

FOOD CHAINS & FOOD WEBS

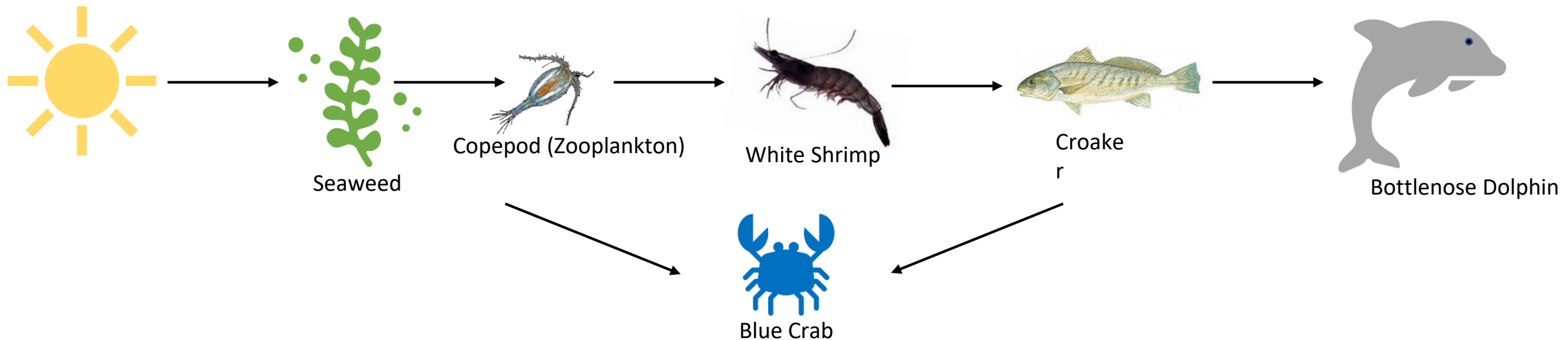
South Carolina Department of Natural Resources
Grade level 3-5th



WHAT IS A FOOD CHAIN?

A food chain shows how energy and nutrients flow through an ecosystem. Every living thing in the world needs food. This shows who eats who in the wild and where that energy comes from. Most food chains begin with the sun.

Marine food chain example:



HOW DOES IT WORK?

**Photosynthesis is the process where plants can get water through their roots, Carbon Dioxide through the air and light energy from the sun. All together, this process helps them make glucose (sugar) and oxygen!*

The **sun** is the beginning of the food chain/web.

Producers are plants.

Primary Consumers are animals that have plants in their diet.

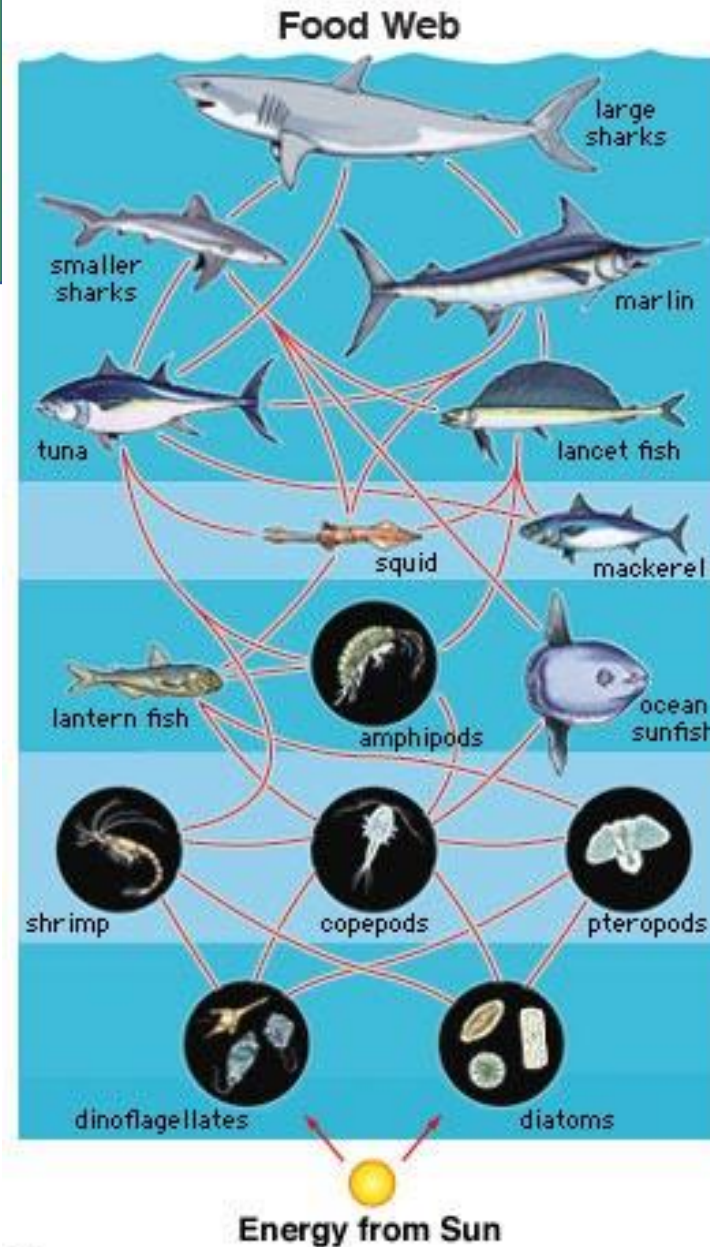
Secondary Consumers are animals that eat other animals.

Apex Predator are always at the top.

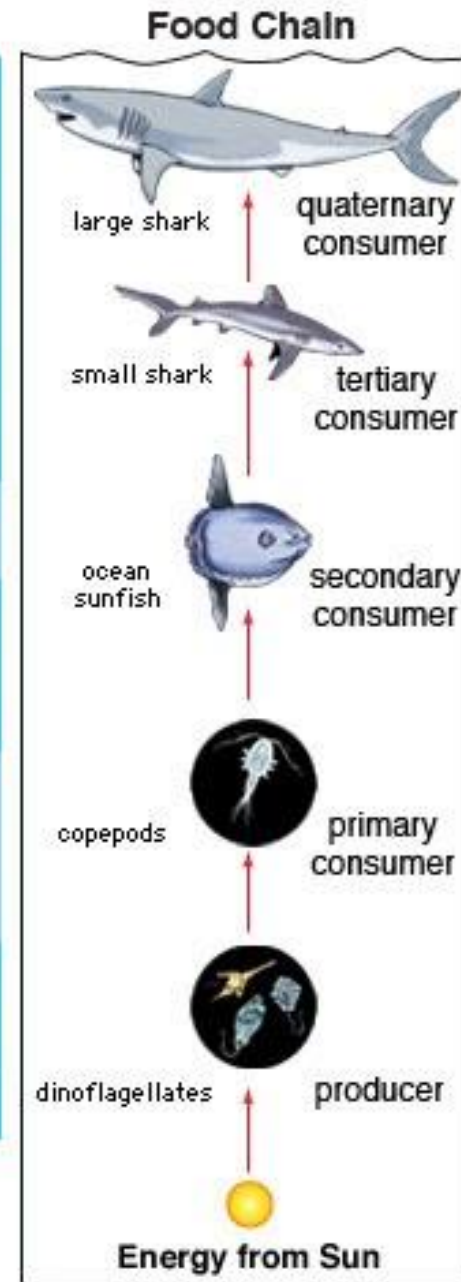
Decomposers make up the bottom and are the clean up crew.

WHAT IS A FOOD WEB?

A food web is made of many food chains from one ecosystem. They show how food chains connect and interact.



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HOW DO WE FIND OUT THE INFORMATION TO MAKE A FOOD WEB?

- DNR biologists conduct research about marine species to understand the ecosystems in South Carolina to help protect them.
- They take samples of multiple marine species using different types of nets in our coastal waters by boat and on shore.
- They bring fish back to the lab to dissect them and identify their stomach contents to find out what they ate.
- Next, you'll be looking at a list of fish that have been found inside bottlenose dolphins' stomachs, who had stranded along our coast. Biologists did a study by looking at their stomach contents to see what they ate.



BELOW ARE 3 SPECIES OF FREQUENT BONY FISH THAT WERE FOUND IN THE STOMACH CONTENTS OF THESE BOTTLENOSE DOLPHINS:

Cynoscion regalis (Weakfish)



Micropogonius undulatus (Atlantic Croaker)



Menticirrhus Americanus (Southern Kingfish)

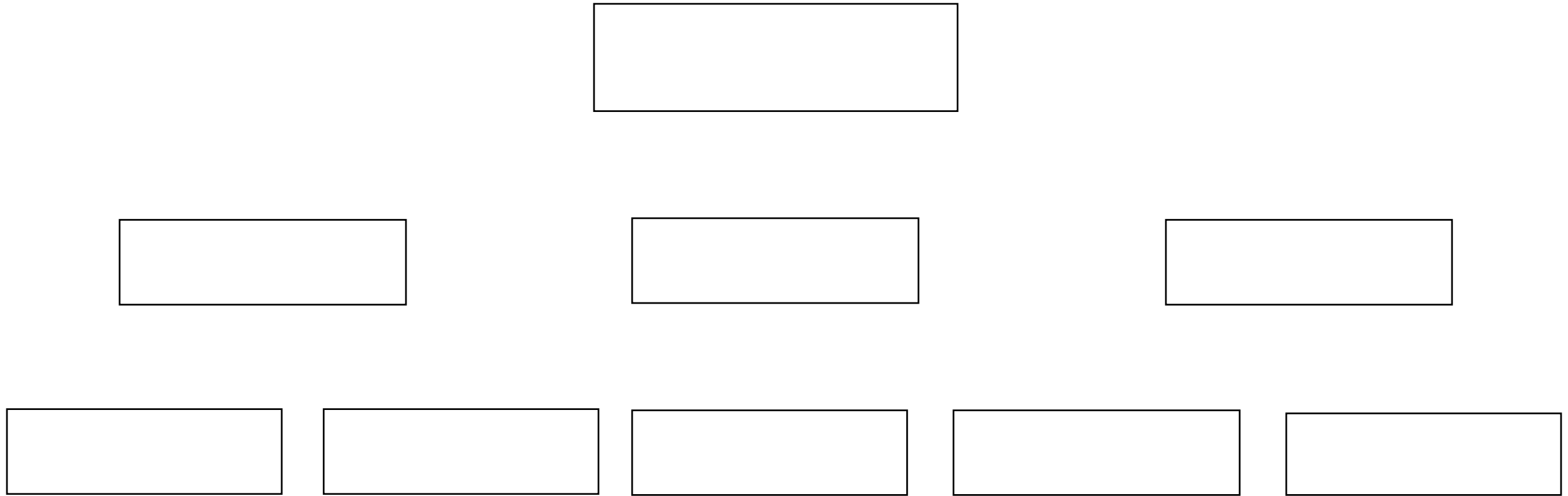


To continue to build a food web, we have to dig further and look at the stomach contents of these 3 species of fish.

**Pass out diet composition data sheets of these fish*

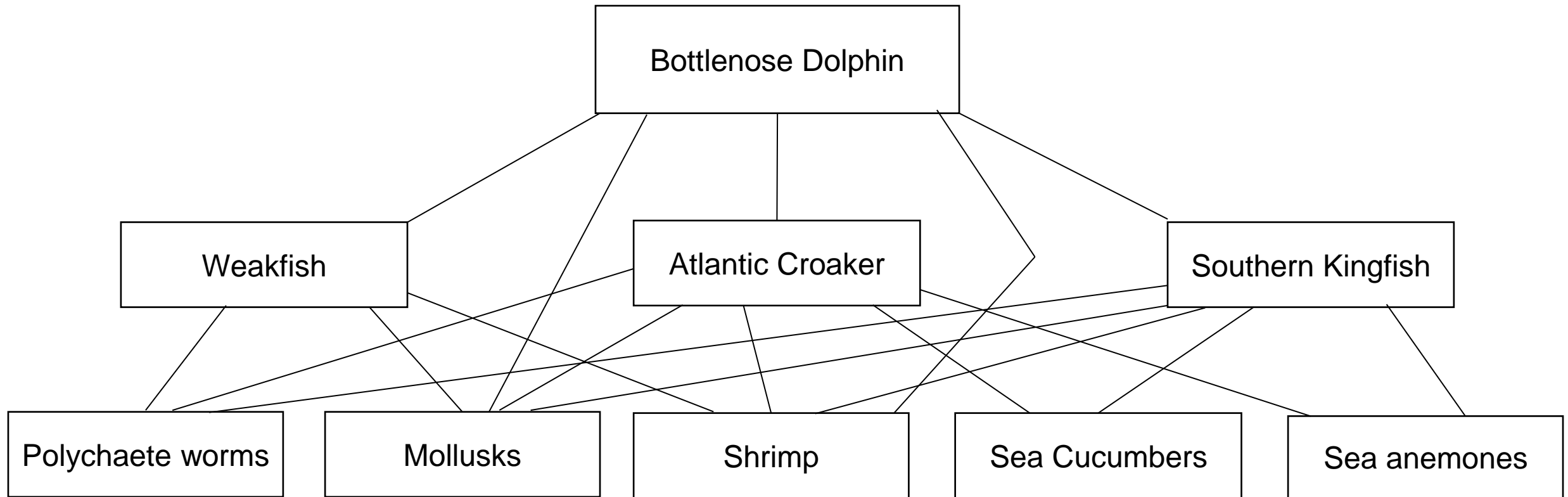
FILL OUT THIS MARINE FOOD WEB AND DRAW LINES TO CONNECT THE ANIMALS DEPENDING ON WHAT THEY EAT

*HINT: SOME OF THESE FISH MIGHT EAT SIMILAR PREY ITEMS



Can you think of a producer and a decomposer to complete this food web?

MARINE FOOD WEB EXAMPLE



Producer: Phytoplankton

Decomposer: Fiddler Crab

DNR RESEARCH

1. What can you learn about each animal by looking at their stomach contents?
1. Where does each organism get its energy in a food chain?
1. What is the most common prey item for the southern kingfish?
1. Out of all 3 fish, which had the highest percentage of its top prey item? Write what fish and what the prey item was.