

Name _____

Exploring the World of Algae

Open-Ended Response Answer Key

1. Algae perform photosynthesis by using chlorophyll to capture sunlight energy, which is then used to convert carbon dioxide and water into glucose and oxygen. This process provides energy and organic matter for other organisms in aquatic ecosystems, making algae crucial primary producers.
2. Algal blooms can have severe environmental impacts, including oxygen depletion, fish kills, and harm to other aquatic organisms. Management strategies include reducing nutrient pollution, monitoring water quality, and implementing measures to control algal growth.
3. One example of a significant algae species is Spirulina, which is used as a nutritional supplement due to its high protein and vitamin content. It is also cultivated for biofuel production and has potential applications in wastewater treatment.
4. Algae are adapted to different aquatic environments through features such as buoyancy mechanisms, photosynthetic pigments, and cell structures. For example, seaweeds have specialized structures such as holdfasts and blades to anchor themselves and capture sunlight in ocean environments.

