

## Honors Biology Syllabus Spring, 2012

**Note:** While all of these topics will be covered this quarter, Mrs. Kohli reserves the right to adjust this schedule as she deems necessary. Textbook pages in normal print are from the new (dragonfly) book, textbook pages in italics are from the old (elephant) book.

**Jan. 4** – Intro to class. Policies & procedures. Root words.

**Jan. 5** – Procedure review. What is Biology? Characteristics of life. (Sec. 1-3; *Sec. 2-1*) Safety video.

**Jan. 6** – Root word & procedure **quiz**. Types of interactions. (p. 68-71 & 91-92; *p. 304-305, 1022-1023, & 1026-1027*)

**Jan. 9** – Finish interactions if necessary. Predator – prey lab, & carrying capacity. (Sec. 3-2, p. 93, p. 122; *p. 1026-1027*)

**Jan. 10** – Factors affecting population changes. Food webs, energy flow, biodiversity & keystone species. (Sec. 5-1 & 5-2)

**Jan. 11** – Niche vs. habitat, trophic levels, begin human population growth. (Sec. 5-3; *1036-1040, Sec. 49-1*) **Quiz**.

**Jan. 12** – Human population growth – affluence, food availability, & reproductive rates. **Quiz**.

**Jan. 13** - Abiotic vs. biotic factors. Intro to biomes & succession. (Sec. 4-2 & 4-3; *Sec. 47-2*)

**Jan. 16** – **No School – Martin Luther King, Jr.**

**Jan. 17** – Human effect on desert biomes, rainforest biomes.

**Jan. 18** – Human effect on other terrestrial biomes. Urban sprawl.

**Jan. 19** – Intro to aquatic biomes. Human effect on pelagic zone – overfishing. (Sec. 4-4; *Sec. 47-3*)

**Jan. 20** – Human effect on estuaries, wetlands, & intertidal zone. Gulf oil spill.

**Jan. 23** – Human effect on other aquatic biomes. Invasive species.

**Jan. 24** – Biogeochemical Cycles & how humans affect them. Begin personal impact webquest

**Jan. 25** - Personal impact webquest

**Jan. 26** – **Biogeochemical cycle book due. Ecology Unit Test**, discuss. Aquatic biome clips.

**Jan. 27** – Importance of water. (Sec. 2-2; *Sec. 4-1*)

**Jan. 30** – Finish water, begin carbohydrates (Sec. 2-3; *Sec. 4-3*)

**Jan. 31** - Carbohydrates, continued. (Sec. 2-3; *Sec. 4-3*)

**Feb. 1** – Lipids (Sec. 2-3; *Sec. 4-3*)

**Feb. 2** – Proteins: structure, function, & enzymatic activity. (Sec. 2-3 & 2-4; *Sec. 4-3*)

**Feb. 3** – **Quiz** on carbs, lipids, & proteins. Nucleic acids: structure & function. (p. 291 – 294; *p. 141 – 145*)

**Feb. 6** – DNA extraction **lab**. PCR & gel electrophoresis. (Sec. 13-2 & 13-3; *Sec. 12-2 & 12-3*)

**Feb. 7** – Organic molecule **lab (dress appropriately)**

**Feb. 8** – Catchup/ review organic molecule structure. Short day – District PLC

**Feb. 9** – Organic molecule **lab cont. (dress appropriately)**; study guide for Biochemistry test.

**Feb. 10** – **Biochemistry Test**. Prokaryotes vs. eukaryotes. (p. 172-3, Sec. 19-1; *Sec. 17-2*)

**Feb. 13** – Bacteria **lab (dress appropriately)**.

**Feb. 14** – Organelles (Sec. 7-2; *Sec. 5-2 & 5-3*)

**Feb. 15** – Finish organelles & cellular structure.

**Feb. 16** - **Organelle quiz**. Osmosis & diffusion. (Sec. 7-3; *Sec. 5-4*)

**Feb. 17** – Active transport. (Sec. 7-3; *Sec. 5-4*)

**Feb. 20 – No School – President’s Day**

**Feb. 21** - Finish transport, begin photosynthesis

**Feb. 22** – Photosynthesis (Sec. 8-2 & 8-3; *Sec. 6-1 & 6-2*)

**Feb. 23** – Photosynthesis continued. Stomata **lab**.

**Feb. 24** – Cellular respiration. (Chapter 9; *Sec. 6-3 & 6-4*)

**Feb. 27** – Cellular respiration, cont.

**Feb. 28** – **AIMS Writing. Quiz** on photosynthesis, & respiration. DNA supercoiling, histones, replication, & Okazaki fragments.

**Feb. 29** – **AIMS Reading** Finish replication.

**Mar. 1** – Intro to mitosis, mitosis **lab**. (Sec. 10-1 & 10-2; *Chapter 8*)

**Mar. 2** – Division regulators, & cancer. (Sec. 10-3; *Sec. 8-1*) Cell test study guide. **Late passes expire.**

**Mar. 5** – Review/Catchup

**Mar. 6** – **Cell Test.** Final exam review.

**Mar. 7** – Review for finals.

**Mar. 8** – **Midterm exams.**

**Mar. 9** – **Midterm exams.**

**Mar. 19** – Intro to Genetics. Three types of RNA, difference between DNA & RNA. Ribosomal subunits. Transcription, promoters. (Sec. 12-3, 12-5; *Sec. 7-2*)

**Mar. 20** – Translation. (Sec. 12-3; *Sec. 7-3*)

**Mar. 21** – Translation **lab**.

**Mar. 22** – Review translation. Intro to mutations. (Sec. 12-4; *Sec. 10-2*)

**Mar. 23** – **Quiz.** Mutation **lab**. Common mutations. (Sec. 12-4; *Sec. 10-2*)

**Mar. 26** – Meiosis **lab** (Sec. 11-4; *Sec. 9-3*)

**Mar. 27** – Review meiosis. Difference between sperm and egg production. (Sec. 11-4, p. 341 & p. 352 -353; *Sec. 9-3 & p. 235 – 236, p. 240-241*)

**Mar. 28** – Problems in meiosis. Karyotypes. *Substitute – NSTA Conference*

**Mar. 29** – Gene linkage & calculation of gene proximity. (Sec. 11-5; *p. 206 – 209*) *Substitute – NSTA Conference*

**Mar. 30** – **Meiosis quiz, Bring photo of parents!** Genotype & phenotype. Human Characteristics **lab**. (p. 265-268; *p. 183 -187*) *Substitute – NSTA Conference*

**Apr. 2** – Genetics vocabulary, intro to monohybrid Punnett squares. (Sec. 11-1; *Sec. 9-2*)

**Apr. 3** – Codominance & incomplete dominance (p. 272-273; *p. 197-198*)

**Apr. 4** – Multiple alleles. (p. 350 -351; *p. 237 – 239*)

**Apr. 5** – Sex-linked traits. Review all crosses.

**Apr. 6** – **Quiz on crosses**, discuss. Dihybrid crosses. (p. 270 -271; *p. 198-199*)

**Apr. 9** – Genetic disorders research for paper.

**Apr. 10** – **AIMS Math (Probably no class)**

**Apr. 11** – **AIMS Science.** Pedigrees. (p. 342-343)

**Apr. 12** – Finish pedigrees. Clone Age, Part 1. Genetics study guide (Sec. 14-3; *Sec. 11-4*).

**Apr. 13** – Gene therapy, Clone Age Part 2. Review. (Sec. 14-3; *Sec. 11-4*).

**Apr. 16** – **Paper due.** Catch up & review, Take A Stand

**Apr. 17** – **Genetics Test** (discuss afterwards)

**Apr. 18** – Solving the Puzzle **lab**, inductive reasoning.

**Apr. 19** – Deductive reasoning. Misconceptions about evolution. (Sec. 1-2; *Sec. 1-2 & 1-3*)

**Apr. 20** – **Holiday – No School**

**Apr. 23** – Darwin & the Voyage of the Beagle. (Sec. 15-1; Sec. 13-1)

**Apr. 24** – Natural selection. Ideas that influenced Darwin. (Sec. 15-2; Sec. 13-1, p.293-295)

**Apr. 25** – Evolution in action: antibiotic resistance (p. 403; *not in old book*)

**Apr. 26** – Natural selection **lab**. (Not in new book; *p. 297-298*)

**Apr. 27** – **Antibiotic Resistance Pamphlet due. Quiz.** Species formation. (Sec. 16-3, p.398-399; *Sec. 14-3*)

**April 30** – Patterns of macroevolution (Sec. 17-4, *14-4*)

**May 1** – Evidence: The fossil record, the Law of Superposition, & Pangaea. (Sec. 17-1 & 17-3; p. 276-282)

**May 2** – Catch up/review(short day – district PLC)

**May 3** – Radioactive dating. Half-life of a Penny **lab**. (p. 420; p. 274-276)

**May 4** – “How Long Did All This Take?” **lab**. Endosymbiotic theory, and the four eras of geologic time. (p.421, Sec. 17-2)

**May 7** – Classification **lab** (Sec. 18-1, p. 865). Evidence: Genetics & DNA. Introduce unit paper.

**May 8** – Evidence: structures and embryology. (p. 382-385, p.454-455; p. 283-285)

**May 9** – Chromosome Clues **lab** (Short period – awards assembly)

**May 10** – Finish Chromosome Clues, fusion at Chromosome 2. Begin human evolution.

**May 11** – Finish human evolution. Review. **Late passes expire.**

**May 14** – **Evolution test, Unit Paper due.** “Who's Aping Who?”

**May 15** – Review for finals

**May 16** – **Final Exams**

**May 17** – **Final Exams**