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Bay Studies was not only a fun trip, but an excellent experience to learn about the Bay that we live on. Many of the topics we have learned this year could be applied to Bay Studies, but the most prevalent would be these five.

Maryland and almost all of the East Coast is in the **Temperate Forest** biome. This is made up mostly of deciduous and evergreen coniferous trees. In the **ecosystem** of the marshlands of Fox Island, there is many **populations** of animals. One of the most important fish in the Bay is the Atlantic Menhaden. The population of this fish has increased dramatically. It eats small floating algae called phytoplankton, which is extremely prevalent in the Bay. Therefore, it is also a fish harvested in mass quantities, but it always seems to replenish itself. The fish and the plankton could be an example of **biotic factors** in the environment. On the other hand, **abiotic factors**, non-living factors such as the water salinity or freshness or ocean currents.

During the trip we walked around series' of small islands learning about plant and animal life on Fox Island's marshes. Our counselor, Ian, gave us alot of information on the different **autotrophic** species such as black needle rush, and salt grass. All plant species use a process of making food for themselves called **photosynthesis**. This process produced high-energy carbs so that they can grow and feed themselves. **Pigments**, such as **chlorophyll**, plants main pigment and gives them their green colour, is stored in the plants chloroplast. Inside of the chloroplast, is a structure called the **thylakoid**. This is where chlorophyll is stored and used during photosynthesis for autotrophs.

Cell respiration is a process that "releases energy from the food in the presence of oxygen". All plants and the humans (us) were performing cell respiration while walking around the marshes. There is two types of cell respiration; **anaerobic** (doesn't require oxygen) and **aerobic** (requires oxygen). **Glycolysis**, the first steps of the reactions in cell respiration, could be an example of anaerobic respiration. While using cell respiration walking around and moving through the mud, we were exerting energy from food we ate and burned **calories** (the amount of energy needed to raise 1 gram of water 1 degree Celsius).

On the many islands we visited over Bay Studies, almost all of them had one or more nests of eggs from birds. There were many different species' nests. Eggs, and eventually baby birds, are produced by following process called **meiosis.** Meiosis is the process in which a set of the males chromosomes and a set of the females chromosomes match and fertilize a cell, now called a **zygote.** During meiosis is an essential process called **crossing over**, which literally means that the genes mix around and come out with a completely new and unique combination. Crossing over is essential to animal growth, diversity, and evolution.

Food chains are a series of steps in which organisms transfer energy by eating and being eaten. If someone says that something is at the bottom of the food chain, they mean that they are surely going to be eaten. At the bottom of the food chain is the first and start of energy, the primary producers. An example could be floating algae like **phytoplankton.** Phytoplankton perform photosynthesis. **Herbivores** eat small plants and some algae. After herbivores there are **carnivores**, or meat-eaters. They eat small fish which got energy from the plants. Larger and larger animals of prey eat more of the foodchain. Another way to show the transfer of energy in an ecosystem is through a **food web.** Food webs are a more detailed way to show who eats who.