

Robotic Engineer

Think robots! What's the the first thing that comes to mind? Is it futuristic characters in a movie or video game?

Maybe your first thought was about vacuum cleaners or lawn mowers. Probably not! But robots now do chores like these in many homes.

Making life easier for humans is a big challenge for robotic engineers. So are robots that drive cars and fight cancer!

(Feel free to use the back of this sheet for longer answers)

The Future of Robots and You

Robots are machines programmed to do two types of things. Robots do things that people can't do. Robots also do things that people don't want to do. They are used to repeat the many steps involved in making products like cars or candy. They also do jobs that are too dangerous for humans. For instance, the military uses robots to defuse bombs.

One thing that robots cannot do is create themselves. That's where robotic engineers come in. They design robots to "think" and "act" in human-like ways. Robotic engineers must know a lot about math, science, and technology. They are problem-solvers and creative thinkers. This STEM career requires a college degree in engineering or computer science and offers better than average earning potential.

CHALLENGE #1: *If you had this career...*

What kind of training would you need?

Where could you find a job?

How much money could you earn?

Who would you help and how would you make a difference?

Why would (or wouldn't) you like doing a job like this?



©Shutterstock Images / Swin

CHALLENGE #2: *Think Tank*

If you could invent a robot, what would you want it to do? Think about your own life as a student. In what ways could a robot make your life easier (or more fun)?

Draw a picture and use words to describe how your robot would work. Start with the problem and show the steps your robot would make to solve it.

How could your robot make the world a better place for students? Be creative and get specific with your ideas.



Robotic Engineer Teacher Tips

Robots can be an effective way to engage students of all ages in STEM learning. Robots are also the source of high demand, STEM-focused career opportunities. Fueled by innovations in industries that include transportation (self-driving cars!), medicine (nanomedicine!) and the military (neutralize explosive devices!), the job outlook is good for robotic engineers.



©Shutterstock Images / Sawin

DISCUSS

Ask students to make a list of the types of real and fictional robots they know about. Discuss differences and similarities between the two types.

READ

Students can read about robotic engineers out loud as a class or silently on their own.

CHALLENGE #1: If You Had This Career...

Several queries prompt students to get up close and personal with essential information about this career option. As they work through each question, remind students to relate this information to their own attributes, interests, and aspirations. Online research tools include:

- Using Google (or another approved Internet search engine) to make specific queries like “what kind of training does a robotic engineer need” or “what can robots do.”
- Visiting career information websites like www.getmyfuture.org or www.mynextmove.org. Both of these websites are sponsored by the U.S. Department of Labor.
- If available, tapping into your school’s career development software platform (such as Career Cruising) or your state’s career and college information system (such as www.CFNC.org).

CHALLENGE #2: FZ] FS]

Robots are being used to solve problems in many industries such as manufacturing, transportation, the military and more. Robots are also being used to make life easier for humans. Ask students to identify a problem or challenge faced by the typical middle grade students. Then have them sketch out ideas for a robot that could be created to solve that problem.

EXTEND THE DISCUSSION

Use this career option as a way to open up discussion about other ways robots might be used to change the world.

EXPLORE MORE STEAM CAREERS

Bright Futures Press features two STEAM-focused career exploration series in its middle grade collection. Go online to www.brightfuturespress.com to find out more about the **Find Your Future in STEAM** and **Emerging Tech Careers** series. **Find Your Future** includes titles for *Science, Technology, Engineering, Art, and Mathematics*. **Emerging Tech Careers** features titles for *Artificial Intelligence, Drone Technology, Nanomedicine, Personal Space Travel, Robot Technology, Self-driving Car Technology, Virtual Reality Technology, and Wearable Electronics*.