



THE FACULTY CORNER

FROM THE ANACAPA SCHOOL SCIENCE DEPARTMENT . . .

Grand Canyon

As a science teacher, I have to admit that the beginning-of-the-year trip was a dream come true; the Grand Canyon provided so many opportunities to get students excited about both the physical and life sciences. Before we went to the canyon, all of my science students learned about a variety of geological concepts that helped to prepare them for their amazing trip. Here are a few of the concepts we covered: the rock cycle, the effects of water flow on erosion, and general topography. Suzie Sichi also did a great job explaining many of the canyon's layers during Breakfast Club. Once we got to the Grand Canyon, the students were already very knowledgeable about how the canyon was formed and how it continues to evolve. Aside from being amazed by the canyon's immense beauty, many students were also excitedly running around (but not too closely to the edge) and showing me fossils and other interesting things they had found in the upper sedimentary layers. We brought along a nice telescope that was generously donated to Anacapa last year, and some of the students and I checked out some amazing celestial bodies in the clear night skies. From all angles it was a great trip, and as a science teacher I must admit that it was a huge success! Just ask your daughter or son; I'm sure they learned a lot.

Lower School Physical Science

This is going to be an exciting year for all of the Lower Schoolers in physical science! After studying some geology preceding our epic trip to the Grand Canyon, we are now going to move on to what happens in the microscopic world, with a thorough study of the composition of matter. Later in the Fall, we will be moving on to some Newtonian physics, followed by an analysis of our own earth's place in the solar system and the rest of the universe. During the second semester, we will focus a little more on the chemical side of things, as students will be studying different types of reactions, the periodic table, the chemistry of living systems, and density and buoyancy.

September 22rd was the first day of Fall, and my science students have learned (or reinforced their prior knowledge) about the importance of this day. We examined how the earth's axis is tilted 23.5 degrees, and this leads to the changing of the seasons as our planet revolves around the sun. There was an equal amount of light and darkness on that day, hence the name Autumn Equinox. I find it really important that students realize how important science is to their daily lives; if we did not have that 23.5 degree tilt in the earth's axis, there would be no change in the seasons! One last thing to mention about the physical science class is that we will likely be traveling to UCSB in the upcoming months to check out their Community Science Center, a part of the physics department that has really cool physics exhibits and demonstrations.

Upper School Biology

I majored in biology in college, so I am always particularly excited to teach the subject. As with all my science classes, we began the year by studying some geology to help prepare and engage the students for their Grand Canyon trip. Now it is time to get down to business (and fun!) as we study the living world around us. The general trend for the year will be a transition from small to large, meaning that we'll begin the year studying microscopic elements that make up life and end the year by studying our place in the entire earth's biosphere. Students will learn how to properly

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use microscopes in biological investigations. (I'm hoping, however, that we won't be investigating what type of pathogen led to an infection in my foot, as we did last year.) The order may change slightly as the year progresses, but here are some of the topics we'll be studying in the first semester: biochemistry, the components of life, the cell, the plasma membrane, mitosis, meiosis, Mendelian genetics, chromosomes and heredity, DNA structure and replication, and genetic transcription, translation, and regulation.

During the second semester, we will focus more on the tangible elements of biology, such as ecology, physiology, and evolution. There will be some exciting dissections near the end of the year, when we are focusing on the intricate body systems of vertebrates. Once again, the school camping trips always play a crucial role in each student's deeper understanding of biology and especially ecology, the way organisms interact in their environments. It will be a nice wrap-up for the bio class if we end the year with another "nature" trip. I also plan on speaking to some researchers at UCSB to see if we can check out some of their aquatic biology labs and the touch tanks with tons of local marine species. It's going to be a great year in biology, and I'm really glad it has begun!

Upper School Physics

Physics is fun to teach because so many of the topics are directly relevant to the lives of my students, especially the ones who are getting behind the wheel of an automobile. Now that we've finished studying geology and the Autumn Equinox, we will be moving on to motion and forces, and I'm thinking that this will be just in time to help many Anacapa students better understand how important it is to be a good driver. It's also fun to teach about the laws of motion and forces because I get to set up some good boxing matches amongst the students. Just kidding! But we will be doing some fun experiments that will potentially get the school a little messy (Don't tell Gordon). As the first semester moves forward, we will study the conservation of both energy and motion, as well as heat and thermodynamics. In the second semester, we'll look closely at a variety of different types of waves, including tsunamis and the sound waves that make many of our students such good guitarists, and we'll also focus on electric and magnetic phenomena.

Along with the Lower School science students, the students in my Upper School physics class will be traveling to the Community Science Center at the UCSB physics department. It will be a great opportunity for us to learn more about the world of science, and I'm especially excited to show Anacapa students how incredibly vast UCSB's science resources are. I am a graduate of UCSB, and I am always amazed to see how much funding the science departments at the school receive. In case you haven't been there recently, it's very impressive to see the new nanotechnology building and some of the other modern facilities. Since all the students studying physics this year are at the age where thinking about college is becoming increasingly important, and possibly omnipresent for some, I know that visiting UCSB will be a valuable experience for them. Even for the students who are less inclined toward science, witnessing the many dedicated individuals around the university campus will definitely leave a lasting impression. And, maybe most importantly, our students will get a clearer glimpse of how college life can be both highly fun and productive at the same time, just like Anacapa is!

~ Jason Mosier

P.S. If anybody has a cooler that says "Sandy" on it, it's been missing from me since the Sage Hill trip last June. Actually, it belongs to my former roommate; that probably explains my tardiness in retrieving it. If anyone happens to see the cooler, I would be very grateful to have it back. Thanks, and have a great Fall!