STEM Careers Coalition™

EMPLOYEE-LED ACTIVITY

Share My Career Session

Software Development Industry

Welcome and thank you for taking the time to contribute to the education of students in your community! Sharing your knowledge and passion for your work can be extremely valuable for students and educators. By doing so, you can inspire students to dream, set goals, focus more on their school work, and engage in and explore new subjects. You will also guide students as they begin to think about the many options they have for pursuing a career that they will enjoy, that will challenge them, and that will help support their families, communities, and the world.

EMPLOYEE INTRODUCTORY NOTES

This *Employee-Led Activity: Share My Career Session,* along with the *Employee Guide*, are designed to help you have a positive and meaningful experience sharing your career expertise with a group of students in your community. This session could take place at a school during a regular class period, an after-school club, an evening community night, or a career fair event.

Holding a preplanning conversation with the classroom teacher or adult facilitating the group of students is critical to ensure your session is valuable for the students. Be sure to reference the *Employee Guide* for helpful information to plan your school visit. The end of this document also includes sample questions students may ask during your visit.

This *Employee-Led Activity: Share My Career Session* could run as short as 20-30 minutes in length or extend to 45–50 minutes depending on the timeframe available to you and your preplanning with the teacher or adult facilitator.

The information below is designed to help guide your discussion with the students. There are two options presented, so you can choose what fits best for you, the students, the setting, and timeframe. You do not have to cover every topic noted below but can choose which items make the most sense given your preplanning conversations with the classroom teacher, the age/grade level of the students, and the amount of time you have for the session.

Students will value an authentic and clearly worded presentation that engages them and inspires them to ask questions. Think of this document as a guide to help you prepare for your presentation, but be sure to value the preplanning session and be open to adding other elements to your session as well. Your company may have brochures, a job search website, summer internships, and/or other experiences and events that students would find both informative and interesting.

OPTION #1

Welcome and Introductions

5–10 Minutes

- Introduce yourself and extend a warm welcome and thanks to the students and teacher for inviting you into their classroom and school.
- Tell students they can raise their hand at any time to ask questions.
- Explain to the students what you do and who you work for (company and division in the company). Dress the part if you can. Wear your work clothes so students see how you look on an average day.
- At this stage of your introduction, consider asking: "What do you think I do in my job?" This question may spark comments from students that could reinforce correct information and/or give you a chance to correct misconceptions that students may have.
- Remember to keep the age level of the students in mind and consider if you'll need to define any technical vocabulary to help them better understand your job. Be prepared to define words in simple, relevant, and relatable language.

Career and Job Exploration

5–10 minutes

Use this section of your presentation to dive more deeply into your career and specific job. Be prepared to explain any of the following items:

- What your company does
- Why your company's work is important and relevant
- How your company specifically creates a benefit to the local community
- What specifically you do in your job and how it contributes to your company's mission
- What you like best about doing your job. (Describe a typical day, including what your responsibilities are and who you work with.)
- How you got into this area of work and some information about your career path
- What other jobs and career opportunities exist at your company
- What education and/or skills may be required for people in your job
- What subjects from school you apply in your job
- What STEM skills—math, science, engineering, technology—you apply in your job
- What other skills you apply on the job every day, such as writing, communication, reading, etc.
- How your career may relate to your hobbies or interests
- How you collaborate and communicate with other employees
- How you use elements of art, design, creative thinking, and/or problem-solving skills in your work.

Engaging Students' Content Knowledge about Your Job

5–10 Minutes

See what students already know or think they know about your industry, career, or specific job. This section should be guided by your expertise and the important knowledge about your career and industry that you can share with students.

Share with students some basic information about software development, such as:

- Computer software is different from computer hardware.
    - Hardware is any part of the computer's physical machine, such as the screen or mouse.
    - Software is the set of programs or instructions that tell a computer how to run and what to do.
- Software instructions are written in computer languages called code. Different languages include JavaScript, Python, or C++. Some languages can be better suited for completing different tasks.
- There are three main types of software:
    - System software is the set of instructions that make computers run, such as its basic operating system.
    - Programming software is what programmers use to develop other software.
    - Application software are the programs that users use, such as word processing programs, media players, mobile apps, etc.
- There are four main career types that contribute to software development: coders, programmers, engineers, and developers. Many of their roles and responsibilities overlap and change depending on the job, but generally speaking:
    - Software engineers analyze the problem or need and develop a software solution to meet that need. They then work with developers, programmers, and coders to create the software.
    - Software developers help oversee the development of the software from beginning to end.
    - Programmers build computer programs by writing code that directs computer programs how to do specific tasks. They figure out what the program needs to accomplish and how to get the computer to actually do this.
    - Coders follow the plan that is developed and laid out by the programmer and help write the code for the program.
- Many consider one of the most exciting areas of software development to be machine learning and Artificial Intelligence (AI).
    - Machine learning is when a computer system is able to learn by classifying data. The machines can then apply what they learn to new scenarios, rather than always needing specific code to make decisions.
    - Artificial Intelligence is when a machine is able to accomplish tasks that used to require human intelligence. Machine learning is one part of AI. Other parts of AI include speech and object recognition, translation, and natural language processing.
- Feel free to supplement this list with additional details from your own career experience.

Ask students to answer the following questions. You can do this as a whole group, or students can work in pairs or small groups and confer with one another before sharing their answers.

- What do you use today that functions due to software and code?
- How would your life be different if computer programs did not exist?
- Have you ever seen what code looks like?
- Have you ever written code?
- Do you speak any languages other than English? How might learning code be like learning another language?
- Do you know anyone who works in the software development industry? (This is an opportunity to engage students and make connections between their experiences and your job or industry.)
- How does software development impact the world? (All industries around the world are impacted by technology. From medical devices to automobiles, software development allows the world around us to function as we know it!)
- What do you know about AI?
- How does AI currently help us in our everyday lives? (Answers could include driving directions, music or video recommendations, spell check, spam folders, Google Home or Alexa, etc.)
- What may AI be able to help us with in the future?

Closure and Summary Notes

5 Minutes

When you come to the end of your session, thank the students and teacher again for their time and participation. Please be sure to share resources from your company and from the STEM Careers Coalition website (stemcareerscoalition.org) that students or teachers can explore for more information.

Be prepared to share 2-3 succinct closing points that help pull together the experience for the students. These 2-3 points could be:

- Words of encouragement to get students excited about the software development industry or your career.
- Specific advice to stay engaged in school and/or to seek learning opportunities about diverse topics in order to discover what they may want to consider as a career path.
- Additional resources that students could access from your company to learn more about the software development industry, such as a website, internships, summer camp, or extension experiences, if available.

OPTION #2

This option is designed for when you have only 20-25 minutes to speak with students and/or if you are possibly speaking to many groups of students throughout a school day or during an after-school career fair or community night event.

Of course, you can also draw upon these ideas if you are conducting a longer session in a classroom with one group of students.

Introduction

5 Minutes

Allow time for the students to get to know who you were when you were their age. Where did you grow up? What did you enjoy doing in middle school or high school? What were your favorite subjects?

Career Path

5 Minutes

How did you transition from the middle or high school student you just described to the person you are now? What college/community college/apprenticeship/internship experiences did you learn from? When did you decide what you wanted to be when you grew up? What jobs did you have before the one you have now? Why did you decide on your career?

Career Role

5 Minutes

What is your current job title? What does this mean? What are your day-to-day responsibilities? What problems does your job help solve? What excites you most about working in the software development industry? What did you learn in school that helped you in this career? Is there a subject area you wish you had studied more in school?

Future

5 Minutes

What do you aspire to do next? What problems do you still want to tackle? What problems could the next generation of software developers try to solve? What does the future look like for your career? If someone wanted to pursue a career similar to yours in the software development industry, what advice would you give?

Question and Answer

5 Minutes

Be sure to thank the students and teacher or adult facilitator at the end of your session. You may also share resources from your company or from the STEM Careers Coalition website (stemcareerscoalition.org) that students or teachers can explore for more information.

Samples of frequently asked questions by students:

Here are some sample questions that students may ask. It may be helpful to think about how you would answer these questions prior to your presentation.

- How long have you worked at your job?
- What projects are you working on now?
- What does your office or job site look like?
- What type of special training, if any, have you received?
- What special equipment, if any, do you use?
- What programming languages do you know or use?
- What technology do you use?
- Do you work with others?
- How many hours do you work each day?
- How much money do you make? (You may not want to state your actual salary, but can provide a salary range for jobs like yours.)
- What is the most important part of your industry?
- What do you find hardest or most challenging about your job?
- What do you really like about your job? (Have an answer prepared in advance for this question that is age-appropriate for the students with whom you are working. Older students may be interested in your training, how technological advancements have changed your job over the years, innovations you have worked on, and/or the creative elements of your work. Younger students may be excited to hear about the hardest problem you've ever had to solve, how your work affects the world around you, or if you've ever worked on any kind of technology that they know or use.)