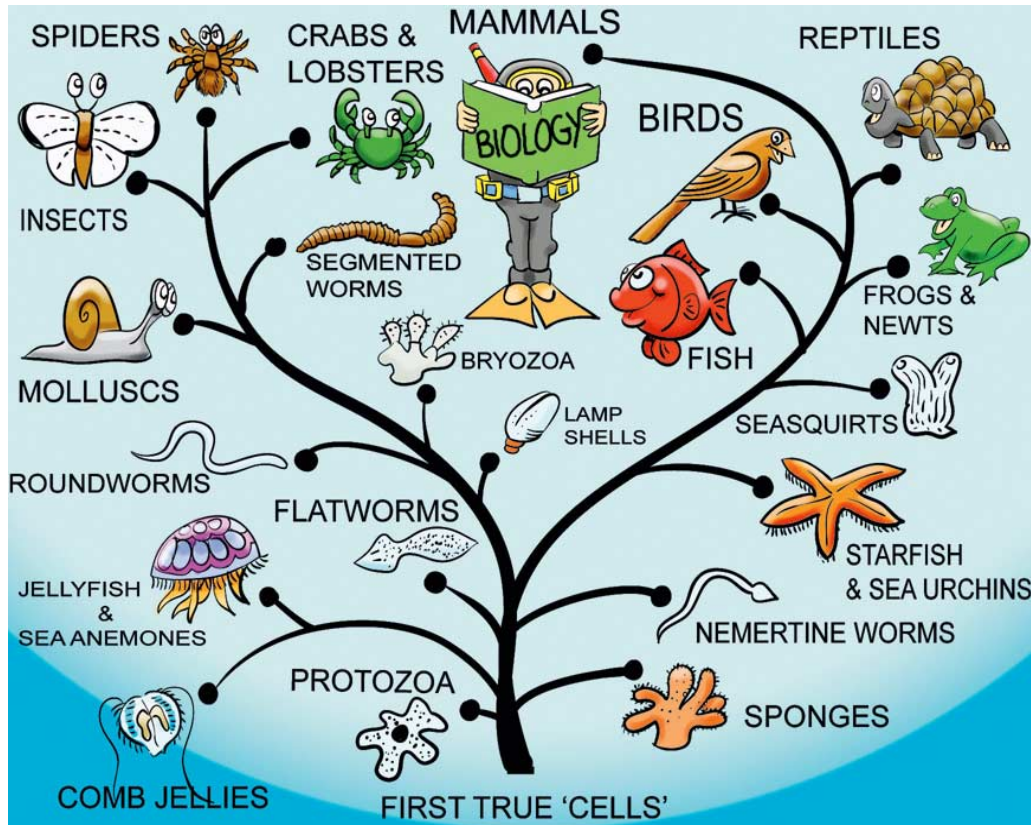


The Tree of Life



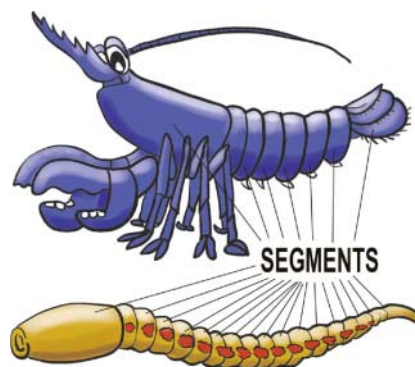
Sketches: © John Joyce

Life on Earth Began in the Sea

Scientists believe that life on Earth began over 3,000 million years ago. It happened when individual atoms of oxygen and hydrogen (present in water) fused with atoms of carbon and nitrogen (present in the atmosphere) to form the first building blocks of life - proteins, carbohydrates and fats. This could have happened when lightning struck the water in the shallow pools at the edge of the ocean. Or it might have come about around deep sea volcanic vents where the sea is very hot.

The diagram above shows one possible version of how the main animal groups evolved from the first primitive 'true cells'. At the base of the tree simple single cell animals develop into animals formed of sheets of cells working together in layers - such as jellyfish and sea anemones (see below). As millions of years pass, these simple animals become more complex - with specialist organs and nervous systems.

To the left of the tree animals develop with no backbone (invertebrates) and to the right of the tree animals gradually evolve a backbone and an increasingly complex nervous system. Many of the invertebrate animals - such as the insects, spiders, lobsters, crabs and worms have bodies that are divided into segments (see above right). While to the right of the tree, the first appearance of a 'backbone' is seen in the free-swimming larva of the sea squirt.



Captain Cockle's Log



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Close Relations

Jellyfish and sea anemones share the same basic design and are closely related. In fact, a juvenile sea anemone is free swimming and looks exactly like a tiny jellyfish, while a juvenile jellyfish looks like a pile of cup-like sea anemones stacked one on top of the other. Both animals share the same deadly stinging cells (nematocysts) that line their tentacles, although the sting of a jellyfish is far more powerful than that of an anemone.

