This template is created to help counselors and others build presentations about STEM and career options.

STEM and You!

Where Your Strengths Meet the World's Needs

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How To Use This Presentation

- How to use and adapt slide deck to meet audience needs:

1. Slides 3-4 are background information for facilitator
2. Remove slides 3-4 or adapt for audience before use
3. All underlined words are hot linked (provides additional information for facilitator or allows audience to follow your lead). Individual users can explore based on their needs.
4. Adapt all material and add personalized slides to meet your objectives.
5. Good luck and please send feedback or ideas for improvement to feller@cahs.colostate.edu

What is STEM?

(For Adults)

- The science, technology, engineering, and mathematics (STEM) fields are collectively considered core technological underpinnings of an advanced society, according to both the National Research Council and the National Science Foundation.
- In many forums (including political/governmental and academic) the strength of the STEM workforce is viewed as an indicator of a nation's ability to sustain itself.
- Maintaining a citizenry that is well versed in the STEM fields is a key portion of the public education agenda. Substantial efforts are underway to raise awareness of STEM education issues, initiatives and programs to help those seeking and promoting STEM career options.

STEM and the Achievement Gap

(For adults)

Some of the most telling facts about the achievement gap are provided by the Education Equality Project - showcasing what's known about both the problem and its solutions. Choose to view all or selected facts by categories.

Fast Facts

What is STEM?

STEM stands for a cluster of careers in the fields of:

- Science
- Technology
- Engineering
- Math

What Do We REALLY Mean by STEM?

Any field or career that:

- Creates, Discovers or Applies **New** Knowledge to Make Life **Better** for All!

In Other Words…

STEM careers :

- Search for new information, methods, and ways to do and understand things better
- Work to effectively and efficiently solve the world’s problems
- Require you to innovate, create, & discover
- Require you to ask why and how about things that need to be built, invented and designed

We want you to explore STEM careers… because the World needs YOU and you may not have been getting the message!

STEM Careers Are:

- Cutting Edge
- Profitable
- Beneficial
- In Demand

People Attracted to STEM Are Usually:

Investigative people interested in:

- Knowing
- Finding out
- Analyzing
- Thinking
- Exploring

People Who Like STEM Are Often:

Realistic people interested in work that demands:

- Physical activities
- Hands-on tasks
- Practical solutions
- Tool-oriented problem solving

STEM Fields Value People Who Are:

- Interested in creating & being “outside the box” (Artistic)
- Interested in organizing, processing, & record-keeping (Conventional)
- Interested in helping society and individuals (Social)
- Interested in leading, persuading and selling (Enterprising)

STEM Is a Way of Thinking, Doing, Creating, Organizing and Helping!

- All career interests are needed in STEM careers, one way or another.
- All career interests use STEM knowledge and tools in their fields.
- STEM interests are incredibly cool because they make a REAL difference in everyday life!

Why is STEM Important?

- Knowledge Economy - Information is power and the global currency of the day.
- Effect of STEM on U.S. Economy
  - Creating wealth and jobs
  - China and India are increasingly wise competitors with much larger populations from which to draw talent.
- Recent History & STEM
  - Space Race - Sputnik to the Moon Landing during the 1950s and 60s. The U.S. was in competition with the former Soviet Union.
  - Global Economic Crisis - The worst financial crisis since the Great Depression.
  - Achievement Gap - The observed disparity on a number of educational measures between the performance of groups of students, especially groups defined by gender, race/ethnicity, ability, and socioeconomic status.

How Do You Benefit From STEM Today?

- Everyday outcomes of STEM:
  - Cell phones, smart phones or MP3 players - computer engineering, high tech manufacturing
  - Video games - computer engineering: hardware, and software
  - Animated movies - computer engineering: hardware, and software
  - Cars - mechanical engineering, high tech manufacturing, mining engineering, petroleum engineering
  - Digital photography - computer software and hardware engineering
  - Plastic - petroleum engineering

Some Places You Might Be Surprised to Find STEM

- Health Care - Prevention, treatment, and management of illness by creating biomedical devices, and defining and developing chemical and biological processes
- Construction and Mining - GIS computer programmed heavy machinery
- Libraries - Computer information systems embodied
- Manufacturing - Computed numerically controlled (CNC) machinery, Mechanical engineering
- Social Sciences - Long distance psychotherapy via live video conferencing

What's in It for You?

- Earn good pay
- Earn respect
- Learn new things everyday
- Create new technologies
- Be valuable to society

Some Average Salaries

- Engineers depending on field: $52K to $83K
- Software Engineers: $85K
- Chemists: $66K
- Medical Scientists: $73K
- Geoscientist: $79K
- Environmental Scientist: $60K
- Biochemist/Biophysicist: $83K

These numbers were taken from the U.S. Occupational Outlook Handbook

STEM by Career Paths

* Science
* Technology
* Engineering
* Math
* Computing
* Health Care

Some Science Careers:

- Agricultural and food scientists
- Biological scientists
- Conservation scientists and foresters
- Medical scientists
- Atmospheric scientists
- Chemists and materials scientists
- Environmental scientists and specialists
- Geoscientists and hydrologists
- Physicists and astronomers

For More Science Career Info See:
OOH Professional Occupations

Some Technology Careers:

- Computer network, systems, and database administrators
- Computer scientists
- Computer software engineers and computer programmers
- Computer support specialists
- Computer systems analysts

For More Technology Career Info See:
OOH Professional Occupations

Some Engineering Fields:

- Aerospace
- Agricultural
- Biomedical
- Chemical
- Civil
- Electrical
- Electronics
- Environmental
- Health and Safety
- Industrial
- Marine
- Materials
- Mechanical
- Mining and Geological
- Nuclear
- Petroleum

For more info: OOH Engineers

Some Math Careers:

Image courtesy of DailyClipArt.net

- Actuaries
- Mathematicians
- Operations research analysts
- Statisticians

Top STEM Industry Clusters

* Advanced Manufacturing
* Aerospace
* Biotechnology
* Energy
* Geospatial Technology
* Health Care
* Homeland Security
* Information Technology
* Nanotechnology
* Transportation

Top STEM Disciplines

- Chemistry
- Computer Science
- Engineering
- Environmental Science
- Geosciences
- Life Sciences
- Mathematics
- Physics/Astronomy
- All STEM Disciplines

How Some Majors Fit Into One STEM Workplace

* Find Your Place at JPL

* Choose from a list of majors and see how they are used within one workplace.

Gender and Ethnic Diversity

Gender and Ethnic Diversity is required to meet global STEM needs.

- Women In Engineering Proactive Network
- Engineer Girl
- STEM Equity Pipeline
- Diverse Education Blog
- There's a STEM Career for You
- Diversity Careers

Women Tell Their STEM Stories

Engineering for Life Video Clips (Female Role Models Solving Problems)

- Katherine Bicer's dream job keeps helicopters flying high AND she teaches yoga to her coworkers. [Video duration 1:16]
- Erin Fletcher's dream job lets her fulfill her childhood dream to build bridges AND she gets to change people's lives. [Video duration 1:57]
- Daniele Lantagne's dream job lets her teach people how to make their drinking water safe ALL WHILE traveling the world. [Video duration 2:13]
- Judy Lee's dream job lets her design everything from toys to pet products AND she gets to brings her dog to work. [Video duration 2:07]
- Tanya Martinez's dream job lets her follow her passions for the environment and her culture PLUS she's her own boss! [Video duration 1:20]
- Jessica Miller's dream job lets her invent cutting-edge medical devices AND save lives. [Video duration 2:08]
- Tara Teich's dream job lets her create new worlds and cool characters for video games PLUS she gets her name on the box! [Video duration 3:01]

A Few STEM Folks Tell Their Stories

- Powering the Planet (19 min)
- The Wind Business (5 min)
- Second Skin Capability (4:30)
- Spaceports (11:45)
- The Space Sling (5:19)
- Designing and Engineering Rockets (8 min)
- Ares: Testing Rockets (8:45)
- Flying on Mars (2:30)

A Few More STEM Folks Tell Their Stories

* Inventing Toys (5 min)
* Understanding Hurricanes (3 min)
* What are Scientists and Engineers Like? (57 min)
* The Shape of Phones (5 min)
* Printing Money (3 min)

Famous and Not-So-Famous STEM People

- Tracy Caldwell Dyson, Chemist, Astronaut
- Steve Jobs: CEO of Apple, Board Member of Disney
- Dorothy M. Metcalf-Lindenburger, Geologist, Teacher, Astronaut
- Story Musgrave - Former astronaut with SIX degrees in fields including mathematics and statistics, operations analysis and computer programming, chemistry, medicine, physiology and biophysics, and surprisingly, literature.
- Waverly Person - Geophysicist, seismologist, director National Earthquake Information Center 1977 - 2006. NEIC Photo
- Stephanie D. Wilson, Aerospace Engineer, Astronaut

How to Find Out More About STEM Careers

- www.STEMCareer.com
- O*Net Online STEM Disciplines
- Occupational Outlook Handbook: OOH Professional Occupations

A Few Cool Websites:

- Discover Engineering
- NASA Education
- Engineer Your Life
- Go-Defense
- Stem Pipeline Blog

Where Can You Use Your Strengths in STEM?