RIDGECROFT SCHOOL
GRADE 7 SCIENCE

PACING GUIDE

TOPICS/CONCEPTS	TIME	CURRICULUM OBJECTIVES Goal 1 Inquiry and Goal 2 Technology will be integrated throughout content	RESOURCE(S) SCIENCE MODULES (Prentice Hall)
FIRST GRADING PERIOD			
CELL • Microbiology	20	3.01, 3.02, 3.03, 3.04, 3.05 4.01, 4.02, 4.03, 4.04	TEXTBOOK MODULE: CELLS AND HEREDITY LAB: Plant/Animal Cell LAB: Osmosis
HEREDITY AND GENETICS	10	6.01, 6.02, 6.03, 6.04, 6.05, 6.06, 6.07	TEXTBOOK MODULE: CELLS AND HEREDITY LAB: Stomata
SECOND GRADING PERIOD			
HEREDITY AND GENETICS	20	6.01, 6.02, 6.03, 6.04, 6.05, 6.06, 6.07	TEXTBOOK MODULE: CELLS AND HEREDITY
BACTERIA PLANTS • Microbiology	10	7.01, 7.02, 7.03, 7.04, 7.05 3.01, 3.02, 3.03, 3.04, 3.05	TEXTBOOK MODULE: FROM BACTERIA TO PLANTS
THIRD GRADING PERIOD			
BACTERIA PLANTS • Microbiology • Photosynthesis	20	7.01, 7.02, 7.03, 7.04, 7.05 3.01, 3.02, 3.03, 3.04, 3.05	TEXTBOOK MODULE: FROM BACTERIA TO PLANTS
ANIMALS	5		TEXTBOOK MODULE: ANIMALS
REVIEW AND ASSESSMENT	5		
FOURTH GRADING PERIOD			
ANIMALS	20		TEXTBOOK MODULE: ANIMALS
ENVIRONMENTAL SCIENCE	10	8.01, 8.02, 8.03, 8.04, 8.05, 8.06	RESOURCE: Project Wild Activities
FIFTH GRADING PERIOD			
ENVIRONMENTAL SCIENCE • Population Dynamics	20	8.01, 8.02, 8.03, 8.04, 8.05, 8.06	RESOURCE: Project Wild Activities
HUMAN BODY SYSTEMS	10	5.01, 5.02 5.03, 5.04 ,5.05, 5.06, 5.07, 5.08	TEXTBOOK MODULE: HUMAN BIOLOGY AND HEALTH
SIXTH GRADING PERIOD			
HUMAN BODY SYSTEMS	25	5.01, 5.02 5.03, 5.04 ,5.05, 5.06, 5.07, 5.08	TEXTBOOK MODULE: HUMAN BIOLOGY AND HEALTH

REVIEW AND ASSESSMENT	5		

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GOALS AND OBJECTIVES

NOTE: The goals and objectives for Grades 6-8 science are abased on a reclustering of the NC Standard Course of Study.

GOAL 1: THE LEARNER WILL DESIGN AND CONDUCT INVESTIGATIONS TO DEMONSTRATE AN UNDERSTANDING OF SCIENTIFIC INQUIRY.	
1.01 Identify and create questions and hypotheses that can be answered through scientific investigations. 1.02 Develop appropriate experimental procedures for: • Given questions, • Student generated questions 1.03 Apply safety procedures in the laboratory and in field studies: • Recognize potential hazards • Manipulate materials and equipment • Conduct appropriate procedures 1.04 Analyze variables in scientific investigations: • Identify dependent and independent • Use of a control • Manipulate • Describe relationships between • Define operationally 1.05 Analyze evidence to: • Explain observations • Make inferences and predictions • Develop the relationship between evidence and explanation	1.06 Use mathematics to gather, organize, and present quantitative data resulting from scientific investigations: • Measurement • Analysis of data • Graphing Prediction models 1.07 Prepare models and/or computer simulations to: • Test hypothesis • Evaluate how data fit 1.08 Use oral and written information systems to: • Communicate findings • Defend conclusions of scientific investigations 1.09 Use technologies and information systems to: • Research • Gather and analyze data • Visualize data • Dsseminate findings to others 1.10 Analyze and evaluate information from a scientifically literate viewpoint by reading, hearing , and/or viewing: • Scientific text • Articles • Events in the popular press
GOAL 2: THE LEARNER WILL DEMONSTATE AN UNDERSTANDING OF TECHNOLOGICAL DESIGN	
2.01 Explore evidence that “technology” has many definitions. • Artifact or hardware • Methodology or technique • System of production • Social-technical system 2.02 Use information systems to: • Identify scientific needs, human needs, or problems that are subject to technological solution • Locate resources to obtain and test ideas	2.03 Evaluate technological designs for: • Application of scientific principles • Risks and benefits • Constraints of design • Consistent testing protocols 2.04 Apply tenets of technological design to make informed consumer decisions about: • Products • Processes • Systems
GOAL 3: THE LEARNER WILL INVESTIGATE THE CYCLYING OF MATTER	
3.01 Describe the flow of energy and matter in natural systems: • Energy flows through ecosystems in one direction, from the sun through producers to consumers to decomposers • Matter is transferred from one organism to another and between organisms and their environments • Water, nitrogen, carbon dioxide, and oxygen are substances cycled between the living and non-living environments	3.04 Evaluate the significance of photosynthesis to other organisms: • The major source of atmospheric oxygen is photosynthesis • Carbon dioxide is removed from the atmosphere and oxygen is released during photosynthesis • Green plants are the producers of food that is used directly or indirectly by consumers 3.05 Evaluate designed systems for ability to enable growth of certain plants and animals.

3.02 Evaluate the significant role of decomposers. 3.03 Examine evidence that green plants make food. • Photosynthesis is a process carried on by green plants and other organisms containing chlorophyll • During photosynthesis, light energy is converted into stored energy which the plant, in turn, uses to carry out its life processes	
GOAL 4: THE LEARNER WILL CONDUCT INVESTIGATIONS, USE MODELS, SIMULATIONS, AND APPROPRIATE TECHNOLOGIES AND INFORMATION SYSTEMS TO BUILD AN UNDERSTANDING OF CELL THEORY.	
4.01 Describe cell theory: • All living things are composed of cells • Cells provide structure and carry on major functions to sustain life • Some organisms are single cell • Other organisms, including humans are multi-cellular • Cell function is similar in all living things 4.02 Analyze structures, functions, and process within animal cells for: • Capture and release of energy • Feedback information • Dispose of wastes • Reproduction • Movement • Specialized needs	4.03 Compare life functions of protist: • Euglena • Amoeba • Paramecium • Volvox 4.04 Conclude that animal cells carry on complex chemical processes to balance the needs of the organism. • Cells grow and divide to produce more cells • Cells take in nutrients to make the energy for the work cells do • Cells take in materials that a cell or an organism needs
GOAL 5: THE LEARNER WILL CONDUCT INVESTIGATIONS, USE MODELS, SIMULATIONS, AND APPROPRIATE TECHNOLOGIES AND INFORMATION SYSTEMS TO BUILD AND UNDERSTANDING OF THE COMPLEMENTARY NATURE OF THE HUMAN BODY SYSTEM.	
5.01 Analyze how human body systems interact to provide for the needs of the human organism: • Musculoskeletal • Cardiovascular • Endocrine and nervous • Digestive and circulatory • Excretory • Reproductive • Respiratory, • Immune • Nervous system 5.02 Describe how systems within the human body are defined by the functions it performs. 5.03 Explain how the structure of an organ is adapted to perform specific functions within one or more systems. • Liver • Heat • Lung • Brain • Stomach • Kidney	5.04 Evaluate how systems in the human body help regulate the internal environment. 5.05 Analyze how an imbalance in homeostasis may result from a disruption in any human system. 5.06 Describe growth and development on the human organism. 5.07 Explain the effects of environmental influences of human embryo development and human health including: • Smoking • Alcohol • Drugs • Diet 5.08 Explain how understanding human body systems can help make informed decisions regarding health.
GOAL 6: THE LEARNER WILL CONDUCT INVESTIGATIONS AND UTILIZE APPROPRIATE TECHNOLOGIES AND INFORMATION SYSTEMS TO BUILD AN UNDERSTANDING OF HEREDITY AND GENETICS.	
6.01 Explain the significance of genes to inherited characteristics: • Genes are the units of information • Parents transmit genes to their offspring	6.04 Analyze the role of probability in the study of heredity: • Role of each parent in transfer of genetic traits • Analysis of pedigrees

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- Some medical conditions and diseases are genetic

6.02 Explain the significance of reproduction:

- Sorting and recombination of parents' genetic material
- Potential variation among offspring
- 6.03 Identify examples and patterns of human genetic traits: Dominant and recessive
- Incomplete dominance

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6.05 Summarize the genetic transmittance of disease.

6.06 Evaluate evidence that human characteristics are a product of:

- Inheritance
- Environmental factors, and
- Lifestyle choices

6.07 Correlate evolutionary theories and processes:

- Biological

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<tr><td colspan="2">GOAL 7: THE LEARNER WILL CONDUCT INVESTIGATIONS, USE MODELS, SIMULATIONS, AND APPROPRIATE TECHNOLOGIES AND INFORMATION SYSTEM TO BUILD AN UNDERSTANDING OF MICROBIOLOGY.</td></tr>
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7.01 Compare and contrast microbes:

- Size, shape, structure
- Whether they are living cells

7.02 Describe diseases caused by microscopic biological hazards including:

- Viruses
- Bacteria
- Parasites
- Contagions
- Mutagens

7.03 Analyze data to determine trends or patterns to determine how an infectious disease my spread including:

- Carriers
- Vectors
- Conditions conducive to disease
- Calculate reproductive potential of bacteria

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7.04 Evaluate the human attempt to reduce the risk of and treatments for microbial infections including:

- Solutions with anti-microbial properties
- Antibiotic treatment
- Research

7.05 Investigate aspects of biotechnology including:

- Specific genetic information available
- Careers
- Economic benefits to North Carolina
- Ethical issues
- Impact for agriculture

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