STEM Happens

Meet DCG's STEM Champion

Ben Chadwick

Ben Chadwick is one of those teachers—the kind who works with kids before and after school, the kind who spends summers writing curriculum, the kind who thinks everyone can succeed if given the opportunity. Dallas Center-Grimes' students know this and flock to his STEM classes.

This past summer, Chadwick received a Project Lead the Way (PLTW) grant and two Hyperstream grants. He's currently implementing PLTW at Meadows Middle School. One week into the course, students are presenting via Prezi. With a partner, students choose an invention, talk to the class and receive immediate feedback.

Morgan signed up for PLTW because she thought "it would be cool. It also kind of forces you to learn about things you normally wouldn't."

Last semester, Chadwick taught Automation and Robotics to a pilot class of eighth graders. It went so well that every eighth grader will take the class next year. Chadwick said, "It's a great way for students to be introduced to robotics. It doesn't overwhelm with straight coding."

With set-up assistance from Mr. Chadwick, Sandra and Claire set up their telescope Prezi for PLTW.

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Change someone's career path! Volunteer for STEM!

1. Ben Chadwick's Hyperstream students presented to Principal's top IT executives.
Mr. Chadwick helps Hailey change background color on her website. "I wasn't planning on taking this class," she said, "but I really enjoy it. I might look at something in technology for a career.

Chadwick draws an eclectic mix of students. Some who already plan a career in STEM, some whose parents encouraged enrollment and some like Cassidy, who said, "I took this [web design] class because Mr. Chadwick teaches it. He's outgoing, upbeat, and I knew I'd learn a lot."

Teaching at the high school in the afternoon, STEM programs in both buildings are growing. "Many jobs can't be filled because kids don't have the right training, but many kids don't even know such jobs exist," said Chadwick. "College costs so much that it's difficult to break out of your comfort zone. We need to introduce kids to STEM early."

Justin, Garrett and Cade present their PLTW Prezi on basketball shoe technology.

STEM needs you!
Want to share your skills and story in your community?

Go to the SC STEM Hub website and click "Find a Scale-Up near you!" the list of schools awarded '13-'14 Scale-Up programs. Contact a school in your community to see how you can help.

You will also find a calendar of STEM events and other ways to get involved!

Application Deadline Extended

NEW DATE: January 17, 2014

The Iowa Governor's STEM Advisory

https://ui.constantcontact.com/visualeditor/visual_editor_preview.jsp?agent.uid=1116037925846&format=html&print=true
Chariton Middle School Implements PLTW

Chariton Middle School raised the academic bar this year by adding Project Lead the Way (PLTW) to their seventh and eighth grade curricula. Cindy Bradford and Tyler Pearson lead the charge.

"Project-based learning is great," said Pearson. "It really makes the kids think. I like to make them go a little further."

PLTW is not new to this district. The high school offers three classes and has paved the way for interest in younger students like Tanner. "I like this [class]," he said. "My brother got me into engineering because he is doing it at the high school."

Seventh grade students just started a new semester and have been in class only a week. Their first assignment is to create a PowerPoint showing technology then and now. Topics included the Pogo stick, toothbrush, snowboard, car and hammer.

Eighth grade students are doing a similar assignment, but questions focus on modern technology. They’re looking at who programs it and the types of jobs created. Topics include the iPad, Google Glass, the automatic flush toilet, motion sensors and X-box Connect.

By the end of the year, students will have a sound introduction to engineering that will hopefully lead to a continued interest at the high school level.

Top 10 Science Videos:
Checkout Youtube's Top 10 Most Popular Science Videos of 2013! Compiled by website for those who are ready to move on from the cute kitten clips.
Click here to connect to CIO's website

Mathematical Mystery Tour:
Graceland math majors reveal the magic in middle school math
Meet SC STEM Hub Advisory Member

Jahna Duda

SC STEM Hub Advisory Member Jahna Duda knows the importance of providing kids with great educational experiences. Duda spends her days as the Director of Curriculum and Assessment for Early Education-Grade 12 at Des Moines Christian School. She reviews, writes, and implements all curriculum. In addition, she serves as an Instructional Coach to teachers, provides professional development, and coordinates all district assessments.

Duda first became active in STEM education when she participated in a pilot project with ExxonMobil while attending Montana State University. Exxon and MSU developed a program that partnered education students minoring in math or science with trained teachers within the school district for all practicum and student teaching experiences. "Through the project, we were immersed in STEM, and I loved witnessing the positive impact on students."

But her interest in teaching and learning developed much earlier than college. Duda says her dad instilled a love of math in her, and she wants others to enjoy it as well. Another defining moment came when she began tutoring classmates who were struggling with concepts.

"I remember the excitement and sense of accomplishment when peers understood something we were learning," says Duda. "I was told I could explain things in such a way that it made sense, and I wanted to help others have the same success."

Technology Scholarships for 2014 Graduates

Students who will be enrolling in an Iowa community college, university, or college next fall in a tech-related program are invited to apply for one of NINE $1000 scholarships.

Note that active HyperStream students will be given bonus points.

For more information, contact Tamara Kenworthy at tamara@technologyiowac.org
Students from both schools chose hands-on activities to visit. They stayed as little or as long as they liked.

**Des Moines Christian School Celebrates STEM Day**

Controlled explosions, foaming pumpkins and 150 hands-on experiments ignite student interest at Des Moines Christian School's STEM Day. The festival began with an all-school assembly lead by science educator/pastor Josh Denhart. The hour-long program combined scientific principles, fun experiments, audience participation, humor and learning.

"We really are passionate about STEM," said Principal Karla Lowe. "We're always looking for ways to incorporate hands-on learning activities,"

To make the day even more special, they extended their annual invitation to about 80 guests from Joshua Christian Academy in downtown Des Moines.

Reverend Keith A. Ratliff, Sr., JCA’s principal, said, "It's good for the kids to come for this science experience. Any time we can learn and explore together is wonderful thing."

The day's events were

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The Blank Park Zoo would like to invite educators to workshops at the Blank Park Zoo hosted on the dates listed below. The workshops are for one hour of Drake University or license renewal credit, and teachers will be eligible to schedule a free classroom animal program. We welcome educators from all parts of the state, and have had many travel the zoo for our workshops. Our education department is willing and able to travel to districts across the state with our follow-up classroom programs (animals included!).

**Workshop Descriptions:**

**Habitats and Adaptations** - January 24-25.

**Climate Change: Wildlife and Wildlands** - February 21-22.

**Wonders of Water** - April 18-19.

**Cost:** $15.00 to help cover materials & meals, payable at workshop; credit fee for taking for credit

**Included in workshop:** Dinner on Friday night and lunch on Saturday, coffee & rolls on Saturday morning, materials for teachers to utilize in their classrooms, and a free classroom visit.

Click [here](https://ui.constantcontact.com/visualeditor/visual_editor_preview.jsp?agent.uid=1116037925846&format=html&print=true) to register.
In order to volunteer, parents prepped each station the evening before the event.

organized by Jahna Dudha, Des Moines Christian's Curriculum Director and STEM Advisory Board Member. "What's makes this day special is that we can engage kids in STEM and explore scientific concepts not in the normal curriculum," says Duda.

After the assembly, students divided into groups for a chance to visit tables full of hands-on experiments and activities. While they did use their very best manners and walking feet, the enthusiasm was palpable.

Parents volunteered at each station to ensure students had the best experience possible. "I hope every student leaves here with an excitement to learn more about science," added Duda. "I want them to tell their parents about it when they get home and to continue talking about it for weeks."

STEM on Holiday

Team ASAP 4646 formed last year and won the Rookie Award at Nationals. The team estimates it takes around 140 hours over six weeks to compete at the national level. It's time well-spent, as universities and companies look for students competing at this level.

Grand View University Seeks Nominations

Grand View University is looking for metro STEM leaders to serve as the Jacobson Distinguished Professor. The endowed professor will serve as the Director of the Jacobson Institute for Innovation in Education, focused on the areas of science, technology, engineering and math.

For more information, visit www.collegiatecounsel.com or call Dr. Seelbach, Senior Vice President Colletage Counsel, at 205-475-0505.

Girls in Science Festival: Call for Booth Exhibitors

WHERE: SCI-Iowa
DATE: February 15
TIME: 11am-4pm

Want your STEM message to reach up to 2,000 people in one day? The Science Center of Iowa is hosting a Girls in Science festival. Organizers are looking for companies and non-profits who offer STEM opportunities. Set up a booth during the festival to promote your business or organization.

For more information or to sign up, please email: girlsinscience@sciowa.org
Award-Winning Robotics Team Gives Back

Des Moines-Metro First Robotics Competition Team ASAP 4646 gave back this holiday season by volunteering as United Way bell ringers. But what makes this team truly remarkable is that the robot actually rang the bell.

In the spirit of goodwill and giving back to the community, high school students from seven Metro schools came together at Merle Hay Mall. "We did this for charity," says team co-captain Dakota Valen of Lincoln.

The team spent 16 hours programming the robot. "It's good practice for the rookies," says Valen. It was time well-spent, as the robot garnered lots of interest and second looks.

When the actual season begins in January, Team ASAP spends three hours each school night together and 8 hours on Saturday. "Everyone gets along really well," says Valen. "The more publicity we get, the more interest there is in the team." Last year the team made it to Nationals held in St. Louis, MO.

Brianna Leonard, from Ankeny, is one of two girls on the team, and she has felt welcome from the start. Her advice to other girls looking to join a similar team: "Just dive right in!" Ankeny's Joseph Bleecker agrees, "I think more and more girls are getting involved in science and technology. The stereotype is becoming a ghost."

Besides science and technology, participants use many skills. They write essays, create a presentation, monitor a budget, and build structures. There's also an area called gracious professionalism. And judging from their good deed this holiday, the team excels in the area of graciousness.

Visit the South Central STEM Calendar

To submit your STEM event, click here!

Make Learning Come Alive!

The SC STEM Hub has a curriculum library of kits and materials that area educators can checkout!

Kits, Equipment and Guides
K-6
* Windmills
* Patterns All Around
It isn't easy being green, but this project makes it look fun. Photo courtesy of Amy Brainard.

Oskaloosa Provides Scales, Tails and Smiles Over Break!

Camp in a Can: Scales and Tails came alive in Oskaloosa on December 26-27. The Iowa State Extension Office teamed up with Mahaska County 4-H to bring natural science to students over winter break. Youth Coordinator Amy Brainard from the Extension Office organized the event.

The project, sponsored by a STEM grant, included a live-animal visit from Blank Park Zoo. The camp was open to 3rd-5th graders, and about 15 were in attendance. The hands-on approach was a big hit.

"The two activities from Camp in a Can that they enjoyed the most were making reptile eggs out of balloons, corn starch and water, and the frog eggs in a cup activity, where they mixed water and gelatin to create small egg-like snacks," said Brainard. "We could tell because they talked about those activities the most and played with their eggs all day."
Hosting the camp during winter break proved beneficial to Oskaloosa students in lots of ways. "Having a hands-on science based camp provided our youth with new experiences that they have not done in school," said Bainard. "It gave them something to do that was fun, productive and educational."

Live-animal interaction made the camp even more interesting. Part of the grant sponsors a visit from Blank Park Zoo. Photo courtesy of Amy Brainard.

Events

**Don't miss these events in the New Year:**

- **Feb 13** State Advisory Board Meeting & STEM Day, DM
- **Feb 13** DMPS 6th Annual District Science Fair, DM
- **Feb 24** ELA Scale-Up Applications Open, Online
- **Feb 28** Girls in Science Meals with Mentors, DM
- **Mar 11** iExplore Festival, Ottumwa
- **April 1** iExplore Festival, Pella
- **May 2** Deadline for LEA Scale-Up Applications, Online

**THE FINE PRINT:**

- Kits may be checked out for 6 weeks.
- All consumable kit materials must be replaced by the educator.
- Prior to classroom use, some kits require teacher training.
- If you're interested in these materials, please email Sarah at: scstemhub@drake.edu

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