The idea of evolution was introduced to us by our biology teacher. As we progressed through the lesson our teacher suggested that we paint our version of the Tree of Life on a wall in our classroom. A few of us enthusiastically took up the idea but decided that we would like to create a larger version on an empty wall in the senior school. We first painted the background yellow, and on that we then drew the skeleton of the tree with chalk. We used different shades of browns, greens and yellows, and also brighter colours like red, purple and blue for the rest.

We chose the branches, and the kinds of life forms to be included, in consultation with our biology teacher. At the base of the tree is a red seed from which we drew a double helix, to signify that all life evolved from DNA. Above this we drew three branches to represent the three Domains — the Monera (Bacteria), Archaea and Eukaryotes. Bacteria (on the right of the trunk) are shown by E.coli. We decided to paint several species of Archaea (on the left of the trunk) as these aren’t usually shown in textbooks. The branch points also indicate that Bacteria speciated before Archaea. Above these one sees the great variety of Eukaryotes, with almost all the major groups. These include fungi, insects, and plants (ranging from ferns to flowering plants) and major Chordate orders such as birds, amphibians, reptiles, and mammals. The few dry leaves that are shown fallen on the ground are meant to represent extinct species, indicating that there have been many dead-ends in evolution.

One of our favourite images is of the dinosaur, and it is also a reminder that this once mighty group of animals was completely wiped off the face of the earth 65 million years ago. The mural has a background of water droplets to signify that water is the medium for all life.

The mural progressed slowly and we got into conflicts with each other as our ideas and artistic sensibilities clashed at many points. Yet this project helped us learn to work as a group and respect each other’s thoughts. Since we were in a boarding school, we could choose to work outside school hours and most of the work was done on weekends. It took an entire term (4 months!) with lots of paint, sweat, and touching up to complete our masterpiece!

The Tree of Life, while simple in conception, speaks to us intuitively, and in it lie buried many deep ideas regarding our origins and connections to all beings in the natural world. It remains the best way to explain how life on this planet developed. We hope this piece encourages you to draw your own version of the Tree of Life.

A R Sharada, Gouri Nandana and Aura Guha are now in Class XI.
April is the cruellest month, breeding
Hatchlings out of dead sand, mixing
Instinct and survival, stirring
Baby ridleys into juvenile frenzy.

Hatchling to right of them,
Hatchling to left of them,
Hatchling behind them
Fumbl’d and flounder’d;
Storm’d through the egg shell,
Scrambl’d up while others fell,
They that had jostled so well
Came thro’ the jaws of sand
Up from their incubatory spell,
All that was left of them,
Left of one hundred.

When old age shall this eon waste,
Thou shalt remain, in midst of other woe
Than ours, a flagship to man, to whom thou sayst,
“Beauty is turtle, turtle beauty,” – that is all
Ye know on earth, and all ye need to know.

**Kartik Shanker** is an evolutionary ecologist with a love for both mountains and marine life, and an occasional writer of children’s fiction. If he had a choice, he would spend all his time visiting cool places, looking for turtles & diving at reefs, or hanging out with students, talking about science.

**Madhuri Ramesh** is a political ecologist who likes to write random things. She is working on her PhD with the Ashoka Trust for Research in Ecology and the Environment (ATREE) and also works with Dakshin Foundation on marine governance.
Once at the bottom there is no time to waste, because our full tank of air will allow us a dive time of one hour at most. My buddy gets to work, reeling out the 30-meter long tape over the reef that we are surveying. I place a 1-meter square frame, called a quadrat, over the coral. Then hover above it to photograph the coral—and everything else—that lies within the outlines of the square frame. With the tape to guide me, I collect this photographic data every ten meters along the measuring tape. We survey several such transects to make sure we have sufficiently covered the dive site.

In the last ten minutes of the dive, we swim over and check on the data loggers we had previously placed at Minerva. These loggers have sensors that automatically measure temperature and light intensity underwater for months on end, and the data loggers store all that information. We regularly visit them, with a toothbrush in hand, to scrub off sand and algae that settle on the sensors and interfere with their working properly.

Within an hour of finishing our dive, we are back on land, rinsing off salt from our SCUBA and research tools with fresh water. After a hot lunch and an afternoon nap to get over post-dive drowsiness, I am ready to start processing my quadrat photographs of coral. This part of fieldwork is almost as exciting as the actual diving itself (if it did not involve hours of computer work!). I still thoroughly enjoy analysing my quadrat photos—identifying different corals and measuring their sizes. The next step would be to look at whether temperature and light intensity in Minerva and other dive sites make a difference to how these animals are recovering. This is when I get to really start answering my research questions, by documenting coral recovery. Someday this information could enable us to help reefs in crisis!

Chetana is an aspiring marine biologist interested in studying coral reef ecosystems. When in the Andaman Islands, she spends a lot of time spreading awareness about marine ecosystems, when not diving in the company of bizarre marine animals!
Coral reefs look like underwater mountains but are actually animals! They occur in shallow tropical waters around islands and in coastal regions. Corals are amongst the earliest multicellular animals on earth and are most closely related to jellyfish and sea anemones. They all have stinging cells to eat microscopic plankton floating in the water.

Most corals live in colonies, and these can grow into huge structures underwater over a period of hundreds and thousands of years. Coral colonies are made of tiny tubular creatures called polyps, which form large colonies by building to form new polyps, which further form new polyps...

Coral reefs support a high diversity of fish and other marine creatures and are sometimes considered the marine equivalent of tropical rainforests. To grow, corals and their associated algae need clean and clear water which is not too warm or too cold.

High temperature, acidification, or pollution can all kill corals and their associated algae, leaving dead limestone skeletons. This is called 'bleaching'.