



## ***Next Generation Science Standards***

### **Middle School**

#### **Overarching Themes**

##### **From Molecules to Organisms: Structures and Processes**

- a. Animal behaviors (songs, dances) and specialized plant structures (flowers, scents) can affect the probability of their successful reproduction. (MS-LS1-4)
- b. Conditions of the environment can influence the growth of organisms (drought, space, light) (MS-LS1-5)
- c. Photosynthesis is the foundation of life on Earth – it uses CO<sub>2</sub> and water and releases oxygen. The product of photosynthesis is sugar. The plant uses the sugar for life processes and stores extra sugar for animals to eat. (MS-LS1-6)
- d. When animals eat plants they are taking the energy from the sun and rearranging it into new molecules, like muscle protein. (MS-LS1-7)

##### **Ecosystems: Interactions, Energy, and Dynamics**

- a. The availability of resources (food, water, light, space) affects the growth and survival of individual organisms and populations. (MS-LS2-1)
- b. Organisms interact with each other – as predator/prey, competitors, or mutually beneficial (e.g. lichens). (MS-LS2-2)
- c. Energy flows through a system and nutrients cycle (decomposers). (MS-LS2-3).

##### **Heredity: Inheritance and Variation of Traits**

- a. Asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation. (MS-LS3-2)

##### **Biological Evolution: Unity and Diversity**

- a. Natural selection is the concept seen in living organisms that reproduce sexually – not all of the offspring are the same and some offspring survive while others don't. Those who survive to reproduce successfully pass their genes on to their offspring. (MS-LS4-4)

##### **Earth and Human Activity**

- a. Human activity such as the burning of fossil fuels and the removal of vegetation for development has led to an overall increase in the Earth's mean surface temperature. Understanding the impact of human activities can help people make wise decisions. (MS-ESS3.D)