COURSE TITLE

Science 7

LENGTH

Full Year

DEPARTMENT

STEM Department

SCHOOL

Union Middle School

DATE

September 10, 2018

Initial BOE Approval Date (Born on): 6/15/2015

Science 7

I. Introduction/Overview/Philosophy

Students in middle school develop understanding of key concepts to help them make sense of the life sciences. These ideas build upon students' science understanding from earlier grades and from the disciplinary core ideas, science and engineering practices, and crosscutting concepts of other experiences with physical and earth sciences. There are five life science topics in middle school: 1) Structure, Function, and Information Processing, 2) Growth, Development, and Reproduction of Organisms, 3) Matter and Energy in Organisms and Ecosystems, 4) Interdependent Relationships in Ecosystems, and 5) Natural Selection and Adaptations. The performance expectations in middle school blend core ideas with scientific and engineering practices and crosscutting concepts to support students in developing useable knowledge across the science disciplines.

II. Objectives

Course Outline:

1. Engineering Design
    a. Data is organized into tables showing repeated trials and means
    b. Variables are defined;
    c. Metric units (International System of Units) are used
    d. Models are constructed to illustrate and explain phenomena
    e. Sources of experimental error are identified
    f. Dependent variables, independent variables, and constants are identified
    g. Variables are controlled to test hypotheses, and trials are repeated
    h. Continuous line graphs are constructed, interpreted, and used to make prediction
    i. Interpretations from a set of data are evaluated and defended
    j. An understanding of the nature of science is developed and reinforced.
2. Ecosystems Interactions and Energy
    a. Needs and functions of living things
    b. Flow of energy and matter throughout the system;
    c. Energy flow in food webs and energy pyramids.
    d. The relationships among producers, consumers, and decomposers in food webs
    e. The relationship between predators and prey
    f. Symbiotic relationships
3. From Molecules to Organisms: Structures and Processes
    a. Cell structure
    b. Cell function
    c. Levels of cellular organization
    d. Chemical reactions and cell processes
    e. Microscopy
4. Heredity, Variation and Traits-
    a. The structure and role of DNA
    b. The function of genes and chromosomes
    c. Genotypes and phenotypes
    d. Characteristics that can and cannot be inherited

e. Genetic engineering and its applications
f. Historical contributions and significance of discoveries related to genetics.
g. Compare and contrast
h. Asexual and sexual reproduction
i. Introduction of mitosis and meiosis

5. Biological Evolution: Unity and Diversity
    a. The evolution of living organisms through inherited characteristics and natural selection.
    b. Survival of organisms and their successive generations as related to their inherited characteristics and adaptation and use of the fossil records.
    c. Anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.
    d. Patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy
    e. Comparison of general and specific characteristics of members within kingdoms
    f. Utilization of dichotomous keys to identify key features of organisms within kingdoms
6. Plants and Plant diversity
    a. The structure and function of seeded and seedless plants
    b. The structure and function of flowers in the reproduction of angiosperms
7. Human Body Systems
    a. Functioning of peripheral and central nervous system
    b. Structure and function of brain
    c. Comparative anatomy
    d. General anatomical terminology

Student Outcomes:

After successfully completing this course, the student will:

- Conduct an investigation to provide evidence that living things are made of cells, either one cell or many different numbers and types of cells.
- Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.
- Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.
- Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.
- 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.
- 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.
- Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
- Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
- Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
- Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
- Evaluate competing design solutions for maintaining biodiversity and ecosystem services.
- 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.
- Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.
- Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.
- Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.
- Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.
- 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.
- 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.
- 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.
- 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.
- Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

New Jersey Student Learning Standards

CAREER READY PRACTICES

CRP1 Act as a responsible and contributing citizen and employee.

Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.

CRP2 Apply appropriate academic and technical skills.

Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation

CRP4 Communicate clearly and effectively and with reason.

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

CRP6. Demonstrate creativity and innovation.
Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.

CRP7. Employ valid and reliable research strategies.
Career-ready individuals are discerning in accepting and using new information to make decisions, change practices or inform strategies. They use reliable research process to search for new information. They evaluate the validity of sources when considering the use and adoption of external information or practices in their workplace situation.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.

CRP11. Use technology to enhance productivity.
Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.

CRP12. Work productively in teams while using cultural global competence.
Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.

TECHNOLOGY

Standard 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.
Strand A: Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.
8.1.8.A.3- Use and/or develop a simulation that provides an environment to solve a real world problem or theory.
Strand E: Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.
8.1.8.E.1- Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem.
Standard 8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:

All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Strand A. The Nature of Technology: Creativity and Innovation Technology systems impact every aspect of the world in which we live.

8.2.8.A.2- Examine a system, consider how each part relates to other parts, and discuss a part to redesign to improve the system.

8.2.8.A.3- Investigate a malfunction in any part of a system and identify its impacts.

Strand C. Design: The design process is a systematic approach to solving problems.

8.2.8.C.1- Explain how different teams/groups can contribute to the overall design of a product.

8.2.8.C.4- Identify the steps in the design process that would be used to solve a designated problem.

Strand D. Abilities for a Technological World: The designed world is the product of a design process that provides the means to convert resources into products and systems.

8.2.8.D.3- Build a prototype that meets a STEM-based design challenge using science, engineering, and math principles that validate a solution.

21ST CENTURY LIFE AND CAREERS

9.2 Career Awareness, Exploration, and Preparation

Strand B: Career Exploration

9.2.8.B.3 Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career.

COMPANION STANDARDS FOR SCIENCE AND TECHNICAL SUBJECTS

RST.6-8.1. Cite specific textual evidence to support analysis of science and technical texts.

RST.6-8.3. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

RST.6-8.4. 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*.

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.

RST.6-8.10. By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

WHST.6-8.6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

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.

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.

WHST.6-8.10. Write routinely over extended time frames (time for research, reflection, metacognition/self-correction, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

NEW JERSEY STUDENT LEARNING STANDARDS- SCIENCE

MS-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.
MS-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.
MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.
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.
MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.
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.
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.
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.
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.
MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems
MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations
MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.
MS-LS3-1. Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.
MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.
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.
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.
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.
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.
MS-LS4-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.
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.
MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

III. Proficiency Levels

Science 7 is a full year course appropriate for all grade 7 students.

IV. Methods of Assessment

Student Assessment
Assessment at this level falls into two categories: formative and summative. Formative assessments include teacher observations, work in student journals, lab reports, and performance-assessment tasks. Summative assessments demonstrate the extent and depth of learning. End of the module assessments and portfolios of accumulated work could serve as tools for this type of evaluation.

Curriculum/Teacher Assessment
The teacher will provide the subject area supervisor with suggestions for changes on an ongoing basis.

V. Grouping

This is a required course for all students in grade 8.

VI. Articulation/Scope & Sequence/Time Frame

Course length is one year.

VII. Resources

Texts/Supplemental Reading/References
Resources include but are not limited to:

A. Textbook
   Prentice Hall Life Science, Pearson-Prentice Hall, 2007.
B. Resources
   a. Various Videos
   b. Internet Websites

VIII. Suggested Activities

Appropriate activities are listed in the curriculum map.

IX. Methodologies

The following methods of instruction are suggested: lecture, group projects, demonstration, hands-on applications, lab activities, and class presentations.

X. Interdisciplinary Connections

At this grade level, connections to many other disciplines are appropriate and natural. Reading and writing become an integral part of the science process. Connections with mathematics are frequent throughout this curriculum. Technology plays an important role in learning science as well.

XI. Differentiating Instruction for Students with Special Needs: Students with Disabilities, Students at Risk, English Language Learners, and Gifted & Talented Students

Differentiating instruction is a flexible process that includes the planning and design of instruction, how that instruction is delivered, and how student progress is measured. Teachers recognize that students can learn in multiple ways as they celebrate students' prior knowledge. By providing appropriately challenging learning, teachers can maximize success for all students.

Differentiating in this course includes but is not limited to:

Differentiation for Support (ELL, Special Education, Students at Risk)

- Peer mentoring on problems
- Differentiated teacher feedback on assignments
- Modeling out problems on whiteboard
- Visual aids as we project problems on whiteboard
- Study guides
- Tiered assignments
- Scaffolding of materials and assignments
- Re-teaching and review
- Guided note taking
- Exemplars of varied performance levels
- Multi-media approach to accommodating various learning styles

Differentiation for Enrichment

- Supplemental reading material for independent study
- Flexible grouping
- Tiered assignments
- Topic selection by interest
- Enhanced expectations for independent study
- Elevated questioning techniques using Webb's Depth of Knowledge matrix

XII. Professional Development

The teacher will continue to improve expertise through participation in a variety of professional development opportunities.

XII. Curriculum Map/Pacing Guide

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
Engineering Design The student will plan and conduct investigations focusing on using scientific inquiry based on engineering design • data are organized into tables showing repeated trials and means • variables are defined; • metric units (International System of Units) are used • models are constructed to illustrate and explain phenomena • sources of experimental error are identified • dependent variables, independent variables, and constants are identified • variables are controlled to test hypotheses, and trials are repeated • continuous line graphs are constructed, interpreted, and used to make prediction • interpretations from a set of data are evaluated and defended • an understanding of the nature of science is developed and reinforced.	4-5 weeks	*For Support:* • Consistently review/enforce class expectations orally • Provide oral reviews of main concepts using index cards or review cards • Assist students in small groups • Prompt students before writing task by asking questions to brainstorm, *For Enhancement:* • Real World application of material • Modeling • Inquiry based instruction	MS-ETS1-1 MS-ETS1-2 MS-ETS1-3 MS-ETS1-4 CRP1,2,4,6,7,8,11,12 8.1.8.A.3, 8.1.8.E.1 8.2.8.A.2, 8.2.8.C.1, 8.2.8.C.4, 8.2.8.D.3 9.2.8.B.3 RST.6-8.1,2,4,9,10 WHST.6-8.6,7,8,10	*Formative Assessment:* • Discussion • Classwork • Group work on Design Project • Shared reading • Questioning on Design *Summative Assessment* • Homework • Quizzes • Labs • Tests • Project
Ecosystems interactions and energy The student will investigate and understand that organisms within an	4-5 weeks	*For Support:* • Modify assessments, quizzes and/or homework if need be,	MS-LS2-1 MS-LS2-2 MS-LS2-3	*Formative Assessment:* • Discussion on Ecosystems

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
ecosystem are dependent on one another and on non- living components of the environment. • needs and functions of living things • flow of energy and matter throughout the system; • energy flow in food webs and energy pyramids. • the relationships among producers, consumers, and decomposers in food webs • the relationship between predators and prey • symbiotic relationships		• Provide extended time on tasks, • Re-read questions with rephrasing, • Review projects/ideas individually with students to check for understanding • Provide additional help/review after school • Provide one to one direction/clarification of instructions if needed • Use graphic organizers for notes *For Enhancement:* • Real World application of material • Inquiry based instruction • Student Choice	MS-LS2-4 CRP1,2,4,6,7,8,11,12 8.1.8.A.3, 8.1.8.E.1 8.2.8.A.2, 8.2.8.C.1, 8.2.8.C.4, 8.2.8.D.3 9.2.8.B.3 RST.6-8.1,2,4,9,10 WHST.6-8.6,7,8,10	• Classwork- Worksheets, Activities on Energy • Group work • Shared reading *Summative Assessment* • Homework • Quizzes • Labs • Tests on Ecosystems and Energy
From Molecules to Organisms: Structures and Processes The student will develop and use a model to describe the function of a cell as a whole and determine the ways the parts of the cell contribute to its function, 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, and develop a model to describe how food is rearranged through chemical reactions forming new molecules that support	6 -7 weeks	*For Support:* • Provide assistance with note-taking • Provide oral reviews of main concepts using index cards or review cards • Modify assessments, quizzes and/or homework • Provide extended time on tasks, re-read questions with rephrasing • Provide completed notes with key ideas outlined (if necessary) • Activate prior knowledge and	MS-LS1-1 MS-LS1-2 MS-LS1-3 MS-LS1-4 MS-LS1-5 MS-LS1-6 MS-LS1-7 CRP1,2,4,6,7,8,11,12 8.1.8.A.3, 8.1.8.E.1 8.2.8.A.2, 8.2.8.C.1, 8.2.8.C.4, 8.2.8.D.3 9.2.8.B.3 RST.6-8.1,2,4,9,10 WHST.6-8.6,7,8,10	*Formative Assessment:* • Discussion • Classwork • Group work • Shared reading *Summative Assessment* • Homework • Quizzes • Labs on Cells • Tests on Molecules

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
growth and/or release energy as this matter moves through an organism. • cell structure • cell function • levels of cellular organization • chemical reactions and cell processes • microscopy		prompting while completing their "Do Now" *For Enhancement:* • Real World application of material • Extension Activities • Inquiry based instruction • Student Choice		
Main Topic: Heredity, Variation and Traits The student will investigate and understand that organisms reproduce and transmit genetic information to new generations. • the structure and role of DNA • the function of genes and chromosomes • genotypes and phenotypes • characteristics that can and cannot be inherited • genetic engineering and its applications and • historical contributions and significance of discoveries related to genetics. • compare and contrast asexual and sexual reproduction • introduction of mitosis and meiosis	7-8 weeks	*For Support:* • Provide assistance with note-taking, • Consistently review/enforce class expectations orally • Provide oral reviews of main concepts using index cards or review cards • Provide one to one direction/clarification of instructions if needed, • monitor on task performance • provide/use graphic organizers for notes • Provide visual aides • monitor on task performance. Provide completed notes with key ideas outlined (if necessary) *For Enhancement:* • Real World application of material	MS-LS3-1 MS-LS3-2 CRP1,2,4,6,7,8,11,12 8.1.8.A.3, 8.1.8.E.1 8.2.8.A.2, 8.2.8.C.1, 8.2.8.C.4, 8.2.8.D.3 9.2.8.B.3 RST.6-8.1,2,4,9,10 WHST.6-8.6,7,8,10	*Formative Assessment:* • Discussion • Classwork- Worksheets and Activities on DNA • Group work • Questioning *Summative Assessment* • Homework • Quizzes • Labs on DNA • Tests on Heredity

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
		• Modeling • Inquiry based instruction		
Biological Evolution: Unity and Diversity The student will analyze and interpret data for extinction, and for the evolution of organisms and its effect on how organisms are classified. The student will identify the major characteristics of the five kingdoms of life. • the evolution of living organisms through inherited characteristics and natural selection. • survival of organisms and their successive generations as related to their inherited characteristics and adaptation and use of the fossil records. • anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships. • patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy • comparison of general and specific characteristics of members within kingdoms • utilization of dichotomous keys to	6-7 weeks	*For Support:* • Consistently review/enforce class expectations orally • Provide oral reviews of main concepts using index cards or review cards • Assist students in small groups Provide extended time on tasks, Activate prior knowledge and prompting while completing their "Do Now" • Rephrase any reading material when needed *For Enhancement:* • Independent study • Real World application of material • Modeling • Inquiry based instruction	MS-LS4-1 MS-LS4-2 MS-LS4-3 MS-LS4-5 MS-LS4-6 CRP1,2,4,6,7,8,11,12 8.1.8.A.3, 8.1.8.E.1 8.2.8.A.2, 8.2.8.C.1, 8.2.8.C.4, 8.2.8.D.3 9.2.8.B.3 RST.6-8.1,2,4,9,10 WHST.6-8.6,7,8,10	*Formative Assessment:* • Discussion on the Five Kingdoms • Classwork on Classification • Group work • Shared reading *Summative Assessment* • Homework • Quizzes • Labs • Tests on Evolution

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
identify key features of organisms within kingdoms				
Plants and Plant diversity The student will use an argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic specialized plant structures affect the probability of successful reproduction of plants respectively. • the structure and function of seeded and seedless plants • the structure and function of flowers in the reproduction of angiosperms	3-4 weeks	*For Support:* • Assist students in small groups Provide extended time on tasks • Re-read questions with rephrasing • Review projects/ideas individually with students to check for understanding • Provide completed notes with key ideas outlined (if necessary) *For Enhancement:* • Real World application of material • Pacing • Inquiry based instruction	MS-LS1-4. MS-LS1-6. MS-LS2-1. MS-LS2-5. CRP1,2,4,6,7,8,11,12 8.1.8.A.3, 8.1.8.E.1 8.2.8.A.2, 8.2.8.C.1, 8.2.8.C.4, 8.2.8.D.3 9.2.8.B.3 RST.6-8.1,2,4,9,10 WHST.6-8.6,7,8,10	*Formative Assessment:* • Discussion • Questioning • Classwork on Structure and Functions of Plants • Group work • Shared reading on Plant Diversity *Summative Assessment* • Homework • Quizzes • Labs on Seeded and Seedless Plants • Tests on Plants
Main Topic: Human Body Systems Student will gather and synthesize information on the major functioning of the human body. Students will gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories • functioning of peripheral and central nervous system • structure and function of brain	3-4 weeks	*For Support:* • Provide oral reviews of main concepts using index cards or review cards • Assist students in small groups • Re-read questions with rephrasing Activate prior knowledge and prompting while completing their "Do Now" *For Enhancement:*	MS-LS1-3 MS-LS1-8. CRP1,2,4,6,7,8,11,12 8.1.8.A.3, 8.1.8.E.1 8.2.8.A.2, 8.2.8.C.1, 8.2.8.C.4, 8.2.8.D.3 9.2.8.B.3 RST.6-8.1,2,4,9,10 WHST.6-8.6,7,8,10	*Formative Assessment:* • Discussion on Anatomy • Classwork • Group work on the nervous system • Shared reading • Questioning on Human Body Systems *Summative Assessment* • Homework

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
• comparative anatomy • general anatomical terminology		• Real World application of material • Modeling • Student Choice • Extension Activities		• Quizzes • Labs on Body Systems • Test on Anatomy