PEER Life Science Water’s the Matter Measuring Nitrates Notes Outline-Student

**Introduction**

* The presence of nitrates does not have a effect on aquatic insects and fish like there is with temperature and dissolved oxygen.
* Algae and aquatic plants use nitrates as a source of the nutrient . Unlimited access to nitrates causes the growth of algae to be .
* Large amounts of algae can cause extreme fluctuations in the amounts of \_\_\_\_\_\_\_\_\_\_ in the water.
* Nitrates can affect human health by interfering with the ability of \_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_to transport oxygen.

**Lesson**

* forms a part of the proteins, DNA, and RNA that is found in all cells and is essential for all living things. Animals can get nitrogen from eating and other animals.
* Plants get nitrogen from or from the soil by absorbing it in the form of and .
* In the cycle, nitrogen is recirculated between the air and soil.
* can come from the waste of aquatic organisms and when aquatic plants and organisms die. This is first changed into by bacteria in the water before being converted by other bacteria into nitrates.
* Nitrates (NO3-) are an form of nitrogen and are formed by combining and nitrogen. Nitrates can also come from the earth due to the matter in soil that can contain nitrogen compounds.
* Many sources of excess nitrates come from , like agricultural activities, stormwater drainage, human wastewater, and industrial pollution.
* The runoff from that is used to fields to promote growth can cause nitrates to seep into the ground water.
* Untreated human can contribute to nitrate levels in surface and ground water. Poorly functioning systems are a source of these nitrates .
* Excess nitrates can also come from natural sources, such as from \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_.
* Nitrates are highly , which means that they easily dissolve in water. Nitrates are also and , so their presence cannot be determined without the use of special testing equipment.
* are more at risk for nitrate poisoning and can turn “blue” if there isn’t enough oxygen being transported by their blood. This condition, known as ” ” can cause brain damage or death.
* Excess nitrates in the water can be a source of for aquatic plants and algae. An is caused by excessive growth of plants and algae.
* Excess plants in a body of water can create an unstable amount of \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ that can create conditions for fish.
* High densities of algae can create conditions where cannot reach very far into the water, which can cause some plants and algae to die off. The dead organic matter can settle on the bottom and increase the amount of in the water. This process is called .
* is one of America’s most widespread, costly, and challenging environmental problems. The \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ has programs in place to help reduce this problem.