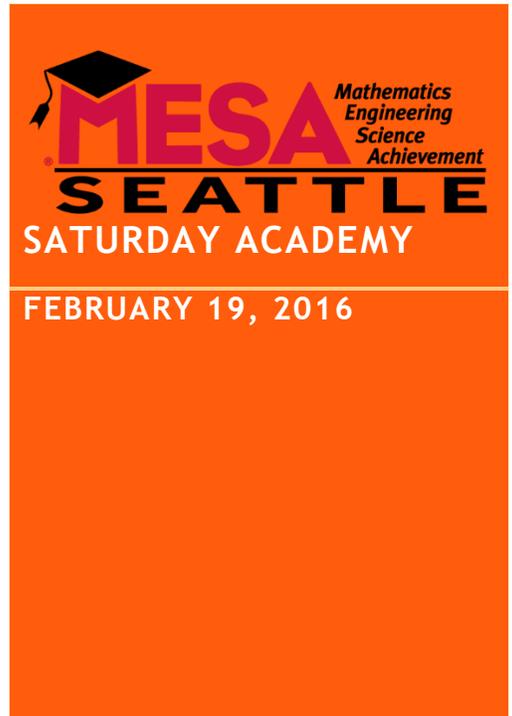




FOOD SCIENCE GROUP TOOK A SPECIAL TOUR OF THE WOODLAND PARK ZOO COMMISSARY



JANUARY SATURDAY ACADEMY

Saturday Academy: Adaptations

by Brian Tracey

Welcome to Seattle MESA's Saturday Academy Monthly Newsletter. In this exciting January issue, we will look at marine mammal adaptations, genetically modified organisms (GMO's), and review the highlights of our January session. As always, take a peek at our announcements page for important dates and special events.

So what makes us mammals anyway? There are a several physical characteristics that separates us from birds, fish, reptiles, and amphibians. To start, we internally regulate our body temperature to maintain a constant temperature, typically above our surroundings (hence the term, "warm-blooded"). We also have hair or fur that covers our bodies and secrete milk (females). But one of the most distinctive features of being a mammal is our ability to give birth to live young.

What's the deal with GMO's? GMO's are a highly controversial topic. Briefly, GMO's are living organisms whose genetic material has been artificially altered in a laboratory via genetic engineering. Viewed as a possible agricultural solution, the debate over the extent of their use and how safe they are is on-going.

In case you missed it: Both the intro marine biology and the advanced marine biology group focused on marine mammal adaptations, or physical responses unique to their geosocial lifestyles. Both groups explored a spectrum of adaptations that ranged from thick layers of blubber (fat) that insulate in extreme cold to fingernail-like teeth that filter the tiniest of food sources for some of the largest marine mammals. Both groups ran experiments involving adaptations to the cold: making blubber from scratch and testing different insulators, and observing heart rates when the body is submerged (for our deep sea diving mammals.)

The advanced group got a special presentation by representatives from the Seattle Aquarium: a veteran animal trainer, and the Youth Engagement Coordinator.

The food science group spent extensive amount of time engaging in a holistic discussions about GMO's as it relates to food security and food safety. They gained experience working with genes via a gene extraction experiment with strawberries and a visit from two UW bioengineers.



Advanced Marine Biology

Which substance insulates the body better: vegetable oil, blubber (made from scratch), cotton balls, or marshmallow fluff? Dr. Kristi explains the setup for their adaptations to cold experiment.



Intro Marine Biology

What could Kamal be staring at so intently? Simple! It's krill. These tiny creatures get swallowed by the tens of thousands by Baleen Whales to satisfy their hunger.

How to train your...sea dragon? A look at training marine mammals at the Seattle Aquarium



FOR MORE INFORMATION

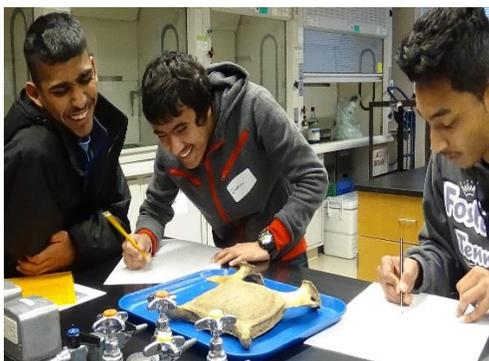
Interested in classroom programs or taking a youth group to the Seattle Aquarium? Please contact:

DAVE GLENN, YOUTH ENGAGEMENT COORDINATOR
206.693.6155

Animal trainer and biologist, Sara Perry, from the Seattle Aquarium demonstrates her process for teaching marine mammals at the aquarium. Then the advanced students try it on each other...and the laughter is non-stop.



Did you know...?
Even we, as surface dwellers, have adaptations for diving. It's called **bradycardia**, a response triggered by senses in the face that reduces the heart rate in order to preserve oxygen.



Bones?...Ha!

A section of whale vertebrae you say? Ha! Seen this before? Nope? Ha, not a problem! Here students from the Intro group practice their scientific sketching skills with a rarely seen piece of whale backbone.



How many scoops does it take?

Students from the Advanced group prepare each other to test various insulation medium by wrapping their hands in different types of insulator substances and sticking them in buckets of ice water. Oh the joy!

FAST FACTS

8

Number of different ethnic groups represented in the 2015-2016 Saturday Academy cohort

10

Number of different high schools represented in the 2015-2016 cohort

FOR MORE INFORMATION

Know a high school student interested in Saturday Academy 2016-2017? Please contact:

BRIAN TRACEY, PROGRAM COORDINATOR
Briant54@uw.edu

The STEM ties that bind: Spotlight on the friendships we can never forget

by Brian Tracey

The STEM Connection

The in-class activities, laboratory experiments, and field trips are meant to be more than just exposure to real-time STEM. Whether it's their first meeting, or they are long-time friends, the Saturday Academy curriculum encourages student interactions across all formal and informal boundaries.

Sometimes, complex science scenarios require intricate solutions. As students collaborate to solve these situations or complete laboratory tasks, differences such as high school affiliations, age, ethnicity or academic level are set aside. The result? A deeper understanding of the scientific process, increased ability to work with other of different backgrounds, and the strengthening of new or existing friendships. Out of all the experiences, the most important one is probably the fun factor. Unbeknownst to some, the students learn that science is and can be fun, especially when shared with a peer.

Learning new information with familiar and unfamiliar faces enhances the overall STEM experience, promoting a positive association with the disciplines. Exposure to new and challenging STEM topics is only a small part of our equation for success. Creating lifelong skillsets, with potential lifelong friendships is the other larger portion.



The Buddy train

Students from the Food Science group participate in a team building activity at the Woodland Park Zoo designed to show how some animal groups collaborate for survival needs.



Stone lizard, Warm hearts

After a full day of learning and adventures, students from the Food Science group stop for a team photo atop this ancient stone dragon...Komodo dragon that is.

Students engage in a myriad of in-class and out of class activities that encourage STEM learning and collaborative thinking. From laboratories to in-field settings, the opportunities are endless.

Important Dates and Announcements:

Remaining Saturday Academy sessions for 2016:

February 27th
 March 12th
 April 2nd and April 30th

Upcoming Field Trips

February 27th
 - Food Science trip to Continental Mills Food Research and Design Facility
 - Advance Marine Biology trip to Seattle Aquarium

March 12th
 - Intro to Marine Biology Ocean Inquiry Project (OIP), Puget Sound research boat trip
 - Advance Marine Biology local field trip studying sea birds

April 2nd
 - Advance Marine Biology Salish Sea research boat trip

Important Announcements

February 29th
Washington State Opportunity Scholarship
 Open to all High School students. For more details, visit:
<http://seattlemesa.org/resource/scholarships/>

March 4th
High School Senior Conference. 9am-1pm
 - A morning of workshops at UW Fisheries Science Building focusing on such topics as internships, help with scholarship essays, polishing resumes, etc. If there are any questions, comments, or concerns, please contact:
 Martha Flores-Peres mgfp@uw.edu

March 5th
2016 ALPFA Seattle Latino Student Summit. 9am-2pm
 -An opportunity for selected students to learn valuable professional development tools and to attend a career fair with recruiters from some of the Puget Sound's largest and most prestigious companies. For more information, please contact:
 Martha Flores-Perez mgfp@uw.edu
 Visit: <http://www.seattlealpfa.org/>

March 10th
Seattle MESA Scholarship 2016
 Open to all current MESA students. For more details, visit:
<http://seattlemesa.org/resource/scholarships/>

Useful Resources for Parents

Helping your students thrive at school
<http://www2.ed.gov/documents/family-community/parent-checklist.pdf>

April 30th
Saturday Academy Celebration
 End of 2015-2016 Saturday Academy celebration. Open to Saturday Academy students, parents, friends, guest presenters and any other friends and family of Seattle MESA.

