

Science Curriculum Biology
Cross County School

Science Skill	Concept	District Objective	Curricular Indicator	Performance Level	Pacing	Instructional Materials/ Class Activities	Intervention	Assessment Local	Assessment NeSA
Inquiry		Formulate a testable hypothesis supported by prior knowledge to guide an investigation	SC12.1.1.a	MR					
Inquiry		Design and conduct logical and sequential scientific investigations with repeated trials and apply findings to new investigations	SC12.1.1.b	MR					
Inquiry		Identify and manage variables and constraints	SC12.1.1.c	MR					
Inquiry		Select and use lab equipment and technology appropriately and accurately	SC12.1.1.d	MR					
Inquiry		Use tools and technology to make detailed qualitative and quantitative observations	SC12.1.1.e	MR					
Inquiry		Represent and review collected data in a systematic, accurate, and objective manner	SC12.1.1.f	MR					
Inquiry		Analyze and interpret data, synthesize ideas, formulate and evaluate models, and clarify concepts and explanations	SC12.1.1.g	MR					
Inquiry		Use results to verify or refute a hypothesis	SC12.1.1.h	MR					
Inquiry		Propose and/or evaluate possible revisions and alternate explanations	SC12.1.1.i	I, P, M					
Inquiry		Share information, procedures, results, conclusions, and defend findings to a scientific community (peers, science fair audience, policy makers)	SC12.1.1.j	P					
Inquiry		Evaluate scientific investigations and offer revisions and new ideas as appropriate	SC12.1.1.k	P,M					
Inquiry		Use appropriate mathematics in all aspects of scientific inquiry	SC12.1.1.l	MR					
Inquiry		Recognize that scientific explanations must be open to questions, possible modifications, and must be based upon historical and current scientific knowledge	SC12.1.2.a	MR					
Inquiry		Describe how society influences the work of scientists and how science, technology, and current scientific discoveries influence and change society	SC12.1.2.b	MR					
Inquiry		Recognize that the work of science results in incremental advances, almost always building on prior knowledge, in our understanding of the world	SC12.1.2.c	MR					

Science Curriculum Biology
Cross County School

Science Skill	Concept	District Objective	Curricular Indicator	Performance Level	Pacing	Instructional Materials/ Class Activities	Intervention	Assessment Local	Assessment NeSA
Inquiry		Research and describe the difficulties experienced by scientific innovators who had to overcome commonly held beliefs of their times to reach conclusions that we now take for granted	SC12.1.2.d	I,P					
Inquiry		Propose designs and choose between alternative solutions of a problem	SC12.1.3.a	IP					
Inquiry		Assess the limits of a technological design	SC12.1.3.b	IP					
Inquiry		Implement the selected solution	SC12.1.3.c	MR					
Inquiry		Evaluate the solution and its consequences	SC12.1.3.d	MR					
Inquiry		Communicate the problem, process, and solution	SC12.1.3.e	MR					
Inquiry		Compare and contrast the reasons for the pursuit of science and the pursuit of technology	SC12.1.3.f	IP					
Inquiry		Explain how science advances with the introduction of new technology	SC12.1.3.g	MR					
Inquiry		Recognize creativity, imagination, and a good knowledge base are all needed to advance the work of science and engineering	SC12.1.3.h	PM					
Biology	Structure/Function-Living Systems	Identify the complex molecules (carbohydrates, fats, proteins, and nucleic acids) that make up living organisms	12.3.1.a	IM					
	Structure/Function-Living Systems	Identify the form and function of sub-cellular structures that regulate cellular activities	12.3.1.b	IM					
	Structure/Function-Living Systems	Describe the cellular functions of photosynthesis, respiration, cell division, protein synthesis, transport of materials, and energy capture/release	12.3.1.c	IM					
	Structure/Function-Living Systems	Describe how an organism senses changes in its internal and external environment and responds to ensure survival	12.3.1.d	IM					

Science Curriculum Biology
Cross County School

Science Skill	Concept	District Objective	Curricular Indicator	Performance Level	Pacing	Instructional Materials/ Class Activities	Intervention	Assessment Local	Assessment NeSA
	Heredity	Identify that information passed from parents to offspring is coded in DNA molecules 1. Include the inheritance of a trait over time.	12.3.2.a	MR					
	Heredity	Describe the basic structure of DNA and its function in genetic inheritance	12.3.2.b	MR					
	Heredity	Recognize how mutations could help, harm, or have no effect on individual organisms	12.3.2.c	IM					
	Heredity	Describe that sexual reproduction results in a largely predictable variety of possible gene combinations in the offspring of any two parents	12.3.2.d	IM					
	Flow of Matter & Energy-Ecosystems	Explain how the stability of an ecosystem is increased by biological diversity	12.3.3.a	IP					
	Flow of Matter & Energy-Ecosystems	Describe how atoms and molecules cycle among living and nonliving components of the biosphere. Include the carbon, nitrogen, oxygen, and the water cycle.	12.4.2.a 12.3.3.b	IP					
	Earth Structures and Processes	Explain how Earth materials move through geochemical cycles (carbon, nitrogen, oxygen) resulting in chemical and physical changes in matter	12.4.2.a	IP					
	Flow of Matter & Energy-Ecosystems	Explain how distribution and abundance of different organisms in ecosystems are limited by the availability of matter and energy and the ability of the ecosystem to recycle materials Include a description of natural influences on global climate.	12.4.3.d 12.3.3.c	IP					
	Earth Structures and Processes	Describe natural influences (Earth's rotation, mountain ranges, oceans, differential heating) on global climate	12.4.3.d	IP					

Science Curriculum Biology
Cross County School

Science Skill	Concept	District Objective	Curricular Indicator	Performance Level	Pacing	Instructional Materials/ Class Activities	Intervention	Assessment Local	Assessment NeSA
	Flow of Matter & Energy-Ecosystems	Analyze factors which may influence environmental quality	12.3.3.d 12.4.2.c 12.4.3.c 12.4.3.d	PM					
	Earth Structures and Processes	Evaluate the impact of human activity and natural causes on Earth's resources (groundwater, rivers, land, fossil fuels)	12.4.2.c	PM					
	Earth's Structures and Processes	Compare and contrast benefits of renewable and nonrenewable energy sources	12.4.3.c	PM					
	Biodiversity	Identify different types of adaptations necessary for survival (morphological, physiological, behavioral)	12.3.4.a	IP					
	Biodiversity	Explain that the concept of biological evolution is a theory which explains the consequence of the interactions of: (1) the potential for a species to increase its numbers, (2) the genetic variability of offspring due to mutation and recombination of genes, (3) a finite supply of the resources required for life, and (4) the ensuing selection by the environment of those offspring better able to survive and leave offspring	12.3.4.b	IP					
	Biodiversity	Explain how natural selection provides a scientific explanation of the fossil record and the molecular similarities among the diverse species of living organisms	12.3.4.c	IP					
	Biodiversity	Apply the theory of biological evolution to explain diversity of life over time	12.3.4.d	IP					
	Earth's History	Recognize in any sequence of sediments or rocks that has not been overturned, the youngest sediments or rocks are at the top of the sequence and the oldest are at the bottom (law of superposition)	12.4.4.a	IP					
	Earth's History	Interpret Earth's history by observing rock sequences, using fossils to correlate the sequences at various locations, and using data from radioactive dating methods	12.4.4.b	IP					
	Earth's History	Compare and contrast the physical and biological differences of the early Earth with the planet we live on today	12.4.4.c	IP					