Pacing Guide for Grade 8: PHYSICAL SCIENCE (Prentice Hall)

Text page	Chap. Sect.	Section Topic	CA Science Standards	Labs and Activities	Suggested Pacing	Main Idea, Notes
Unit 1 - CHEMICAL BUILDING BLOCKS						
Chapter One: INTRODUCTION TO PHYSICAL SCIENCE						***Recommend doing sec.6 on lab safety first***
43	1.6	Science laboratory safety*	9	■Scientific method ■Measuring: length area volume of liquids & solids (regular, irregular) weight, mass density temperature ■Use of equipment ■Graphing of data	1 day	Also refer to Appendix A: Lab Safety, pg 650
6	1.1	What is physical science?	9		1 day	Branches of physical science, skills
10	1.2	Scientific inquiry	9a, 9c		3 days	Scientific method, models, laws, theories
16	1.3	Measurement	8a, 8b, 9b		5 days	Length, area, volume, mass, weight, density, temp, time, and use of equipment (refer to Appendix B: Use of a balance, pg 652)
30	1.4	Mathematics and science	9b		2 days	Estimation, accuracy, precision
34	1.5	Graphs in science	8b, 9d, 9e, 9g		5 days	Line graph, best fit, slope, bar graph, pie chart
48	1	*Chapter Assessment*			1 day	
Chapter Two: THE NATURE OF MATTER						
58	2.1	Describing matter	3b, 5d	■Chemical and physical properties: elements compounds ■Separating mixtures ■Physical changes ■Chemical changes	4 days	Chemical, physical properties, elements, compounds, mixtures
68	2.2	Changes in matter	5a, 5b		4 days	Physical and chemical changes
73	2.3	Energy and matter	3b, 5c, 9a		4 days	Forms of energy, energy transformation
80	2	*Chapter Assessment*			1 day	
Chapter Three: SOLIDS, LIQUIDS, AND GASES						
90	3.1	States of matter	3e	■Change of state ■Charles Law ■Boyles Law	4 days	Motion and arrangement of particles in solids, liquids, gases
96	3.2	Changes of state	3d, 5d, 9b		4 days	Melting, freezing, evaporation, condensation
103	3.3	The behavior of gases	3d, 3e, 8a, 8b, 9e, 9f		4 days	Charles's Law (temp vs. volume), Boyle's Law (pressure vs. volume), pressure vs. temp
114	3	*Chapter Assessment*			1 day	
					44 days	
End of Quarter One				Benchmark 1 - check assessment calendar for date		

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Chapter Four: ELEMENTS AND THE PERIODIC TABLE						
124	4.1	Introduction to atoms	3a, 7b	■Modeling atoms ■Group reactivity	3 days	Atomic theory, models of atomic structure
131	4.2	Organizing the elements	7a, 7c		4 days	Periodic table - history and organization
138	4.3	Metals	7a, 7c, 9c		4 days	properties, periodic table, synthetic elements
148	4.4	Nonmetals, inert gases, and semimetals	5a, 7a, 7c, 9			properties, families, inert gases, semimetals
158	4.5	Radioactive elements	7b		optional	radioactive decay, radioactive isotopes
164	4	*Chapter Assessment*			1 day	
Unit 2 - CHEMICAL INTERACTIONS						
Chapter Five: ATOMS AND BONDING						
176	5.1	Atoms, bonding, and the periodic table	3f	■Modeling of chemical bonds ■Properties of: covalent bonds ionic bonds	4 days	Valence electrons, use of periodic table
184	5.2	Ionic bonds	3b, 3c, 7c, 9c		4 days	Ions, chem. formulas, nomenclature, ionic
192	5.3	Covalent bonds	3b, 7c			Molecular compounds, sharing of electrons
198	5.4	Bonding in metals	3b, 7c			Metals and alloys, metallic properties
204	5	*Chapter Assessment*			1 day	
Chapter Six: CHEMICAL REACTIONS						
214	6.1	Observing chemical change	3a, 5a, 5c, 9b	■Chemical changes ■Types of chemical changes: decomposition single replacement double replacement exothermic reactions endothermic reactions	4 days	Chemical changes, evidence of reactions
224	6.2	Describing chemical reactions	5b		4 days	Chemical equations, conservation of matter, balancing chemical equations
234	6.3	Controlling chemical reactions	5a, 5c, 9a		optional	If time; standards have already been covered.
242	6.4	Fire and fire safety	5b, 5c		optional	
246	6	*Chapter Assessment*			1 day	
Chapter Seven: ACIDS, BASES, AND SOLUTIONS						
256	7.1	Understanding solutions	3d, 5d	■pH ■Concentration ■Properties of: acids bases ■Neutralization ■Indicators	1 day	A lot of the material in this chapter has already been covered in chap. 2 and chap. 3 (properties of matter, states of matter). If time is an issue, just spend one or two periods going over pages 276-277.
262	7.2	Concentration and solubility	5d		1 day	
268	7.3	Describing acids and bases	5e		2 days	
274	7.4	Acids and bases in solution	5c, 5d, 5e, 9c			
282	7	*Chapter Assessment*			1 day	
Chapter Eight: CARBON CHEMISTRY						
292	8.1	Properties of carbon	6a	■Polymers (slime) ■Molecular models	1 day	This may be redundant if chap. 2 and 3 were covered thoroughly in the beginning of the year. It is more important to be ready to move into the next Unit on Motion and Forces at the end of the quarter than to spend a lot of time here.
296	8.2	Carbon compounds	3c, 6a		1 day	
306	8.3	Polymers and composites	3c, 6a		1 day	
316	8.4	Life with carbon	6a, 6b, 6c, 9c		1 day	
326	8	*Chapter Assessment*			1 day	
					40 days	

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Text page	Chap. Sect.	Section Topic	CA Science Standards	Labs and Activities	Suggested Pacing	Main Idea, Notes
End of Quarter Two				Benchmark 2 - check assessment calendar for date		

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Text page	Chap. Sect.	Section Topic	CA Science Standards	Labs and Activities	Suggested Pacing	Main Idea, Notes
Unit 3 - MOTION, FORCES and ENERGY						
Chapter Nine: MOTION AND ENERGY						
338	9.1	Describing motion	1a	■Speed ■Acceleration	2 days	Motion, distance, displacement
342	9.2	Speed and velocity	1b, 1c, 1d, 9e		10 days	Speed, velocity, graphing speed
350	9.3	Acceleration	1c, 1e, 1f, 9f			Changing velocity, calculating acceleration
358	9.4	Energy			optional	If time - no 8th grade standards for this section
364	9	*Chapter Assessment*			1 day	
Chapter Ten: FORCES						
374	10.1	The nature of forces	2a, 2c	■Friction ■Forces: balanced unbalanced ■Laws of motion	2 days	Forces, combining forces,
380	10.2	Friction, gravity, and elastic forces	2b, 2c, 2d		7 days	Friction, gravity and motion
389	10.3	Newton's first and second laws	2e, 2f		5 days	3 Law's of motion, conservation of momentum
393	10.4	Newton's' third law	2e, 2f, 9e			
402	10.5	Rockets and satellites	2e, 9e		optional	If time - standards have already been covered.
406	10	*Chapter Assessment*			1 day	
Chapter Eleven: FORCES IN FLUIDS						
416	11.1	Pressure	2e, 8c, 8d, 9c, 9f	■Pressure ■Density liquids solids ■Archimedes Principle ■Buoyant Force	5 days	Calculating pressure, fluid pressure
424	11.2	Floating and sinking	8c, 8d, 9a		5 days	Density, buoyancy, Archimedes principle
432	11.3	Pascal's Principle	8c		4 days	Transmitting pressure in fluid, hydraulic systems
437	11.4	Bernoulli's Principle	2e, 8a, 8b, 8d, 9f			Pressure in moving fluids
444	11	*Chapter Assessment*			1 day	
					43 days	
End of Quarter Three				Benchmark 3 - check assessment calendar for date		

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Text page	Chap. Sect.	Section Topic	CA Science Standards	Labs and Activities	Suggested Pacing	Main Idea, Notes
Unit 4 - ASTRONOMY						
Chapter Twelve: EARTH, MOON, AND SUN						
464	12.1	Earth in space	4e		*	* This unit covers the "*least essential*" (in terms of what's on the CST) of 8th grade standards. Review some of the basic facts prior to the CST; then devote the remainder of the year afterwards to this material.
474	12.2	Gravity and motion	2g		*	
478	12.3	Phases, eclipses, and tides	2g, 4d, 4e,		*	
488	12.4	Earth's moon	4e, 9a		*	
492	12	*Chapter Assessment*			*	
Chapter Thirteen: EXPLORING SPACE						12% on Grade 8 Science Blueprint:
502	13.1	The science of rockets	2e,		*	a. Students know galaxies are clusters of billions of stars and may have different shapes. (1 question)
510	13.2	The space program	4d		*	b. Students know that the Sun is one of many stars in the Milky Way galaxy and that stars may differ in size, temperature, and color. (2 questions)
515	13.3	Exploring space today	4d		*	
520	13.4	Using space science on Earth	2d, 2e, 7c, 9c		*	
528	13	*Chapter Assessment*			*	c. Students know how to use astronomical units and light years as measures of distances between the Sun, stars, and Earth. (1 question)
Chapter Fourteen: THE SOLAR SYSTEM						
538	14.1	Observing the Solar System	4c, 4d, 4e		*	d. Students know that stars are the source of light for all bright objects in outer space and that the Moon and planets shine by reflected sunlight, not by their own light. (1 question)
545	14.2	The Sun	2g, 4b, 9e		*	
552	14.3	The inner planets	4e		*	
562	14.4	The outer planets	4e, 9a		*	
572	14.5	Comets, asteroids, and meteors	4e		*	
576	14.6	Is there life beyond Earth?	4e, 6c, 9b		*	e. Students know the appearance, general composition, relative position and size, and motion of objects in the solar system, including planets, planetary satellites, comets, and asteroids. (2 questions)
580	14	*Chapter Assessment*			*	
Chapter Fifteen: STARS, GALAXIES, AND THE UNIVERSE						
590	15.1	Telescopes	4d		*	
598	15.2	Characteristics of stars	4b, 4c, 9b		*	
608	15.3	Lives of stars	4b, 4d		*	
614	15.4	Star systems and galaxies	4a, 4b		*	
622	15.5	The expanding universe	2g, 4a, 4b, 4d, 9c		*	**CST Window: April 6 - May 17, 2012**
628	15	*Chapter Assessment*			*	
End of Quarter Four				Benchmark 4 - check assessment calendar for date		