Robots and AI

1 Read pages 8–9 about some of the jobs that robots can do. Explain why robots are useful for jobs that people cannot do or jobs that people do not want to do.

Common Core State Standards (Reading: Informational text): RI.4.2

2 Turn to pages 10–11. What is the purpose of the main picture on page 10? What does it show? How do the labels help you understand the different parts of a robot?

Common Core State Standards (Reading: Informational text): RI.4.7

3 Read pages 18–19 about early robots. When were true robots invented? What was the name of the first electric robot? Why did its inventor cut a hole in its chest?

Common Core State Standards (Reading: Informational text): RI.4.1, RI.5.1

4 Read about flying bots on pages 26–27. What are UAVs? What two examples does the author give for how UAVs can be helpful to farmers?

Common Core State Standards (Reading: Informational text): RI.4.1, RI.5.1

5 Read about industrial bots on pages 30–31. Explain how cobots use AI to keep people safe.

Common Core State Standards (Reading: Informational text): RI.4.1, RI.5.1

6 On pages 32–33, the author describes humanoids. What is a "humanoid"? What features make this kind of robot human-like?

Common Core State Standards (Reading: Informational text): RI.4.4, RI.5.4, RI.4.1

7 Do you know what a "bionic prosthetic" is? If not, turn to pages 34–35 and the glossary to find out. What sort of material are bionic limbs made with?

Common Core State Standards (Reading: Informational text): RI.4.4, RI.5.4, RI.4.1

8 What are pages 36–37 about? How do the text and pictures work together to give you information about this topic? Summarize how Perseverance and Ingenuity work together to help scientists study Mars.

Common Core State Standards (Reading: Informational text): RI.4.2, RI.4.7

9 Read about how robots can help explore the ocean on pages 38–39. What can robots do around hot underwater volcanoes? How can this information help scientists?

Common Core State Standards (Reading: Informational text): RI.4.1, RI.5.1

10 Read pages 44–45 about robots of the future. Do you think the author believes that the development of robots and AI is a good thing? What makes you say this? How do you feel about robots of the future?

Common Core State Standards (Reading: Informational text): RI.4.8, RI.5.8

Answers

1 They can do dirty, dangerous, delicate, and boring jobs; Answers will vary.

2 To show the names and locations of all the different parts of a robot; Answers will vary.

3 early 1900s; Elektro; to prove no human was inside

4 Uncrewed aerial vehicles; They can inspect damage after a storm and monitor crops.

5 They use AI to understand information from their sensors to monitor surroundings and adjust their speed or force as necessary.

6 A human-shaped robot; Most have a head, chest, and arms; they may walk on legs and have hand-like grippers.

7 robot limbs used to replace parts of the body; a strong, lightweight material

8 Scientific robots on Mars; Perseverance collects rock samples, tests ways to make oxygen, and searches for signs of life; Ingenuity helps Perseverance navigate and teaches scientists about flying through Mars's atmosphere.

9 measure temperature and depth, and take pictures of sea creatures; map the ocean floor and discover new species

10 Answers will vary.