How do you inspire enthusiasm for biology on the first day of class? Here, the challenge is motivation. Teaching is effective only if students are ready to learn. They must be primed to see the subject as interesting or meaningful. Otherwise, nothing gets internalized. Schooling risks becoming a short-term memory game.

So, here is a simple activity to start the year. One that you can also revisit throughout the year. Lead a contest to find “The World’s Most Extraordinary Organism.”

“This class is about living things. So we are going to find some examples to consider. But not ordinary organisms, like dogs or cats or goldfish or cows or horses or frogs. We already know about them. Let’s find some amazing organisms. Something truly exciting. Something worth studying! We are going to have a class contest to find the world’s most extraordinary organism. Everybody enters. For your first homework project, I want you to find an organism that you think is exotic or incredible or unbelievable or just plain unusual. We’ll vote in class which is best.

“You’ve all been to a zoo, I’m guessing. So you know about giraffes and rhinoceroses and zebras. You can imagine how Europeans were inspired with wonder when they saw these animals for the very first time, just as you did when you were young. I want you to explore further. You can use the internet, your experience watching TV, your textbook (yes!), or browse the nature section at the local library. (I’ve also put a few books on reserve in the school library.)

“Here’s your checklist for what to submit: an image (1-page size), the common name of the organism, the scientific name, a short description of what you think makes the organism so special, and details about where you found your information—the author, date, URL or book.”

Here, you need to decide what fits your students. What skills do you want to promote? Will this be written or oral? Length? (100-word minimum, or more? 1 minute, or more?) Do you want to delve into this immediately as an overnight project, or do you want to allow a few days, so you can offer suggestions to students who get stuck or feel lost? (“Ever heard of acorn worms or leafy sea dragons?” “How about thermoacidophiles?” “Check out water bears!” “Do you know about lichens, or Welwitschia?”) Also, do you want to inspire and challenge students with an automatic ‘A’ for anyone who can identify an organism they’ve never encountered? Do you want to defray the competitive spirit by eventually declaring everyone a winner?

Leading in-class presentations, discussion and voting should be simple enough. However, by joining in the sense of wonder and amplifying student comments, you help promote the main objective: nurturing a sense of wonder and curiosity. Indeed, you can comment on the role of such emotions in inspiring scientific study. This helps portray science as a human endeavor and as an investigatory process, not just a dry list of facts.

The next step is to transform the wonder into questions. Channel all the “ooh-ah!” energy into studying biology. You can invite students to pose questions they would ask about any of the organisms. They may involve the origin of strange forms: evolution, genetics and development! They may involve bizarre behaviors: ethology or the nervous system! They may involve body functions: physiology! You will certainly be ready to point out where in the course each topic fits. You might be able to map out the whole field of biology. Your class will eventually address all these very questions! (Imagine students looking forward to class months in advance!)

Alternatively, or in addition, you can introduce your own set of “problems” to lead into your next set of lessons. The most notable questions, often introduced in the first week, concern unity and diversity. As wildly different as all the creatures are, what do they share that makes them all “living”? (Insert familiar lesson about features of living things here.) Or: how do we organize and make sense of all these divergent forms? How do we interpret their likely origin and relatedness to other forms? (Segue to standard evolution lessons.) How do we explain the strange features in context, as adaptations? (Proceed to ecology and natural selection.)

The lesson can linger. Post the images (and descriptions) on a bulletin board or around the classroom. Personalize the classroom environment for this year’s students, with a sense of “ownership” that promotes participation. (But be sure to rearrange the images as part of the taxonomy unit!)

Of course, one may return to the extraordinary organisms at various points in the school year, thereby fostering a sense of the course as a whole, even on the last day. Students might even do more research on their organisms in later units. This can help personalize learning. And the detailed information can invigorate the class beyond the text. Be creative. Perhaps guide students in shifting from the organism to a scientist that studies them. Learn about doing science, or biology as a career. Once students are motivated, and engaged in their own learning, almost anything is possible.