AP® Biology: Sample Syllabus 1 Syllabus Number: 876030v1
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JoVE Content Mapping

Unit	CH	Title	JoVE Video	Jove Category
1	1	Introduction: Themes in the Study of Life	32.1 What-is-natural-selection? Natural Selection Lab 1.3 The-scientific-method Scientific Method Lab 2.14 States of Water	CORE CH 32 Natural-selection Lab Manual CORE CH 1 Scientific-inquiry Lab Manual CORE CH 2 Chemistry-of-life
	2	The Chemical Context of Life	2.1 The periodic table and organismal elements	CORE CH 2 Chemistry-of-life
	3	Water and the Fitness of the Environment	The Water Cycle 2.15 pH The Solubility Rules of ionic Compounds	CORE CH 27 Ecosystems CORE CH 2 Chemistry-of-life General Chemistry
2	4	Carbon and the Molecular Diversity of Life	2.7 Carbon Skeletons	CORE CH 2 Chemistry-of-life
	5	The Structure and Function of Large Biological Molecules	3.8 What Are Nucleic Acids? Macromolecules Lab	CORE CH 3 Macromolecules Lab Manual
	6	A Tour of the Cell	4.1 What Are Cells? 4.3 Eukaryotic Compartmentalization	CORE CH 4 Cell Structure and Function
	7	Membrane Structure and Function	5.1 The Fluid Mosaic Model 5.3 Diffusion 5.4 Osmosis 5.8 Facilitated Transport Diffusion and Osmosis Lab	CORE CH 5 Membranes and Cellular Transport Lab Manual
3	8	An Introduction to Metabolism	7.1 What Is Metabolism? 7.5 Potential Energy Hydrolysis of ATP	CORE CH 7 Metabolism

	9	Cellular Respiration	8.1 What Is Glycolysis? Cellular Respiration Lab 8.3 Energy Requiring Steps of Glycolysis 8.10 Dietary Connections	CORE CH 8 Cellular Respiration Lab Manual
	10	Photosynthesis	9.1 What Is Photosynthesis? Photosynthesis Lab 9.2 Light As Energy 9.5 Photosystem I 9.6 The Calvin Cycle 9.7 C4 Pathway and CAM	CORE CH 9 Photosynthesis Lab Manual
4	11	Cell Communication	6.1 Bacterial Signaling 6.3 Contact-Dependent Signaling 6.11 Enzyme-Linked Receptors	CORE CH 6 Cell Signaling
	12	The Cell Cycle	10.1 What Is The Cell Cycle? 10.6 Mitosis and Cytokinesis	CORE CH10 Cell Cycle and Division
5	13	Meiosis and Sexual Life Cycles	11.1 What Is Meiosis? Cell Division Lab 11.4 Crossing Over	CORE 11 Meiosis Lab Manual
	14	Mendel and the Gene Idea	12.1 Genetic Lingo Genetics of Organisms Lab 12.4 Dihybrid Crosses 12.7 Multiple Allele Traits	CORE CH 12 Classic and Modern Genetics Lab Manual
	15	The Chromosomal Basis of Inheritance	14.1 What Is Gene Expression? 14.7 Epigenetic Regulation 14.8 RNA Interference	CORE CH 14 Gene Expression
6	16	The Molecular Basis of Inheritance	13.1 The DNA Helix 13.3 Organization of Genes	CORE CH 13 DNA Structure and Function
	17	From Gene to Protein	13.11 Transcription 13.12 Translation	CORE CH 13 DNA Structure and Function

	18	Regulation of Gene Expression	13.7 Proofreading 13.8 Mismatch Repair 13.10 Mutations	CORE CH 13 DNA Structure and Function
	19	Viruses	16.2 Viral Structure 16.7 Viral Structure	CORE CH 16 Viruses
	20	Biotechnology	15.2 Antibiotic Selection 15.10 Gene Therapy 15.12 CRISPR	CORE CH 15 Biotechnology
	21	Genomes and their Evolution	Lab: DNA Isolation and Restriction Enzyme Analysis 10.4 Genomic DNA in Eukaryotes	Lab Manual CORE CH 10 Cell Cycle and Division
7	22	Descent with Modification: A Darwinian View of Life	An Overview of Genetic Analysis 32.1 What Is Natural Selection? 13.3 Frequency-dependent Selection	SciEd - Advanced Biology - Genetics CORE CH 32 Natural Selection
	23	The Evolution of Populations	28.1 What Are Populations and Communities? Lab: Hardy-Weinberg & Genetic Drift	CORE CH 28 Population and Community Ecology Lab Manual
	24	The Origin of Species	31.1 What Is a Species? 31.2 Formation of Species Lab: Evolutionary Relationships	CORE CH 31 Speciation and Diversity Lab Manual
	25	The History of Life on Earth	Lab: Extinction	Lab Manual
	26	Phylogeny and the Tree of Life	1.8 Phylogeny An Introduction to the Zebrafish: Danio rerio	CORE CH 1 Scientific Inquiry SciEd - Basic Biology - Biology II
	27	Bacteria and Archae	4.4 Prokaryotic Cells	CORE CH 4 Cell Structure and Function
8	40	Basic Principles of Animal Form and Function	4.10 Tissues	CORE CH 4 Cell Structure and Function

	43	The Immune System	24.1 What Is the Immune System? 24.7 Allergic Reactions 24.9 Vaccinations	CORE CH 24 Immune System
	48	Neurons, Synapses, and Signaling	18.1 What Is a Nervous System? 18.5 Neuron Structure 18.10 Long-term Depression	CORE CH 18 Nervous System
	49.2	The Vertebrate Brain		
9	51	Animal Behavior	26.1 What is Behavior? 26.4 Migration 26.10 Inclusive Fitness	CORE CH 26 Behavior
	52.2	Interactions between organisms and the environment limit the distribution of species	https://www.jove.com/science-education/10940/distribution-and-dispersion 28.3 Life Histories	CORE CH 28 Population and Community Ecology
	53	Population Ecology	28.1 What are Populations and Communities? 28.5 Population Growth	CORE CH 28 Population and Community Ecology
	54	Community Ecology	28.6 Symbiosis	CORE CH 28 Population and Community Ecology
	55	Ecosystems	27.2 Trophic Levels 27.7 The Water Cycle 27.8 The Carbon Cycle	CORE CH 27 Ecosystems
	56	Conservation Biology and Global Change	29.3 Global Climate Change	CH 29 Biodiversity and Conservation

Instructional Resources: Reece, Jane, et al., Campbell Biology, 9th Edition, 2011, Pearson Benjamin Cummings. [CR1]