Oxford Area School District Science Scope and Sequence – Quarter 1:

AP Biology

3.1.B.A1	• Describe the common characteristics of life. • Compare and contrast the cellular structures and degrees of complexity of prokaryotic and eukaryotic organisms. • Explain that some structures in eukaryotic cells developed from early prokaryotic cells (e.g., mitochondria, chloroplasts)
3.1.B.A2	• Explain why many biological macromolecules such as ATP and lipids contain high energy bonds. • Explain the importance of enzymes as catalysts in cell reactions. • Identify how factors such as pH and temperature may affect enzyme function.
3.1.B.A8	• Recognize that systems within cells and multicellular organisms interact to maintain homeostasis. • Demonstrate the repeating patterns that occur in biological polymers. • Describe how the unique properties of water support life.
3.1.B.A7	• Analyze the importance of carbon to the structure of biological macromolecules. • Compare and contrast the functions and structures of proteins, lipids, carbohydrates, and nucleic acids. • Explain the consequences of extreme changes in pH and temperature on cell proteins.
BIO.B.4.1	• Describe ecological levels of organization in the biosphere.

4.1.10.A	• Examine the effects of limiting factors on population dynamics. • Analyze possible causes of population fluctuations. • Explain the concept of carrying capacity in an ecosystem. • Describe how organisms become classified as threatened or endangered. • Describe how limiting factors cause organisms to become extinct.
4.1.10.B	• Explain the consequences of interrupting natural cycles.
4.1.10.C	• Evaluate the efficiency of energy flow within a food web. • Describe how energy is converted from one form to another as it moves through a food web.
4.5.10.D	• Research practices that impact biodiversity in specific ecosystems.
4.1.10.E	• Analyze how human influence the pattern of natural changes (e.g primary/ secondary succession and desertification) in ecosystems over time.
4.2.10.A	• Examine the interactions between abiotic and biotic factors within a watershed.
4.2.10.B	• Examine how interactions impact wetlands and their surrounding environments.
4.2.10.C	• Explain the relationship between water quality and the diversity of life in a freshwater ecosystem

CC.3.6.9.-10.C.	• Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
CC.3.6.9-10.H.	• Draw evidence from informational texts to support analysis, reflection, and research.
CC.3.5.9-10.C.	• Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the test.

Oxford Area School Science Scope and Sequence – Quarter 2:

Biology

3.1.B.A2	• Identify the initial reactants, final products, and general purposes of photosynthesis and cellular respiration. • Explain the important role of ATP in cell metabolism. • Describe the relationship between photosynthesis and cellular respiration in photosynthetic organisms.
3.1.B.A5	• Relate the structure of cell organelles to their function (energy capture and release, transport, waste removal, protein synthesis, movement, etc). • Explain how the cell membrane functions as a regulatory structure and protective barrier for the cell. • Explain the role of water in cell metabolism. • Describe transport mechanisms across the plasma membrane.
CC.3.6.9.-10.C.	• Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
CC.3.6.9-10.H.	• Draw evidence from informational texts to support analysis, reflection, and research.
CC.3.5.9-10.C.	• Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the test.

Oxford Area School District Science Scope and Sequence – Quarter 3:

Biology

3.1B.A3	• Explain how all organisms begin their life cycles as a single cell and that in multicellular organisms, successive generations of embryonic cells form by cell division.
3.1.B.A4	• Summarize the stages of the **cell cycle.** • Examine how interactions among the different molecules in the cell cause the distinct stages of the cell cycle which can also be influenced by other signaling molecules. • Explain the role of **mitosis** in the formation of new cells and its importance in maintaining chromosome number during asexual reproduction. • Compare and contrast a virus and a cell. Relate the stages of viral cycles to the cell cycle.
3.1.B.A6	• Explain how cells differentiate in multicellular organisms.
3.1.B.B1	• Explain that the information passed from parents to offspring is transmitted by means of genes which are coded in **DNA** molecules. • Explain the basic process of **DNA** replication. • Describe the basic processes of transcription and translation. • Explain how crossing over, jumping genes, and deletion and duplication of genes results in genetic variation. • Explain how **mutations** can alter genetic information and the possible consequences on resultant cells.

3.1.B.B2	• Describe how the process of **meiosis** results in the formation of haploid gametes and analyze the importance of **meiosis** in sexual reproduction. • Compare and contrast the function of **mitosis** and **meiosis.** • Illustrate that the sorting and recombining of genes in sexual reproduction results in a great variety of possible gene combinations in offspring.
3.1.B.B3	• Describe the basic structure of **DNA**, including the role of hydrogen bonding. • Explain how the process of **DNA** replication results in the transmission and conservation of the genetic code. • Describe how transcription and translation result in gene expression. • Differentiate among the end products of replication, transcription, and translation. • Cite evidence to support that the genetic code is universal.
3.1.B.B5	• Describe how Mendel's laws of segregation and independent assortment can be observed through patterns of inheritance. • Distinguish among observed inheritance patterns caused by several types of genetic traits (dominant, recessive, codominant, sex-linked, polygenic, incomplete dominance, multiple alleles) • Explain how the processes of replication, transcription, and translation are similar in all organisms. Explain how gene actions, patterns of heredity, and reproduction of cells and organisms account for the continuity of life. • Demonstrate how inherited characteristics can be observed at the molecular, cellular, and organism levels.
CC.3.6.9.-10.C.	• Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
CC.3.6.9-10.H.	• Draw evidence from informational texts to support analysis, reflection, and research.
CC.3.5.9-10.C.	• Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the test.

Oxford Area School District Science Scope and Sequence – Quarter 4:

Biology

3.1.B.B4	• Explain how **genetic technologies** have impacted the fields of medicine, **forensics**, and agriculture
3.1.B.C1	• Describe species as reproductively distinct groups of organisms. • Analyze the role that geographic isolation can play in speciation. • Explain how evolution through natural selection can result in changes in biodiversity through the increase or decrease of genetic diversity within a population. • Describe how the degree of kinship between species can be inferred from the similarity in their **DNA** sequences.
3.1.B.C2	• Describe the theory suggesting that life on Earth arose as a single, primitive prokaryote about 4 billion years ago and that for the next 2 billion years, a huge diversity of single-celled **organisms** evolved. • Analyze how increasingly complex, multicellular organisms evolved once cells with nuclei developed. • Describe how mutations in sex cells may be passed on to successive generations and that the resulting **phenotype** may help, harm, or have little or no effect on the offspring's success in its environment. • Describe the relationship between environmental changes and changes in the gene pool of a population.
3.1.B.C3	• Compare and contrast various theories of evolution. • Interpret data from fossil records, anatomy and **physiology**, and **DNA** studies relevant to the **theory of evolution.** • Discuss the implications of a universal genetic code for evolution.
CC.3.6.9.-10.C.	• Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CC.3.6.9-10.H.	• Draw evidence from informational texts to support analysis, reflection, and research.
CC.3.5.9-10.C.	• Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the test.
CC.3.6.9-10B.	• Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
CC.3.6.9-10.D.	• Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
CC.3.6.9-10.E.	• Use technology, including the internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly
CC.3.5.9-10.A.	• Cite specific textual evidence to support of science and technical texts, attending to the precise details of explanations of descriptions.
CC.3.5.9-10.E.	• Analyze the structure of relationships among concept in a text, including relationships among key terms.
CC.3.5.9-10.G.	• Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically.
CC.3.5.9-10.H.	• Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.
CC.3.5.9-10.I.	• Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.

Big Idea 1: The process of evolution drives the diversity and unity of life **EQ: Why is change in the genetic makeup of a population over time is evolution?** **EQ: How are organisms linked by lines of descent from common ancestry?** **EQ: How does life continue to evolve within a changing environment?** **EQ: How does the origin of living systems explained by natural processes?**			
Concepts	**Competencies**	**Resources**	**Assessments**
1.A.1 Natural selection is a major mechanism of evolution. 1.A.2 Natural selection acts on phenotypic variations in populations. 1.A.3 Evolutionary change is also driven by random processes. 1.A.4 Biological evolution is supported by scientific evidence from many disciplines, including mathematics. 1.B.1 Organisms share many conserved core processes and features that evolved and are widely distributed among organisms today. 1.B.2 Phylogenetic trees and cladograms are graphical representations of evolutionary history	CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11–12 texts and topics*. CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. CC.3.6.11-12.B. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or	National Center for Case Study Teaching in Science **http://sciencecases.lib.buffalo.edu/cs/** CollegeBoard AP Biology Lab Manual Genetic Science Learning Center http://teach.genetics.utah.edu/ Howard Hughes Medical Center BioInteractive https://www.hhmi.org/biointeractive K'Nex DNA Building Model PhET Simulations https://phet.colorado.edu/en/simulations/category/biology Science Courseware – Fruit Fly Virtual Lab http://www.sciencecourseware.org/vcise/drosophila/	ExamView Exams per unit ExamView quizzes per chapter Laboratory Exercises

that can be tested. 1.C.1 Speciation and extinction have occurred throughout the Earth's history. 1.C.2 Speciation may occur when two populations become reproductively isolated from each other. 1.C.3 Populations of organisms continue to evolve. 1.D.1 There are several hypotheses about the natural origin of life on Earth, each with supporting evidence. 1.D.2 Scientific evidence from many different disciplines supports models of the origin of life.	technical processes. CC.3.6.11-12.C. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11–12 texts and topics*. CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. CC.3.6.11-12.B. Write informative/explanatory texts, including the narration of		

	historical events, scientific procedures/ experiments, or technical processes. CC.3.6.11-12.C. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.		
Vocabulary Adaptation Adaptive radiation Allele Allopatric speciation Analogous structures Antibiotic resistance Artificial selection Bottleneck effect Cladograms Clade Common ancestor	Convergent evolution Directional selection Disruptive selection Divergent evolution Emigration Evolution Fertility Founder effect Gene flow Gene pool Genetic drift Homologous structures	Hybrid Immigration Isolation types Limited resources Mutation Natural selection Outgroup Phenotype Phylogenetic tree Population Protobiont Random mating	Reproductive isolation Serial endosymbiosis Sexual selection Speciation Species Stabilizing selection Sterility Sympatric speciation Variation Vestigial organs viability

Big Idea 2: Biological systems utilize free energy and molecular building blocks to grow, to reproduce, and to maintain dynamic homeostasis.
EQ: Why does growth, reproduction and maintenance of the organization of living systems require free energy and matter? **EQ: How do cells create and maintain internal environments that are different from their external environment by means of growth, reproduction and dynamic homeostasis?** **EQ: How do organisms use feedback mechanisms to regulate growth and reproduction and to maintain dynamic homeostasis?**

EQ: How are growth and dynamic homeostasis of a biological system are influenced by changes in the system's environment.
EQ: How do many biological processes involved in growth, reproduction and dynamic homeostasis include temporal regulation and coordination?

Concepts	Competencies	Resources	Assessments
2.A.1 All living systems require constant input of energy. 2.A.2 Organisms capture and store free energy for use in biological systems. 2.A.3 Organisms must exchange matter with the environment to grow, reproduce and maintain homeostasis. 2.B.1 Cell membranes are selectively permeable due to their structure. 2.B.2 Eukaryotic cells maintain internal membranes that partition the cell into specialized regions. 2.C.1 Organisms use feedback mechanisms to maintain their internal environments and respond to external changes.	CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11–12 texts and topics*. CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. CC.3.6.11-12.B. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.	National Center for Case Study Teaching in Science **http://sciencecases.lib.buffalo.edu/cs/** CollegeBoard AP Biology Lab Manual Genetic Science Learning Center http://teach.genetics.utah.edu/ Howard Hughes Medical Center BioInteractive https://www.hhmi.org/biointeractive K'Nex DNA Building Model PhET Simulations https://phet.colorado.edu/en/simulations/category/biology Science Courseware – Fruit Fly Virtual Lab http://www.sciencecourseware.org/vcise/drosophila/	ExamView Exams per unit ExamView quizzes per chapter Laboratory Exercises

2.C.2 Organisms respond to changes in their external environments. 2.D.1 All biological systems from cells and organisms to populations, communities, and ecosystems are affected by complex biotic and abiotic interactions involving exchange of matter and free energy. 2.D.2 Homeostatic mechanisms reflect both common ancestry and divergence due to adaptation in different environments. 2.D.3 Biological systems are affected by disruptions to their dynamic homeostasis. 2.D.4 Plants and animals have a variety of chemical defenses against infections and affect dynamic homeostasis. 2.E.1 Timing and coordination of specific events are necessary for the normal development	CC.3.6.11-12.C. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11–12 texts and topics*. CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. CC.3.6.11-12.B. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or		

of an organism, and these events are regulated by a variety of mechanisms. 2.E.2 Timing and coordination of physiological events are regulated by multiple mechanisms. 2.E.3 Timing and coordination of behavior are regulated by various mechanisms and are important in natural selection.	technical processes. CC.3.6.11-12.C. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.		
Vocabulary Abiotic Active transport Adaptive radiation Anabolic reactions Apomixes Asexual reproduction ATP ATP synthetase Binary fission Biotic Budding Calvin cycle Catabolic reactions Chemiosmosis Chloroplast Community Competitive inhibitor Concentration gradient	Cooperativity Courtship behavior Cryptic coloration Cuticle Cyclic phosphorylation Cytoskeleton Divergent evolution Ecosystem Endergonic reactions Energy coupling Enthalpy Entropy Exergonic reactions Facilitated diffusion Feedback inhibition Fermentation G protein Glycolysis Golgi apparatus	Homeostasis Hypertonic Hypotonic Isotonic Krebs cycle Lysosome Metabolism Meiosis Mitochondria Mitosis Negative feedback Net primary productivity Noncyclic photophosphorylation Nucleus Osmoconformer Osmoregulator Osmosis Passive transport Periodic disturbances	Pheromones Photosynthesis Phylogeny Population Positive feedback Primary succession Producers Regeneration Ribosome Rough endoplasmic reticulum Rubisco Secondary succession Sexual reproduction Sexual selection Smooth endoplasmic reticulum Speciation Transcription factors

Consumers			Trophic levels Vegetative reproduction

Big Idea 3: Living systems store, retrieve, transmit, and respond to information essential to life processes. **EQ: How does heritable information provide for continuity of life?** **EQ: How does expression of genetic information involve cellular and molecular mechanisms?** **EQ: Why is the processing of genetic information imperfect and a source of genetic variation?** **EQ: How do cells communicate by generating, transmitting, and receiving chemical signals?** **EQ: How does transmission of information result in changes within and between biological systems?**			
Concepts	**Competencies**	**Resources**	**Assessments**
3.A.1 DNA, and in some cases, RNA, is the primary source of inheritable information. 3.A.2 In eukaryotes, heritable information is passed to the next generation via processes that include the cell cycle and mitosis or meiosis plus fertilization. 3.A.3 The chromosomal basis of inheritance provides an understanding of the pattern of passage (transmission) of genes from parent to offspring. 3.A.4 The inheritance pattern of many traits cannot be explained by simple Mendelian	CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11–12 texts and topics*. CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	National Center for Case Study Teaching in Science **http://sciencecases.lib.buffalo.edu/cs/** CollegeBoard AP Biology Lab Manual Genetic Science Learning Center http://teach.genetics.utah.edu/ Howard Hughes Medical Center BioInteractive https://www.hhmi.org/biointeractive K'Nex DNA Building Model PhET Simulations https://phet.colorado.edu/en/simulations/category/biology Science Courseware – Fruit Fly Virtual Lab http://www.sciencecourseware.org/vcise/drosophila/	ExamView Exams per unit ExamView quizzes per chapter Laboratory Exercises

genetics. 3.B.1 Gene regulation results in differential gene expression, leading to cell specialization. 3.B.2 A variety of intercellular and intracellular signal transmissions mediate gene expression. 3.C.1 Changes in genotype can result in changes in phenotype. 3.C.2 Biological systems have multiple processes that increase genetic variation. 3.C.3 Viral replication results in genetic variation, and viral infection can introduce genetic variation into the hosts. 3.D.1 Cell communication processes share common features that reflect a shared evolutionary history. 3.D. 2 Cells communicate	CC.3.6.11-12.B. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. CC.3.6.11-12.C. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11–12 texts and topics*. CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with		

with each other through direct contact with other cells or from a distance via chemical signaling. 3.D.3 Signal transduction pathways link signal reception with cellular response. 3.D.4 Changes in signal transduction pathways can alter cellular response. 3.E.1 Individuals can act on information and communicate it to others. 3.E.2 Animals have nervous systems that detect external and internal signals, transmit and integrate information, and produce responses.	other sources of information. CC.3.6.11-12.B. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. CC.3.6.11-12.C. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.		
Vocabulary Allele Alternative splicing Aneuploidy Cell plate Centromere Cleavage furrow Codominance Conjugation Crossing over Cytokinesis	DNA polymerase DNA replication Epistasis Euchromatin Genotype Helicase Hemizygous Heterochromatin Heterozygous Homologous chromosome Homozygous	Inducible operon Kinetochore Lagging strand Leading strand Linked traits Lysogenic cycle Lytic cycle Meiosis Mendelian genetics Mitosis Nondisjunction	Phenotype Pilus Polygenic inheritance Polyploidy Purine Pyrimidine Repressible operon RNA sex-linked traits Splicing Synapsis Telomere

DNA DNA ligase DNA methylation	Incomplete dominance Independent assortment	Nucleotide Operons	Transduction Transformation

Big Idea 4: Biological systems interact, and these systems and their interactions possess complex properties. **EQ: How do interactions within biological systems lead to complex properties** **EQ: Why are competition and cooperation important aspects of biological systems?** **EQ: How does naturally occurring diversity among and between components within biological systems affect interactions with the environment?**			
Concepts	**Competencies**	**Resources**	**Assessments**
4.A.1 The subcomponents of biological molecules and their sequence determine the properties of that molecule. 4.A.2 The structure and function of subcellular components, and their interactions, provide essential cellular processes. 4.A.3 Interactions between external stimuli and regulated gene expression result in specialization of cells, tissues and organs. 4.A.4 Organisms exhibit complex properties due to interactions between constituent parts. 4.A.5 Communities are	. CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11–12 texts and topics*. CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	National Center for Case Study Teaching in Science **http://sciencecases.lib.buffalo.edu/cs/** CollegeBoard AP Biology Lab Manual Genetic Science Learning Center http://teach.genetics.utah.edu/ Howard Hughes Medical Center BioInteractive https://www.hhmi.org/biointeractive K'Nex DNA Building Model PhET Simulations https://phet.colorado.edu/en/simulations/category/biology Science Courseware – Fruit Fly Virtual Lab http://www.sciencecourseware.org/vcise/drosophila/	ExamView Exams per unit ExamView quizzes per chapter Laboratory Exercises

composed of populations of organisms that interact in complex ways. 4.A.6 Interactions among living systems and with their environment result in the movement of matter and energy. 4.B.1 Interactions between molecules affect their structure and function. 4.B.2 Cooperative interactions within organisms promote efficiency in the use of energy and matter. 4.B.3 Interactions between and within populations influence patterns of species distribution and abundance. 4.B.4 Distribution of local and global ecosystems changes over time. 4.C.1 Variation in molecular units provides cells with a wider range of functions. 4.C.2 Environmental factors influence the	CC.3.6.11-12.B. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. CC.3.6.11-12.C. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11–12 texts and topics*. CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with		

expression of the genotype in an organism. 4.C.3 The level of variation in a population affects population dynamics. 4.C.4 The diversity of species within an ecosystem may influence the stability of the ecosystem.	other sources of information. CC.3.6.11-12.B. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. CC.3.6.11-12.C. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.		
Vocabulary Active site Allosteric regulation Amino acid Atom Atomic mass Atomic numer Atomic weight Carbohydrates Cell wall Centriole Cholesterol Chloroplast Coenzymes Cofactors Competitive inhibition Covalent bond	DNA Disaccharides Electrons Feedback inhibition Fatty acids Glycolipids Golgi mechanism Heterozygous Homozygous Hormone Hydrogen bond Hydrophilic Hydrophobic Invasive speces Ionic bond Isotope Keystone species	Lysosome Mitochondria Monosaccharides Neuron Neurotransmitter Neutrons Niche Nonpolar covalent bond Nucleic acid Nucleolous Nucleotide Nucleus Organ Organelle Peptide bond Phagocytosis Phospholipid	Plasma membrane Polar covalent bond Polysacchardies Positive feedback Protons Purine Pyrimidine RNA Radioactive isotopes Ribosome Rough endoplasmic reticulum Smooth endoplasmic reticulum Steroid Substrate Triglyceride Valence electrons Van der Waal interaction