ScienceNews

Activity Guide for Students: Exploring STEM Career Paths

Directions:
In this activity, you will consider your interests and skills and identify STEM careers that interests you. After selecting a career to explore, you will identify the steps necessary to get from where you are today to that goal and create a map or flowchart showing a potential path. For an idea on how you might develop your map or flowchart, consult the model provided.

After creating your STEM career map or flowchart, you will choose a STEM professional whose career interests you and answer questions about them and their work. Those answers can be used to develop a presentation about that STEM professional.

Charting a path
For homework, you will read the *Science News* article "How our SN 10 scientists have responded to tumultuous times." This article was published October 9, 2021, in the print edition of *Science News* under the title "SN 10: Times of Change." The reading will prepare you for the first class period during which your teacher will discuss the careers of the featured scientists and how they got there.

To chart your path to a STEM career, answer the questions and prompts below by circling sample answers or writing in your own.

1. First, consider your existing interests and skills, and what motivates you.

I like to…
Help people, Write, Code and game, Draw, Explore new places, Be outdoors, Build models, Play sports, Cook, Sing, Perform, Dance, Listen to music, Write your own:

I'm good at…
Public speaking, Solving problems, Encouraging others, Noticing details, Thinking big picture, Being creative, Leading a team, Synthesizing information, Active listening, Coordinating others, Creating systems, Working independently, Reading comprehension, Write your own:

I care about…
Climate change, Animals, Sustainability, Conservation, Clean energy, Cybersecurity, Space exploration, Transportation, Mental health, Teaching others, Food supply, Human health and wellness, Equity and inclusion, Write your own:

My favorite high school STEM subjects are…
Biology, Chemistry, Physics, Computer science, Math, Earth science, Anatomy, Psychology, Health, Technology, Engineering, Write your own:

2. Next, explore Science Buddies or other online resources to identify two or three careers that sound interesting to you. What does a person in that career do? Why does that career sound interesting? How does it fit with your interests and skills? What do the careers you selected have in common? What makes them different?

STEM careers that interest me include…
Veterinarian, Pharmacologist, Climate modeler, Robotics engineer, Biomedical researcher, Agronomist, Teacher, Architect, Physical therapist, Science reporter, Patent lawyer, Statistician, Oceanographer, Cartographer, Food scientist, Economist, Write your own:

3. Now, identify the steps that could get you from your current interests and skills to one of the STEM careers you have identified. Consider the importance of academic degrees, training or experience. Use Science Buddies or other online resources to guide you.

High school coursework might include…
Culinary arts, Anatomy, Computer science, Calculus, Statistics, Chemistry, Physics, Biology, Introduction to research, Write your own:

Vocational training programs might include…
Dental hygienist, Medical technologist, Web developer, Assistants in physical or occupational therapy, HVAC mechanic or installer, Massage therapy, Electrician, Write your own:

College majors might be…
Biology, Biochemistry, Physics, Biomedical engineering, Forestry, Nutrition, Computer science, Civil engineering, Genetics, Agronomy, Economics, Write your own:

Additional education might be…
Ph.D. in STEM subject, Masters in STEM, Masters in writing or communication, Business school, Medical school, Associate degree in nursing, Certificate in aerospace engineering, Law degree, Certificate in nutrition, License in teaching, Clarify further or write your own:

Skills I'll need include…
Computer coding, Data analysis, Strong leadership, Active listening, Critical thinking, Writing, Speaking, Reading comprehension, Social perceptiveness, Complex problem solving, Judgement and decision making, Mathematics, Mechanical aptitude, Fine motor skills, Write your own:

Work experience could include…
Internship with local newspaper, Volunteering at a nature center, Lab experience at local college or university, Student teaching, Internships in consulting or research firms, Database management, Systems administration, Internship at a law firm, Write your own:

4. Finally, you'll create a path that gets you from where you are now to where you want to be. A sample path from an interest in coding and earth science to a career as a climate modeler is shown. What might a path from your interests and skills to your selected career look like? Draw a map or flowchart of that path on a separate piece of paper. Indicate when you might learn important skills or gain necessary experience along the way. What would a path to a second career look like? Can you think of an alternative route?

Coding and gaming + Earth science → Computer science courses in high school + Volunteering building a website for a local nature center → College major in Oceanography + Courses in CSS and JavaScript → Ph.D. in Climate Science → Climate modeler

Zooming in

During this class, you will use the *Science News* SN 10, *Science News for Students* Cool Jobs or the general *Science News* archive to find a scientist whose career interests you. If possible, try to find someone whose career matches a career you chose for yourself.

Answer the following questions about the scientist you chose to research.

1. Who is the scientist whose career you find interesting?

2. What sources did you use to research this scientist?

3. What is the scientist's field, and where do they work?

4. What degrees did they earn to pursue their career?

5. What do they focus on within their field, and how do they study it?

6. Does the scientist mention a moment of inspiration or challenge in their research/STEM journey?

7. Do they name a mentor or important person who helped them?

8. What accomplishments do they mention, and why are they important?

9. What was surprising to you about your scientist's work?

10. How has your research on this scientist influenced your thinking about a STEM career?

Optional presentation
Make a visual presentation about the career of the STEM professional you have chosen. Using the answers to the questions and any other material you want, describe the person's career path in a compelling way.