Mt. Zion High School Curriculum Map

Name: Barksdale-Woodard & Downs Department: Science Subject: Biology

Quarter	Essential Skills	Strategies and Activities	CC Standards	Assessments
1	A. Identify the characteristics of life and the life processes Chapter 1: "The Study of Life"	1. Virtual Lab - Comparing living & non-living things 2. Pill Bug Lab 3. Manipulate Variables Lab	LS1.2 ESS2.7	Ch 1 Homework, Lab Reports & Test
	B. Explain aspects of an organism's environment and how energy flows through an ecosystem Chapter 2: "Principles of Ecology"	1. Detecting Oxygen Lab 2. Owl Pellet & Food Webs Lab 3. Fletcher Park Water Quality Lab 4. Cycles Foldable 5. Dimensional Analysis	LS2.1-8 ESS2.6 ESS3.1, 2	Ch 2 Homework, Lab Reports & Test
	C. Determine where species live and the different biomes of Earth Chapter 3: "Communities, Biomes & Ecosystems"	1. Graphing Data Analysis 2. Terrestrial Biomes Notecards	LS2.1-8 ETS1.1	Ch 3 Homework, Lab Reports & Test
	D. Identify differences in density dependent & independent limiting factors Chapter 4: "Population Ecology"	1. Cemetery Lab 2. Predator/Prey Lab 3. Population Density Lab 4. Kaibab Graphing Lab 5. Doubling time/Data Analysis	LS4.2-6 ESS3.2, 4, 5, 6	Ch 4 Homework, Lab Reports & Test
	E. Explain what biodiversity is and how it is endangered and conserved Chapter 5: "Biodiversity and Conservation"	1. How does detergent effect seed germination Lab 2. Index of Diversity Lab 3. Measuring Biodiversity Activity	LS2.1 LS2.2 LS2.7 LS2.8	Ch 5 Homework, Lab Reports & Test

Quarter	Essential Skills	Strategies and Activities	CC Standards	Assessments
2	A. Review what an atom is, the importance of water, and the role of carbon compounds in organisms Chapter 6: "The Chemistry of Life"	1. Acid/Base Lab 2. Enzymes and Simple Sugars Lab 3. Drawing Chemical Bonds	PS1.1, 2, 7, 8 LS1.6, 7 ESS2.5 PS4.5	Ch 6 Homework, Lab Reports & Test
	B. Describe all the parts of a cell and how eukaryotes differ from prokaryotes Chapter 7: "Cellular Structure & Function"	1. Microscope Lab 2. Observing Plant & Animal Cells Lab 3. Cell Size & Diffusion Lab 4. Drawing Plant & Animal Cells 5. Estimating Size of Objects with the Microscope	LS1.2	Ch 7 Homework, Lab Reports & Test
	C. Discover how cells obtain materials and explain the importance of ATP to life Chapter 8: "Cellular Energy"	1. Energy Transformation Lab 2. Cellular Respiration Lab 3. Apple Fermentation Lab	LS1.7	Ch 8 Homework, Lab Reports & Test
	D. Explain the importance of cell division Chapter 9: "Cellular Reproduction"	1. Investigate Cell Size Lab 2. Cell Cycle Lab 3. Real World Analysis: Cancer	LS1.4	Ch 9 Homework, Lab Reports & Test

Quarter	Essential Skills	Strategies and Activities	CC Standards	Assessments
3	A. Demonstrate the knowledge of basic concepts of genetics and how a cell forms gametes Chapter 10: "Sexual Reproduction & Genetics"	1. Meiosis Simulation Lab 2. Inherited Traits Lab 3. Taste Lab 4. Real World Analysis: Corn Kernel Color 5. Working Genetic Crosses	LS3.1-3	Ch 10 Homework, Lab Reports & Test
	B. Demonstrate how traits are inherited in humans Chapter 11: "Complex Inheritance and Human Heredity"	1. Facial Features Lab 2. Reebop Lab 3. Working Genetic Crosses 4. Pedigree Activity	LS3.1-3	Ch 11 Homework, Lab Reports & Test
	C. Identify the structure and function of DNA and how mutations affect this fundamental molecule Chapter 12: "Molecular Genetics"	1. Making a DNA structure Model Lab 2. DNA extraction Lab 3. Decoding Genetic Codes 4. Who did it? Lab	LS3.1-3	Ch 12 Homework, Lab Reports & Test
	D. Compare the fossils and the geological time scale Chapter 14: "The History of Life"	1. Fossil Hunt Lab 2. Geological Time Scale 3. Real World Analysis: Radioactive Dating	LS4.1-6 ESS1.5, 6 ESS2.2	Ch 14 & 15 Homework, Lab Reports & Test
	E. Discuss the evidences for how different life forms have changed over time Chapter 15: "The Theory of Evolution"	1. Opposable Thumb Lab 2. Human Evolution Lab 3. Fossil Hunt Project	LS4.1-6 ESS2.7	
	F. Classify organisms Chapter 17: "Organizing Life's Diversity"	1. Design a Classification System 2. Designing & Using Cladograms	LS4.1, 4, 5	Ch 17 Homework, Lab Reports & Test

Quarter	Essential Skills	Strategies and Activities	CC Standards	Assessments
4	A. Know the structure, reproduction, and importance of viruses and bacteria Chapter 18: "Viruses and Bacteria"	1. Microbe Scavenger Hunt 2. Bacteria vs. Viruses Table	LS4.1, 4	Ch 18, 19 & 20 Homework, Lab Reports & Test
	B. Learn the taxonomy, characteristics, & importance of protists Chapter 19: "Protists"	1. Protist Foldable	LS4.1, 4	
	C. Learn the taxonomy, characteristics, and importance of fungi Chapter 20: "Fungi"		LS4.1, 4	
	D. Explain how plants are adapted to life on land and how they are classified & Identify the characteristics and importance of plants Chapter 21: "Introduction to Plants"	1. How do Ferns, Moss, & Conifers reproduce Lab	LS4.1, 4	Ch 21, 22 & 23 Homework, Lab Reports & Test
	E. Describe the structure and function of plant cells, tissues, and organs and how plants respond to their environment Chapter 22: "Plant Stucture & Function"	1. Transpiration Lab 2. Leaf Patterns Lab 3. Stomata Lab	LS4.1, 4	
	F. Learn the life cycles of different kinds of plants and the structure of a flower Chapter 23: "Reproduction in Plants"	1. Flower Structure Lab	LS4.1, 4	
	G. Describe the basic characteristics of animals and distinguish between vertebrates and invertebrates, and distinguish between animal groups including the sponges, coelenterates, roundworms, flatworms, segmented worms and mollusks Chapter 24: "Introduction to Animals?"	1. Tissue Lab 2. Symmetry/Body Plans Lab	LS4.1, 4	Ch 24, 25 & 26 Homework, Lab Reports & Test
	H. Describe the taxonomy, adaptations, and importance of simple invertebrates Chapter 25: "Worms and Mollusks"	1. Earthworm and Leech Lab 2. Comparing Types of Worms Act. 3. Squid Dissection Lab	LS4.1, 4	
	I. Describe the taxonomy, adaptations, and importance of arthropods Chapter 26: "Arthropods"	1. Bess Beetle Lab 2. Crayfish Dissection Lab 3. Arthropod Project	LS4.1, 4	

	J. Describe the taxonomy, adaptations, and importance of echinoderms and invertebrate chordates Chapter 27: “Echinoderms and Invertebrate Chordates”	1. Design an Echinoderm	LS4.1, 4	Ch 27, 28 & 29 Homework, Lab Reports & Test
	K. Describe the taxonomy, adaptations, and importance of fishes, and amphibians Chapter 28: “Fishes and Amphibians”	1. Frog Dissection Lab	LS4.1, 4	
	L. Describe the taxonomy, adaptations, and importance of reptiles and birds Chapter 29: “Reptiles and Birds”	1. Bird Foot Adaptations Lab	LS4.1, 4	
	M. Describe the taxonomy, adaptations, and importance of mammals Chapter 30: “Mammals”	1. Mammal Teeth Adaptations Lab	LS4.1, 4	