

Grade 7 and 8: Physical Science					
Textbook : <i>Holt Science and Technology Physical Science (H)</i>					
Modules: <i>Chemical Interactions - FOSS (CI); Energy, Machines, and Motion - STC (EMM)</i>					
August/September (This may vary depending on every day or every other day instruction.)					
Key concepts	Standards	Assessments	Content	Skills	Lessons
Students will understand that ...		Students will demonstrate their learning by	Students will know ...	Students will be able to ...	
Science as Inquiry is the process they will using in science	S8.A.1.1.1 S8.A.1.1.2 S8.A.3.2.1 S8.A.2.1 S8.A.2.2.1 S8.A.2.2.2 S8.A.2.2.3	*Recorded data from Investigation *Note-booking *Teacher observation	the fundamental understandings about scientific inquiry, and be able to demonstrate the abilities to do scientific inquiry.	*explain current scientific knowledge, models and understanding that guide scientific investigations. *use appropriate tools and techniques to gather, analyze and interpret data.	(H)Chapter 1 (CI)and (EMM) Interspersed throughout the modules
the atomic nature of matter.	S.8.C.1.1	*Response sheets *Teacher observation *Note-booking	that atoms are the basic building blocks of matter	*provide evidence for the existence of atoms.	(H)Chapter 1, 2, 7 (CI) Investigation 1: Substances
		*Chapter 2 Resource File *Response sheets *Teacher observation *Note-booking		*describe how atoms combine to form molecules or crystal lattices.	(H)Chapter 2 (CI) Investigation 1: Substances
		*Chapter 4 Resource File *Response sheets *Teacher observation *Note-booking		*describe the structure of atoms using electrons, protons, and neutrons.	(H)Chapter 4
		*Response sheets *Teacher observation *Note-booking *Mid-summative exam 1-2		*relate atoms and molecules to the characteristics of elements and compounds.	(CI) Investigation 2: Elements
		*Lab notebook sheet *Teacher observation *Note-booking	all atoms and molecules are constantly moving.	*describe phase change in terms of the motion and arrangements of atoms and molecules.	(H)Chapters 3, 13, 14 (CI)Investigation 3: Particles
		*Lab notebook sheet *Teacher Observations *Note-booking *Mid-summative exam 3		*observe and describe the characteristic properties of solids, liquids, and gases in terms of atoms and molecules.	(H)Chapters 3, 13 (CI)Investigation 3: Particles
		*Lab notebook sheet *Response sheet *Mid-summative exam 4 *Note-booking		simple reaction of atoms and molecules.	*explain the roles of electrons in various types of chemical reactions.

that when substances change to form new substances, mass is conserved.	S.8.C.1.1	*Class discussion *Section reviews and quizzes *Teacher observation *Response sheets *Note-booking	that elements, compounds, mixtures and solutions have characteristic properties.	*determine the density of various substances.	(C)Investigation 5: Energy Transfer (C)Investigation 6: Heat of Fusion
	S.8.C.2.1 3.4.7.B 4.2.7.B	*Class discussion *Section reviews and quizzes *Teacher observations *Response sheets *Mid-summative exam 5		*describe physical and chemical properties of matter.	(C)Investigation 5: Energy Transfer (C)Investigation 6: Heat of Fusion
	S.8.C.2.1 3.4.7.B 4.2.7.B	*Class discussion *Section reviews and quizzes *Skill worksheets		*differentiate between mixtures and compounds.	(H)Chapters 9 and 10
	S.8.C.2.1 3.4.7.B 4.2.7.B	*Class discussion *Section reviews and quizzes *Skill worksheets *Quick writes *Lab notebook sheets *Note-booking		*classify substances as acid, base, or neutral.	(H)Chapters 2, 3, 10 (C)Investigation 7: Phase Change
	S.8.C.2.1 3.4.7.B 4.2.7.B	*Class discussion *Section reviews and quizzes *Skill worksheets *Quick writes *Lab notebook sheets *Note-booking	simple chemical changes.	*describe evidence of simple chemical reactions.	(H)Chapters 2, 3, 10 (C)Investigation 7: Phase Change
	S.8.A.2.2 S.8.C.1.1 3.3.7.A 3.7.7.B 3.1.7.D	*Quick writes *Lab notebook sheets *Response sheets *Note-booking		*differentiate between reactants and products in a chemical reaction.	(C)Investigation 8: Solutions
	S.8.A.2.2 S.8.C.1.1 3.3.7.A 3.7.7.B 3.1.7.D	*Quick writes *Response sheets *Note-booking		*relate chemical reactions to conservation of mass.	(C)Investigation 8: Solutions

that a change in the state of matter is caused by a transfer of heat energy.	S.8.C.2.1	*Class discussion *Section reviews and quizzes *Skill worksheets	that a loss or gain of heat energy affects molecular motion.	*define heat in terms of kinetic energy.	(H)Chapter 4 (CI)Investigation 8: Solutions
	S.8.A.2.2 S.8.C.1.1 3.3.7.A 3.7.7.B 3.1.7.D	*Chapter 2 Resource File *Teacher observations *Note-booking		*differentiate between heat and temperature.	(H)Chapters 1, 2, 5
	S.8.A.2.2 S.8.C.1.1 3.3.7.A 3.7.7.B 3.1.7.D	*Chapter 2 Resource File *Teacher observations *Note-booking	types of phase change.	*describe melting.	(H)Chapters 2, 7
	S.8.C.1.1 3.4.7.A	*Class discussion *Section reviews and quizzes *Lab worksheets *Quick writes *Note-booking		*describe freezing.	(H)Chapters 1, 2, 7
	S.8.C.1.1 3.4.7.A	*Teacher observation *Lab notebook sheets *Note-booking		*describe types of vaporization (boiling, evaporation).	(H)Chapters 11, 12, 13 (CI)Investigation 9: Reaction
	S.8.C.1.1 3.4.7.A	*Chapter 11 Resource File *Class discussion *Section reviews and quizzes *Lab worksheets *Quick writes *Note-booking		*describe condensation.	(H)Chapters 11
	S.8.C.1.1 3.4.7.A			*investigate the relationship between temperature and phase change.	(H)Chapters 13, 14 (CI)Investigation 9: Reaction

the relationship between forces, motion, and energy.	S.8.A.1.2 S.8.C.2.1 S.8.C.3.1 3.2.7.C 3.8.7.A 3.8.7.B 4.3.7.A 3.4.7.B 4.2.7.B 3.4.7.C 3.6.7.C S.8.A.1.1 S.8.A.2.1 S.8.A.2.2	*Chapter 6 Resource File *Teacher observations *Reflections	types of forces and their relationship to motion.	*explain that a force is a push or a pull on an object.	(H)Chapters 5, 6, 7 (EMM) Lesson 1: Circuit of Inquiries
		*Student sheets *Teacher observation *Reflections *Note-booking		*recognize that an unbalanced force is necessary to make a resting object move, bring a moving object to rest, or change the direction of a moving object.	(EMM) Lesson 2: Making a Battery
		*Chapter 9 Resource File *Student sheets *Teacher observation *Reflections *Note-booking *Graphing		*recognize that friction is a force that opposes motion.	(H)Chapters 9 (EMM) Lesson 3: Rechargeable Batteries (EMM) Lesson 4: Storing and using Energy in a Battery
		*Student sheets *Teacher observations *Reflections *Note-booking *Graphs and charts	how forces affect motion within simple machines.	*compare load and effort.	(H)Chapters 1, 2, 5 (EMM)Lesson 5: Introduction to Forces
		*Lab checklist *Performance assessment *Graphs *Note-booking		*explore the effect of forces on simple machines.	(H)Chapter 5 (EMM)Lesson 6: The Force of Friction
		*Reflections *Data analysis *Note-booking	different forms of energy.	*explain how all energy can be considered to be kinetic or potential.	(EMM)Lesson 7: The Force Exerted by a Motor
		*Student sheets *Reflections *Data analysis *Note-booking		*recognize that energy is a property of many substances and is associated with multiple forms (e.g. electrical, mechanical, heat, light, sound, nuclear).	(EMM)Lesson 8: Work and the Motor
		*Student sheets *Reflections *Data analysis *Note-booking *(EMM)Lesson 10: Assessing What You Know		*recognize that energy can be stored and released to make an object move.	(EMM)Lesson 9: Power of a Motor

		*Student sheets *Reflections *Data analysis *Note-booking	how forces affect motion within simple machines.	*demonstrate how machines can reduce effort force and increase effort distance when doing work.	(EMM)Lesson 11: The Inclined Plane, Lesson 12: The Pulley Lesson 13: The Lever
		*Student sheets *Reflections *Data analysis *Note-booking *(EMM)Lesson 16: Machines Assessment: A Technological Design		*calculate the mechanical advantage and efficiency of simple machines.	(EMM)Lesson 14: The Mechanical Advantage of Machines, Lesson 15: Efficiency of Machines
	S.8.A.1.2 S.8.C.2.1 S.8.C.3.1 3.2.7.C 3.8.7.A 3.8.7.B 4.3.7.A 3.4.7.B 4.2.7.B 3.4.7.C 3.6.7.C	*Student sheets *Reflections *Rubrics *Note-booking *(EMM) Lesson 17: Introduction to Anchor Activity	the scientific definition of speed and acceleration.	*determine how to calculate speed and describe the motion of a car.	(EMM)Lesson 18: Motion of a Fan Car
	S.8.A.1.2 S.8.C.2.1 S.8.C.3.1 3.2.7.C 3.8.7.A 3.8.7.B 4.3.7.A 3.4.7.B 4.2.7.B 3.4.7.C 3.6.7.C	*Student sheets *Reflections *Note-booking *Predictions *Claims-based evidence	forces can change the speed of an object.	*identify and describe the forces acting on a car.	(EMM)Lesson 19: Motion of a Mousetrap Car
	S.8.A.1.2 S.8.C.2.1 S.8.C.3.1 3.2.7.C 3.8.7.A 3.8.7.B 4.3.7.A 3.4.7.B 4.2.7.B 3.4.7.C 3.6.7.C	*Student sheets *Reflections *Note-booking *Predictions *Claims-based evidence *(EMM) Lesson 22: Anchor Activity *Module post assessment	forces can accelerate an object.	*observe and describe the motion of the roller coaster.	(EMM)Lesson 20: The Roller Coaster, Lesson 21: Motion on a Roller Coaster

Electricity and magnetism are related forms of energy

<p>S.8.A.3.1 S.8.C.2.1 3.1.7.A 3.4.7.B 4.3.7.C 4.2.7.D 4.6.7.A 4.2.7.B</p>	<p>*Start up Activity *Directed Reading *Class Discussion *Section Reviews & Quizzes *Skills Worksheets *Activities and Labs *Chapter Tests</p>	<p>the relationship between electricity and magnetism.</p>	<p>*construct an electromagnet.</p>	<p>Chapter 18</p>
<p>S.8.A.3.1 S.8.C.2.1 3.1.7.A 3.4.7.B 4.3.7.C 4.2.7.D 4.6.7.A 4.2.7.B</p>			<p>*describe applications for electromagnets.</p>	<p>Chapter 18</p>
<p>S.8.A.3.1 S.8.C.2.1 3.1.7.A 3.4.7.B 4.3.7.C 4.2.7.D 4.6.7.A 4.2.7.B</p>		<p>the parts and functions of various electrical circuits.</p>	<p>*construct a series circuit.</p>	<p>Chapter 17 "A Series of Circuits" pg. 496</p>
<p>S.8.A.3.1 S.8.C.2.1 3.1.7.A 3.4.7.B 4.3.7.C 4.2.7.D 4.6.7.A 4.2.7.B</p>			<p>*construct an electrical cell.</p>	<p>Chapter 17</p>
<p>S.8.A.3.1 S.8.C.2.1 3.1.7.A 3.4.7.B 4.3.7.C 4.2.7.D 4.6.7.A 4.2.7.B</p>			<p>*construct a parallel circuit.</p>	<p>Chapter 17</p>
<p>S.8.A.3.1 S.8.C.2.1 3.1.7.A 3.4.7.B 4.3.7.C 4.2.7.D 4.6.7.A 4.2.7.B</p>		<p>alternative methods for generating electricity.</p>	<p>*identify advantages and disadvantages of converting alternative forms (solar, hydro-electric, wind, nuclear, hydrogen) to generate electricity.</p>	<p>Chapter 17 "A Parallel Lab" pg. 497</p>