EDUCATE TO INNOVATE
ARIZONA SCIENCE CENTER

EDUCATE TO INNOVATE
PROGRAM OF SESSIONS

SESSION 1 (9:10 – 10:10 A.M.)

Cities of the Future (Film)
Arizona Science Center | Irene P. Flinn Giant Screen Theater

Cities of the Future invites you to step into the future and discover the exciting innovations engineers are working on right now to help meet the challenges of a changing world. Renewable energy will be our primary power source, solar energy beamed down from space will power entire cities, smart buildings and greener infrastructure will keep us cool, and we will travel on aerial highways in individualized pods that run on little or no energy. We will also ride in electric flying vehicles! Traffic jams will be a thing of the past. This isn't science fiction. This is the world engineers are designing right now. Travel to some of the world's greatest cities—from Amsterdam to Los Angeles to Singapore and more—where profound change is already happening and meet the engineers and visionaries whose human ingenuity is forging a brighter, more sustainable future for us all.

Curiosity and Collaboration: The Water Cycle for the Littlest Learners (PreK-3)
Arizona Science Center | Celebration Lab

Flood Control District of Maricopa County | Donell Taylor, Outreach Coordination Liaison| Angela Clipper, Outreach Coordination Liaison

Dive into the wonders of the water cycle with an action-packed, project-based learning adventure! These hands-on activities transform young learners into water cycle explorers as they dance through evaporation, create water cycle bracelets, and observe real-time evaporation with interactive water cycle baggies. With every step, students will uncover the mysteries of evaporation, condensation, precipitation, and collection, sparking curiosity and teamwork. This dynamic approach empowers critical thinking and deepens their appreciation for water's essential role in sustaining life. Get ready to make a splash in science learning!

Engineering Design Process (PreK-3)
CREATE at Arizona Science Center® | CREATE Zones

Dysart Unified School District - iExplore Team | Kathryn Voss, iExplore District Team Lead

Teachers will learn about how to implement the Engineering Design Process in their own primary grade classroom through fairytales and other stories. They will walk away with a complete unit for one fairytale and a framework on how to turn a story into a design challenge.

How to Build STEM minded students through the Math Practices (3-9)
CREATE at Arizona Science Center® | CREATE Classroom

Arizona Department of Education | Marisa Tualla - K12 Math Specialist

This session will explore strategies to foster students' critical thinking, problem-solving, and perseverance in STEM fields. Participants will learn practical techniques to cultivate a growth mindset, encourage collaboration, and develop effective communication skills. The session will delve into specific mathematical habits of mind, such as modeling, using tools strategically, and attending to precision. By implementing these strategies, educators can empower students to become confident and successful STEM learners.

Integrating Arizona Technology Standards In The Classroom (4-12)
CREATE at Arizona Science Center® | Artistry Hub

Arizona Science Center | Jazz Cano, Senior Scientist - Computer Science and Technology

What are the ISTE standards, and why do they matter? As the world evolves, so must the classrooms. Get hands on with the International Society for Technology in Education (ISTE) standards adopted by Arizona and explore how to easily adopt them in your classroom.

SESSION 1 (9:10 – 10:10 A.M.)

Integrating Authentic Research in the Classroom (4-12)

Arizona Science Center | Boardroom

Arizona Science Center | Beth Nickel, Chief Academic Officer

This session will provide background and strategies for integrating authentic research into your classroom. Additionally, participants will gain a better understanding of the academic and social benefits of allowing students the space to dig deeply into something they are passionate about.

Semiconductors 101: How to incorporate semiconductor knowledge into your classroom (K-8)

Arizona Science Center | Basement Classroom

SEMI Foundation| Bia Hamed, Program Manager, Global Education Initiatives | Perla DeBaggis, Sr. Specialist, Career & Industry Awareness Navigator

With the semiconductor industry taking center stage in the United States, it is important for students to grasp what this technology is about. In this session you will learn how to introduce students to the fundamental concepts in a fun way! You will learn how to present hands-on projects and experiments related to the industry. We will provide interactive experiments using inexpensive items that will teach students about concepts in the semiconductor space. We will also provide free online resources for even more programming in this space.

Unlocking the Power of STEM: Hands-On with the Arizona Educational Foundation's ASAP Lesson Database (K-12)

CREATE at Arizona Science Center® | Public Hall

Arizona Educational Foundation | Jonathan Perrone, teachSTEM Coordinator | Mark Paulsen - Director of Education

Discover the extensive resources of the Arizona Educational Foundation's ASAP STEM lesson plan database, featuring over 2,000 standards-aligned, K-12 STEM lessons. In this interactive session, we will delve into sample lesson plans, highlighting practical ways to integrate STEM into any classroom. You'll participate in an engaging hands-on lesson from the database using Makey Makey technology, experience innovative STEM approaches, and have dedicated time to explore the database for lessons to implement right away. Walk away with fresh ideas and ready-to-use resources to inspire your students.

SESSION 2 (10:20 – 11:20 A.M.)

Applying STEM into CTE medical programs within High School (10-12)

Arizona Science Center | Celebration Lab

Ombudsman | Doris Klein, CTE Director

We will discuss how high school "STEM" encompasses the scientific and technical aspects of medical assisting, medical billing and pharmacy technician programs. When high school students take these programs they learn about patient care, including taking vital signs, performing basic lab tests, administering injections, operating medical equipment like EKG machines, and understanding medical terminology. This includes the technological side of healthcare such as electronic health records (EHRs) and health management information systems (HIMS).

To manage patient information effectively, CTE medical programs that are implemented within high school allow students the ability to incorporate elements of science, technology, engineering, and mathematics within their daily tasks.

Chemysteries (3-8)

Arizona Science Center | Basement Classroom

Arizona Science Center | Vanessa Gutierrez, Science on Wheels Manager

Investigate the properties of various solid, liquid and gas chemicals, and explore the mysterious changes that occur when they are combined. You won't believe this color-changing chemistry isn't magic!

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SESSION 2 (10:20 – 11:20 A.M.)

Extreme Makeover: Math & EdTech Edition (K-12)

CREATE at Arizona Science Center® | CREATE Classroom

Arizona Department of Education | Alecia Henderson, Computer Science and Educational Technology Specialist | Marisa Tualla, K-12 Math Specialist

This session explores how to effectively integrate technology with math instruction to cultivate strong critical thinking and communication skills alongside a deep understanding of math standards. By reflecting on their current EdTech practices within the math classroom, and encouraging a shift from passive to active student technology use, participants will gain the knowledge and confidence to transform students into adaptable, future-ready problem solvers and innovators. Bring your hardhats and get ready for a Math and EdTech makeover!

Hidden Resources: How to Utilize Student Voice, Collaborations, and Partnerships for STEM (PreK-12)

CREATE at Arizona Science Center® | Public Hall

SciTech Institute | Ashton Grove, CSO AZ Program Manager | Claire Conway, Arizona Ecosystem STEM Director

In this session, educators will explore innovative strategies to amplify student voice, foster collaborations, and leverage community partnerships to enhance STEM learning. SciTech Institute will work with participants to uncover "hidden resources" within their classrooms and communities, empowering students to take an active role in their STEM education. Through practical examples and interactive discussions, attendees will leave with actionable ideas to create a more inclusive and engaging STEM environment.

It's All In The Cards (3-12)

Arizona Science Center | Boardroom

Arizona Science Center | Kal Mannis, Sr. Dir for Rural Engagement

This session will showcase how the use of card decks designed to enhance student engagement can be used to stimulate critical, analytical, and creative thinking. This is a fully hands-on/minds-on session focusing on several decks created by funding from NASA, the United Nations, the Forest Service, and Energy Cooperatives. Attendees will leave with integration ideas and decks.

NAMI Ending The Silence (6-12)

CREATE at Arizona Science Center® | Artistry Hub

NAMI Valley of the Sun | Angela Cross, NAMI Ending the Silence Program Specialist | Birdie Thorn, NAMI Presenter and Author

Our NAMI Ending the Silence program is an in-person presentation that helps middle and high school aged youth learn about the warning signs of mental health conditions and what steps to take if they or a loved one are showing signs of a mental health condition. As part of the presentation, we also have a young adult presenter who shares their story of recovery. This adds a unique element in that our young adult presenters have real life experience with a mental health condition and can share and connect with youth. It is a free, evidence-based presentation and for this conference, we will be giving the staff version of the presentation. The staff version goes over warning signs and how to talk to students about mental health.

STEM and the Arts (PreK-8)

CREATE at Arizona Science Center® | CREATE Zones

Arizona Science Center | Maree Toscano, Professional Development Facilitator

Through hands-on activities and collaborative discussions, educators will explore the intersection of STEM and the arts. Discover innovative strategies for integrating science, technology, engineering and mathematics to foster cross-disciplinary collaboration in your classroom. Leave with tools and ideas to enhance your curriculum and engage students in dynamic, multi-dimensional learning experiences.

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SESSION 3 (12:30 – 1:30 P.M.)

A Peek Below: Field Geology and Ore Body Modeling (6-12)

CREATE at Arizona Science Center® | CREATE Zones

University of Arizona School of Mining and Mineral Resources | Chris Earnest, Education Outreach Coordinator | Joshua Page, Education Outreach Coordinator

In this lesson, teachers will learn an activity that simulates the job of a field geologist attempting to model a copper ore body at the site of suspected igneous rocks as determined by a geologic map. The lesson incorporates the use of technology in the form of Vernier LabQuests and magnetic field probes to initially detect the presence of a possible copper ore but is adaptable if similar equipment is not available. After detecting the ore, teachers will then explore ideas about core drilling with boba straws to obtain the most accurate three-dimensional model of the ore body.

AI in the Classroom: Empowering Educators for the Future (K-12)

Arizona Science Center |Boardroom

Arizona Science Center | Jennifer Petersen, Manager of STEM Competitions and Outreach

Through this interactive session, participants will explore how AI can enhance personalized learning, streamline administrative tasks, and foster creativity and critical thinking among students. Attendees will gain practical insights on integrating AI-driven technologies into their teaching practices.

BTC in the STEM Classroom (K-11)

CREATE at Arizona Science Center® | CREATE Classroom

STEMteachersPHX | Christel Bruno, President-Elect

Immerse yourself in this professional development session designed for those looking to explore engaging strategies for the STEM classroom. This hands-on session focuses on task identification, effective collaboration, and dynamic classroom discussions, with an emphasis on sense-making through phenomena. Discover structures that foster innovation and critical thinking. The session includes dedicated time for teacher talk, providing actionable insights and the confidence to integrate strategies into your STEM teaching practices. Elevate your classroom with this concise, impactful opportunity.

Igniting Innovation: Integrating Robotics into the K-12 STEM Curriculum (PreK-12)

CREATE at Arizona Science Center® | Public Hall

Balsz School District | Rae Mask, Technology Mentor

In this session, educators will explore the transformative potential of robotics in the K-12 STEM curriculum. This interactive workshop will showcase hands-on activities and provide resources for integrating robotics into classroom instruction. Participants will engage with current best practices and learn how robotics can enhance student engagement, critical thinking, and problem-solving skills. The session will cover strategies for implementing robotics programs that align with Arizona Science Standards and cater to different educational levels from lower elementary to high school.

Mindfulness Unveiled: Explore the Brain-Body Connection for a Happier, Healthier You (PreK-12)

Arizona Science Center |Celebration Lab

Mindfulness First | Madicyn Quiroz - Instructor, Programming and Development Manager | Andra Prager, Mindfulness Coach

Join us for an enlightening and transformative workshop introducing the fascinating connection between our brains and bodies. Discover the true meaning, and immense benefits, while dispelling common misconceptions surrounding mindfulness. You'll also explore practical tools and techniques to cultivate your mindfulness practice, helping you lead a more balanced, joyful, and mindful life.

SESSION 3 (12:30 – 1:30 P.M.)

Playful Pathways: Integrating Learning Through Play in the Classroom and Beyond (PreK-12)

Arizona Science Center | Basement Classroom

Arizona Science Center | Ashley Brooks, Director of CAMP INNOVATION | Maddy Rohm, Science Communication Specialist

Explore the transformative power of play in education. This session will highlight the significance of play-based learning as a dynamic approach to fostering creativity, critical thinking, and social-emotional development in students. Drawing from professional experiences and research done with The LEGO Group, we'll discuss characteristics of play and practical strategies for incorporating play into diverse environments.

Transforming Arizona Classrooms Using the PAX Good Behavior Game®. (PreK-12)

CREATE at Arizona Science Center® | Artistry Hub

PAXIS Institute | Kristi Hamblin, PAXIS Program Specialist

The PAX Good Behavior Game® (PAX GBG®) is a trauma-informed set of universal prevention strategies that support self-regulation and problem-solving skills in the classroom. By promoting pro-social behavior and cooperation, PAX GBG® creates a nurturing environment while reducing disruptive behaviors and improving academic outcomes. In Arizona, the PAXIS Institute's statewide initiative has demonstrated significant improvements in student behavior.

SESSION 4 (1:40 - 2:40 P.M.)

AI For All: Increasing Accessibility with AI Technology (PreK-12)

CREATE at Arizona Science Center® | CREATE Zones

EdTech Coach at Gilbert Public Schools | Hannah Anderson, Technology Integration Educator

From breaking down barriers to unlocking new possibilities, this workshop is all about showing educators how to use AI tools to create classrooms that work for everyone. Plus, you'll get hands-on with simple, time-saving tools that make teaching easier and more impactful. Let's make tech our BFF and reimagine what's possible in education!

Code Music into Your Steam Curriculum (2-8)

CREATE at Arizona Science Center® | Artistry Hub

Code.org | Linda Angeloff, Facilitator

Using the Music Lab in Code.org, students learn to code and compose songs while connecting the arts into your curriculum.

Cultivating Early Coding Skills (K-2)

CREATE at Arizona Science Center® | CREATE Classroom

Arizona Science Center | Noortje Nelissen, Professional Development Facilitator

Discover practical strategies and hands-on activities to introduce foundational coding concepts to young children. Learn how to integrate coding into your curriculum, making learning fun and developmentally appropriate. Equip yourself with resources to foster a love for coding in your classroom.

Gamification and Critical Thinking with the Phoenix Zoo (K-8)

Arizona Science Center | Basement Classroom

Phoenix Zoo | Leslie Bell, Formal Learning & Engagement Manager | Makenzie Taylor, Camp Assistant

Increase student engagement and motivation through playing games in your classroom! Join Phoenix Zoo camp experts as we demonstrate and discuss how to add critical thinking and learning objectives to creative, active games. Come have fun while learning practical ideas you can apply to your classroom!

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SESSION 4 (1:40 – 2:40 P.M.)

Principles for Developing Culturally Sustaining and Responsive Curriculum for Indigenous Students (PreK-12)

Arizona Science Center | Boardroom

Office of Native American and Indigenous Advancement, NAUancement, Northern Arizona University | Darold Joseph, INE Director, Assistant Professor | Denyse Herder, INE Community Coordinator

In this session, presenters from the Institute for Native-serving Educators (INE) at Northern Arizona University will provide an overview of Indigenous Education and Indigenous Nation Building, engage participants with the Culturally Responsive Assessment of Indigenous Schooling (CRAIS) Tool, and construct strategies for engaging culturally responsive STEM teaching and learning. The Institute for Native-serving Educators (INE) is a collaborative initiative to strengthen schools across Indigenous homelands. Housed in NAU's Office of Native American and Indigenous Advancement (ONAIA), we partner with Native Nations, Indigenous-serving schools, and public school districts on and bordering tribal communities to develop professional development opportunities that meet community needs.

Transforming Note-Taking into Note-Making using AI (3-12)

CREATE at Arizona Science Center® | Public Hall

Office of the Maricopa County Schools Superintendent | Brian Hoffner, STEM Program Administrator

Discover strategies to help all students see themselves as scientists through meaningful, real-world engagement in science. In this interactive session, participants will explore a toolkit of note-making strategies that transform traditional note-taking into dynamic, student-led explorations. Learn how to incorporate practical resources, including AI tools, to foster critical thinking, enhance student engagement, and make science accessible and exciting for every learner.

Water Reuse (7-10)

Arizona Science Center | Celebration Lab

Arizona State University | Tiffany Rybiski, Project Coordinator Research & Emily Briese, Phd Candidate

Where do you think your drinking water comes from? What happens after you flush the toilet? Come learn about water treatment and reuse. You'll be surprised to learn how many people have already used the water you drink.