



CONNECT | ENRICH | TRANSFORM

# Plankton Activity Book

## *Introduction:*

These activities are an exploration of organisms that are very important to life in water that is usually unnoticed and unseen – PLANKTON. Plankton is not a name of any one organism, but rather the name of a group of organisms that drift around with the currents in the water. The only thing that will define an organism as plankton or not is whether it can swim well against a current or not. For plankton that means they are too weak or are too small to swim well against a current. Some plankton will always be plankton and drift around with the current their whole lives, while others will one day grow up and be able to swim against a current and not be called plankton anymore.

There are two different types of plankton.

- Phytoplankton (plants) – are microscopic plants found in the sunlight zone of a water column. Just like plants on land, phytoplankton also have cells called chloroplasts that are used to turn sun light into food through a process call photosynthesis. Phytoplankton are often green, gold, or even blue-ish because of the pigments in their chloroplasts.
- Zooplankton (animals) – these range in size from microscopic to very large organisms like sunfish and jellyfish! Zooplankton cannot make their own food, instead they eat a variety of things including phytoplankton, other zooplankton, and (in some cases for the very largest of zooplankton) they may eat small fishes.

One thing to remember is that while plankton may not be good at moving horizontally in the water column, especially when there is a current, some plankton species are very good at moving vertically in the water column.

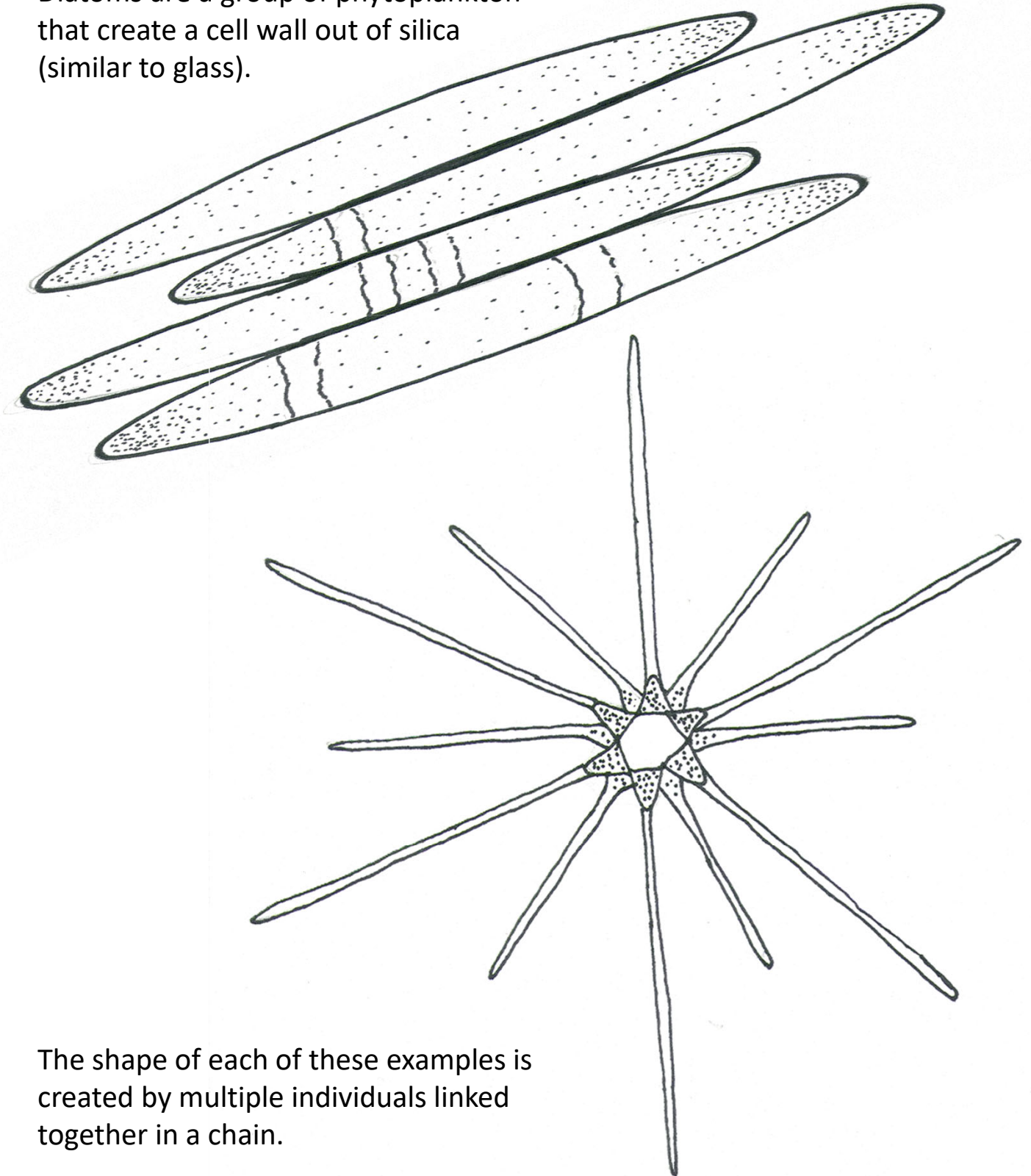
Some other facts about plankton.

- They are the most abundant type of organisms in the ocean
- They can be found in all marine and freshwater systems
- They are the base of the aquatic food chain and support all life in body of water

# Phytoplankton Coloring Pages

## Diatoms

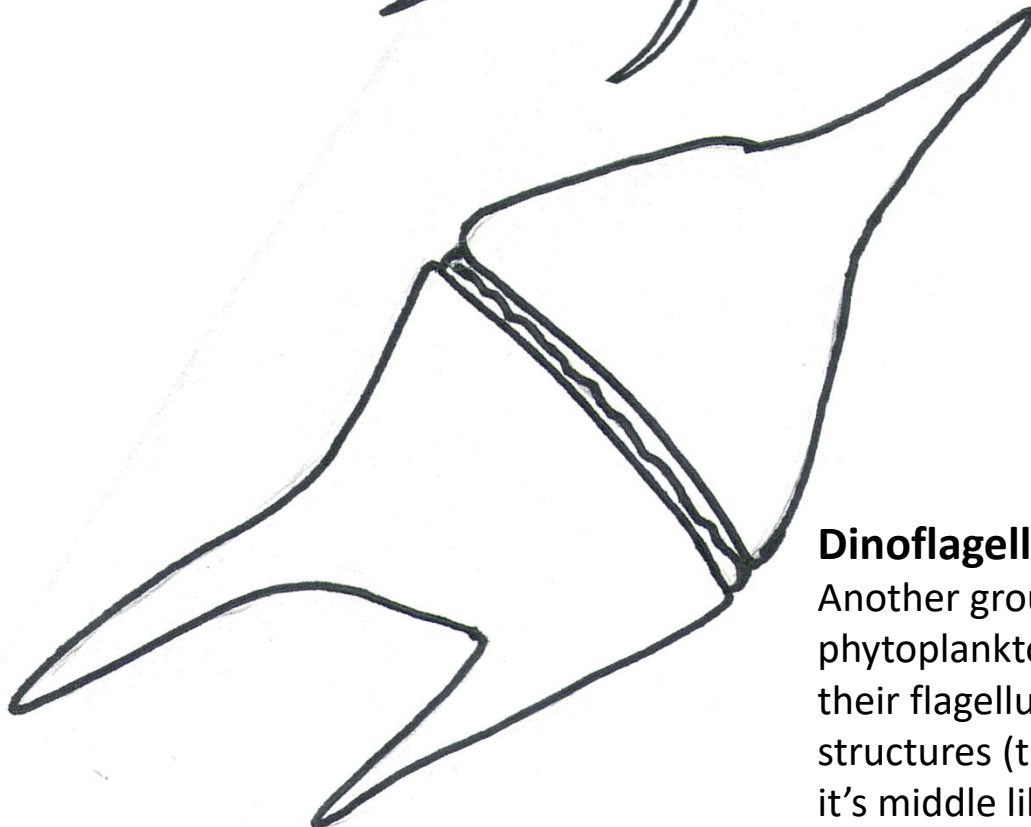
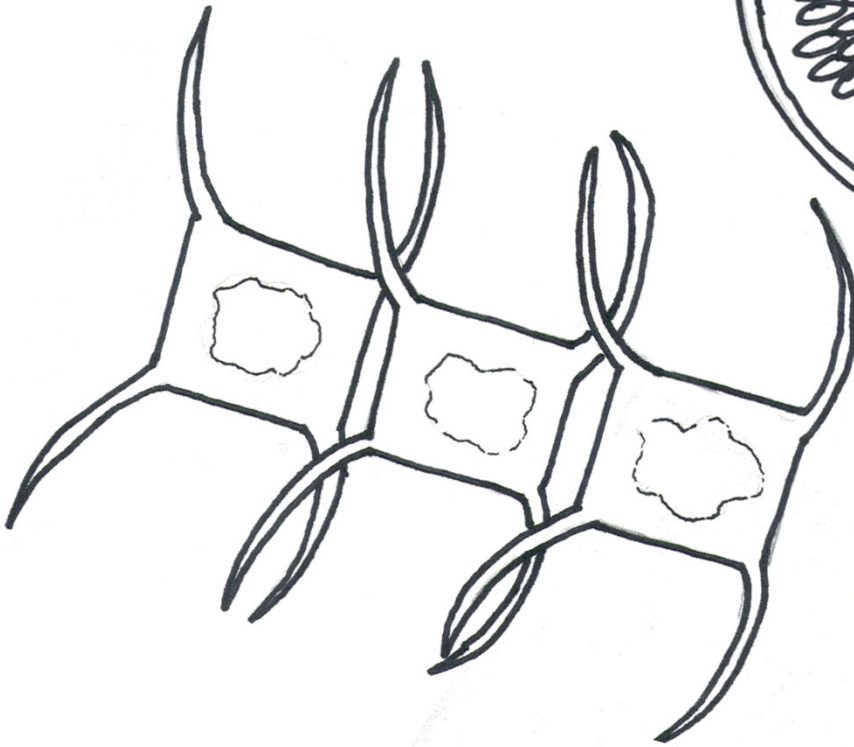
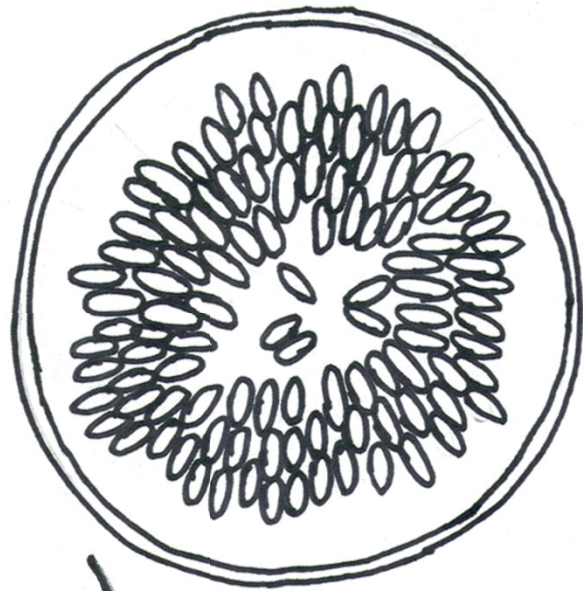
Diatoms are a group of phytoplankton that create a cell wall out of silica (similar to glass).



The shape of each of these examples is created by multiple individuals linked together in a chain.

## Diatoms

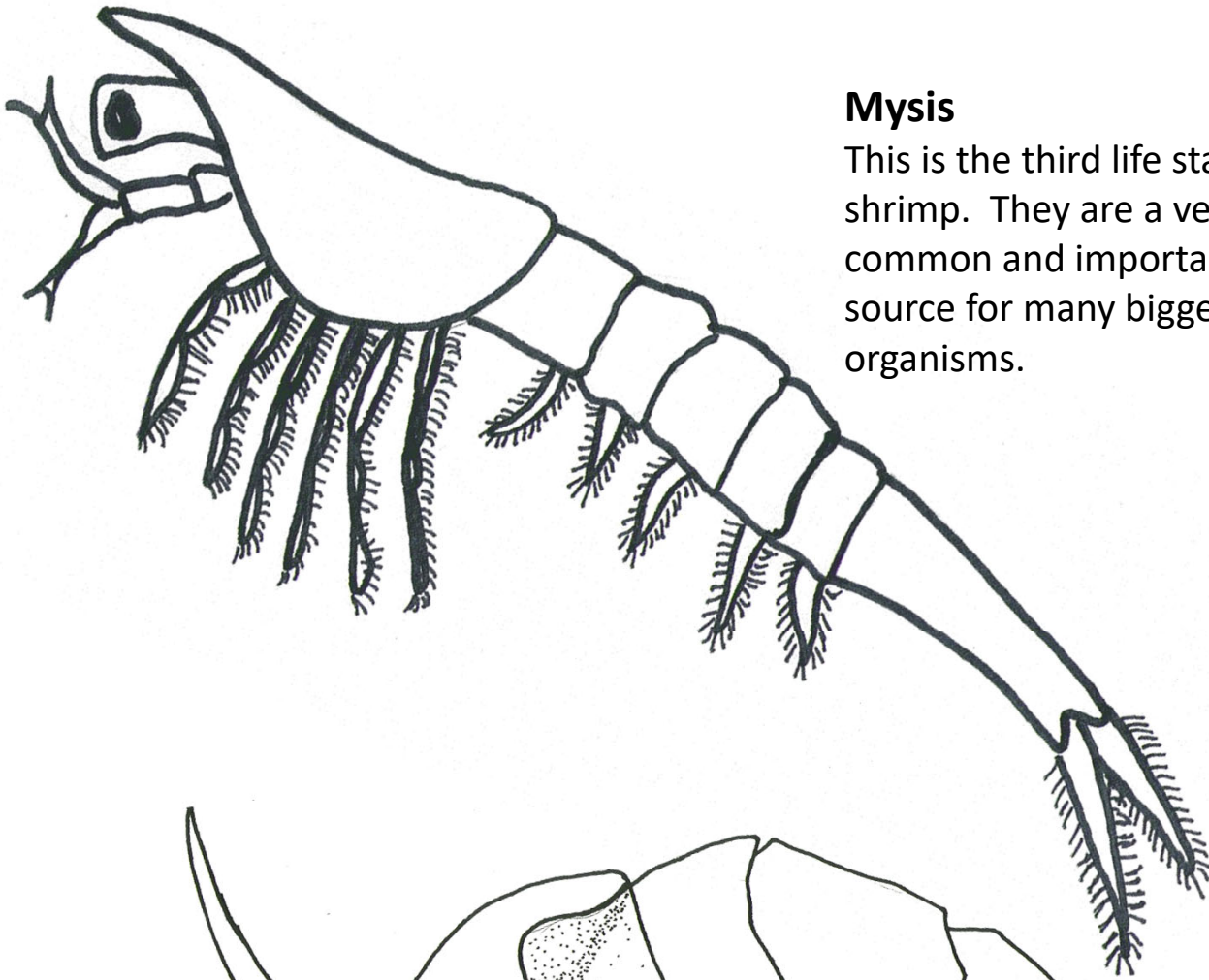
About 20% to 50% of the oxygen on Earth is produced by diatoms. You can often see the chloroplasts (parts of the cell that capture sunlight) in the cells.



## Dinoflagellate

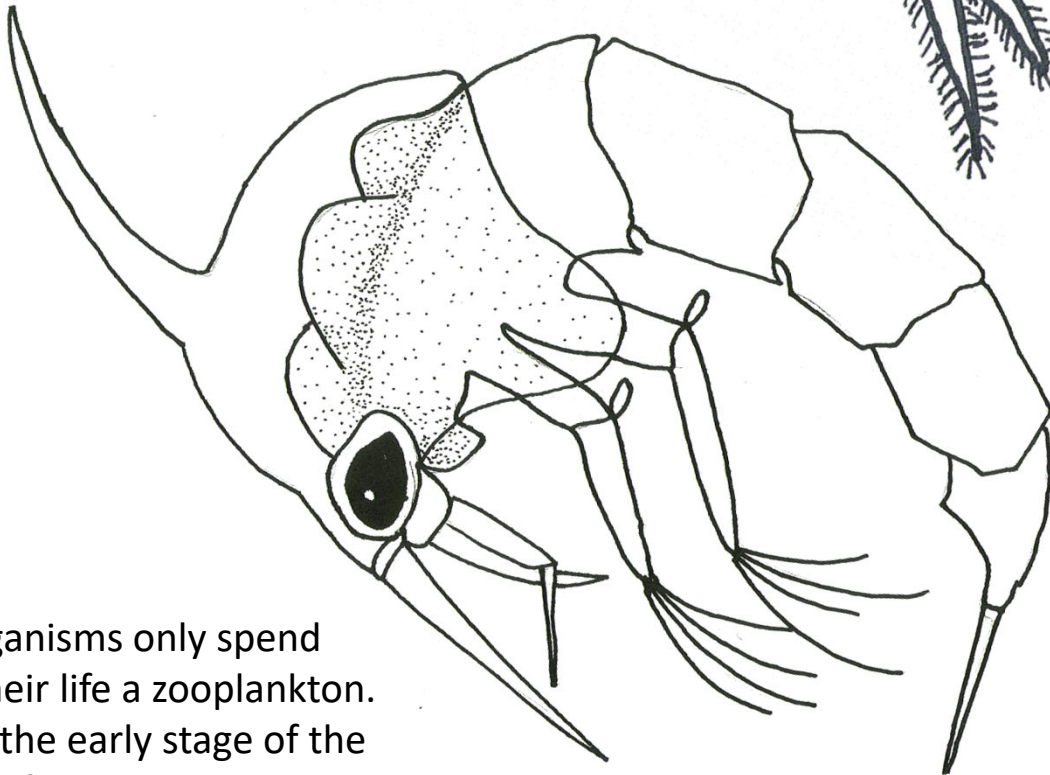
Another group of phytoplankton move using their flagellum, long whip-like structures (this one's is around it's middle like a belt).

# Zooplankton Coloring Pages



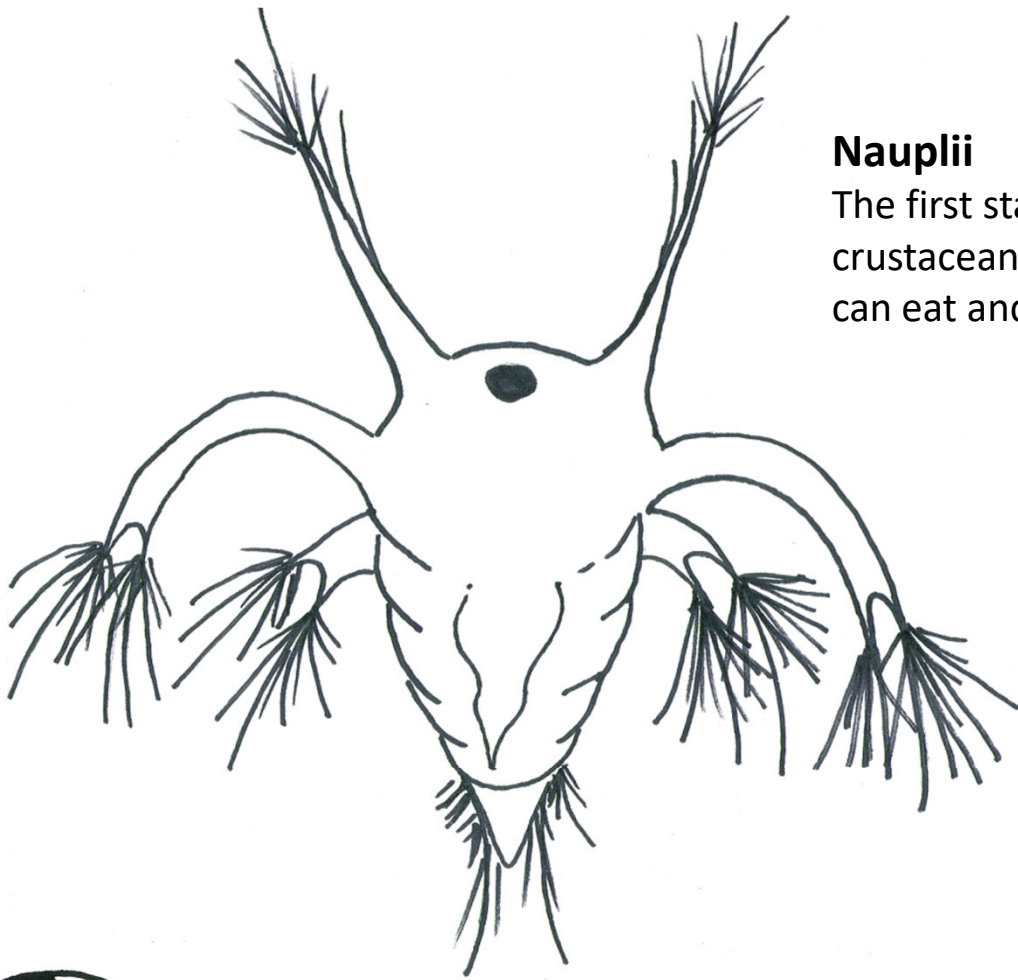
## **Mysis**

This is the third life stage of a shrimp. They are a very common and important food source for many bigger organisms.



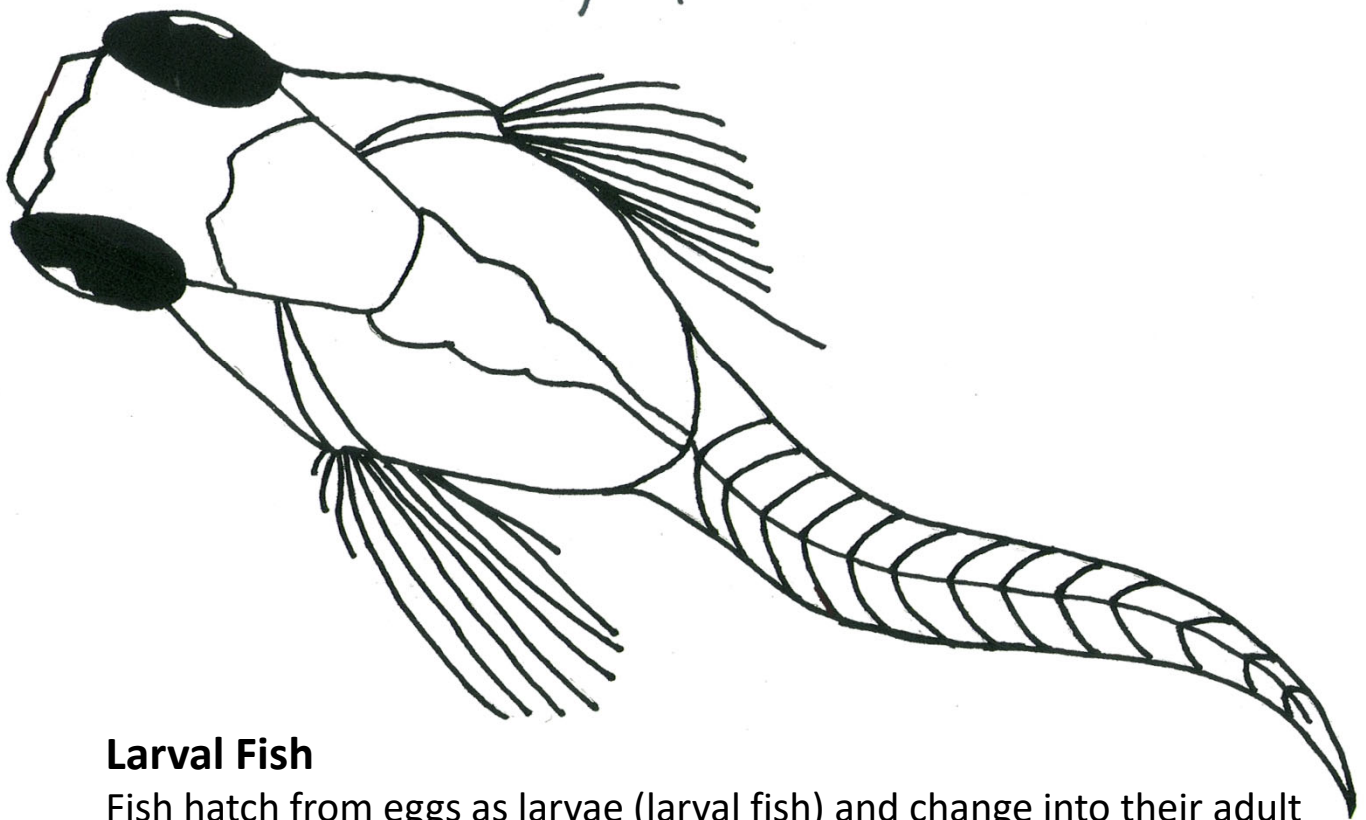
## **Zoea**

Some organisms only spend part of their life a zooplankton. Zoea are the early stage of the life cycle of some crustaceans, like crabs.



### **Nauplii**

The first stage in many crustacean life cycles, they can eat and swim!



### **Larval Fish**

Fish hatch from eggs as larvae (larval fish) and change into their adult form in a process called metamorphosis.

*Is it zooplankton or phytoplankton?*

Can you identify which of the following images are of zooplankton and which are of phytoplankton? Study each image carefully. Write Phytoplankton or Zooplankton under each image.

*The correct answers are provided on the bottom of Page 8.*



a. \_\_\_\_\_



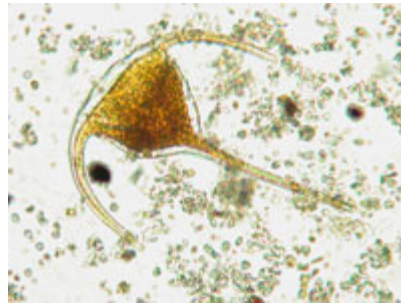
b. \_\_\_\_\_



c. \_\_\_\_\_



d. \_\_\_\_\_



e. \_\_\_\_\_



f. \_\_\_\_\_



g. \_\_\_\_\_



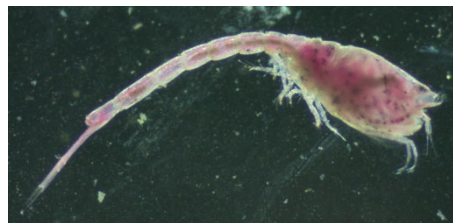
h. \_\_\_\_\_



i. \_\_\_\_\_



j. \_\_\_\_\_



k. \_\_\_\_\_



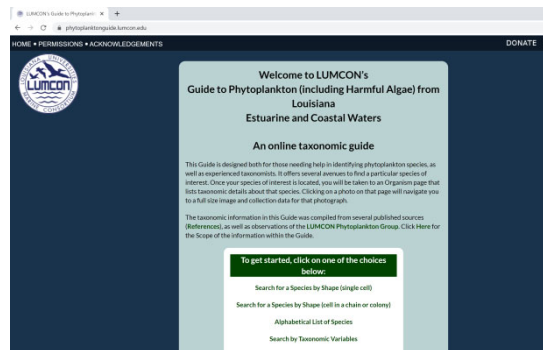
l. \_\_\_\_\_

## Phytoplankton Identification

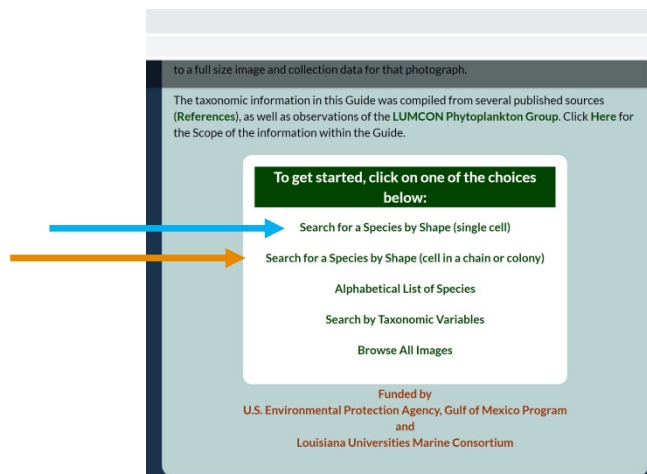
Now that you've divided those plankton into zooplankton and phytoplankton, we'll use LUMCON's Phytoplankton Guide to identify the phytoplankton.

Procedure:

- 1) In each box of the Phytoplankton Identification Guide (page 8) make a basic drawing of the shape of each of the phytoplankton you identified on the previous page.
- 2) Using the internet go to the LUMCON Phytoplankton Guide. Use the following link <https://phytoplanktonguide.lumcon.edu/>. If the link does not work, you can copy and paste link into your browser.



- 3) Scroll down to the box titled "To get started, click on one of the choices below:"
- 4) Select one of the "Search for a Species by Shape" options. Start with the "single cell" option (Blue Arrow) and then move to the "cell in chain or colony" option (Orange Arrow) if you can not find anything that looks like your phytoplankton cell.



- 5) Once you have identified the species of phytoplankton label your drawings with the species or group name in the space indicated.
- 6) In the space for notes, write any extra information about the characteristics that helped you identify each species.

# Phytoplankton Identification Guide

Name:	Name:	Name:
Name:	Name:	Name:

Notes:
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