

## Illinois State Science Standards Correlation

		Inquiry Investigations™ Physical Science Series I - 1013060																					
State Goal	Content Standard	Benchmark	Description	UNIT 1 THE WORLD OF PHYSICAL SCIENCE						UNIT 2 HEAT AND ENERGY					UNIT 3 LIGHT AND OPTICS					UNIT 4 ELECTRICITY			
				Exploring the Scientific Method LAB 1013080		Exploring the Science of Measurement LAB 1013082				Exploring Heat and Energy LAB 1013084					Exploring Light and Optics LAB 1013086					Exploring Electricity LAB 1013088			
				Effect of temperature on the emergence of sponge creatures	Effect of pH on the emergence of sponge creatures	The metric system (SI)	Measuring density	Measuring temperature	Measuring pH	Measuring low concentrations of water pollutants	Heat of fusion of ice	Thermal conductivity of different metals	Thermal expansion	Demonstrating radiant heat and energy	Calibration of a thermometer	Visible light spectrum	What is color?	Reflection of light	Polarized light	The laser	The electroscope	Electrolytes	Resistors in series and parallel
Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.	Know and apply the concepts, principles, and processes of scientific inquiry.	11.A.3a	Formulate hypotheses that can be tested by collecting data.																				
		11.A.3b	Conduct scientific experiments that control all but one variable.																				
		11.A.3c	Collect and record data accurately using consistent measuring and recording techniques and media.																				
		11.A.3d	Explain the existence of unexpected results in a data set.																				
		11.A.3e	Use data manipulation tools and quantitative (e.g., mean, mode, simple equations) and representational methods (e.g., simulations, image processing) to analyze measurements.																				
		11.A.3f	Interpret and represent results of analysis to produce findings.																				
	11.A.3g	Report and display the process and results of a scientific investigation.																					
	Know and apply the concepts, principles, and processes of technological design.	11.B.3a	Identify an actual design problem and establish criteria for determining the success of a solution.																				
		11.B.3b	Sketch, propose, and compare design solutions to the problem considering available materials, tools, cost effectiveness, and safety.																				
		11.B.3c	Select the most appropriate design and build a prototype or simulation.																				
		11.B.3d	Test the prototype using available materials, instruments and technology and record the data.																				
		11.B.3e	Evaluate the test results based on established criteria, note sources of error and recommend improvements.																				
11.B.3f		Using available technology, report the relative success of the design based on the test results and criteria.																					
Understand the fundamental concepts, principles, and interconnections of the life, physical, and earth/space sciences	Know and apply concepts that describe properties of matter and energy and the interactions between them.	12.C.3a	Explain interactions of energy with matter including changes of state and conservation of mass and energy.																				
Understand the relationships among scientists, technology, and society in historical and contemporary contexts.	Know and apply concepts that describe the interaction between science, technology, and society.	13.A.3c	Explain what is similar and different about observational and experimental investigations.																				
		13.B.3b	Identify important contributions to science and technology that have been made by individuals and groups from various cultures.																				

**Illinois State Science Standards Correlation**

State Goal	Content Standard	Benchmark	Description	Inquiry Investigations™ Physical Science Series II - 1013061																			
				UNIT 1 GRAVITY				UNIT 2 MAGNETISM				UNIT 3 PROPERTIES OF SOUND				UNIT 4 FORCES, MOTION, AND SIMPLE MACHINES							
				Exploring Gravity LAB 1013090				Exploring Magnetism LAB 1013092				Exploring Sound Waves LAB 1013094				Exploring Force and Motion LAB 1013096				Exploring Simple Machines LAB 1013098			
				Determination of the density of a solid	Learning about gravitation	Archimedes principle	Teacher demonstration - pressure	Investigating the behavior of the magnetic compass	The magnetic field of a bar magnet	Constructing an electromagnet	Electromagnetic induction	Investigating properties of sound	Interaction of sound waves	Doppler effect	Observing the properties of a wave	Investigating Newton's laws of motion	Friction	Rotational inertia	Collisions	The lever	The pulley	The inclined plane	
Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.	Know and apply the concepts, principles, and processes of scientific inquiry.	11.A.3a	Formulate hypotheses that can be tested by collecting data.																				
		11.A.3b	Conduct scientific experiments that control all but one variable.																				
		11.A.3c	Collect and record data accurately using consistent measuring and recording techniques and media.																				
		11.A.3d	Explain the existence of unexpected results in a data set.																				
		11.A.3e	Use data manipulation tools and quantitative (e.g., mean, mode, simple equations) and representational methods (e.g., simulations, image processing) to analyze measurements.																				
		11.A.3f	Interpret and represent results of analysis to produce findings.																				
		11.A.3g	Report and display the process and results of a scientific investigation.																				
	Know and apply the concepts, principles, and processes of technological design.	11.B.3c	Select the most appropriate design and build a prototype or simulation.																				
		11.B.3d	Test the prototype using available materials, instruments and technology and record the data.																				
		11.B.3e	Evaluate the test results based on established criteria, note sources of error and recommend improvements.																				
11.B.3f		Using available technology, report the relative success of the design based on the test results and criteria.																					
Under the fundamental concepts, principles, and interconnections of life, physical, and earth/space science.	Know and apply concepts that describe properties of matter and energy and the interactions between them.	12.C.3a	Explain interactions of energy with matter including changes of state and conservation of mass and energy.																				
		Know and apply concepts that describe force and motion and the principles that explain them.	12.D.3a	Explain and demonstrate how forces affect motion (e.g., action/reaction, equilibrium conditions, free-falling objects).																			
	12.D.3b		Explain the factors that affect the gravitational forces on objects (e.g., changes in mass, distance).																				
	Know and apply concepts that explain the composition and structure of the universe and Earth's place in it.	12.F.3a	Simulate, analyze, and explain the effects of gravitational force in the solar system (e.g., orbital shape and speed, tides, and spherical shape of the planets and moon).																				
Understand the relationships among scientists, technology, and society in historical and contemporary contexts.	Know and apply concepts that describe the interaction between science, technology, and society.	13.B.3b	Identify important contributions to science and technology that have been made by individuals and groups from various cultures.																				