**Cambrian Fact File**

**Sponges**
Sponges appear to be very simple, but they are hugely important in our story of how life evolved. Sponges were one of the first organisms to be multi-cellular, which gave them several important advantages.

**The body beautiful**
Up to this point, all forms of life were at best just a single cell – or maybe a couple of cells joined together – floating around in the oceans. A single cell has to be able to do everything itself – feed, move, reproduce and so on – and so cannot generally be highly specialised at anything. If groups of cells begin to live together then some of them can carry out one job while others get on with something else; the cells become adapted in order to be do their particular job better than their single-celled ancestors. Not only that, but a group of cells living together can do several things at once – some cells can be feeding while others move the organism around for example, making the whole group more efficient.

One consequence of this is that the cells have to communicate with each other so that they can coordinate their work, and share whatever resources they gather. The group of cells eventually stops being a lot of individuals living together and starts to be a body; this is one of the most important steps life took during the history of the world.

**Sponge body plan**
Sponges have not quite reached the level of being a body; they are more of a colony of cells living together in a skeleton of silica shaped into a tube. The colony draws water through small holes in the sides of the tube and then squirts it out of an opening at one end. As the water is drawn through the walls of the tube, specialised cells grab hold of any small particles of food, algae or bacteria that go past. Other specialised cells secrete the silica spikes that make up the skeleton of the sponge, while others constantly beat their cilia to keep the water flowing through the sponge. Everything works well and the cells share whatever resources they have – they gain more food and better protection living together than they would get living on their own. But a sponge can be broken down into its individual cells (usually by being sieved!) and then if left alone, it will reassemble itself back into a sponge. You can't do that with a body!

**See also:** **Vauxia**
**Eiffelia**