

STEAM Creativity Inspired by Joshua Tree National Park

Information

Date/ Time: Friday, April 24, 6 pm – 9 pm
Saturday, April 25, 9 am – 5 pm
Sunday, April 26, 9 am – 1 pm

Meet at: [Black Rock Nature Center](#)
9800 Black Rock Canyon, Yucca Valley, CA 92284

Instructors: Mary Borobia Walls, founder of *Action Driven Inquiry*
Linda Braatz Brown, retired *San Bernardino County Superintendent of Schools Science & Environmental Education Coordinator*

Overview

The natural world has been perfecting materials, structures, and shapes for billions of years. Wherever there is life, there are organic structures that help with survival and efficiency. There is so much to learn from these engineering marvels. The structures and patterns in all that can be found at the Joshua Tree National Park is a boundless source for creative inspiration. This hands-on class will explore how, if you take the time to look, the natural world offers creative ideas that can spark human ingenuity. Participants will walk away with concrete ideas to take back to their K-12 classrooms. In addition, participants will develop and discuss connections to the Next Generation Science Standards, Common Core State Standards, and California's Environmental Principles & Concepts through a learning sequence plan.

Itinerary

Friday, April 24, 6 pm – 9 pm
Black Rock Nature Center

- Using Notebooks to capture Patterns in the Natural World
- Launching the learning through an action driven inquiry cycle
- Beginning a collaborative art piece inspired by natural patterns
- Engaging in natural phenomena at the Joshua Tree National Park
- Overview of assignment: interdisciplinary learning sequence plan, 50 points (due final session)

Saturday, April 25, 9 am – 5 pm

Black Rock Nature Center

- From Patterns to Biomimicry: Applying Ideas from Nature to Human Art & Technology
- Engaging in a variety of media to model scientific and mathematical understanding: poetry, sculpture, mapping, drawing, dance
- Lunch/snack break, **bring your own food**
- Field class in Joshua Tree National Park including exclusive session at Key's Ranch
- Getting to know a 5E learning sequence model
- Creating a feedback rubric
- Developing Interdisciplinary Learning Sequence Plan

Sunday, April 26, 9 am – 1 pm

Black Rock Visitor Center

- Applying Learning to Create STEAM Experiences for 21st Century Learners
- Completing Interdisciplinary Learning Sequence Plan, 50 points
- Presenting Learning Sequence Plan, 20 points
- Lunch/snack break, **bring your own food**
- Providing feedback and reflecting on learning and next steps
- Sharing resources and supporting each other
- Program concludes at 1pm

What to Bring to the Course

Required Class Materials

- Access to mobile application iNaturalist recommended
- Access to laptop recommended
- WiFi is available at the Black Rock Nature Center.

Optional Class Materials

- Art supplies you already have and would like to use while you attend

The 10 Essentials: Every day in the Desert

- Day pack
- 4 quarts of water
- Closed toe hiking shoes
- Lunch and snacks
- Clothing layers
- Hat
- Sun glasses
- Sunscreen
- Notebook and pencil/pen
- Whistle

Fitness Requirements

Participants must be in good physical condition for courses/activities in a desert that may be hot, dry, windy, and sometimes surprisingly cold.

Hike Level

Easy to Moderate

College Credit

If taking this course for 1.5 unit of credit through the University of California Riverside Extension. Your grade will be determined by:

- STEAM Notebook, 30 points (ongoing, completed notebook review final session)
- Interdisciplinary Learning Sequence Plan, 50 points (due final session)
- Presentation of Learning Sequence Plan, 20 points (due final session)

Guidelines

- You are responsible for your safety.
- Park your car in designated areas only. Parking along the side of the road is dangerous to you and the environment.
- Rattlesnakes are present in the desert. Avoid contact with wildlife. Put your hands and feet only where you can see them.
- Stay with the group. If you get lost, stay put.
- Before leaving the class, check out with the Desert Institute Representative.
- Drink plenty of water. If you run out, notify the instructor or the Desert Institute Representative.

Instructor Biography

Mary Borobia Walls is the Director & Founder of Action Driven Inquiry and volunteer Project Manager for the EEC (Environmental Education Collaborative). Recently, she was CREEC (California Regional Environmental Education Community) Coordinator for CA Region 10 as well as a Teacher Ambassador for EEI (Education & the Environment Initiative) curriculum.

Linda Braatz Brown Linda serves as a consultant and thought partner for Action Driven Inquiry. She has over 33 years of service in public education, retiring from the San Bernardino County Superintendent of Schools as the Science Coordinator serving over 32 school districts. Linda has been deeply involved in the implementation of the Next Generation Science Standards locally, regionally, and throughout the state. In addition to science, she has been active in both teaching and provide professional learning opportunities across content areas including mathematics, history/social science, Environmental Literacy and STEM. In addition to her teaching experience in K-12, she has taught Math and Science Methods (elementary and secondary) and STEM Master courses at both California State University, San Bernardino (CSUSB), University of California, Riverside (UCR), and UCR Extension. One of her passions

and areas of expertise is bringing grants to life to benefit students, parents, and communities. Successful grants include a NASA grant with the City of Ontario, CA, Math and Science Partnership Grants with Upland USD (mathematics & ALPHA Center, UCR) and Ontario-Montclair SD (science & ALPHA Center, UCR). Linda is a passionate advocate for inquiry-based teaching and learning and equal access for all students to engage in action oriented learning in both formal and informal learning environments. Join her on Twitter @braatz_brown

* The Desert Institute staff/instructors will attempt to accommodate participant's needs; however we reserve the right to deny a student participation in the course due to concerns regarding health and safety issues.