

Algae Group

Read the attached information about algae. You must put together a presentation at least 2 minutes in length on algae. In your presentation you should include:

- The definition of algae
- Provide two reasons why algae are important to our survival
- Describe where you can find algae
- Describe the uses of diatoms and other algae
- Anything else you think is important.

By the end of your presentation, the class should be able to answer these questions:

- What is algae?
- How much oxygen to algae produce?
- How do Pfiesteria get their food?
- What are 3 uses of diatoms?

Algae

Algae are plant-like microorganisms that preceded plants in developing photosynthesis, the ability to turn sunlight into energy. Algae cells contain light-absorbing chloroplasts and produce oxygen through photosynthesis.

Although plants generally get the credit for producing the oxygen we breathe, some 75% or more of the oxygen in the planet's atmosphere is actually produced by photosynthetic algae and cyanobacteria.

Algae also play an important role as the foundation for the aquatic food chain. All higher aquatic life forms depend either directly or indirectly on microscopic gardens of algae.

Most unicellular algae live in water, some dwell in moist soil, and others join with fungi to form lichens.

When you think of algae, you probably think of seaweed or the green, slimy stuff that forms on the walls of untreated, dirty swimming pools. Here we'll focus on the microscopic algae.

Algae are found in bodies of fresh and salt water across the globe. They can also grow on rocks and trees and in soil when enough moisture is available. (They also grow on the hair of the South American sloth, giving the animal a greenish color.)

Most algae are able to make energy from sunlight, like plants do. They produce a large amount of the oxygen we breathe. However, at some stages of their lives, some algae get their nutrients from other living things. You may have heard of large fish kills along the east coast of the U.S. caused by *Pfiesteria* <fis-ter-ee-uh>. *Pfiesteria* belongs to a type of algae called the dinoflagellates <die-no-flah-geh-lets>. Some dinoflagellates make their own energy from sunlight, like plants. But others like *Pfiesteria* produce toxic substances that stun passing fish and cause bleeding sores. The *Pfiesteria* then feed on the fish blood and fluids. This microbe has at least 24 different forms it cycles through during its life (wow!).

Diatoms <die-uh-toms> are another kind of algae. They have hard shells made out of silica, or glass. When they die, these shells sink to the bottom of their watery environments. We mine deposits of these silica

shells that formed hundreds of thousands of years ago to make abrasives, shiny road paint and grit in toothpaste. Diatoms come in all sorts of shapes—some, like the one pictured here, are round and others are oval. Some look like leaves and others like fat commas.

Because photosynthetic algae make so much oxygen, these microbes are very helpful. But sometimes certain kinds of algae can also grow in such large numbers called blooms or red tides—that when they suddenly die off en masse, the breaking down of their cells by bacteria depletes the amount of dissolved oxygen in the water, hurting the animals and plants that live there.