

Extreme Robots

A WebQuest for Matter

Introduction

When you hear the word robot you may only think of fictional characters. For decades, authors, artists, and filmmakers that have helped fuel our fascination with robots. What you may not realize is that robots are used in real life too. Robots are able to safely traverse environments that are too dangerous for humans. The data they collect help us learn about these environments.

Task

Your task is to research robots used in extreme environments. You will then create a presentation describing extreme environments and how robots are built to withstand them.

Process

Use the resources listed in the Resources section to begin your research. The Web sites listed are good starting points, but further Internet research will be necessary. Record your answers to the following questions.

1. List three environments that are considered extreme in which robotics are used.
2. Each extreme environment has variables that must be addressed when building a robot to ensure its success; name at least two of these variables.
3. Choose two of the extreme environments you listed in question one, and explain the possible scientific benefits to using robots in those environments.

Presentation

Create a multimedia presentation from your research on robotics in extreme environments. Your presentation should include details on the materials and designs used to build robots that can withstand these environments. Your presentation should be creative and use illustrations, photos, and/or video footage to support your description.

Resources

[NASA](#)

[Galileo Educational Network](#)

[Rover Ranch](#)

[Oak Ridge National Laboratory](#)

Evaluation

Read this rubric to determine how you will be scored on this activity.

	Criteria				Points
	0	5	10	15	
Process	The process was not followed and questions were not answered.	The process was followed but answers to questions showed no evidence that resources were used.	It was evident that resources were used to answer process questions but answers were incomplete or incorrect.	Answers to process questions were complete and supported by evidence from resources.	
Presentation	The presentation was not prepared.	The presentation contained information about robots and/or extreme environments but did not link the two concepts.	The presentation described extreme environments and how robots are built to withstand them, but it lacked detail, organization, and/or creativity.	The presentation described extreme environments and provided details of how robots are built to withstand them. It was creative and well-organized.	
Total Points					