Almont High School **BIOLOGY** Pacing Guide

2016-2017

Months	SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE	
Week #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
	<u>SEMESTER 1</u> **Biochemistry** (10 days) Review atoms, molecules, elements, and compounds ionic and covalent bonding Four LIFE SUBSTANCES:Carbohydrates, Lipids, Proteins, Nucleic Acids, Building block units, Chemistry of Foods Lab Chemistry of Butter Lab ***Lorenzo's Oil* Film** Written analysis Neuron anatomy (5 days)				**Cell Type/Cell Parts** (13 days) Organization of living things, cell classification: prokaryote and eukaryote, Cell organelle identification and function Animal cell vs. plant cell Cells Lab: Onion root tip, cheek cells				**Plasma Membrane and Cell Transport (15 Days)** Plasma membrane anatomy,/physiology, Intracellular and extracellular environment constitution, movement with or against concentration gradients, osmosis, diffusion, active transport, egg "cell" inquiry activity, real life cell transport problems to achieve equilibrium **ATP** (3 days) Energy for the cell, chemical configuration, energy released when bonds are broken, converted from glucose				**ATP** Energy for the cell, chemical configuration, energy released when bonds are broken, converted from glucose **Cell Energy: Photosynthesis** (10 days) Plant cells, chloroplast parts, Light dependent and Light Independent reactions Waterweed simulation				**Cell Energy: Respiration** (10 days) Oxygen used to convert glucose to ATP, takes place in the mitochondria, aerobic or anaerobic respiration, glycolysis, Kreb's cycle, electron transport chain, lactic acid and alcohol fermentation, Muscle fatigue lab, Yeast fermentation lab **Exam Review** (4 days) **EXAMS**				**<u>SEMESTER 2</u>** **Cell Cycle and Cell Division** (10 days) What limits cell size? Cell cycle segments: G1, S, and G2, G0 Mitosis and Meiosis, phases, purpose of each, parent cells, resulting daughter cells, division of nucleus, diploid/haploid chromosome numbers, nondisjunction, trisomy, (3-5 days)				**DNA** (5 days) Historical scientific contributions, structure, function, and location of DNA, replication, helicase, polymerase, hydrogen bonds **Protein Synthesis** (10 days) Central dogma, three types of RNA, transcription and translation, amino acids become polypeptide chains, ribosomes build proteins, point and frameshift mutations, DNA CLUE game				**Genetics and Heredity** (15 days) Probability, predictability, and randomness in the inheritance of traits, gene, alleles, genotypes and phenotypes, patterns of heredity, monohybrid crosses, dihybrid crosses, incomplete and complete dominance, multiple alleles, sex-linked traits, sickle cell disease, hemophilia, colorblindness				**Evolution** (12 days) History of life on Earth, Charles Darwin, theory of evolution, Galapagos Islands, allele frequency, patterns in evolution, changes over time,adaptations,speciation and diversity, Breeding Bunnies Lab Lizard Evolution Lab Bird Beak Lab **Ecology** Symbiotic relationships, honey bees: keystone species				**Sustainability** (5 days) **Review/EXAM** (4 days)	

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