

# Sbnature FROM HOME

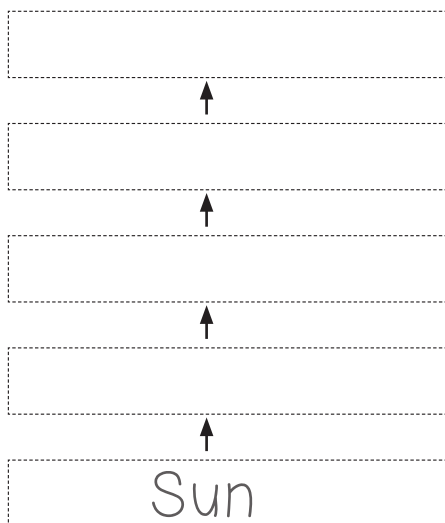
## BUILD MARINE FOOD CHAINS AND WEBS: A FILL-IN-THE-BLANK PUZZLE

What are two very important things we need to live and grow? If you said food and oxygen, then you are correct! Did you know that just like humans and other land creatures, animals living in the ocean also rely on these things?

Many marine species never need to leave the water, because the oxygen they need is provided by the ocean water all around them. In the marine world, oxygen is abundant in many habitats, but what about food? Food gives us energy to live and do the things we enjoy, such as walking, running, riding a bike, swimming and so on. Animals in the ocean also need energy, and just like humans, they need to eat food to get that energy.

Using the clues provided, can you complete Level 1 below to show how energy from the sun reaches the highest predator? Feel free to use a dictionary for some of the words in the clues.

### Level 1



**Phytoplankton** – uses photosynthesis to gain energy and is carried by ocean currents

**Clams** – filters food from water flowing past

**Orca** – apex predator

**Sea Otter** – uses rocks as tools to smash open prey

✓ **Wonderful job!**

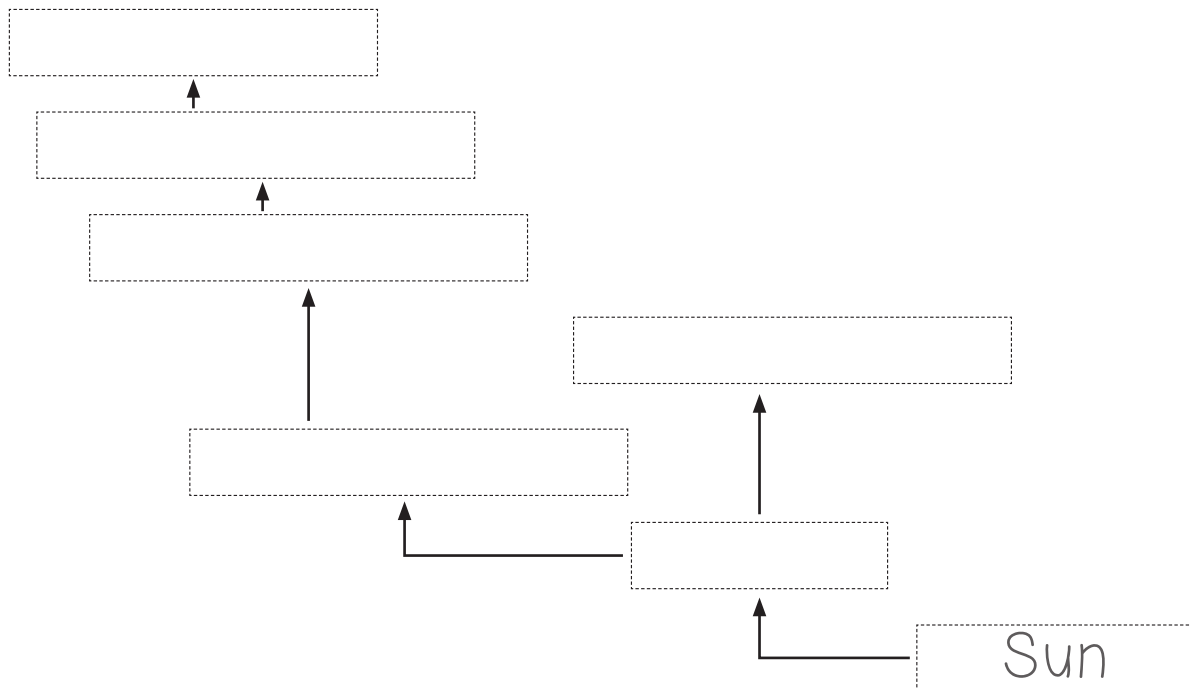
Check your choices with the answer key on page 5.

Ready for something more challenging? Try your hand at Level 2, building a food chain for animals found in our local Channel Islands marine ecosystem.



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## Level 2



**Purple Sea Urchin** – a voracious herbivore

**Great White Shark** – apex predator of the Channel Islands

**Kelp** – uses photosynthesis to obtain energy to grow

**California Sea Lion** – Their prey may not be that big, but they will defend themselves with strong claws; sea lions also enjoy eating animals hiding in shells.

**Lobster** – As a keystone species in the Channel Islands, they help to keep all the kelp from being eaten.

**Sheep Crab** – munches on very spiny echinoderms

✓ **Check your choices with the answer key on page 6.**

Did you get the right sequence? Nicely done! As you've seen, a food chain is one way scientists study how energy that began with the sun moves from organism to organism all the way up to the top of the food chain. However, the food chain we just created is only a few organisms, and if you imagine a marine ecosystem, you can probably come up with a whole bunch of different animals.

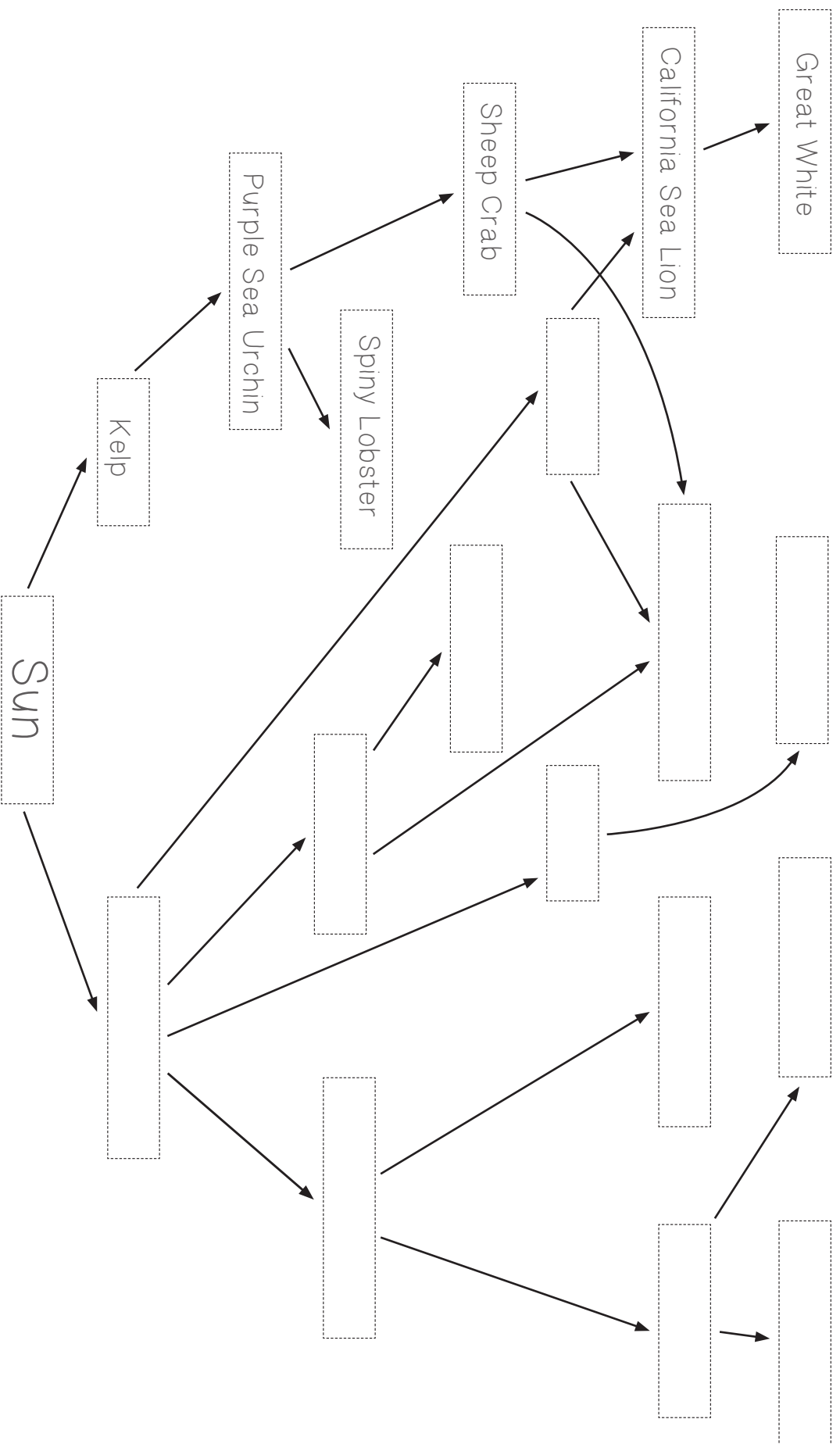
Many ecosystems are made up of hundreds or even thousands of different types of animals both big and small. The different types of plant and animal species living in an ecosystem make up what we call biodiversity. An environment with high biodiversity is usually a healthy environment, because it's more likely to bounce back after something disturbs it. High biodiversity equals a large number of different species of plants and animals.

The Channel Islands marine ecosystem found here off the coast of Santa Barbara is an environment with high biodiversity. Using the clues provided, can you complete Level 3 on the next page to show how energy flows through our local marine ecosystem? You may need a dictionary for some of the words in the clues.

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## Level 3

Use the clues on the following page to fill in the blanks.



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## Level 3

**Krill** – eats small planktivorous crustaceans and are food for many animals in the Channel Islands, including the largest animal on Earth

**Phytoplankton** – uses photosynthesis to gain energy and is carried by ocean currents

**Common Dolphin** – Their prey may not be that big, but it travels in large schools.

**Zooplankton** – feeds on other types of plankton and is carried by ocean currents

**Two-spot Octopus** – Looking at the entrance to its den, you might find shells and exoskeletons.

**Blue Whale** – can eat 8,000 pounds of a very small animal each day

**Ochre Sea Star** – uses its tube feet and arms to pull open animals hiding in shells

**Moon Jelly** – drifts along eating microscopic animals unlucky enough to end up in its tentacles

**Mussels** – filter microscopic photosynthesizers from water flowing past them

**Brown Pelican** – dives into the ocean when it sees schools of its prey

**Herring** – a smaller fish that feeds on small microscopic animals that can't swim against the ocean currents

**Were you able to get them all? Excellent job!**

✓ **Check your choices with the answer key on page 7.**

As you can see, you've put together something much more complex than a simple food chain. What you have now is called a food web.

As you learned earlier, a food web is used by scientists to study how energy that comes from the sun moves through an entire ecosystem. If you look carefully, you will notice that a food web is made up of many individual food chains. As you see, food chains can have different lengths. Some are very long and energy passes through many different plants and animals on the way to the apex predators. Some food chains are very short and energy passes through only one or two plants or animals between the sun and the apex predator.

Taking care of our ecosystems means taking care of individuals at each level of this food web, no matter how small or large.

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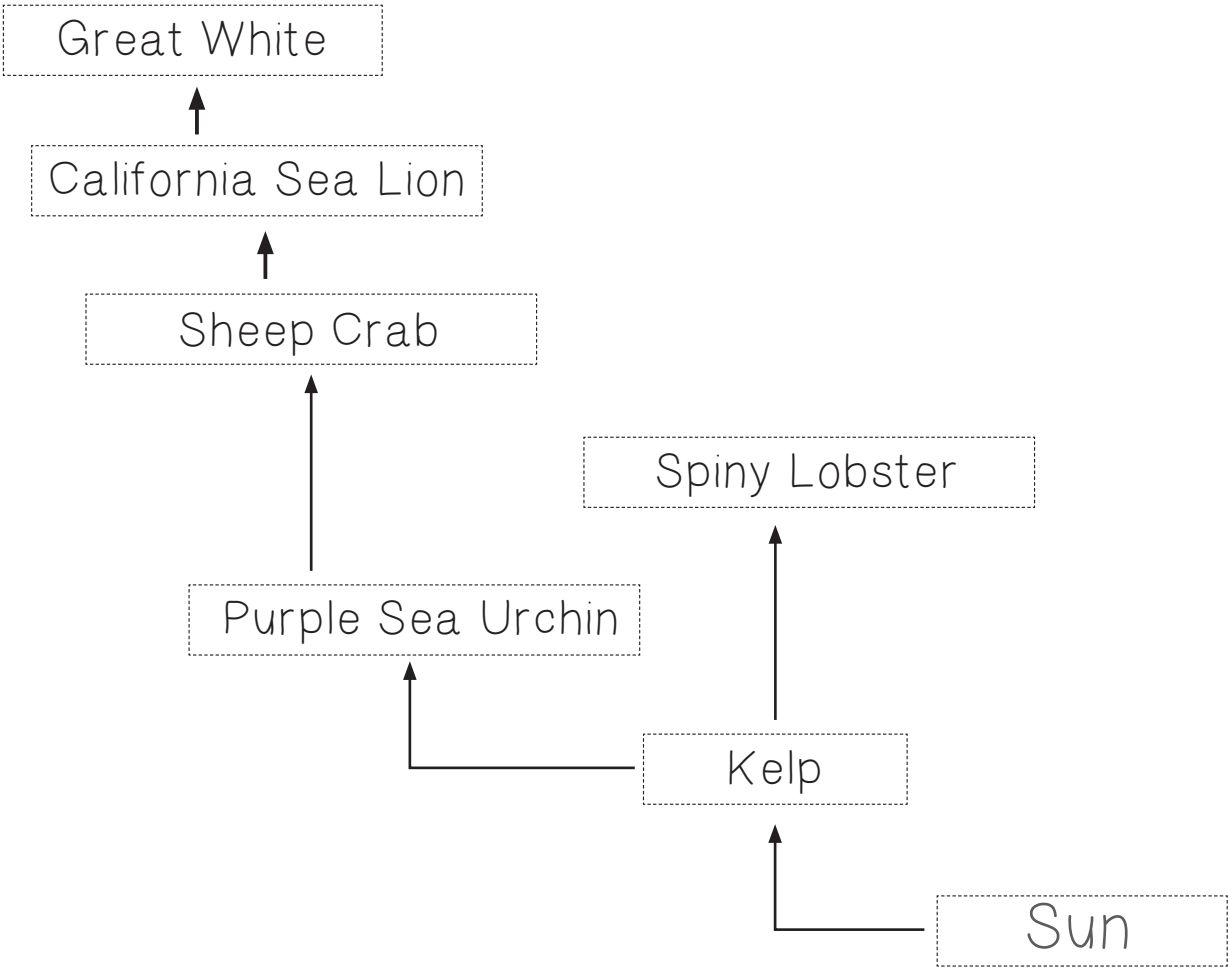
### ✓ Level 1 Answers



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## BUILD MARINE FOOD CHAINS AND WEBS: A FILL-IN-THE-BLANK PUZZLE

✓ Level 2 Answers



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## BUILD MARINE FOOD CHAINS AND WEBS: A FILL-IN-THE-BLANK PUZZLE

✓ Level 3 Answers

