What is S.T.E.M.?

S.T.E.M. is an acronym for **Science, Technology, Engineering and Mathematics**. It was first coined in the early 1990's, but was mostly focused on Science and Mathematics. In the 21st century, new technologies are engineered and emerge every day, and those people who can use science, mathematics, and engineering to solve new problems will be in demand.

What is STEM Education?

Today, STEM is quickly becoming an educational initiative because of its integrative approach. A quality STEM program focuses on Science, Technology, Engineering, and Mathematics to help students gain the skills required to succeed in today's challenging world. This includes the ability to think critically, solve complex problems, and drive advancements in science and technology. However, STEM itself is not a separate subject; it is the application of the process and skills learned in these subjects. Making Science, Technology, Engineering, Mathematics connections for students is our primary focus, and opens the door to a more meaningful curriculum that is relevant to our students and the world they live in.

Why is STEM Education Important?

These days, every job – even those you least expect – require some amount of skill in science, technology, engineering and math (STEM). But many students graduate without those skills. That's not just bad for our students; it's bad for our communities that lack the well-trained workforce needed to attract today's jobs. Maintaining our scientific and technological leadership is essential to our economy, our national security and our future. It's not just about science and math; it's about being ready for college, careers and life.

Why is STEM Education important locally?

In the 12 counties located in the Southwest Region, there are approximately 4,000 manufacturing businesses. The median number of employees is 50, and of those 50 employees, 12 are engineers/technicians. With the average age of the employees in the businesses being 50 or greater, approximately 24,000 engineers/technicians must be replaced along with an unknown number of professionals/technicians in the medical sciences, Biotechnology, Energy, Clean Tech, Robotics, IT, and the Marcellus Shale industry. The total number of STEM employees predicted to be needed during the next 10 to 15 years is approximately 35,000 to 50,000 in southwestern Pennsylvania alone.

What are the challenges we as a nation face with regard to STEM Education?

The most serious challenge our nation faces with regard to STEM Education is the lack of diversity in STEM fields. It is imperative that all students have access to quality STEM Education programs. Girls and minority students need to be encouraged from an early age to engage with STEM studies. Many talented young men and women fail to complete their degrees in a STEM field for a variety of reasons.

What are some future job opportunities predicted for STEM fields?

We know that our students need to be prepared for jobs that are not yet on the radar. To do this, we need to teach students how to think; how to be critical thinkers and adapt to an ever changing world that they will live in. These 21st century skills are effectively addressed through a quality STEM education. Our students will be required to be innovative and creative problem solvers, designers, developers, and inventors.

I'm a Burrell parent, and I am supportive of our STEM efforts. What are some basic steps Burrell parents can take to help their children explore STEM Education

Parents can help their children by exhibiting attitudes and values that support learning. Encourage your child to ask questions and avoid negative statements like "I was never good at math"; be positive and expect your child to be successful.

- Help your child see how they encounter science, technology and mathematics in their everyday life. Whether it be in the sports section of the newspaper reviewing team statistics, cooking with your child or working around the house on painting or building projects, point out how mathematics, science or technology is being used.
- Encourage your child to engage in inquiry through investigation and question asking.
- Encourage your child to ask questions and explore careers early. How much education is required to be a mechanical engineer, a computer programmer, or a radiologist? What subjects should they be taking in school to prepare them for a STEM career?
- Take advantage of informal learning opportunities such as museums, science centers, planetariums, aquariums, zoos, and park/recreation programs. We live in an area that has excellent selection of informal learning opportunities and programs.