

	Week	Unit	Topics by week	Lab or simulation
Quarter 1	1	Unit 1: Nature of life Chapter 1: The science of biology	1.1 What is science 1.2 Science in context 1.3 Patterns in life	Interactivity: Scientific methodology Quick Lab: Replicating procedures
	2	Chapter 2 Chemistry of Life	2.1 Nature of matter 2.2 Properties of water	Interactivity: Types of bonding Properties of water Lab Science Skills: Exercise & Blood pH
	3		2.3 Carbon compounds	Understanding macromolecules (virtual) Macromolecules lab
	4		2.4 Chemical reactions & enzymes	Exploration Lab: Temperature and enzymes (foundations)
	5	Unit 2: Ecology Chapter 3 The biosphere	3.1 Introduction to global systems 3.2 Climate & weather	Quick Lab Guided Inquiry: Different surfaces, different temps
	6	Chapter 4 Ecosystems	3.3 Biomes & aquatic ecosystems	Biomes Research Project - Ignite Presentation
	7		4.1 Energy, producers, consumers 4.2 Energy flow in ecosystems	Interactivity: Food Webs Interactivity: Energy Pyramids PBL: Food Webs & Invasive Species
	8		4.3 Cycles of matter	Interactive: Biogeochemical cycles Exploration Lab: Effects of Fertilizer on Algae Growth
	9	Chapter 5 Populations		
Fall Break				
Quarter 2	10	Chapter 6 Communities and ecosystem dynamics	5.1 How populations grow 5.2 Limits to growth 5.3 Human population growth	Limiting factors model (HS+B.L2U1.1) Modeling Lab: Estimating population LARP: Oh, Deer! Interactivity: Types of limiting factors Interactivity: Human population growth Simulation: Investigate population growth rates
	11	Chapter 7 Humans & global change	6.1 Habitats, niches, species interactions 6.2 Succession 6.3 Biodiversity, ecosystems, resilience	Simpson's diversity index lab Engage in argument from evidence (HS+B.L4U1.2)
	12		7.1 Ecological footprints 7.2 Causes and effects of global change 7.3 Measuring and responding to change 7.4 Sustainability	Calculating ecological footprint
	13	Unit 3 Cells Chapter 8 Cell structure and function	8.1 Life is cellular 8.2 Cell structure	Exploration Lab: Detecting diffusion dialysis/cell transport
	14	Aspire mimics (Thanksgiving week, 2 days)	8.3 Cell transport 8.4 Homeostasis & cells	Guided Inquiry PhET sim: Membrane channels Plasmolysis of plant cells Homer-stasis
	15		Aspire	
	16		9.1 Energy & life 9.2 Photosynthesis: an overview	Interactivity: Model of photosynthesis
	17	Chapter 9 Photosynthesis	9.3 Process of photosynthesis	Photosynthesis & light (elodea) Write a story of photosynthesis
	18		Final exam review	
19	Finals week	Finals week		
Winter Break				
Quarter 3	20	Unit 3 Cells Chapter 10 Cellular respiration	10.1 Cell respiration overview 10.2 Process of cell respiration	Interactivity: Cellular Respiration Modeling Lab: Cellular Respiration
	21	Chapter 11 Cell growth & division	10.3 Fermentation	Fermentation lab
	22		11.1 Cell growth, division, reproduction 11.2 Process of cell division 11.3 Regulating the cell cycle	Cell size lab
	23		--Ch 11 complete; test Unit 4 Genetics Chapter 12 Introduction to genetics	11.4 Cell differentiation 12.1 The work of Gregor Mendel 12.2 Applying Mendel's principles
	24		12.3 Other patterns of inheritance 12.4 Meiosis	Meiosis modeling

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Quarter 3	25	Chapter 13 DNA	13.1 Identifying the substance of genes 13.2 Structure of DNA 13.3 DNA Replication	Using DNA to identify species DNA origami
	26	Chapter 13 DNA Chapter 14 RNA and protein synthesis	14.1 RNA 14.2 Ribosomes and protein synthesis 14.3 Gene regulation and expression	Protein synthesis LARP
	27	Chapter 15 Human genome	14.4 Mutations 15.1 Human chromosomes 15.2 Human genetic disorders 15.3 Studying the human genome	Interactive investigating point mutations HeLa karyotype lab
	28	Chapter 16 Biotechnology	16.1 Changing the living world 16.2 Process of genetic engineering	Micropipetting practice gel electrophoresis (MiniOne) Using DNA to solve crimes
	29		16.3 Ethics and impacts of biotechnology	CRISPR modeling
Spring Break				
Quarter 4	30	Unit 5 Evolution Chapter 17 Darwin's theory of evolution	17.1 Darwin's theory of evolution 17.2 Ideas that influenced Darwin 17.3 Darwin's theory: natural selection	Competing for resources
	31		17.4 Evidence for evolution	PBA: p572-573 Evolution in Action
	32	Chapter 18 Evolution of populations	18.1 Genes and variation 18.2 Evolution as genetic change 18.3 Process of speciation	Interactivity: Genetic variation Simulation: Allele frequencies PTC class allele frequency Interactivity: Genetic change Driftworms- genetic drift modeling Interactivity: Speciation
	33	Chapter 19 Biodiversity and classification	18.4 Molecular evolution 19.1 Finding order in biodiversity	Interactivity: Molecular clock (18.4) Create a dichotomous key Interactivity: Classifying organisms Interpret & build a cladogram
	34		19.2 Modern evolutionary classification	Interactivity: Classifying organisms Interpret & build a cladogram
	35	Chapter 20 History of life	20.1 Fossil record 20.2 Evolutionary patterns & processes	Interactivity: Geologic timescale PhET: Radiocarbon dating
	36	Unit 6 Diversity of life Chapter 21 Viruses, prokaryotes, protista, fungi	21.1 Viruses 21.2 Prokaryotes 21.3 Protists	Interactivity: Viruses Science Skills Activity: Design a flu vaccine Analyzing Data: Case study MRSA Interactivity: Prokaryotes Simulation: Cholera outbreak Interactivity: Protists
	37	Finals review	Finals review	
	38	Finals week	Final exams	