

Expanding Your Horizons – 2023 Workshops

Accessorizing with Bioluminescence:

Not all bacteria are bad, some serve in a symbiotic relationship to help their hosts survive. Because bacteria are invisible to the naked eye, it can be difficult to understand and visualize the dynamic relationships between bacteria and their hosts. In this activity, participants will learn about the symbiotic relationship between bioluminescent bacteria and the Hawaiian bobtail squid by building their own handheld microscopes and observing prepared slides of both squid and symbiotic bacteria. Through the use of interactive activities revolving around a cute sea critter, participants can experience how a scientific experiment is performed and see that the process can be simple, accessible and fun!

All About the Planets!

Would you like to learn all about the amazing planets in our Solar System? In this workshop, you will learn about the size scales and other interesting information about the planets by engaging in hands-on activities and watching a Planetarium show. A souvenir Solar System bookmark will be yours to keep!

All About Physics!

This workshop will include physics demonstrations and activities as well as robotics demonstrations.

Cheese Rind Microbes: A Taste of Science

Many people love to eat fermented foods, including kimchi, yogurt, and cheese. Have you ever wondered why these foods taste so good? Step into the shoes of a food scientist by joining our workshop to explore (and taste) how bacteria and fungi add flavor to your favorite cheeses! Participants will do cheese and fermented food tasting, and prepare agar plates.

Games in Math!

In this short session, I will introduce some connections between mathematical combinatorics and daily life activities. For example, computing the largest amount changes which cannot be obtained using only certain coins is called the Frobenius problem and finding specific formula for three coins is still an open problem. Another example is to solve a Rubik cube. This is a combination of group actions. Such combinatorial problems are surrounding our daily life from playing simple games to generative AIs, such as ChatGPT. I will introduce combinatorial problems using simple games such as solving Rubik cubes to problems for reinforcement learnings and machine learning.

Workshops continued on next page:

In a Heartbeat!

Lub Dub! Have you ever wondered how our hearts beat?

In this fun, interactive, hands-on workshop you will learn the structures and functions of the heart. Virtually dissect the heart using state-of-the-art virtual dissecting table Anatomage. See a real heart and feel it with your own hands. Play doctor and listen to your heartbeat using a stethoscope. Understand what those squiggly lines on the ECG tracing mean. See the effects of exercise on the heartbeat. All these and many more. Join us in this exciting heart skipping journey about the heart! See you soon!

The Intersection of Art and Programming

Hands on logic games and storytelling using procedural processes.

Intro to Web Development: Creating Your Own Digital Clock!

Students will be introduced to the basics of Web Development creating a fun Digital Clock website using HTML, CSS and JavaScript. Learning how to code using desktop computers.

Keep It A Secret!

fbehwhfxubw lv ixq! In this engaging and hands-on workshop, students will learn how to protect their digital world while unraveling the mysteries of cryptography. We will discuss the fundamentals of online safety and dive into the fascinating world of cryptography, where we will learn how codes and ciphers work. We will create our secret messages and try to break some, including the first sentence in this description. Participants will actively participate in encrypting and decrypting processes.

Knot What I Expected

People oftentimes learn about knots when they learn to tie their shoes, but did you know that knots are often studied by mathematicians as well? In this workshop, you will work with other mathematicians to try to generalize our understanding of knots. We will also learn how to determine differences in knots by making models and coloring pictures!

Meet MEarth... and Talk Trash with Us!

Let's talk trash at MEarth, a place that Connects ME to Earth! MEarth is excited to build on existing programs to help our community embrace composting and adhere to the new requirements of California's SB1383 legislation addressing climate pollutants and wasted food. In 2022, food scrap collection became part of the implementation of California's SB1383 legislation as a climate solution. MEarth programming supports sustainable food systems; the addition of SB1383 into our current programming is an important next step to reducing methane, a potent greenhouse gas, from landfills.

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Nature Journaling With a Science Illustrator

Do you love to draw plants and animals? Do you like to be outdoors? If so, come join this workshop where we find the intersection of art and science while nature journaling. Students will be guided by a science illustrator on how to create a nature journal and record observations about the plants and animals we see while exploring the natural world. Students will learn and develop skills in observation and scientific illustration. All materials are provided, but if you already have a journal or pens/pencils you'd like to use, please bring them!

Shake it off (I shake it off hoo-hoo-hoo)!

In this hands-on workshop, students will learn how to build structures that can withstand an earthquake. Shaker tables will be used to “**shake, shake, shake, shake, shake**” to test the integrity of their structures during a simulated earthquake. The students will have fun while learning about physics and structural engineering.

Space Adventures

Does your child love all things Space related, or just like the idea of what it takes to explore and survive in space? Then this is the workshop for them! Students participate in a variety of fun and engaging hands-on projects like designing and making clay shuttles, and designing a spacesuit. Learn about what it takes to get to space and survive there.

Squid – Inside & Out!

Smells like science! Dive into the world of invertebrate zoology by getting an up close look at one of the coolest ocean creatures - squid! Each pair of students will dissect a market squid and investigate how squid anatomy is well-adapted to an ocean environment.

Watershed Systems: Land Connections to Monterey Bay

We will be discussing our local watersheds, the human impact on animals and ecosystems then playing a trash game to understand how long our everyday trash lasts and ways we can make a difference in our world on land and Sea!

Rank your workshops in order of preference to prepare for registration

1st Choice: _____ 5th Choice _____

2nd Choice: _____ 6th Choice _____

3rd Choice: _____ 7th Choice _____

4th Choice: _____ 8th Choice: _____