COURSE TITLE

Anatomy and Physiology

LENGTH

One Semester

DEPARTMENT

STEM Department

SCHOOL

Rutherford High School

DATE

September 10, 2018

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

Anatomy and Physiology

I. Introduction/Overview/Philosophy

"There are many wonders in our world, but none is more wondrous than the human body." (Thibodeau, 1992). This course in anatomy and physiology deals with two very distinct and yet interrelated sciences. Anatomy is often defined as the study of the structure of an organism and the relationships of its parts. Physiology is the study of the functions of living organisms and their parts. Through a variety of laboratory and hands on activities, students will investigate these two branches of science with the goal to instill an understanding and appreciation of the human body and its parts.

Anatomy and Physiology is an elective course suggested for those students who plan to major in a life science or related field in college. It is an in-depth and rigorous course covering all the systems of the body while investigating the relationship between structure and function. Emphasis is placed on critical thinking, analysis of physiological concepts, and practical application.

II. Objectives

Course Outline:

1. Appreciate the structure and function of the body by:
    a. Defining the terms *anatomy*, *physiology,* and *anatomical position*.
    b. Listing the levels of organization in the body in order of increasing complexity.
    c. Contrasting the axial and appendicular subdivisions of the body and identifying the specific anatomical regions in each area.
    d. Identifying the nine abdominal regions and the abdominal quadrants.
    e. Defining the principal directional terms and planes used in describing the body and their relationship to each other.
    f. Listing the major cavities of the body and the subdivisions of each.
    g. Explaining the meaning of the term homeostasis and giving examples of typical homeostatic mechanisms.
2. Investigate cells and tissues by:
    a. Identifying and discussing the basic structure and function of the three major components of a cell.
    b. Listing the functions of the primary cellular organelles.
    c. Comparing the major passive and active transport processes that act to move substances through cell membranes.
    d. Comparing RNA and DNA and their function in protein synthesis.
    e. Recognizing the stages of mitosis and explaining the importance of cellular reproduction.
    f. Explaining how epithelial tissue is grouped according to shape and arrangement of cells.
    g. Listing and explaining the major types of connective and muscle tissue and the structural components of neurons.
3. Examine the organ systems of the body by:
    a. Defining and contrasting the terms *organ* and *organ system*.
    b. Listing the eleven major organ systems of the body.

c. Identifying and locating the major organs of each organ system.
d. Describing the major functions of each major organ system.
e. Identifying and discussing the major subdivisions of the reproductive system.

4. Investigate the skeletal system by:
   a. Classifying, comparing the structure of, and giving examples of each type of body membrane.
   b. Describing the structure and function of the epidermis and dermis.
   c. Listing and describing each accessory organ of the skin.
   d. Listing and discussing the three primary functions of the integumentary system.
   e. Classifying burns and describing how to estimate the extent of a burn injury.
5. Investigate the integumentary system and body membranes by:
   a. Explaining how bones are formed, how they grow, and how they are remodeled.
   b. Discussing the microscopic structure of bone and cartilage, including the identification of specific cell types and structural features.
   c. Identifying the major anatomical structures found in a typical long bone and discussing bone formation and growth.
   d. Listing and discussing the generalized functions of the skeletal system.
   e. Identifying the two major subdivisions of the skeleton and listing the bones found in each area.
   f. Listing and comparing the major types of joints in the body and giving examples of each.
6. Investigate the muscular system by:
   a. Listing, locating in the body, and comparing the structure and function of the three major types of muscle tissue.
   b. Discussing the microscopic structure of a skeletal muscle sarcomere and motor unit.
   c. Explaining how a muscle is stimulated and comparing the major types of skeletal muscle contractions.
   d. Naming, identifying on a model or diagram, and giving the function of the major muscles of the body.
   e. Listing and explaining the most common types of movement produced by skeletal muscles.
7. Investigate the nervous system by:
   a. Listing the organs and divisions of the nervous system and describing the generalized functions of the system as a whole.
   b. Identifying the major types of cells in the nervous system and discussing the functions of each.
   c. Identifying the anatomical and functional components of a three-neuron reflex arc.
   d. Comparing and contrasting the propagation of a nerve impulse along a nerve fiber and across a synaptic cleft.
   e. Identifying the major anatomical components of the brain and spinal cord and briefly commenting on the function of each.
   f. Identifying and discussing the coverings and fluid spaces of the brain and spinal cord.
   g. Comparing and contrasting spinal and cranial nerves.
   h. Discussing the anatomical and functional characteristics of the two divisions of the autonomic nervous system.
8. Examine the five senses by:
   a. Classifying sense organs as special or general and explaining the basic differences between the two groups.
   b. Discussing how a stimulus is converted into a sensation.
   c. Listing the major senses.
   d. Describing the structure of the eye and the functions of its components.

e. Discussing the anatomy of the ear and its sensory function in hearing and equilibrium.
f. Discussing the chemical receptors and their functions.
g. Discussing the general sense organs and their functions.

9. Investigate the endocrine system by:
   a. Distinguishing between endocrine and exocrine glands and defining the terms *hormone* and *prostaglandin*.
   b. Identifying and locating the primary endocrine glands and listing the major hormones produced by each gland.
   c. Describing the mechanisms of steroid and protein hormone action.
   d. Explaining how negative and positive feedback mechanisms regulate the secretion of endocrine hormones.
   e. Identifying the principal functions of each major endocrine hormone and describing the conditions that may result from hyposecretion or hypersecretion.
   f. Defining *diabetes*, *insipidus*, *diabetes mellitus*, *gigantism*, *goiter*, *cretinism*, *and glycosuria*.
10. Examine the characteristics and functions of blood by:
   a. Describing the primary functions of blood.
   b. Listing the formed elements of blood and identifying the most important function of each.
   c. Discussing anemia in terms of red blood cell numbers and hemoglobin content.
   d. Explaining the steps involved in blood clotting.
   e. Describing ABO and Rh blood typing.
   f. Defining the following medical terms associated with blood: *hematocrit, leukosytosis, leukopenia, polycythemia, sickel cell, phagocytosis, acidosis, thrombosis, erythroblastosis, fetalis, serum, fibrinogen, Rh factor, and anemia.*
11. Examine the circulatory system by:
   a. Explaining the relationship between blood vessel structure and function.
   b. Tracing the path of blood through the systemic, pulmonary, hepatic portal, and fetal circulations.
   c. Identifying and discussing the primary factors involved in the generation and regulation of blood pressure and explaining the relationships between these factors.
12. Examine the lymphatic system and immunity by:
   a. Describing the generalized functions of the lymphatic system and list the primary lymphatic structures.
   b. Defining and comparing nonspecific and specific immunity, inherited and acquired immunity, and active and passive immunity.
   c. Discussing the major types of immune system molecules and indicating how antibodies and complements function.
   d. Contrasting the development and functions of B and T cells.
   e. Comparing and contrasting humoral and cell-mediated immunity.
13. Examine the respiratory system by:
   a. Discussing the generalized functions of the respiratory system.
   b. Listing the major organs of the respiratory system and describing the functions of each.
   c. Comparing, contrasting, and explaining the mechanism responsible for the exchange of gases that occurs during internal and external respiration.
   d. Listing and discussing the volumes of air exchanged during pulmonary ventilation.
   e. Identifying and discussing the mechanisms that regulate respiration.
14. Examine the digestive system by:
   a. Listing in sequence each of the component parts or segments of the alimentary canal from the mouth to the anus and identifying the accessory organs of digestion.

b. Listing and describing the four layers of the wall of the alimentary canal.
c. Comparing the lining layer in the esophagus, stomach, small intestine, and large intestine.
d. Discussing the basics of protein, fat, and carbohydrate digestion and giving the end products of each process.
e. Defining and contrasting mechanical and chemical digestion.
f. Defining *peristalsis, bolus, chyme, jaundice, ulcer, and diarrhea*.
g. Defining and contrasting *catabolism* and *anabolism*.

15. Examine the urinary system by:
    a. Identifying the major organs and their functions.
    b. Naming the parts of the nephron and describing the role each component plays in the formation of urine.
    c. Explaining the importance of filtration, tubular reabsorption, and tubular secretion in urine formation.
    d. Discussing the mechanisms that control urine volume.
    e. Explaining how the kidneys act as vital organs in maintaining homeostasis.
16. Investigate fluid and electrolyte balance by:
    a. Listing, describing, and comparing the body fluid compartments and their subdivisions.
    b. Discussing avenues by which water enters and leaves the body and the mechanisms that maintain fluid balance.
    c. Discussing the nature and importance of electrolytes in body fluids and explaining the aldosterone mechanism of extracellular fluid volume control.
    d. Explaining the interaction between capillary blood pressure and blood proteins.
    e. Giving examples of common fluid imbalances.
17. Determine Acid-Base balance by:
    a. Discussing the concept of pH and define the phrase *acid-base balance*.
    b. Defining the terms *buffe*r and *buffer pair*, and contrasting strong and weak acids and bases.
    c. Discussing compensatory mechanisms that may help return blood pH to near-normal levels in case of pH imbalances.
    d. Comparing and contrasting metabolic and respiratory types of pH imbalances.
18. Investigate the reproductive system by:
    a. Listing the essential and accessory organs of the male and female reproductive systems and giving the generalized function of each.
    b. Describing the gross microscopic structure of the gonads in both sexes and explaining the developmental steps in spermatogenesis and oogenesis.
    c. Discussing the primary functions of the sex hormones and identifying the cell type or structure responsible for their secretion.
    d. Identifying and describing the structures that constitute the external genitals of both sexes.
    e. Identifying and discussing the phases of the endometrial or menstrual cycle and correlating each phase with its occurrence in a typical 28-day cycle.
19. Summarize Growth and Development by:
    a. Discussing the concept of development as a biological process characterized by continuous modification and change.
    b. Discussing the major developmental changes characteristic of the prenatal stage of life from fertilization to birth.
    c. Discussing the three stages of labor that characterize a normal, vaginal birth.
    d. Identifying the three primary germ layers and several derivatives in the adult body that develop from each layer.

e. Listing and discussing the major developmental changes characteristic of the four postnatal periods of life.
f. Discussing the effects of aging on the major body organ systems.

Student Outcomes:

After successfully completing this course, the student will:

- Understand how the interacting components of a system combine to produce the overall behavior of the system.
- Apply problem-solving skills to develop and test hypotheses by planning experiments where they conduct observations, gather and analyze data, draw conclusions and communicate results.
- Appreciate the many people and cultures that have contributed to the advancement of science and the individuals that have made major discoveries.
- Use correctly the instruments, apparatus, and technology of biology and demonstrate procedures of biology in a safe prescribed manner.
- Apply scientific discoveries to technology.
- Identify ways in which the study of biology serves as a foundation for many career opportunities in science and technology related to medicine and the human body.
- Utilize the scientific method in solving biological problems and use mathematical operations where appropriate for solving these problems.
- Evaluate and discuss advances in treating current medical diseases and/or disorders.

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.

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.

CRP10. Plan education and career paths aligned to personal goals.
Career-ready individuals take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.

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 E. Computational Thinking: Programming: Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.
8.2.12.E.1- Demonstrate an understanding of the problem-solving capacity of computers in our world.

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

8.2.12.C.4- Explain and identify interdependent systems and their functions.

21ST CENTURY LIFE AND CAREERS
9.2 Career Awareness, Exploration, and Preparation
Strand C: Career Preparation
9.2.12.C.1 Review career goals and determine steps necessary for attainment.

COMPANION STANDARDS FOR SCIENCE AND TECHNICAL SUBJECTS
RST.11-12.3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
RST.11-12.4. 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 11-12 texts and topics.
RST.11-12.5. Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
RST.11-12.7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
WHST.11-12.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
WHST.11-12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
WHST.11-12.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
WHST.11-12.6. Use technology, including the Internet, to produce, share, and update writing products in response to ongoing feedback, including new arguments or information.

NEW JERSEY STUDENT LEARNING STANDARDS- SCIENCE
HS-LS1-1. Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells. [
HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
HS-LS1-3. Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis
HS-LS1-4. Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

III. Proficiency Levels

Anatomy & Physiology is available to junior and senior level students who have completed Biology and who wish to further their knowledge of the systems of the human body.

IV. Methods of Assessment

Student Assessment
The teacher will provide a variety of assessments, among them are: homework, teacher-made tests and quizzes, projects, laboratory reports, and presentations.

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

V. Grouping

Anatomy & Physiology is a heterogeneously grouped course at the junior/senior level.

VI. Articulation/Scope & Sequence/Time Frame

Course length is one semester.

VII. Resources

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

1. Structure and Function of the Body, Mosby, 2004.
2. Various websites
3. Various videos

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, and class presentations.

X. Interdisciplinary Connections

Connections are made to Family and Consumer Sciences, particularly Foods, during the study of nutrition and the digestive system. Chemistry topics play a large part in the study of the interactions in the human body. Writing assignments in the form of laboratory reports makes use of skills learned in language arts literacy.

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**
Introduction to Anatomy and Physiology • define anatomy and physiology and describe areas of specialty for each discipline (e.g., careers) • identify the major levels of organization in living organisms from simplest to most complex • identify the organ systems of the human body and the major components of each system • justify the importance of homeostasis • use anatomical terms to describe body sections, body regions, and relative positions • identify the major body cavities and their subdivisions • understand and distinguish between positive and negative feedback loops	3 weeks	*For Support:* Guided notes Visual learning- diagrams and models Teacher modeling *For Enhancement:* Real world problems and scenarios Critical Thinking tasks Crash Course- Introduction to Anatomy & Physiology	NJSLS-HS-LS1-2 NJSLS-HS-LS1-3 RST.11-12.3,4,5,7 WHST.11-12.2,4,5,6	*Formative Assessment:* Activity- Diagram torso Textbook reading End of chapter Review Questions Study Guide Classwork *Summative Assessment* Quiz- Plane and body sections Test- Introduction to the Structure and Function of the Body
Cells and Tissues • Discuss the basic structure and function of the major components of the cell • Relate the structure of each organelle to its function • Compare passive and active transport processes that act to move substances through cell membranes • Discuss DNA and RNA and their function in protein synthesis	3 weeks	*For Support:* Rephrase questions, directions and explanations Have peers rephrase directions and explanations Allow errors *For Enhancement:* Critical Thinking Skills Adjust the pace of the lessons	NJSLS-HS-LS1-1 NJSLS-HS-LS1-2 NJSLS-HS-LS1-3 NJSLS-HS-LS1-4 RST.11-12.3,4,5,7 WHST.11-12.2,4,5,6 8.1.12.E.1 8.2.12.C.4	*Formative Assessment:* Classwork-Cells Alive Textbook reading End of chapter Review Questions Study Guide Closure questions *Summative Assessment*

Unit Topic	**Time Allocated**	**Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students**	**Standards**	**Assessments**
• Describe mitosis and explain the importance of cellular reproduction • describe the types and functions of each epithelial tissue type • detail the structure and function of types of connective tissue • distinguish among types of muscle tissue and the function of each		Crash Course- Tissues Part I Crash Course- Tissues- Part 2- Epithelial Tissue Crash Course- Tissues Part 3- Connective Tissues Crash Course- Tissue Part 4 Types of Connective Tissues		Lab- Diffusion Lab- Epithelial Tissue Lab- Connective Tissue Lab- Muscle Tissue Lab- Nervous Tissue Quiz- Cell organelles Quiz- DNA and RNA Test- Cells and Tissues
Tissue Organization and The Integumentary System • identify the body's major types of tissue and their roles • explain the function and role of the integumentary system • explain how the skin responds to injury and how it repairs itself • discuss the function of the accessory organs/glands of the skin	3 weeks	*For Support:* Bozeman Video- The Integumentary System Visual models Rephrasing explanations Diagram Labelling *For Enhancement:* Real world problems More extensive diagrams for labelling Crash Course- The Integumentary System Part 1- Skin Deep Crash Course- The Integumentary System Part 2 Skin Deeper	NJSLS-HS-LS1-2 NJSLS-HS-LS1-3 RST.11-12.3,4,5,7 WHST.11-12.2,4,5,6	*Formative Assessment:* Textbook reading End of chapter Review Questions Study Guide Questioning *Summative Assessment* Lab- Fingerprints Lab- Temperature Quiz- Skin Benchmark
Sense Organs • Describe the structures and functions of the parts of the eye • Discuss the structures and functions of the parts of the ear • Discuss the chemical receptors and their function in smell and taste. • Explain the structures and functions	3 weeks	*For Support:* Use of technology Visual learning- Diagrams Visual models *For Enhancement:* Interest based content Independent study- problems	NJSLS-HS-LS1-2 NJSLS-HS-LS1-3 RST.11-12.3,4,5,7 WHST.11-12.2,4,5,6	*Formative Assessment:* Perception Activity Textbook reading End of chapter Review Questions Study Guide Closure questions *Summative Assessment*

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
associated with general sense organs		associated with vision, hearing, smelling and taste Crash Course Vision Crash Course- Hearing and Balance Crash Course- Taste and Smell		Lab- Visual Acuity, Blind Spot Determination Lab- Mapping the Tongue Lab- Fooling the Senses Lab- Smell Quiz- Eye Quiz- Ear Test- Senses
Blood • define the components of plasma • describe the components and function of blood • identify factors that determine a person's blood type • identify the types of blood vessels	2 weeks	*For Support:* Allows errors Use of cognates to increase comprehension Peer rephrasing definitions and explanations *For Enhancement:* Real world problems/diseases Analytical thinking tasks Crash Course- Part 1- True Blood Crash Course Part 2- There will be Blood	NJSLS-HS-LS1-2 RST.11-12.3,4,5,7 WHST.11-12.2,4,5,6	*Formative Assessment:* Textbook reading End of chapter Review Questions Study Guide Questioning Closure questions *Summative Assessment* Lab- Blood Typing Quiz- Blood Test- Blood
Organ Systems of the Body • The Circulatory System • The Respiratory System • The Skeletal System • The Muscular System • The Digestive System • The Nervous System • The Urinary System • The Endocrine System • The Lymphatic System	6 weeks	*For Support:* Use of visual diagrams and models Allows errors Use technology to aid in understanding *For Enhancement:* Interest based content Curriculum compacting Independent Study	NJSLS-HS-LS1-2 NJSLS-HS-LS1-3 RST.11-12.3,4,5,7 WHST.11-12.2,4,5,6	*Formative Assessment:* Textbook reading End of chapter Review Questions End of chapter- Chapter Test Study Guide Classwork Group and cooperative work

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
• The Reproductive Systems		Crash Course- The Heart, Part 1 Crash Course- The Heart Part 2 Crash Course- Blood Vessels Part I Crash Course- Blood Vessels Part 2 Crash Course- Respiratory System, Part 1 Crash Course- Respiratory System, Part 2 Crash Course- The Skeletal System Crash Course- Joints Crash Course- Muscles, Part 1 Crash Course- Muscles, Part 2 Crash Course-Digestive System, Part 1 Crash course- Digestive System, Part 2 Crash Course-Digestive System, Part 3 Crash Course- The Nervous System, Part 1 Crash Course- The Nervous System, Part 2 Crash Course- The Nervous System, Part 3 Crash Course- Urinary System, Part 1 Crash Course- Urinary System, Part 2 Crash Course- Endocrine System, Part 1 & 2		*Summative Assessment* Lab- Skeleton Project- Research the organ systems of the body Project- Presentation of the organ system Lab- Dissection of the Fetal Pig Lab Practical- Fetal Pig anatomy Benchmark

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
		Crash Course- Lymphatic System Crash Course- Immune System, Part 1, 2, 3 Crash Course- Reproductive System, Part 1, 2 Khan Academy Videos		