

# Eighth Grade Science Updated May 2020

## Course Description

Eighth Grade Sciences focuses mainly on Life Sciences. We study the cell parts and functions and the processes that occur inside the cell. We also study the basics of Genetics and Heredity by looking at inherited human traits and the probability that they'll be passed onto offspring. We study the types of reproduction and how offspring characteristics are affected. The last unit covers the basic components of ecology, interactions between organisms and the environment.

## Big Ideas

1. The basic unit of life is the cell, in which many processes occur.
2. Sexual reproduction creates genetic variation whereas asexual reproduction produces identical offspring.
3. All energy used for life comes from the sun.

## Essential Learning Objectives

ELO #	ELO Description	Missouri Standards	NGSS Standards
ELO #1	Students will give evidence that living things are made of cells, distinguish between living and non-living things, and understand that living things may be made of one cell or many and varied cells.	6- 8.LS.1.A.1 6- 8.LS.1.A.2 6- 8.LS.1.A.3 6- 8.LS.1.A.4	MS-LS1-1 MS-LS1-2 MS-LS1-3
ELO #2	Students will explain the role that photosynthesis and cellular respiration have in the cycling of matter and flow of energy into and out of organisms.	6- 8.LS.1.B.1 6- 8.LS.1.B.2 6-8.LS.1.C	MS-LS1-4 MS-LS1-5 MS-LS1-6 MS-LS1-7 MS-LS1-8
ELO #3	Students will analyze and interpret data to provide evidence for the effects of resource availability on individual organisms and populations of organisms in an ecosystem and construct an explanation that predicts the patterns of interactions among and between the biotic and abiotic factors in a given ecosystem.	6- 8.LS.2.A.1 6- 8.LS.2.A.2 6-8.LS2.B 6- 8.LS.2.C.1 6-8.LS2.C.2	MS-LS2-1 MS-LS2-2 MS-LS2-3 MS-LS2-4 MS-LS2-5
ELO #4	Students will construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.	6-8.LS.4.A 6- 8.LS.4.B.1 6- 8.LS.4.B.2 6-8.LS.4.C	MS-LS3-1 MS-LS3-2 MS-LS4-1 MS-LS4-2 MS-LS4-3 MS-LS4-4 MS-LS4-5 MS-LS4-6