Technology Today and Tomorrow

A *Robobee* sits on top of a flower. Robobees are tiny flying robots. Robert Wood is leading the development of Robobees at Harvard University's Microrobotics Lab. In the future, Robobees could help with search and rescue missions and gathering scientific data.

1. What are some ways technology can help us in our everyday lives?

2. How can doctors use technology to help people?

An ASIMO robot in Tokyo

Prereading

Discuss these questions with a partner.

1. Look at the photo. This is a robot called ASIMO. What do you think it can do? Make a list.

_____   _____

_____   _____

2. ASIMO looks like a person. Do you think all robots look like people? _____

3. Where do people use robots? Circle your answers. You can choose more than one answer.
   a. At home
   b. At work
   c. At school

4. Did you ever see a robot? Where did you see it? What did it do?

5. Imagine you have a robot. What do you want the robot to do for you? Make a list.

   _____   _____

   _____   _____

Reading

🎧 **Read the following passage carefully. Then complete the exercises that follow.**

CD 1
TR 14

Robots: The Face of the Future

1   ASIMO traveled to Edinburgh, Scotland, for the annual Edinburgh International
2   Science Festival. The festival takes place in February every year. Thousands of people
3   came to visit the festival, but most of them came to see ASIMO. ASIMO is very
4   famous because ASIMO is a robot. It is designed to run, climb stairs, and kick a soccer
5   ball. It can even conduct an orchestra. In fact, when Yo Yo Ma, the famous cellist,
6   performed at a concert in Detroit, Michigan, ASIMO was the conductor. Everyone at
7   the concert was amazed not only by Yo Yo Ma, but also by ASIMO.
8   A robot is not a new idea. Scientists developed robots more than 60 years ago.
9   For many years, robots have worked in factories. They do uninteresting jobs, such
10 as packaging food or assembling cars. They are often used to do dangerous work as
11 well. Most of these robots are shaped like machines; they do not look like people.
12 However, ASIMO looks like a person. In addition, it is equipped with the ability to
13 recognize and remember people.

14   While many countries are developing robots, Japan has the most robots of all.
15 It is also developing more robots very quickly. In Japan, 20 percent of the people are
16 over 65 years old. This means that a lot of Japanese people are senior citizens who no
17 longer work. When people retire, robots can do their work. They can take care of the
18 senior citizens, too. Japan hopes to have one million robots working in the country by
19 the year 2025. A single robot can replace, or do the work of, ten people!
20   In the future, robots will become more useful and popular. Right now you can't buy
21 a robot to do all your work, but you can buy one to help you around the house. A few
22 years ago, iRobot, an American company, announced that it has robots that can wash,
23 sweep, or vacuum your floors. Although these robots do not look like people, they
24 can work just as hard!

A robot helps a woman in a grocery store.

Fact Finding

Read the passage again. Then read the following statements. Check (√) whether each statement is True or False. If a statement is false, rewrite it so that it is true. Then go back to the passage and find the line that supports your answer.

1. _____ True _____ False   ASIMO can play the cello.

    _____

2. _____ True _____ False   Some robots do uninteresting and dangerous jobs.

    _____

3. _____ True _____ False   Most robots look like people.

    _____

4. _____ True _____ False   ASIMO has the ability to recognize people.

    _____

5. _____ True _____ False   Most people in Japan cannot work.

    _____

6. _____ True _____ False   One robot can do the work of ten people.

    _____

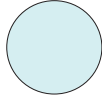7. _____ True _____ False   Now you can buy a robot to clean your floors.

    _____

Reading Analysis

Read each question carefully. Circle the letter or the number of the correct answer.

1. ASIMO traveled to Edinburgh, Scotland, for the **annual** Edinburgh International Science Festival. The festival takes place in February every year.
    Annual means
    a. scientific.
    b. international.
    c. every year.

2. ASIMO is **designed** to run, climb stairs, and kick a soccer ball. It can even **conduct** an orchestra.

    a. **Designed** means
        1. made.
        2. performed.
        3. climbed.

    b. **Conduct** means
        1. play.
        2. lead.
        3. perform.

3. Everyone at the concert was **amazed not only** by Yo Yo Ma, **but also** by ASIMO.

    a. **Amazed** means
        1. confused.
        2. surprised.
        3. interested.

    b. **Not only . . . but also** means
        1. however.
        2. except.
        3. and.

    c. Why were the people amazed by ASIMO?
        1. It's a good conductor.
        2. It can play the cello.
        3. It's a robot.

4. Scientists **developed** robots more than 60 years ago. For many years, robots have worked in factories. They do **uninteresting** jobs such as **packaging** food or **assembling** cars.

    a. **Developed** means
        1. learned about.
        2. thought about.
        3. made.

    b. Something **uninteresting** is
        1. dangerous.
        2. boring.
        3. difficult.

    c. **Packaging** food is
        1. making food for a company.
        2. carrying food to a truck.
        3. putting food into boxes.

    d. **Assembling** means
        1. putting together.
        2. driving.
        3. checking.

5. Most of these robots are **shaped like** machines; they do not look like people. However, ASIMO looks like a person. In addition, it is **equipped with** the ability to recognize and remember people.
   a. **Shaped like** means
      1. to have the same form.
      2. to be the same size.
   b. Which one of these is shaped like an egg? Circle your answer.

      1.

      2.

      3.

   c. **Equipped with** means
      1. needs.
      2. makes.
      3. has.

6. In Japan, 20 percent of the people are over 65 years old. This means that a lot of Japanese people are **senior citizens** who no longer work.
   Senior citizens are people who
   a. do not work.
   b. are 65 years old or older.
   c. have important jobs.

7. Japan hopes to have one million robots working in the country by the year 2025.
   Does Japan have one million robots now?
   a. Yes
   b. No

8. A **single** robot can **replace**, or do the work of, ten people!
   a. In this sentence, **single** means
      1. not married.
      2. only one.
      3. new.
   b. In this sentence, **replace** means
      1. one robot equals ten people at work.
      2. ten robots equal one person at work.
      3. one robot equals one person at work.

9. In the future, robots will become more useful and **popular**.
   Popular means
   a. many people like it.
   b. many people make it.
   c. many people need it.

10. A few years ago, iRobot, an American company, **announced** that it has robots that can wash, sweep, or vacuum your floors.

Announced means

a. discovered.
b. said.
c. promised.

11. These robots do not look like people, but they can work **just as hard**!
This sentence means

a. robots can work harder than people.
b. people can work harder than robots.
c. robots can do the same work as people.

12. What is the main idea of this reading?

a. In the future, robots will do a lot of work for people.
b. Twenty percent of the people in Japan are senior citizens.
c. ASIMO can teach students and conduct an orchestra.

Vocabulary Skills

PART 1

> **Recognizing Word Forms**
> In English, some verbs become nouns by adding the suffix -*ment*, for example, *govern (v.)*, *government (n.)*.

Complete each sentence with the correct word form on the left. Write all of the verbs in the past. The verbs may be affirmative or negative. The nouns may be singular or plural.

amaze *(v.)*   **1.** The people watched in _____ when ASIMO conducted

amazement *(n.)*   the orchestra. ASIMO _____ the audience because the

robot was the conductor!

develop *(v.)*   **2.** Many other companies _____ new robot technology last

development *(n.)*   year. These technological _____ are happening more

and more quickly.

equip *(v.)*

equipment *(n.)*

3. Factories need heavy _____ to assemble cars. Many car companies _____ their factories with robots to do the heavy work years ago.

replace *(v.)*

replacement *(n.)*

4. Fifty years ago, robots _____ people at home, but they did in factories. Today, the _____ of people by robots at home for housework is becoming more common.

announce *(v.)*

announcement *(n.)*

5. iRobot made an important _____ a few years ago. The company _____ the development of Roomba, the robot that can clean floors.

PART 2

> ### Recognizing Connecting Words
> *And*, *too*, *as well*, *also*, and *in addition* all have the same meaning. They connect ideas, but they are used differently in sentences.

a. Look back at the passage. Put the correct adverb in each sentence.

1. ASIMO looks like a person. _____, it is equipped with the ability to recognize and remember people.

2. Robots will become more useful _____ popular in the future.

3. Japan has the most robots of all. It is _____ developing more robots very quickly.

4. Robots can do their work and help take care of the senior citizens, _____.

5. Robots do boring work. They are often used to do dangerous work _____.

b. Answer the questions below. Write the correct adverb(s).

1. Which two adverbs are at the end of a sentence? _____ _____

2. Which adverb is between two adjectives? _____

3. Which adverb comes before a verb? _____

4. Which adverb comes at the beginning of a sentence? _____

Vocabulary in Context

Read the following sentences. Complete each sentence with the correct word or phrase from the box. Use each word or phrase only once.

amazed *(adj.)*	assemble *(v.)*	equipped *(adj.)*	replace *(v.)*
announced *(v.)*	design *(v.)*	recognize *(v.)*	senior citizens *(n.)*

1. The teacher _____ that we are going to have a grammar test next week. I am going to begin studying this weekend.

2. My cell phone is broken. I'm going to return it to the store, and the store will _____ it. I hope the new cell phone works better than this one!

3. Ann's new computer is _____ with a DVD player, speakers, and a camera.

4. Mickey bought a new bookcase. He needs to _____ it before he can use it.

5. My brother has a new haircut and looks very different. I almost didn't _____ him!

6. Clara is learning English very quickly. She is _____ at her fast progress.

7. Maryann really likes fashion, especially new clothes and shoes. She hopes to learn to _____ clothing in college.

8. Many _____ don't have to work any longer, so they have more time to spend with their grandchildren.
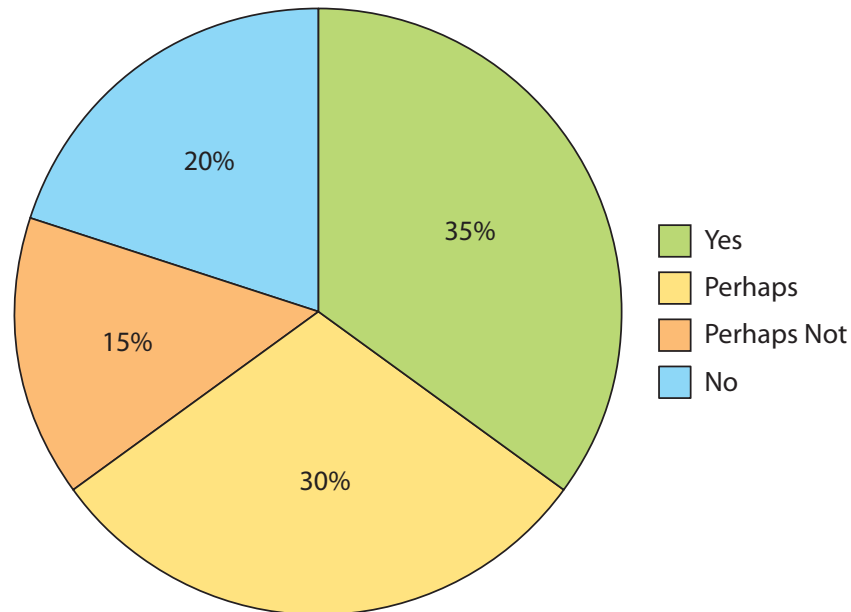
Reading Skill

a. **Look at the pie chart and read the sentences below. Put a check (√) next to the sentences that are true.**
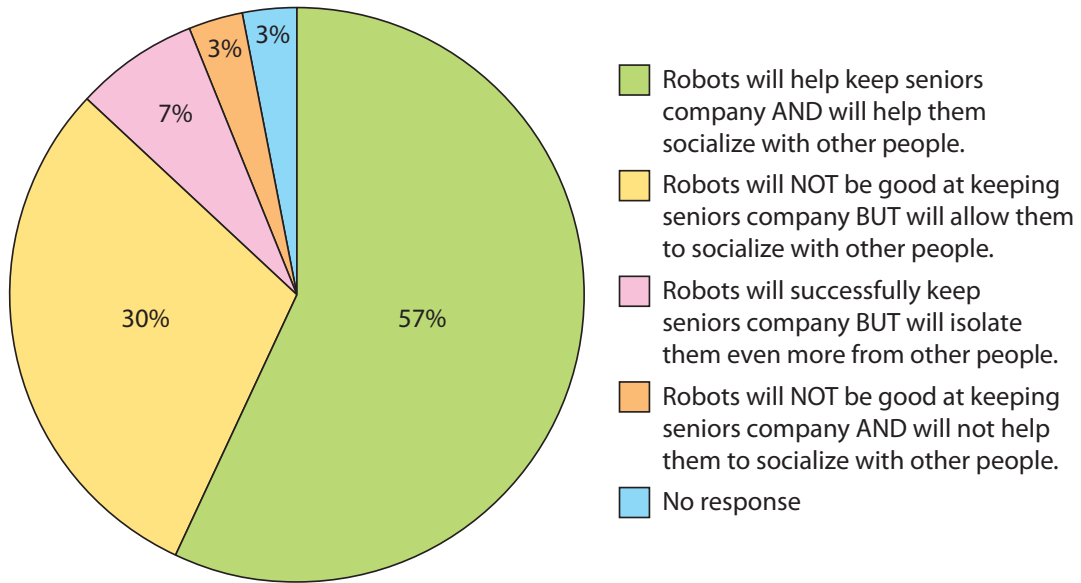
Would you want a robot to take care of you?

- 35% Yes
- 30% Perhaps
- 15% Perhaps Not
- 20% No

Source: http://whatjapanthinks.com/tag/robot/

1. _____ Everyone wants a robot to take care of them.

2. _____ Many people want a robot to take care of them.

3. _____ Most people don't want a robot to take care of them.

4. _____ Some people are not sure if they want a robot to take care of them.

b. Look at the pie chart below. Put a check (√) in the correct boxes.

Will personal care robots isolate seniors even more?
Or will they help seniors to socialize better?

Legend:
- Robots will help keep seniors company AND will help them socialize with other people.
- Robots will NOT be good at keeping seniors company BUT will allow them to socialize with other people.
- Robots will successfully keep seniors company BUT will isolate them even more from other people.
- Robots will NOT be good at keeping seniors company AND will not help them to socialize with other people.
- No response

Source: http://www.openroboethics.org/results-robots-will-enable-seniors-to-socialize-more-says-readers/

	Robots will help keep seniors company.		Robots will allow seniors to socialize with other people.	
	Yes	No	Yes	No
57% of people believe …				
30% of people believe …				
7% of people believe …				
3% of people believe …				

Another Look

Read the following passage about a new teacher in Japan. Then answer the questions that follow.

An Unusual Teacher

1 Yuki Ishito's new sixth-grade teacher, Sava, is like most teachers in Japan. This
2 morning, she is calling the attendance list and asking the students in the back of the
3 room to please be quiet. Sava smiles at the students and looks happy. "Thank you,"
4 she says. Sometimes she looks sad or angry. Other times, she can look surprised or
5 scared. Sava doesn't really look different from Yuki's other teachers, but she is. Sava is
6 a robot.

7 Hiroshi Kobayashi is a professor at the Tokyo University of Science. He developed
8 Sava. "Robots that look like people are a big hit with young children," he said. Of
9 course, Sava cannot really teach the students. She is remote controlled by a person
10 through a camera inside the robot.

11 Japan and other countries hope that in the future robots will do a lot of the work
12 that people do today. However, some scientists don't believe that a robot can replace
13 a teacher. Professor Kobayashi says, "Sava is just meant to help people. The robot has
14 no intelligence. It has no ability to learn. It's just a tool." Although Sava is not ready to
15 be a real teacher, the children enjoy her visits.

A robot named Sava speaks to elementary school students in Tokyo.

QUESTIONS FOR ANOTHER LOOK

1. What can Sava do? Write three things.

_____

_____

_____

2. "Robots that look like people are **a big hit** with young children."
A big hit is an idiom. What does it mean?
a. Famous
b. Popular
c. Effective

3. Do you think robots can replace teachers in the future? Why or why not?

_____

_____

_____

Topics for Discussion and Writing

1. Robots can do many different jobs. What jobs do you think robots cannot do? Why not? Discuss your ideas with your classmates.

2. Robots do many dangerous and boring jobs. Robots also do interesting jobs. For example, ASIMO can conduct an orchestra. Will people be happy if robots do interesting jobs for them? Why or why not?

3. What are some of the advantages of having robots work in factories and other places, such as hospitals and homes for senior citizens? What are some of the disadvantages?

4. Write in your journal. Imagine that you have a robot teacher. Write a letter to a friend, and describe your robot teacher. Tell your friend about your class. Do you enjoy your robot teacher? Why or why not?

Critical Thinking

1. Work with a partner and design a new robot. What will it look like? What can it do?

2. Work in a small group. Pretend that you are the parents of children in a school. The school wants to replace a real teacher with a robot. You do not want your children to have a robot for a teacher. Give reasons why you think having a robot teacher is a bad idea.

3. Work in a small group. Pretend that you are the parents of children in a school. The school wants to replace a real teacher with a robot. You agree with this plan. Give reasons why you think having a robot teacher is a good idea.

4. Work in a small group. You manufacture robots that can teach children. Design an advertisement for your robot.

5. Discuss these questions with a partner. Most robots look like machines. They do not look like people. Is it important for robots to look like people? What do you think?

6. There are many senior citizens in Japan. In the future, robots will do their work and take care of them, too. How can robots take care of senior citizens? Talk about your ideas with your classmates.

7. In many countries, including Japan, people must retire, or stop working, by a certain age, usually when they are 60 or 65 years old. This is a law. What is the reason for this law? Discuss this with your class.

8. iRobot has robots that can wash, sweep, and vacuum. What else do you want a robot to do for you in your home? Make a list and then compare your list with your classmates' lists.

A robot helps an elderly man get out of bed.

Crossword Puzzle

Review the words in the box. Then read the clues on the next page. Write the words in the correct spaces in the puzzle.

amazed	conduct	packaging	shape
announce	designed	popular	single
annual	develop	replace	uninteresting
assemble	equip	senior	

Crossword Puzzle Clues

ACROSS CLUES

2. It takes a lot of experience to _____ an orchestra.

4. _____ means very surprised.

5. Will you _____ this robot with the ability to speak?

8. We need to _____ technology to help older people be independent.

9. One day, robots will have a more human _____. Now they look like machines.

10. A robot can never _____ a person in every way.

12. A 65-year-old person is a _____ citizen.

13. Automobile factories _____ thousands of cars every year.

14. A person's birthday is an _____ event.

15. The company will _____ the name of the new type of robot tomorrow.

DOWN CLUES

1. My car is _____ to save on gasoline.

3. I have a very _____ job. It is very boring.

6. People like the _____ on products to be colorful and easy to read.

7. ASIMO is a very _____ robot. Many people like it.

11. A _____ robot can do the work of ten people!