**Words Students need to know for the NC Biology EOC**

**Scientific Method Key Vocabulary:**

variable (independent / dependent), control, experimental, hypothesis, data, synthesis, transport, excretion, respiration, nutrition, growth/development, reproduction, regulation, homeostasis

**Biochemistry Key Vocabulary:**

acid, base, pH, buffer, element, atom, compound, molecule, inorganic, organic, carbon, hydrogen, oxygen, nitrogen, phosphorous, polymer, monomer, carbohydrate, monosaccharide, glucose, polysaccharide, starch, cellulose, glycogen, lipid, glycerol, fatty acid, saturated, unsaturated, phospholipid, steroid, nucleic acid, nucleotide, DNA, RNA, protein, amino acid, R-group, hemoglobin, insulin, enzyme, denature, catalyst, activation energy, substrate, active site, re-usable, specific, indicator

**Cell Structure/Reproduction/Microscopes Key Vocabulary:**

unicellular, multicellular, prokaryotic, eukaryotic, chromosome, DNA, plasmid, nucleus, cell/plasma membrane, phospholipid bilayer, selectively permeable, cell wall, cytoplasm, organelle, mitochondria, chloroplast, vacuole, ribosome, stem cell, differentiation, specialization, cell communication, junction, synapse, compound light microscope, ocular lens, objective lens, diaphragm, electron microscope, magnification, cell cycle, interphase, Growth1(G1), Synthesis(S), DNA replication, chromatin, chromatid, centromere, doubled chromosome, Growth2(G2), Mitosis, nuclear membrane, spindle fibers, Cytokinesis, asexual reproduction, clone, binary fission, budding, vegetative propagation, regeneration, sporulation

**Cell Transport and Energy Key Vocabulary:**

homeostasis, passive transport, diffusion, osmosis, cell (plasma) membrane, selectively permeable, phospholipid bilayer, pores, transport proteins, concentration gradient, osmotic/turgor pressure, equilibrium, active transport, photosynthesis, cellular respiration, reactant, product, ATP, energy, aerobic, anaerobic, fermentation (lactic acid / alcoholic), chloroplast, mitochondria, homeostasis

**DNA and Protein Synthesis Key Vocabulary:**

DNA, chromosomes, heredity, trait / phenotype, double helix, nucleic acid, nucleotide, deoxyribose sugar, phosphate, nitrogen bases, adenine, guanine, cytosine, thymine, complementary base pairing, hydrogen bonds, DNA replication, protein synthesis, gene, protein, codon, transcription, messenger RNA, ribose, uracil, translation, ribosomal RNA, transfer RNA, anticodon, amino acid, peptide bond, polypeptide, gene expression, differentiation, gene regulation, point mutation (substitution), frameshift mutation (deletion / addition), gamete

**Biotechnology Key Vocabulary:**

DNA fingerprint, gel electrophoresis, restriction enzyme, restriction digestion, genetic engineering, bacterial transformation transgenic organism / GMO (genetically modified organism), recombinant DNA, plasmid, vector, host, Human Genome Project, genetic screening, gene therapy, stem cell

**Meiosis/Genetic Variation/Genetics Key Vocabulary:**

Sexual reproduction, gamete, zygote, meiosis, diploid, haploid, reduction division, genetic variation, mutation, crossing over, random/ independent assortment, nondisjunction, random fertilization, homologous chromosome pairs, allele, dominant, recessive, genotype, phenotype, homozygous/pure breeding, heterozygous/hybrid, Mendel’s laws [dominance, segregation, independent assortment], Punnett square, monohybrid cross, intermediate inheritance [codominance, incomplete dominance], multiple alleles, polygenic traits, autosomal, sex-linked

**Human Genetics Key Vocabulary:**

* karyotype, trisomy, pedigree, acquired vs. inherited
* Down syndrome, Turner syndrome, Klinefelter syndrome, cystic fibrosis, Huntington’s disease, sickle-cell anemia, color blindness, hemophilia, PKU

**Evolution Key Vocabulary:**

Abiogenesis, spontaneous generation, primordial soup, heterotroph hypothesis, endosymbiotic theory, biogenesis, natural selection, variation, overproduction, competition, survival of the fittest (best adapted), adaptation, gene pool, mutations, selection forces, stabilizing/directional/disruptive selection, speciation, geographic isolation, reproductive isolation, gradualism, punctuated equilibrium, fossil, relative dating, radioactive dating, biochemical evidence, homologous structures, vestigial structures, resistance, passive/active immunity, vaccine

**Classification Key Vocabulary:**

Domain, kingdom, phylum, class, order, family, genus, species, taxa, binominal nomenclature, dichotomous key, phylogeny, phylogeny tree, cladogram, shared trait/character

**Living Organisms Adaptations & Behavior Key Vocabulary:**

**Protists**

unicellular, adaptation, contractile vacuole, cilia, flagella, pseudopodia, eyespots, behavior, chemotaxis, phototaxis,

**Plants**

* (Synthesis/Nutrition): photosynthesis, leaves, succulent, roots, taproot, fibrous roots, root hairs
* (Transport/Excretion): non-vascular, osmosis, stem, vascular, xylem, phloem, stomata, guard cells, diffusion, transpiration, cuticle
* (Regulation): hormone, auxin, cytokinen, ethylene, tropism, phototropism, geo/gravitotropism, thigmotropism, tendrils
* (Reproduction): vegetative propagation, runners, spores, seed, gymnosperm, angiosperm, cone, stamen, anther, filament, pollen, pistil/carpel, stigma, style, ovary, ovule, pollination, pollen tube, fertilization, fruit
* (Growth/Development): germination, dormancy, deciduous

**Animals**

* (Synthesis) protein synthesis
* (Transport) closed/open circulatory system, blood, 4-chambered heart
* (Excretion) waste, nephridia, Malpighian tubules, kidneys, nephrons, urine, homeostasis
* (Respiration) diffusion, spiracles, gills, lungs, alveoli
* (Nutrition) mandibles, jaws, teeth, digestion, esophagus, stomach, enzyme, intestine, microvilli
* (Reproduction) fragmentation, regeneration, external vs. internal fertilization, hermaphroditism
* (Growth/Development) egg, incomplete vs. complete metamorphosis, amniotic egg, pouch, placenta
* (Regulation) nervous system, neuron, sensory structure, brain, endocrine system, hormone
* (Behavior) stimulus, response, adaptive value, innate, learned, reflex, fight-or-flight, instinct, suckling, courtship, territoriality, aggression, dominance hierarchy, orientation, taxis, circadian rhythm, migration, hibernation, estivation, motivation, habituation, classical conditioning, trial and error, insight/reasoning, imprinting, society, communication, pheromone

**Ecology Key Vocabulary:**

* Biosphere, biomes ecosystem, biotic, abiotic, communities, populations, niche, trophic level, producer, autotroph, consumer, heterotroph, herbivore/primary consumer, carnivore/secondary or tertiary consumer, omnivore, scavenger, decomposer, recycling, food web, radiant/solar energy, chemical energy, energy pyramid, ecological efficiency, 10% rule,
* Cycles: water/hydrologic cycle, precipitation, infiltration, run-off, evaporation, transpiration, carbon cycle, photosynthesis, cellular respiration, greenhouse effect, fossil fuel, climate change, nitrogen cycle, nitrogen fixation
* competition, predation, predator, prey, symbiosis, mutualism, parasitism, commensalism, biotic potential, J-curve, exponential growth, limiting factors, S-curve, carrying capacity, dynamic equilibrium, density-dependent factors, density-independent factors