The Zoology Journal Project

Your journal should reflect your journey within the field of zoology throughout the semester. As we cover each specific topic (or more commonly group of animals (taxa)) you are expected to produce a section in your journal that reflects your learning experience. The learning experience is of course unique for each individual in the class. Generally speaking the labs, the lectures and your readings make up the bulk of the material you are putting forward in your journal. It is very important that you never procrastinate with the journal project.

The Goals: First of all you will build an excellent learning tool for zoology. The bulk of the learning occurs as you are making your journal but it will also serve as a tool for reviewing material for the exams. During the semester you will enhance your writing skills, your ability to summarize topics, your ability to observe as well as your ability to ask questions about what you are learning. The journal is a creative project that pulls from many different aspects of your abilities as a student. At the end of the semester my wish is that you have sharpened your tools for further journeys into the realm of biology and the other sciences.

What do You Need? I require a large format bound journal (8.5x11) with blank pages (about 380 pages) since it allows you to have a higher degree of creative flexibility. They are often referred to as sketchbooks. Borders tend to have nice ones on sale ($7 or less). You should plan to fill up the whole journal by the end of the semester (front and back of each page). Get your journal as soon as possible. Pencils, pens and color pencils (6-8 different colors are sufficient) are a must.

Examples? I have several journals on display from previous semesters that you can take a look at. They will give you an idea about the format of the entries you need to do. It will also give you an appreciation for the “volume” of work required (since it is easy to go “overboard”).

What do You Write About? An example: E.g. let us imagine that we just finished the phylum Cnidaria (jellyfish and relatives). Your journal should reflect the lectures, the lab on Cnidaria and your readings in the text. Your entries in the journal should encapsulate your understanding of this group of animals with an emphasis on the laboratory component. What are some good aspects to write about?

? You should definitely try to give a **general description** of the **body plan** (bauplan) of the animal (including a well labeled drawing), as well as its **main characteristics** (be sure to point out unique features).

? Try to **summarize** the information from the **lecture** as well as the **text**. What were the important aspects from lecture? The text? Keep in mind that your journal is **not a notebook for your lecture notes**.

? The journal should also **strongly emphasize your experience in lab**. It is appropriate to include several labeled drawings of specimens from lab (slides, whole organisms and dissected specimens). You will not have the time to include all the material from a lab so be **selective** in terms of what you put in your journal. Some species are emphasized in each lab. Most specimens demonstrate major aspects of the group of animals you are studying. In the case of Cnidaria lab it is worthwhile to include sketches and written information related to the structure of
the living Hydra and their feeding behavior; microslides of Hydra to show the structure of the polyp; microslides of Obelia to show an understanding of the differences between solitary and colonial polyps; a drawing of the life cycle of Obelia; a drawing of a medusa and its structures as well as some observations on the diversity of this group as demonstrated by specimens on display. These choices would encapsulate what you study in the lab that day. What were the objectives of today’s lab? What did you learn?

Labs often include films that demonstrate and show you important aspects of the living animals and their behavior. It is worthwhile to include information from these films in your journals.

Other aspects to include in your journal:

- Your journal should continuously include observations, questions and reflections. The ability to produce these three aspects is an important skill in a budding biologist. I would like you to try to notice and question the material you are studying. In particular, I am really focusing on your ability to reflect on what you are seeing. What is this structure? What does it do? How is it related to the function of the whole animal? Have I seen similar structures in other animal groups I have studied? What is the evolutionary importance of this structure? Can I make connections with other aspects of lecture, text and lab with this observation?

- Reflections are of course needed in lab, but are equally important in all aspects of the journal. You are also allowed to include material from outside of class. E.g. observations of animals (e.g. in your backyard or on your way to class), films you see on PBS or the Discovery Channel, from articles you read in magazines or newspapers (including ones sent out by the instructor), conversations you have with other students or ideas and opinions about zoology.

- Your reflections are a very important aspect of your journal.

- Assignments and Projects: You can write about (reflect on) all the different assignments and projects you are doing this semester. The insect collection can be a wonderful source of inspiration for your journal entries.

To Summarize: Each section of your journal should reflect your learning experience in the covered topic (e.g. the phylum Cnidaria). Emphasize the lab, but include lecture, the text, field trips, assignments, projects, outside observations, films as well as any interesting ideas or thinking about the subject at hand.

When should you write in the journal? The lab sections should be prime time for journal writing. Some students prefer not to write in the journal until they get home but I do not recommend that approach. Write directly in the journal as you make your observations. Draw your sketches when the specimen is in front of you. In addition to the laboratory time it is necessary to spend about 20 minutes per day writing on different topics or adding to the theme (e.g. Cnidarians) you are currently studying. DO NOT COPY INFORMATION FROM OTHER SOURCES. Such copying is plagiarism and is likely to give you an F in the course. If you read something that interest in an article or book you can summarize the information in your own words. You are allowed to copy diagrams or figures from other sources if they aid your understanding of the topic.
Remember: do not copy written material. Make sure to read the section on plagiarism in your class syllabus as well as the link on the class web site related to plagiarism.

How many pages should you devote to each topic? Minimums of 12 pages per topic (~24 pages week) but you are encouraged to go beyond that if time permits. You will be using both the front and the back of each page so the 12 pages above actually reflect 6 sheets in the journal. Insert a blank sheet of paper underneath the page you are writing on to avoid smears on the opposite pages.

Can you type your journal? No! All the material in your journal should be written, colored or drawn directly into you journal. I do not want to see any pictures or glued sheets of paper in your journal. Anything that is entered in your journal should be written or drawn directly on the bound pages of the journal with the help of a pen, pencil or a brush.

Drawings: Students vary enormously in their ability to draw. I do not expect you to be a Rembrandt in this matter but you definitely need to demonstrate an effort to capture these animals on your journal pages. You will find that as time goes by you will get more skilled and efficient in terms of making these sketches. Sketches should typically take up about ½ to 2/3 of the page you are using (no miniatures please). Sketches should be well labeled, include a reference to the total magnification [if a slide], and integrated with other necessary information on your journal page. Some advice:

- Do not make small drawings
- Do not draw circles to accommodate drawings of slides from the microscope
- Use the recommended magnification for microscopes when you draw specimens.
- Minimize the copying of drawings or photos from the text. Use the REAL thing as a source for your sketch. The drawings in your book will aid you in labeling your sketch.
- Do not spend too much time on each drawing. Typically about ten minutes should be sufficient.
- Use the space available.
- Integrate drawings and writing on the same page. Such a layout makes your journal more dynamic and alive.
- Use colors to emphasize different structures or aspects.
Evaluations: I will collect and evaluate your journal three times during the semester. The first time you are given a maximum of 60 points, the second time 120 points, and finally an additional 120 points. The journal is worth a total of 300 points. I have included a score sheet below that shows you the main components I examine as I evaluate your journal. You should check this sheet for each lab in your journal as you prepare to turn it in. Make sure that you have covered all these different aspects for your journal entries. Go over this list and your journal before turning it in for evaluation.

Missing Labs (automatic reduction in proportion to the number of topics)?

Skills as presented in your journal (graded A, B, C, D or F):
- Observing
- Drawing (with labeling)
- Including factual information
- Reflecting on the material

Feedback (the checked items below are things that you should work on to improve your journal):
- Add more factual material from lectures/text and lab to enrich the topic
- Allocate more space to each lab (at least 12 pages per topic [6 sheets front and back])
- Some of the labs are incomplete
- You need to spend considerable more time on this project to earn a higher grade
- Spend more time working on this project (20 minutes per day outside of class hours)
- Write more about what you actually see and learn in class (labs and lectures)
- Write more about experiences outside of class (films, animal encounters, hunting for insects etc.)
- Spend more time reflecting on the material (synthesizing, analyzing, pondering)
- The journal is lacking in content. Work towards making each section representative of the lab topic (typically a phylum or class/ies within a phylum).
- Make sure to cover all the fundamental characteristics of the taxon you are writing about (how are they represented by the specimens you are examining/dissecting?)
- Include basic physiological aspects of the taxon (esp. from this point on): e.g. food intake, gas exchange, waste, movement, senses, and reproduction (life cycle).
- Compare: compare the group of animals you are studying with ones that you studied earlier in the semester (especially the one just before). Changes? Similarities? Evolutionary differences? How did the body plan change?
- Summarize: what were the major objectives of the lab? What did you learn from the lab?

Drawings:
- Make your figures/sketches larger (~1/2 page or more per drawing)
- You need to label your figures better
- Use color pencils (four of them will do the trick)
- Try to mix drawings and writing (on the same page) to a greater extent