AV2 NONFICTION Activities

True or False

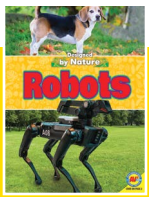
Follow the instructions to complete the activity.

NAME

DATE

Using the information in *Robots*, verify whether the following information is true or false. Check your answers in the book. List the page number where you found your information beside your answer.

Statement 1	Snakebot has 10 motors along its body.	◯ True ◯ False	Page Number	
Statement 2	The first model of RoboBee was smaller than a paperclip.	◯ True ◯ False	Page Number	
Statement 3	Being related to snails, octopuses also have shells.	◯ True ◯ False	Page Number	
Statement 4	Jellyfish that eat crustaceans turn blue.	◯ True ◯ False	Page Number	
Statement 5	Snakebot was named the 2017 Ground Rescue Robot of the Year.	◯ True ◯ False	Page Number	



Designed by Nature

Robots

Reference: All Pages

AV2 NONFICTION
Activities

Fill in the Blanks

Follow the instructions to complete the activity.

NAME

DATE

Use the information found in *Robots* to help you complete the following activity.

1. Some robots can fly in a group, similar to a _____ of insects.

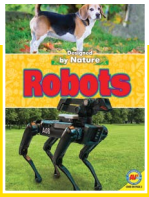
2. Octopuses use _____ both to hide from predators and to catch prey.

3. Boston Dynamics is well known for its advances in _____ technology.

4. The Venetian Lagoon is in danger of _____ and pollution.

5. An _____ is the part that makes a machine move.

6. Some robots _____ the way sea creatures swim and communicate.



AV2 NONFICTION Activities

Know Your Numbers

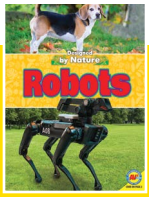
Follow the instructions to complete the activity.

NAME

DATE

Complete the statements by entering the correct number in the box.

The snakebot used in Mexico was this many feet long.		**1.2**
Microbots with cilia move up to this many times faster than microbots without them.		**3**
A team of six microbots this long was used to slowly tow a car.		**120**
RoboBee has a wingspan of this many inches.		**25**
Robobees flap their wings this many times each second.		**1.1**



AV2 NONFICTION Activities

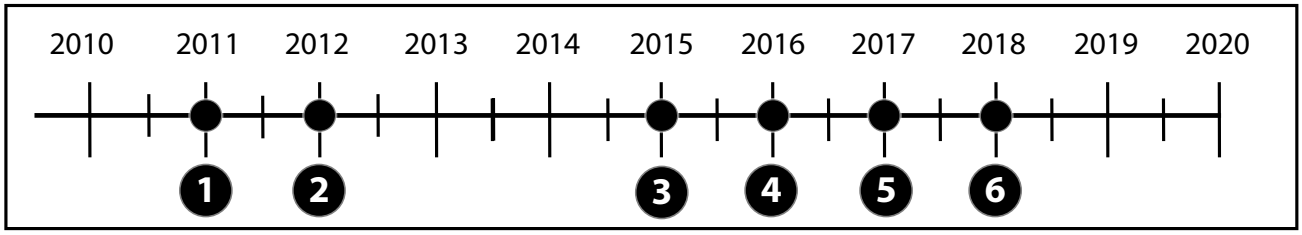
Timeline

Follow the instructions to complete the activity.

NAME

DATE

Number the events below in the order they should appear on the timeline. Write the number in the box beside each event. Check your answers with page 27 of the book.



HAMR-F, a cockroach-based robot built by Harvard engineers, is developed. It has an onboard battery and can move at a speed of four body lengths per second. ☐

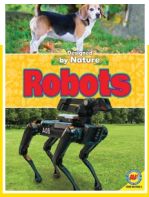
Engineers at the University of Virginia develop a swimming robot based on the movement of rays. ☐

Robirds are first used at airports. These robots, shaped like birds of prey, are used to scare away other birds to keep aircraft safe. ☐

An engineering team at the Georgia Institute of Technology develops Tarzan the Robot, a crop monitoring robot with movement based on a sloth. ☐

An Italian engineering team develops robot arms based on octopus limbs. ☐

Robotics company Boston Dynamics reveals Spot, a robot dog that can climb stairs and move through rough terrain. ☐



AV2 NONFICTION
Activities

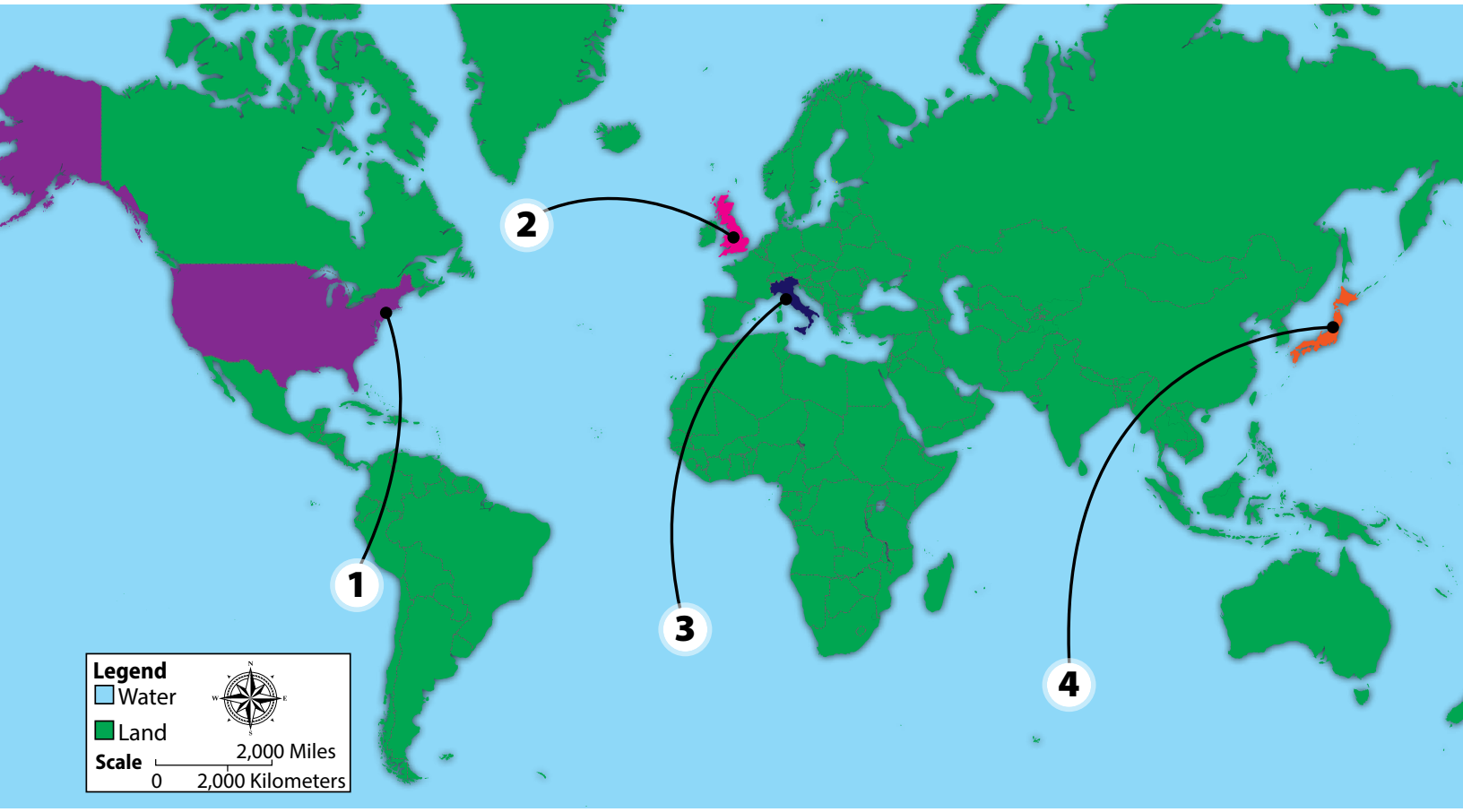
Map Activity

Follow the instructions to complete the activity.

NAME

DATE

Using the information on pages 28–29 of the book, fill in the blanks with the development relating to robots in each location. Using information found in the book and research online, briefly explain why each location is important to the field of biomimetics.

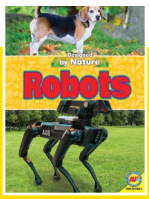


1

2

3

4



Designed by Nature

Robots

Reference: Pages 28-29

Quiz

Test your knowledge by answering these quiz questions.

NAME

DATE

1 When does English ivy begin growing quickly?

2 What was RoboBee's dive based on?

3 What are the hairs on a paramecium called?

4 What robot was created by researchers at Keio University and the University of Tokyo?

5 When was the first nanobot built?

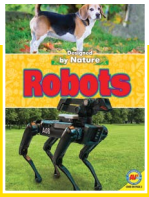
6 What is swarm intelligence?

7 What city is on the Venetian Lagoon in Italy?

8 What kind of robot was used to search for survivors after a 2017 earthquake in Mexico?

9 What bird was SmartBird's design based on?

10 What does Octobot use to move its tentacles?



AV2 NONFICTION Activities

Key Words Match-Up

Write the words from the list below in the box above the correct definition for each word.

NAME

DATE

KEY WORDS

search and rescue	**camouflage**
artificial	**electric field**
segments	**infrared**
GPS	**swarm**
silicone	**mimic**

Your Score is

%

1. _____
different parts that make up a body or object

2. _____
light that is invisible to human eyes but can be seen by certain cameras

3. _____
a force that surrounds an electric charge or group of charges

4. _____
the activity of finding and helping people in danger

5. _____
a pattern that is designed to look like its surroundings

6. _____
to copy an appearance or behavior

7. _____
a tough, human-made substance made from the chemical element silicon

8. _____
made by humans instead of occurring naturally

9. _____
a navigation system that uses satellites to figure out location

10. _____
a large number of insects moving together