

**TI participants have represented schools in almost every state. Here are some comments about the workshop from 2010 participants:**

"This program is amazing! This provided me with so many technical possibilities to expand in all of my classes. I can't wait for the school year to start! I especially love how so many of these projects are cross-curricular so we can all do this together in my school."



"Good combination of integrating hardware and software. I like the oscilloscope to show the sine waves in real life form which will help my trig class. The robotics will be used to reinforce mathematical concepts and to determine what kind of function formulas to use... The hands-on experience with all of this equipment was great!"

"This is an excellent course with tremendous possibilities for standards based application in math, science and engineering classrooms... I was blown away with how much we covered and how much more I still wanted to investigate that we did not have time for!... I am so excited to now take this material and create projects that align to my units so that my sometimes dry math topics become interesting, relevant and hands-on."

"Thank you for an awesome insight into a complicated subject. I have learned more in 4 days than I did in 4 years of college!"

"Concepts were presented in a simple, straight-forward manner that allows attendees to grasp a real understanding of the ideas involved in space communications. The wonderful part of the Teachers Institute series is that it allows teachers face time to share and explore various applications of ham radio in the classroom. We were able to share what works and what doesn't as well as share better analogies to aid in instruction."

"This was the best institute that I have attended in 27 years of teaching ... It was the kind of experience that changed the way I teach."

"Science is a blast again!"



Participants of the 2010 Teachers Institute held at Parallax headquarters in Rocklin, CA.

Once you have experienced the basic TI-1, think about attending the TI-2!

**TI-2 Space in the Classroom (limited to 8 participants)**

This 4-day workshop is focused on satellite communications and opportunities to introduce related curriculum topics and research activities into the classroom. TI-2 Space in the Classroom participants receive a basic satellite ground station to take back to their classrooms, and learn how to set it up and operate it. They learn how to locate and access ham radio satellites and make on-the-air Amateur Radio contacts through the satellites. The satellite operations conducted during the workshop include voice contacts, and satellite telemetry transmitted by Morse code. As opportunities permit, participants will also make contacts with the International Space Station as preparation for learning what is involved in making ISS contacts through the Amateur Radio on the International Space Station (ARISS) program. An Amateur Radio license is required to attend the TI-2, Space in the Classroom workshop.

2011 TI Dates, Locations and Application Deadlines		
Date	Location	Application Deadline
June 13-16, 2011	Albuquerque Unified School District, Albuquerque, NM	April 15, 2011
June 20-23, 2011	Parallax Inc., Rocklin, CA	April 15, 2011
July 11-14, 2011	Mohawk Valley Community College, Utica, NY	May 15, 2011
July 18-21, 2011	ARRL Headquarters, Newington, CT	May 15, 2011
TI-2 Space in the Classroom		
Date	Location	Application Deadline
July 11-14, 2011	Dayton Amateur Radio Association, Dayton, OH	May 15, 2011



**ARRL** The national association for **AMATEUR RADIO™**

225 Main Street, Newington, CT 06111-1494  
[www.arrl.org](http://www.arrl.org)

For an application and more information about the Teachers Institute please visit [www.arrl.org/ti](http://www.arrl.org/ti)

Learn more about what teachers are doing in their classrooms with Amateur Radio and with wireless technology topics at:

[www.arrl.org/amateur-radio-in-the-classroom](http://www.arrl.org/amateur-radio-in-the-classroom)

Please direct any questions about the ARRL Teachers Institute on Wireless Technology to: ARRL Education Services Department [etp@arrl.org](mailto:etp@arrl.org) or (860) 594-0242

**Wireless Technology**

**ARRL's Teachers Institute on Wireless Technology**



**Building Wireless Technology Literacy**

Explore wireless technology for your classroom and expand your horizons with a hands-on professional development experience!

- Electronics
- Space Technology
- Robotics
- Satellites
- Amateur Radio
- Weather
- Radio Astronomy
- and more!

**Apply Now!**

Sponsored by The ARRL Education & Technology Program and funded by donors to the Education & Technology Fund at



**ARRL** The national association for **AMATEUR RADIO™**  
[www.arrl.org](http://www.arrl.org)

**At the Teachers Institute, teachers have the opportunity to explore and experience firsthand:**

- wireless technology basics and the foundation of radio science,
- techniques to instruct the basic electronics concepts integral to microcontrollers and robotics,
- space technology in the classroom,
- robotics, including building and programming a Boe-Bot<sup>®</sup>,
- and much more!

Four expense paid sessions of the TI-1 are offered in 2011 to qualified applicants.

Enrollment for each session is limited to 12 participants to maximize participation and individual attention.



**The goals of the ARRL Teachers Institute:**

- Understand wireless technology fundamentals;
- Acquire the tools needed to effectively teach wireless technology concepts;
- Utilize hands-on instructional approaches and techniques; and
- Achieve success in teaching wireless technology concepts and using wireless technology tools in the classroom.

**Cost:**

Tuition resources and most expenses to attend either a TI-1 or TI-2 are paid by donations to the ARRL Education & Technology Program. Travel (up to \$600), lodging and a daily meal stipend are also reimbursed.

To qualify for full expense reimbursement, participants must attend all 4 days of Institute activities.



A \$100 refundable deposit is required with the application. Deposits are refunded upon completion of the workshop.

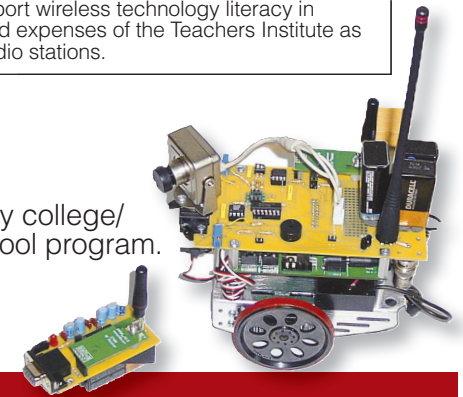
The Teachers Institute is supported through generous contributions to the ARRL Education & Technology Fund by individuals and amateur radio clubs, with additional in-kind support from equipment vendors. ARRL asks for donations to support the Teachers Institute and the Education & Technology Program activities that support wireless technology literacy in schools. These donations fund tuition, resources and expenses of the Teachers Institute as well as equipment grants to schools for Amateur Radio stations.



**Apply Now!**

**Applicant qualifications:**

- Active teacher at elementary, middle, high school or community college/ university level, or leadership in school enrichment or after-school program.
- An Amateur Radio license NOT required to attend the TI-1. An Amateur Radio license is required to attend the TI-2.



**Format: Expect hard work at the Institute!**

The Teachers Institute is a 4-day workshop. Each 8:00 am to 4:00 pm day is filled with lectures, hands-on activities and demonstrations, building, programming, robotics competition, and, of course, time is set aside for teachers to operate an Amateur Radio station.

The first two days of the Institute include instruction on how to teach wireless technology, day three covers microcontroller basics, and the finale is how to teach basic robotics. The class materials are a mix of basic theory coupled with teaching strategies that you can use immediately when you return to the classroom. Refer to our website [www.arrl.org/ti](http://www.arrl.org/ti) for a detailed agenda.

**Materials provided:**

- Radio Lab Handbook and Curriculum Guide
- Instructional electronics kits
- Parallax Basic Robotics (Boe-Bot<sup>®</sup>) kit
- Parallax "What is a Microcontroller" kit
- Parallax USB Oscilloscope
- Resource library