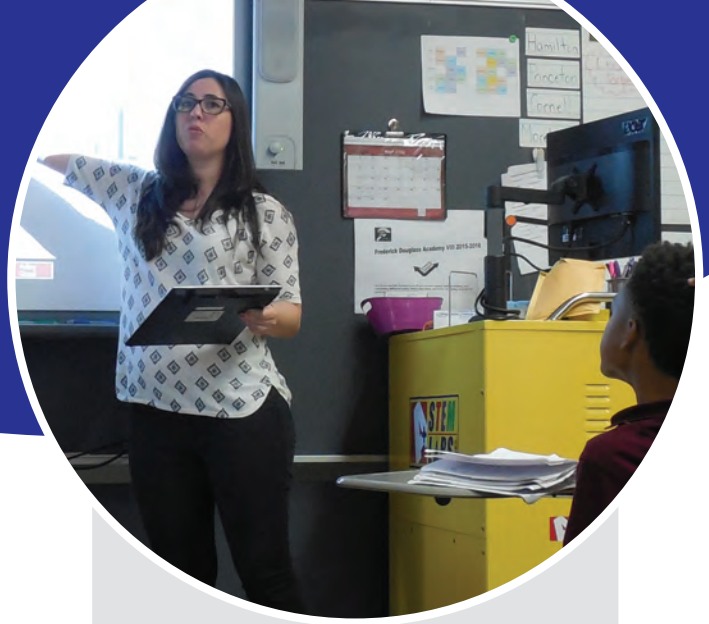
www.APlusStemLabs.com

A+ STEM Labs turn any classroom into a high-tech learning laboratory.

A+ STEM LABS

making **STEM** *achievable*



"My A+ STEM Lab has completely revolutionized instruction and student engagement in my 6th grade classroom. What I love most is how easily we were able to integrate its tools into our existing classroom routines. The possibilities with these tools are truly endless."

— **A. ADELFIO, TEACHER**
FREDERICK DOUGLAS ACADEMY VIII
MIDDLE SCHOOL, BROOKLYN, NY

The future of our economy is in STEM. So is the future of our students. *The U.S Bureau of Labor Statistics** reports that occupations in science, technology, engineering and mathematics are growing by about 1 million jobs per year. How well is your school preparing students for the 21st century work force?

A+ STEM Labs makes it possible for K-12 schools to deliver robust, grade-appropriate, technology-driven STEM education through hands-on activities and experiments that map easily to any curriculum. We also make it as easy as possible for teachers to integrate our technologies within their classrooms, helping them to better manage classroom time, student evaluations and presentation of content.

* Source: 2010 Standard Occupational Classification (SOC) System, SOC Policy Committee recommendation to the Office of Management and Budget. Healthcare occupations are not included.

The future of our economy is in STEM. So is the future of our students.

Testing has never been easier for teachers and more fun for students.

Your Curriculum, Only Better!

As standards and core curriculum differ by state and sometimes even by district, **A+ STEM Labs** embraces a flexible approach that provides a range of experiments and activities that map to the programs you already have in place. There is no "one way" or "right way" to use our labs. Our solutions are designed to support and enhance your curriculum of choice, letting you focus on the subjects and core competencies most relevant to your classroom.

Each **STEM Lab** is configured for K-5, middle school or high school, with subject specificity for high school labs. We'll work with you on specific configurations to meet your needs. Some of the subject areas we support are:

- *Elementary Science Experiments*
- *5 Minute Activities*
- *Science at Work*
- *Science of Sport*
- *Alternative Energy*
- *Level 2 & 3 Biology*
- *Level 2 & 3 Chemistry*
- *Level 2 Physics*
- *Level 3 Physics Electricity and Heat*
- *Level 3 Physics Light, Sound and Pressure*
- *Level 3 Physics Forces and Motion*

Measure Students' Success

Engage, monitor and measure your students' mastery of classroom content through the **A+ STEM Lab's** student response system, which includes assessment software and student "clickers." Easy- to-use software lets you insert response questions right within your PowerPoint slides. Create and deliver self-paced benchmark, district, end-of- course and state level assessment exams. Testing has never been easier for teachers and more fun for students.

- *Digital answer submission eliminates hassle and cost of bubble sheet collection and scanning*
- *Save time with on-demand data scoring and reporting within software*
- *Simple import/export of data to any third party system*

A+ STEM LABS FOR SCIENCE

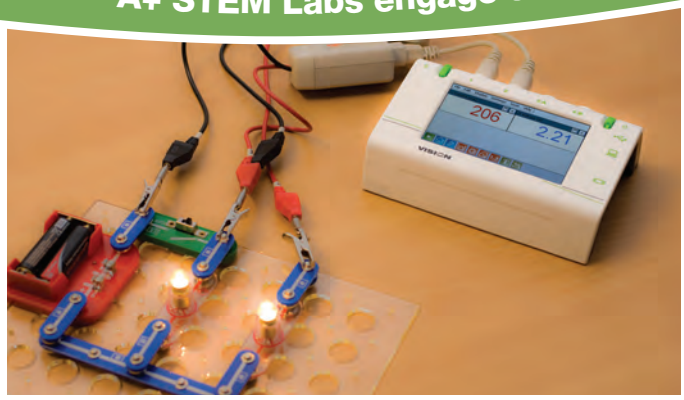
A+ STEM Labs believes that hands-on learning makes for memorable learning and greater retention of concepts. Our labs encourage students to act like "real scientists" by participating in experiments that use data they personally collect and sample from the world around them. All our **STEM Labs for Science** feature scientific probes and data loggers offered in configurations tailored for the needs of Elementary, Middle or High School students. We also offer a specially configured Pre-K version.

Each of our labs can support hundreds of grade-appropriate experiments. Here is a small sample of the types you will find:

Pre-K

- *Does light shine through everything?*
  Use light sensors to see how well light travels through different objects.
- *What makes the most noise?*
  Use sound sensors to measure changes in sound levels from different noises.
- *What happens when we exercise?*
  Use fever strips and a heart rate monitor to measure changes in pulse and temperature after vigorous activity.

A+ STEM Labs engage students with a



Elementary

- *How do different surfaces and colors reflect light?*
  Use light sensors to take measurements and compare.
- *How do different activities affect your heart rate?*
  Use the heart rate monitor to measure changes in your pulse.
- *How well do different sunglasses block out light?*
  Use light sensors to take measurements and compare.

Hands-on learning makes for memorable learning and greater retention of concepts.

dynamic, interactive teaching platform.

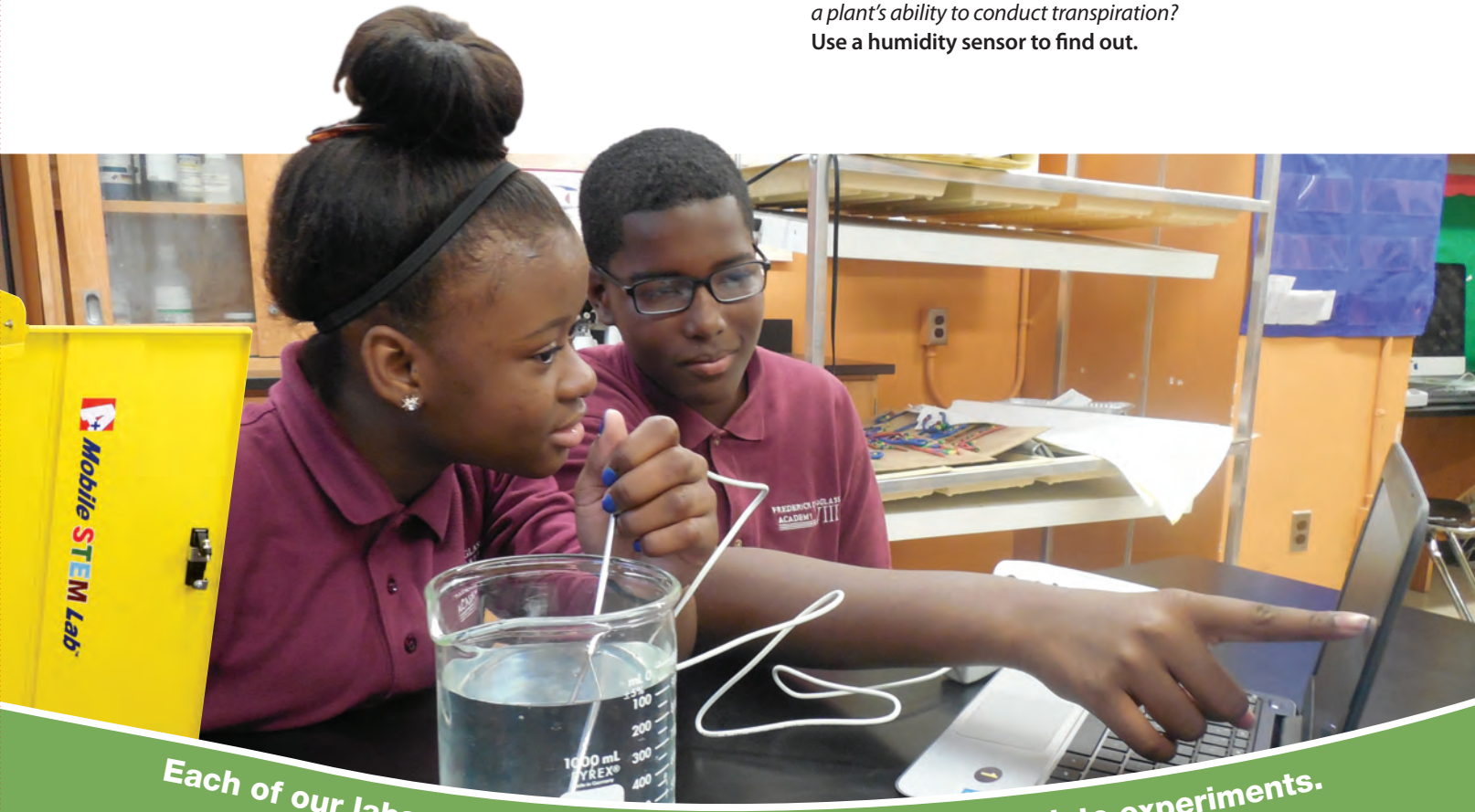
> *"My students feel like real scientists, using the tools real scientists use."*
>
> — **K. Terelli, TEACHER**
> **Philip J. Abinanti PS 108, Bronx, NY**

Middle School

- *How do different objects leave a heat signature?*
  Use an infrared sensor to measure the heat radiating from objects and left behind by them.
- *How well does the body regulate temperature?*
  Use a heat sensor to measure body temperature as it is exposed to changing environmental conditions.
- *Does voltage and current vary with load?*
  Connect a voltage sensor to a wind turbine and take measurements as the load changes. Chart the relationship.

High School

- **PHYSICS LAB:**
  What is the relationship between kinetic and electrical energy?
  Use a spinning magnet and a voltage sensor to collect readings, then see how the power curve varies with speed of magnet, current and voltage.
- **CHEMISTRY LAB:**
  What happens during an endothermic reaction?
  Conduct a calorimetric experiment within an aqueous solution while measuring temperature changes.
- **BIOLOGY LAB:**
  How do different environmental and physical factors affect a plant's ability to conduct transpiration?
  Use a humidity sensor to find out.



Each of our labs can support hundreds of grade-appropriate experiments.

A+ STEM INTELLIGENT LAPTOP CARTS

Few activities provide such a broad

The **Intelligent Laptop Cart** is a complete teacher's command center that enables teachers and students to make the most productive and efficient use of personal laptops or tablets in the classroom. In addition to **providing each student with the power of a personal PC**, it gives the teacher a set of easy-to-use tools to effectively monitor and manage all student computer usage, as well as push content to individual and/or the entire classroom's laptops.

The **Intelligent Laptop Cart** also integrates with a range of presentation equipment, our student response system, and a selection of "Specialty Kits," including the *NAO Robot, K'Nex Education* and *3-D Modeling and Printing*. It also serves as the perfect platform for any computer based educational programs, including web/game design, programming, robotics, reading intervention, CAD/CAM, video editing and much more.

Classroom management tools include:

- *Monitor and control*
- *Screen blanking*
- *Teacher screen broadcasting*
- *Video and audio streaming*
- *Student demonstration*
- *File transfer and distribution*
- *Managing tests and quizzes*
- *Group collaboration*

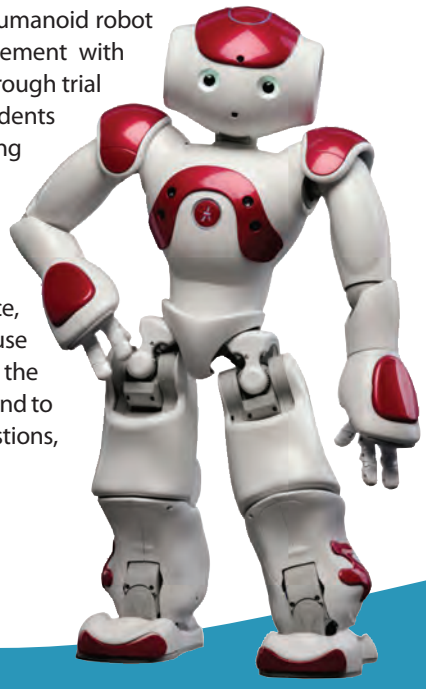
SPECIALTY KITS

Our special activity kits integrate seamlessly with **A+ STEM Labs**. Use them as a foundation for special classes, extra-curricular clubs and programs, and even summer science camps. All related software comes pre-loaded on your Lab's student laptops.

∧ NAO Choreographe
< K'Nex Computer Control

NAO Robot

The fully programmable **NAO** humanoid robot sparks imagination and engagement with students like few other tools. Through trial and error, and teamwork, students learn simple to complex coding that brings the robot "to life." Beginners learn using **NAO's** own software suite, called *Choreographe*, which offers an intuitive "drag and drop" interface, while advanced students can use *C++* and *Python* to program the robot. Make him talk, walk, respond to commands, ask and answer questions, and even dance.



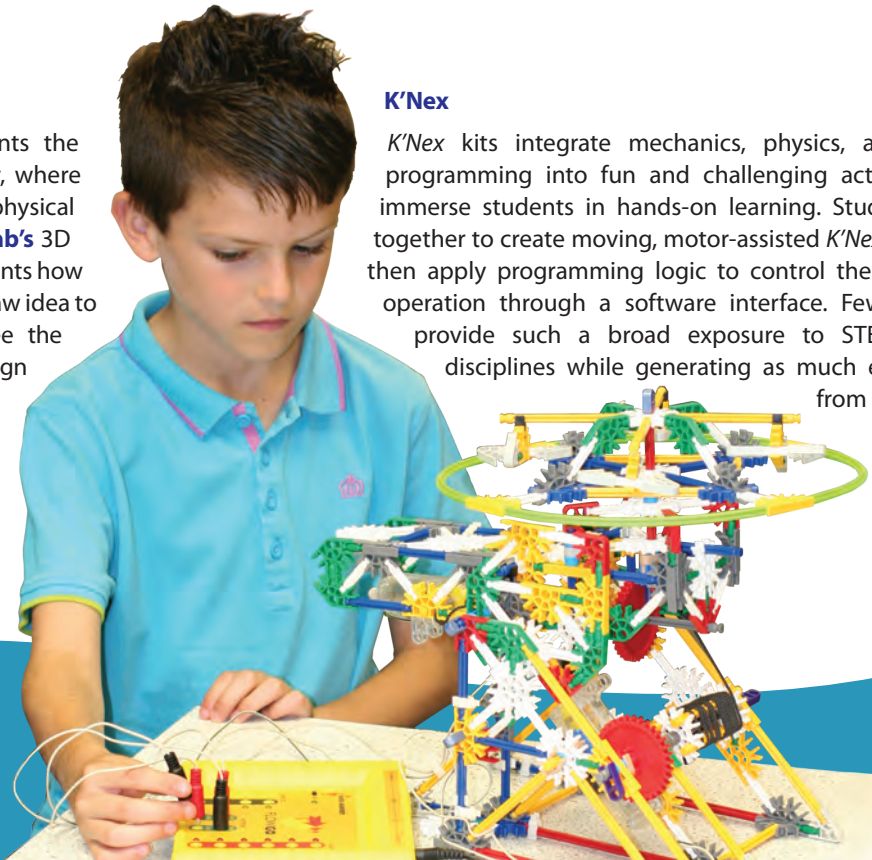
exposure to STEM related disciplines while generating as much enthusiasm from students.

Zspace

Zspace is a desktop-based, 3D virtual reality learning platform that allows students to immerse themselves within the worlds of science in an experiential way never before possible. Through the use of special software and *Zspace* glasses and stylus, students can see and manipulate life-like 3D models that support the study of biology, anatomy, physics and much more. In addition to providing a captivating experience that brings depth to the learning process, the use of *Zspace* is safer and less expensive than using physical equipment or cadaver animals, thereby making a wider range of subjects accessible within the classroom environment.

3D Printing

The popular Maker Movement represents the intersection of creativity and technology, where STEM (and STEAM) disciplines enable the physical creation of tangible objects. **A+ STEM Lab's** 3D design and printing solution teaches students how to design, plan and build a product from raw idea to finished item, encouraging them to see the direct connection between abstract design and concrete end products. For students interested in industrial technology to engineering, art to architecture, exposure to 3D printing helps develop the very same skills these students will need in future careers.



K'Nex

K'Nex kits integrate mechanics, physics, and simple programming into fun and challenging activities that immerse students in hands-on learning. Students work together to create moving, motor-assisted *K'Nex* creations, then apply programming logic to control the structures' operation through a software interface. Few activities provide such a broad exposure to STEM related disciplines while generating as much enthusiasm from students.

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Funding Sources

Let our team of committed professionals work with you on funding and procurement options. We've worked closely with *New York City Public Schools* to find full or partial funding for over 500 labs throughout the city. Let's see what we can do for you.

Our labs are also available for procurement through state purchasing contracts, as well as the ***PEPPM Technology Bidding and Purchasing Program***, which is honored by almost all 50 states.

Contact us to learn more:

A+ STEM LABS
1490 North Clinton Avenue
Bay Shore, NY 11706
Tel: 631.969.2605

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