



STEAM Careers

Science, Technology, Engineering, Arts, Mathematics

Choose a career from the list to explore and research. Write a job ad so that someone would want to apply for that job. Be sure to include a description of the job: duties and responsibilities, salary, degree requirements.

Careers:

Biochemist
Biofuel or Biodiesel Technician
CAD Technician
Cytotechnologist
Food Scientist or Technologist
Forensic Scientist
Fuel Cell Engineer
Geoscientist
Hydrologist
Nuclear Medicine Technologist
Photonics Engineer or Technician
Remote Sensing Scientist
Robotics Engineer or Technician
Software Developer
Soil and Water Conservationist
Sustainability Specialist
Video Game Designer
Wind Energy Engineer



STEM Every Day

Science and technology impact our lives every day.
Try some of these activities/ideas.

People and Animals

Observe the movements of the animals around you: dogs, cats, squirrels, rabbits, birds, spiders. Look for animal tracks outside. Visit the vet with your pet. Observe the changes as a cut heals. Ask to see x-rays at the doctor's or dentist's office. Ask about the equipment that your doctor or dentist uses.

Plants

Plant seeds and watch them grow. Start a compost pile with leftover food from your kitchen. Watch flowers bud and blossom. Help care for trees and flowers in your environment.

Weather

Look at the weather report on television or in the newspaper. Pick a location and find its weather on the Internet. Look at a map that has climate or weather zones. Observe the sky at different times during the day. Keep a thermometer inside and outside your house and record the temperatures. Keep a graph or diary of weather conditions. Draw conclusions about how location affects weather. Investigate how a meteorologist predicts the weather.

Chemical and Physical Properties

Experiment with what will sink or float in a large bucket of water. Collect items in nature, and sort and log them. Time how long it takes for an ice cube to melt. Draw on steamy bathroom mirrors or car windows. Reflect light off mirrors. Balance objects on a seesaw. Squirt food coloring into water. Make bubbles. Create your own musical instruments. Help with measuring and mixing recipes. Generate questions to explore: for example, why do sweet treats have salt in them?

Earth and Space

Go rock hunting to see how many different ones you can find; ask if friends or relatives who live in different areas can send you some rocks from where they live. Notice the way the sun and moon move across the sky. Watch a sunrise or sunset. Keep track of the progress of space program satellites, launches, and missions. Make a graph of how the shape of the moon changes throughout the month.

Energy

Observe how your electric meter changes when you turn things on and off. Recycle glass, metal, and paper around the house. Visit a recycling site and a dump. Play around with magnets on the refrigerator. With parental help, learn how to use electrical tools in the kitchen, bathroom, and workshop. Take apart old tools that have stopped working. Figure out how many calories are burned from various activities.

Create a list of your activities:



STEM Women

Below is a list of women who have made contributions to STEM fields. Choose one and find out what contributions she has made. Try to determine the problem/issue each is addressing and see if you can discover the motivation or the reason she has focused on her work.

Research 3-4 of the women below.

What content knowledge, skills, behaviors do they have in common?

- Chelsea Clinton
- Brittany Wenger
- Dr. Jenna Carpenter
- Debbie Sterling
- Mayim Bialik
- Dr. Ellen Stofan
- Marissa Mayer
- Dr. Karen Panetta
- Danica McKellar
- NASA's Datanauts: STEM Women on a Mission
- Dr. Frances Allen
- Liu Yang
- Dr. Fabiola Gianotti
- Maryam Mirzakhani



Global Issues

Choose one of the following global issues to research. Decide what the needs are and what are the obstacles to overcoming the problems.

(Have younger students identify an issue at home or school that needs to be addressed.)

Issues:

Disaster Relief, Clean Water, Education (especially for girls), Food, Going Green, and Accessible Healthcare

Take Action:

Design a pamphlet or create a video that explains your findings and includes ideas for a solution.

Your pamphlet should include:

- A description of the problem, including for whom and where in the world it is a problem.
- What is needed in order to solve the problem, and some suggestions as to how to solve it.
- Identify which areas of STEM/STEAM are involved.
- Links to additional information about the topic.
- An action that can be taken now to help.

Be prepared to share your pamphlet/video with others. It could be shared with your class, school, community or the world.