Supplementary Exercise: An Introduction to the Tree of Life using [OneZoom Tree of Life Explorer](https://www.onezoom.org/)

Part 1: Taxonomy- The science of naming organisms.

Scientific names- The search tool

1. Click on the OneZoom link above. In the top right corner of the home screen is a search bar with an icon that looks like a magnifying glass with a leaf inside. Type in ‘cane toad’. The search results box will open with the name. Click on the name here and you will see the tree of life scroll to a leaf with the name and image.

*Question 1: Why is the icon a leaf? Because the tips of branches on trees are where leaves are found.*

*Question 2: What is the scientific name (2 words) of this frog? Rhinella marina*

The Hierarchical Nature of Taxonomy: The Compass tool

1. In the lower left corner of the screen is a tool bar. You will select the compass icon at the top of the tool bar. With this, the number of levels from the base of the tree of life to the cane toad will appear.

*Question 3. How many described species occur in the tree of life? 2,235,076*

*Question 4. How many steps are required to get to the top of the list? 19*

*Question 5. What does each step represent? A lineage*

*Question 6. See the top of the list. What is the name of the group of toads in which the cane toad is found? Rio Viejo toads.*

1. Click on the name you chose from question 6. You will see the tree zoom out to show the name on the tree.

*Question 7. Why is the name not a leaf? Leaves represent species. This is a higher taxonomic level.*

1. Click on the name so that the information in the circle is visible.

*Question 8. What is scientific name of the toads in question 6? Rhinella*

*Question 9. Based on the Linnaean system of classification, what taxonomic level is represented? Genus*

Part 2: Taxonomy. Cladograms and evolutionary relationships. The Tracer Tool.

Cladograms represent the evolutionary splits between all taxonomic levels required to arrive at your selected species. The Tracer tool is shown below as a simple clade (Y shape) next to a magnifying glass. A box will appear that reads ‘trace a path to’ You will use this tool to visualize the evolutionary relationships of groups of organisms.

1. Select the tracer tool and type cane toad in the box. Next add ‘cane’ and ‘caneborer’. You will have three names in the box and three corresponding colors.
2. At the bottom of the box, you will see the Y shape with the term common ancestor. Click on this icon.

*Question 10. What is the common ancestor to these lineages? Eukaryotes*

*Question 11. Based on the colored branches, what two species are the most closely related? Cane toads and cane borers.*