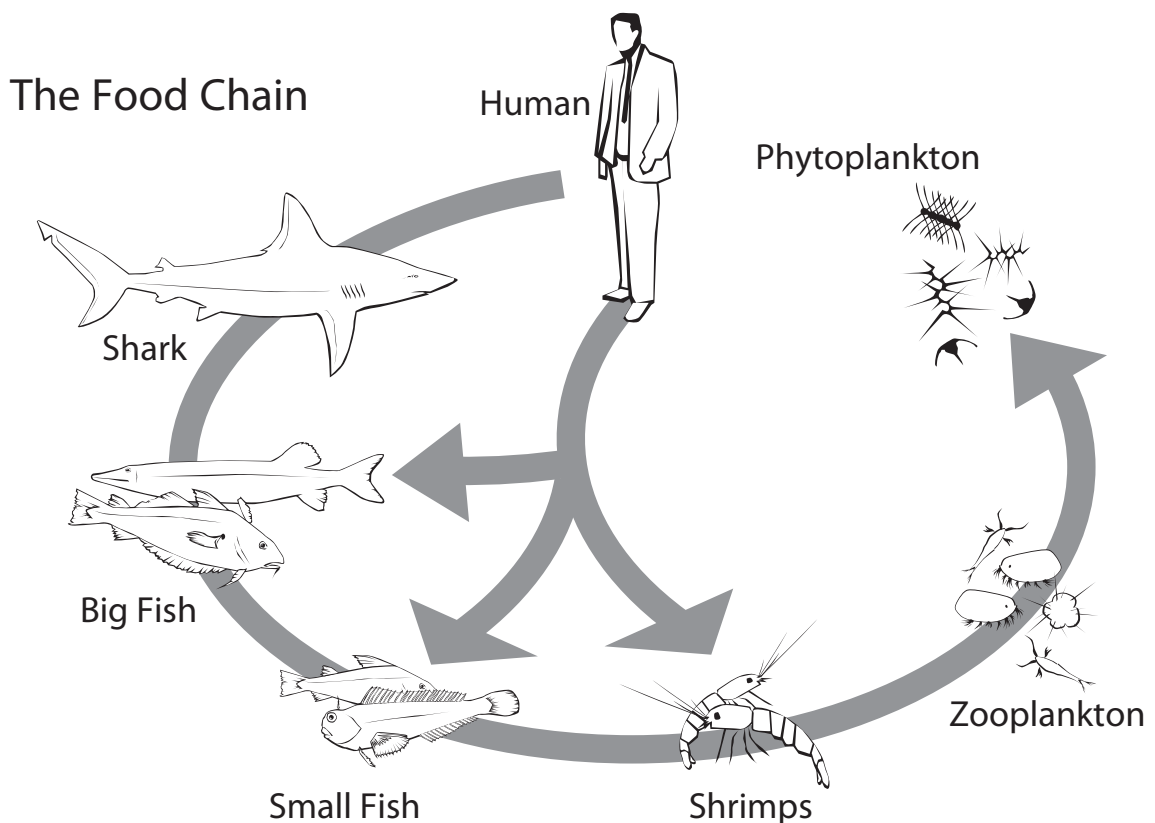


# Food Chains/Nutrition

## PUPIL FACTSHEET



Big fishes eat little fishes, and little fishes eat even smaller fishes ... but what do these even smaller fishes eat? This old question was solved the day the magnifying lens was invented.

Without green plants, there would be almost no life on earth. They are not only the food source for animals; they are also the oxygen source. Both are needed for life.

Food chains can be seen as a flow of energy from the sun through to the predator or hunter.

The food chain in water, as on land, is based on plants. It works like this:

Most plants in the sea are microscopic and are called phytoplankton. They get their energy from the sun – a process called photosynthesis.

- Microscopic animals, or zooplankton, eat the phytoplankton
- Small creatures such as shrimps eat the zooplankton
- Small fish eat the shrimps - so do we!
- Big fish eat the small fish - so do we!
- Sharks eat the big fish - so do we!
- We eat sharks - and they call sharks the predators!

If you visited a coral reef the first thing you would notice is how many different kinds of fish there are - 60% of the known species of fish live in coral reefs. Some swim in open water high above the reef top, others move about near the sand bottom; a few can be seen poking about coral heads.

Why are the different fish in different places and what are they doing there? A simple answer is that they are either searching for their favourite food to eat, or they are hiding so they will not get eaten themselves. Fish that eat other animals are known as predators.

# Food Chains/Nutrition (continued)

## PUPIL FACTSHEET

### A very fishy diet

If you opened a fish restaurant - ie a restaurant where the fish were the customers not the food - what would be on the menu?

Fish are just like people - they eat all kinds of things and in all kinds of quantities. But it is not just about whether they like the taste or not – it also depends on what food is available in the environment where they live.

- Most fish are carnivores (meat-eaters). A lot of fish eat other fish, others eat worms
- Some fish are herbivores - that means they eat plants
- Some fish eat algae and plankton
- Some fish are scavengers. They feed mainly on waste products and on the dead bodies of other animals that sink to the sea floor.

**Shark** babies can swim and hunt as soon as they are born.

**Lionfish** hunt by drifting through the water and gulping in daydreaming prey. In Sea Life centres they can normally be persuaded to accept dead food, but prefer live fish.

Groups of small **brown chromis** hover near the surface where water movement, called current, carries the microscopic animals and plants known as plankton. These tiny bits of life are so small we cannot see them with our eyes, but the chromis can.

As the plankton float by, the fish extend their mouths and suck the food in one at a time. Scientists call the fish that feed this way plankton-pickers. Because **plankton-pickers** feed in the open, they have to be careful not to be eaten themselves. When a big predator fish comes near, they all instantly dart to small holes where they hide until the danger passes.

Several fish-eating species do not hunt for a meal. Instead, these fish, known as **ambush-predators**, lie on the bottom, without moving, and change colours so they are hard to see. When a fish swims too close to a **scorpionfish**, it will open its great mouth, and instantly swallow the other fish whole.

Another way fish protect themselves from being eaten is to stay close together in large groups, called schools. Fish such as **grunts** school during the day for protection. When a fish-eating species, such as the fast swimming **bar jack** attacks the school of grunts, the jack has trouble keeping its eye on a single fish. However, if the predator can chase its prey away from the school, it is easy to grab and eat.

At night, when most fish-eating predators sleep, grunts become predators themselves. They swim out over the sand and hunt for little crabs and shrimp hiding in the sand.

Many other fish also feed in the sand. **The boxfish** has learned to blow jets of water into the bottom to uncover food. The **Spanish hogfish** hunts for crabs, stars and other invertebrates in the ocean bed's many nooks and crannies.

Some fish like **trout**, rise to the surface to snatch drowning flies and other food trapped at the surface or flying just above.

Most of the time, the **archerfish** feeds on prey swimming in the water. But when it is really hungry, this fish can squirt a jet of water at insects and other creatures on leaves above the surface. The surprise attack knocks the prey into the water, where the archerfish snaps it up.

The West African **butterflyfish** can leap over 6ft (2m) out of the water to catch insects – not bad for a fish that is no longer than 4 inches (10cm)!

A **seal's** main prey is fish, but they also feed on squid and crustaceans. They eat five to six percent of their body weight per day. Food is always caught underwater, with the seal grabbing its chosen prey and swallowing it whole.

**Octopus** often hide on the seabed hunting crabs.

**Parrotfish** do not eat animals. Instead they eat small plant life, called algae, from rocks. Parrotfish get their name from the hard pointed mouths that looks like a parrot's beak. They use this special mouth as a tool to scrape the plants from the rocks.

# Food Chains/Nutrition

## PUPIL WORKSHEET

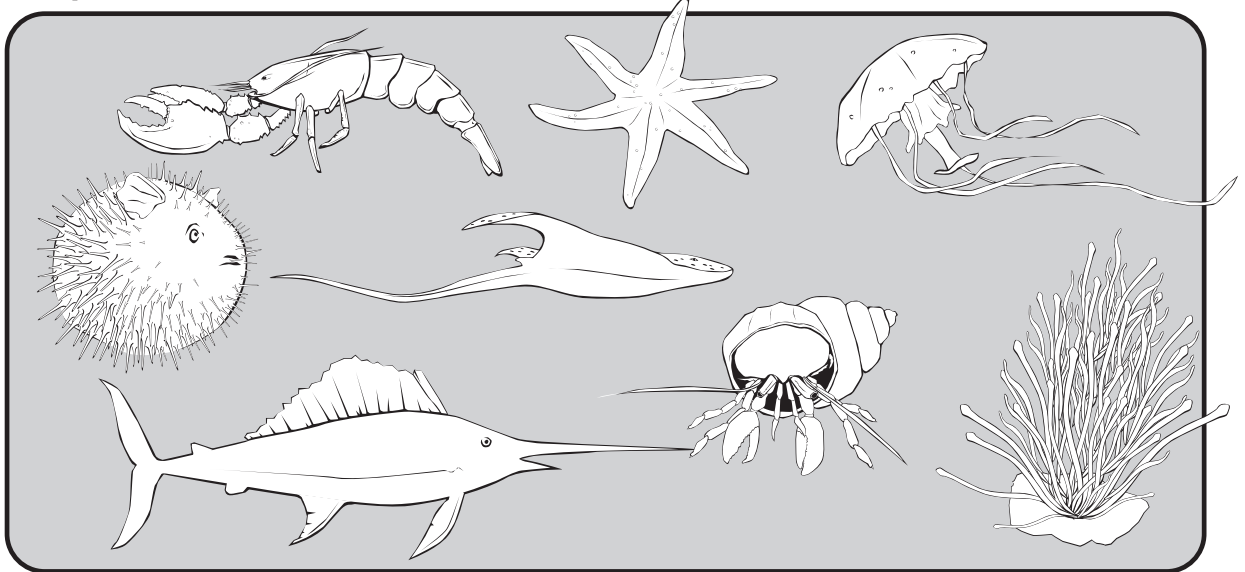
### Sea Life's weekly shopping list

How much food does it take to feed all the fish in a typical Sea Life Centre (on average 6,500 creatures)?

First try guessing on your own.

When you have finished, your teacher will give you a list of items and you have to guess how many of each it takes to keep the Sea Life residents fed for one week.

### Funny eaters!



Fill in the gaps below with these words:

**Lobsters, stingrays, jellyfish, pufferfish, anemone, starfish, swordfish, hermit crab.**

have long beak like jaws, which they use for spearing.

use their tentacles to catch small animals and then push them into their mouths to eat.

use their two huge claws for self-defence and food. One claw has sharp edges like scissors and is used for cutting. The other is much larger and is used for crushing.

The  is an efficient eater, but has pretty disgusting table manners. It rips open its favourite food - a mussel - with its powerful tubed suckers, pushes its stomach out through its mouth, eats the flesh then pulls its stomach in again.

Sometimes an  will attach itself to the shell of a , to the benefit of both - the anemone helps to keep away the crab's enemies, and in return it can enjoy leftovers from any food the crab may catch.

feed on fish and vertebrates - attacking its prey with their poisonous tails.

The  loves to eat so much it will eat until its almost unconscious. The pufferfish is well-equipped to find and eat food - feelers hang down from their nostrils, helping them find food as they float along the ocean floor.