



PLTW Virtual Learning

6th Grade Intro to Gateway

April 21, 2020



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Lesson: April 21 (Part 2 of 5)

Objective/Learning Target:

Student will research and develop a deeper understanding of different types of robots used in society today and in the near future.

Warm-Ups:

As a quickwrite, make a list of all of the different types of categories of robots that you think exist. A hint to get you started is one we talked about in the continued learning yesterday - self-driving cars are a type of transportation robot.

After you've brainstormed as many possible types of robots as you can, rank them in terms of how interesting you think they would be to learn more about, with 1 being the most interesting and so on.

Lesson Introduction/Background Information:

Yesterday, you got an introduction to some of the types of robots that are being invented/innovated and either helping with roles or taking over roles in our society.

Today, your practice is to look at an overview of types of robots that exist (*you don't need to watch all of every video example, just the ones that you think are interesting*). Then, you are going to select one type of robot that you are going to be researching and answering some specific questions about this week.

Lesson Introduction/Background Information:

Some general reasons we use robots as opposed to humans for work right now include:

- Precision work - work where you don't want shaky hands
- Repetitive/monotonous work - work that can cause repetitive motion injuries
- Dangerous work - work that puts humans at risk
- Exploration - work where humans can't safely go
- Education - in the classroom, like the VEX robotics you could use in Automation and Robotics next year
- Competition - Lego Robotics is a competition that ISD teams compete in each year

Practice:

- Industrial robots
 - Used for welding, painting, and assembly of goods ([video example](#))
- Medical robots
 - Assist with surgery ([video example](#)), delivering supplies, dispense medicine, help communicate with patients
- Assistive robots
 - Help the disabled perform everyday tasks, like eating, walking, cleaning, and grasping/reaching ([video example](#))

Practice:

- Exploratory robots
 - Used to explore places like outer space, deep underwater, and for military purposes ([video example](#))
- Rescue robots
 - Used for search and rescue operations ([video example](#))
- Robot toys
 - Used for fun and entertainment
- Household robots
 - Used to do things like vacuum, mow, and fold laundry

Self-Assessment:

Pick the category of robot that interested you the most, and share it with someone at home. If there was a video with your category, maybe show them the cool things that your chosen type of robot can do that they may not have known about.

Extend Your Learning/Continued Practice:

Some of the categories that I didn't include are:

- Automated Guided Vehicles
 - Telerobots
 - Robots of the future
 - Agricultural robots

Find a video or article about one of these categories of robots if you want to learn more.