

# Sponge facts for kids

[Kids Encyclopedia Facts](#)



A **sponge** is a member of the [phylum Porifera](#). It is a simple [animal](#) with many cells, but no [mouth](#), [muscles](#), [heart](#) or [brain](#). It is [sessile](#): it cannot move from place to place the way most other animals can. A sponge is an animal that grows in one spot like most plants do. Nevertheless, sponges are quite successful.

The basic body plan is a jelly-like layer sandwiched between two thin layers of cells. Their bodies are full of [pores](#) and channels allowing water to circulate through them. Most of them feed on [bacteria](#) and other [microorganisms](#). A few of them eat tiny [crustaceans](#).

There are more than 10,000 [species](#) of sponge. Most sponges live in the [ocean](#). A few live in fresh water. All sponges take in water through pores (little holes) in their bodies. The water goes out through a big tube in the center. Most sponges filter (take out) little bits of food from the water going through their bodies. Animals that get food this way are called [filter feeders](#).

## What makes them different

Sponges are simple animals. A few things make them different from other animals.

- A living sponge can change the shape of its body. Most cells in its body can move around; a few cells can even change from one type of cell to another.
- Like [cnidarians](#) (jellyfish, etc.) and [ctenophores](#) (comb jellies), and unlike all other known [metazoans](#), sponges' bodies are made of a non-living jelly-like mass sandwiched between two main layers of cells.
- Sponges have no [nervous system](#). Their middle jelly-like layers have many different types of cells. Some types of cell in their outer layers may move into the middle layer and change their functions.

	Sponges	<a href="#">Cnidarians</a> and <a href="#">ctenophores</a>
<b>Nervous system</b>	No	Yes, simple
<b>Cells in layer bound together</b>	No, except that Homoscleromorpha have basement membranes.	Yes: inter-cell connections; basement membranes
<b>Cells in middle "jelly" layer</b>	Many	Few
<b>Cells can move in, change functions</b>	Yes	No

## Different kinds of sponges

There are four [classes](#) of sponges. The difference between these kinds is in how their [skeleton](#) is made.

- [Demosponges](#) is a class that contains most of the sponges. The sponges in this class make their skeleton from spongin. Spongin is a special [protein](#). All the large sponges are in this order.
- [Bony sponges](#) use [calcium carbonate](#) to make the skeleton. They are known as *Calcarea*. They are usually very small, only 3-4 inches in height. Of the about 15,000 sponges known, about 400 are Calcarea.
- [Glass sponges](#) use [silicon dioxide](#) to make their skeletons. They are sometimes called *Hexactinellida*. Most of these live very deep in the ocean. There are about 500 different kinds of glass sponges, in 17 different [families](#). These sponges make for about 7% of all known sponges.
- Homoscleromorpha are a class which was part of the Demosponges.

# Life functions

## Movement

Sponges are sessile, they live in one place, where they are *fixed* to the ground. A few sponges can change their position, they can move at speeds of between 1 mm and 4 mm a day. They do this like amoebae. A few species can contract their whole bodies. Many can close their openings/holes.

## Carnivorous sponges

A few species live in waters where there is very little food available. They have therefore changed, and became predators. They eat small crustaceans and other small animals. Most of these sponges belong to the family Cladorhizidae, but a few members of the Guitarridae and Esperiopsidae are also carnivores. In most cases little is known about how they actually capture prey. Some species are thought to use either sticky threads or hooked spicules. Most carnivorous sponges live in deep waters, up to 8,840 metres (5.49 mi), and the development of deep-ocean exploration techniques is expected to lead to the discovery of several more. However one species has been found in Mediterranean caves at depths of 17-23m alongside the more usual filter feeding sponges. The cave-dwelling predators capture crustaceans under 1 millimetre (0.039 in) long by entangling them with fine threads, digest them by enveloping them with further threads over the course of a few days, and then return to their normal shape; there is no evidence that they use venom. Most known carnivorous sponges have completely lost the water flow system and choanocytes. However the genus *Chondrocladia* uses a highly modified water flow system to inflate balloon-like structures that are used for capturing prey.

## Reproduction in Sponges

### Asexual reproduction

Sponges usually reproduce (make more of their kind) when little pieces break off. If such a piece has the right types of cells it can grow to become a new sponge. A few sponges can also use budding. With budding a small sponge grows on the parent; when it is done growing, it simply *falls off*. When the conditions are bad, some sponges can also grow lumps of unspecialised cells. These will not develop until the conditions improve again. They can then either make a new sponge, or they can use the skeleton of the parent sponge (that died).

### Sexual reproduction

Most sponges reproduce sexually. They can make sperm cells that are released into the water. These are either captured by another sponge, and are then transported to the egg cells of the parent. This is known as *viviparous*. Both cells are joined to form larvae, which can swim off to find a good place to settle. The other way, known as *oviparous* is that both sperm cells and egg cells are released into the water. These then combine outside the sponges.

## Use as tools

### By dolphins

A report in 1997 described how bottlenose dolphins in Shark Bay used sponges as tools: A dolphin will attach a marine sponge to its rostrum (snoutlike projection). It is thought the sponge is used to protect the rostrum when the dolphin is looking for food in the sandy sea bottom but scientists have not confirmed this. The behaviour, known as *sponging*, has only been seen in this bay, and is almost exclusively shown by females. A study in 2005 concluded that mothers teach the behaviour to their daughters, and that all the

sponge-users are closely related. This suggests that it is a fairly recent innovation. Dolphins also use sponges as an exfoliator, rubbing their skin against the sponge attached to the rock to get rid of their old/dry skin.

## By people



Display of natural sponges for sale on Kalymnos in [Greece](#)

Main page: [Sponge \(tool\)](#)

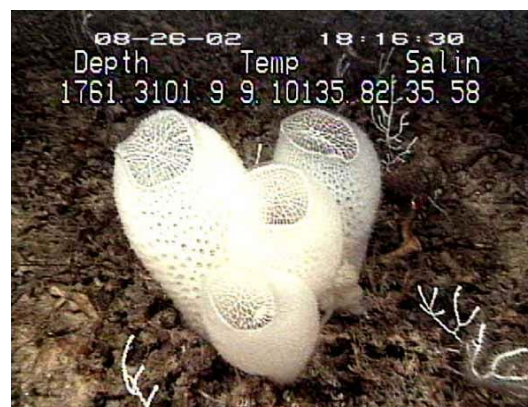
The [calcium carbonate](#) or [silica](#) spicules of most sponges make them too rough for most uses, but two genera, *Hippospongia* and *Spongia*, have soft, entirely [fibrous](#) skeletons. Early Europeans used soft sponges for many purposes including padding for helmets, portable drinking utensils and municipal water filters. Until synthetic sponges were invented, they were also used as cleaning tools, for painting, and as contraceptives. In the [20th century](#), [overfishing](#) is a problem. This has caused the animals, as well as the industry behind it to be close to [extinction](#).

Many objects with sponge-like textures are now made of substances that do not come from poriferans. Synthetic "sponges" include personal and household [cleaning tools](#); breast implants; contraceptive sponges. The [luffa](#) "sponge", also spelled *loofah*, which is commonly sold for use in the kitchen or the bath, is not derived from an animal but from the fibrous "skeleton" of a [gourd](#) ([Cucurbitaceae](#)).

## Images for kids



*Spongia officinalis*, "the kitchen sponge",  
is dark grey when alive



*Euplectella aspergillum*, a glass sponge  
known as "Venus' Flower Basket"



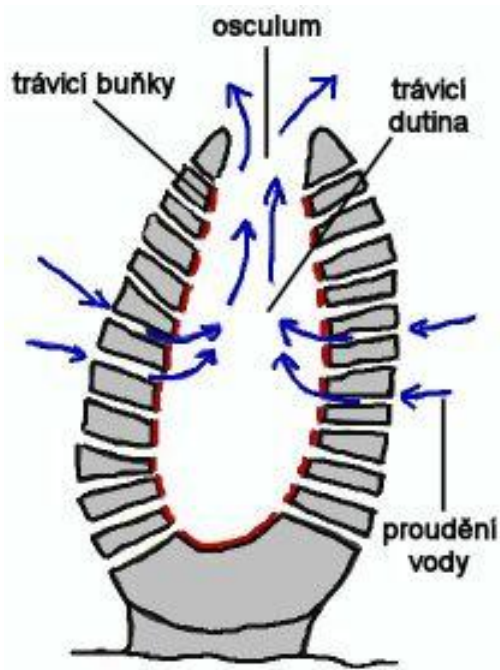


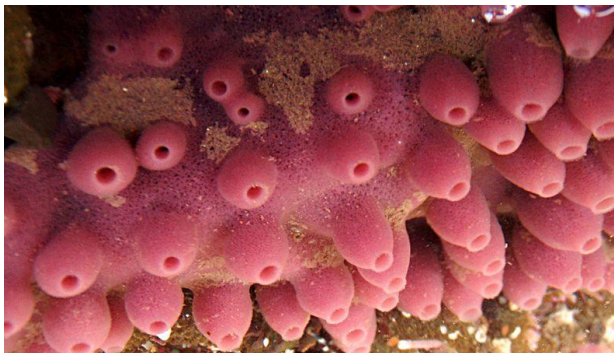
Diagram of a sponge



Holes made by clionaid sponge (producing the trace *Entobia*) after the death of a modern bivalve shell of species *Mercenaria mercenaria*, from [North Carolina](#)



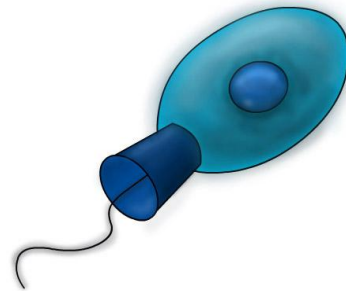
*Raphidonema faringdonense*, a fossil sponge from the [Cretaceous](#) of England.



Sponges growing near the edge of the ocean



The freshwater sponge *Spongilla lacustris*



A choanoflagellate



Natural sponges in Tarpon Springs, [Florida](#)