Students entering the 21st century workplace will face an occupational world unrecognizable to their parents. Many of the jobs they will pursue didn’t exist ten years ago.

The majority of high paying jobs will be in STEM related career fields. Some will require advanced degrees, but many will just require advanced training.

One thing they all require though is a commitment to being the best at what you do. That is why it is critical for students to discover a career that gets them excited; one where they discover their passion.

This STEM Summit is intended to help students do that: to realize that careers can be fun and really cool!

Steve Jobs

“And the only way to do great work is to love what you do. If you haven’t found it yet, keep looking. Don’t settle. As with all matters of the heart, you’ll know when you find it.”

Updated 9-1-15
According to the U.S. Bureau of Statistics, in the next five years, STEM jobs are projected to grow twice as quickly as jobs in other fields.

While all jobs are expected to grow by 10.4%, STEM jobs are expected to increase by 21.4%. Similarly, 80% of jobs in the next decade will require technical skills.

To put these numbers into perspective, of the 3.8 million 9th graders in the U.S., only 233,000 end up choosing a STEM degree in college (National Center for Education Statistics). That means only six STEM graduates out of every 100 ninth grade students.

**STEM is more than a college track**

Most career programs tend to focus on a college track. At the STEM Summit, JA demonstrates that not all students have to go to college in order to have a successful career. While many STEM careers require post graduate degrees, there are also many jobs where a technical school degree is sufficient. Regardless, students need skills and STEM knowledge.

**STEM is more than a career track**

One of the points that is made in the STEM Summit is that STEM applies to nearly every career choice you can make. Whether it is the role of math in terms of finance as an artist or the use of technology in the business world; all positions have some type of STEM component.
Overview of STEM Summit

The STEM Summit is a day-long program held at local high schools across South Central PA. It consists of nine thirty-minute sessions to include science experiments; science, engineering, and math related competitions; and two sets of career panel presentations. The fast pace and constant motion create an atmosphere of excitement and energy.

The program, which is coordinated and run by Junior Achievement, involves up to thirty business volunteers who work with the students during the day. Each volunteer has a specific STEM career and is able to share their background with the students throughout the day.

The goal of the STEM Summit is to inspire students to pursue an academic STEM focus in the remainder of their high school courses to help prepare them for STEM careers in the future. After the completion of the Summit, guidance counselors have a foundation to work with students on appropriate school course work.

What grade level is the STEM Summit designed for?

The STEM Summit could be run at any grade level. However, JA encourages schools to consider implementing it at the freshman or sophomore levels. The goal is to help students realize the importance of taking math and science classes in high school. If the program is postponed until junior or senior levels, less time is available to adjust schedules or increase their motivation in pursuing a STEM career.

Which students should participate in the STEM Summit?

The STEM Summit is designed to give every student an opportunity to see the applications of science, technology, engineering, and math in the real world. As a result, JA requires that the program be provided to all students at grade level.

What is the charge to schools for the STEM Summit?

Junior Achievement provides the STEM Summit to schools for free. There is some work required by the school to run the event to include preparing agendas, providing teachers to supervise discipline, and having a facility team available for set up and take down.
Chemists from North Industrial Chemical and Glatfelter work with students on experiments focused on polymers and chemistry.

Electrical professionals from IBEW work with students on assembling electrical junction boxes.
Competitions

The STEM Summit’s immersive style creates situations where students are involved in science and math without even knowing it.

The Mechanical Engineering competition is where students have to assemble an object using 80/20 aluminum extrusion components. The Civil Engineering competition is where students have to build the tallest tower using spaghetti and a marshmallow. The Relay Competition combines electrical, nuclear, and aerospace engineering, and culminates with a civil engineering activity where the student walks barefoot across eight dozen eggs. The Math Competition has the students competing in various math activities from algebra to geometry and more.

The students also learn about trades in the Electrical Competition.

Career Panels

STEM Careers cover many fields, industries, and professions. The goal of the career panels is to provide students with a glimpse of a few.

Through the use of props and engaging discussions, students find the panels to be interesting and inspiring. Each presentation is eight minutes long, and each of the three sessions consists of three presenters. The emphasis is on each panelist’s career journey and how they chose their career.

Comments from Teachers

“I found the program to help students make connections between STEM knowledge learned in the classroom and STEM application and careers discovered at the Summit.

Students returned to the classroom eager to discuss the event and had a new purpose for high classroom performance.”

Beverly Whiteford
Science Department Chair
Kennard-Dale High School

Experiments

Experiments give students an opportunity to get hands on with science. The students will learn about foam/polymers through a fun Chemistry Experiment and Physics through a series of experiments involving wind and air. They also will taste and compare different foods in the Sensory Science Experiment.

The goal of each set of experiments is not to teach science; but rather, to give students a fun look at science and how it applies to the real world.
The STEM Summit is a fun engaging opportunity for students to learn about STEM careers. It demonstrates how science, technology, engineering, and math coursework are important to prepare for pursuing 21st century jobs. The STEM Summit is not intended to teach science or math, but rather to inspire students to want to learn.

In the Math Competition, students cycle through several different problem solving challenges.

A career panelist from Exelon talks about the importance of safety and shows an anti-contamination suit. Students will use these suits in the relay.

During the Relay Competition, a student from each team walks across eight dozen eggs barefoot demonstrating a civil engineering concept, the strength of domes.
Collaboration is the key:

Junior Achievement of South Central PA is pleased to be able to make this program available to local high schools thanks to the support of the business community.

What JA will provide

Junior Achievement will be responsible for organizing and hosting the event. This will include:

1. Providing all volunteers for event (approximately 35)
2. Providing all supplies and support materials
3. Pipe and drape for dividing gym
4. Coordination and supervision for event
5. Handouts for students
6. Website follow-up materials

What the school needs to provide

In order for the day to be successful, there are a number of activities that are best performed by school staff. We will review the list in more detail and can work around some of the issues.

1. Creating student agendas
2. Grouping students
3. Staffing needs - one teacher for each of nine groups
4. Space requirements – 2 classrooms, gym, and auditorium
5. Set-up - access for JA after school day before.
6. Knock-down – completed after day
7. Tables and chairs
8. Parking for volunteers
9. Reception room for volunteers
10. Coffee and pastry for volunteers upon arrival
11. Host lunch for volunteers
12. Students as greeters and helpers during STEM day

How to get involved?

If your school has an interest in getting involved, please contact the JA office. You can do this by phone at (717) 843-8028 or by email to kzech@jascpa.org.

Comments from Students:

“It was one of the best things I did in my high school career. I would love to do it again.”
“I am now certain I want to be an engineer.”
“An amazing learning experience.”
“I thought the STEM Summit was awesome. It was better than I thought it was going to be.”
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