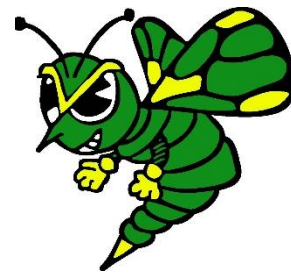




HORNET TARGETS

“CAN I?”



9TH—10TH GRADE BIOLOGY

Discover · Explore · Practice · Create

Target #	Target	Can I?'s
9.1	I CAN explain that all living organisms need to maintain a state of homeostasis.	<ul style="list-style-type: none"> explain the definition of homeostasis? give two or more examples of an organism maintaining homeostasis? explain why need to maintain homeostasis?
9.2	I CAN describe and explain each of the 4 major macromolecules that are the building blocks of all life.	<ul style="list-style-type: none"> list all 4 macromolecules? describe the subcategories within each macromolecule? describe the building blocks (how they are constructed) of each individual macromolecule? describe why each macromolecule is important to have?
9.3	I CAN distinguish the different systems of specialized cells (multicellular, unicellular, prokaryotic, eukaryotic) within different organisms that help perform essential functions of life.	<ul style="list-style-type: none"> define and distinguish the difference between Prokaryotes and Eukaryotes? understand and give an example of the difference between unicellular organisms and multicellular organisms? list and describe the functions of organelles within a Eukaryotic multicellular organism? describe that within a multicellular eukaryotic organism, different cells are a variety of shape, size, and function depending on its job?
9.4	I CAN Explain the different processes of cellular transport and maintenance of homeostasis	<ul style="list-style-type: none"> explain how equilibrium is established as a result of diffusion distinguish between diffusion and osmosis explain how substances cross the cell membrane diffusion via ion channels in the cell membrane distinguish between passive and active transport explain how the sodium-potassium pump operates compare and contrast endocytosis and exocytosis
9.5	I CAN use a model to illustrate that for organisms to obtain energy, their cells need to use a chemical process called Cellular Respiration to break down bonds of macromolecules and form new bonds.	<ul style="list-style-type: none"> identifying that Carbohydrates (specifically glucose) are the main source of energy during the process of cellular respiration define ATP define cellular respiration define glycolysis determine that glycolysis is the first stepping stone to two main pathways to creating energy
9.6	I CAN describe both forms of Cellular Respiration and model or illustrate each cycle.	<ul style="list-style-type: none"> distinguish the difference between aerobic respiration and anaerobic respiration (fermentation) define Pyruvic acid describe the 4 steps to glycolysis define Fermentation describe lactic acid fermentation

		<ul style="list-style-type: none"> • name the location where aerobic respiration takes place • describe/illustrate the 5 steps to the Krebs cycle • describe/illustrate the steps in the Electron transport chain • determine the energy yield for both cellular respiration cycles.
9.7	I CAN explain cell growth, cell division, and the processes of cellular reproduction in eukaryotic cells.	<ul style="list-style-type: none"> • describe the structure of a chromosome • explain the difference between sex chromosomes and autosomes • distinguish between diploid and haploid cells • describe the events of binary fission • describe each phase of the cell cycle • summarize the phases of mitosis • compare cytokinesis in animal cells and cytokinesis in plant cells • list and describe the phases of meiosis • compare the end products of mitosis and meiosis • explain crossing over and how it contributes to the production of a unique individual
9.8	I CAN explain the history and fundamental processes of genetics	<ul style="list-style-type: none"> • describe the steps involved in Mendel's experiments on garden peas • distinguish between dominant and recessive traits • state two laws of heredity that were developed from Mendel's work • explain the difference between an allele and a gene • explain how probability is used to predict the results of genetic crosses • use a Punnett square to predict the results of monohybrid and dihybrid genetic crosses • differentiate a monohybrid and a dihybrid
9.9	I CAN explain the roles of DNA and RNA within nucleic acids and how they play in storing information and making proteins	<ul style="list-style-type: none"> • explain the principal function and structure of DNA • explain the role of complementary base pairing in the replication of DNA and summarize the main features of DNA replication • explain the principal function and structure of RNA • compare the structure of RNA with that of DNA • Summarize the process of Transcription • describe the genetic code and distinguish between a codon and an anticodon, and state where each is found • explain the roles of the start codon and stop codon • summarize the process of translation
9.10	I CAN describe the control of gene expression and how gene expression and development can play an important role in the growth of eukaryotes	<ul style="list-style-type: none"> • define gene expression • describe the regulation of the lac operon in prokaryotes • distinguish between introns and exons • describe the role of enhancers in the control of gene expression • recognize the relationship between gene expression and morphogenesis • describe the influence of homeotic genes on drosophila development • summarize the role of the homeobox in eukaryotic development
9.11	I CAN recognize inheritance patterns and describe these patterns in human genetics	<ul style="list-style-type: none"> • explain the role of sex chromosomes in sex determination • describe how sex linkage affects the inheritance of traits • explain the effects of crossing over on the inheritance of genes in linkage groups • distinguish between chromosome mutations and gene mutations • show how pedigree analysis can be used to illustrate the inheritance of traits • explain the inheritance of ABO blood groups • give examples of traits or disorders transmitted by autosomal dominant, autosomal recessive, polygenic, and X-linked recessive inheritance • compare sex-linked traits with sex-influence traits • explain how nondisjunction can cause human genetics disorders