

8th Grade Science Pacing Guide 2012-2013

The inquiry and engineering embedded standards will be implemented throughout the course of the school year; however they have been placed with chapters in which the content is specifically addressed.

Grade Level Expectations	Check for Understanding	State Performance Indicator	Resources	
GLE 0807.Inq.1 Design and conduct open-ended scientific investigations.	0807.Inq.1 Design and conduct an open-ended scientific investigation to answer a question that includes a control and appropriate variables.	SPI 0807.Inq.1 Design a simple experimental procedure with an identified control and appropriate variables	Chapter 1.1-2 Scientific Method Glencoe Online Supper DVD: Mind Jogger Scientific Method Lab – Lab 1	Weeks 1-2
GLE 0807.Inq.2 Use appropriate tools and techniques to gather, organize, analyze, and interpret data.	0807.Inq.2 Identify tools and techniques needed to gather, organize, analyze, and interpret data collected from a moderately complex scientific investigation.	SPI 0807.Inq.2 Select tools and procedures needed to conduct a moderately complex experiment	*see lab manager CD Brain Pop Internet4Classrooms	Weeks 1-2 *Common Assessment: Inq. 1 and 2
GLE 0807.Inq.3 Synthesize information to determine cause and effect relationships between evidence and explanations.	0807.Inq.3 Use evidence from a dataset to determine cause and effect relationships that explain a phenomenon.	SPI 0807.Inq.4 Draw a conclusion that establishes a cause and effect relationship supported by evidence.	Chapter 4.3 Graphs Virtual Lab: How are graphs used to represent data? *Virtual Lab CD or Online	Weeks 3-4
		SPI 0807.Inq.3 Interpret and translate data in a table, graph, or diagram.		Weeks 3-4
GLE 0807.Inq.4 Recognize possible sources of bias and error, alternative explanations, and questions for further exploration.	0807.Inq.4 Review an experimental design to determine possible sources of bias or error, state alternative explanations, and identify questions for further investigation.			Weeks 3-4
GLE 0807.Inq.5 Communicate scientific understanding using descriptions, explanations, and models	0807.Inq.5 Design a method to explain the results of an investigation using descriptions, explanations, or models.	SPI 0807.Inq.5 Identify a faulty interpretation of data that is due to bias or experimental error.		Weeks 3-4 *Common Assessment Inq. 3,4,5
	0807.9.3 Measure or calculate the mass, volume, and temperature of a given substance	SPI 0807.9.7 Apply an equation to determine the density of an object based on its mass and volume. TN State Vocabulary: density		Weeks 5-6
	0807.9.4 Calculate the density of various objects.			Weeks 5-6
GLE 0807.12.4 Identify factors that influence the amount of gravitational	0807.12.5 Explain the difference between	SPI 0807.12.4 Distinguish between mass and weight using		Weeks 5-6 *Common

force between objects.	mass and weight.	appropriate measuring instruments and units.	Chapter 2.2 & Ch. 3 Adaptations Glencoe Online Natural Selection Lab -Teddy Grahams -M&M's -*in Activities Manuel Virtual Lab: How can natural selection be modeled? *Virtual Lab CD or Online Super DVD -Mindjogger	Assess: 7.9.7, 7.12.4
Life Science				
GLE 0807.5.3 Analyze how structural, behavioral, and physiological adaptations within a population enable it to survive in a given environment.	0807.5.3 Compare and contrast the ability of an organism to survive under different environmental conditions.	SPI 0807.5.2 Analyze structural, behavioral, and physiological adaptations to predict which populations are likely to survive in a particular environment		Weeks 7-8
GLE 0807.5.4 Explain why variation within a population can enhance the chances for group survival	0807.5.4 Collect and analyze data relating to variation within a population of organisms.	SPI 0807.5.3 Analyze data on levels of variation within a population to make predictions about survival under particular environmental conditions. TN State Vocabulary: species, variation, physiological adaptation	BrainPop Active Folders-Adaptations Compare4kids.co.uk/science.php JC Schools *Power points *Adaptations and Darwinism Internet4Classrooms *Fossils Frozen Fossils-Txt pg. 480 Biology in Motion Virtual Lab: How do introduced species affect the environment? *Virtual Lab CD or Online Planet Earth Video: Saving Species amnh.org/ology/ *biodiversity	Weeks 7-8 Common Assessment: 7.5.2, 7.5.3
GLE 0807.5.2 Use a simple classification key to identify a specific organism.	0807.5.2 Create and apply a simple classification key to identify an organism.	0807.5.1 Use a simple classification to identify an unknown organism. TN State Vocabulary: class, family, genus, kingdom, phylum, domain, order, dichotomous key		Weeks 9-10
GLE 0807.5.5 Describe the importance of maintaining the earth's biodiversity	0807.5.5 Prepare a poster that illustrates the major factors responsible for reducing the amount of global biodiversity. 0807.5.6 Prepare graphs that demonstrate how the amount of biodiversity has changed in a particular continent or biome.	SPI 0807.5.4 Identify several reasons for the importance of maintaining the earth's biodiversity. TN State Vocabulary: biodiversity		Weeks 9-10
GLE 0807.5.6 Investigate fossils in sedimentary rock layers to gather evidence of changing life forms.	0807.5.7 Create a timeline that illustrates the relative ages of fossils in sedimentary rock layers.	SPI 0807.5.5 Compare fossils found in sedimentary rock to determine their relative age		Weeks 9-10 Common Assessment

				t: 7.5.4, 7.5.5
			Benchmark #1 (1st Nine Weeks)	
Physical Science				
GLE 0807.9.2 Explain that matter has properties that are determined by the structure and arrangement of its atoms	0807.9.2 Illustrate the particle arrangement and type of motion associated with different states of matter	SPI 0807.9.6 Compare the particle arrangement and type of particle motion associated with different states of matter. TN State Vocabulary: particle motion	Chapter 6.1-2 & Ch 7.2, 9.2 Atoms Glencoe Online Brain Pop Internet4Classrooms JC – Schools *see basic skills Super DVD: - Mind Joggers - Video Lab Active Folders - States of Matter - Principles of Gases and Liquids Virtual Lab: How does thermal energy affect the state of a substance? *see Virtual Lab CD or online Lab Demo – Viscosity TE pg 157 Mini Lab - Air Pressure txt pg 171 Cartesian Diver Demo- TE pg 172 Internet4Classrooms JC – Schools *see basic skills Brain Pop Active Folders – Matter Atomic Drawings/Models Inquiry Lab – Charged Particles *TE pg 196	Weeks 11-12
GLE 0807.9.1 Understand and explain that all matter is made up of atoms.	0807.9.1 Identify atoms as the smallest particle of matter	SPI 0807.9.1 Recognize that all matter consists of atoms TN State Vocabulary: atom, electron, proton, neutron, neutral		Weeks 11-12 *Common Assessment: 7.9.6, 7.9.1
GLE 0807.9.6 Use the periodic table to determine the characteristics of an element	0807.9.10 Identify the atomic number, atomic mass, number of protons, neutrons, and electrons in an atom of an element using the periodic table.	SPI 0807.9.9 Use the periodic table to determine the properties of an element.	Chapter 8 Periodic Table Glencoe Online Virtual Lab Brainpop	Weeks 13-15

		TN State Vocabulary: atomic mass, atomic number	Distinguishing Elements Activity/Lab Periodic Table Activity	Week 15 Common Assessment: 7.9.9, 7.9.3
	0807.9.5 Distinguish between elements and compounds by their symbols and formulas	SPI 0807.9.3 Classify common substances as elements or compounds based on their symbols or formulas (Should only take 1-2 days) TN State Vocabulary: element, compound		
GLE 0807.9.3 Interpret data from an investigation to differentiate between physical and chemical changes.	0807.9.6 Differentiate between physical and chemical changes.	SPI 0807.9.2 Identify the common outcome of all chemical changes. TN State Vocabulary: chemical change, exothermic, endothermic	Chapter 5 Phys & Chem Changes Glencoe Online Internet4Classrooms JC – Schools *see basic skills Brain Pop Super DVD: - Mind Joggers - Video Lab Active Folders – Physical and Chemical Changes Virtual Lab: How are physical and chemical changes distinguished? Finding the Difference – Txt pg 133 Physical and Chemical Reactions -TE Txt pg 138	Weeks 16-17
	0807.9.8 Determine the types of interactions between substances that result in a chemical change	SPI 0807.9.8 Interpret the results of an investigation to determine whether a physical or chemical change has occurred. TN State Vocabulary: diffusion		Weeks 16-17 Common Assessment: 7.9.2, 7.9.8
GLE 0807.9.8 Interpret the events represented by a chemical equation.	0807.9.12 Differentiate between the reactants and products of a chemical equation	SPI 0807.9.10 Identify the reactants and products of a chemical reaction. TN State Vocabulary: chemical equation, reactant, product	Chapter 10 Chem Reactions Glencoe Online Virtual Lab Brainpop Balancing Equations Activity	Week 18
GLE 0807.9.7 Explain the Law of Conservation of Mass.	0807.9.11 Use investigations of chemical and physical changes to describe the Law of Conservation of Mass.	SPI 0807.9.11 Recognize that in a chemical reaction the mass of the reactants is equal to the mass of the products (Law of Conservation of Mass). TN State Vocabulary:		Weeks 19-20 *Common Assessment: 7.9.10, 7.9.11

		Law of Conservation of Mass		
			Benchmark #2 (End of 2nd 9 Weeks)	
GLE 0807.9.4 Distinguish among elements, compounds, and mixtures.	0807.9.7 Describe how the characteristics of a compound are different than the characteristics of their component parts	SPI 0807.9.4 Differentiate between a mixture and a compound TN State Vocabulary: Compound	Chapter 11 Substances & Mixtures Glencoe Online Virtual Lab Brainpop Elements, compounds and mixtures Lab Acids and Bases Lab	Week 21
GLE 0807.9.5 Apply the chemical properties of the atmosphere to illustrate a mixture of gases.	0807.9.9 Explain how the chemical makeup of the atmosphere illustrates a mixture of gases.	SPI 0807.9.5 Describe the chemical makeup of the atmosphere. (Only spend 1-2 days)		Week 22-23 *Common Assessment: 7.9.4, 7.9.5
GLE 0807.9.9 Explain the basic difference between acids and bases	0807.9.13 Determine whether a substance is an acid or a base by its reaction to an indicator	SPI 0807.9.12 Identify the basic properties of acids and bases. TN State Vocabulary: acid, base		Week 23
Engineering				
GLE 0807.T/E.1 Explore how technology responds to social, political, and economic needs.	0807.T/E.4 Research bioengineering technologies that advance health and contribute to improvements in our daily lives.		Chapter 12.2-3 Sci Tech Glencoe Online Virtual Lab Brainpop Design Squad October Sky Dolphin Tale When we left Earth-NASA Missions	Week 24
GLE 0807.T/E.2 Know that the engineering design process involves an ongoing series of events that incorporate design constraints, model building, testing, evaluating,	0807.T/E.1 Use appropriate tools to test for strength, hardness, and flexibility of materials.	SPI 0807.T/E.1 Identify the tools and procedures needed to test the design features of a prototype.		Week 24 *Common Assessment: 7.9.12, T/E.1,

modifying, and retesting.	0807.T/E.2 Apply the engineering design process to construct a prototype that meets certain specifications.	SPI 0807.T/E.2 Evaluate a protocol to determine if the engineering design process was successfully applied.		T/E.2
GLE 0807.T/E.3 Compare the intended benefits with the unintended consequences of a new technology.	0807.T/E.3 Explore how the unintended consequences of new technologies can impact society	SPI 0807.T/E.3 Distinguish between the intended benefits and the unintended consequences of a new technology.		Week 25-26
GLE 0807.T/E.4 Describe and explain adaptive and assistive bioengineered products.	0807.T/E.5 Develop an adaptive design and test its effectiveness.	SPI 0807.T/E.4 Differentiate between adaptive and assistive engineered products (e.g., food, biofuels, medicines, integrated pest management).		Week 25-26 *Common Assessment: T/E.3, T/E.4
Forces				
GLE 0807.12.1 Investigate the relationship between magnetism and electricity.	0807.12.1 Create a diagram to explain the relationship between electricity and magnetism.	SPI 0807.12.1 Recognize that electricity can be produced using a magnet and wire coil.	Chapter 14 Magnetism Glencoe Online Virtual Lab Brainpop Design Squad Magnetic Field Inquiry Electromagnet Lab	Week 27
GLE 0807.12.2 Design an investigation to change the strength of an electromagnet.	0807.12.2 Produce an electromagnet using a bar magnet and a wire coil.	SPI 0807.12.2 Describe the basic principles of an electromagnet.		Week 27
	0807.12.3 Experiment with an electromagnet to determine how to vary its strength.	TN State Vocabulary: electromagnet		
			Benchmark #3 (End of 3rd Nine Weeks)	
0807.12.6 Identify factors that influence the amount of gravitational force between objects.	SPI 0807.12.5 Determine the relationship among the mass of objects, the distance between these objects, and the amount of gravitational attraction.	0807.12.6 Identify factors that influence the amount of gravitational force between objects. TN State Vocabulary gravitation (universal law)		
GLE 0807.12.5 Recognize that gravity is the force that controls the motion of objects in the solar system.	0807.12.7 Explain how the motion of objects in the solar system is affected by gravity.	SPI 0807.12.6 Illustrate how gravity controls the motion of objects in the solar system.		Week 28

<p>GLE 0807.12.3 Compare and contrast the earth's magnetic field to that of a magnet and an electromagnet.</p>	<p>0807.12.4 Create a chart to distinguish among the earth's magnetic field, and fields that surround a magnet and an electromagnet.</p>	<p>SPI 0807.12.3 Distinguish among the Earth's magnetic field, a magnet, and the fields that surround a magnet and an electromagnet.</p> <p>TN State Vocabulary magnetic field</p>		<p>Week 28 Common Assessment: 7.12.1, 7.12.2, 7.12.6, 7.12.3</p>
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