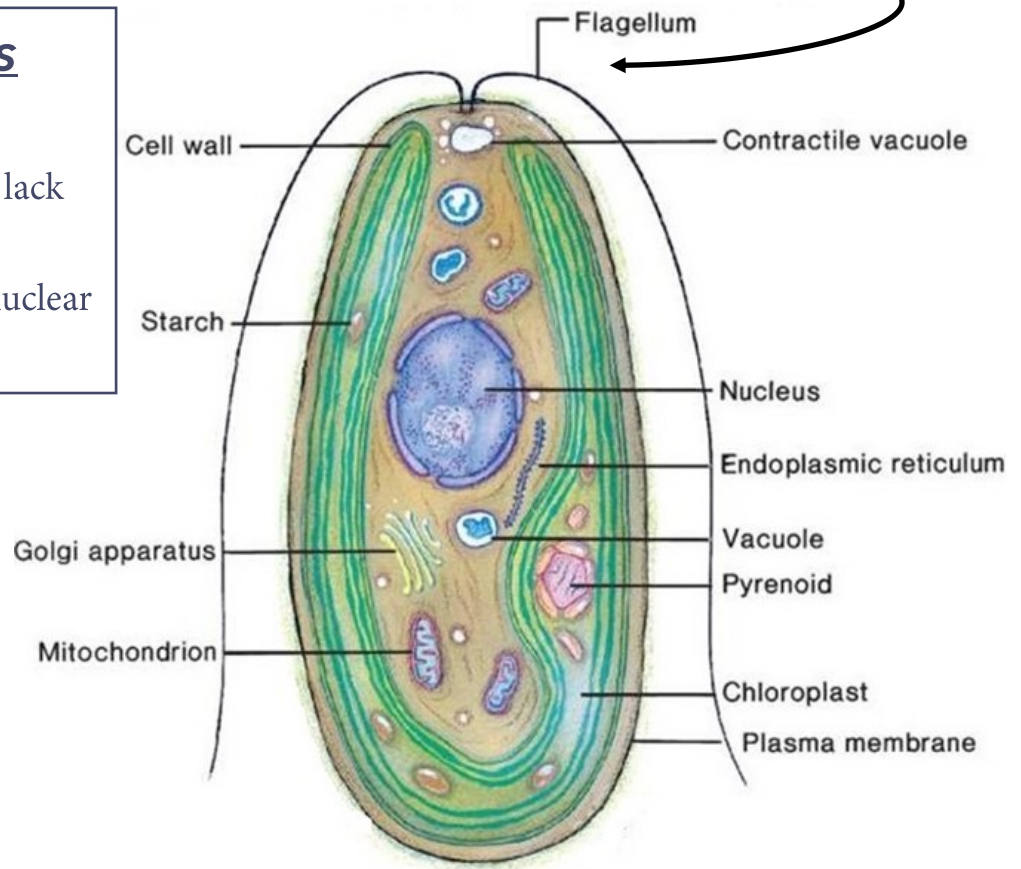


Algae: What is it and how can it affect a human?

Algae, singular alga, members of a group of predominantly aquatic photosynthetic organisms of the kingdom Plant, Bacteria, and Protista. They are also part of a group of organisms call phytoplankton. They grow mostly in water and range in size from single cells to large spreading seaweeds. Like all plants, algae manufacture their own food through photosynthesis and release large amounts of oxygen into the atmosphere. This makes algae a primary producer in the ecosystems in which they live. Take a look at the parts of an algae cell below!

Algae and Its Cells

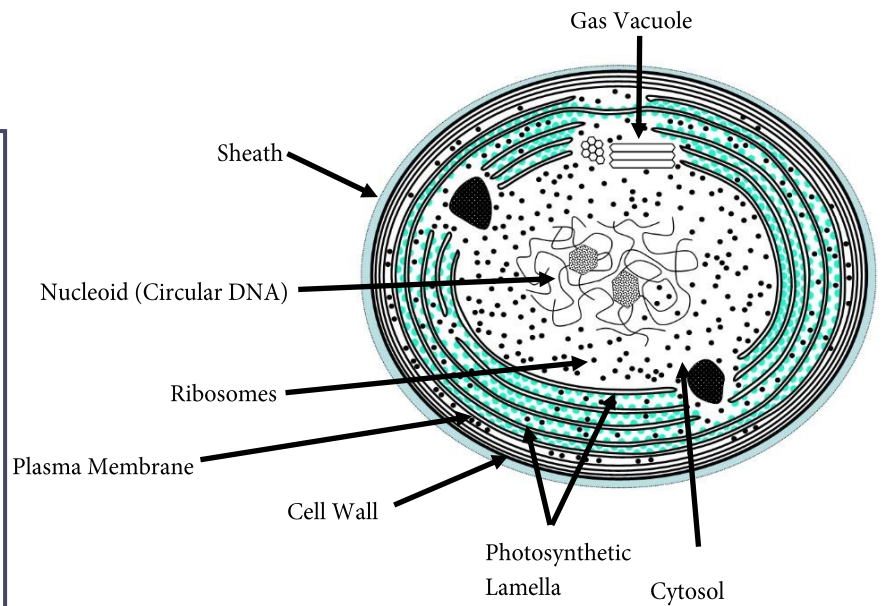
- ◆ This cell is eukaryotic
- ◆ They photosynthesize but lack reproductive structures
- ◆ Its DNA is enclosed in a nuclear membrane.



But the above kind of algae isn't the kind that can be toxic to animals and humans....flip over this paper to find out about that kind....

Blue-Green Algae

- ◆ Blue-Green Algae is the common name for cyanobacteria.
- ◆ Cyanobacteria is not a plant or a protist like most algae, it is a bacteria that produces energy via photosynthesis.
- ◆ Cyanobacteria is the algae that is responsible for releasing toxins into the water in which it grows, but not all types cyanobacteria release toxins.
- ◆ Given the right conditions (*warmer water and lots of nutrients*) cyanobacteria will bloom in large quantities causing a large green cloud in the water (*as pictured on the right*) that is difficult for other plants and fish to live in.
- ◆ When the cyanobacteria eventually die, some types will release toxins into the water that can be harmful.
- ◆ Take a look at the health effects and body systems effected in the table below.



A growing Harmful Algae Bloom in Lake Erie

<u>Cyanotoxins</u>	<u>Acute Health Effects in Humans</u>	<u>Body Systems Affected</u>
<u>Microcystin-LR</u>	Abdominal pain, Headache, Sore throat, Vomiting and nausea, Dry cough, Diarrhea, Blistering around the mouth, and Pneumonia	Digestive System, Respiratory System, Circulatory and/or Nervous System
<u>Cylindrospermopsin</u>	Fever, Headache, Vomiting, Bloody diarrhea	Digestive System and Nervous System
<u>Anatoxin-a group</u>	Tingling, burning, numbness, drowsiness, incoherent speech, salivation, respiratory paralysis leading to death*	Nervous System