Innovations resulting from science, technology, engineering and mathematics (STEM) fields have positively touched nearly every aspect of human life.

Kenneth Gibbs Jr,

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The Future of Employment in Occupations related to STEM

“The future of the economy is in STEM,” says James Brown, the executive director of the STEM Education Coalition in Washington, D.C. “That’s where the jobs of tomorrow will be.” Data from the U.S. Bureau of Labor Statistics (BLS) support that assertion. Employment in occupations related to STEM—science, technology, engineering, and mathematics—is projected to grow to more than 9 million between 2012 and 2022. That’s an increase of about 1 million jobs over 2012 employment levels.

Outlook BLS projects overall STEM employment, to grow about 13 percent between 2012 and 2022. This is faster than the 11-percent rate of growth projected for all occupations over the decade. But projected employment growth varies by occupation. Knowing which occupations are projected to have the most job openings and fastest growth may help you narrow your career options.

http://www.bls.gov/careeroutlook/2014/spring/art01.pdf

Providing a STEAM infused education for every child in Elkin City Schools will ensure that our students are better prepared to face “their future educational and employment opportunities.” STEAM encourages problem solving, creative thinking, innovation, working together and the skills needed for both education and careers.

We hope that you and your child will continue to investigate the importance of a STEAM infused education.

Dr. Randy Bledsoe, Superintendent ECS

Career Headlines

February 15, 2015
https://mail.google.com/mail/u/0/
imbox/152e5249df5f56abc

Advice to GenZ from a Millennial

You’re probably a member of the generation following Millennials, and people don’t know what to call you yet. Some of the names out there are GenZ, iGen, Boomlets, ReGen, Plurals, or Founders. MTV calls you Founders. Whatever your generation is called, you can learn from the Millennials. Here is some advice from Dan Schawbel, a Millennial and a contributor to Forbes.

Dan Schawbel’s advice to GenZ, iGen, Boomlets, ReGen, Plurals, or Founders:

1. Think of your career as a series of experiences. You need to collect knowledge in every job that you can take to your next one.
2. Don’t settle. Make sure you are passionate about the work you do. You won’t last long if you take a job just to pay the bills.
3. Focus on making a difference immediately. The quicker you become valuable to the company, the more attention and support you will get.
4. Spend more time with people than at your laptop. The strongest relationships are formed in person, not online. Communicate in person, not through technology.
5. Build your soft skills. These skills are becoming more and more cherished by companies.
Spring has been a busy time for our fourth graders. Students became entrepreneurs as part of their economics unit. They worked together to develop their own soap company. Students filled out job applications and were given various jobs in the company. Some students were supervisors, some made labels, some worked in marketing etc. Students sold soap and will decide together how to spend their proceeds. This year students worked with parent volunteer, Jim Teachey, to design a stamp on the 3D printer. Once the stamp for Elkin Elementary Soap Company was designed and printed on the 3D printer, students stamped the soap imprinting the label in the soap. During their study of birds, students also printed various beaks of birds for comparison.

During the first few days of May students in fourth grade studied government and the three branches of government. As part of their study, students participated in a Mock Trial of the Cat in the Hat. The Cat was accused of attempted murder of the Grinch. Students invited Attorney, James Freeman, Army At, Mary Golden, and two officers from the sheriff’s department in Surry County. The entire trial was written in rhyme and some students performed the trial for the remaining students. Students were instructed on how a criminal trial takes place. They began by placing the jury and swearing them in. Witnesses such as Cindy Lou Who were called to the stand. Students were able to learn various aspects of court and how the judicial branch of the government works.

Students in ESL classes used technology using IPADS to create movie trailers for the states they were learning about. Each student selected a state to present. Students added sound, pictures and text to complete a 60 second trailer describing the important facts about their state. Students presented their movie trailers to other students and administrators. The teachers learned about the technology use at a training held at Elkin High School. They attended a session taught by Shawna Poindexter, EES Media Specialist. Mrs. Poindexter learned how to create the trailers at NCTIES in Raleigh during training in February.

Third graders at EES are busy learning about the planets. Each student researched a planet and learned about what attributes would be needed to live on the planet they chose. As part of their Makerspace assignment, students worked to design and construct aliens. Students had to choose characteristics for their alien based on what would be needed to live and survive on the planet they chose. Students designed aliens who could stand intense heat, live without water, lungs that would filter air and add in oxygen.

Elkin City Schools is the only school system in North Carolina providing a STEAM infused education to every child in grades Pre-K through 12.
Kindergarten students on a scavenger hunt

Kindergarten students went on a scavenger hunt around the school. Students were looking for examples of the terms they were learning in art.

Students found straight lines, zigzag lines, bumpy textures, smooth textures, something dark, something light, something with a pattern etc.

Putting the “A” in STEAM

The halls of Elkin Elementary are covered with art from students in grades Pre-K-6 grade. Students have completed ink prints, abstract art, art with shadows, and others using a variety of mediums. Now Elkin Elementary students are working on a school wide joint art project. Families have been saving and sending in plastic lids all year. Mrs. Jill Bellia, EES art teacher, has been planning a project that will involve all students in PreK-6 grades. The project involves bottle caps, plywood forms, glue, screws and planning. The finished project will be an outdoor mural depicting a nature scene. Smaller plywood forms of bugs, snails, flowers and mushrooms will be placed on rods in the foreground outside the front of the school. The project will involve all students placing lids on plywood to complete the artwork. Once all pieces are designed and finished the display will be mounted on the wall at the front of the school and smaller pieces will be planted in the area in front of the mural. The classes are still collecting plastic lids of all colors. The project will take thousands of plastic lids.

Marble Roller Coasters

In seventh grade students are supposed to explain how energy can be transformed from one form to another (specifically potential to kinetic energy) using a model or diagram of a moving object. So after a lot of thinking it was decided that it would be fun for the students to build their own marble roller coaster. After all...who doesn't enjoy a great roller coaster?

Students were supplied with regular household items like empty paper towel and toilet paper rolls. EMS brought in paper plates and bowls and we used an embarrassing amount of clear tape. Students were given the challenge to ensure that there was SUFFICIENT potential energy (which is converted to kinetic energy) at the beginning of the design to keep the marble in motion for the length of the design track. The classroom was loud and chaotic as the students had time trials with marbles flying all over the room. Students built (then took apart) and rebuilt their designs until the marbles stayed on the tracks and rolled to the end of their roller coasters. The students showed off their designs at our annual Elkin Middle School STEAM Fair on Tuesday, April 19th. This activity was fun, exciting and students learned so much from the process and from one another.

Elkin Middle School

Choral Music

and

STEAM

Ms. Scott, EES music teacher, worked with students in fourth grade to teach them how to play the recorder. Students learned several songs on the recorder and in addition learned to sing songs to go along with the studies of NC in fourth grade social studies.

Students performed both vocal music and selections on the recorder for parents, friends and family at a concert at EES. 5th and 6th grade students have worked to learn music for a concert that will be held on May 17 at Dixon Auditorium. Both band and chorus will perform for a free concert to showcase their work this spring.
**STEAM in Bread Making by Sydney Baker**

In Mrs. Rycroft’s class, the class is reading the Hunger Games. One of the main themes in the book is hunger. Students were challenged to design bread to represent Elkin and its history. My bread was Cranberry-Molasses bread. Molasses represent an agricultural product that can be obtained in the Elkin area. Many people did, and still do, farm varieties of crops in order to make molasses. Cranberries are not produced in the area, but my mother bought cranberries from our area grocer. I researched and did find that during the 1920s, cranberries and other foods were sold and delivered to people in Elkin by Dick Grier’s grocery store.

This relates to STEAM in three ways. We had to use technology by using devices to research history and improvement significances on the internet. Student art encouraged us to use our imagination and be creative in developing recipes. Students had to utilize his/her mathematical skills as they had to use fractions to create the bread through various ingredients.

**Elkin High School**

**Swisher is Bright Ideas Grant winner**

Chaise Swisher, Elkin High School, recently attended the North Carolina’s Touchstone Energy Bright Ideas education grants dinner.

Recognized locally by the Surry-Yadkin EMC, Swisher was one of three recipients who were provided an opportunity to exhibit student projects with co-op leaders and CEO’s from across the state. Greg Puckett, president and general manager of Surry-Yadkin Electric, hosted Swisher and his family at the event as Swisher met with co-workers of Surry-Yadkin EMC.

A formal presentation on the night of the Bright Ideas celebration of grant winners included the opportunity to listen to Charles Swoboda, president and CEO of CREE (a market-leading innovator of lighting-class LEDs, LED lighting, and semiconductor solutions for wireless and power applications), discuss the importance of technology in lighting, electricity and future advancements.

Surry-Yadkin EMC provides power to 27,000 members in Surry, Yadkin, Stokes, Wilkes and Forsyth counties. North Carolina’s Touchstone Energy cooperatives serve 2.5 million people in 93 of the state’s 100 counties. Since the Bright Ideas grant program began in 1994, Surry-Yadkin EMC has contributed more than $100,000 total to local teachers.

“Surry-Yadkin EMC is committed to the communities we serve, and we believe there is hardly a better investment than in the education of our youth and future leaders,” said Adam Martin, manager of Surry-Yadkin public relations.
Advanced Manufacturing Day/STEAM Career

Twenty-two Elkin High School students participating in the Advanced Manufacturing Day on Tuesday, April 5, 2016 on the campus of Surry Community College. The showcase of activities included tours of the various Advanced Manufacturing labs: Computer Integrated Machining, Electronics Engineering Technology, Mechatronics Engineering Technology, Engineering Design Technology, and Welding Technology.

Participating Students were: Jacob Adams, Deisy Alvarez, Rhett Bledsoe, AJ Brown, Maxx Calderon, Addison Collins, Henry Freeman, Brandon Garris, Issy Gonzalez, Cody Martin, Jasmine Martinez, Lane Moore, Damian Ouellette, Carson Pardue, Joshua Perea, Caitlyn Poe, Ryan Russell, Isaiah Suarez, Griffin Wheeler, Caitlyn Wilson, Tyler Wood, Jose Zuniga. These students are a part of Mr. Swisher’s Technology Engineering Design classes at EHS. Participating staff were Mr. Swisher, Mrs. Long, and Mrs. Burgess.

Presentations included gaining information about the programs of study including degrees, diplomas, and certificate classes, along with courses offered through the Career & College Promise program. With a focus on STEAM careers, students learned that each Advanced Manufacturing area offers opportunities to be trained in specific technologies currently needed in the job market. Students toured the technology labs for each area gaining exposure to technology tools and equipment. Each of the areas offers high school students opportunities to take courses through the Career & College Promise Program (CCP). Students can use the CCP courses to obtain certifications or as an early start to obtain a diploma or degree. Tuition for CCP courses is free to enrolling high school students.

**Engineering Design Technology** Graduates of the SCC Engineering Design program have the opportunity to be employed as Mechanical Drafters, Designers, CAD Designers, and Project Designers. The course of study prepares students to apply technical skills and advanced computer software and hardware to create working drawings, graphic representations and computer simulations for mechanical and industrial designs.

**Electronics Engineering Technology** is a degree program. Graduates of this program have the opportunity to be employed as Digital Technicians, Electronics Engineering Technicians, Electronics Technicians, Failure Analysis Technicians, Refurbish Technicians, and Test Technicians. The curriculum is designed to prepare students to apply basic engineering principles and technical skills in electrical maintenance and management or in the design, planning, construction, development, and installation of electrical systems, machines, and power generating equipment. Average Hourly Salary is $28.15. Average Yearly Salary is $58,540.

**Mechatronics Engineering Technology** graduates have the opportunity to be employed as Automation Engineers, Automation Specialists, Controls Engineers, Process Engineers, and Project Engineers. The course of study prepares the student to use basic engineering principles and technical skills in developing and testing automated, servomechanical, and other electromechanical systems. The program includes instruction in prototype testing, manufacturing and operational testing, system analysis and maintenance procedures. Graduates should be qualified for employment in industrial maintenance and manufacturing including assembly, testing, startup, troubleshooting, repair, process improvement, and control systems. Average Hourly Salary is $23.03. Average Yearly Salary is $47,910.

**Computer Integrated Machining** is a growing degree program at SCC. Students can take classes for a degree, diploma, or certificate. Job possibilities with this degree include Machinists, Computer-Controlled Machine Tool Operators, Drilling & Boring Machine Tool Setters, Grinding Machine Tool Setters, and Milling Machine Setters. The curriculum prepares students with the analytical, creative and innovative skills necessary to take a production idea from an initial concept through design, development and production, resulting in a finished product. Average Hourly Salary is $19.03. Average Yearly Salary is $39,570.

**Welding** is a transitional skill that is needed in all areas of Advanced Manufacturing. Graduates of the SCC Welding Technology program have the opportunity to be employed as independent welding technicians or for metalworking industries. They can be employed in career fields such as construction, manufacturing, fabrication, sales, quality control, supervision, and welding-related self employment. Average Hourly Salary is $17.66. Average Yearly Salary is $36,720.
High School Science Students Participate in STEAM Trip

Students in Biology II, AP Biology, Health Science I, and Health Science II classes traveled to the Greensboro Science Center on Tuesday, April 19, to view the Bodies Revealed Exhibit as well as the center’s varied science exhibits.

Bodies Revealed is an exhibition showcasing real human bodies dissected and preserved through a revolutionary process. Students saw 9 full human body specimens and more than 200 organs on display. They were able to view deep inside the human body observing systems including skeletal, muscular, nervous, respiratory, digestive, urinary, reproductive, endocrine, and circulatory. The body specimens in the exhibition had been prepared through polymer preservation. This process involves preserving human tissue through a liquid silicone rubber. The preserved specimens will not decay. Small organs take approximately one week to preserve while full bodies may take up to a year, after which specimens can last for decades.

Students also were able to visit the aquarium, museum, and zoo at the Science Center. The aquarium exhibit included mammals, fish, and birds from around the world. Students were able to participate in the three interactive SciPods exploring the science of survival, water quality, and care of aquatic animals. Exhibits included Asian Fishing cats, small-clawed otters, African penguins, an Amazon Basin, and a Shark Reef. A hands-on harbor provided opportunities for students to touch a variety of stingrays.

In addition to the Bodies Revealed exhibit, students saw museum exhibits including the Wild Weather Gallery, Prehistoric Passages, the Gem and Mineral Gallery, a variety of snakes, turtles, frogs, and amphibians. Another student favorite was the Animal Discovery Zoo where tigers, gibbons, lemurs, crocodiles, maned wolves, The Discovery House and The Friendly Farm both home to a variety of animals.

Another interesting part of the visit was the OmniSphere show, Microcosm: Virtual Voyage through the Human Body. This featured an armada of nanoshells traveling via the bloodstream through the eye, ear, and brain in search of a deadly virus. Microcosm uses the latest discoveries of nanoscale science to create a realistic voyage that is possible for inner space probes a few nanometers wide. This OmniSphere showed how superconductors can measure magnetic fields outside the body and deploy gold nanoshells to the sites of tumors and/or infections.

Thanks to the following community members who made this learning opportunity available to students:

Dr. Will Ballard, Dr. Tim Barron, Mrs. Patty Crosswhite, Dr. Debra Garing, Mr. Paul Hammes, Dr. Gavin Harrell, Dr. Robert Peterson, and Mr. Jerry Stroud.
DIY Taken to a New Level- A Makerspace in the Making

In early April, a group of teachers from Elkin High School visited East Forsyth High School’s Makerspace with Principal, Joel Hoyle, and Chief Academic Officer, Cynthia Altemueller. Their Media Coordinator started our visitation talking to English teacher, April Swarey, math teacher, Misty Ball, and Media Coordinator Kathryn Snow about the unique services provided to students and teachers in their Makerspace.

It is our goal to put into place a Makerspace at Elkin High School during the 2016-2017 school year. This space would serve as a place for students to create, invent, innovate, think and learn.

It is our intent that teachers bring students to the Makerspace to help reinforce understanding in a content area while emphasizing the 4 C’s. Student’s will have opportunities to be creators rather than just the consumer.

Each Makerspace inventory is as individual as the space and its members. Initially the EHS Makerspace will house items such as a 3D printer, iPads, Sphero balls, RaspPi, Rokenboks and Makey Makey. Students will have exposure to the processes of 3D design and printing, coding, electronics, gaming and robotics while using various platforms. The possibilities are endless. This Do-It-Yourself (DIY) concept will only enhance our engagement with the fields of Science, Technology, Engineering, the Arts, and Math (STEAM) and possibly encourage students to pursue careers in these areas. Although our teachers may not be experts in these areas of learning, they are experts in fueling curiosity within our students. It is an opportunity for teachers to learn together with their students.

In addition, bringing students to the Media Center Makerspace may not be ideal for some teachers. We hope to create mobile carts with materials and supplies for “soft making” for hands-on opportunities in the teacher’s classroom.

Visiting East Forsyth High School certainly created a buzz of ideas for what a Makerspace could look like at Elkin High. Collaboration and planning among the teachers and administrators will certainly provide exploratory ideas in the future. We look forward to the ongoing evolution of our EHS Makerspace.

Career Headlines

How to Succeed the First Day of a New Job

The first day of a new job may be one of the most stressful of your career. You’ll feel pressure to impress not only your direct supervisors, but also your coworkers. Follow these suggestions and you’re on your way to success.

1. **Be ready to explain.** You will get questions, lots of them. Where did you go to school? What did you major in? Where did you work before? It’s a good idea to have a 30-second explanation ready, so you don’t fumble as a communicator and come off looking unsure or, worse, incapable of carrying on a conversation.

2. **Appear confident, even if you aren’t.** Coming across as shy, uninformed, or insecure can make others write you off. That doesn’t mean you should pretend to know something you don’t. It’s okay to admit you don’t have all the answers, but admit it with confidence.

3. **Introduce yourself and shake hands, whether you are female or male.** Ask coworkers to repeat their name so you can use it the next time you see them. Nothing pleases people more than having their name remembered.

4. **Keep criticisms about the place to yourself.** You may not like the long walk from the parking lot, but on the first day of work you haven’t earned the right to say so.

5. **Let your energy show.** You will be watched for several days because being new makes you interesting. Present your best positive attitude and hard-worker ethic. Show enthusiasm.

6. **Turn your cell phone off.** That means neither you nor anyone else should be able to hear a vibration or other sound to indicate a call, voice mail, or text message. Your attention should be on the job only.

7. **Watch your body language.** The largest part of communication is body language, so make sure the message you deliver is the one you intend. Smiles are great body language on the first day of work.

8. **Keep silent about a bad experience with a former employer or any other negatives in your life.** Complain- ers and whiners are not welcome in the workplace. You’ll set yourself up for failure if you’re perceived as negative.
Find our STEAM Newsletter for Parents on the Elkin City Schools website
( Parent/Student pulldown window)

It’s Another Great Day to be a Buckin’ Elk!

Want to become more involved at your child’s school in his/her STEAM infused education?

Contact your child’s teacher or principal:

Elkin Elementary School-
Pam Colbert, Principal 835-2756

Elkin Middle School-
Cassandra Morrison, Principal 835-3175

Elkin High School-
Joel Hoyle, Principal 835-3858