

Ideas That Help

Trace how science, solutions, and career research connect.

5.4 "Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society..."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each sentence that tells how a discovery or innovation affects people or future research. Circle each resource the class uses to investigate the engineer career, then number the resources 1 through 6.

Clean Water, Curious Careers

- ① More than a century ago, scientists learned that some tiny living things can cause disease. This discovery changed research about clean water. Engineers used the new knowledge to improve water-treatment systems that remove harmful germs before water reaches homes. These systems help communities prevent many illnesses. The work also gave scientists new questions about testing water and finding safer ways to clean it.
- ② Today, a fifth-grade class investigates the STEM career of an environmental engineer. At the public library, students use books and a career database to learn what the job involves. At a science museum, they examine a water-filter exhibit. A professional engineering organization's website describes training and safety work. Each source gives useful information, but students check who created it and compare facts across sources.
- ③ They also contact a local water company, which explains how engineers monitor pipes and treatment equipment. On an online career platform, the class watches an interview with an engineer. Finally, an engineer agrees to be a mentor and answers their questions. Research helps students see that STEM careers solve real problems for people. It also helps them notice that new discoveries can lead to innovations, and innovations can lead to more research.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What did scientists learn, and how did engineers use that knowledge?

2 Give one way water-treatment systems affect society and one way they affect science.

3 Name two resources the class used to investigate environmental engineering. Tell what the class learned from one of them.

4 Why do students check who created a source and compare facts across sources?

3 YOUR TURN _____ Your own words

Choose a STEM career that could help solve a problem in your community. In 3 or 4 sentences, name two different resources you would use to learn about the career, tell what each could teach you, and explain how one innovation from this career could help people.

PART 1 • READ AND MARK

Underline each sentence that tells how a discovery or innovation affects people or future research. Circle each resource the class uses to investigate the engineer career, then number the resources 1 through 6. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What did scientists learn, and how did engineers use that knowledge?	Scientists learned that tiny living things can cause disease. Engineers used that knowledge to improve water-treatment systems that remove harmful germs.
2	Give one way water-treatment systems affect society and one way they affect science.	They help communities prevent illnesses. They also lead scientists to ask new questions about testing and cleaning water.
3	Name two resources the class used to investigate environmental engineering. Tell what the class learned from one of them.	Answers may name any two: public library, science museum, professional engineering organization website, local water company, online career platform, or mentor. For example, the library helped students learn what the job involves.
4	Why do students check who created a source and compare facts across sources?	They do this to judge whether information is trustworthy and to see whether facts agree across sources.

PART 3 • YOUR TURN (SAMPLE ANSWER)

To learn about civil engineering, I would use a library book about bridges and interview a city public works engineer. The book could explain the training civil engineers need, and the engineer could describe local projects. Better flood-warning sensors, which civil engineers may help plan and install, can alert people sooner so they can move to safer places.

Accept equivalent descriptions of the discovery, water-treatment impact, and listed career resources. For the open response, accept a realistic STEM career, two distinct resources, what each could provide, and a plausible innovation connected to helping society.