the student's I.E.P. needs.

Adaptations/Modifications may include but are not limited to:

INSTRUCTION CONTENT

- Modification of instructional content and/or instructional approaches
- Modification or deletion of some of the essential elements

SETTING

- Preferential seating

METHODS

- Additional clarification of content
- Occasional need for one to one instruction
- Minor adjustments or pacing according to the student's rate of mastery
- Written work is difficult, use verbal/oral approaches
- Modifications of assignments/testing
- Reasonable extensions of time for task/project completion
- Assignment sheet/notebook
- Modified/adjusted mastery rates
- Modified/adjusted grading criteria
- Retesting opportunities

MATERIALS

- Supplemental texts and materials
- Large print materials for visually impaired students
- Outlines and/or study sheets
- Carbonless notebook paper
- Manipulative learning materials
- Alternatives to writing (tape recorder/calculator)