

Science Curriculum Physics
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	MR					
Inquiry		Share information, procedures, results, conclusions, and defend findings to a scientific community (peers, science fair audience, policy makers)	SC12.1.1.j	MR					
Inquiry		Evaluate scientific investigations and offer revisions and new ideas as appropriate	SC12.1.1.k	MR					
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					

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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	MR					
Inquiry		Propose designs and choose between alternative solutions of a problem	SC12.1.3.a	MR					
Inquiry		Assess the limits of a technological design	SC12.1.3.b	MR					
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	MR					
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	MR					
Physics	Motion	List and explain the three types of speed.		P, M					
		Describe velocity and its two parts.		P, M					
		List and explain two types of acceleration.	12.2.2a	P, M					
		Describe a projectile and its motion.		P, M					
		Describe a satellite and its motion.		P, M					
		Explain Newton's 1st Law of Motion and its applications.	12.2.2b	P, M					
		Explain Newton's 2nd Law of Motion and its applications.	12.2.2c	P, M					
		Explain Newton's 3rd Law of Motion and its applications.	12.2.2d, 12.2.2e	P, M					
		Describe and apply the Law of Conservation of Momentum.		I, P, M					
	Energy	Define and apply potential and kinetic energy.	12.2.3d, 12.2.3e, 12.2.3i, 12.2.3j	P, M					

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		Calculate the mechanical advantage and efficiency of a machine.	12.2.3i	P, M					
	Motion	Describe linear, tangential, and rotational speed.		I, P, M					
	Gravity	Describe the centers of mass and gravity, and their relationships.	12.2.2g	P, M					
	Energy	Explain the difference between stable, unstable, and neutral equilibrium.		P, M					
	Rotat. Mech.	Describe lever arm, torque, and rotational inertia.		I, P, M					
	Gravity	Describe and apply the Law of Universal Gravitation.	12.2.3f	I, P, M					
		Explain how tides work.		P, M					
		Describe the concept of a black hole.		I, P					
	Light	Predict the effects of reflection and refraction, in regards to microscopes, telescopes, eye correction, etc.	12.2.3c	I, P					
	Sound	Describe how music relates to the wavelength and frequency of sound waves.		I, P					