



THE ARIZONA SCIENCE LAB®

Evans School Facility, 4525 S College Ave, Tempe, AZ 85282

www.azsciencelab.org

THE WHOLE IEEE “ARIZONA SCIENCE LAB” WORKSHOP PROGRAM IS PROVIDED ABSOLUTELY FREE TO THE STUDENTS, TEACHERS AND SCHOOLS OF ARIZONA!!

- ❖ The teachers bring their grade 4 thru’ 8 science classes (up to 60 students) to the Arizona Science Lab for a day of Science Workshop, a Science Field Trip!
- ❖ Each Science Workshop uses a lab setting to conduct a project-based lesson plan, complete with demonstrations, lecture and a construction project or experiments in a single 4 hour session.
 - The students work in engineering teams of two and keep the projects they build.
- ❖ Each Workshop is conducted by retired, employed and university student engineers and scientists who:
 - Are highly qualified in math, physics, computers, electronics, power generation & distribution, structures, thermal, chemistry, materials science, software, etc.
 - Have “real world applications” experience of the science and can relate the theory being taught to the everyday application and to the design and operation of everyday objects.
- ❖ The teachers choose a Lab Workshop from a list of ready-to-run Workshops that support the National Science Education, Next Generation (Common Core), and Arizona Science Education Content Standards.
- ❖ Each Workshop emphasizes the “Wow!” factor of hands-on construction projects and experiments:



Seven Workshops are currently being offered:

1. **Sail Away** – Archimedes Principle, Forces and Moments, Newton’s Laws; Design & Build A Sail Boat.
2. **Here Comes The Sun** – Renewable Energy, Solar Cells, Electric Circuits, Sources & Loads In Series & Parallel; Build A Solar Powered Race Car.
3. **Working With Watermills** – Renewable Energy, Kinetic & Potential Energy, Simple Machines, Mechanical Advantage; Design & Build A Water Wheel.
4. **All About Electric Motors** – Electricity, Circuits, Magnetism, Electromagnetism, Electric Motors; Build an Electric Motor.
5. **Popsicle Bridges (not currently offered)** – Structures in Compression, Tension, Shear and Torsion; Design & Build A Truss Bridge
6. **Rockets** – Newton’s Laws, Rocket Aerodynamics, Using Simulations; Design, Build and Launch An Air / Water Rocket.
7. **Ciphers and Codes** – Information Representation, Protection, Decoding, Secure Codes; Many Exercises in Coding and Decoding.
8. **Oscillators & Waves** - Pendulums, Kinetic/Potential Energy, Oscillators/Waves, Measurements, Graphing; Students Do Many Experiments with Pendulums and Oscillators.

Building sail boats



Building water wheels



Building electric motors



Building solar powered cars



Building bottle rockets



FOR MORE INFORMATION, CONTACT:

ROY ZABOROWSKI, ASL REGISTRAR

ROY@BBZ.NET

602-689-3950



**“Helping Students Transfer
What Is Learned In The
Classroom To The World Beyond”**