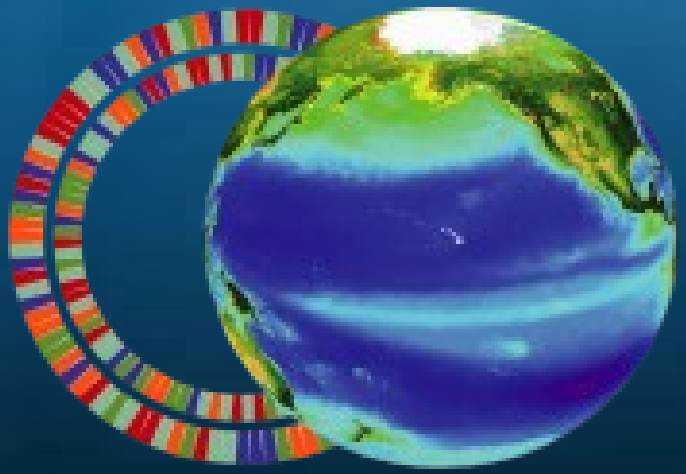
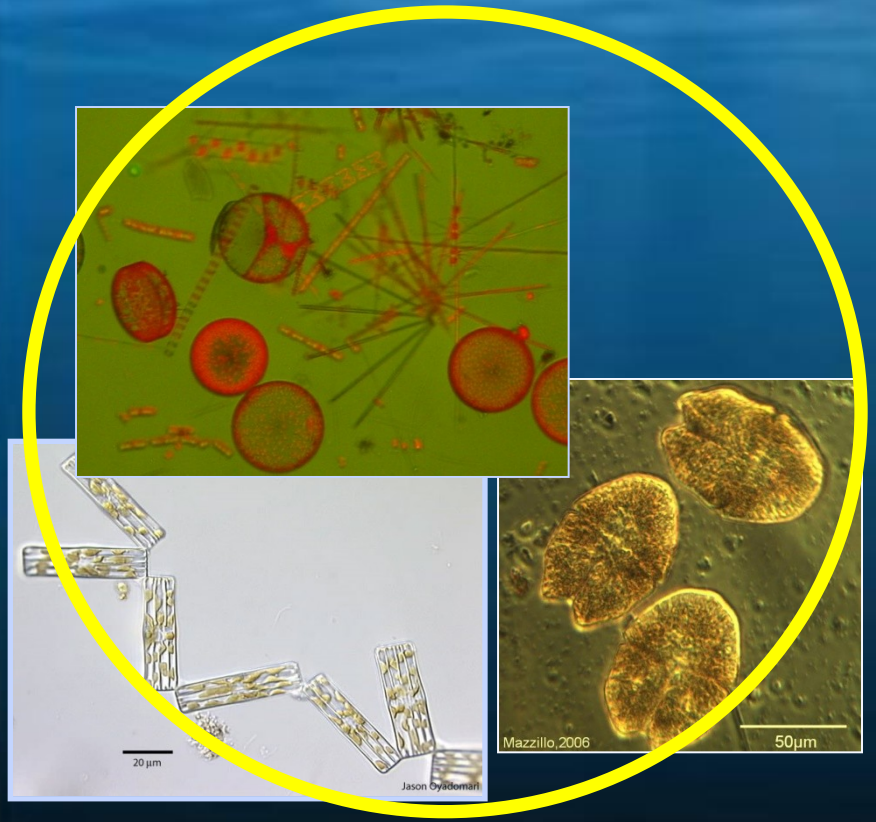
Introduction to Plankton



What Exactly are Plankton?



Plants

Animals

Plants and animals that live in the water and cannot swim against major currents.

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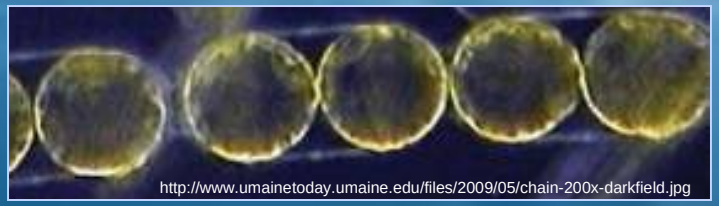
Plant-like Plankton = Phytoplankton

Single cell or chain of cells



Over a million phytoplankton in a teaspoon!

Bloom off the West coast

NASA image courtesy Jeff Schmaltz, MODIS Land Rapid Response Team at NASA GSFC

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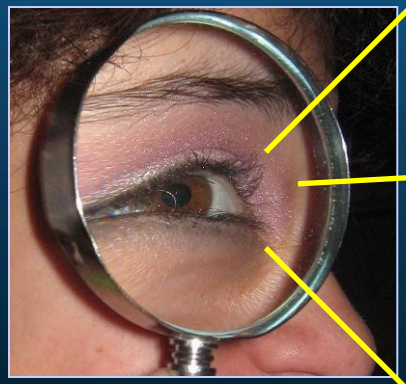
Animal-like Plankton = Zooplankton



Jellyfish

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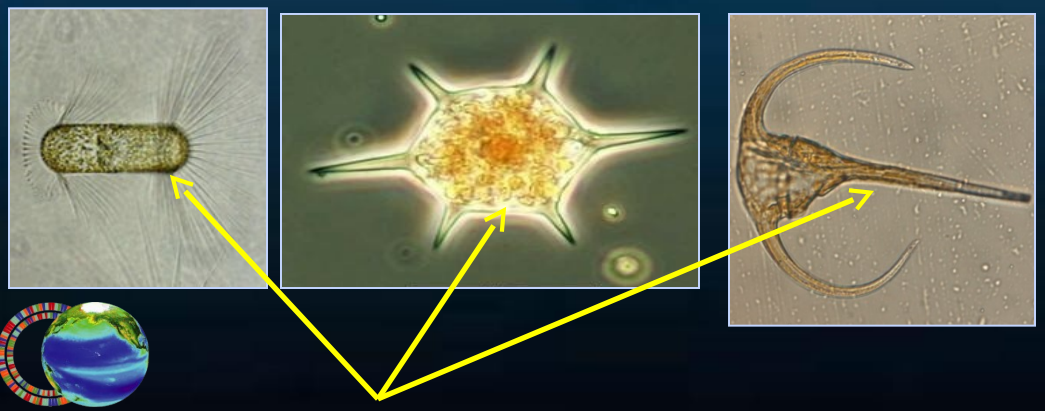
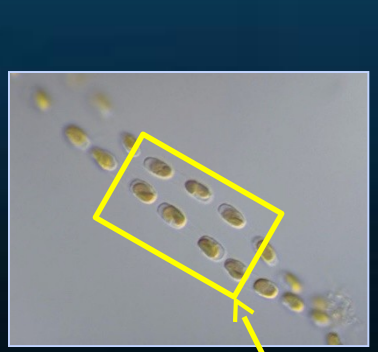
Phytoplankton Shapes

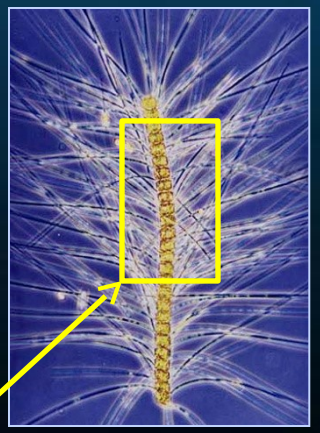
Phytoplankton live near the surface of the ocean because they need sunlight to make food.

http://www.gettyimages.com/detail/92304462/Taxi

http://www.activities4kids.com.au/images/swim-floating%20on%20back.jpg







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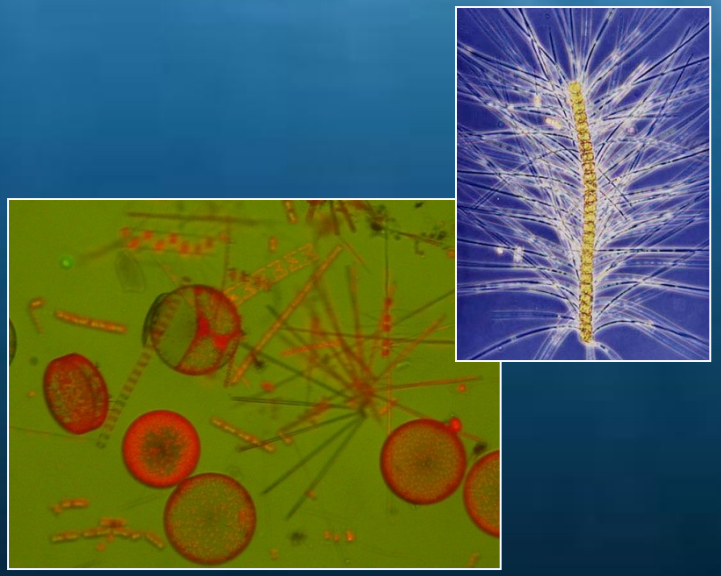
Examples of Phytoplankton (Plant-like)

Dinoflagellates

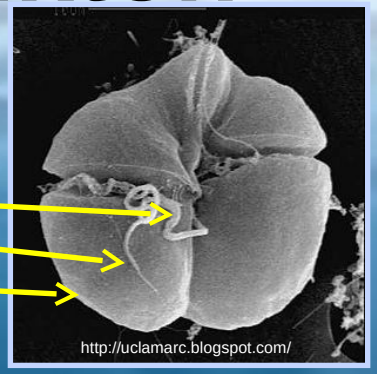


Diatoms

Adaptations of Phytoplankton

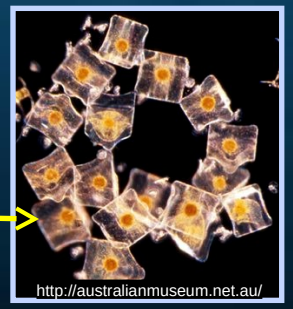
Dinoflagellates

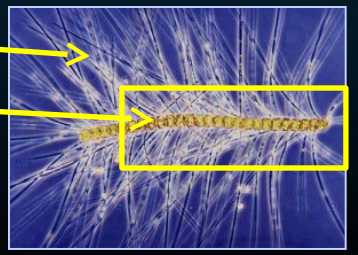
- 2 flagella (tails)
- Hard shell
- Bloom



Diatoms

- Various shapes
- Glass cell wall
- Spines
- Chains





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Types of Zooplankton (Animal-like)

1. Temporary (or Meroplankton)
   - only part of their life cycle as plankton.

2. Permanent (or Holoplankton)
   - whole life as plankton.

Meroplankton
(zooplankton only when young)

Crab Larva

Reef Fish Larva

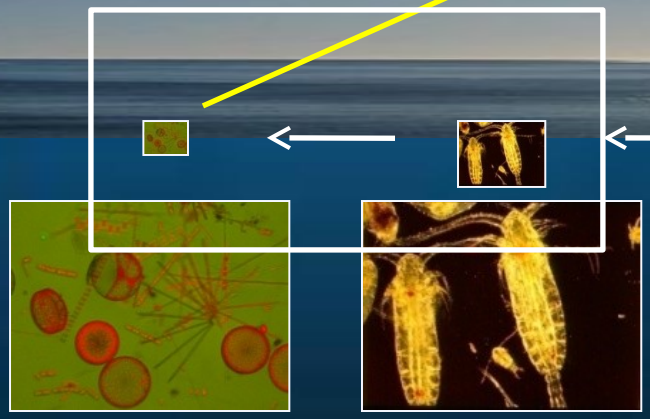
Holoplankton
(spends whole life as plankton)

Euphausiid

Copepod

Amphipod

Why Are Plankton So Important?



http://www.mbari.org/news/

Small fish

http://www.gowerfishing.co.uk/assets/images/mackerel.jpg

Mackerel

http://www.sciencelearn.org.nz/Media/Images/News-story-images/Sun-rays-over-the-ocean

http://animals.nationalgeographic.com/staticfiles/NGS/Shared/StaticFiles/animals/images/1024/blacktip-reef-shark-swimming.jpg

http://tunaseiners.com/blog/2009/02/tuna/

Tuna

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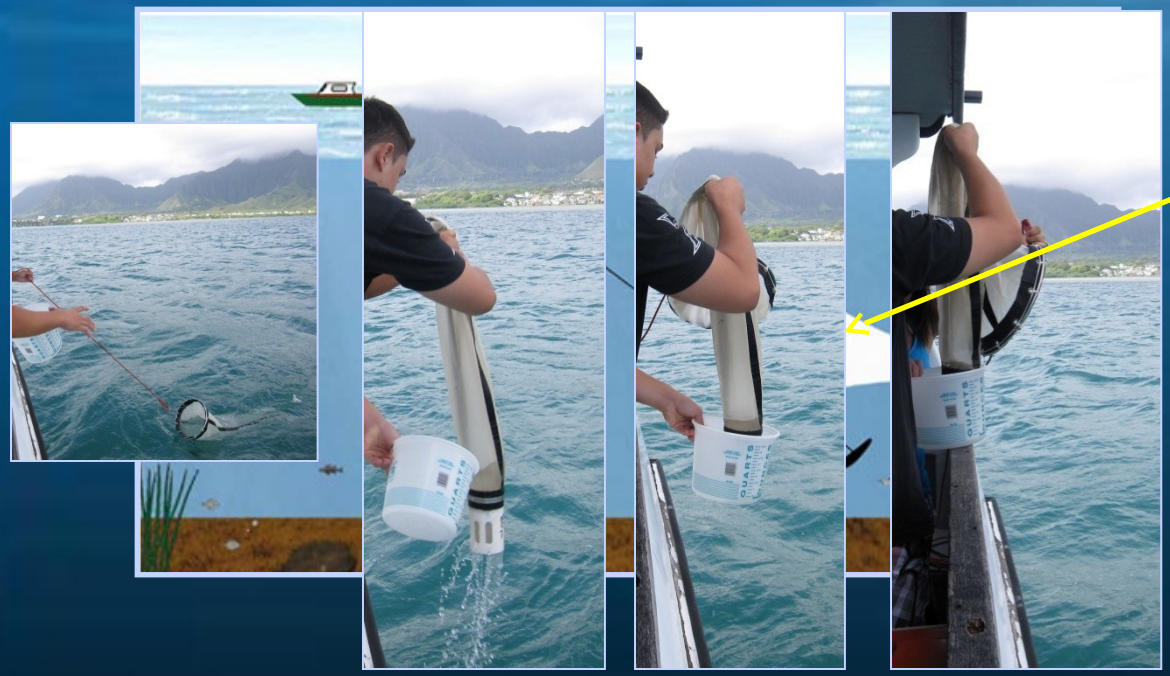
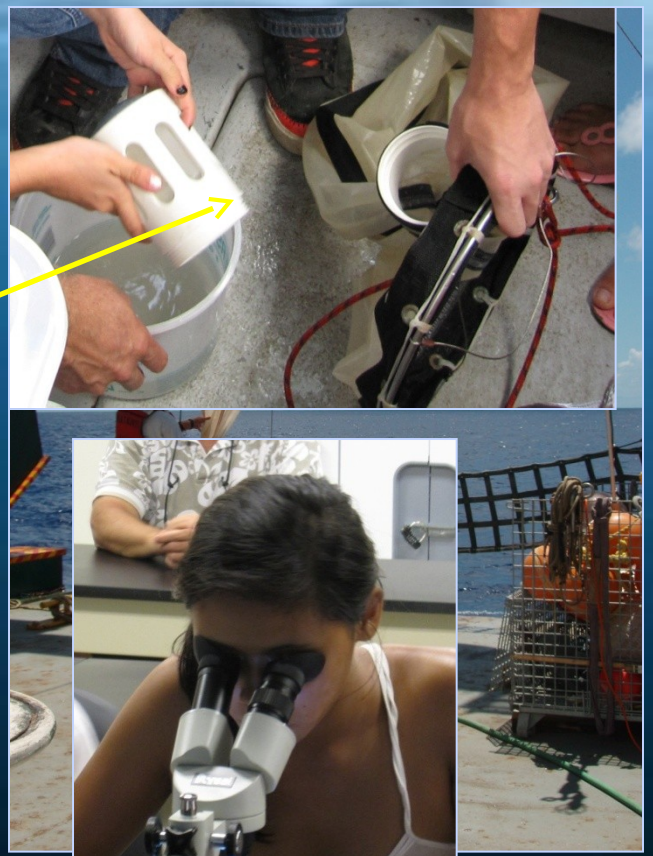
Plankton Tow





Aiea High School students aboard the Honu Kai

Summary – Phytoplankton

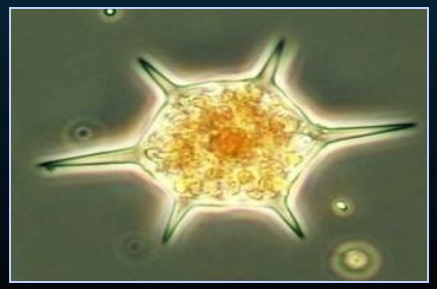
Phytoplankton = plant-like plankton

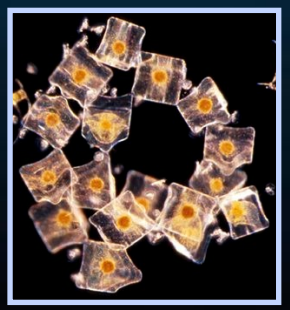
Phytoplankton cannot swim against major currents.

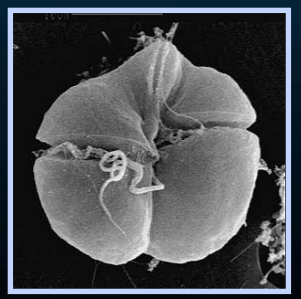
Plankton their whole life.

Produce 50% of all the oxygen we breathe!

Adaptations: spines, chains, and hard shells.







Summary – Zooplankton

Zooplankton = animal-like plankton.

Zooplankton cannot swim against major currents.

Exist as either

1. meroplankton (temporary plankton)

2. holoplankton (plankton their whole life).

Zooplankton and phytoplankton are the base of the food web!