

Advanced Biology A Pacing Guide and Curricular Map

Time	Expectations and Assessments	Description/Skills	Resources	Assignments
8 Days	<p style="text-align: center;">UNIT 1</p> <p>B1.1 Scientific Inquiry (Skill 2) B1.2 Scientific Reflection and Social Implications (Skill 2) B2.1 C Transformation Matter and Energy in cells (Skill 1) B2.2 A-E Organic Molecules (Skill 4-7) B2.2x f-g Proteins (skill 8) B2.4f Cell specialization (skill 3) B2.5A Living Organism Composition (skill 7)</p> <p style="text-align: center;">ASSESSMENTS</p> <p>1.1 Exit questions: skill 1 1.2 Exit questions: skill 3 1.3 Exit questions: skills 4-6 1.4 Exit questions: skills 7-8 Quiz: skills 1-3 Test: skills 1-8</p>	<ol style="list-style-type: none"> 1. List and describe the characteristics of life 1. List the steps of scientific method and explain experimental design 2. Discuss the different types of energy bonds used to make molecules 3. Discuss the importance of carbon in organic compounds 4. Discuss how hydrolysis and dehydration relate to organic compounds 5. List the major elements of organic molecules 6. List and discuss the composition, structure and functions of the 4 major organic molecules 7. Discuss the role of enzymes in chemical reactions 	Chapter 1-3 text	<p>Chapter 2.2 Read ws Scientific Method ws Chapter 2.3 Read ws Chapter 2.4 Read ws Compound ws Lab: Organic Compounds Concept Maps Chart Review sheet</p>

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10 Days	<p style="text-align: center;">UNIT 2</p> <p>B1.1 Scientific Inquiry (Skill 2) B1.2 Scientific Reflection and Social Implications (Skill 2) B2.5B Living Organism Composition (skill 7) B2.4g-I Cell specialization (skill 5-6) B2.5x g-I Energy Transfer (skill 1-4)</p> <p style="text-align: center;">ASSESSMENTS</p> <p>Quick Quiz #1-2 (skills 1-2) Plant and Animal Cell drawings (skill 2) Lab: Diffusion (skill 4) Lab: Microscope (skill 8) Unit II Test (skills 1-7)</p>	<ol style="list-style-type: none"> 1. Identify the parts of a cell and their functions Include Cell Theory 2. Compare and contrast plant and animal cells 3. Discuss the structure and role of membranes 4. Distinguish between processes of active and passive transport: diffusion, osmosis, and active transport 5. Explain origin of earliest organelles, include prokaryotes and eukaryotes 6. Describe the structures of viruses and bacteria 7. Explain the relationship between organelles, cells, tissues, organs, systems, and organism 	Chapter 7, 19 text	<p>Section 7-1 ws Section 7-4 ws Section 7.1 review Diagram plant and Animal cells Eukaryote Cell Structure ws Cell Boundary ws Concept Maps Review Questions Lab: Diffusion Lab: Microscope</p>

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12 Days	<p style="text-align: center;">UNIT 3</p> <p>B1.1 Scientific Inquiry (Skill 2) B1.2 Scientific Reflection and Social Implications (Skill 2) B2.4e Cell Specialization (skills 1-2) B2.5D Living Organism Composition (skill 3) B2.5x e-f Energy Transfers (skills 4-5) B3.1B-C, e-f Photosynthesis and Respiration (skill 6-8)</p> <p style="text-align: center;">ASSESSMENTS</p> <p>Lab: Chromatography (skill 5) Unit 3 Test (skills 1-8)</p>	<ol style="list-style-type: none"> 1. Explain how cellular respiration is important for the making of ATP 2. Distinguish between aerobic and anaerobic respiration 3. Describe how individual cells breakdown energy-rich molecules to provide energy for cell functions 4. Explain the relationship between photosynthesis and respiration 5. Relate plant structures and functions of photosynthesis and respiration 6. Illustrate and describe the energy conversions that occur in photo, and respiration 7. Recognize equations for photo, and respiration and be able to identify reactants and products 8. Summarize process of photosynthesis 	<p style="text-align: center;">Chapter 8-9 text Video Clips: Photosynthesis</p>	<p>Student Outlines: Photosynthesis-Respiration Diagram: Chloroplast Mitochondria Respiration ws Respiration – Photo ws Lab: Chromatography Concept maps Review questions</p>

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7 Days	<p style="text-align: center;">UNIT 4</p> <p>B1.1 Scientific Inquiry (Skill 2) B1.2 Scientific Reflection and Social Implications (Skill 2) B2.1C Transformation of Matter and Energy in Cells (skill 1) B2.1 x d Cell differentiation (skill 2) B3.5x d Environmental Factors (skill 3) B4.2A DNA (skill 5) B4.3A-C d-f Cell Division (skills 4-6) B4.4x b Genetic Variation (skill 7)</p> <p style="text-align: center;">ASSESSMENTS</p> <p>Overhead Question Sets #1-3 Stem cell Article (skill 1-2) Unit 4 Test (skills 1-7)</p>	<ol style="list-style-type: none"> 1. Explain processes involved in growth and development 2. Describe how cells can become specialized for special function 3. Describe different reproductive strategies employed by various organisms and explain their advantages and disadvantages (sexual and asexual reproduction) 4. Compare and contrast processes of cell division (mitosis and meiosis) 5. Explain when mutations can be inherited 6. Explain different ways genetic recombination occurs in sexual reproduction 7. Explain how gene mutation and exposure to carcinogens can lead to cancer 8. Draw and label a homologous chromosome pair 	<p style="text-align: center;">Chapter 10, 11 text Video clips: Mitosis and Meiosis</p>	<p>Crossword Cell division ws Meiosis ws Stem Cell article Examining Risks of Cancer article Book Questions pg 257/ 1-10 Pg 259/ 1-12 Review Concept Maps</p>

Time	Expectations and Assessments	Description/Skills	Resources	Assignments
12 Days	<p style="text-align: center;">UNIT 5</p> <p>B1.1 Scientific Inquiry (Skill 2) B1.2 Scientific Reflection and Social Implications (Skill 2) B4.1A-B, c-e Genetics and Inherited Traits (skills 1-3) B4.3B,C,f,g Cell Divisions (skills 4-7)</p> <p style="text-align: center;">ASSESSMENTS</p> <p>Genetic Problems (skills 1-3) Unit 5 Test (skills 1-7)</p>	<ol style="list-style-type: none"> Differentiate between dominant and recessive, codominant, polygenic, and sex-linked traits Explain the genetic basis for Mendel's laws of segregation, dominance and independent assortment Determine the genotype and phenotype of monohybrid crosses using a Punnett square Explain that cellular differentiation results from gene expression and/or environmental influence – Nature vs. Nurture Predict how mutations may be transferred to offspring – Sickle Cell Anemia, PKU Explain why only mutations in gametes can be passed on to offspring Explain how it may be possible to identify defects from a karyotype – Downs Syndrome, Turners Syndrome 	Chapter 11, 14 text	<p>Chapter 11 Summary Section worksheets 11.1-11.3 Punnett square ws Genetic Problems Blood type ws Review Questions</p>

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8 Days	<p style="text-align: center;">UNIT 6</p> <p>B1.1 Scientific Inquiry (Skill 2) B1.2 Scientific Reflection and Social Implications (Skill 2) B4.1 Genetics and Inherited Traits (skill 1) B4.2 A-E DNA (skills 2-3) B4.3e Cell Division (skill 7) B4.4x b-c Genetic Variation (skill 6)</p> <p style="text-align: center;">ASSESSMENTS</p> <p>Video: DNA Revolution (skill 6) Dry Lab: DNA and Protein synthesis (skills 3-6) Unit 6 Test (skills 1-7)</p>	<ol style="list-style-type: none"> Explain that the info passes from parent to offspring is transmitted by genes that are coded in DNA Recognize that each species has its own characteristic DNA sequence Describe the structure and function of DNA Demonstrate how the genetic info in DNA provides instructions for assembling protein and is the same for all life forms Describe replication, transcription, and translation and how these relate to each other Explain different effects that mutation in DNA sequences can produce in an organism ⇒ Radiation and toxic chemicals ⇒ Deleting, inserting, duplication, or substitution of DNA segments Recognize that genetic engineering techniques provide great potential and responsibilities 	Chapter 12, 13 Text Video: DNA Revolution or Gene Power	<p>Diagram: DNA/RNA Worksheets Review questions</p>