

Curiosity Rover and Computer Science Questions

ANSWER KEY

As you look at videos, images, and simulation consider the questions below.

- 1) What is the mission of the Mars Science Laboratory and the Curiosity rover?

Mars Science Laboratory is a rover that will assess whether Mars ever was, or is still today, an environment able to support microbial life. In other words, its mission is to determine the planet's "habitability."

- 2) Who controls the rover and how is it controlled?

NASA's mission control team on Earth controls the rover using data packets sent to and from the rover.

- 3) What is an algorithm?

An algorithm is a step-by-step procedure for solving a problem or accomplishing some a goal.

- 4) How can computer science aid NASA with exploring Mars?

Computer science plays a large role in controlling the rover, allowing it to effectively explore Mars. Using computer science, some programs are written and carried out autonomously by the rover. Mission controllers analyze sensing data from rover and using computer science, send commands as algorithms and packets to rover.

- 5) Why is there usually a difference between simulations and real occurrences, and what can be done to reduce the difference?

Simulations are only tests of what can happen based on engineer's best guesses. No matter how well a plan (simulation) is constructed, there will always be a difference between simulations and real occurrences. The goal is to make the best simulation possible to give the best possible guess about what will happen in real life. To reduce the difference, programs can be debugged and improved to better simulate real events.