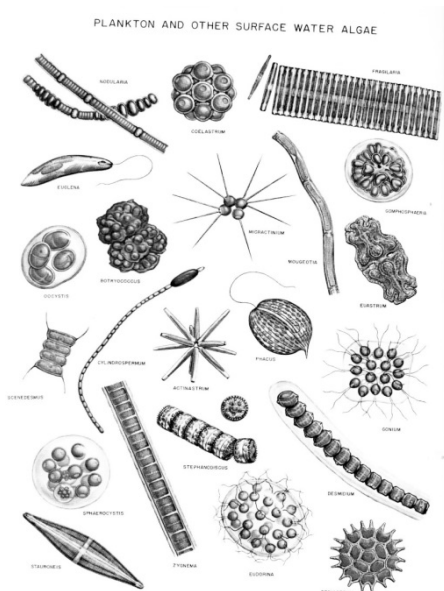


PLANKTON INDOOR LAB

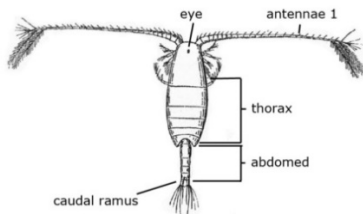
Plankton: *Plankton* are small aquatic organisms that drift with water movements.

Phytoplankton (microscopic plants) comprise mainly **green algae** and **diatoms**, carry out photosynthesis (“primary producer”) and form the base of the aquatic food-chain. Many are single-celled and free-floating but others attach to each other forming filaments, spheres and other shapes. **Zooplankton** (animals) are small microcrustaceans (including **Copepods** and **Daphnia**) and protozoans (one celled animals) that feed on phytoplankton. These are barely visible with the naked eye but seen better with the “dissecting” stereo microscope.

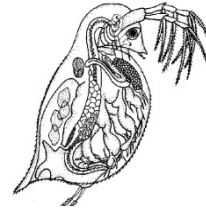
PHYTOPLANKTON: ALGAE & DIATOMS



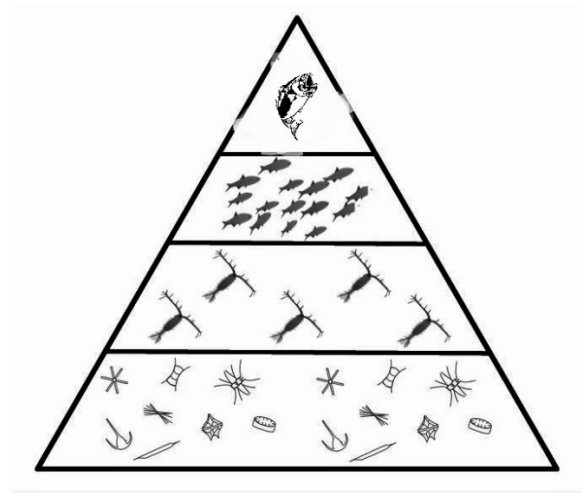
ZOOPLANKTON: COPEPOD



ZOOPLANKTON: DAPHNIA

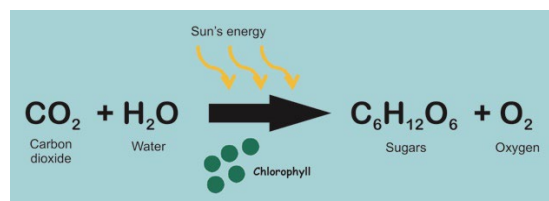


LAKE FOOD AND ENERGY CHAIN/WEB: Herbivores eat plants. Carnivores eat animals and animal parts. Omnivores eat both. Because of photosynthesis, algae (microscopic plants containing chlorophyll) are the lake’s “primary producers”. Zooplankton eat algae and are the lake’s “primary consumers”. Minnows and other animals that eat them are “secondary consumers”. Other animals eat them.



PHOTOSYNTHESIS

Photosynthesis by algae: In the presence of chlorophyll (plant’s green pigment) & sunlight, dissolved carbon dioxide (CO₂) plus water (H₂O) are changed into carbohydrate (sugar) and oxygen (O₂). This takes place in *phytoplankton* (and other green plants).



Materials – Get the following materials from your instructor:

- Lake water sample.
- Plastic bulb pipettes.
- Plain glass microscope slides and coverslip, glass microscope slide with central depression but no coverslip.
- Monocular microscope at each pair of student’s desk, stereo dissecting zoom binocular microscope at front of room.

Directions:

1. Work in groups of two, sharing one water sample and one microscope.
2. Using a plastic bulb pipette, place a drop of lake water on a slide.
 - a. One drop on a plain glass slide; cover the drop with a small glass coverslip & observe for algae using your monocular microscope. Identify algae & diatoms.
 - b. On a depression slide, place two or three drops and observe without a coverslip, using binocular stereo dissecting microscope at front of classroom. Identify zooplankton: copepod, Daphnia.
3. Identify phytoplankton (know which ones are algae and diatoms) and zooplankton (identify copepod or Daphnia).
4. Record your findings on the worksheet.
5. Seek instructor to confirm your identifications.
6. Add points and record at bottom of page.

After each of your identifications, make a check next to the organism and get confirmation from teacher.

Teacher Initials	Points (5 pts each)
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1. Use depression slide at stereo microscope to identify zooplankton:

___ Copepod	_____	_____
___ Daphnia or other “water flea”	_____	_____
___ Other zooplankton, for example a rotifer	_____	_____

Identify and rate how much phytoplankton you have:

2. Using a plain glass slide, look for **ALGAE** - tiny green particles.

___ None	___ Few	___ Many	_____	_____
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3. Look for **DIATOMS** – tiny geometric shaped algae

___ None	___ Few	___ Many	_____	_____
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Why are plankton important to the lakes?

(5 pts) _____

TOTAL PLANKTON MODULE POINTS (30 pts) _____