



Worthington Independent School District 518

Essential Outcomes & Student Learning Targets

Standards define expectations for the educational achievement of all students. The Essential Outcomes listed below were determined through a process of evaluating standards based on; endurance, leverage, readiness, and "high testing value." A learning target describes the standard from a student's point of view.

Below is a summary of the Essential Outcomes and learning targets for the listed grade/team and subject.

Grade/Team: High School Science

Subject: Biology

Essential Outcomes:

Recognize that cells are composed primarily of few elements (carbon, hydrogen, oxygen, nitrogen, phosphorous, and sulfur) and describe the basic molecular structures and the primary functions of carbohydrates, lipids, proteins, and nucleic acids. (9.4.1.2.1)

Learning Targets:

I can recognize that cells are composed of few elements (carbon, hydrogen, oxygen, nitrogen, phosphorus, and sulfur).

I can describe the basic molecular structure of carbohydrates.

I can describe the basic molecular structure of lipids.

I can describe the basic molecular structure of proteins.

I can describe the basic molecular structure of nucleic acids.

I can describe the primary functions of carbohydrates.

I can describe the primary functions of lipids.

I can describe the primary functions of proteins.

I can describe the primary functions of nucleic acids.

Essential Outcomes:

Describe how viruses, prokaryotic cells and eukaryotic cells differ in relative size, complexity and general structure. (9.4.1.2.3)

Learning Targets:

I can describe similarities and differences between viruses, bacteria, and eukaryotic cells.

Essential Outcomes:

Use words and equations to differentiate between the processes of photosynthesis and respiration in terms of energy flow, beginning reactants and end products. (9.4.2.2.1)

Learning Targets:

I can use words to differentiate between the processes of photosynthesis and respirations in terms of energy flow.

I can use words to differentiate between the process of photosynthesis and respiration in terms of beginning reactants.

I can use words to differentiate between the process of photosynthesis and respiration in terms of end products.

I can use equations to differentiate between the photosynthesis and respiration in terms of energy flow.

I can use equations to differentiate between the process of photosynthesis and respiration in terms of beginning reactants.

I can use equations to differentiate between the process of photosynthesis and respiration in terms of end products.

Essential Outcomes:

In the context of a monohybrid cross, apply the terms phenotype, genotype, allele, homozygous and heterozygous. (9.4.3.1.2)

Learning Targets:

I can apply phenotype to context of a monohybrid cross.

I can apply genotype to context of a monohybrid cross.

I can apply homozygous to context of a monohybrid cross.

I can apply heterozygous to context of a monohybrid cross.

I can apply allele to context of a monohybrid cross.

Essential Outcomes:

Describe the process of DNA replication and the role of DNA and RNA in assembling protein molecules. (9.4.3.1.3)

Learning Targets:

I can describe the process of DNA replication.

I can describe the role of DNA in assembling protein molecules.

I can describe the role of RNA in assembling protein molecules.

Essential Outcomes:

Use scientific evidence to show evolutionary relationships among species. (9.4.3.3.2)

Learning Targets:

I can use scientific evidence to show evolutionary relationships among species.

I can use scientific evidence, homologous structures, to show evolutionary relationships among species.

I can use scientific evidence, genetic and/or biochemical similarities, to show evolutionary relationships among species.

Essential Outcomes:

Explain why genetic diversity within a population is essential. (9.4.3.3.4)

Learning Targets:

I can show that gene pool diversity keeps a population more stable.

Essential Outcomes:

Explain how the body produces antibodies to fight disease and how vaccines assist in this process. (9.4.4.2.2)

Learning Targets:

I can explain how the body produces antibodies to fight disease.

I can explain how vaccines assist the production of antibodies to fight disease.