



New Science Cart enhances science teaching at Mahoning County Career and Technical Center.



At Mahoning County Career and Technical Center, in Canfield, Ohio, they have introduced a new concept in their Science Department – the SciTEK Science cart.

Produced by LJ Technical Systems Inc. of Long Island, New York, the cart has been specifically designed to provide a mobile teaching resource that is fully IT enabled. It provides the teacher with a range of computer based presentation and assessment tools and a comprehensive series of science curriculum materials.

We visited the center to see how staff and students are benefiting from the new technology.

Science teacher, Ms. Erin Johnson using the new science cart.

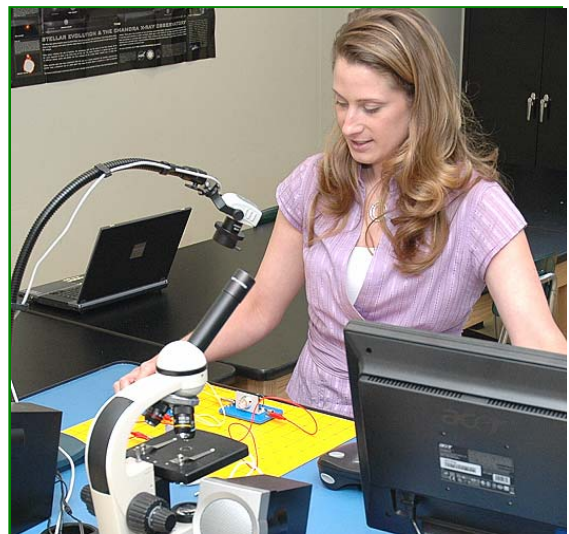
Science teacher, Ms. Erin Johnson, told us how she was using the cart.

“We only have two science labs here, so for most of my teaching I have to use a regular classroom. Now with the cart, I can wheel it into my room and we have three science labs.

I teach physical science and physics which used to be quite hard to do before we had the cart. A lot of the experiments need to be done using pieces of apparatus and we don't have enough for whole class groups.

Now with the cart, I can use the camera and do a front-of-class presentation that all the students can see. As an example, right now, I am covering electricity so I use the basic electrics unit on the cart and I project the experiment to the whole class group.

To make the lessons even more interesting, I tend to use the ClassAct SRS Student Assessment system a lot. Every time the students see we are going to use it they get excited, they love using the key pads to answer the questions. I really like the system because it works directly with PowerPoint. I have created a whole series of presentations with questions at appropriate places.



“I am covering electricity so I use the basic electrics unit on the cart and I project the experiment to the whole class group.”



Mostly I use it for reviews to check that the students have understood a particular topic before we move on. The instant feedback is great as it lets me see who has got it and who needs more work. We also use one of the laptops that come with the cart as these allow us to do group work with the students like Internet based research.”



“In the Bio Tech program we do a lot of problem-solving, now the students know what sensors we have.”

The flexible design of the cart and the resources it contains makes it suitable for use across a broad range of Sciences. Tom Slaven, the Biotechnology Instructor, explains how he uses it for his courses.

“I run a half day vocational Bio Technology program and I love the new Science Cart. The students use all the components on the cart, in fact they will ask to use it. If I give them a lab protocol that asks for a thermometer for example, they say “Can we use the data loggers instead?”

In the Bio Tech program we do a lot of problem-solving. Since the students know what sensors we have, they want to use them all the time. Just the other week we did a fermentation experiment to create our own soda. We used the oxygen sensors to measure the rate of fermentation over 24 hours. They were able to use the data loggers in remote mode and then download the results into the laptop computers.

We even did a test using the temperature sensors to solve a power problem we had been having with our small animal incubators in the back of the lab.

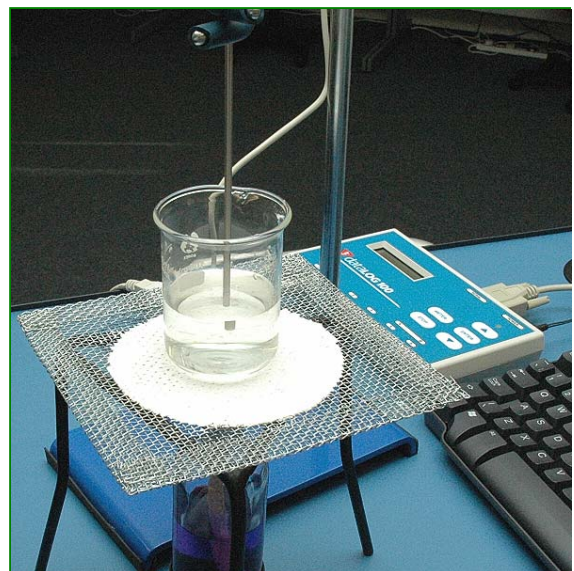
We asked Comprehensive Science Instructor, Mr Bob Millar what attracted them to the SciTEK Science cart concept and why it was so successful for them.

“We wanted to get the Science cart initially because it is so versatile and the possibilities are endless for how we can use it. Originally it was set up for Physics. I don’t teach Physics yet and I have been using different components from it everyday since it was delivered.

It works so well for us because the students love working with it. The use of computer technology to teach Science really motivates them and gets them engaged. They love the ClassAct SRS System, we had a CPS system before, but this is so much better. When we saw it we said “Hey we can use this everyday!”

It makes it fun for the students as well as making it easy for the teacher to deliver great science lessons. We can do really advanced things with our resources like capture images from the microscope and then use the software to do side by side comparisons just like in a forensic lab. We can even video experiments and lessons and re-use them year after year, or hand them out on CD to students who may have missed a lesson.

Without a resource like the Science cart our Bio Tech lessons would be ‘Cookbook labs’ and home made experiments.



“We wanted to get the Science cart initially because it is so versatile and the possibilities are endless for how we can use it.”



With the cart we can give them the chance to use the real thing and they are real experiments just like they would be at university. We have a number of advanced students where we are using AP Science books.

These call for the advanced resources like photo spectrometers and high range temperature measurements. We can have calorimeters and temperature sensors that are accurate to 0.01^C.

This has really helped the Bio Tech Program. We have already doubled the enrollment because when prospective students visit us they see the cart and all the resources and they know that their home high school has nothing like it so they all ask to come here to do Science.”

“With the cart we can give them the chance to use the real thing and they are real experiments just like they would be in University.”

“It’s a great investment for us. The fact that they can just wheel the cart out and use it to teach Science is excellent!” - Edward E Kapusinski – Principal

Contact Details:

Bob Miller

Comprehensive Science Instructor

Mahoning County Career & Technical Center
7300 North Palmyra Road,
Canfield, Ohio 44406-1306
Phone: 330 729 4015. Ext. 1306
Email: mjvs_krm@access-k12.org

The Science Cart installed at Mahoning County Career and Technical Center is just one of the successful programs installed in Ohio by our representatives – Buckeye Educational Systems.



LJ Technical Systems
Web site: www.ljgroup.com