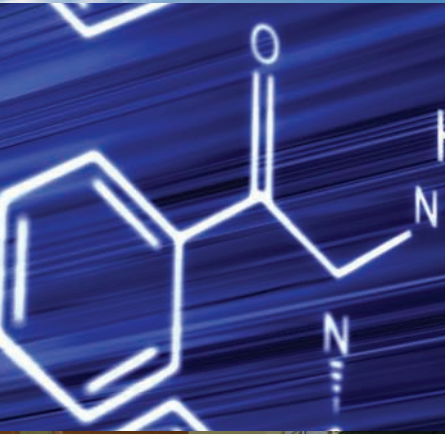


FOR MANY TEACHERS, PRINCIPALS AND SCHOOL DISTRICT LEADERS, STEM CAN BE A RADICAL SHIFT. THE DAYTON REGIONAL STEM CENTER CAN HELP.

The Dayton Regional STEM Center – Ohio's first regional preschool through grade 12 STEM program – has developed and delivered STEM resources and support since 2007.

Housed in the Montgomery County Educational Service Center, the STEM Center is helping all schools – public, charter, private and parochial – become leaders in STEM education.

The Center's initial funding came from a \$350,000 National Governors Association grant, which originated from a Bill & Melinda Gates Foundation initiative. Other local and national partners have provided additional support.




The Dayton Regional STEM Center
Science, Technology, Engineering and Math
200 S. Keowee St.
Dayton, OH 45402

IT'S A FACT

The jobs of today and the jobs of the future require not only a solid understanding of science and math – but also engineering and technology.



HOW SHOULD WE PREPARE OUR STUDENTS?

BUT STEM ISN'T JUST 'BEEFING UP' SCIENCE AND MATH IN SCHOOLS.

A Quality STEM Education:

- Integrates science, technology, math and the process of engineering;
- Provides inquiry-based, hands-on learning that is relevant and connected to work at real-world laboratories and industries; and
- Equips students with 21st century skills in critical thinking, creativity, innovation, communication, collaboration, leadership and problem solving.

LEARN MORE!

Visit us at:

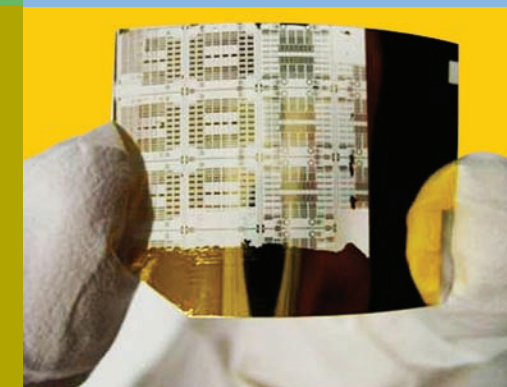
www.daytonregionalstemcenter.org

Or call:

937.225.4598

Fax: 937.496.7426
www.mcesc.org

We need to invent a whole new way to teach and integrate science, technology, engineering and math – called STEM – to inspire all students and improve student achievement.




The Dayton Regional STEM Center
Science, Technology, Engineering and Math

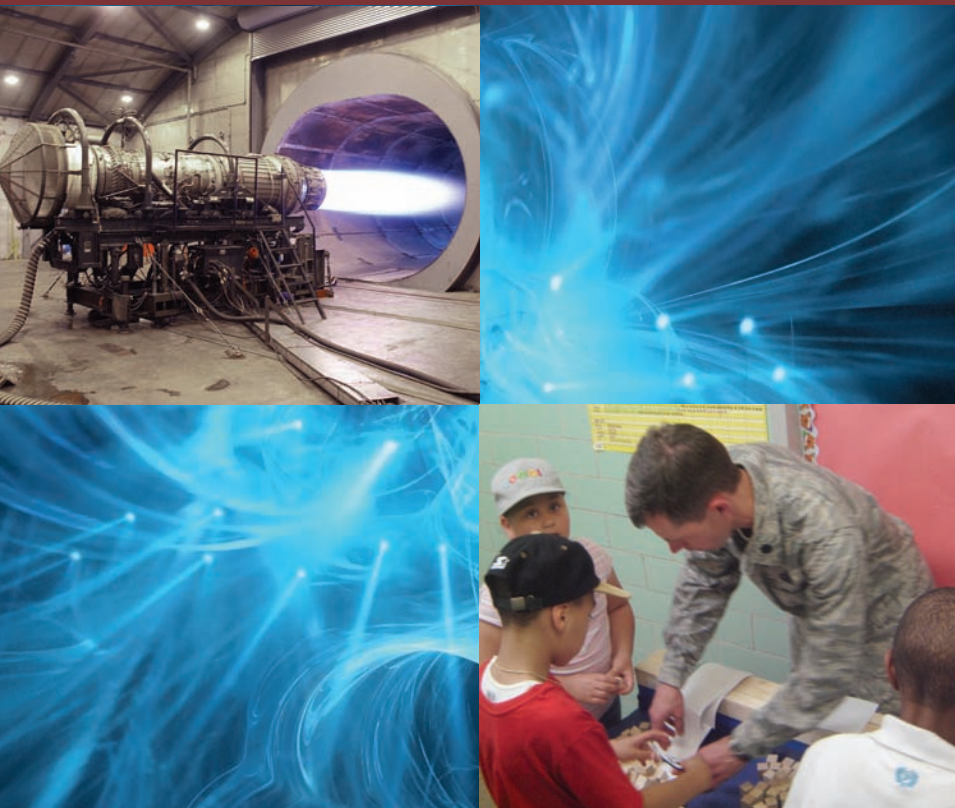
IS LEADING THE WAY!



OUR ECONOMIC FUTURE DEPENDS ON HOW WELL WE INTEGRATE A QUALITY STEM EDUCATION INTO EVERY CLASSROOM.

We live in a STEM world, where our lives are shaped every day by new advancements in science, technology, engineering and math.

Students receiving a quality STEM education will be able to land the high-need, high-paying jobs growing in the region – and make us more competitive nationally and globally.



THE DAYTON REGIONAL STEM CENTER DESIGNS A QUALITY STEM CURRICULUM, TOOLS AND TRAINING FOR TEACHERS AND OTHER EDUCATORS IN THE MIAMI VALLEY.

1 A Quality STEM Curriculum

The Center has developed an initial curriculum of more than 70 STEM lessons. These user-friendly, content-rich lessons – accessible online and easy to implement in the classroom – are like no other STEM curriculum available today:

- **Lessons integrate all four elements of STEM:** science, technology, math and the process of engineering.
- **Lessons are aligned to Ohio's Academic Content Standards and mapped to real work being done in the region in five "industry clusters":** power and propulsion, sensors, advanced manufacturing and materials, human performance and medicine, and air vehicles and systems. All five industry clusters are important for regional and national economic development.
- **Lessons are flexible to work for all students in all districts, and all means all.** Although not every student will become an engineer or rocket scientist, all students can become pioneers of their own learning through rich STEM experiences.

2 STEM Fellows

The Center develops STEM lessons by collaborating with STEM Fellows: competitively selected and trained preschool through grade 12 teachers, plus faculty and researchers from higher education, and engineers and scientists from local STEM industries.

Fellows make a yearlong commitment to work side-by-side in teams to develop, test and refine new lessons. Since inception, the Center has trained more than 100 STEM Fellows representing more than 30 school districts.

3 STEM Tools

The Center has developed STEM tools to ensure the quality of its STEM curriculum:

- STEM Fellows follow a **STEM Lesson Template** to ensure each lesson has the right framework and content for a comprehensive curriculum and critical STEM components. Teachers can even use this research-based, vetted template to convert existing math and science lessons to STEM lessons.
- The Center's **STEM Quality Rubric** measures the degree to which science, technology, engineering and math are integrated into any STEM lesson.
- During inquiry-based instruction, the teacher acts as a guide, allowing students to struggle, experiment and arrive at their own solutions. The Center's **Inquiry Rubric** measures a teacher's ability to use inquiry at the highest level, and the students' degree of understanding and achievement.

4 STEM Training

Teachers can observe best practices in inquiry-based STEM instruction, gain confidence and improve the way they teach by attending training developed by the STEM Center. The Center has trained more than 500 teachers in just the first two years.

For principals and school district leaders, the Center offers customized professional development at all levels – from awareness and evaluation to STEM lesson implementation. School districts learn that STEM can be integrated in different ways: by individual teachers, by teacher teams or through STEM course rotations with other electives.

5 STEM Support in the Community

The Center helps to advance STEM initiatives led by other organizations throughout the region by providing consulting, grant-writing assistance, curriculum development and training.

THE DAYTON REGIONAL STEM CENTER IS BECOMING A NATIONAL LEADER IN STEM EDUCATION.

- The National Governors Association has recognized the Center as a **model for curriculum development and regional collaboration**, with tools that can help educators implement the Center's best practices in their own communities. Several organizations across the country are interested in adopting the Center's STEM Fellow model for curriculum development.
- Funding from the National Defense Education Program is making it possible to **distribute the Center's STEM lessons nationwide** to school districts in communities with an Air Force Research Laboratory. Teachers will collaborate with their local AFRL scientists and engineers to teach these lessons.
- A national credential is needed to distinguish teachers for their high level of training, experience, proficiency and leadership in STEM curriculum development and inquiry-based STEM instruction. The Center's **STEM Teacher Credential** – which was recognized at a STEM summit in the nation's capital and is now being tested and vetted – has the potential to become a U.S. prototype.

GET INVOLVED

STEM CAN INSPIRE ALL STUDENTS AND IMPROVE STUDENT ACHIEVEMENT. THAT'S WHY ENSURING A QUALITY STEM EDUCATION SHOULD BE A PRIORITY FOR ALL OF US.

Science and Math Teachers:

- **Review the STEM curriculum online and teach one or more lessons in your classroom.** Share your feedback with other teachers through the Center's Web site: www.daytonregionalstemcenter.org
- **Sign up for training to learn how to integrate STEM effectively.** Or request training from a STEM Fellow in your school district.
- **Consider becoming a STEM Fellow.** Are you a motivated self-starter and a team player who's creative, innovative and open to change? The Center recruits new Fellows each spring and conducts training in the summer. Curriculum-development meetings are twice monthly beginning in the fall. Check the Web site for an application.

Principals:

- **Encourage math and science teachers in your building** to teach a STEM lesson or attend training.
- **Recommend one or two teachers you know** to become STEM Fellows.

School District Superintendents and Curriculum Directors:

- **Contact the STEM Center and request the training you need** to integrate STEM into your curriculum.

Parents:

- **Ask your child's math and science teachers and principal** how they are integrating STEM education into the classroom.

Engineers and Scientists:

- **Consider becoming a STEM Fellow.** You'll be able to collaborate with teachers in the region to help create STEM lessons that ignite the imagination of today's students – and shape your future employees.

Businesses:

- **Help to advance STEM education by becoming a partner with the STEM Center.** Our partners include the Air Force Research Laboratory, Wright-Patterson Air Force Base, colleges and universities, and local STEM industries. Partners provide STEM Fellows, design engineering-intensive experiences and sponsor internships and tours for teachers. Some also offer financial support.

