

Adv Bio-Bio II
Curriculum Mapping
2019-2020
Mark Joachim

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| Unit: <i>Intro to Biology</i> | | Time: <i>August 2019</i> |
| Standards Taught | | |
| <ul style="list-style-type: none"> • <i>Identify scientific methods, and how Biology takes measurements and studies organisms with qualitative and quantitative data.</i> • <i>Summarize the characteristics of living things.</i> • <i>Explain why science and technology cannot solve all problems.</i> | | |
| Differentiation/Assessment: | Classroom Management and Environment: | What will the students be doing? |
| <i>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</i> | <i>The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.</i> | <i>The students will identify the characteristics of life, recognize how scientific methods are used to study living things. Collecting plant leaves and insects for identification collections.</i> |
| Prior Knowledge Needed | Vocabulary | Assessments |
| <i>Students have a foundation in science that they will draw upon in this course.</i> | <i>Scientific methods, organization, quantitative and qualitative information.</i> | <i>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.</i> |
| Reflection: <i>This chapter is a review of science concepts from previous courses.</i> | Essential Questions: <ul style="list-style-type: none"> • <i>What is Biology?</i> • <i>How are quantitative data and qualitative data different?</i> • <i>What is your plans after graduation? (college/votech)</i> • <i>What plan of study/classes will be need to reach your goal?</i> | |
| Relevance: | <i>Plan & prepare, understanding what will need to be done to accomplish the goal and is a prerequisite.</i> | |

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| Unit: Ecology | | Time: September 2019 |
| Standards Taught | | |
| <ul style="list-style-type: none"> • HS-LS2-1, HS-LS2-2, HS-LS2-3, HS-LS2-4, H HS-LS2-5, HS-LS2-6, HS-LS2-7, HS-LS2-8 | | |
| Differentiation/Assessment: | Classroom Management and Environment: | What will the students be doing? |
| <i>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</i> | <i>The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.</i> | <i>~The students will trace the flow of energy and nutrients in living and nonliving worlds. ~Identify important aspects of an organism's environment and interactions between organisms. Reaching deeper into their thinking process.</i> |
| Prior Knowledge Needed | Vocabulary | Assessments |
| <i>Students have a foundation in science that they will draw upon in this course.</i> | <i>biotic factor, abiotic factor, niche, ecology, population, biological community, ecosystem, habitat, symbiosis, mutualism, parasitism, commensalism, autotroph, heterotroph, food chain, food web, biomass, trophic levels, biodiversity, biomes, primary and secondary succession, exponential growth, linear population growth, limiting factors, carrying capacity, density-dependent factors, life-history pattern, demography, edge effect, exotic species, habitat degradation, habitat fragmentation, endangered species, habitat corridors, reintroduction programs, Captivity, sustainable use,</i> | <i>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.</i> |
| Reflection: <i>This unit allows the student to look at the world that they live in, and begin to understand how and why the different species interact and fit into it.</i> | Essential Questions: <ul style="list-style-type: none"> • <i>What is ecology?</i> • <i>How is energy transferred from organism to organism through the trophic levels?</i> • <i>How do organisms relate to the biotic and abiotic factors in their ecosystem?</i> • <i>Why are big fierce animals rare?</i> • <i>How do environmental factors affect population growth?</i> | |

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| | <ul style="list-style-type: none"> • <i>Why do certain species only live in certain areas?</i> • <i>What effect do exotic species have on native species?</i> • <i>Why is biodiversity important to the environment?</i> • <i>How do reintroduction programs work, and how successful are they?</i> • |
| Relevance: | <i>This unit shows how organisms are diverse, dependent on each other and their environment for survival.</i> |

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| Unit: Plants | | Time: October 2019 |
| Standards Taught | | |
| <ul style="list-style-type: none"> • <i>HS-LS1- HS-LS1-1, HS-LS1-2, HS-LS1-3, HS-LS1-4, HS-LS1-5, HS-LS1-6, HS-LS1-7</i> • <i>HS-LS2-4, HS-LS2-5, HS-LS2-6</i> • <i>HS-LS3-1, HS-LS3-2, HS-LS3-3</i> • <i>HS-LS4-5</i> | | |
| Differentiation/Assessment: | Classroom Management and Environment: | What will the students be doing? |
| <i>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</i> | <i>The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.</i> | <i>Survey and Identify the major divisions of plants. Identify distinguishing feature of vascular/nonvascular plants. Describe and compare major types of plant cells and tissues. Compare and contrast reproduction and life cycles. Lab- Plant/Leaf Collection.</i> |
| Prior Knowledge Needed | Vocabulary | Assessments |
| <i>Students have a foundation in science that they will draw upon in this course.</i> | <i>Apical meristem, collenchyma, cork cambium, epidermis, guard cell, meristem, parenchyma, phloem xylem, sclerenchyma, sieve tube member, stomata, vascular cambium, vessel element, endodermis, pericycle, root cap, sink, translocation, transpiration, auxin, cytokinin, ethylene, gibberellin, hormone, nastic movement, tropism, archegonium, antheridium, prothallus, sorus, strobilis, annuals, biennials, perennials,</i> | <i>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.</i> |

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| | <i>deciduous plant, cotyledon, monocotyledon, ovule, pollen grain, cone, frond, vascular tissue, vascular and nonvascular plant, cuticle, day-neutral, long-day, short-day, anther, pistil ovary, petals, pistil, sepals, stamen, dormancy, vegetative reproduction, photoperiodism,</i> | |
| Reflection: <i>Students enjoyed identifying the plants and plant parts to put in their collection.</i> | Essential Questions: <ul style="list-style-type: none"> • <i>How are plants identified and named?</i> • | |
| Relevance | In a farming and rural community, identifying plants and how they are important. | |

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| Unit: <i>Invertebrates_Vertebrates</i> | | Time: <i>November 2019 - January 2020</i> |
| Standards Taught | | |
| <ul style="list-style-type: none"> • <i>HS-LS1-1, HS-LS1-2, HS-LS1-3, HS-LS1-4, HS-LS1-6, HS-LS1-7</i> • <i>HS-LS2-4, HS-LS2-7HS-LS2-8</i> | | |
| Differentiation/Assessment: | Classroom Management and Environment: | What will the students be doing? |
| <i>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</i> | <i>The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.</i> | <i>The students will identify animal characteristics and distinguish between organisms. different classes of animals. Dissection of an earthworm. Insect Collection and Identification</i> |
| Prior Knowledge Needed | Vocabulary | Assessments |
| <i>Students have a foundation in science that they will draw upon in this course.</i> | <i>Pharyngeal pouch, notochord, dorsal hollow nerve cord, tube foot, ray, water vascular system, appendage, book lung, cephalothorax, mandible, molting, pheromone, spiracle, tracheal tube, metamorphosis, nymph, pupa, larva, spinneret, parthenogenesis, closed circulatory system, open circulatory system, radula,</i> | <i>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.</i> |

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| | <i>nephridia, mantle, gizzard, setae, hermaphrodite, internal/external fertilization, pharynx, regeneration, trichinosis, scolex, nematocyst Mesoderm, endoderm, ectoderm, gastrula, blastula, acoelomate, pseudocoelom, symmetry, ventral, dorsal, radial</i> | |
| Reflection: <i>Taking the students deeper in the process and functions of the organisms.</i> | Essential Questions: <ul style="list-style-type: none"> • <i>Why do invertebrates have different body plans?</i> • <i>How do the invertebrates have similar and different structures compared to humans?</i> | |
| Relevance | Taking an in-depth look at animals, and how each are similar and different from the human. | |

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| Unit: Human Body | | Time: March - May 2020 |
| Standards Taught | | |
| <ul style="list-style-type: none"> • <i>HS-LS3-1, HS-LS3-2, HS-LS3-3,</i> • <i>HS-LS4-1, HS-LS4-3, HS-LS4-4, HS-LS4-7</i> | | |
| Differentiation/Assessment: | Classroom Management and Environment: | What will the students be doing? |
| <i>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</i> | <i>The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.</i> | <i>Investigating the different system of the body and how they interact and function to make the organism able to function properly.</i> |
| Prior Knowledge Needed | Vocabulary | Assessments |
| <i>Students have a foundation in science that they will draw upon in this course.</i> | <i>Homeostasis, epidermis, keratin, melanin, dermis, hair follicle, axial skeleton, appendicular skeleton, joint, ligament, bursa, tendon, compact bone, osteocyte,</i> | <i>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.</i> |

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| | <p><i>spongy bone, osteoblast, red marrow, yellow marrow, smooth muscle, involuntary muscle, cardiac muscle, skeletal muscle, voluntary muscle, myofibril, myosin, actin, sarcomere, sliding filament theory, esophagus, peristalsis, epiglottis, stomach, pepsin, small intestine, pancreas, liver, bile, gall bladder, villus, large intestine, rectum, mineral vitamin, Calorie, neuron, dendrite, axon, synapse, neurotransmitter, central nervous system, peripheral nervous system, cerebrum, cerebellum, medulla oblongata, Somatic nervous system, autonomic nervous system, sympathetic nervous system, parasympathetic nervous system, taste buds, retina, rod, cone, cochlea, semicircular canals,</i></p> | |
| <p>Reflection: <i>Students are interested and have many questions.</i></p> | <p>Essential Questions:</p> <ul style="list-style-type: none"> • <i>How are the different organ systems able to function to make up an organism?</i> • | |
| <p>Relevance</p> | <p>The students will understand how the human body functions, and what may cause it to not function properly.</p> | |

