



OneZoom Tree of Life Explorer (Available from <http://www.onezoom.org/>; Flash enabled)

Modern technologies have led us to an increased understanding of the complex nature of the “tree of life.” With the growing usage of DNA and genetic evidence as prominent tools for classifying organisms, the tree of life changes and adapts. To help organize the enormous amounts of data used to create organism phylogenies, a team of scientists have assembled a website that showcases the relationships between living things.

Called *OneZoom Tree of Life Explorer*, this website greets the viewer with a split screen. The left side presents an interactive map showing the evolutionary relationships of the living world, represented as spiraled branches on a tree. Clicking on a group of organisms on the branch leads to a new screen that zooms in, revealing new branches

of organisms related to the original group. Users can continue zooming in or out, following the length of the branch, exploring the ancestral relationships between organisms. Pulling all the way back to the beginnings of the tree, the viewer will see three main branches: the “Euryarchaeotes,” the “DPANN archaeal group,” and the “Eukaryotes.” *OneZoom Tree of Life Explorer* makes a disclaimer that the information collected about the euryarchaeotes is limited. This group contains the world’s bacterial species, and the genetic and taxonomic information available about them is fairly spotty.

Clicking on the “Eukaryotes” branch leads viewers toward several smaller branches including the “Excavates,” the “Plants,” the “True Amoebas,” and “Animals and More.” There are other branches, as well. Clicking on “Animals and More” reveals a branch that showcases sponges, jellies, and animals that are bilaterally symmetrical. Clicking on the jellies zooms users in even further to highlight the relationships among jellies, corals, and sea fans. The viewer can click several more times before reaching the species level of organization. Once at the species level, the viewer is taken to another page that includes references and information about that particular organism. Tabs also exist that reference the International Union for Conservation of Nature’s Red List of Threatened Species and the National Center for Biotechnology Information’s Taxonomy Browser.

As a way of supporting the site, the right side of the home page hosts a collection of organisms that can be “sponsored” for a

nominal amount. Although the idea of soliciting funds from viewers can be somewhat off-putting, the organization hosting the site is a nonprofit charity focused entirely on the collection and distribution of open-access scientific information. The charity has the support of many important scientific organizations and world-renowned scientists, including Richard Dawkins. In the classroom, teachers can tell students to use these sponsorships to validate the accuracy of the claims made.

OneZoom Tree of Life Explorer would be a great asset to any biology classroom. Trying to show students how species are related is often delegated to two-dimensional phylogenetic trees. This interactive version presents far more information than could be presented in a textbook or handout. Students will love the interactivity and the graphics. The information is always being updated, so teachers can be assured that what their students are viewing is accurate. *OneZoom Tree of Life Explorer* would be an invaluable asset to help biology teachers wade through the sometimes murky and often changing evolutionary histories of organisms. Students will be able to see how things are organized, how they relate to each other, and when they evolved. After using the site, students should take away a new appreciation for just how complicated the living world is, and how much is still unknown.

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