CONTENT
Middle School Science

GRADE LEVEL/COURSE
Grade 7/Advanced Science

BOARD APPROVAL DATE: 09/2019

BOARD ADOPTION OF STATE STANDARDS: 09/2016

Unit Overview (Standards Coverage)				
Unit	**Standards**	**Unit Focus**	**Skills Overview**	**Suggested Pacing**
Unit 1: Water and the Atmosphere	New Jersey Student Learning Standards for Science: SCI.MS-ESS2-4 SCI.MS-ESS2-5 SCI.MS-ESS2-6 SCI.MS-ESS3-2 SCI.MS-ESS3-3 SCI.MS-ESS3-5	The purpose of this unit is to study and understand the interactions of Earth's large-scale systems, the role of water in Earth's surface processes, and the flow of energy among these systems.	Students will be able to: ● Define weather and describe variables that occur including temperature, air pressure, wind, humidity, and dew point ● Illustrate and explain how weather is related to the water cycle. ● Create a model of prevailing winds incorporating oceanic flow. Justify how latitude and longitude correlate with weather patterns.	15-20 weeks (about two marking periods)
Unit 2: Ecology and the Environment	New Jersey Student Learning Standards for Science: SCI.MS-LS2-1 SCI.MS-LS2-2 SCI.MS-LS2-3 SCI.MS-LS2-4 SCI.MS-LS2-5	The purpose of this unit is to analyze, understand and interpret data and models, and also demonstrate a deeper understanding of the cycling of matter and energy in ecosystems.	Students will be able to: ● Identify the needs of living things and determine the method of obtaining these needs. ● Compare and contrast a habitat and a niche. ● Model and analyze a disruption in food web and explain its potential influence.	5-10 weeks (about one marking period)
Unit 3: Diversity of Living Things	New Jersey Student Learning Standards for Science: MS-LS1-3 MS-LS1-4 MS-LS1-5 MS-LS4-6	The purpose of this unit is to develop an understanding of the characteristics and classification of life from single-celled organisms to complex life forms.	Students will be able to: ● Distinguish between living and nonliving things.	10-15 weeks (about one marking period)

	MS-LS4-7 MS-LS4-8 MS-LS4-1 MS-LS4-2 MS-LS4-3 MS-LS4-4 MS-LS4-5 MS-LS4-6		• Compare cells, tissues, organs, and organ systems • Explain and illustrate how the circulatory, digestive, and respiratory systems are interdependent.	

This document outlines in detail the answers to the following four questions:

1. **What do we want our students to know?**
2. **How do we know if they learned it?**
3. **What do we do if they did not learn it?**
4. **What do we do when they did learn it?**

Unit 1 Water and the Atmosphere		
Content & Practice Standards (write in full)	**Interdisciplinary Standards**	**Critical Knowledge & Skills**
New Jersey Student Learning Standards for Science SCI. MS-ESS2 Earth's Systems: SCI.MS-ESS2-4 Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity. SCI.MS-ESS2-5 Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. SCI.MS-ESS2-6 Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates. New Jersey Student Learning Standards for Science SCI.MS-ESS3 Earth and Human Activity: SCI.MS-ESS3-2 Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. SCI.MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. SCI.MS-ESS3-5 Ask questions to clarify stability and change in global temperatures	Language Arts Literacy RST.6-8.1 Cite specific textual evidence to support analysis of science and technical texts. (MS-ESS2, MS-ESS3) RST.6-8.9 Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. (MS-ESS2, MS-ESS3) WHST.6-8.2 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. (MS-ESS2, MS-ESS3) WHST.6-8.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. (MS-ESS2, MS-ESS3) SL.8.5 Integrate multimedia and visual displays in presentations to clarify information, strengthen claims and evidence, and add interest. (MS-ESS2, MS-ESS3) Mathematics MP.2 Reason abstractly and quantitatively. (MS-ESS2, MS-ESS3) 6.NS.C.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. (MS-ESS2, MS-ESS3) 6.EE.B.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an	Chapters 1-5: Fresh Water, The Oceans, The Atmosphere, Weather, Climate & Climate Change Essential Vocabulary: weather, temperature, air pressure, wind, humidity, dew point, fog, clouds, water cycle, pressure systems, air masses, meteorologist, UV radiation, atmosphere, oceanic flow, latitude, longitude, global warming, condensation, precipitation, evaporation, runoff, greenhouse effect, Coriolis effect, currents, climate Create a model of the water cycle. Identify characteristics of fresh and salt water. Track hurricanes and analyze weather data. Identify beach dynamics. Explain currents and weather as a global system. Define weather and describe variables that occur such as temperature, air pressure, wind, and humidity. Illustrate and explain how weather is related to the water cycle. Compare and illustrate pressure systems and explain how air masses drive weather patterns. Define and illustrate fronts. Explain how and why severe weather occurs. Describe ways meteorologists measure and predict weather. Collect data using weather maps and predict future weather. Differentiate among the layers of the atmosphere. Define types of heat transfer and how convection currents affect ocean and air currents. Determine how air circulates and explain how patterns influence weather conditions. Create a model of prevailing winds incorporating oceanic flow. Justify how latitude and longitude correlate with weather patterns.

	unknown number, or, depending on the purpose at hand, any number in a specified set. (MS-ESS2, MS-ESS3) 7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. (MS-ESS2, MS-ESS3) Technology Standards 8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations B. Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology. C. Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. E: Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information. F: Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. 21st Century Themes/Careers: Through instruction in life and career skills, all students acquire the knowledge and skills needed to prepare for life as citizens and workers in the 21st century. For further clarification see NJ World Class Standards at www.NJ.gov/education/aps/cccs/career/	Collect data about climate change in a specific area and justify the reasoning for global warming citing specific evidence. Explain how the sun's energy affects the global systems of water and the atmosphere on Earth.

	CRP1. Act as a responsible and contributing citizen and employee. CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity.	

Unit 1 Water and the Atmosphere

Stage 1 – Desired Results

UNIT SUMMARY	CORE AND SUPPLEMENTAL MATERIALS/RESOURCES (OPEN RESOURCES)
The purpose of this unit is to study and understand the interactions of Earth's large-scale systems, the role of water in Earth's surface processes, and the flow of energy among these systems. Topics covered include the hydrologic cycle, currents, global winds, and air masses, and the impact of human activity and its effects on our planet. In this unit, students are expected to demonstrate proficiency in developing and using models and planning and carrying out investigations as they make sense of the disciplinary core ideas. Students will use these practices to demonstrate an understanding of these core ideas.	Water and the Atmosphere, Pearson Chapters: 1 – Fresh Water, 2 – The Oceans, 3 – The Atmosphere, 4 – Weather, 5 – Climate & Climate Change Internet Resource Links: http://www.pearsonsuccessnet.com http://www.discoveryeducation.com http://www.brainpop.com http://www.noaa.gov

ENDURING UNDERSTANDINGS

Students will understand that Earth's weather and climate systems are the result of complex interactions between land, ocean, ice, and atmosphere. Scientists use weather variables to describe weather and study weather systems. Climate is the long term average weather conditions that occur in an area.

Essential Questions-
How does fresh water cycle on Earth?
What are some characteristics of Earth's oceans?
How does the sun's energy affect Earth's atmosphere?
What variables help predict future outcome of weather?
What factors affect Earth's climate?

Students will know…	Students will be able to…

What content will be covered that students must master?	*What should students be able to accomplish to demonstrate understanding?*
Chapters 1-5: Fresh Water, The Oceans, The Atmosphere, Weather, Climate & Climate Change Essential Vocabulary: weather, temperature, air pressure, wind, humidity, dew point, fog, clouds, water cycle, pressure systems, air masses, meteorologist, UV radiation, atmosphere, oceanic flow, latitude, longitude, global warming, condensation, precipitation, evaporation, runoff, greenhouse effect, Coriolis effect, currents, climate	Create a model of the water cycle. Identify characteristics of fresh and salt water. Track hurricanes and analyze weather data. Identify beach dynamics. Explain currents and weather as a global system. Define weather and describe variables that occur such as temperature, air pressure, wind, and humidity. Illustrate and explain how weather is related to the water cycle. Compare and illustrate pressure systems and explain how air masses drive weather patterns. Define and illustrate fronts. Explain how and why severe weather occurs. Describe ways meteorologists measure and predict weather. Collect data using weather maps and predict future weather. Differentiate among the layers of the atmosphere. Define types of heat transfer and how convection currents affect ocean and air currents. Determine how air circulates and explain how patterns influence weather conditions. Create a model of prevailing winds incorporating oceanic flow. Justify how latitude and longitude correlate with weather patterns. Collect data about climate change in a specific area and justify the reasoning for global warming citing specific evidence. Explain how the sun's energy affects the global systems of water and the atmosphere on Earth.
Stage 2 – Assessment Evidence	
Performance Tasks: Suggested Formative Assessments: *What projects, hands-on lessons, use of manipulatives, active participation in new situations, etc. will reveal evidence of meaning-making and transfer (true understanding)?* Water Cycle Model, Density Investigations, Hurricane Tracking, Layers of the Atmosphere project, Cloud/Weather observation journal, Global Warming debate, Formation of cloud lab, Convection Currents lab, Ocean currents model and lab, Web Quests, Ocean Sea Floor Google Earth scavenger hunt, Terrarium project, Wetlands Flyer research project Lab 12: Cycling of water on Earth: Why Do theTemperature and the Surface Area to Volume Ratio of a Sample of Water Affect Its Rate of Evaporation? (from Argument-Driven Inquiry in Earth and Space Science for Grades 6-10, NSTApress)	Other Evidence **(Alternate Assessments)**: *What other means of assessment will be used throughout this unit?* Warm Up/Do Now Assessment rubrics Project-based learning Essay-writing Formal and informal presentations Class discussions Graphic and computer-based projects Check for understanding questions Critical Thinking Practice Class polls check for understanding Quizlet and other interactive online activities Quizzes Exit/Closure activities Homework

Lab 20: Predicting Hurricane Strength: How Can Someone Predict Changes in Hurricane Wind Speed Over Time? (from Argument-Driven Inquiry in Earth and Space Science for Grades 6-10, NSTApress) Claim/Evidence/Justification Posters and Presentations STEM and STEAM Projects *How will students demonstrate their understanding (meaning-making and transfer) through complex performance?* Suggested Summative Assessments: Common assessments such as chapter tests, benchmark tests, major projects and lab assignments, student presentations	Class participation

Stage 3 – Learning Plan

• Where is the work headed? Why is it headed there? What are the student's final performance obligations, the anchoring performance assessments? What are the criteria by which student work will be judged for understanding? (These are questions asked by students. Help the student see the answers to these questions upfront.)

• Hook the student through engaging and provocative entry points: thought-provoking and focusing experiences, issues, oddities, problems, and challenges that point toward essential questions, core ideas, and final performance tasks.

• Explore and Equip. 21st Century Learning and Interdisciplinary connections. Engage students in learning experiences that allow them to explore the big ideas and essential questions; that cause them to pursue leads or hunches, research and test ideas, try things out. Equip students for the final performances through guided instruction and coaching on needed skill and knowledge. Have them experience the ideas to make them real.

•Organize and sequence the learning for maximal engagement and effectiveness, given the desired results.

What pre-assessments will you use to check students' prior knowledge, skill levels, and potential misconceptions?
Are all three types of goals (acquisition, meaning, and transfer) addressed in the learning plan?
Does the learning plan reflect principles of learning and best practices?
Is there tight alignment with Stages 1 and 2?
Is the plan likely to be engaging and effective for all students?

PROGRESS MONITORING
How will you monitor students' progress toward acquisition, meaning-making, and transfer, during lesson events?
What are potential rough spots and student misunderstandings?
How will students get the feedback they need?
What supports are needed for students to be successful? Re-teach, small group instruction, etc.
Progress Monitoring:

Warm Up/Do Now
Assessment rubrics

Project-based learning
Essay-writing
Formal and informal presentations
Class discussions
Graphic and computer-based projects
Check for understanding questions
Critical Thinking Practice
Class polls check for understanding
Quizlet and other interactive online activities
Quizzes
Exit/Closure activities
Homework
Class participation

Feedback and Support:

Rubrics
Peer-peer conferencing
Teacher-student individual conferencing
Immediate verbal feedback
Modeling/Reteaching

Potential Misunderstanding:

New vocabulary
New and/or abstract concepts
Data and graph analysis
Common/popular misconceptions
Essential question distinctions

Samples of learning activities go here:

Small groups for classroom activities or projects
Hands-on and inquiry-based projects
Laboratory investigations and demonstrations
Argument-Driven Inquiry Claim/Evidence/Justification activities
Project-based learning and models
Computer-based research and projects
Content/discussion-driven videos, animations, and other media
Writing and vocabulary practice activities

Diagram and graphing activities
Critical thinking questions and activities

Planned Differentiation & Interventions for Tiers I, II, III, ELL, 504s, SPED, and Gift & Talented Students

• Rethink and revise. Dig deeper into ideas at issue (through the faces of understanding). Revise, rehearse, and refine, as needed. Guide students in self-assessment and self-adjustment, based on feedback from inquiry, results, and discussion.

• Evaluate understandings. Reveal what has been understood through final performances and products. Involve students in a final self-assessment to identify remaining questions, set future goals, and point toward new units and lessons.

•Tailor (personalize) the work to ensure maximum interest and achievement. Differentiate the approaches used and provide sufficient options and variety (without compromising goals) to make it most likely that all students will be engaged and effective.

Suggested Gifted & Talented/Differentiation for Advanced Science:
Scientific Method Obscertainer lab (black box lab)
Argument-Driven Inquiry - Lab 12 - Cycling of Water on Earth: Why Do the Temperature and the Surface Area to Volume Ratio of a Sample of Water Affect Its Rate of Evaporation?
Argument-Driven Inquiry - Lab 20. Predicting Hurricane Strength: How Can Someone Predict Changes in Hurricane Wind Speed over time?
Independent Study research choice-project (individual, pairs, or small groups of students)
Independent Study research presentation (individual, pairs, or small groups of students)
Advanced Wetlands Flyer Project
Advanced Terrarium Project
Advanced Hurricane Project including graph generation and data analysis
Advanced Ocean Landform project
Advanced Layers of the Atmosphere project (computer-based or multimedia)

Note: Advanced projects are considered more independent, more in depth in content, more student-driven, and requiring greater demonstration of mastery and synthesis of concepts and critical thinking than similar activities performed in general science.

Tier I:

- Choice Boards
- Guided Reading
- Independent Research & Projects
- Project-Based Learning
- Graphic Organizers

Tier II:

- Leveled Rubrics
- Tiered Products
- Varied Product Choices
- Stations/Centers
- Work Alone/Together

Tier III:

- Goal-Setting with Students
- Homework Options
- Personal Agendas

ELL: English Language Learners

●Flexible Grouping
●Small Group Instruction
●Peer Buddies
●Graphic Organizers
●Technology Integration
●Provide clear and specific directions
●Allow for alternate forms of responses- drawing or speaking instead of writing to demonstrate knowledge when you are not specifically assessing writing
●Provide class notes ahead of time to allow students to preview material and increase comprehension

504s

● Multisensory Instruction / Multiple modalities
● Flexible Grouping
● Small Group Instruction
● Peer Buddies
● Graphic Organizers
● Chunking Information
● Scaffolded Questioning
● Manipulatives
● Provide clear and specific directions, orally and in writing
● Allow for differentiated assessment as long as it meets requirements / demonstrates proficiency of NJSLS
● Provide class notes ahead of time to allow students to preview material and increase comprehension
● Provide extended time
● Assign peer tutor
● Utilize visual charts/cues

SPED:

● Multisensory Instruction / Multiple modalities
● Flexible Grouping
● Small Group Instruction
● Peer Buddies
● Graphic Organizers
● Chunking Information
● Scaffolded Questioning
● Manipulatives
● Provide clear and specific directions, orally and in writing
● Allow for differentiated assessment as long as it meets requirements / demonstrates proficiency of NJSLS

- Provide class notes ahead of time to allow students to preview material and increase comprehension
- Provide extended time
- Assign peer tutor
- Utilize visual charts/cues

Unit 2 Ecology and the Environment		
Content & Practice Standards	**Interdisciplinary Standards**	**Critical Knowledge & Skills**
New Jersey Student Learning Standards for Science SCI.MS-LS2 Ecosystems: Interactions, Energy, and Dynamics: SCI.MS-LS2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. SCI.MS-LS2-2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. SCI.MS-LS2-3 Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. SCI.MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. SCI.MS-LS2-5 Evaluate competing design solutions for maintaining biodiversity and ecosystem services.	Language Arts Literacy RST.6-8.1 Cite specific textual evidence to support analysis of science and technical texts. (MS-LS2) RST.6-8.7 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). (MS-LS2) RST.6-8.8 Distinguish among facts, reasoned judgment based on research findings, and speculation in a text. (MS-LS2) RI.8.8 Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims. (MS-LS2) WHST.6-8.2 Write arguments to support claims with clear reasons and relevant evidence. (MS-LS2) WHST.6-8.1 Write arguments focused on discipline content. (MS-LS2) WHST.6-8.2 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. (MS-LS2) WHST.6-8.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. (MS-LS2) WHST.6-8.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. (MS-LS2) WHST.6-8.9 Draw evidence from literary or informational texts to support analysis, reflection, and research. (MS-LS2)	Chapters 1 and 2: Populations and Communities, Ecosystems and Biomes Essential Vocabulary: Abiotic, Biotic, Population, Community, Producer, Consumer, Decomposer, Herbivore, Omnivore, Carnivore, Food chain, Food web, Energy pyramid, Limiting factors, Symbiosis, Mutualism, Parasitism, Commensalism, Competition Create a model to show how food releases energy. Differentiate between ecosystem, community and population. Differentiate between consumer, producer and decomposer. Identify the needs of living things and determine the method of obtaining these needs. Model energy flow through a food chain. Create a model of a food web and explain how energy moves through an ecosystem. Model an energy pyramid and explain how energy is transferred. Model and analyze a disruption in food web and explain its potential influence. Explain how matter cycles influence energy flow in an ecosystem. Identify ways an ecosystem can change. Identify limiting factors in an ecosystem. Explain how limiting factors relate to carrying capacity. Compare and contrast a habitat and a niche. Explain what factors influence population size and density. Compare and contrast types of symbiosis. Identify ways that organisms compete for their needs.

	SL.8.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly. (MS-LS2) SL.8.5 Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. (MS-LS2) Mathematics MP.2 Reason abstractly and quantitatively. (MS-LS2) MP.4 Model with mathematics. (MS-LS2) 6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems. (MS-LS2) 6.SP.B.5 Summarize numerical data sets in relation to their context. (MS-LS2) Technology Standards 8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations B. Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology. C. Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. E: Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information. F: Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and	

	make informed decisions using appropriate digital tools and resources. 21st Century Themes/Careers: Through instruction in life and career skills, all students acquire the knowledge and skills needed to prepare for life as citizens and workers in the 21st century. For further clarification see NJ World Class Standards at www.NJ.gov/education/aps/cccs/career/ CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence.	

Unit 2 Ecology and the Environment

Stage 1 – Desired Results

UNIT SUMMARY	**CORE AND SUPPLEMENTAL MATERIALS/RESOURCES (OPEN RESOURCES)**
The purpose of this unit is to analyze, understand and interpret data and models, and also demonstrate a deeper understanding of the cycling of matter and energy in ecosystems. Students will be able to study interactions among organisms within an ecosystem. They will also need to consider how abiotic and biotic factors affect population growth within an ecosystem. They also understand that the limits of resources influence the growth of organisms and populations, which may result in competition for those limited resources. Students analyze and interpret data and design solutions to build on their understanding of the ways that human activities affect Earth's systems.	Ecology and the Environment, Pearson Chapter 1 – Populations and Communities Chapter 2 – Ecosystems and Biomes Internet Resource Links: http://www.pearsonsuccessnet.com http://www.discoveryeducation.com http://www.brainpop.com http://www.noaa.gov

ENDURING UNDERSTANDINGS

Students will understand that…

- Living things depend on both abiotic and biotic resources to ensure survival. Living organisms interact and compete in various habitats.
- Living organisms interact with each other in a variety of ways that can be either beneficial or harmful.
- Changes in an ecosystem will impact a population's size and growth.

Essential Questions:

- How do living things affect one another?
- How do energy and matter move through ecosystems?
- What can people do to use resources wisely?
- What is an ecosystem?
- What are biotic and abiotic factors?
- How do various organisms obtain the energy the need to sustain life?
- How is energy flow modeled in an ecosystem?
- How does an energy pyramid show energy transfer in an ecosystem?
- How is matter transferred in an ecosystem?
- How do individuals and groups of organisms interact?
- What is symbiosis?
- How does biodiversity influence the size of a population and/or a community?
- How does competition exist in an ecosystem?

Students will know…	**Students will be able to…**
What content will be covered that students must master? ● Knowledge and Skills: Populations and Communities, Ecosystems and Biomes, Land, Air and Water Resources ● Vocabulary: Abiotic, Biotic, Population, Community, Producer, Consumer, Decomposer, Herbivore, Omnivore, Carnivore, Food chain, Food web, Energy pyramid, Limiting factors, Symbiosis, Mutualism, Parasitism, Commensalism, Competition	*What should students be able to accomplish to demonstrate understanding?* ● Create a model to show how food releases energy. ● Differentiate between ecosystem, community and population. ● Differentiate between consumer, producer and decomposer. ● Identify the needs of living things and determine the method of obtaining these needs. ● Model energy flow through a food chain. ● Create a model of a food web and explain how energy moves through an ecosystem ● Model an energy pyramid and explain how energy is transferred. ● Model and analyze a disruption in food web and explain its potential influence ● Explain how matter cycles influence energy flow in an ecosystem. ● Identify ways an ecosystem can change. ● Identify limiting factors in an ecosystem. ● Explain how limiting factors relate to carrying capacity. ● Compare and contrast a habitat and a niche. ● Explain what factors influence population size and density. ● Compare and contrast types of symbiosis. ● Identify ways that organisms compete for their needs.

Stage 2 – Assessment Evidence

Performance Tasks: *What projects, hands-on lessons, use of manipulatives, active participation in new situations, etc. will reveal evidence of meaning-making and transfer (true understanding)?* Suggested Formative Assessments: Energy Pyramid/Food Web computer project, Energy pyramid foldable, Hallway Food Web, Food Chain Project using Inspiration, Water Filtration Project, Food Chain/Food Web Learning Centers, Public Service Announcement, QR coding/smart trail, Somers Point Eco-Tour field trips, Class debate of ecology phenomena, Predator/Prey competition lab (owl lab) Argument-Driven Inquiry Lab 10 Predator-Prey Relationships: How is the size of a predator population related to the size of a prey population? (from Argument-Driven Inquiry in Life Science for Grades 6-8, NSTApress) Argument-Driven Inquiry Lab 11 Food Webs and Ecosystems: Which member of an ecosystem would affect the food web the most if removed? (from Argument-Driven Inquiry in Life Science for Grades 6-8, NSTApress) Claim/Evidence/Justification Posters and Presentations STEM and STEAM Projects *How will students demonstrate their understanding (meaning-making and transfer) through complex performance?* Suggested Summative Assessments: Common assessments such as chapter tests, benchmark tests, major projects and lab assignments, student presentations	Other Evidence **(Alternate Assessments)**: *What other means of assessment will be used throughout this unit?* Warm Up/Do Now Assessment rubrics Project-based learning Essay-writing Formal and informal presentations Class discussions Graphic and computer-based projects Check for understanding questions Critical Thinking Practice Class polls check for understanding Quizlet and other interactive online activities Quizzes Exit/Closure activities Homework Class participation

Stage 3 – Learning Plan

• Where is the work headed? Why is it headed there? What are the student's final performance obligations, the anchoring performance assessments? What are the criteria by which student work will be judged for understanding? (These are questions asked by students. Help the student see the answers to these questions upfront.)

• Hook the student through engaging and provocative entry points: thought-provoking and focusing experiences, issues, oddities, problems, and challenges that point toward essential questions, core ideas, and final performance tasks.

• Explore and Equip. 21st Century Learning and Interdisciplinary connections. Engage students in learning experiences that allow them to explore the big ideas and essential questions; that cause them to pursue leads or hunches, research and test ideas, try things out. Equip students for the final performances through guided instruction and coaching on needed skill and knowledge. Have them experience the ideas to make them real.

•Organize and sequence the learning for maximal engagement and effectiveness, given the desired results.

What pre-assessments will you use to check students' prior knowledge, skill levels, and potential misconceptions?
Are all three types of goals (acquisition, meaning, and transfer) addressed in the learning plan?
Does the learning plan reflect principles of learning and best practices?
Is there tight alignment with Stages 1 and 2?
Is the plan likely to be engaging and effective for all students?

PROGRESS MONITORING
How will you monitor students' progress toward acquisition, meaning-making, and transfer, during lesson events?
What are potential rough spots and student misunderstandings?
How will students get the feedback they need?
What supports are needed for students to be successful? Re-teach, small group instruction, etc.

Progress Monitoring:

Warm Up/Do Now
Assessment rubrics
Project-based learning
Essay-writing
Formal and informal presentations
Class discussions
Graphic and computer-based projects
Check for understanding questions
Critical Thinking Practice
Class polls check for understanding
Quizlet and other interactive online activities
Quizzes
Exit/Closure activities
Homework
Class participation

Feedback and Support:

Rubrics
Peer-peer conferencing
Teacher-student individual conferencing
Immediate verbal feedback
Modeling/Reteaching

Potential Misunderstanding:

New vocabulary
New and/or abstract concepts
Data and graph analysis
Common/popular misconceptions
Essential question distinctions

Samples of learning activities go here:

Small groups for classroom activities or projects
Hands-on and inquiry-based projects
Laboratory investigations and demonstrations
Argument-Driven Inquiry Claim/Evidence/Justification activities
Project-based learning and models
Computer-based research and projects
Content/discussion-driven videos, animations, and other media
Writing and vocabulary practice activities
Diagram and graphing activities
Critical thinking questions and activities

Planned Differentiation & Interventions for Tiers I, II, III, ELL, 504s, SPED, and Gift & Talented Students

• Rethink and revise. Dig deeper into ideas at issue (through the faces of understanding). Revise, rehearse, and refine, as needed. Guide students in self-assessment and self-adjustment, based on feedback from inquiry, results, and discussion.

• Evaluate understandings. Reveal what has been understood through final performances and products. Involve students in a final self-assessment to identify remaining questions, set future goals, and point toward new units and lessons.

•Tailor (personalize) the work to ensure maximum interest and achievement. Differentiate the approaches used and provide sufficient options and variety (without compromising goals) to make it most likely that all students will be engaged and effective.

Suggested Gifted & Talented/Differentiation for Advanced Science:
Argument-Driven Inquiry Lab 10 Predator-Prey Relationships: How is the size of a predator population related to the size of a prey population?
Argument-Driven Inquiry Lab 11 Food Webs and Ecosystems: Which member of an ecosystem would affect the food web the most if removed?
Independent Study research choice-project (individual, pairs, or small groups of students)
Independent Study research presentation (individual, pairs, or small groups of students)
Hallway Food web research and visual project
Advanced Predator/Prey competition lab (owl lab)

Note: Advanced projects are considered more independent, more in depth in content, more student-driven, and requiring greater demonstration of mastery and synthesis of concepts and critical thinking than similar activities performed in general science.

Tier I:
- Choice Boards
- Guided Reading
- Independent Research & Projects
- Project-Based Learning
- Graphic Organizers

Tier II:
- Leveled Rubrics
- Tiered Products
- Varied Product Choices
- Stations/Centers
- Work Alone/Together

Tier III:
- Goal-Setting with Students
- Homework Options
- Personal Agendas

ELL: English Language Learners
●Flexible Grouping
●Small Group Instruction
●Peer Buddies
●Graphic Organizers
●Technology Integration
●Provide clear and specific directions
●Allow for alternate forms of responses- drawing or speaking instead of writing to demonstrate knowledge when you are not specifically assessing writing
●Provide class notes ahead of time to allow students to preview material and increase comprehension

504s
● Multisensory Instruction / Multiple modalities
● Flexible Grouping
● Small Group Instruction
● Peer Buddies
● Graphic Organizers
● Chunking Information
● Scaffolded Questioning
● Manipulatives
● Provide clear and specific directions, orally and in writing
● Allow for differentiated assessment as long as it meets requirements / demonstrates proficiency of NJSLS
● Provide class notes ahead of time to allow students to preview material and increase comprehension
● Provide extended time
● Assign peer tutor
● Utilize visual charts/cues

SPED:
- Multisensory Instruction / Multiple modalities
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Chunking Information
- Scaffolded Questioning
- Manipulatives
- Provide clear and specific directions, orally and in writing
- Allow for differentiated assessment as long as it meets requirements / demonstrates proficiency of NJSLS
- Provide class notes ahead of time to allow students to preview material and increase comprehension
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Unit 3 Diversity of Living Things		
Content & Practice Standards	**Interdisciplinary Standards**	**Critical Knowledge & Skills**
New Jersey Student Learning Standards for Science SCI.MS-LS1 From Molecules to Organisms: Structures and Processes: SCI.MS-LS1-3 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. SCI.MS-LS1-4 Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively. SCI.MS-LS1-5 Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. SCI.MS-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. SCI.MS-LS1-7 Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism. SCI.MS-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. New Jersey Student Learning Standards for Science SCI.MS-LS4 Biological Evolution: Unity and Diversity: SCI.MS-LS4-1 Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.	Language Arts Literacy RST.6-8.1 Cite specific textual evidence to support analysis of science and technical texts. (MS-LS1), (MS-LS4) 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. (MS-LS1), (MS-LS4) WHST.6-8.1 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. (MS-LS1), (MS-LS4) WHST.6-8.9 Draw evidence from informational texts to support analysis, reflection, and research. (MS-LS1), (MS-LS4) SL.8.5 Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. (MS-LS1), (MS-LS4) Mathematics 6.EE.C.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. (MS-LS1), (MS-LS4) Technology Standards 8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations	Diversity of Living Things Chapters: Chapter 1- Introduction To Living Things Chapter 2-Viruses, Bacteria, Protists, and Fungi Chapter 3- Plants Chapter 4- Introduction to Animals Chapter 7- Animal Reproduction and Behavior Essential Vocabulary: organism, taxonomy, binomial nomenclature, classification, homeostasis, photosynthesis, respiration, evolution, natural selection, asexual and sexual reproduction, fertilization, zygote, embryo, species, virus, protist, fungi, plants, invertebrate animal, vertebrate animal, asymmetry, radial symmetry, bilateral symmetry, exoskeleton, endoskeleton, organ, organ systems, circulatory system, digestive system, respiratory system, dissection Distinguish between living and nonliving things. Identify what living things need to survive. Identify and explain characteristics organisms must have in order to sustain life. Infer how early scientists classified living things. Identify the domains and kingdoms of life and indicate the shared characteristics of each. Explain the system of binomial nomenclature. Differentiate between prokaryotic and eukaryotic cells. Explain how populations change through natural selection. Compare cells, tissues, organs, and organ systems. Explain and illustrate how the circulatory, digestive, and respiratory systems are interdependent. Compare and contrast the benefits of asexual reproduction verse sexual reproduction. Use a taxonomic key. Classify invertebrate and vertebrate animals.

SCI.MS-LS4-2 Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships. SCI.MS-LS4-3 Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy. SCI.MS-LS4-4 Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. SCI.MS-LS4-5 Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms. SCI.MS-LS4-6 Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.	B. Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology. C. Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. D. Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. E: Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information. F: Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. 21st Century Themes/Careers: Through instruction in life and career skills, all students acquire the knowledge and skills needed to prepare for life as citizens and workers in the 21st century. For further clarification see NJ World Class Standards at www.NJ.gov/education/aps/cccs/career/ CRP1. Act as a responsible and contributing citizen and employee. CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity.	

	CRP12. Work productively in teams while using cultural global competence.	

Unit 3 Diversity of Living Things

Stage 1 – Desired Results

UNIT SUMMARY	CORE AND SUPPLEMENTAL MATERIALS/RESOURCES (OPEN RESOURCES)
The purpose of this unit is to develop an understanding of the characteristics and classification of life from single-celled organisms to complex life forms. Living things have common requirements to carry out their life functions. Students will distinguish which characteristics are required for life and how life continues through reproduction. Classification is a method of organizing information into a meaningful structure or system. Students will be introduced to taxonomy and classification (from domain to species) with a detailed focus on the kingdoms of life and the definition of species. Studies will include an overview of non living viruses, and the kingdoms of life describing bacteria, protists, fungi, plants, and animals. These studies will also include an exploration of natural selection and evolution. Inherited mutations can lead to variations, which can become adaptations through natural selection over many generations. Similarities and differences can be found among all living things.	The Diversity Of Life, Pearson Chapter 1- Introduction To Living Things Chapter 2-Viruses, Bacteria, Protists, and Fungi Chapter 3- Plants Chapter 4- Introduction to Animals Chapter 7- Animal Reproduction and Behavior Internet Resource Links: http://www.pearsonsuccessnet.com http://www.discoveryeducation.com http://www.brainpop.com http://www.statedclearly.com

ENDURING UNDERSTANDINGS

Students will understand that…

- The ability to carry out life functions determines if something is living or nonliving.
- Living things have requirements to carry out their life functions.
- Classification is a method of organizing information into a meaningful structure or system.
- In science, things are classified based upon the similarities of their shared characteristics.
- Organisms are composed of systems that have specialized organs, tissues and cells that are used to carry out life processes.
- Inherited mutations can lead to variations, which can become adaptations through natural selection over many generations.
- There are many different types of plants, but they all have structures and functions that help ensure survival.
- There are many different types of animals, but they all have structures and functions that help ensure survival.
- Photosynthesis and respiration both play a role in helping cycle matter and energy throughout an organism.

Essential Questions:

- What are the characteristics of life?
- Where do living things come from and what do they need to survive?
- What is taxonomy and how are organisms classified?
- How are organisms classified into domains and kingdoms?
- How does an animal's behavior help it survive and reproduce?
- How does the classification system help scientists differentiate the evolutionary process of different organisms?

- What role does reproduction play in the survival of different organisms?
- Why is it important for individual organs to work together as organ systems in plants and animals?

Students will know…	**Students will be able to…**
What content will be covered that students must master? Diversity of Living Things Chapters: Chapter 1- Introduction To Living Things Chapter 2-Viruses, Bacteria, Protists, and Fungi Chapter 3- Plants Chapter 4- Introduction to Animals Chapter 7- Animal Reproduction and Behavior Essential Vocabulary: organism, taxonomy, binomial nomenclature, classification, homeostasis, photosynthesis, respiration, evolution, natural selection, asexual and sexual reproduction, fertilization, zygote, embryo, species, virus, protist, fungi, plants, invertebrate animal, vertebrate animal, asymmetry, radial symmetry, bilateral symmetry, exoskeleton, endoskeleton, organ, organ systems, circulatory system, digestive system, respiratory system, dissection	*What should students be able to accomplish to demonstrate understanding?* Distinguish between living and nonliving things. Identify what living things need to survive. Identify and explain characteristics organisms must have in order to sustain life. Infer how early scientists classified living things. Identify the domains and kingdoms of life and indicate the shared characteristics of each. Explain the system of binomial nomenclature. Differentiate between prokaryotic and eukaryotic cells. Explain how populations change through natural selection. Compare cells, tissues, organs, and organ systems. Explain and illustrate how the circulatory, digestive, and respiratory systems are interdependent. Compare and contrast the benefits of asexual reproduction verse sexual reproduction. Use a taxonomic key. Classify invertebrate and vertebrate animals.

Stage 2 – Assessment Evidence

Performance Tasks: Suggested Formative Assessments: *What projects, hands-on lessons, use of manipulatives, active participation in new situations, etc. will reveal evidence of meaning-making and transfer (true understanding)?* Taxonomy Tree Computer project, Infectious Diseases project, Online dissections, Invertebrate and Vertebrate practical dissections or alternative, Male/Female Flower reproductive dissection, Animal Appendage STEM activity, Hydroponics project, Botany project, Constructing DNA models with K*Nex, Taxonomy research project, Identification using Taxonomic Keys, Clearly stated evolution and natural selection activity, Cladogram Analysis, QR coding/Smart Trail, Vertebrate Research project Argument-Driven Inquiry Lab 17 - Mechanisms of Evolution: Why does a specific version of a trait become more common in a population over time? Argument-Driven Inquiry Lab 18 - Environmental Changes and Evolution: Which mechanism of microevolution caused the beak of the Medium Ground Finch population on Daphine Major to increase in size from 1976 to 1978?	Other Evidence **(Alternate Assessments)**: *What other means of assessment will be used throughout this unit?* Warm Up/Do Now Assessment rubrics Project-based learning Essay-writing Formal and informal presentations Class discussions Graphic and computer-based projects Check for understanding questions Critical Thinking Practice Class polls check for understanding Quizlet and other interactive online activities Quizzes Exit/Closure activities Homework Class participation

Argument-Driven Inquiry Lab 19 - Phylogenetic Trees and the classification of Fossils: How should Biologists Classify the Seymouria? Argument-Driven Inquiry Lab 20 - Descent With Modification and Embryonic Development: Does Animal Embryonic Development Support or Refute the Theory of Descent With Modification? (Labs 17-20 from Argument-Driven Inquiry in Life Science for Grades 6-8, NSTApress) *How will students demonstrate their understanding (meaning-making and transfer) through complex performance?* Suggested Summative Assessments: Common assessments such as chapter tests, benchmark tests, major projects and lab assignments, student presentations	

Stage 3 – Learning Plan

• Where is the work headed? Why is it headed there? What are the student's final performance obligations, the anchoring performance assessments? What are the criteria by which student work will be judged for understanding? (These are questions asked by students. Help the student see the answers to these questions upfront.)

• Hook the student through engaging and provocative entry points: thought-provoking and focusing experiences, issues, oddities, problems, and challenges that point toward essential questions, core ideas, and final performance tasks.

• Explore and Equip. 21st Century Learning and Interdisciplinary connections. Engage students in learning experiences that allow them to explore the big ideas and essential questions; that cause them to pursue leads or hunches, research and test ideas, try things out. Equip students for the final performances through guided instruction and coaching on needed skill and knowledge. Have them experience the ideas to make them real.

•Organize and sequence the learning for maximal engagement and effectiveness, given the desired results.

What pre-assessments will you use to check student' prior knowledge, skill levels, and potential misconceptions?
Are all three types of goals (acquisition, meaning, and transfer) addressed in the learning plan?
Does the learning plan reflect principles of learning and best practices?
Is there tight alignment with Stages 1 and 2?
Is the plan likely to be engaging and effective for all students?

PROGRESS MONITORING
How will you monitor students' progress toward acquisition, meaning-making, and transfer, during lesson events?
What are potential rough spots and student misunderstandings?
How will students get the feedback they need?
What supports are needed for students to be successful? Re-teach, small group instruction, etc.

Progress Monitoring:

Warm Up/Do Now
Assessment rubrics
Project-based learning
Essay-writing
Formal and informal presentations
Class discussions
Graphic and computer-based projects
Check for understanding questions
Critical Thinking Practice
Class polls check for understanding
Quizlet and other interactive online activities
Quizzes
Exit/Closure activities
Homework
Class participation

Feedback and Support:

Rubrics
Peer-peer conferencing
Teacher-student individual conferencing
Immediate verbal feedback
Modeling/Reteaching

Potential Misunderstanding:

New vocabulary
New and/or abstract concepts
Data and graph analysis
Common/popular misconceptions
Essential question distinctions

Samples of learning activities go here:

Small groups for classroom activities or projects
Hands-on and inquiry-based projects
Laboratory investigations and demonstrations
Argument-Driven Inquiry Claim/Evidence/Justification activities

Project-based learning and models
Computer-based research and projects
Content/discussion-driven videos, animations, and other media
Writing and vocabulary practice activities
Diagram and graphing activities
Critical thinking questions and activities

Planned Differentiation & Interventions for Tiers I, II, III, ELL, 504s, SPED, and Gift & Talented Students

• Rethink and revise. Dig deeper into ideas at issue (through the faces of understanding). Revise, rehearse, and refine, as needed. Guide students in self-assessment and self-adjustment, based on feedback from inquiry, results, and discussion.

• Evaluate understandings. Reveal what has been understood through final performances and products. Involve students in a final self-assessment to identify remaining questions, set future goals, and point toward new units and lessons.

•Tailor (personalize) the work to ensure maximum interest and achievement. Differentiate the approaches used and provide sufficient options and variety (without compromising goals) to make it most likely that all students will be engaged and effective.

Suggested Gifted & Talented/Differentiation for Advanced Science:
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Argument-Driven Inquiry Lab 19 - Phylogenetic Trees and the classification of Fossils: How should Biologists Classify the Seymouria?
Argument-Driven Inquiry Lab 20 - Descent With Modification and Embryonic Development: Does Animal Embryonic Development Support or Refute the Theory of Descent With Modification?
Independent Study research choice-project (individual, pairs, or small groups of students)
Independent Study research presentation (individual, pairs, or small groups of students)
Advanced Cladogram Analysis and Design
Additional dissections such as dogfish dissection
Advanced Vertebrate Research project and competition

Note: Advanced projects are considered more independent, more in depth in content, more student-driven, and requiring greater demonstration of mastery and synthesis of concepts and critical thinking than similar activities performed in general science.

Tier I:
- Choice Boards
- Guided Reading
- Independent Research & Projects
- Project-Based Learning
- Graphic Organizers

Tier II:
- Leveled Rubrics
- Tiered Products

- Varied Product Choices
- Stations/Centers
- Work Alone/Together

Tier III:

- Goal-Setting with Students
- Homework Options
- Personal Agendas

ELL: English Language Learners

●Flexible Grouping
●Small Group Instruction
●Peer Buddies
●Graphic Organizers
●Technology Integration
●Provide clear and specific directions
●Allow for alternate forms of responses- drawing or speaking instead of writing to demonstrate knowledge when you are not specifically assessing writing
●Provide class notes ahead of time to allow students to preview material and increase comprehension

504s

● Multisensory Instruction / Multiple modalities
● Flexible Grouping
● Small Group Instruction
● Peer Buddies
● Graphic Organizers
● Chunking Information
● Scaffolded Questioning
● Manipulatives
● Provide clear and specific directions, orally and in writing
● Allow for differentiated assessment as long as it meets requirements / demonstrates proficiency of NJSLS
● Provide class notes ahead of time to allow students to preview material and increase comprehension
● Provide extended time
● Assign peer tutor
● Utilize visual charts/cues

SPED:

● Multisensory Instruction / Multiple modalities
● Flexible Grouping
● Small Group Instruction
● Peer Buddies
● Graphic Organizers
● Chunking Information
● Scaffolded Questioning
● Manipulatives
● Provide clear and specific directions, orally and in writing
● Allow for differentiated assessment as long as it meets requirements / demonstrates proficiency of NJSLS

- Provide class notes ahead of time to allow students to preview material and increase comprehension
- Provide extended time
- Assign peer tutor
- Utilize visual charts/cues