**Teacher: Mr. Kevin Bugg**
**Class: Biology A**

**Semester: Fall '11**
**Date: August 15, 2011**

| | week: 1<br>Date: Aug. 15-19 | week: 2-3<br>Date: Aug. 22 – Sept. 2 | week: 4<br>Date: Sept. 6-9 | week: 5<br>Date: Sept. 12-16 |
|---|---|---|---|---|
| Topics | • Introduction/Assessments<br>• Scientific Inquiry/Thinking<br>• "Becoming Better Students" | • Ch. 1: The Science of Biology<br>• Ch. 2: The Chemistry of Life | • Ch. 3: The Biosphere<br>• Ch. 4: Ecosystems and Communities | • Ch. 5: Populations<br>• Ch. 6: Humans in the Biosphere |
| Standards | • Investigation and Experimentation Grade 9-12: 1a, 1d, 1f, 1k-l and 1n | • Investigation and Experimentation Grade 9-12: 1a-d, 1f-g and 1i<br>• Chemistry Grade 9-12: 10a-c | • Biology Grade 9-12: 6a, 6e | • Biology Grades 9-12: 6b-d, 6f-g |
| Lecture Notes | • Syllabus – Course Goals and Objectives<br>• "What's the Point?" - Value of Scientific Thinking outside classroom. Inductive Reasoning vs. Deductive Reasoning. Levels of Critical Thinking. | • History of Science<br>• Scientific Methods<br>• Biological Molecules | • Flora and Fauna<br>• Organism, Ecosystem and Everything in Between | • Population Interactions<br>• Endangered and Extinct Species<br>• The Human Factor/The Human Responsibility |
| Readings | • In Class Reading: Handouts and Textbook Ch. 1 (for assessment) | • At Home Reading: Chs. 1 and 2 | • At Home Reading: Chs. 3 and 4 | • At Home Reading: Chs. 5 and 6 |
| Homework | • Syllabus/Letter to Parent Signatures 10pts<br>• Lab. Safety handout 10pts<br>• Personal Statement/Questionnaire 10pts | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Scientific Method Handout 10pts<br>• Video Study Guides 10pts | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Food Web Handout 10pts<br>• Video Study Guide 10pts | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Population Handout 10pts<br>• Climate and Climate Change Handout 10pts<br>• Video Study Guide 10pts |
| Labs & Projects | • Note-taking Activity<br>• Effective Reading Act.<br>• Studying Effectively | • Identifying biological molecules (scientific inquiry) 30pts<br>• "Build A Molecule" 30pts | • Identifying Communities 30pts<br>• Describe Consumers 30pts<br>• Construct A Food Web 30pts | • How Do You Interact with the Biosphere? (Paper) |
| AV, Internet | • | • Scientific Method Video<br>• Biology's Building Blocks Video | • Biomes Video<br>• | • Internet Site (Ecology) 10pts<br>• The Energy Problem Video |
| Demos | • "Black Box" experiment<br>• "Observation vs. Inference" | • | • | • Allele Frequencies (Comp. Sim)<br>• Smog in a Bottle |
| Special | • | • Student/Parent Prog. Check 10pts | • Check Assignment Notebooks | • Student/Parent Prog. Check 10pts |
| Tests | • Assessment Quiz on Prior Knowledge 20pts (extra credit) | • Chs. 1&2 Quiz 20pts | • Chs 3&4 Quiz 20pts | • Chs 5&6 Quiz 20pts<br>• Unit Exam I Chs. 3-6 100pts |
| Points | • 30pts plus 20pts EC | • 130pts | • 150pts | • 80pts |

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| | week: 6-7<br>Date: Sept. 19-30 | week: 8<br>Date: Oct. 3-7 | week: 9<br>Date: Oct. 10-14 | week: 10<br>Date: : Oct. 17-21 |
|---|---|---|---|---|
| Topics | • Ch. 7: Cell Structure and Function | • Ch. 8: Photosynthesis | • Ch. 9: Cellular Respiration | • Ch. 10: Cellular Growth and Division |
| Standards | • Biology Grade 9-12: 1a-j | • Biology Grade 9-12: 1f and 1i | • Biology Grade 9-12: 1g and 1i | • Biology Grade 9-12: 2a-e |
| Lecture Notes | • Prokaryotic and Eukaryiotic Cells<br>• Structures and Functions (Analogies)<br>• Measurements/Scale | • Chemical Pathway<br>• Light and Dark Rxns | • Glycolysis/Fermentation<br>• Kreb Cycle and ETS | • Mitosis and Meiosis<br>• Types of Reproduction |
| Readings | • At Home Reading: Ch. 7 | • At Home Reading: Ch. 8 | • At Home Reading: Ch. 9 | • At Home Reading: Ch. 10 |
| Homework | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Video Study Guide 10pts<br>• Analogy Handout 10pts | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Video Study Guide 10pts<br>• Photosynthesis Handout 10pts | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Video Study Guide 10pts<br>• Cellular Respiration Handout 10pts | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Video Study Guide 10pts<br>• Bacterial Growth Wksht (Begin) |
| Labs & Projects | • Microscopy Lab 30pts<br>• Biosphere Paper (Check In)<br>• Scaled Cell Model (Begin) | • Begin Fast Plants 30pts<br>• Scaled Cell Models Presentation 50pts | • Yeast Respiration Lab 30pts<br>• Biosphere Paper Due 100pts | • Onion Root Microscopy 30pts<br>• Mitosis Model (Begin) |
| AV, Internet | • The Cell Video<br>• Internet Site (Cells Alive) 10pts | • Internet Site (Photosynthesis) 10pts<br>• Photosynthesis Video | • Respiration Video | • Mitosis and Meosis Video |
| Demos | • Diffusion/Osmosis across Membrane<br>• Surface Area vs. Volume | • Plant Leaf vs. Solar Cell | • Muscle Fiber vs. Candle | • Bacterial Growth |
| Special | • Student/Parent Progress Check 10pts | • Check Assignment Notebooks | • Student/Parent Progress Check 10pts | • Check Assignment Notebooks |
| Tests | • Ch. 7 Quiz 20pts | • Ch. 8 Quiz 20pts | • Ch. 9 Quiz 20pts | • Ch. 10 Quiz 20pts<br>• Unit Exam II Chs 7-10 100pts |
| Points | • 110pts | • 150pts | • 200pts | • 180pts |

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| | week: 11<br>Date Oct 24-28 | week: 12<br>Date: Oct 31- Nov. 4 | week: 13<br>Date: Nov. 7-11 | week: 14<br>Date: Nov. 14-18 |
|---|---|---|---|---|
| Topics | • Ch. 12: DNA and RNA | • Ch. 11: Introduction to Genetics | • Ch. 14: The Human Genome | • Ch. 13: Genetic Engineering |
| Standards | • Biology Grade 9-12: 1d, 2e-f, 4a-e, 5a-b | • Biology Grade 9-12: 2a-g, 3a-d | • Biology Grade 9-12: 2a-g, 3a-d | • Biology Grade 9-12: 5c-e |
| Lecture Notes | • Nucleic Acids: Units of the Code<br>• Gene Expression and Regulation | • Mendelian Genetics<br>• Monohybrid and Dihybrid Crosses | • Autosomes vs. Sex Chromosomes<br>• Sex Linkage<br>• Chromosomal Abnormalities<br>• Chromosomal Mapping | • Cloning<br>• Gene Therapy<br>• DNA Recombination |
| Readings | • At Home Reading: Ch. 12 | • At Home Reading: Ch 11 | • At Home Reading: Ch. 14 | • At Home Reading: Ch. 13 |
| Homework | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Video Study Guide 10pts<br>• Replication vs. Transcription Handout 10pts | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Video Study Guide 10pts<br>• Pedigree Handout 10pts | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Video Study Guide 10pts<br>• Genetic Disorders Handout 10pts | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Video Study Guide 10pts<br>• Genetic Engineering Handout 10pts |
| Labs & Projects | • DNA Extraction 30pts<br>• Mitosis Model Presentation 50pts | • DNA Digestion and Electrophoresis 30pts<br>• Bacterial Growth Analysis and Transfer 50pts | • Gene Sequencing 30pts | • Bacterial Growth Revisited (differential growth conditions) |
| AV, Internet | • Cellular Blueprint Video | • The Code of Life Video | • Genetic Disorders Video | • Genetic Engineering Video |
| Demos | • | • | • | • |
| Special | • Student/Parent Progress Check 10pts | • Check Assignment Notebooks | • Student/Parent Progress Check 10pts | • Check Assignment Notebooks |
| Tests | • Ch. 12 Quiz 20pts | • Ch. 11 Quiz 20pts | • Ch. 14 Quiz 20pts | • Ch. 13 Quiz 20pts<br>• Unit Exam III Chs. 11-14 100pts |
| Points | • 150pts | • 140pts | • 100pts | • 160pts |

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| | week: 15<br>Date: Nov. 21-23 (Thanksgiving Week) | week: 16<br>Date: Nov. 28 – Dec. 2 | week: 17<br>Date: Dec. 5-9 | week: 18<br>Date: Dec. 12-16 |
|---|---|---|---|---|
| Topics | • Ch. 15: Darwin's Theory of Evolution | • Ch. 15: Darwin's Theory of Evolution (cont.)<br>• Ch. 16: Evolution of Populations | • Semester Review | • Finals Week |
| Standards | • Biology Grade 9-12: 7a, 7d, 8a-e | • Biology Grade 9-12: 7a-d and 8a-e | • | • |
| Lecture Notes | • "Survival of the Fittest"<br>• Convergence and Divergence | • Genetic Drift<br>• Genetic Markers<br>• Genetic Relatedness<br>• Scientific Theory vs. Theories in Other Disciplines | • How to Study | • |
| Readings | • At Home Reading: Ch. 15 | • At Home Reading Ch. 16 | • Review Notes (Assignment Notebooks) at Home – Bring Questions to Class 5pts per question EC (up to 10pts/day) | • |
| Homework | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Video Study Guide 10pts<br>• Traits Handout 10pts | • Chapter Notes 10pts<br>• Chapter Questions 10pts<br>• Video Study Guide 10pts<br>• Evolution Handout 10pts | • Retake Semester Quizzes 5pts each (up to 60pts) | • |
| Labs & Projects | • Bacterial Growth II 50pts<br>• | • Fossil Records Activity 30pts | • | • |
| AV, Internet | • Evolution Video | • | • | • |
| Demos | • | • Fossils | • | • |
| Special | • | • Check Assignment Notebooks | • Student/Parent Progress Check 10pts | • |
| Tests | • | • Chs. 15 & 16 Quiz 20pts | • | • |
| Points | • 90pts | • 90pts | • 10pts (up to 110pts EC) | • |