Teacher Professional Development

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CALIFORNIA ACADEMY OF SCIENCES

In-Person and Online Teacher Workshops and Coaching

All of our learning experiences for educators, both in-person and online, are highly interactive and immersive. Both in-person and online, we provide opportunities to engage in small- and whole-group discussions as well as individual exploration. Participants will try out activities as learners, and reflect with colleagues on how to apply ideas to their own teaching. Stipends (for online or in-person), meals, and travel reimbursements are all things we can provide, depending on the context. Learn more about Customized Science Support for Schools and Districts on the Academy's website.

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Workshops designed for outdoors

Notebooks Outside (Grades K-12)

How can we preserve the joy and wonder of outdoor learning, while also digging deep into science practices and making connections to classroom learning? Science notebooks can be a powerful tool for communication, data collection, concept development, and formative assessment. Combined with outdoor experiences, they can also deepen our understanding of, and connection to, the places around us. Join us to enjoy some time outdoors while gaining experience with science practices and notebooking strategies. Explore ways to make science notebooks a bridge between outdoor learning and classroom learning, while valuing the diverse environments around us.
3 hours, in-person (outside)

Let's Go Outside! (Grades preK-2+)

In this workshop we model strategies that support young children exploring, either around their home, their schoolyard, or another outdoor setting. We will demonstrate ways to lead this learning equitably, supporting all learners to be curious and explore. You will have the opportunity to talk with fellow educators and apply strategies to your own unique teaching context. This workshop is designed primarily for K-2 teachers, but we think that teachers of younger or older students will also find it valuable.
3 hours, in-person (outside) or online

Workshops designed for outdoors

Inquiry Outside (Grades K-8)

This workshop will focus on supporting students to follow their own curiosity and investigate their own questions in any setting. We will use the natural environment at or near your school to explore strategies for accessible, learner-driven inquiry. Experience these strategies by getting curious and planning and carrying out your own investigation. Then unpack the pedagogy behind those activities and consider how and what you can bring to your own students.
2 to 3 hours, in-person (outside)

What participants say about "Inquiry Outside"

> *"I feel like I have more tools for how to help students investigate their own questions and keep the spark of curiosity alive, which is my overall goal of being a science teacher."*
>
> *"It was the most engaging professional development experience I've ever had. All other PD I do after this will have to measure up to the high, high bar this experience set."*
>
> *"I thought I understood inquiry but I have a much clearer understanding now that I've discussed the levels of inquiry [in] science. Very helpful!"*

Thriving California (Grades 4-8)

By exploring the world around us, we can see connections among plants, animals, and their environments. Seeing these connections locally can support understanding of California's diverse ecosystems, and what we learn can help us to shape solutions that will ensure a thriving California for the future. In this workshop you will engage with strategies like observation, data collection, and systems thinking, that make complex concepts about ecosystems both accessible and relatable. You will be supported to figure out how the strategies we practice in this workshop might be translated for successful implementation in your unique teaching and learning context.
3 hours, in-person (outside)

What participants say about "Thriving California"

> *"I love that [the strategies were] something very ready to use. The methods of observation were simple enough to transfer to any classroom."*
>
> *"[I valued] being outside and exploring an ecosystem new to me."*

Low Floor, High Ceiling: Making Science Tasks More Spacious (Grades K-12)

Low Floor, High Ceiling experiences are those with BOTH easy access points for all learners (low floor), AND the potential for expansive thinking (high ceiling). They have been present in math learning for many years. In this workshop, we pose the question, "What do Low Floor, High Ceiling experiences look like in science, and how can they foster a positive science identity for all students?" Participate in example activities, discuss the benefits and characteristics of this approach with your peers, and consider how to bring these ideas into your own classroom.
2 hours, in-person (indoors) or online

What participants say about "Low Floor, High Ceiling"

> *"[I valued] seeing examples… and participating in the creation of student-centered, phenomenon-driven, learning sequences and tasks."*
>
> *"[The Low Floor, High Ceiling workshop] promotes real thinking without compromising rigor and allow[s] for self-differentiation."*
>
> *"[This workshop is about] designing a rigorous activity with a multitude of paths, whose outcome is driven by student background, choice, and a little bit of chance."*
>
> *"[Low Floor, High Ceiling Tasks are about] shifting from the industrial style education to more creative, equitable and accessible 21st century learning"*

Talk, Write, Draw: Tools for Meaning Making in Science (Grades 4-12)

In this workshop, you will build your repertoire of strategies to support students in constructing explanations, communicating ideas, and tracking their own learning. Session participants will act as learners and explore what it's like to use these strategies in their own meaning-making. We will then debrief the experience, highlight the strategies we used, and provide resources that empower participants to implement them in their classrooms.
2 hours, in-person (indoors) or online

What participants say about "Talk, Write, Draw"

> *"I value[d] the strategies to expand a "simple" experiment into a multi-level experience where the students see, experience, discover, and learn about the concepts themselves. Thank you!"*
>
> *"I love how you made it ENGAGING but also with purpose!"*
>
> *"Very well organized workshop with good flow of content and interaction [with] opportunity to connect with other educators."*

The ABCs of Hands-on, Minds-on Learning (Grades K-12)

In this immersive workshop, you will explore the power of ABC: Activity Before Content, and CBV: Content Before Vocabulary, a research-based teaching strategy that supports NGSS learning. You'll have the opportunity to evaluate current curriculum and make adjustments to improve learning outcomes for students. This workshop will be interactive, with both whole group and small group activities.

3 hours, in-person (indoors and/or outdoors) or online

What participants say about "ABCs"

"[This workshop] allows for more inquiry based learning and [is] a great way to differentiate science!"

"[This strategy] lets learners explore and get messy FIRST, so they tap into what they ALL already have--innate curiosity, ability to make observations and solve problems--to develop their own experiences and questions."

"[This strategy] is a more powerful, brain-based way of teaching because it allows the teacher to activate the prior learning and kinesthetic learning modalities first, then develop the concepts, and finally… develop "hooks" [for] vocabulary.

Exploring Your Environment with Math & Science (Grades 3-8)

What do scientists and mathematicians have in common, and how do they work together? Experience a model activity that brings math and science practices together and supports students to succeed at both. The activity will also get students outside and exploring the biodiversity of their school grounds or local environment. Workshop participants will reflect on their learning experience and discuss ways to apply the pedagogical strategies in their own context.

3 hours or more, in-person (outdoors and indoors) or online

What participants say about "Exploring Your Environment with Math & Science"

"Hands on examples of how to integrate science and math. I appreciated the science story to make it 'real!' I also appreciated my own shift in thinking about integrating not necessarily by topic, but by practices."

"I valued the accessibility of the tasks. I also valued having an opportunity to speak with other educators about our findings and how we could utilize the information in our classrooms."

Emergence: Exploring Art and Science Through Nature (Grades preK-12)

Can art help us to learn about the science of the natural world? Can science support the creation of powerful art? Art and science can be viewed as different ways of seeing, questioning, and communicating about the same world. These ways of knowing can work together to build our understanding of, and connection to, the natural world – as well as our ability to take care of it and work towards its regeneration. In this workshop, you will have the opportunity to tap into your own creativity and experience firsthand the connections between art and science. We will make art, and will investigate the overlaps between elements and principles of art and the NGSS Practices and Crosscutting Concepts.
3 hours or more, in-person (outdoors and indoors)

What participants say about "Emergence"

> *"I valued the outdoor prompts and activities as well as the art stories activity. I can envision students taking the time to generate and share their own opinions about skills and processes that are relevant to them."*
>
> *"I loved the opportunities to venture outside and explore nature. The leaf storyboards left a great opening for creativity!"*

Let's Talk About It! (Grades 3-12)

In this workshop, we will focus on creating a classroom climate conducive to science talk, and we will model a series of discussion strategies that can help all students engage in science conversations. These strategies promote equity of participation and offer scaffolding for all students, including English Language Learners. After experiencing a science unit with numerous talk strategies, you will have a chance to reflect on the experience and apply the conversation strategies to your own teaching context.
5 hours including a lunch break, in-person (indoors)

What participants say about "Let's Talk About It!"

> *"I loved the activities–the strategies were useable from the moment I walk out of the room"*
>
> *"Engaging experience that made me want to discover…you set up for me what I hope to set up for my kids"*

Making the Most of Science Notebooks (Grades K-8)

Keeping a notebook can support your students to think and act like scientists, as well as building a personal connection to your work and learning. Science notebooks can be a powerful tool for organization, communication, data collection, concept development, and formative assessment. In this workshop we will practice some strategies for making the most of science notebooks, and introduce some of the many different ways that they can be used.
6 hours including a lunch break, in-person (indoors) or 3 hours online

What participants say about "Science Notebooks"

> *"I love being a learner and being engaged in science on that level. [There was a] good balance of learner and teacher hats [and] I love walking away with a sample."*
>
> *"I appreciated [the workshop for] engaging activities, conversations with other teachers, movement, and time to practice as learners."*
>
> *"Thank you for the wonderful ideas. I have several ideas that I'll use on Monday 🙂"*

Exploring Phenomena (grades K-12)

"How did the Grand Canyon form?" "What happens to an apple core when I throw it in the compost?" These questions about real-world phenomena are examples of how science can be used for figuring things out. In this workshop you will participate as a learner in a phenomenon-based lesson sequence, then unpack your experience with fellow educators. You will build understanding and gain strategies to help you choose phenomena and craft essential questions that can guide your students to figure things out about the real world.
6 hours including a lunch break, in-person (indoors)

What participants say about "Exploring Phenomena"

> *"It was a fun and inspiring workshop! I feel ready to adjust my science lessons/scope and sequence. Very fun and well-organized."*
>
> *"I valued the hands-on exploration - putting myself in "learner" mode."*
>
> *"I valued the afternoon session with "quick hits" of examples of phenomenon-based lessons."*
>
> *"I valued all of the opportunities to collaborate."*

Multi-day learning experiences

Inquiry (Grades K - 12)*

What exactly is scientific inquiry? Does the linear “Scientific Method” we see in textbooks accurately represent how science is done in the real world? How might my students benefit from different kinds of inquiry experiences in the classroom? In this workshop, you will engage in your own inquiry project as an adult learner, coming up with your own testable question about one of our aquarium animals, and planning an observational study to collect and analyze data. The tools and theory that you will explore during your adult-level inquiry project will enhance your understanding of how to support authentic inquiry at any grade level. You will have the chance to apply these tools by designing or revising an inquiry-based lesson for your students.
2 to 3 full days, in-person (indoors)
**Existing version designed to take place at the Academy. Can be customized for any location.*

Inquiry Anywhere (Grades 3 - 8)

This online workshop will explore strategies for accessible, learner-driven inquiry, and will bring participants together with peers to share and gather ideas. We will focus on supporting students to follow their own curiosity and investigate their own questions in any setting. Try out some investigations as a learner, unpack the pedagogy behind the activities, and reflect on how these approaches support the Next Generation Science Standards (NGSS). There will also be opportunities to collaborate with peers and consider how to apply these ideas back in the virtual or in-person classroom.
3 half-days online, plus asynchronous work

Engineering: Beyond Building Bridges (Grades 3-12)

Many of us grew up thinking that engineering was just about building bridges or designing gadgets. While some engineers do those things, there is actually a lot more to it! Engineering is an iterative, collaborative process involving critical thinking, problem solving, and communication. In this workshop, you will discover what engineering really looks like and how it can apply to diverse content areas. Go beyond stereotypical engineering activities and integrate this way of thinking across your science curriculum.
2 to 3 days, in-person (indoors) or online

Instructional Coaching

Individual Coaching Sessions

Ideally in combination with classroom observations of some kind, individual coaching involves meeting multiple times with an Academy coach to support an educator's reflective practice and work towards identified goals for their science classroom.

Group Coaching Sessions

Structured group coaching sessions for up to six participants with one Academy facilitator. Sessions can be in-person at a school site if local, or on zoom. Protocol or structure and focus will depend on the goals of the group.

Additional time may be added to this cost to allow for the Academy facilitator to build community with the individual(s) or group and determine goals and focus, especially if the coaching sessions are not part of a larger partnership or other work at the Academy (e.g. follow-up to a workshop).

Example Pricing

This is a non-exhaustive list that provides some idea of the range in price of various types of professional development experiences we provide. **Actual costs will depend on things like the amount of customization, number of participants, location, etc.** You can learn more on our website, and reach out via our interest form to talk specific interests of your school, district, or organization

Type of workshop or support	**Minimum cost**
3-hour virtual workshop on zoom	$2,125
3-day virtual workshop on zoom	$6,375
Full day in-person workshop at the Academy	$4,450
3-day in-person workshop at the Academy	$13,350
4 group coaching sessions	$1,275