

Title: Biology II

Unit:	Is laughter the best medicine? The history of medicine and disease				
Big Ideas:	How has medicine evolved from plant based to science based? Do any old medicines still exist and work today? Can laughter be the best medicine?				
Unit Essential Questions:	What is medicine? How has the use of medicine changed over the history of mankind? How plants were used and still used today as important medicines? What are the similarities and differences of traditional/modern medicine and complimentary/alternative forms of medicine? Is laughter the best medicine? What is the importance of alternative medicines in modern medicine? What is addiction?				
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments
History of medicine Laughter Complimentary Medicine Addiction	3.3.12 C 3.6.10 A, B, C 3.6.12 A,B,C 3.7.10 A, B, C 3.8.10 A, B, C, D	medicine traditional/modern medicine complimentary/alternative medicine laughter endorphin dopamine catecholamines frontal lobe cortex hypthothalamus gelotology addiction	Videos discussion groups Journal readings worksheets Research paper Guided web search	internet smartboard journal articles powerpoints animations videos multimedia presentations quest speakers	discussions research notes quizzes tests research paper presentation journal entries
Unit:	Prokaryotes: Archea & Bacteria				
Big Ideas:	What are the characteristics of prokaryotes? How do prokaryotes live? What are the beneficial and detrimental roles prokaryotes play for us?				
Unit Essential Questions:	How do we define and classify prokaryotes, bacteria and archea? How do bacteria grow, reproduce and survive? How are prokaryotes beneficial to us? What problems do prokaryotes present to us? How can we control prokaryotes and not cause other problems? What role does genetic engineering play?				
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Archea Bacteria	3.3,10 C	Obligate Facultative	Videos	Computers	discussions
	3.6.10 A, B, C 3.6.12 A, B, C	Plasmid	discussion groups	internet	research notes
	3.7.10 A, B, C 3.7.12 A, B, C	Pilli	Journal readings	smartboard	quizzes
	3.8.10 A, B, C, D 3.8.12 B C	Conjugation Binary fission Coccus Bacillus Spirillum Capsule Saprophyte Endosymbiosis antibiotic	worksheets Research Guided web search Lab: Antiseptic techniques Lab: bacteria slides Lab: testing for bacteria Lab: bacteria growth and count	journal articles powerpoint animations videos Microscopes Prepared slides Petri plates Incubator Glo germ	tests presentation journal entries (lab write-ups)

Unit:	Viruses: Bio-terrorists				
Big Ideas:	What are viruses and why are they not classified as living? What is the nature of viruses? What are the good and bad points about viruses?				
Unit Essential Questions:	How do we define and classify viruses? How do viruses grow, reproduce and survive? How are viruses beneficial to us? What problems do viruses present to us? How can we control viruses? What are vaccines and why are they important? How does disease spread?				
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments
Viruses Vaccines Spread of Disease	3.3,10 C 3.6.10 A, B, C 3.6.12 A, B, C 3.7.10 A, B, C 3.7.12 A, B, C 3.8.10 A, B, C, D 3.8.12 B C	Viroid Prion Endemic, pandemic, epidemic Pathogen Virus Caspsid Bacteriophage Lytic Lysogenic Provirus Retrovirus	Videos discussion groups Journal readings worksheets Research Guided web search Lab: disease transmission	Computers internet smartboard journal articles powerpoint animations videos video game	discussions research notes quizzes tests presentation journal entries
Unit:	Protista: the junkdrawer of living things				
Big Ideas:	Why are protists the “catch all kingdom” and why is it important to study them? Why are protists so important to evolution?				
Unit Essential Questions:	How do we classify and organize protists? What are the zooplankton and how can you identify them? What are the phytoplankton and how can you identify them? What are the fungus like protists and how do they live?				
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments

	3.1.10.A, B, C, D, E; 3.1.12.A, B, C, D 3.3.10.B 3.7.10.A, B;; 3.7.12.A, B 3.9.10.A	Protest Protozoan Phytoplankton Zooplankton Slime molds Pseudopod, ecto/endoplasm Contractile vacuole Trichocysts Sporangia Bioluminescence Macro/micronucleus conjugation	Videos discussion groups Journal readings worksheets Research Guided web search Lab: prepared slides Lab: live specimens Chapter web Slime mold field search	Computers internet smartboard journal articles powerpoint animations videos Microscopes Microscope cameras Prepared slides Live specimens	discussions research notes quizzes tests presentation journal entries lab practical slide preparation specimen ID in lab
Unit:	Fungus: Fungi's or not so fun guys				
Big Ideas:	Without fungi, Why would life as we know it, be impossible? How does fungi live?				
Unit Essential Questions:	What is the basic life cycle of fungus? What mutualistic relationships have fungus formed with living things? What are the good and bad of being a fungus? How are fungus classified and identified				
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments
Fungus	3.1.10.A, B, C, D, E; 3.1.12.A, B, C, D 3.3.10.B 3.7.10.A, B;; 3.7.12.A, B 3.9.10.A	Chitin Hyphae Mycelium Saprophyte Mycorrhizae Budding Lichen mycobiology	Videos discussion groups Journal readings worksheets Research Guided web search Fungi ID walk Lab: prepared slides Lab: live specimens Guest speakers	Computers internet smartboard journal articles powerpoint animations videos Microscopes Prepared slides Live specimens	discussions research notes quizzes tests presentation journal entries
Unit:	Plant diverstiy				
Big Ideas:	How are plants classified and what importance do they serve medically? How have flowering plants come to dominate earth?				
Unit Essential Questions:	How did plants evolve and adapt to life without water? How are plants classified? What is the diversity of flowering plants? How do plants affect human culture?				
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<p>Plant origins and evolution</p> <p>Classification of plants</p> <p>Flowering plant diversity</p> <p>Plants and human culture</p>	<p>3,3.10.C</p> <p>3.6.10. A and C: 3.6.12 C</p> <p>3.7.10. A, B and C; 3.7.12.A, B, and C</p> <p>3.8.10.C and D</p> <p>3.9.10.A</p>	<p>Cuticle</p> <p>Stomata</p> <p>Vascular</p> <p>Lignin</p> <p>Pollen</p> <p>Seed</p> <p>Gymnosperm</p> <p>Angiosperm</p> <p>Cotyledon</p> <p>Monocot/dicot</p> <p>Gametophyte</p> <p>Sporophyte</p> <p>Rhizoids</p>	<p>Videos</p> <p>discussion groups</p> <p>Journal readings</p> <p>worksheets</p> <p>Research</p> <p>Guided web search</p> <p>Plant ID walk</p> <p>Lab: prepared slides</p> <p>Lab: live specimens</p>	<p>Computers</p> <p>internet</p> <p>smartboard</p> <p>journal articles</p> <p>powerpoint</p> <p>animations</p> <p>videos</p> <p>Microscopes</p> <p>Prepared slides</p> <p>Live specimens</p>	<p>discussions</p> <p>research notes</p> <p>quizzes</p> <p>tests</p> <p>presentation</p> <p>journal entries</p>
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Unit:	Plant structure and Function				
Big Ideas:	What are the basic tissue and structures that make plants successful? What are the functions, uses and adaptations of roots stems and leaves?				
Unit Essential Questions:	What are the basic plant cells/tissues? What is xylem and phloem? What are roots, stem, leaves? How do you identify plants?				
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments
Plant tissues Plant vascular tissue Roots Stems Leaves Plant ID	3.2.10.A, B, C 3.3.10.B, C; 3.3.12.A 3.4.10A; 3.4.12.A 3.5.12.A 3.6.10.A, B, C 3.6.12.C 3.7.10.B	Parenchyma, sclerenchyma, collenchyma Dermis Ground tissue Xylem Phloem Transpiration Cohesion-adhesion Root hair Meristem Primary/secondary growth Petiole Mesophyll Guard cell Lignin Parallel, pinnate, palmate	Videos discussion groups Journal readings worksheets Research Guided web search Lab: prepared slides Lab: live specimens	Computers internet smartboard journal articles powerpoint animations videos Microscopes Prepared slides Live specimens	discussions research notes quizzes tests presentation journal entries
Unit:	Plant growth, reproduction and response				
Big Ideas:	How do plants grow, reproduce and respond to their environment? How do seeds and pollen allow such diversity? How do hormones control plant life cycles?				
Unit Essential Questions:	How do non flowering pants reproduce? How do floweing plants reproduce? How are seeds dispersed? What are the types of fruit? How can plants reproduce asexually? How important are plant hormones in all aspects of a plants life? How can we use this information to grow better plants?				
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Non flowering plant reproduction Flowering plant reproduction Seeds and pollen Fruits Vegetative propagation Plant hormone regulators Horticulture	3.2.10.A, B, C 3.3.10.B, C; 3.3.12.A 3.4.10A; 3.4.12.A 3.5.12.A 3.6.10.A, B, C 3.6.12.C 3.7.10.B	Sepal Stamen Petal Carpel Endosperm Germination Dormancy Vegetative propagation Gibberellin Ethylene Cytokinin Auxin Tropism Thigmotropism Phototropism Gravitropism	Videos discussion groups Journal readings worksheets Research Guided web search Lab: prepared slides Lab: live specimens	Macbooks/internet smartboard journal articles powerpoint animations videos Microscopes Prepared slides Live specimens	discussions research notes quizzes tests presentation journal entries

Unit:					
Big Ideas:					
Unit Essential Questions:					
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments
Unit:					
Big Ideas:					
Unit Essential Questions:					
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments

Unit:					
Big Ideas:					
Unit Essential Questions:					
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments
Unit:					
Big Ideas:					
Unit Essential Questions:					
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments