



STEM Career Adventures: Robotics Engineer

Robots for Airplanes and Cars

Adventure Description

For this adventure, you will think like a robotics engineer and build a new robot to help fix airplanes!

Activity

Step 1: Background on Robotics Engineering (5-10 minutes)

- Ask explorers if they have ever seen a robot. Explain to explorers that robots in movies look very different than robots in real life!
 - o Show **Discovery Picture: What Do Robots Look Like and What Do They Do?** Explain to explorers that robots don't usually look like humans. They don't have hair, eyes, or a mouth! Instead, robots are machines.
 - o Ask explorers if they know something that a robot can do. Explain to explorers that robots do things that are hard for humans to do. Robots also do things to help humans with their jobs.
- Explain to explorers that robotics engineers are people who build robots (show **Discovery Picture: Robotics Engineers in Action**).
 - o As a class, read through what robotics engineers do.
 - o Take a quick class poll if explorers think it would be fun to be a robotics engineer one day.

Step 2: Learning about Robots (10 minutes)

- Explain to explorers that you will show them 2 videos of robots. After each video, the class will talk about how each robot helps humans.
 - o Tip: Encourage explorers to brainstorm multiple reasons why robots are helpful after watching each video. There are no right or wrong answers! The goal is to get explorers thinking about how people build robots for different purposes.
- Show **Discovery Link: Walking Robot**, and play the entire video. Explain to explorers that this robot can open a door.
- Ask explorers why people would want to have a robot open a door.

Contact Allison, Director of Customer Service, with any questions or feedback at 314-272-2560 or allison@rozzylearningcompany.com

Send photos of your explorers and their projects to allison@rozzylearningcompany.com to be featured on Rozzy's website, social media pages, and blog!



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- o Reason #1: Some people have trouble opening doors. If someone is in a wheel chair or has trouble seeing, they might have trouble opening a door. A robot can open the door for them.
- o Reason #2: People who are carrying a lot of heavy boxes or bags might want help opening a door. An adult who is carrying a lot of groceries or a big stack of papers at school might want help opening a door.
- Show **Discovery Link: Robots in Warehouses** and play video from 0:30 to 0:55. Explain to explorers that robots in this video can organize and move items in a warehouse.
- Ask explorers why people would want a robot that can organize and move items.
 - o Reason #1: Explain that robots move very fast! They can quickly move items from one place to another. Humans can get tired while working. But, robots never get tired!
 - o Reason #2: Robots also don't make mistakes. They have a small computer inside of them that tells them what to do. However, sometimes humans make mistakes.
- Explain to explorers that there is a new type of robot that robotics engineers have created. Provide explorers with **Handout: Story about a New Robot**. As a class, read about this new robot!

Step 3: Building a Robot (25 minutes)

- Explain to explorers that they will now build a prototype of a robot to fix an airplane.
 - o Explain that robotics engineers build a prototype first so they can make changes to their robot before the final robot is built (show **Discovery Picture: Prototype**).
- Provide explorers with **Handout: Steps to Build a Robot**. As a class, read through each step.
 - o For Step 1: Have explorers decide if their robot will look like a butterfly, bug, or snake. Have explorers circle their choice.
 - o For Step 2: Have explorers decide if their robot will go inside a car or an airplane.
 - o For Step 3: Have explorers build their robot using art supplies and building materials.
- Provide explorers with art supplies and building materials to build the robot prototypes.

Extra Time? Check out **Discovery Link: More Information on Robots**. This is an awesome video from Sci-Show Kids that explains what a robot does!

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Materials List

Provided online:

- Discovery Picture: What Do Robots Look Like and What Do They Do?
- Discovery Picture: Robotics Engineers in Action
- Discovery Link: Walking Robot
- Discovery Link: Robots in Warehouses
- Discovery Picture: Prototype
- Handout: Story about Robots
- Handout: Steps to Build a Robot
- Discovery Link: More Information on Robots

Not provided:

- Art supplies and building materials

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