

Pacing Guide for Grade 7: LIFE SCIENCE (Prentice Hall)

Text page	Chap. Sect.	Section Topic	CA Science Standards	Labs and Activities (LZ = Lab Zone)	Suggested Pacing	Main Idea, Notes
Unit 1 - LOOKING AT CELLS						
Chapter One: WHAT IS LIFE SCIENCE?						
6	1.1	Thinking like a scientist	5g, 7	■ Scientific method ■ Measuring & graphing practice activities ■ Microscopes: parts of, how to use look at newsprint letter "e", hair, thread, cheek cells dry mounts wet mounts	2 days	Observing, inferring, predicting, classifying Also refer to Skills Handbook: p. 670-671
		Measurements, graphing, math in science	7a		5 days	Skills Handbook p. 672 - 685
13	1.2	The study of life	5, 6		2 days	Branches of life science, big ideas
18	1.3	Scientific inquiry	5, 7c		8 days	Appendix A: Lab Safety, p. 686-687 Appendix B: Using a Microscope, p. 688-689
23	1.4	Safety in the laboratory, Lab equipment	5, 7, 7c, 7e			
28	1	Chapter Assessment			1 day	
Chapter Two: USING LIGHT						
38	2.1	Waves and the electromagnetic spectrum	6a	■ Prisms, white light (LZ 38) ■ Ropes for amplitude, wave-length, frequency, energy transfer ■ Mixing colors (LZ 46) ■ Cellophane filters ■ Bouncing ball (LZ 52) ■ Looking at images (LZ 61) ■ Beam of light (LZ 62) ■ Pinhole viewer (LZ 65)	5 days	Waves, energy, electromagnetic spectrum
46	2.2	Visible light and color	6e, 6f, 7c			Color, transparency, combinations of color
52	2.3	Reflection and refraction	6c, 6d, 6g, 7c		2 days	Mirrors, lenses, angles
62	2.4	Seeing light	5g, 6b, 6c, 6e		1 day	Vision, eyes
65	2.5	Optical tools	6c, 6d, 6g, 7		1 day	Cameras, telescopes, microscopes
70	2	Chapter Assessment			1 day	
Chapter Three: CELL STRUCTURE AND FUNCTION						
80	3.1	Discovering cells	1, 1a, 6d, 7a	■ Photos up close (LZ 80) ■ Build a scope (LZ 86) ■ Size of cells (LZ 88) ■ Prepared slides of animal and plant cells (nucleus, mitochondria, chloroplasts) ■ Cell as a city (build model) ■ Micro viewer strips ■ Compounds (LZ 97)	10 days	Overview, history, cell theory
88	3.2	Looking inside cells	1b, 1c, 7d			Animal vs. plant cells, organelles, diversity
97	3.3	Chemical compounds in cells	1a		6 days	Elements, compounds, carbohydrates, lipids, proteins, nucleic acids
102	3.4	The cell in its environment	1a			Diffusion, osmosis, active transport
108	3	Chapter Assessment			1 day	
					45 days	
End of Quarter One				Benchmark 1 - check assessment calendar for date		

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Chapter Four: CELL PROCESSES AND ENERGY						
118	4.1	Photosynthesis	1d	■ Leaf pigments (LZ 121) ■ Yeast respiration (LZ 123) ■ Yeast cell division (LZ 129) ■ Chenille stem mitosis (LZ 130)	5 days	Energy sources, stages of photosynthesis
123	4.2	Respiration	1d, 7		Stages of respiration, fermentation	
129	4.3	Cell division	1e, 2e, 7a		3 days	Interphase, mitosis, replication
138	4.4	Cell differentiation	1d, 1f		3 days	Organization, how cells differentiate
142	4	Chapter Assessment			1 day	
Unit 2 - GENETICS AND EVOLUTION						
Chapter Five: GENETICS: THE SCIENCE OF HEREDITY						
154	5.1	Mendel's work	2d	■ Class survey (LZ 160) ■ Coin toss probability (LZ 162) ■ Morse code (LZ 175) ■ Build models of DNA	4 days	Mendel's experiments, dominant/recessive alleles
162	5.2	Probability and heredity	2b, 2d		Principles of probability, phenotypes, genotypes	
170	5.3	The cell and inheritance	2b		4 days	Chromosomes, meiosis
175	5.4	Genes, DNA, and proteins	1a, 2d		Genetic code, protein production, mutations	
182	5	Chapter Assessment			1 day	
Chapter Six: MODERN GENETICS						
192	6.1	Human inheritance	2, 2c, 2d	■ Punnett squares ■ Make family pedigrees ■ Fingerprints (LZ 205)	3 days	Patterns, sex chromosomes
199	6.2	Human genetic disorders	2b, 2d		Causes, pedigrees, genes vs. environment	
205	6.3	Advances in genetics	2b, 2d, 2e		1 day	Selective breeding, cloning, genetic engineering
214	6	Chapter Assessment			1 day	
Chapter Seven: CHANGES OVER TIME						
224	7.1	Darwin's theory	3a, 3b, 7c, 7e	■ Variations in sunflower seeds (LZ 224) ■ Bird beaks (LZ 227) ■ Natural selection (LZ 229) ■ Plaster of Paris fossils ■ Classifying an owl (LZ 253)	1 day	Darwin's observations, natural selection
234	7.2	Evidence of evolution	3c, 4e		1 day	Fossils
241	7.3	Evolution of species	3a, 3e, 7b		1 day	Variety of species, new species, extinction
248	7.4	Classifying organisms	3d		4 days	Characteristics used to classify, nomenclature
255	7.5	Branching trees	3a, 3d		Evolutionary relationships	
258	7	Chapter Assessment			1 day	
Chapter Eight: EARTH'S HISTORY						
268	8.1	The rock cycle	4a, 4c	■ Age of layers (LZ 272) ■ Half-life with clay (LZ 279) ■ Rock samples and pictures ■ Student time lines (LZ 286)	5 days	Review of 6th grade material: types of rock, rock cycle, rock layers, dating of rock, fossils, plate tectonics, geologic time scale
272	8.2	The relative age of rocks	4c, 7c			
279	8.3	Radioactive dating	4d			
283	8.4	Movement of Earth's plates	4f			
286	8.5	The geologic time scale	4b, 4g, 7d			
300	8	Chapter Assessment		1 day		
					40 days	
End of Quarter Two				Benchmark 2 - check assessment calendar for date		

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Unit 3 - STRUCTURE AND FUNCTION IN LIVING SYSTEMS						
Chapter Nine: VIRUSES, BACTERIA, PROTISTS, AND FUNGI (also refer back to classification, Ch. 7)						
318	9.1	Viruses	2a, 5, 5a, 7d	■ Bacterial cultures of hands ■ Bacteria replication with beans (LZ 325) ■ Hay infusions to look at protists (LZ 334) ■ Bread vs. fruit mold (LZ 344) ■ Cotton ball spores (LZ 346)	5 days	(Some of this material will also be covered in Health/HIV/AIDS curriculum.) Characteristics, reproduction, diseases caused by viruses, bacteria; beneficial role of bacteria
325	9.2	Bacteria	1, 2a		Animal-like, plant-like, and fungus-like protists	
334	9.3	Protists	1d, 5a, 7		2 days	Reproduction, role in nature
344	9.4	Fungi	1a, 2a, 5, 5a		1 day	
352	9	Chapter Assessment				
Chapter Ten: STRUCTURE AND FUNCTION OF PLANTS (also refer back to classification, Ch. 7)						
362	10.1	The plant kingdom	5a	■ Leaf comparison (LZ 362) ■ Water absorption in peat moss vs. sand (LZ 370) ■ Seed observations (LZ 375) ■ Photosynthesis in Elodea (LZ 386) ■ Dissect a flower ■ Make & label a flower model	2 days	Defining a plant, adaptations, classification
370	10.2	Plants without seeds	5, 5a, 7d		2 days	Nonvascular, seedless vascular
375	10.3	The characteristics of seed plants	5a		4 days	Seeds, life cycle
380	10.4	Roots, stems and leaves	1d, 5a, 7c			Role of plant parts
388	10.5	Reproduction in seed plants	2a, 5, 5a, 5f, 7a		4 days	Gymnosperms, angiosperms, structure of flowers
400	10	Chapter Assessment			1 day	
Chapter Eleven: STRUCTURE AND FUNCTION OF INVERTEBRATES (also refer back to classification, Ch. 7)						
410	11.1	What is an animal?	5a	■ Earthworm responses (LZ 433) ■ Movement of exoskeleton (LZ 434) ■ Graphing of insect groups (LZ 439) ■ Labeled drawings of invertebrates	5 days	Structures, functions, symmetry, classification
417	11.2	Sponges and Cnidarians	2a, 5a			Overview of body structure and reproduction
424	11.3	Worms and mollusks	2a, 3d, 5a, 5b, 7e			Flatworms, roundworms, segmented worms, body structure and reproduction of mollusks
434	11.4	Arthropods	2a, 3d, 5b, 7d			Characteristics/diversity of arthropods, insects
443	11.5	Echinoderms	2a, 5b			Body structure, reproduction, diversity
446	11	Chapter Assessment			1 day	
Chapter Twelve: STRUCTURE AND FUNCTION OF VERTEBRATES (also refer back to classification, Ch. 7)						
456	12.1	What is a vertebrate?	4g, 5b, 5c, 7a, 7c	■ Model backbone (LZ 461) ■ Observation of chicken bones (LZ 466) ■ Observation of feathers (LZ 480) ■ Skeleton models - label bones	15 days	Chordates, vertebrates
462	12.2	Fishes	5b			Characteristics, reproduction, diversity
468	12.3	Amphibians	3a, 5a			Lifecycle, living on land
472	12.4	Reptiles	3e, 5a			Adaptations, diversity, extinct reptiles
480	12.5	Birds	2a, 5a			Characteristics, adaptations, reproduction
486	12.6	Mammals	2a, 5a, 5b, 7c			Characteristics, diversity
496	12	Chapter Assessment			1 day	
					43 days	
End of Quarter Three				Benchmark 3 - check assessment calendar for date		

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Unit 4 - STRUCTURE AND FUNCTION IN THE HUMAN BODY						
Chapter Thirteen: BONES AND MUSCLES						
508	13.1	Organ systems and homeostasis	5a	■ Parts of body working together (LZ 508) ■ Classifying joints (LZ 521) ■ Human skeleton model with labels ■ Clothespin lab (LZ 526) ■ Exercise journal ■ Chicken wing lab (LZ 531)	9 days	Cells, tissues, organs, organ systems
518	13.2	The skeletal system	5c, 6h			Functions, joints, bones
526	13.3	The muscular system	5c, 7d			Types of muscles, how they work
532	13.4	Machines and the body	5a, 6h, 6i, 7a			Force and work, levers in the body
542	13	Chapter Assessment			1 day	
Chapter Fourteen: CIRCULATION AND RESPIRATION						
552	14.1	The body's transport system	5a, 6j, 7c	■ How hard does your heart work? (LZ 552) ■ Microscope slides of blood (LZ 563) ■ Balloon for lung capacity (LZ 570) ■ Frog dissection - applies to next chapter as well	9 days	Cardiovascular: heart, arteries, capillaries, veins
563	14.2	Blood and lymph	5a, 5b			Blood cells, blood types, lymphatic system
570	14.3	The respiratory system	5a, 5b, 7d			Functions, path of air, gas exchange, breathing
580	14.4	Cardiovascular and respiratory diseases	5a, 5b			Definitions, effects, prevention
590	14	Chapter Assessment			1 day	
Chapter Fifteen: THE NERVOUS SYSTEM						
600	15.1	How the nervous system works	5b, 7c	■ Reaction times (LZ 605) ■ Reflexes (LZ 606) ■ Seeing with one eye (LZ 614) ■ Dissection of cow's eye ■ Identifying objects by touch (LZ 621)	9 days	Functions, neurons, nerve impulses
606	15.2	Divisions of the nervous system	5b			Central: brain, spinal cord; peripheral, reflexes
614	15.3	Sight and hearing	5g, 6b			Lenses (eye, telescope, microscope), hearing and balance
621	15.4	Smell, taste, and touch	5b			Overview
624	15.5	Alcohol and other drugs	5b, 5g	See chapter 16 notes below		
630	15	Chapter Assessment			1 day	
Chapter Sixteen: THE ENDOCRINE SYSTEM AND REPRODUCTION						
640	16.1	The endocrine system	5b, 7	■ Exercise journals ■ Food journals ■ Labeled models / drawings ■ Guest speakers	15 days	Chap. 15.5 and all of chap. 16 need to be taught with Health Curricula: Nutrition, Project Alert, HIV Training
648	16.2	The male and female reproductive systems	5d			
656	16.3	Pregnancy, development and birth	1f, 5b, 5e			
664	16	Chapter Assessment				1 day
					46 days	
End of Quarter Four				Benchmark 4 - check assessment calendar for date		