Student's Name:_____ **Middle School Grade 6-7**
School and Teacher: _____

Career and Technical Education
Phase IV: May 18 -June 5, 2020
Grades 6-7: STEM /Technology Ed

AN OVERVIEW OF STEM CAREERS

Although STEM careers are diverse, they do share some important commonalities. They all involve working on teams, and they all involve applying science and math to solve problems and make new discoveries. STEM professionals are problem solvers, innovators, and analytical thinkers. They're able to break complex concepts into their components, and they can reconstruct those components in creative ways to come up with solutions. STEM professionals are detail oriented and persistent. The world's biggest problems and most elusive mysteries don't get solved overnight. They require diligent, focused, and tireless work.

Students will be able to: (These objectives will continue to be covered by the teacher during virtual learning)

· Students will understand and appreciate the importance of STEM Education and career in their lives and community

· Students will be able to conduct effective research on STEM careers

What kinds of STEM careers are there?

One useful way to organize STEM careers is by job type. Another is by education requirements.

Job Type:

● Scientists and Researchers: Scientists and researchers work on teams to conduct experiments to answer questions. For example, physicists and their research associates work to answer questions like: Can we turn the movement of ocean tides into electricity? Biologists and their research associates work to answer different questions like: Is there a cure for cancer? Every scientist has a specific field, or area of research. Chemists study chemical reactions, psychologists study the human mind, astrophysicists study planets, black holes, and other objects in outer space...the list goes on!

● Engineers: Like scientists, engineers work on teams. They design the systems and structures that meet needs and solve problems. Some engineers build electrical systems, construct football stadiums, or build spacecrafts. Engineers work for the military, local governments, construction firms, manufacturing firms, and a variety of other organizations. Without them, we would not have vehicles, buildings, computers, or a bunch of other things.

● Technicians: Technicians install, maintain, and operate the equipment that engineers design. Technicians can work with equipment that produces energy (like solar panels), enables transportation (like cars), manufactures products (machines and robotic systems), and more.

● Mathematicians and Statisticians: Their expertise in math is used to help many different types of individuals. They assist scientists in interpreting the results of their experiments. They support engineers in designing systems and structures. They help business owners and marketing directors draw conclusions from data. Mathematicians and statisticians are employed in every industry.

Required Education:

● Associate's Degrees: Associate's degrees are two- year degrees offered through community colleges. Many technician careers require associate's degrees.

Student's Name:_____ **Middle School Grade 6-7**
School and Teacher: _____

- Licenses and Certificates: These are earned/offered through a variety of postsecondary options and programs. They indicate that an individual has completed a course of study, usually under two years, that qualifies them for a particular type of job. Many technician careers require licenses or certificates. Depending on the career, you can also earn licenses and certificates while attending college, working, or participating in an apprenticeship, with passing an exam. Some individuals are able to earn a certificate or license while studying a specific STEM area while in high school.

- Bachelor's Degrees: Bachelor's degrees are four-year degrees offered through colleges and universities. Many engineering careers and careers in research require bachelor's degrees.

- Graduate Degrees: After students have earned bachelor's degrees, they can attend graduate school to earn graduate degrees. These degrees generally fall into two categories: master's degrees and doctoral degrees. Master's degrees take around two years to earn and indicate that a student has completed an advanced course of study in a particular subject. Doctoral degrees usually take four to six years to complete. They indicate that a student has BOTH completed an advanced course of study AND has contributed new research to a subject area. Many upper-level careers in research or engineering require graduate degrees.

Why is it important to know about STEM Careers?

It's critical for everyone to be aware of STEM careers because they are among the fastest growing professions in the U.S. They are also important because they're dedicated to solving some of the world's biggest problems, including:

1. Climate change
2. Diminishing resources
3. Overpopulation
4. Poverty and hunger
5. Health and medical

Student Activity

Students are to complete both the "quickie" quiz and the written response/presentation.

Take a Quick Quiz 😊

1. Click(circle) all the things that ALL STEM careers have in common. (Multiple Choice)

A. They all have to do with building complex machines, robots, and devices.
B. They involve working on teams.
C. They all require a bachelor's degree.
D. They are dedicated to solving problems and making discoveries.
E. They are all dedicated to conserving this planet's resources.

2. You must have at least a bachelor's degree to pursue a career in STEM. (True/False)

A. True
B. False

3. STEM professionals are persistent problem solvers. (True/False)

A. True
B. False

Student's Name:_____ **Middle School Grade 6-7**
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4. Scientists and researchers: (Multiple Choice)

A. Maintain machines
B. Conduct experiments to answer questions
C. Care for people with illnesses and injuries
D. Design and build machines and structures

5. Engineers: (Multiple Choice)

A. Conduct science experiments to answer questions
B. Design systems and structures
C. Always have a master's degree
D. Care for individuals with illnesses or injuries

6. Technicians: (Multiple Choice)

A. Conduct science experiments to answer questions
B. Care for people with illnesses and injuries
C. Install, maintain, and operate the equipment that engineers design
D. Design new devices and machines

Written Response (Presentation)

After reading the overview of STEM careers above, you will select the job type that interests you the most. Think about what you may like to do now and in the future as a career. After selecting one job type, you are to conduct further research on that specific job type using the internet, reading an article, or possibly interviewing someone who works in that field. After researching, you are to create a three to five slide presentation regarding your STEM selection. The slides can be created on the computer within power point or any other presentation software. You may also hand draw/create your slides on paper. Included on your slides should be the specific career selected such as chemical engineer or computer technician. Then, briefly talk about the potential salary, education requirements, job description, working environment, and any other great aspects of that exciting STEM career. Now, if you have done something similar to this in the past, take this time to update your presentation based on new information learned. You will have an opportunity to share your presentation with a teacher in the future. Contact your teacher or school for any needed assistance.

Have fun researching!