

NAME: _____

Appendix 6: High-Tech Gardening

Created: Summer 2020 by the National FFA Organization

Part 1

DIRECTIONS:

Read the article "High-Tech Gardening" in the summer 2020 issue of *FFA New Horizons* and complete the following activities.

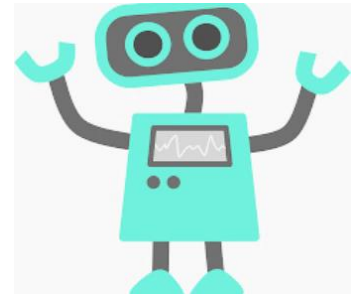
1. In what state is the Sutherlin High School FFA chapter located? *Shade in the state.*



2. Sutherlin High School FFA began experimenting with Farm _____, an open-source agricultural _____. Their goal was to put it to _____ in their campus _____.

3. Using this technology, they were able to talk about what two things?

4. What grant did the students receive that allowed them to build a raised bed with tracks?



5. What tasks was the robot programmed to perform? *Identify 3.*

6. Students were able to learn about CNC (computer _____ controlled) farming, _____ and running experiments.

7. What was the biggest takeaway for student Alyssa McCormick?

What does this word mean?



NAME: _____

Part 2

Aligned to the following standards:

NRS.01; AGPE01.01; CCSS.RI.9-10.3; CCSS.SL.9-10.1; RST.9.10.1; RST.9.10.2;
RST.9.10.4; RST.9.10.5; RST.9.10.6; RST.9.10.8; RST.9.10.9; WHST.9.10.7;
WHST.9.10.9; MP3; MP6; AG-NR2; HS-LS2-6; HS-LS2-7

DIRECTIONS:

Answer the following questions to learn more about robots, how they are utilized in the agriculture industry and other industries and how they are present in your daily life.

1. What type of robots do you have in your life?

(School, classroom, home, work, etc.)

List 6 types.

3. How are robots used in the agriculture industry? *Utilize this site, and other similar sites, <https://builtin.com/robotics/farming-agricultural-robots>, to help start your research.*



2. Do these robots help? Explain your answer.

4. Choose another industry and explain how robots are used.

How could a robot help with your future career?

NAME: _____

Part 3

DIRECTIONS:

Create your own robot. If you could design and create a robot, what would it look like? What would it do for you? Use the space below to design the robot and describe what it would do.

Describe the functions/actions it would perform:

What are the benefits of this robot?

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1. In what state is the Sutherlin High School FFA chapter located? *Shade in the state.*

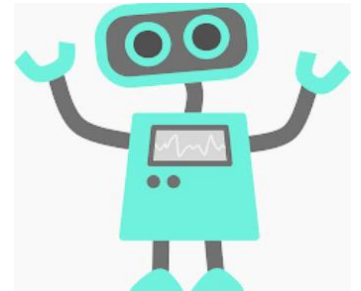


2. Sutherlin High School FFA began experimenting with FarmBot, an open-source agricultural robot. Their goal was to put it to work in their campus greenhouse.

3. Using this technology, they were able to talk about what two things?
Automation and variable-rate application

4. What grant did the students receive that allowed them to build a raised bed with tracks?

Funds from Grants for Growing, sponsored by Tractor Supply Co., allowed students to build a 10x20-foot raised bed with tracks for the robot to run along.



5. What tasks was the robot programmed to perform? *Identify 3.*

Planting

Watering

Weeding

6. Students were able to learn about CNC (computer numerical controlled) farming, coding and running experiments.

7. What was the biggest takeaway for student Alyssa McCormick?

Perseverance

What does this word mean?



continued effort to do or achieve something despite difficulties, failure, or opposition
(<https://www.merriam-webster.com/dictionary/perseverance>)

Part 2

DIRECTIONS:

Answer the following questions to learn more about robots, how they are utilized in the agriculture industry and other industries and how they are present in your daily life.

1. What type of robots do you have in your life?

(School, classroom, home, work, etc.)

List 6 types.

Answers will vary.

3. How are robots used in the agriculture industry? *Utilize this site, and other similar sites, <https://builtin.com/robotics/farming-agricultural-robots>, to help start your research.*



Answers will vary but might include the following:

Robots are utilized for harvesting purposes, such as a robot for strawberry-harvesting called Berry 5. It uses robotic components to grab the leaf, pick the berry and pack it. Another example of a robot utilized for harvest purposes is the "Vegebot." It has one camera that scans the lettuce and gives a thumbs up or down for harvesting. A second camera, near a blade, then guides the pick without crushing the plant. A machine-learning algorithm "teaches" the robot to avoid unripe or diseased lettuce.

An example in the greenhouse market is a robot, HV-100, that handles the important, but highly repetitive and strenuous, work of spacing container crops and plants.

2. Do these robots help? Explain your answer.

Answers will vary.

4. Choose another industry and explain how robots are used.

How could a robot help with your future career?

Answers will vary.