Automation & Robotics Virtual Learning

7th & 8th
What is an Engineer
Day 2

May 5, 2020

PLTW: Automation & Robotics
Lesson: What is an Engineer Day 2 [May 5th]

Objective/Learning Target:
Students will identify an engineer career and learn about the different aspects of the career.

Warm-up

*To complete the Warm-up, notes, and questions electronically, click here

When making a presentation what medium (poster board, infographic, slides presentation) if your favorite?

What makes it your favorite?

If you suddenly couldn't use your first choice any more what medium would you use instead?

Why?

Instructions

In today's lesson you will need to pick **one** of the three engineer careers you choose in yesterday's lesson.

This engineer career will be your focus for the presentation.

You already know the different job responsibilities of the career you choose.

Today we are going to research the job outlook, work environment, and education needed to become an engineer in the field you picked.

Research

A great resource to use is www.bls.gov

This website is managed by the United States Bureau of Labor Statistics. Which means that the U.S. government uses information from businesses to update the information you find on the site making it accurate.

Watch the below video to help you use the BLS' website and understand what is needed for the "job outlook" question.

Link to video

Job Outlook (how many jobs will be created in a 10 year period)

Looking at the graph under Job Outlook,

What ten year span is the BLS using to show job prospects?

_____

What percentage change is projected for “total, all occupations”?
_____%

What percentage change is projected for “Engineers”?
_____%

What percent change in employment will your career choice have?
_____%

How many possible jobs does the percentage represent? (specific number/numeric)

_____

Work Environment

Where do engineers in this field work? (circle/highlight all that apply)

Office Job site Indoors Outside Other

Describe the work schedule for this career *(examples: Full time, 40 hours a week, direct projects, manage a team, meet deadlines, ensure that the designs meet the requirements, etc.)*

_____

_____

_____

_____

_____

What is a Bachelor's Degree?

Most engineering jobs will require individuals to complete at least a Bachelor's of Science or Art degree.

A bachelor's degree usually takes 3 to 5 years of college to complete. It will cover the basic education classes for any college degree and then two to three years of specific classes over the degree.

Example: *If you were going to be a nuclear engineer you would go to college for two years to get your basic english, math, history, and science classes covered. Then spend the next two - two and half years taking classes over engineering and nuclear science courses.*

What is a Master's Degree?

Some engineering jobs will require individuals to complete a Master's of Science degree.

A master's degree is an advanced program that lasts at least two more years (after completing a bachelor's degree). Classes and subject study focuses on the specific degree. Many master's programs require thesis papers (20+ pages of research over specific research project).

Example: If you already have a bachelor's degree in nuclear engineer and you would like to do research in nuclear medicine, a job may require you to have a master's degree. You would go to school for at least two more years. You would take more advanced courses and work on a research project of your choice. Before graduating you would need to defend your research in front of a group of professors/professionals.

Educational Requirements

What type of degree does your engineering career require? List all that could be needed.

_____

_____

_____

Does your career require a license or certification? (circle/highlight one) Yes No

If yes, what is it called?_____

What are some important qualities/skills your career needs (list at least 4)

1. _____
2. _____
3. _____
4. _____

What are some things you can do as a high school student to prepare for this career?

_____

_____

Extend your learning

Based on the information you gathered today, if a high school senior today wanted to pursue your engineering career, what are some things they will need to do to make sure they standout from other people who want the same job?

They won't graduate from college until 2024. Based on the job outlook do you think there will be lots of jobs available for them in this field?

Please explain your answer