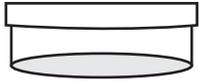
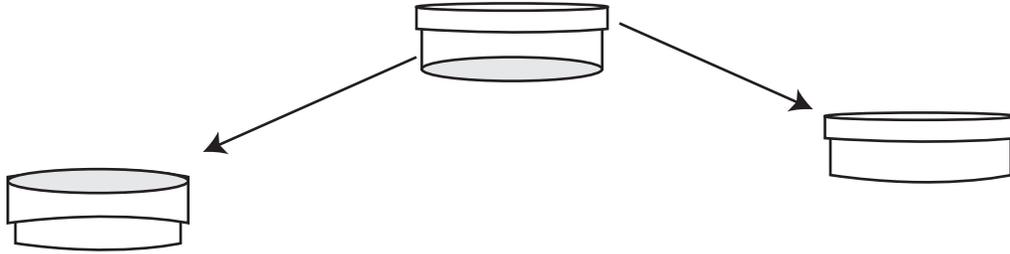


DIATOMS: Immobile Phytoplankton

Diatoms, the most common type of phytoplankton, are a group of mostly single cell microalgae with cell walls that are made of silica. The cell wall is comprised of two shells (valves). The top part of the diatom overlaps the bottom part, like a petri dish.



When diatoms divide, each half keeps one of the shells and grows a new shell within the old one.



After each division cycle the diatom becomes smaller. When a minimum size has been reached the diatom reproduces by meiosis, to produce a new diatom, thereby resetting to its original size.

Shells of diatoms are a major part of the sediment found on the ocean floor.

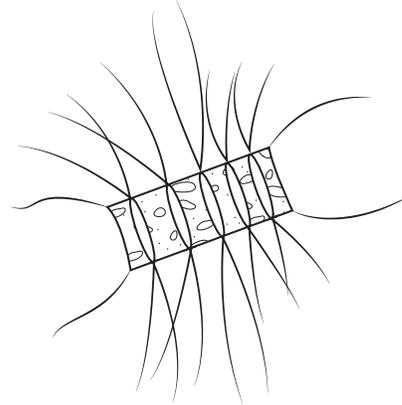
Diatoms are divided into 2 groups, centric and pennate diatoms.

Centric Diatoms are radially symmetric. These diatoms have an upper and a lower shell (epitheca and hypotheca).

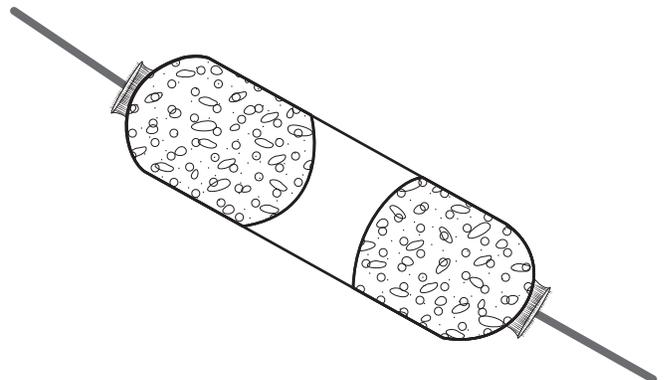
Pennate diatoms are bilaterally symmetric. This means they are left and right side symmetrical. They can be long and narrow and may form chains.

Centric Diatoms

Chaetoceros is the most abundant genus of diatoms in the ocean. There are about 400 species of this genus. Cells form chains with long setae projecting from the corners of the cells.

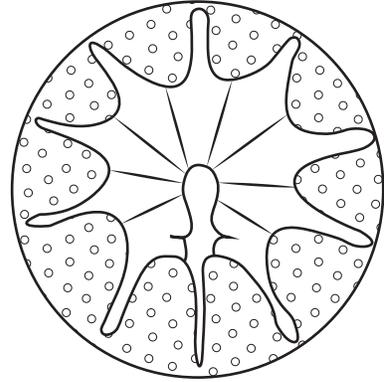


Ditylum: Occurs in solitary cell form or in chains.

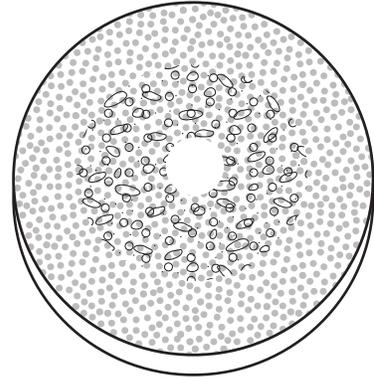


Centric Diatoms (radially symmetric)

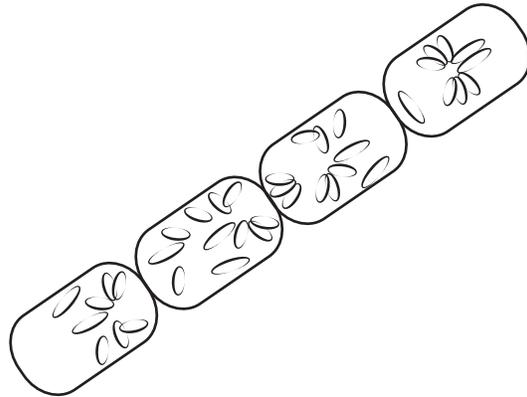
Asteromphalus: Disc shaped solitary cells.



Coscinodiscus: Disc shaped solitary. Larger than most diatoms.

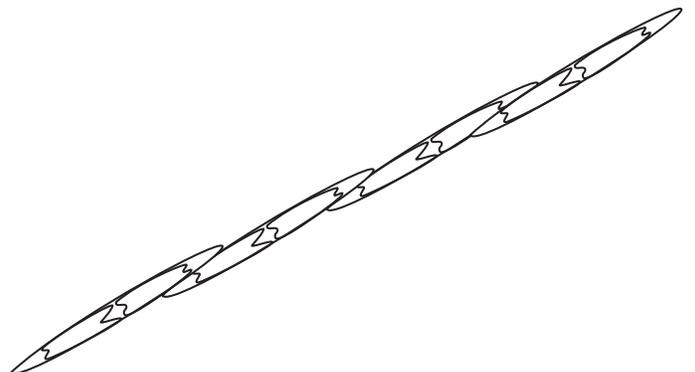


Cerataulina: Cells form chains.



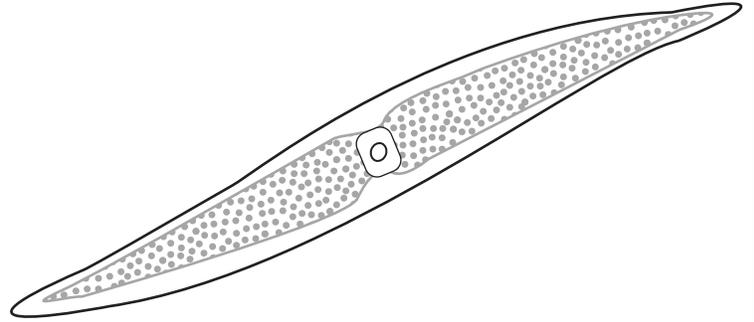
Pennate Diatoms (bilaterally symmetric)

Pseudo-Nitzschia: Cells form chains.

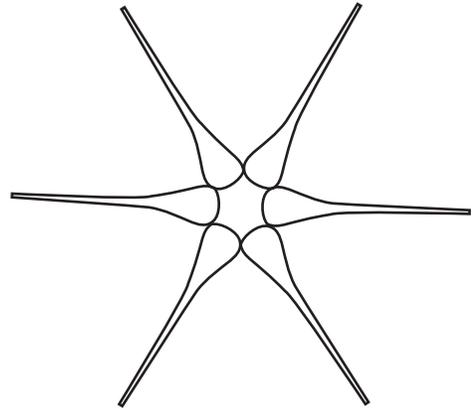


Pennate Diatoms (bilaterally symmetric)

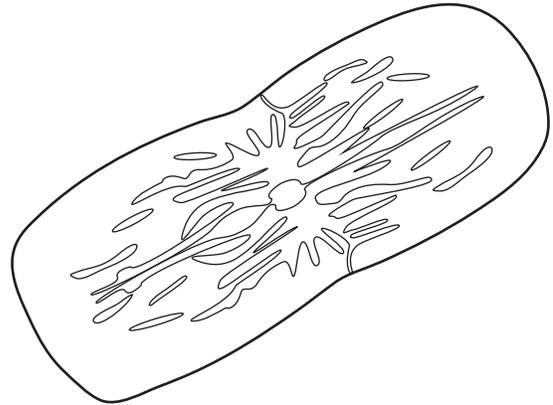
Pleurosigma: Solitary.



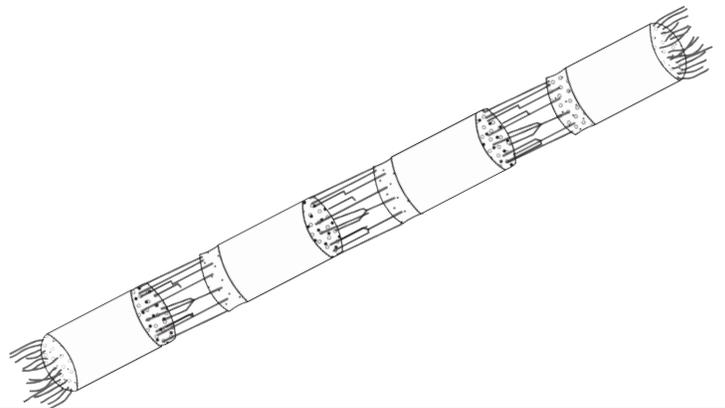
Asterionellopsis: Cells connect by the valve faces into a star-shaped arrangement.



Tropidoneis: Solitary, found in Pudget Sound, WA and sometimes in California waters.



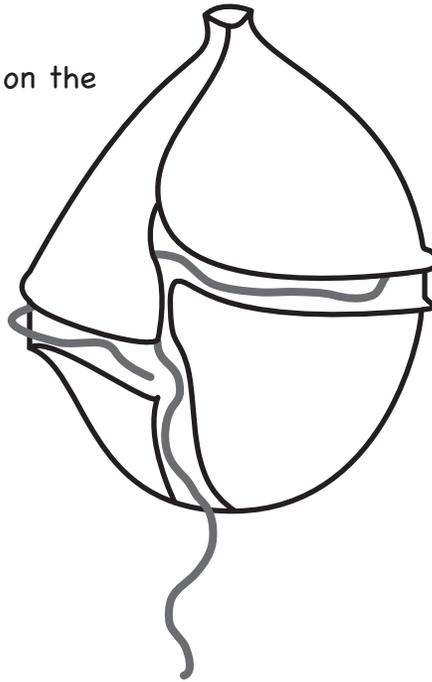
Skeletonema: Cells form chains.



DINOFLAGELLATES: Mobile Phytoplankton

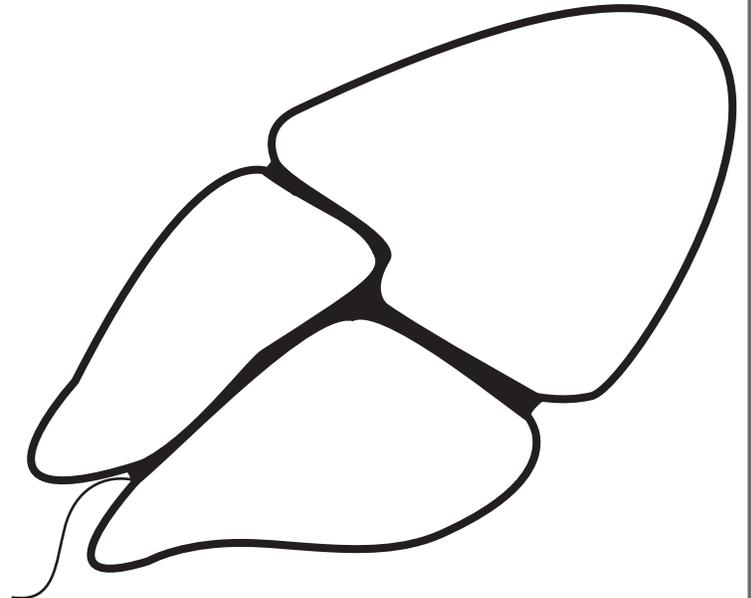
- Dinoflagellates are single cell algae.
- Dinoflagellates have little tails called "flagella" that help them move in the water.
- Dinoflagellates have a nucleus.
- Dinoflagellates have a cellulose shell (theca).
- Some dinoflagellates form chains
- About half of them can photosynthesize they are referred to as algae.
- Some are heterotroph predators those are sometimes called protozoa.
- Some can photosynthesize and absorb food.
- Some dinoflagellates are bioluminescent.
- Of the 2000 identified dinoflagellate species 60 can produce neurotoxins. Blooms of such dinoflagellates will stain the water red and are therefore called red tides.

Dinoflagellates generally have 2 flagella:
One around the middle like a belt and one on the end like a tail.



Akashiwo:

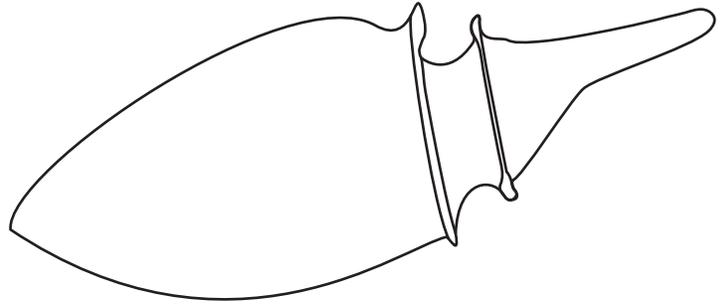
- Not armored.
- Epitheca cone shaped, Hypotheca has 2 distinct lobes.
- Photosynthetic.
- Blooms will cause red tides



Dinoflagellates

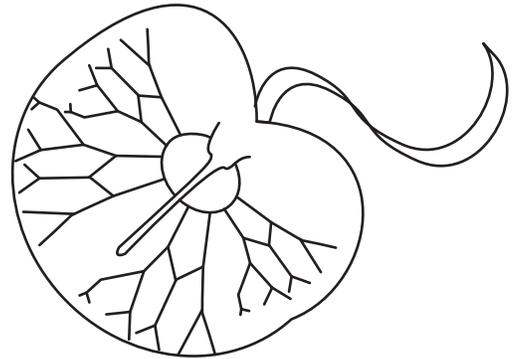
Oxyphysis:

- Non-photosynthetic.
- Predatory on other protists.



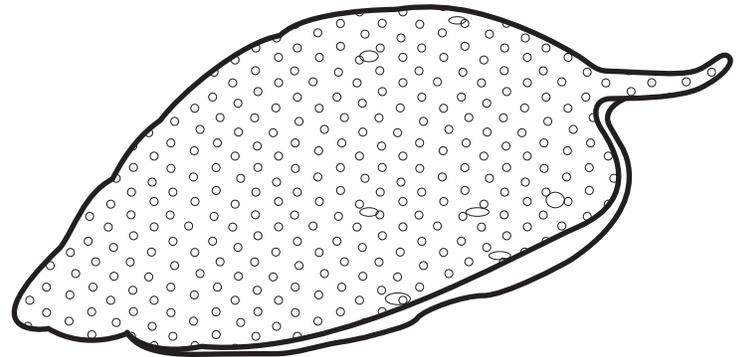
Noctiluca:

- Non-photosynthetic.
- Has one flagellum.
- Large size (200 - 2,000 microns).
- Bioluminescent.



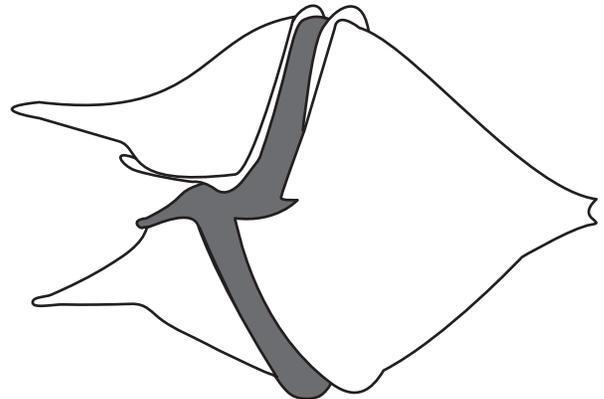
Prorocentrum:

- Photosynthetic dinoflagellate.



Proto-peridinium:

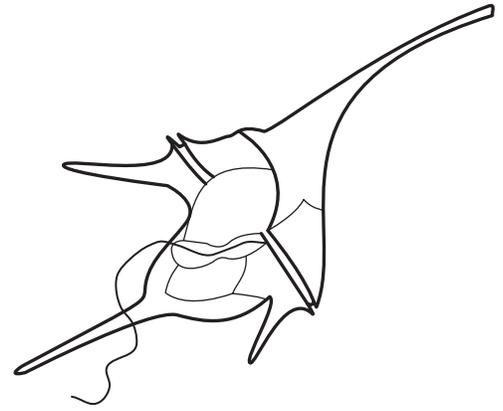
- Non-photosynthetic.



Dinoflagellates

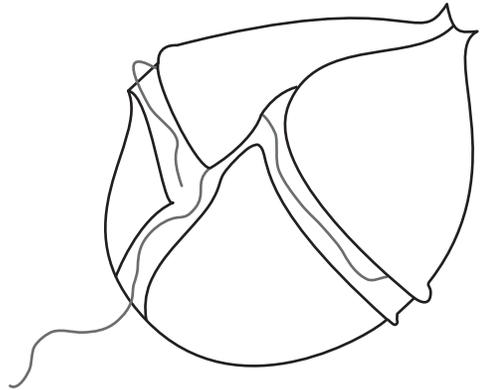
Ceratium:

- Non toxic.
- Mixotrophic (both photosynthetic and can eat other plankton).
- Armoured plates.



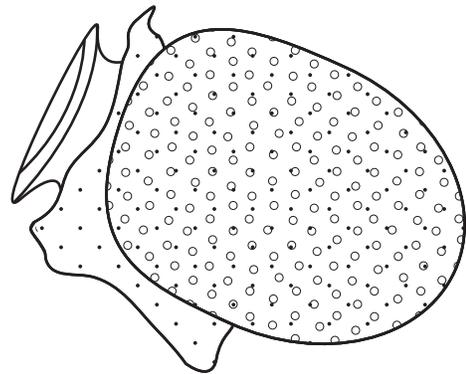
Gonyaulax:

- May form chains.
- Blooms cause red tides.
- Some may be bioluminescent.
- Photosynthetic.



Dinophysis:

- Produce toxins.
- Photosynthetic.



Gyrodinium:

- Non-toxic.
- Mixotrophic.

