MONROVIA UNIFIED SCHOOL DISTRICT
2009-2010 INSTRUCTIONAL PACING GUIDE
"World Class Schools for World Class Students"

BIOLOGY

Department	MHS Science
Course Name	Biology
Grade Level	10th
Instructional Reference Material	CA Holt Biology

***E.S. – monthly (Tungston)**
***M.S. Math & English – 6 wks (Tungston)**
***M.S. Sci. & Soc.Sci. – 6 wk (benchmark @ 9 wk)**
***H.S. All Content – 9 wk (benchmark @ 9 wk)**

Grading/ Benchmark Term	Standard	Topic & Resource Reference	Assessment(s) (tests, projects, reports, performances)	Common Vocabulary (Content & Academic)	Differentiation Intervention (Skills level, SDAIE)
7 weeks	**Cell Biology** **1 a-c, e,- h** **Investigation & Experimentation #1 b, c, d, e, f**	1. Biology & You: Investigation & Experimentation (Chapter 1) (1 week) 2. Chemistry of Life: Macromolecules (Chapter 2) (1 week) 4. Cell Structure (Chapter 3) (2 weeks) 5. Cells & Their Environment (Chapter 4) (1 weeks) 6. Photosynthesis & Cellular Respiration (Chapter 5) (2 weeks) **Benchmark #1**	• Cell as a City Project • Osmosis/Diffusion Lab • Egg/vinegar activity • Floating Leaf Lab • Microslide Lab: Ultra Structure of Animal Cells • Microslide lab: Photosynthesis (59) • Calorie Lab • pH Lab • Chemical Test for Organic Compounds • Enzyme Catalysis Lab • Chapter packets • Study Guides • Key Terms – Word/Definition/Word Map • Chapter/Unit Tests	Cell theory, cell membrane, cytoplasm, cytoskeleton, prokaryote, eukaryote, cell wall, nucleus, phospholipids, lipid bilayer, ER, lysosome, mitochondria, vacuole, diffusion, osmosis, active transport, passive transport, photosynthesis, cellular respiration, gamete, chromosome, cell cycle, Calvin Cycle, Krebs Cycle, photolysis, Glycolysis, Fermentation, Aerobic, anaerobic, endocytosis, osmosis, dehydration, synthesis, hydrolysis	Theory vs. Law Concept Map Diagram the pH Scale Cells Graphic Organizer Cell Types Graphic Organizer Stages of Photosynthesis Graphic Organizer Events of Calvin Cycle Graphic Organizer Diagram of Plant vs Animal Cell Concept Map: Photosynthesis & Cell Respiration Food Coloring Diffusion Demo Cell respiration SpeakEasies Macromolecules SpeakEasies Science Word Dictionary Reflection Boxes & Note – Taking Outline Lab Book Write-Up

Grading/ Benchmark Term	Standard	Topic & Resource Reference	Assessment(s) (tests, projects, reports, performances)	Common Vocabulary (Content & Academic)	Differentiation Intervention (Skills level, SDAIE)
9 Weeks	**Cell Biology** **1d** **Genetics** **#2 a - g** **3 a - b** **4 a - e** **5 a-d**	1. Genetics – Mitosis (Chapter 6) (2 week) 2. Meiosis (chapter 7) (1 week) 3. Mendel's laws, Punnett Squares (Chapter 8) (2 weeks) 4. Genetics – DNA (Chapter 9) (2 weeks) 5. Genetics- Amino Acids, RNA, Proteins, etc. (Chapter 10) (1 week) 6. Genetics – Gene technology (Chapter 11) (1 week) **Benchmark #2**	• Modeling Meiosis Lab • Coin toss to build a face – genetics • Karyotyping activity • Build a DNA Model • Recombinant DNA lab • Microslide Lab: Plant Mitosis (55) • Microslide Lab: Chromosomes & Genes (81) • Microslide Lab: Meiosis (92) • Mitosis/Meiosis Total Physical response (TPR) • Pink & Blue Dots Activity • Electrophoresis • Meiosis Playdoh • Mitosis Playdoh • Chapter packets • Study Guides • Key Terms – Word/Definition/Word Map • Chapter/Unit Tests	Meiosis, crossing over, asexual reproduction, sexual reproduction, heredity, genetics, allele, dominant, recessive, law of segregation, law of independent assortment, Punnett square, pedigree. Vaccine, transformation, double heliz, nucleotide, DNA replication, RNA, transcription, translation, anticodon, codon, genetic engineering, recombinant DNA, restriction enzyme, gene cloning	Mitosis & Meiosis Graphic Organizer Mendel Laws/Meiosis Diagram and Captions Card Deck Shuffle to demo genetic variation and predictions Cause & Effect Reading Diagram the Cell Cycle DNA concept map Transcription vs. Replication vs. Translation Comparison Chart Gene Expression Concept Map Genetic Engineering Concept Map Science Word Dictionary Reflection Boxes & Note – Taking Outline Lab Book Write-Up
9 weeks	**Physiology** **#9 a-e** **#10 a - e**	1. Skeletal, Muscular, & Integumentary Systems (Ch. 37) (1.5 weeks) 2. Circulatory & Respiratory Systems (Ch. 38) (1..5 weeks) 3. Digestive System & Excretory Systems (Ch. 39) (1.5 weeks) 4. Immune System (Ch. 40) (1.5 weeks) 5. Nervous System (Ch. 41) (1.5 weeks) 6. Endocrine System (Ch. 42) (1.5 weeks)	• Microslide Lab: Nerve & Muscle Action (221) • Microslide Lab: Digestive System (67) • Microslide Lab: Circulatory System (68) • Microslide Lab: Endocrine System (71) • Microslide Lab: Animal Parasites (75) • Microslide Lab: Body's Defenses (204) • Microslide Lab: Human Blood (95)	Tissue, bone marrow, periosteum, osteocyte, joint, ligament, tendon, actin, myosin, epidermis, dermis, cardiovascular system, artery, capillary, vein, red blood cell, white blood cell, platlet, ABO blood group, atrium, ventricle. Aorta, vena cava, pharynx, larynx, trachea, diaphragm, digestion, calorie, amalyse, esophagus, pepsin, lipase, excretion, urea, nephron, urine, ureter, pathogen, interferon, histamine, B Cell, T Cell, immunity, vaccination, HIV, AIDS, allergy, hormone, endocrine gland, second messenger,	Body Graphic Organizer Human Body Graphic Organizer Blood Graphic Organizer Flow of Blood thru the Heart Diagram Circulatory System Concept Map Dental Records Bio Watch Digestive Enzymes Concept Map Nutrients Concept Map Immune System Concept Map Nervous System Graphic Organizer Types of Hormones Graphic Organizer Hearth Blood Flow Magnetic SpeakEasies Endocrine System Concept Map Science Word Dictionary Reflection Boxes & Note – Taking Outline

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		Benchmark #3	• Microslide Lab: Viruses (97) • Microslide Lab: Harmful Bacteria (20) • Frog dissection • Analyzing the Work of Muscles Exploration Lab • Chicken Wing Dissection • Urinalysis lab • Sheep Heart Dissection • Cow Eye Dissection • Frog Dissection • TPR Circulation • Senses Lab • Calculating Reaction Times Exploration Lab • Mink Dissection • Eye Tests (also part of Senses Lab) • Sphygmomanometer Practice • Right or Left Brained? Activity • Ruler Catching – Reaction Time Lab • Chapter packets • Study Guides • Key Terms – Word/Definition/Word Map • Chapter/Unit Tests	negative feedback, hypothalamus, pituitary gland, adrenal gland	Lab Book Write-Up
4 weeks	**Evolution** **#7 a - d** **#8 a - e**	1. Natural Selection and Species Variation (ch 13) 2. History of Life on Earth (Chapter 12) (1 week) 3. Theory of Evolution (Chapter 13) (1 weeks) 4. How Populations Evolve (Ch. 15) (2 weeks)	• Peppered Moth activity • Oh Deer Lab • Modeling Natural Selection Exploration Lab • Evolution of Caminacules • Observing How Natural Selection Affects a Population Exploration Lab • Microslide Lab: Evolution Under the Microscope (205) • Amazing Adaptations – Create	Half – life, fossil, extinction, population, natural selection, adaptation, isolation, divergence, speciation, vestigial structure, homologous structure, population density, carrying capacity, exponential growth, density – dependent factor, genetic drift	First prokaryotes Graphic Organizer Evolution Graphic Organizer Brown Bear vs. Polar Bear Survival Populations Graphic Organizer Allele frequency Graphic Organizer Natural Selection Stages & Steps Organizer Science Word Dictionary Reflection Boxes & Note – Taking Outline Lab Book Write-Up

Grading/ Benchmark Term	Standard	Topic & Resource Reference	Assessment(s) (tests, projects, reports, performances)	Common Vocabulary (Content & Academic)	Differentiation Intervention (Skills level, SDAIE)
			an Imaginary Animal • Microslide Lab: Adaptations • Microslide Lab: Earth's History (305) • Chapter packets • Study Guides • Key Terms – Word/Definition/Word Map • Chapter/Unit Tests		
3 weeks	**Ecology #6a - f**	1. Abiotic resources (Ch. 16) (2 weeks) 2. Oxygen cycling through photosynthesis and respiration (Ch. 5 & 16) 3. Ecosystems (Ch. 16) 4. Biomes (Ch. 17.2) (1 week) **Benchmark #4**	• Ecological succession activity • Making Food Webs Group Activity • Owl Pellets Lab • Microslide Lab: Symbiosis (212) • Microslide Lab: Ecology Under the Microscope (98) • Recycling Lab • Studying Population Growth Skills Lab • Chapter packets • Study Guides • Key Terms – Word/Definition/Word Map • Chapter/Unit Tests	Ecology, habitat, community, ecosystem, biotic factor, abiotic factor, biodiversity, producer, consumer, trophic level, food chain, herbivore, omnivore, carnivore, decomposer, food web, energy pyramid, biomass, biogeochemical cycle. Transpiration, nitrogen fixation, predation, parasitism, competition, biome, acid rain, global warming, biological magnification, greenhouse effect, niche, symbiosis, mutualism, commensalism	Evaluating Biodiversity Activity Biomes Graphic Organizer Earth Day Project Science Word Dictionary Reflection Boxes & Note – Taking Outline Lab Book Write-Up