

Curriculum Map: 8th grade (Trimester 1 – physics)

Unit of Study	Key Concepts	Estimated Time	Learning Strategies	Activities	Instructional Resources	Assessments		Prerequisites	Content Expectations
						for Learning	of Learning		
Intro to waves and sound	-waves are described by their wavelength, amplitude, frequency and speed	4 weeks	-generate questions that can be investigated -evaluate the validity of scientific conclusions	CPO 1.1 parts 1-3-timer CPO 11.1 -harmonic motion CPO 12.3-wiggler	CPO ch.12- waves Skillsheet 11- harmonic motion Skillsheet 12- waves	-Lab write-up -quizzes -student work	-end of unit written assessment		P4.4A P4.4C
	-vibrations in matter initiate mechanical waves, including sound waves		-conduct scientific investigations using appropriate tools and techniques -identify patterns in data	CPO 12.3-natural frequency and resonance CPO 13.1-sound CPO 13.2-properties of sound	CPO ch.13- Sound and music				P4.4B P4.5B P4.5C P4.5E
	-waves transfer energy from one place to another		-describe a reason for a given conclusion -make predictions -design and conduct a scientific investigation	Slinky Demos CPO 13.3-music + palm pipes	CPO ch13- Sound and music				P4.1B P4.5A P4.5D P4.6D

	-waves can be reflected. Refracted or absorbed	↓	-draw conclusions from data	CPO 12.2-waves and motion	-CPO 12.2 -CPO lab book Q's p.84+85	↓	↓	P4.8c P4.8d P4.8e	
	-although light waves can travel through a vacuum, sound waves cannot	↓		Questions that go with the United Steaming Video	United Streaming Video: waves: energy in motion	↓	↓		P4.6B
The Nature of Light	-the laws of reflection and refraction describe the relationship between incident and reflected/refracted waves	5 weeks ↓	↓	CPO 15.1-seeing an image CPO 15.2-the human eye Skillsheet 15-A ray diagram Optional: sheep/cow eye dissection	CPO ch.14- light and color CPO ch.15- optics Skill- sheet 15A	↓	↓		P4.6A P4.6B P4.6C P4.6D P4.8A P4.8B P4.9C

Energy	-moving objects and waves transfer energy from one location or object to another	3 weeks		Demo: Newtonian Demonstrator Bumper cars Demo Billiards Demo	CPO 5.2- Energy conservation				P4.1A P4.1B P4.2D
	-energy can be transformed from one form to another. The amount of energy does not change.			CPO lab 5.3-energy transformation Optional: Skillsheet 5-C potential and kinetic energy Draw energy transfer diagrams	CPO 5.3- Energy Transformations				P4.2A P4.2B P4.2C
	-in most energy transformation, some energy is converted to thermal energy			Draw energy transfer diagrams	CPO 5.2- Energy conservation CPO 5.3- Energy Transformations				P4.2D

	-Heat transfer occurs by conduction, convection, and radiation.	↓	↓	<p>CPO lab 25.1 measuring heat</p> <p>Lab colored ice cube w/ water</p> <p>Optional: CPO lab 25.2 Flow of Heat</p> <p>Optional: CPO lab 25.3 Heat Transfer</p>	<p>Q. lab p.187</p> <p>CPO ch.25 Measuring Heat</p>	↓	↓		E2.2C
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Curriculum Map: 8th grade (Trimester 2 – geo science)

Unit of Study	Key Concepts	Estimated Time	Learning Strategies	Activities	Instructional Resources	Assessments		Prerequisites	Content Expectations
						for Learning	of Learning		
Maps	-There are different types of maps for different purposes	3 weeks	-generate questions that can be investigated -evaluate the validity of	-jigsaw notes activity -map from home to school	Glencoe Earth Science ch.2	-Lab write-up -quizzes -student work	-end of unit written assessment		(District expectation)
	-Maps and globes use a co-ordinate system to find locations		scientific conclusions -conduct scientific investigations using appropriate tools and techniques	-MI map lab -MI Road Trip -MI Voyage (optional)					
	-topographic maps are used to find the contour of the land		-identify patterns in data -describe a reason for a given conclusion	-Activity 6-3 -Farmington Topo. map -Spud Hill					

Earth Resources	-Water carbon and nitrogen are inter-related cycles of the Earth. The layers of the earth are Litho-, Bio-, Hydro-, and Atmosphere	4 weeks	-make predictions -design and conduct a scientific investigation	Glencoe Lab 25.2 water usage Drawing/book Darlene's Earth Poster Project Air unit from MEECS	Glencoe Geo book ch.25- Earth Resources	-Lab write-up -quizzes -student work	-end of unit written assessment		E4.p1A E4.p2A E2.3A E2.3c E2.3d E2.1B
	Resources are either renewable or non-renewable			Shrinky-dink Mobile rotating unit (assign each group a topic)	-Glencoe Geo book ch.26				E2.2B E2.4A
	-Most of the energy we use comes from fossil fuels and nuclear power								E2.2B E2.4A
	-Alternative energy sources include solar, water, geothermal, and wind	↓	↓	Optional: CPO lab 3I.3 The Sun	↓	↓	↓	↓	E2.2D

Astronomy	-scientific evidence indicates the universe is orderly in structure, finite, and contains all matter and energy	5 weeks		<p>CPO 30.2 telescope lab</p> <p>CPO 32.1 spectroscope lab</p> <p>Solar System Scale model lab</p> <p>Space Probe activity</p> <p>Optional: Glencoe 31.1 Modeling Spiral Galaxies</p> <p>Optional: CPO lab 32.2 Galaxies and the Universe</p> <p>Optional: Glencoe 29.1 Age + weight on other planets</p>	<p>Glencoe Geo book ch.28.1 and ch.29</p> <p>CPO ch.30.2 Tool of astronomy</p> <p>CPO ch.31.2- the solar system</p> <p>Solar System website</p> <p>CPO ch32.2- galaxies and the Universe</p>	<p>-Lab write-up</p> <p>-quizzes</p> <p>-student work</p>	<p>-end of unit written assessment</p>		E.5.1A
	-solar phenomena affect the earth	↓	↓	<p>Optional: Build a sun activity</p> <p>Optional: CPO lab 30.1 Sundial</p>	<p>Glencoe Geo Book ch.30.1</p> <p>CPO ch.31.3 The sun</p>	↓	↓		E5.2B

<p>-stars, including the Sun, transform matter into energy through nuclear fusion reactions</p>	<p>↓</p>	<p>↓</p>		<p>Optional: Build a sun activity</p>	<p>Glencoe Geo Book ch. 30.2 CPO ch.32.1- stars</p>	<p>↓</p>	<p>↓</p>		<p>E5.2A E5.2C E5.2D</p>
<p>-there is a wide range of stellar objects of different sizes and temperature</p>	<p>↓</p>	<p>↓</p>		<p>Make and color an H-R diagram WS using an H-R diagram</p>	<p>Glencoe Geo ch.30.2 CPO ch.32</p>	<p>↓</p>	<p>↓</p>		<p>E5.2f</p>
<p>-stars have varying life histories based upon their size and temperature</p>	<p>↓</p>	<p>↓</p>		<p>Optional: Mrs. Frizzle-life and death of a star project</p>	<p>Glencoe Geo ch. 30.3 CPO ch.32</p>	<p>↓</p>	<p>↓</p>		<p>E5.2e E5.2f E5.2h</p>

Curriculum Map: 8th grade (Trimester 3 – chemistry)

Unit of Study	Key Concepts	Estimated Time	Learning Strategies	Activities	Instructional Resources	Assessments		Prerequisites	Content Expectations
						for Learning	of Learning		
Measurement and Matter	-matter can be measured in a variety of ways. (length, mass, weight, volume, density, viscosity, buoyancy)	7 weeks ↓	-generate questions that can be investigated -evaluate the validity of scientific conclusions -conduct scientific investigations using appropriate tools and techniques	-CPO 16.2 how is matter measured -CPO 17.1 properties of solids w/ graphing -CPO 17.2 density of fluids -CPO 17.4 viscosity of fluids -Optional: CPO 17.3 buoyancy -add heat substances to predict relationship between temp + viscosity	CPO ch16.2 CPO ch17.1 CPO ch17.2 CPO ch17.4	-Lab write-up -quizzes -student work ↓	-end of unit written assessment ↓		CI.1C
	-matter can be classified as elements, compounds, mixtures, and pure substances	↓	-identify patterns in data -describe a reason for a given conclusion -make predictions	CPO 23.2 – solutions 2D sketch @ particle level CPO 16.1 – paper chromatography	CPO ch16.1 CPO ch23.2	↓	↓		P4.p2A P4.p2B P4.p2C P5.p1A

	↓ (cont.)		-design and conduct a scientific investigation -draw conclusions from data	Filtration Distillation Crystallization (make rock candy) Optional: Glencoe lab 4.1 Crystallization Separation/immiscibility					
	-the states of matter are solid, liquid, gas, and plasma			make and describe sketches	CPO ch.16.3				P4.p1A P4.p1B P4.p1C P5.p1A C4.3A C4.3B
	-matter can change from one state to another	↓	↓	-CPO lab 16.3 Q's: p.119 -Optional: graph of water states -drawings of molecular motion	CPO ch.16	↓	↓		P2.p1A P2.p1B C5.4B

	-matter can go through physical and chemical changes	↓	↓	CPO 20.1 evidence of chemical changes	CPO ch.20.1	↓	↓		C5.2B
Atoms and the Periodic Table	-electrons, protons, and neutrons are parts of the atom and have measurable properties, including mass and charge	5 weeks ↓	↓	Draw Bohr diagrams CPO lab 18.2 comparing atoms CPO lab 18.3 periodic table/ nuclear reactions	CPO ch.18.1, 18.2, 18.3 atomic structure	-Lab write-up -quizzes -student work ↓	-end of unit written assessment ↓		C4.8A C4.8B C4.8D C4.10A C4.10B
	-a kind of force that is only evident at nuclear distances holds the particles of the nucleus together against the electrical repulsion between the protons	↓	↓	Draw Bohr diagrams CPO lab 18.2 comparing atoms CPO lab 18.3 periodic table/ nuclear reactions	CPO ch.18.1, 18.2, 18.3 atomic structure	↓	↓		C4.8C

	<p>-in the periodic table, elements are arranged in order of increasing number of protons (the atomic number) AND -vertical groups in the periodic table (families) have similar physical and chemical properties due to the same outer electron structures</p>			<p>CPO18.3-periodic table of elements</p> <p>Lab: Secret Agent Man</p> <p>Lab: Alien Periodic Table</p>	<p>CPO ch18.3 the periodic table of elements</p>				<p>C4.9A</p>
	<p>-ions are charged atoms with an unequal number of protons and electrons</p>			<p>CPO 18.2 - comparing atoms</p>	<p>CPO ch18.2 comparing atoms</p>				<p>C4.8D</p>

	-isotopes are atoms of the same element with different number of neutrons	↓	↓	CPO 18.2 - comparing atoms	CPO ch18.2 comparing atoms	↓	↓		C4.10A

Last updated 6-20-07