SCIENCE, TECHNOLOGY, ENGINEERING AND MATH
Teacher Resource

Note: Careers in Science, Technology, Engineering and Math (STEM) are divided into pathways. Although recognized as a separate cluster, STEM careers support most all clusters through research and development of new technologies.

Listed below are some of the careers found in each pathway and range from entry level to those that require post-secondary training, certificates and/or degrees. This list serves only to build educator background knowledge. Students are not introduced to career pathways until the 6th–8th gradeband.

Engineering and Technology Pathway

Engineering can be defined as the process of creating and building structures, products and systems such as roads, cars, machines, computers, etc. Technology can be defiined as the tools and machines used to solve realworld problems.

- Aerospace Engineer
- Agricultural Engineer
- Automotive Engineer
- Biomedical Engineer
- Electrical Engineer
- Electronics Technician
- Manufacturing Engineer
- Manufacturing Technician
- Survey Technician
- Transportation Engineer

Engineering Design and Development

The engineering design process is a series of steps that engineers use to solve a problem. There are many versions of this process, but all serve to help engineers find a workable solution.

- Applied Mathematician
- Astronomer
- Biologist
- Chemist
- Environmental Scientist
- Math Teacher
- Meteorologist
- Physicist
- Programmer
- Science Teacher

Alphabet Letter Printing Worksheet

Practice writing each upper case and lower case lettter on the lines below as shown on the sample letters. Then write the name of the occupation.

A

a

Astronaut

Alphabet Letter Printing Worksheet

Practice writing each upper case and lower case lettter on the lines below as shown on the sample letters. Then write the name of the occupation.

S 1

s 1

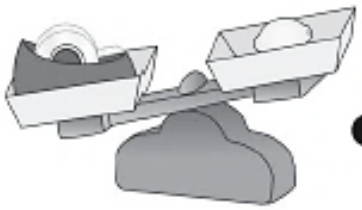
Scientist

CHEMIST

Chemists do experiments that require problem solving and record keeping. They work in laboratories and offices.

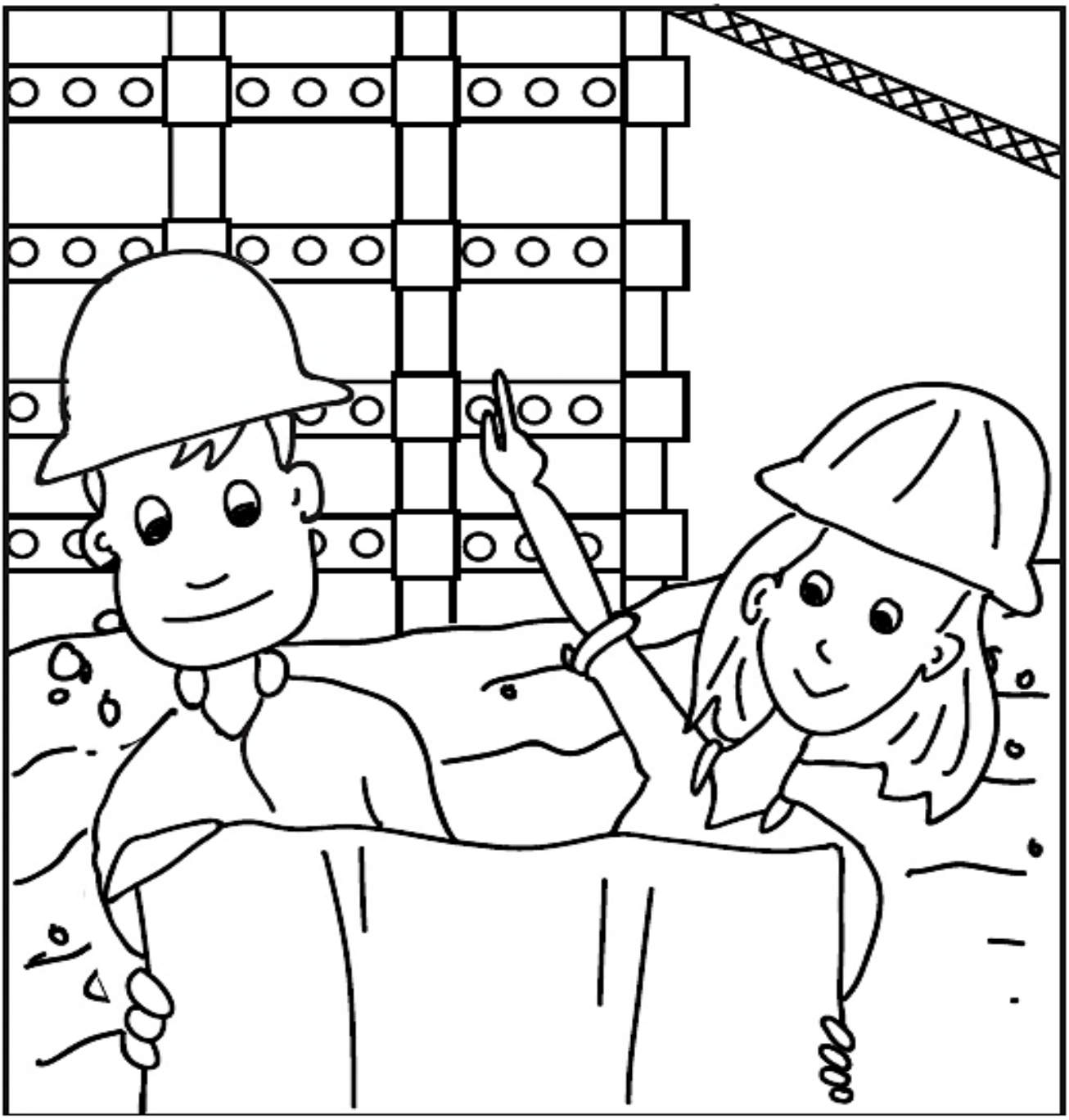
MATCHING ACTIVITY

Draw a line that matches the words to the pictures.



- Scientist
- Magnifying Glass
- Experiment
- Scale
- Goggles
- Test Tubes
- Microscope
- Laboratory

ENGINEERING



STRUCTURAL ENGINEER

Engineers design buildings, bridges and other structures for construction workers to build.

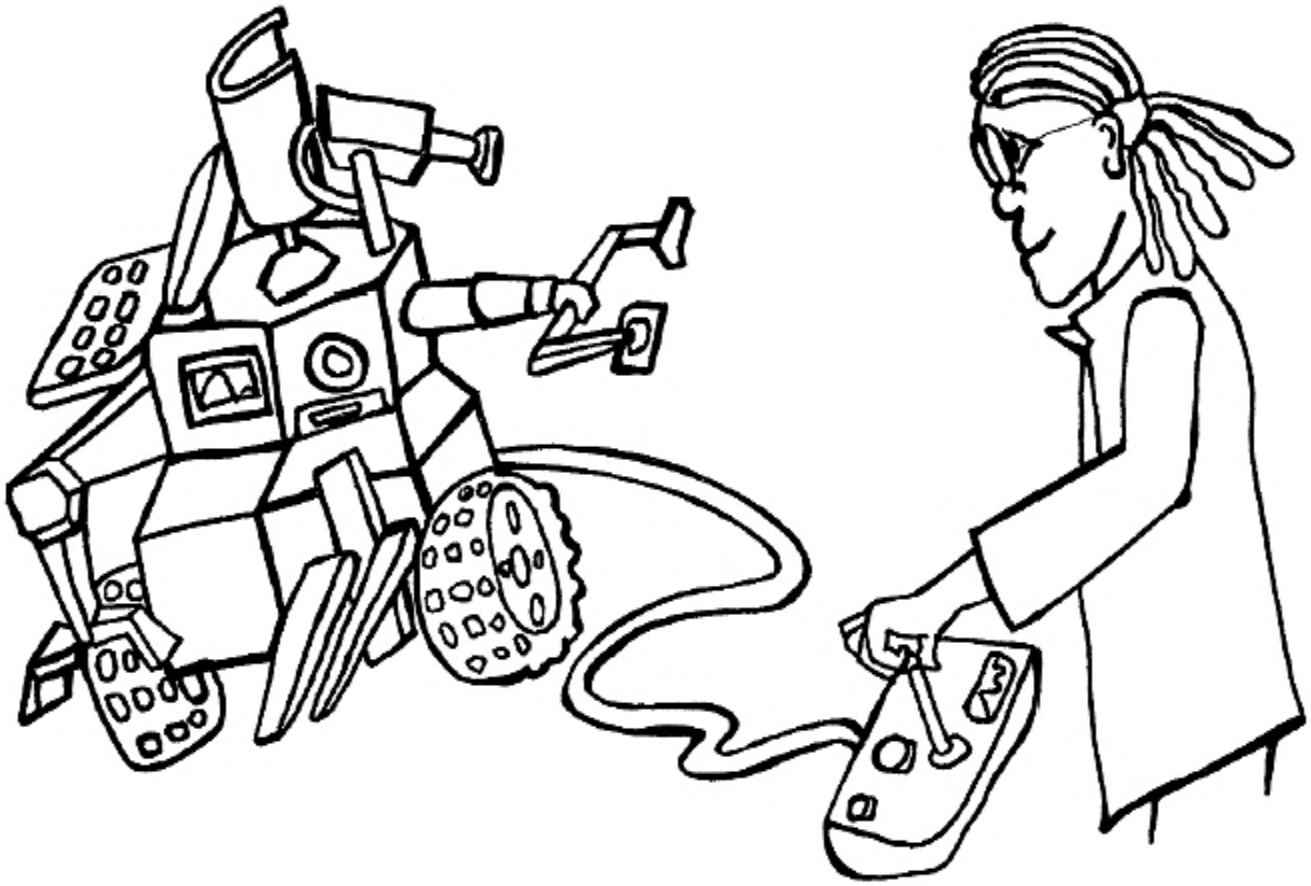
Science, Technology, Engineering & Mathematics

Sample Careers

1. Biological Scientist
2. Chemical Engineer
3. Drafter
4. Robotics Technician
5. _____

Can you think of another?

Careers in the Science, Technology, Engineering & Mathematics cluster are usually very technical and employ people who are good at problem solving and measuring things. People in these occupations may do lots of research. They may work in laboratories or in offices. You can be an engineer, archeologist, astronomer or meteorologist and be in this career cluster.



Science, Technology, Engineering & Mathematics

Name_____

Could you make a better toothbrush, pencil or toy?
Choose an object and draw your improvements below.

Describe how your changes make the item better.

_____

_____

_____

_____

_____

_____

_____

_____

_____

STEM CAREERS

T	S	I	G	O	L	O	E	H	C	R	A	N	T
S	C	I	E	N	T	I	S	T	I	O	O	S	N
N	B	C	T	G	E	N	E	T	I	C	I	S	T
T	O	S	I	S	S	I	A	A	E	G	H	G	H
E	T	R	T	S	I	M	O	N	O	C	E	O	T
C	A	E	C	T	N	R	T	L	A	B	N	B	T
H	N	M	A	S	T	R	O	N	A	U	T	E	S
N	I	S	T	A	T	I	S	T	I	C	I	A	N
I	S	E	M	T	B	I	C	H	E	M	I	S	T
C	T	T	S	I	G	R	U	L	L	A	T	E	M
I	C	S	R	E	H	C	A	E	T	E	T	T	T
A	T	S	R	E	M	O	N	O	R	T	S	A	S
N	G	E	E	E	N	E	N	G	I	N	E	E	R
A	S	T	R	O	P	H	Y	S	I	C	I	S	T

SCIENTIST
TEACHER
BIOLOGIST
BOTANIST
ARCHEOLOGIST
ENGINEER
STATISTICIAN
METALLURGIST
TECHNICIAN
ASTROPHYSICIST
CHEMIST
ECONOMIST
ASTRONOMER
GENETICIST
ASTRONAUT

Play online at: https://bit.ly/39R2r2R

DIG DEEPER

Note: These tasks serve only to generate ideas and connect real world actitivites to academic content. **Exploratory Tasks** may be teacher led through a class project, demonstration or assignment. **Extension Tasks** may be modified to align with ELA, math, science or social studies content through writing, determining/comparing costs, human impact, etc.

Exploratory Tasks	Extension Tasks
Experiment with different styles of paper airplanes.	Test each style to determine which flies the farthest.
Identify items in you room that made from common building materials such as wood, plastic, brick, concrete, metal or fabric. What material was used most often?	Why use one material instead of another? Choose two of the materials. Draw a Venn diagram to compare characteristics of the materials such as strength, hardness, flexibility, durability, etc.
Make a boat out of an everyday material such as aluminum foil, styrofoam or plastic.	Experiment with different sizes or shapes to determine which can hold the most weight.
Use paper to make a three-dimensional object. Create a technical drawing with different views, front, back, etc. Include measurements.	Write step-by-step instructions describing how to make the object. Share with a peer to make the object.
Design a new board game. Create a drawing of the board, instructions and game pieces.	Use your drawings to make the game to play with others. Afterwards, ask them what they liked the best and what could be improved and how.

Is a Career in Science, Technology, Engineering and Mathematics for Me?

Would you be interested in a career in Science, Technology, Engineering and Mathematics? Below are knowledge and skill statements related to the careers in this cluster. Read each statement. Decide if this describes you by checking the Yes, No or Maybe box.

THINGS I LIKE TO DO	YES	NO	MAYBE
Interpret formulas			
Find the answers to questions			
Work in a laboratory			
Figure out how things work and investigate new things			
Explore new technology			
Experiment to find the best way to do something			
Pay attention to details and help things be precise			
PERSONAL QUALITIES THAT DESCRIBE ME	**YES**	**NO**	**MAYBE**
Detail oriented			
Inquisitive			
Objective			
Methodical			
Mechanically inclined			
SCHOOL SUBJECTS THAT INTEREST ME	**YES**	**NO**	**MAYBE**
Math			
Science			
Drafting or computer aided drafting (CAD)			
Electronics or computer networking			
Technical classes or technology education			

Did you check YES most often? If so, continue to explore careers and opportunities in this cluster. And don't forget to focus on your math and science classes to build the academic skills you need for these careers.

Did you check NO most often? If so, don't worry. There are hundreds of jobs to explore in the other 15 career clusters.

Did you check MAYBE most often? If so, continue to explore this cluster as well as investigating how your skills and interests may be a good match in other clusters.