A GUIDE TO USING DIGITAL ZOOLOGY

Digital Zoology Components

When *Digital Zoology* first launches, a dendrogram (tree) of the major animal and protozoan phyla appears on the screen (fig. 1). This is one of four different views of the phyla covered in *Digital Zoology*. They include dendrograms such as this, as well as cladograms based on either traditional morphological data or molecular data. To change between the different views, choose the appropriate button from the choices in the upper-right bar on your screen. Dendrograms show all the phyla in *Digital Zoology*, while the cladogram includes only the animal phyla.
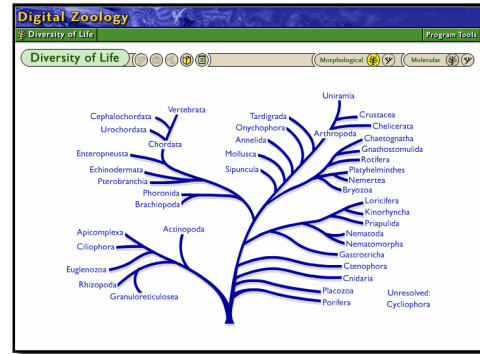

Figure 1: Main dendrogram (tree) for *Digital Zoology*.
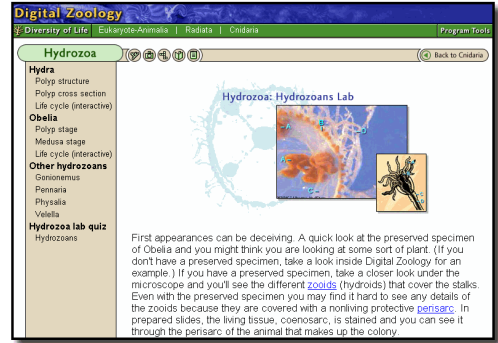
Taxon "Read Abouts"

Selecting any of the phyla names listed in the dendrograms or cladograms takes you to the "Read About" for that taxon (fig. 2). Each "Read About" includes information for that taxon with the number of living and extinct species, habitats where they are found, and how they function: locomotion, excretion, osmoregulation, feeding, digestion, respiration, circulatory, nervous, sensory, and reproductive systems are all covered. Highlighted terms are linked to an interactive glossary that includes a definition of the term and information on its derivation. More detailed information on the defining differences unique to the taxon is available by selecting "Defining Differences" from the menu on the left. The same menu includes links to other taxa within the phylum and a direct link to laboratory modules available.

Figure 2: Taxon "Read About".
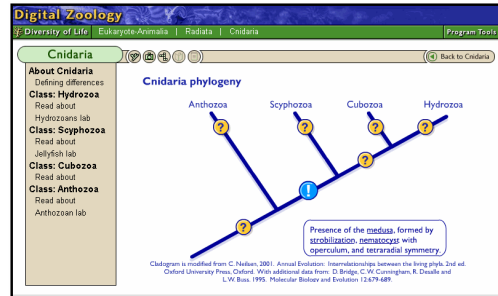
Laboratory modules

Each laboratory module (fig. 3) opens with an introduction to the lab, providing a brief introduction to what you'll see in the lab, along with some of the unique features available in *Digital Zoology*. Like the "Read Abouts," highlighted terms in the introduction are linked to the interactive glossary. Laboratory modules consist of different topics that may be further subdivided. For example, "Internal anatomy" may include: "General features," "Anterior region," and "Posterior region." You can move to any part of the lab by using the menu on the left-hand side of the screen. Once inside a lab, click on the screen numbers or arrows to move forward or backward one screen at a time.

Figure 3: Laboratory module. Navigate to the different parts of the lab using the menu on the left. Advance through the screens by clicking on the slide number or the left and right arrows.

Interactive cladograms

Cladograms for the phyla at the start of *Digital Zoology*, or classes included in a phylum (fig. 4), provide an opportunity to learn about key events in the evolutionary history of the group. Clicking on a question mark button opens a brief description of the changes that occurred at that point in the evolution of the group. Click on the buttons in order starting from the base of the cladogram and follow the events that defined the group at the end of each branch. Key words in each explanation are linked to the interactive glossary. Clicking on the taxa names at the ends of the cladogram branches will take you to the "Read About" for that group.

Figure 4: Interactive cladogram showing the changes that occurred during the evolutionary history of different groups within the taxon.

Image galleries

For selected phyla, *Digital Zoology* has image galleries (fig. 5) that include photographs and video clips displaying the diversity associated with the phylum. If an image gallery is available for the group you're currently working with, the image gallery button will go from gray to a solid color. Click on the smaller image at the top of the screen to select the image that you want to view. Those with a small film icon in the upper-right corners are video clips. Explanations point out important features about each image or video.
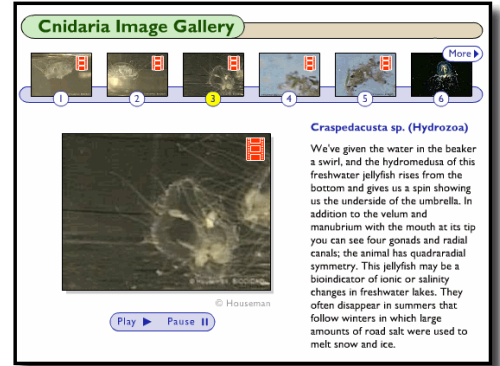

Figure 5: Image gallery.

Self-evaluation

Drag-and-drop quizzes: Laboratory modules have drag-and-drop quizzes that test your familiarity with material in that module (fig. 6). If a quiz is available, you'll see it listed in the navigation bar on the left. The legend for each of the pin heads is given in the list, and below it a set of pin heads with labels is provided. Click and hold the left mouse button down over the labeled pin head, and drag it into the circle that corresponds to the structure identified in the legend. To change your answer, drag the lettered pin head off the circle. To check out your identifications, use the "Submit" button to correct the quiz. Use the right arrow on the question navigation bar to move to the next question. Each time the quiz runs, the questions are slightly different--you might want to try it more than once!
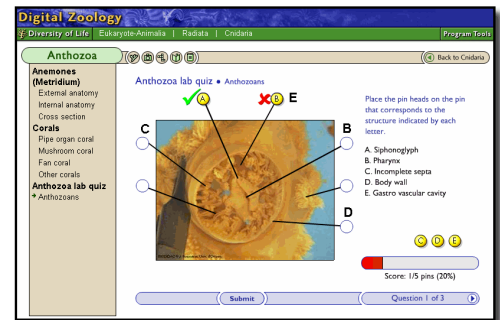

Figure 6: Drag-and-drop quiz module.

Interactive crossword puzzles: Each of the main phyla in *Digital Zoology* has an interactive crossword puzzle (fig. 7) that allows you to test your knowledge of key terms and concepts. The puzzles are built using fill-in-the-blank questions or questions that require only a one- or two- word answer, similar to what you might encounter on an exam. In this format, clues you already have completed may provide letters that help answer another question. Check your answers with the "Check" button that removes any incorrectly placed letters. If you're stuck, reveal a single letter by using the "Reveal letter" button; if you are really stuck, get the answer with the "Reveal" button.
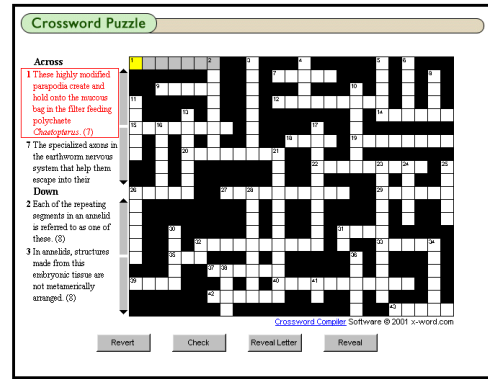
Additional study suggestions: There are other ways that you can use *Digital Zoology* as a study tool. To test how well you recognize different structures in the lab modules, with a piece of paper cover the legend that appears on the lower-right corner of the screen. Write a legend based on the labels in the picture and then compare your answers to the original. You can also use *Digital Zoology* to test your familiarity with key zoological terms. When you read through any of the explanations and see a term highlighted in blue, write a short definition. Then click on the word and compare your definition to the one that appears on the screen.

Figure 7: Interactive crossword puzzle.

Navigation

Digital Zoology runs using an Internet web browser but the usual back and forward buttons of the browser aren't used in navigating through the program. Instead, a series of buttons and menus are used to move between the different parts of the program. A short reminder of what each button does is available by holding the mouse pointer over each button. You can also use Help, available in the Program Tools, to take a short tour that explains how *Digital Zoology* works.

Buttons

Cladogram button: Click on this button to display the cladogram for the taxon that has been selected. If a phylum's cladogram button is clicked, the cladogram for the classes in that phylum appears. On the main tree, this button switches from the dendrogram view of all the phyla in *Digital Zoology* to the cladogram view of the animal phyla.

Dendrogram button: Clicking on this button on the main tree switches from the cladogram view of the animal phyla in *Digital Zoology* to the dendrogram view of all the phyla.

Crossword button: Click on this button when it is in color to open an interactive crossword puzzle that uses clues based on the current phylum. When a crossword isn't available, the button appears gray.

Image gallery button: Click on this button to open an image gallery that includes additional photos and videos that display the diversity found in the current phylum. When an image gallery isn't available, the button appears gray.

Bookmark button: Click on this button to bookmark any of the pages in *Digital Zoology* and use your personal list of bookmarks to jump to any part of the program. This feature is available only online at www.digitalzoology.com.

Notes button: Click on this button to take notes. Enter any reminders or additional information that you may have and then access your set of notes along with where in *Digital Zoology* the notes were taken. This feature is available only online at www.digitalzoology.com.

Question button: Click this button on a cladogram for an explanation of the changes that occured at this point in the evolutionary history of the taxon.

Explanation button: You can't click on this button on a cladogram, but it will tell you the point on the cladogram that corresponds to the explanation that appears on the screen.

Menus

A green taxon bar runs across the top of the screen underneath the blue title of *Digital Zoology*. It starts on the far left with Diversity of Life, and as you move through the different phyla the taxon bar expands to identify the kingdom and infrakingdom for the phylum you are looking at. Select any of the taxonomic names in the taxon bar to navigate to that group of organisms. A second menu appears on the left side of the screen. Its content varies depending where you are in the program, and if you click on any of the items listed there you'll move to that part of the *Digital Zoology*.

Program tools

The Program Tools menu is located at the far right of the green taxon bar. Program Tools include another link to the **Bookmark** and **Notes** tools available in the online version of *Digital Zoology*. **Glossary** in the menu opens the full glossary, allowing you to browse and search for specific terms. By selecting **Bibliography** you can access a list of key resources used to create *Digital Zoology*; **Credits** lists the people who put *Digital Zoology* together, and provides copyright information for borrowed materials. **Help** gives you a guided tour of *Digital Zoology* and how it works.