

Unit 61 Minding Key Words

(キーワードに気をつけよ)

A 品詞とキーワード

Some words seem more important to us than other words. These words are called key words. Many nouns are key words: *house, book, butter*. Many verbs are key words: *eat, dream, talk*. Many adjectives are key words: *hot, beautiful, hungry*. Nouns, verbs, and adjectives seem more important than other parts of speech like articles (such as *the* and *a*), prepositions (such as *to* and *at*), and pronouns (such as *they* and *me*). When we don't have much time or space to write — for example, in class notes, telegrams, or newspaper headlines — **we use nouns and verbs, while we often take out articles, prepositions, and other “little” words.** For example:

Class note: WAR OVER 1918, not “The war was over in 1918.”

Telegram: SEND MONEY, not “Send me some money, please.”

Headline: BUS STRIKE TODAY, not “There is a bus strike today.”

B キーワードのニュアンス

Sometimes the key words we choose can show our feelings and express our judgments. If we see a person who is thin, we may describe that person as “slim” or “skinny.” The word *slim* shows positive feelings: we think that the thin person looks good or we like that person. The word *skinny* shows negative feelings: we think that the thin person looks bad or we don't like him or her. We can call a quiet town *peaceful* or *dead*. Both words mean that there are not many activities in the town. If we dislike a town with few activities, we may call the quiet town “dead.” If we like a town without a lot of activities, we may call it “peaceful.” **The choice of words often says more about the speaker than about what he or she is talking about.**

C 広告とキーワード

Advertisers use certain key words to describe their products or services. They choose words that will give the readers good feelings about their products. For example, a supermarket ad may say, “Our eggs are fresher” or “Our orange juice is more natural.” The words “fresher” and “more natural” suggest that **the food in other places is less fresh or less natural than theirs.** This is a problem with the language of advertisers. We do not know what the ad means. For example, are the eggs fresher than the eggs in another supermarket? Which supermarket? Are they fresher than the eggs on a farm? We have to be careful.

D 人々の変化とキーワード

Key words have also been used by some famous teachers to help their pupils with their learning. When Sylvia Ashton-Warner was teaching children in New Zealand to read, she used words that interested them. Some of her most successful words were *frightened, kiss, cried, football, I, and Mummy*. In Brazil, Paulo Freire taught adults to read. When he worked with people who lived in the countryside, he used words like *land, rain, food, and work*. When he worked with the people in prison, he used words like *lawyer, visit, and freedom*.

People learn different key words as they change. A child needs words to say that something is good or bad. An older person adds words to say why something is good or bad. People beginning a new job need new words that are useful for the job. Most of us change and, **as we change, we learn new key words.**

Unit 62 Why Did Dinosaurs Die Out?

(なぜ恐竜は絶滅したのか?)

A 恐竜絶滅の謎

K: Have you ever seen the skeletons of dinosaurs in a museum?

H: No, I haven't been to a museum lately. **The only thing I know about dinosaurs is that they were much larger than elephants.**

K: Dinosaurs were the largest land animals that ever lived. They lived on earth for more than 140 million years. Then, about 65 million years ago, they died out. All the dinosaurs died at almost the same time.

H: Why did all the dinosaurs die out?

K: No one knows what has become of them. There were no human beings around to see them. Scientists can only use secondhand evidence to find out what happened. They sometimes find fossils of bones and eggs of dinosaurs under the ground.

B 恐竜は大きすぎた?

K: At first scientists thought that dinosaurs grew too big to live.

H: I hear that elephants often break their bones, because their bones can't support their weight. Maybe dinosaurs were disturbed by the same kind of trouble.

K: One of the dinosaurs, for example, weighed about 80 tons but had a brain as big as a dog's. The theory also says that perhaps the big animal was too stupid to live long. But **this theory soon turned out to be wrong.** It did not explain how the dinosaurs were able to live long in the first place.

H: I wonder if the gravity was weak in those days.

K: I doubt it. Furthermore, some dinosaurs were quite small.

C 小動物か昆虫か?

K: There was another idea. They said that some small animals ate the dinosaurs' eggs, so the number of dinosaurs became smaller and smaller.

H: But many other kinds of plants and animals also died out at the same time, didn't they?

K: That's right. **If dinosaurs had died out because of this reason, plants wouldn't have died out with them.** Scientists had to look out for other reasons for dinosaurs' death. Some scientists thought that the animals died out because they ate the flowers of new plants which had a deadly poison. Other scientists said that dinosaurs died out because of insects.

H: How could the insects have killed dinosaurs?

K: They destroyed the green leaves which were the food for many dinosaurs.

D 隕石落下説の真偽

K: The most surprising theory started with some clay from Italy. A scientist found a layer of clay which fell and piled up on the earth at the time of the dinosaurs' death. This clay contained a lot of minerals that are usually found only in meteors. The scientists said that a large meteor hit the earth 65 million years ago.

H: Did the meteor hit many dinosaurs?

K: No, but the dust from the explosion blocked the sun's light for two or three years. Many green plants died, and the animals which lived on them died, too.

H: I see. Does anyone argue against that theory?

K: Yes, a scientist studying ancient plants said that many green plants did not die when the dinosaurs did. If he is right, the meteor theory is not true. **It is still a mystery why the dinosaurs died out.**

Unit 63 Can You Believe Your Eyes?

(あなたは自分の目が信じられますか?)

A 私たちの目は嘘をつく

We usually believe that the things we see are real. However, sometimes something looks different, though it is really the same. And sometimes something looks the same though really not.

Have a careful look at figure (A). **Which do you think is longer, line (a) or line (b)?** Do not measure. Is line (a) longer than line (b)? You may think so, but in fact they are of equal length. The arrows at the ends of the lines make them look like they have different lengths.

Take another example. Look at figure (B). Do you think the two thick lines are straight or curved? First, do not use a ruler. Try to guess. Now check your answer. What do you find? Our eyes saw something that was false. Why did our eyes tell us lies?

B 近いものと遠いもの

We know that things near us look bigger and things far away look smaller. Imagine that you are now standing at the entrance of a tunnel and going in. You can see the other small entrance in the distance. As you walk through the tunnel, it looks bigger and bigger. When you come out of the tunnel, you will find the entrance you came out of is as big as the entrance you first came into the tunnel through.

Look at the picture. Do you think the farthest thing is the largest? The answer is no. All three are the same size. Your experiences tell you that the farther thing looks smaller if they are really the same. Therefore, **your eyes judge that the farthest thing must be the largest even if they are really the same.**

C 二通りに見える絵

Look at picture (A). What do you see? Sometimes you will see a vase. Sometimes you will see two faces. Our eyes see the picture in two ways, but we don't see both a vase and two faces at the same time.

Look at picture (B). Do you see a young woman or an old woman? The young woman's ear is the old woman's eye, the young woman's chin is the old woman's nose, and the young woman's necklace is the old woman's mouth.

Look at picture (C). Do you see a rabbit or a duck? Our eyes can see both of them but can't see them at the same time, so our eyes go back and forth between them.

How does this happen? It happens because **what we see is sometimes different from what is really in front of our eyes.**

D あなたの盲点

Do you see a blind spot anywhere? The blind spot for one eye is at a different place than the blind spot for the other, so you don't notice the blind spot because each eye sees what the other doesn't.

Here is an experiment which will help you find your blind spot. Look at picture (A). Close your left eye or cover it with your hand, and look at the cross mark with your right eye. Now slowly bring the card toward your face. At a particular distance the dot will disappear. It has entered your blind spot! Now move the card even closer to your face, and the dot will appear again.

Unit 64 The Study of Sleep

(睡眠の研究)

A 睡眠と体温

Sleep is very important to human beings; the average person spends one third of his or her life sleeping. In the past, no one knew much about sleep. Then doctors and scientists began studying sleep. They have learned that a lot happens when people sleep, but there are many things that are unknown to us.

When are we most likely to sleep? Researchers put people in a room with no windows or clocks. The people could go to sleep and get up when they wanted to. **They went to sleep when their body temperature was lowest.** They awoke when it began to rise. So maybe our need for sleep depends more on our body's temperature than on how long we have been awake.

B 睡眠時間と健康

Scientists do not know exactly why some people sleep more than others, but one scientist says **people who need only a few hours of sleep usually have a lot of energy and get their work done quickly.** The scientist said many people who sleep longer than normal do creative work and seem to need extra dreaming time to come up with solutions to emotional problems.

People who sleep only a few hours each night stay healthy. Doctors have kept healthy people awake for as long as eleven days. These people did not become sick, but they lost some of their mental quickness. This can be dangerous when they are driving a car.

We need less sleep as we grow older. A newborn baby may sleep from sixteen to eighteen hours per day. Older people sleep as few as five hours each night.

C 二種類の眠り

There are two kinds of sleep.

When you first go to sleep, you go into a deep sleep. Your temperature falls, your body relaxes, and you breathe slowly. After about half an hour you go into the second kind of sleep. This is called rapid eye movement sleep, or in short, REM sleep, because your eyes move rapidly.

REM sleep differs from normal sleep in that most dreams occur during REM sleep. If you wake up during REM sleep, you can usually remember your dream. Your body spends about twenty minutes in REM sleep and then goes back into deep sleep for an hour.

D 夢の必要性

Some scientists thought that it was important to have dreams when we were sleeping.

So the scientists did an experiment. They used a machine that told them when people began to have a dream. The scientists woke sleeping people when they began to have a dream. They slept long enough but couldn't have any dreams. The scientists did this for several nights. Those people felt sick all day.

Then the scientists did another experiment. They woke sleeping people several times when they were not dreaming. They did this for several nights. Those people didn't feel sick. By these experiments, the scientists concluded that they were right. **If it were not for dreams, we would not be able to live normal lives.**

Unit 65 Why Is English Spoken All Over the World?

(なぜ英語は世界中で話されているか?)

A 今や世界中で話される英語

The American spaceship, Voyager One, began a long trip into space on September 5, 1977. The spaceship carried a greeting from the people of the earth. The greeting was spoken in 55 different languages, but it began in English. **Now that English is an international language, this is no surprise.** Although Chinese, for example, has more speakers, English is spoken and written around the world in more countries than any other language.

How did English become the most widely used language in the world? In the time of Julius Caesar during the Roman Empire 2,000 years ago, English was spoken nowhere in the world.

B 英語のはじまり

English was spoken for the first time about 500 years later, on the island which we call Britain today. There were very few people who spoke English then, but by the time of William Shakespeare, nearly 1,000 years later, there were between five and seven million speakers of English. But English was spoken only in England, and even then not everyone in England spoke English.

Around 1600 things began to change. England was becoming a more powerful country. The English navy and English merchants began to go to many parts of Africa and Asia, and great English sea captains arrived in unknown lands in the American continents.

Many ordinary English people also went to live in new colonies in North America and later to Australia and New Zealand. **English was beginning to be spoken in many different parts of the world.**

C アメリカ合衆国の独立と英語

In the sixteenth and seventeenth centuries, England, France, Spain, and Holland succeeded in making their colonies in America. They thought themselves to be English, French, Spanish, and Dutch.

The English people in the northern part of America were angry about the heavy taxes that their king imposed on them. Finally **they fought the English army so as to become independent.** After many battles, they were finally able to win the war.

In 1783, the thirteen colonies became the thirteen states of a new country that was called the United States of America. The English people were the strongest, so new laws were written in English. Public affairs were done in English, too. The official language was English despite the fact that many people spoke other languages in many places. Through this way, it has been the language that is spoken by the greater part of the world.

D 20世紀、英語普及の背景

By the 19th century English was an “international” language. But England was not the only powerful country then. Other European countries had their colonies and, in the same way, French, Spanish, German, and other European languages were spoken around the world. English, at that time, was only one of a few international languages.

In the next 100 years English became even more important around the world. But this was no longer because of England’s great power. After 1900 England became a weaker country. Its navy got smaller and it started to lose colonies. By the end of World War II the United States was a more powerful country. American businesses began to go to many countries in Asia, Africa, and Latin America. Popular culture, like movies and music, from the United States also began to spread around the world. **Now, as we know, English is essential for business, science, and popular culture.**

Unit 66 Superstitions

(迷信)

A 迷信って何？

H: Do you believe in superstitions?

T: What is a superstition?

H: **A superstition is a belief people have which is not based on scientific principles.**

T: In Japan, many people spill salt after funerals to keep away from bad luck. Some people never whistle or cut their nails at night. Some people never sleep towards the north, because this is called “north pillow,” which will bring bad luck.

H: Those are typical examples of superstitions. People who are superstitious believe that they can either bring themselves good luck or keep away from bad luck and disasters by behaving in certain ways.

B はしごの迷信

T: When do Americans and Canadians think that you will have good luck or bad luck?

H: You'll have good luck if you find a four-leaf clover, if you carry a rabbit foot, or if you cross your fingers. You'll have bad luck if a black cat crosses in front of you, if you break a mirror, or if you walk under a ladder.

T: Uh-huh. Some of them are familiar to Japanese people, but I don't know anything about a ladder.

H: People believe that triangles have special powers, so they are afraid to break them. If a ladder is leaning against a wall, **most people won't walk under it because it would break the triangle.**

C 13 と 4

H: In the United States, people commonly think that seven is a lucky number. We also think thirteen is an unlucky number. Hotels don't have a thirteenth floor and hotel rooms don't have the number thirteen.

T: Why do American people believe that thirteen is an unlucky number?

H: Because thirteen reminds us of the last supper that Jesus Christ had. There were thirteen people in all before he was executed.

T: In Japan, many people regard four as an unlucky number because in Japanese the word “four” sounds just like the word “death.”

H: Now I got it. When I went to Kyoto last week, **I couldn't find Room No. 104 in the hotel I stayed in.**

D くしゃみの迷信

T: You said something strange when I sneezed while we were chatting some time ago, but I didn't understand what it meant.

H: I said, “Take care.” You had a sore throat and were coughing, so I thought you had a cold.

T: Didn't you say anything else?

H: Oh, I said, “God bless you.” It has nearly the same meaning as “Take care.”

T: I see. That's what I wanted to ask. But why God?

H: A long time ago people thought that their soul could fly out of their body during a sneeze, so they prayed for God to send their soul back into their body. Today we no longer believe that it means loss of spirit, but we still say “God bless you!” **The main reason of our saying it is that we think of the expression as a courtesy.**

Unit 67 Some English Proverbs

(英語のことわざ)

A ことわざ(その1)

A proverb is a phrase or a sentence which contains experience, wisdom and lessons. Here are some proverbs that are well known in English.

Do in Rome as the Romans do.

All roads lead to Rome.

Don't count your chickens before they are hatched.

Health is better than wealth.

There is no general rule without exceptions.

A friend in need is a friend indeed.

Don't put off until tomorrow what you can do today.

Experience is the best teacher.

Two heads are better than one.

No news is good news.

A man is known by the company he keeps.

Heaven helps those who help themselves.

B ことわざ(その2)

It is no use crying over spilt milk.

Rome was not built in a day.

A burnt child dreads the fire.

Honesty is the best policy.

The early bird catches the worm.

Slow and steady wins the race.

All work and no play make Jack a dull boy.

Necessity is the mother of invention.

Time flies like an arrow.

Time and tide wait for nobody.

A rolling stone gathers no moss.

Let sleeping dogs lie.

A drowning man will catch at a straw.

Seeing is believing.

C ことわざ(その3)

There is no accounting for taste.

Absence makes the heart grow fonder.

Out of sight, out of mind.

Spare the rod and spoil the child.

When the cat is away, the mice will play.

The pen is mightier than the sword.

Make hay while the sun shines.

You never miss the water until the well runs dry.

The end justifies the means.

An Englishman's house is his castle.

Time is money.

You are never too old to learn.

Practice makes perfect.

D ことわざ(その4)

Where there's a will, there's a way.

Still waters run deep.

The best fish swim near the bottom.

Birds of a feather flock together.

Speech is silver, silence is golden.

There is no royal road to learning.

Well begun is half done.

You may take a horse to the water, but you can't make him drink.

Hunger is the best sauce.

Might is right.

Money is the root of all evil.

Prevention is better than cure.

No pain, no gain.

Strike while the iron is hot.

Barking dogs seldom bite.

Unit 68 The Greenhouse Effect

(温室効果)

A 温室と温室効果

F: The greenhouse effect has become one of the hottest topics for the past few decades.

C: What is it?

F: A greenhouse is a building made of glass. We can grow flowers, vegetables, and other plants in it. We use a greenhouse when they need a lot of warmth. When the sun shines in through the glass, it becomes warm in a greenhouse, and the heat can't escape because of the roof and the walls.

C: I see. What is the greenhouse effect?

F: Well, around the earth, there is a belt of gases that works just like a greenhouse. The sun shines in, and the belt of gases catches the heat and keeps it near to the earth. **This is what we call the greenhouse effect.**

B 温室効果をもたらすもの

C: Then the greenhouse effect is a good thing because we can't live without warmth, right?

F: Yes, but the greenhouse effect also has a problem. As you know, factories and cars are making a lot of new gases. When oil, gas, and coal burn, they create large amounts of carbon dioxide. Even when trees are cut down, gases come out. These new gases are catching more and more heat from the sun.

C: Will anything bad happen if the earth gets more heat?

F: Yes, of course. If the earth becomes hotter, there will be great change in climate all over the world.

C: What will happen then?

F: Places that are warm will be too hot to live in, and places that are cold will become warm. **What is worse, the places that grow most of our food will become too hot to grow food any more.**

C: Wow, that's a big problem.

C 温室効果と海面上昇

F: At the beginning of this century, scientists produced a shocking 1,000-page report on global warming.

C: What did they report?

F: The 1990s was the warmest decade in 1,000 years. The scientists warn that temperatures will go up more and more quickly in the next 100 years. They also estimate that the sea will be 88 centimeters higher than it is now.

C: Why does the sea level rise?

F: **The heat could melt glaciers and polar ice, and raise the level of the ocean by one or two meters.**

C: Then millions of people will lose their houses in terrible floods.

F: It will also have a serious effect on agriculture.

D 地球を守るために

C: Are world leaders frequently discussing the global warming problems?

F: Yes, they are exchanging ideas with one another to seek the best solution.

C: What can we do to deal with the problems?

F: We must learn much more about the earth. Also we should know what to do to save the earth. We should stop using too much energy. When energy is produced, carbon dioxide is usually made. Turn off the TV when you are not watching it.

C: Using a bike or a train is better than using a car. It is more important to plant more trees, because trees absorb CO₂ and make O₂.

F: Yes, that's right. **To save forests is one of the ways to solve environmental problems.**

Unit 69 The Importance of Blood

(血液の重要性)

A 血液と心臓の関係

The blood in our body is like a stream. The cells take what they need, their fuel, out of the blood stream, as plants and fish take their food out of water. The blood stream carries food and the oxygen which it has taken up in our lungs to all the cells in our body.

What makes the blood continue moving around the body in a stream? The heart sends it around. The heart is situated between the lungs. A person's heart is the size of their fist. The heart has four chambers in it with valves between them. **As it is made of muscle, it can pump blood in and out through these valves by changing the size of the chambers so that the valves can open and shut.**

B 血流の役割

The heart keeps a stream of blood flowing throughout the body and back again to itself. The pipes which take blood from the heart are called arteries; the pipes through which it comes back to the heart are called veins.

Everywhere the blood stream does two things: supplies the cells with nutrition and oxygen and takes away waste. The blood keeps the little fires in the cells burning and takes away the ashes. The fuel for the fires in the cells is given to us by the food we eat. It cannot burn without oxygen. This gas is as necessary to all living things as it is necessary to the burning of fires made of wood or coal.

C 血液の種類

When you cut your skin, you bleed. If a person loses a great deal of blood, he or she will become ill or may die. Blood is very important. When doctors understood how blood flowed throughout the body, they tried ways of giving blood to people who needed it. They used a tube to take blood from healthy people and give it to sick people. However, there were two problems. First, sometimes people died. At first **doctors believed that they could give any kind of blood to whoever needed it.** Later, they found that it was not right. We do not have the same kind of blood. There are four groups --- O, A, B, and AB. Doctors can give blood of group O to anyone safely. They can give any kind of blood to people of group AB. However, they must give A-group blood to A-group people and B-group blood to B-group people.

D 輸血の試み

There was another problem. **The doctors had to urgently find a person of the right blood type to give blood of the right kind.** Often they could not find a person in time. It was necessary to preserve blood of the right kind until someone needed it, so they tried ways of keeping blood. At first they found that they could keep it in the bottles for fifteen to twenty days. They did this by making it very cold. Then they found how to keep it longer. Now people can give blood at any time. The blood is put in bottles and then kept until someone needs it. It is called a blood bank. One day, when you are older, you may decide to give blood to a blood bank. In this way you may prevent someone from dying.

Unit 70 Are You Interested in Astronomy?

(天文学に興味はありますか?)

A 生命が存在する惑星

- K: Now, I'm crazy about astronomy books. These days more and more scientists are beginning to believe that there probably is life on other planets in our galaxy.
- H: That's unbelievable. Are there any other planets that can support life, like the earth does?
- K: Yes, I guess so. **The sun is one of the answers to the question about whether there is life on the planets.** Needless to say, our sun gives us the heat and light that is important for life.
- H: But there are nine planets that orbit our sun. Why don't the other planets have life?
- K: Because there is another important condition. The earth is not too close or too far from the sun, so it is not too hot or too cold.

B 日食と月食

- K: In 2009, a total solar eclipse can be seen in Japan for the first time in 66 years. It's really worth seeing.
- H: That's fantastic! Where in Japan can you see one?
- K: In Yaku island. A solar eclipse happens when the moon moves between the sun and the earth and casts a shadow over part of the earth. When the moon completely blocks out the sun, it is called a total solar eclipse.
- H: Sometimes the earth casts a shadow on the moon, doesn't it?
- K: Yes, it's called a lunar eclipse.
- H: Do lunar eclipses happen as often as solar eclipses?
- K: No, but they can be seen by more people. This is because **a lunar eclipse can be seen from anywhere on the dark side of the earth, as long as the moon is above the observer's horizon.**

C 彗星が教えてくれるもの

- H: What is a comet?
- K: A comet is a body that moves around the sun, not in a circle like the planets, but in a kind of egg shape. The nearest comet reaches the edge of the sun and its orbit is about 145,000 kilometers. There are about 120,000 comets in our solar system. **It is believed that they are made of gases and dust,** but some scientists say that the head is made of organic material.
- H: Why are many scientists concerned about comets?
- K: Because comets have only changed a little since they were first made, so they can give us interesting information about the beginning of our solar system. If they are made of organic material, they can also give us important information about the beginnings of life on our earth.

D 流れ星の正体

- H: Are falling stars the same as shooting stars?
- K: Yes, but they are not stars. They are pieces of solid stone or iron. Most of them are very small. They fall through the sky, and then they reach the air around the earth.
- H: How can we see such small objects?
- K: While they are moving through the air, they become very hot. **They shine brightly enough for us to see.** Most of them burn up before they get to the earth. Some of the bigger ones fall onto the earth. Usually they weigh only a few kilograms, but one or two very big ones have fallen onto the earth. In 1908 one fell in a forest in Russia and the heat burned many trees there.
- H: That's awful. Were many people killed?
- K: Not at all. Luckily, there were no inhabitants.

Unit 71 Stories of the Calendar

(暦の物語)

A エジプトの暦

More than 2,000 years ago, scientists in Egypt made a calendar. A year consisted of twelve months, a month consisted of three weeks, and a week consisted of ten days. This calendar showed a way to count weeks and months, but it was not scientific. **It does not matter how many days are in a week or in a month;** any number can be used. No one, however, can decide how long a day or a year should be. A day is the exact length of time it takes the earth to rotate one time. A year is the length of time the earth takes to revolve around the sun one time. The Egyptians did not think about these scientific facts. For them, 12 of their 30-day months made a year, but 360 days do not make a full year.

B ナイル川と暦の関係

The wise men of Egypt observed the sky carefully. The brightest star in the sky is Sirius, the Dog Star. **Every year, the waters of the Nile are seen to rise when Sirius comes up just before the sun does.** The wise men said, "Does it happen at regular intervals? We must know how many days will pass until the next time. Then we can tell the farmers when the waters of the Nile will rise again soon. This will be very helpful to them."

They counted the days and found that three hundred and sixty-five days passed in the interval. "This is amazing," said the wise men. "The star helps us more than the moon does. Now we know that the regular interval is three hundred and sixty-five days. Let's call it a year and divide it into twelve months."

C うるう年の発明

However, it takes the earth a little more than 365 days to revolve around the sun. **To be exact, it takes 365 days, 5 hours, 48 minutes, and 46 seconds.** The Egyptian calendar was faster than the exact sun year. In four years, it was about a day ahead of the sun.

Many years later in Rome, Julius Caesar tried to make the calendar accurate. He added an extra day every four years. The year with an extra day is called a leap year. This calendar was almost twelve minutes behind the sun. Scientists then decided to remove three days every 400 years. A year ending in 00 is not a leap year if you cannot divide it by 400. The year 2000 was a leap year, but 1700, 1800, and 1900 were not. This is the plan we use now. Our calendar is called the Gregorian Calendar.

D 月の名前

The names of the months all come from Latin. January is named after the god Janus. Janus was a strange god with two faces. He could look forward and backward at the same time. In January, people look forward to the new year and look back over the old year.

March is named after the Roman god of war, Mars. People connected him with thunder and lightning. **March is considered to be a month of storms.** There is often thunder and lightning.

July is named after Julius Caesar. Before the time of Caesar the year began in March instead of January. The present month of July was then the fifth month. Caesar changed this and made a new calendar. He gave the name of July to the month, the seventh month of the new calendar, when he was born.

Unit 72 The Explorer of the Unconscious Mind

(無意識の探検家)

A 無意識という新世界

Where do dreams come from? People have tried to answer this for a long time, but no one has produced a more satisfying answer than a man called Sigmund Freud. He said that one's world of dreams seems strange and unusual because dreams come from a part of one's mind which one never recognizes or controls. He named this the "unconscious mind."

Freud was one of the great explorers of his time. However, the new worlds he explored were inside human beings. The unconscious mind is like a deep well, full of memories and feelings. These memories and feelings have been there from the moment of our birth ---- perhaps even before birth. Our conscious mind has forgotten them. **The moment we have dreams, we suddenly feel the same fear and disappointments we felt when we were little children.**

Bフロイトの歩み

Freud was born in Vienna, Austria. **He grew up to be interested in the pain of other people,** so it wasn't surprising for him to become a doctor. He was a diligent student at university. He majored in medicine, and above all, he was interested in science. Like other doctors he learned all about how the human body works, but he became more and more interested in the human mind. So he went to Paris to study diseases of the mind and nerves.

In Freud's day few doctors were interested in a man's thoughts, ideas, or dreams. Freud wanted to know why we think and feel as we do. So, in 1886 he began to work as a doctor of nerve diseases.

C 会話療法の始まり

One day a friend, Dr. Josef Breuer, came to see Freud and told him about a girl he was looking after. The girl seemed to get better when she talked freely about herself. **She told Dr. Breuer whatever came into her mind,** and as she talked to him she remembered more about her life as a little child. Freud was excited when he heard about this. Perhaps this was the way to help his patients, he thought. He began to treat his patients in the same way. He asked about the events in their early years, and wanted them to talk about their own experiences. Freud kept silent and quietly accepted everything they told him. Sometimes, talking to him in this way seemed to ease their pain. Freud called this kind of treatment the "talking cure."

Dフロイトの遺産

The things that patients told him sometimes shocked Freud. For example, people became blind, or lost the power of speech, because of the events they experienced when they were children. **It was then that Freud found that the human mind was a dark and mysterious place.**

Freud was attacked from all sides for the things he said and wrote. He made many enemies, but he also found many friends who gladly said, "Freud at last found a way to open the secrets of the human mind, and to help people who are very miserable."

Not all of Freud's ideas are accepted today, but others have followed him and have helped us to understand ourselves better. Because of Freud, and others like him, there is more hope today than there has ever been before for people who were once just called "crazy."

Unit 73 The English Language and Japanese people

(英語と日本人)

A 日本語の中の外国語

Most languages borrow words from other languages. For example, the Japanese “*arubaitō*”, which means “part-time job”, comes from German. Japanese people also talk about “*anketo*”, which comes from the French word for “questionnaire.” However, today most foreign words used in Japan are from English.

Since we were small children, we have been using lots of English words. When we were in the first grade, we were able to write the words by using katakana. **It was not until I began to study English that I found the difference** between katakana pronunciation and the original pronunciation. For example, “*herumettō*”, “*daiamondō*”, and “*chuurippu*” are quite different from “helmet”, “diamond”, and “tulip.”

In Japan, there are many more words from English than there were ten years ago. In this respect, we are fortunate to live in a good environment to study English.

B アメリカ英語とイギリス英語

There are many dialects of English, but the two major groups are American English and British English. They are sometimes different from each other in pronunciation. **Compared with British people, American people pronounce the “r”-sound very clearly.**

They are also different in grammar. “I haven’t got a pen.” is the British expression for “I don’t have a pen.”

In addition, there are some differences in usage. Americans say *fall*, *apartments*, *elevators*, *movies*, *baggage*, and *cookies*, while the British say *autumn*, *flats*, *lifts*, *cinemas*, *luggage*, and *biscuits*. Some words are different in spelling. Americans spell *color*, *realize*, and *theater*, while the British spell *colour*, *realise*, and *theatre*.

As for speaking English, we only have to learn one kind of English. However, things are different when it comes to learning how to listen. We must understand British and Australian English as well as American English.

C 英語とカタカナ語

There are many *katakana* words that sound like English but are not correct English. They are called Japanese English, because they were created in Japan.

The correct English for “nighter” is “night game.” “Gasoline-stand”, “salary man”, and “guardman” are also incorrect. We must say “gas station”, “office worker”, and “security guard.”

Japanese people also like to shorten English phrases. For example, we change “department store”, “bargain sale”, and “apartment building” into “depart”, “bargain”, and “apart.” Also, “personal computer” and “convenience store” are called “*pasokon*” and “*kombini*” in Japan.

A few years ago, **as I was talking with a friend from America, I made an embarrassing mistake.** I intended to talk about cream puffs, but I carelessly called it “shoe cream” in the Japanese way. The friend thought that I was talking about some cream to polish shoes. After all I couldn’t make myself understood.

D 正しい英語か和製英語か？

Some English words have different meanings from Japanese English. **We sometimes use those Japanese English words as if they were correct English**, and that causes misunderstandings among foreigners. If you say, “I live in a mansion,” it means that you live in a huge fancy house, not an apartment building. For another example, we must say, “Mind your zipper,” or “Make sure the steering wheel of your car turns freely.” Japanese people tend to say “chuck” instead of “zipper”, and “handle” instead of “steering wheel”. When the words “talent” and “smart” were introduced to Japan, their meaning changed to “TV celebrity” and “slim.” Of course, their correct meanings are “ability” and “brilliant.”

Unit 74 Understanding and Appreciating Art

(芸術を理解し味わうこと)

A ガウディの建築

G: Do you think that a building is art?

M: No, a building is not art but a daily life necessity.

G: Strange to say, in the eyes of a certain architect, a building was much more than four walls, some windows and a door.

M: **I don't understand which architect you are talking about.**

G: I'm talking about Antonio Gaudi, a Spanish architect in the early twentieth century.

M: Did he build many unique buildings in Spain?

G: Yes, his art was a combination of many European styles of the past with some of the new and popular styles. He put many elements, such as painting, sculpture, and even literature together.

M: Do all the Spanish people appreciate Gaudi's works?

G: No, not all the people admire his works. Some people think Gaudi was a strange man who built ugly and useless buildings.

B ミケランジェロの天井画

M: Yesterday I studied about paintings on a ceiling of a chapel in St. Peter's, but I forgot the painter's name.

G: His name is Michelangelo. Actually he was a sculptor, not a painter. Pope Julius was very eager to ask him a favor, so he had to do as he was told.

M: What a splendid idea to cover the whole ceiling with stories from the Bible!

G: He thought that the pictures would tell the history of human from the creation of the universe to the birth of Christ. Julius was excited when he saw Michelangelo's sketches and told him to start work at once.

M: Did Michelangelo work all by himself?

G: Yes, it took him two years to accomplish it. **He felt as if ten years had passed.** On seeing the great pictures high above him, Pope was greatly moved.

C 洞窟の壁画

M: Have you ever been to the Lascaux caves in France?

G: Yes, the caves were closed, though. They have been closed since 1967. You can only see an artificial cave which is just like the real one.

M: Why are they closed? Is there any problem?

G: Definitely. The problem started soon after some boys found the caves. Thousands of people came to see the wonderful paintings there, and they carried artificial light to see the paintings.

M: I understand. The artificial light helped green plants grow near the cave mouth, didn't it?

G: Yes, that's right. Small green plants grew all over the walls and the paintings. **People seem to have made a big mistake.** In 1994, another painted cave was discovered in southern France, and the paintings there are older than the paintings at Lascaux. This cave will never be a show cave.

D ショーヴェの壁画

M: You said that another cave was discovered. What is the name of the cave?

G: It's called Chauvet's cave. The walls of Chauvet's cave are filled with paintings more than 20,000 years old. They are perfectly preserved on the stone walls, because no sunlight entered this cave after the paintings were made.

M: Are the pictures images of animals?

G: Yes, some of them are images of animals which no longer exist. The paintings are very realistic.

M: How did prehistoric artists make them look real?

G: They used the natural curves of the cave wall. **On the floor around the paintings are animal bones.** The bones make the paintings appear even more alive.

Unit 75 Earthquakes

(地震)

A 地震の仕組み

Some countries have large numbers of earthquakes. Japan is one of them. Others do not have many; for example, there are few earthquakes in Britain. Earthquakes often occur near volcanoes, but this is not necessarily true. The centers of some earthquakes are under the sea.

How does an earthquake happen? In the depths of the earth, it is so hot that everything becomes soft. There are a lot of pieces of very large rock which are floating over the depths. Each of these pieces of rock is called a "plate." An earthquake happens at places where some of the plates on the depths meet each other. Can we stop an earthquake? **This question is not easy to answer.**

B 二つの大震災

The Kanto Earthquake of 1923 occurred just before noon, just as people were cooking their meals. In those days most houses were made of wood and were very close together, so many of the houses caught fire. Soon 134 fires were burning in the city. They gave people much more damage than the earthquake itself.

Another terrible earthquake struck in the Hanshin and Awaji region of Japan on January 17, 1995. More than 6,000 people were killed, 43,000 were injured, and more than 430,000 lost their homes. **The people of Kobe criticized the government, saying that the lack of good crisis management caused many people to die unnecessarily.** Kobe has a population of 1.5 million, and it has Japan's second largest port. It was supposed to be one of the safest cities in Japan.

C 地震を予知する動物たち

Before an earthquake happens, animals sometimes do strange things. Dogs bark and bark, and horses kick at barn walls. Cats look at things that we cannot see, or they run about here and there. They look like they are mad with fear. **It seems that the animals know that something is going to happen.** It is not magic. Cats and dogs may feel the ground move in ways that people can't. Animals may hear sounds that tell them something is wrong, and when they feel a sudden fear, animals act in a strange way. Animals may help people learn about earthquakes. Some day we may be able to predict when a quake is going to strike, and that may save our lives.

D 私たちにできる災害対策

What can we do to lessen as much damage as possible from earthquakes? It is of course necessary to have flashlights and a good supply of food and water, some medicine, and money.

A student from Mexico who experienced the earthquake in Kobe gives us these pieces of advice:

1. **Prepare a first aid kit in case you get hurt during an earthquake.**
2. Get to know all emergency exits in your home and school.
3. Try to keep calm, and don't become frightened while a disaster is happening.
4. After a disaster, collect all possible information, and wait for directions.
5. Bicycles are the only reliable means of transportation. Automobiles are useless on the damaged streets after a disaster.

Unit 76 A Good Idea?

(名案 ?)

A もう一方の足です!

Alice was going to have an operation on her right knee. She heard stories about doctors who gave their patients the wrong operation. So she took a pen and wrote in big, black letters on her left knee, "The OTHER knee!" After the operation, **the doctor scolded her for not trusting him.** "Why did you write on your knee like that?" he asked. "Don't you think we can remember which knee we should operate on?" "But," she answered, "you started to operate on my left knee, didn't you? If not, how did you notice my sign?"

B 人気中華料理店の秘密

Very few people were coming to eat at a Chinese restaurant, and its owner did not know what he should do about it. The food in his restaurant was cheap and good, but nobody seemed to want to eat there.

Then he did something that changed all that, and in a few weeks his restaurant was always full of men with their lady friends. **Whenever a gentleman came in with a lady, a smiling waiter gave each of them a beautiful menu.** The menu looked exactly the same on the outside, but there was an important difference inside. The menu that the waiter gave to the man had the correct price for each dish and each bottle of wine, but the menu that he gave to the lady had a much higher price!

So when the man calmly ordered dish after dish and wine after wine, the lady thought he was much more generous than he really was!

C タクシーに乗るわけ

A pretty, well-dressed young lady stopped a taxi in a big square, and said to the driver, "Do you see that young man at the other side of this square?"

"Yes," the driver nodded. The young man was standing outside a restaurant and looking impatiently at his watch every few seconds.

"Take me over there," said the young lady.

There were a lot of cars, buses, and trucks in the square, so the taxi-driver asked, "Are you afraid to cross the street?"

"Absolutely not," said the young lady. "But I am three-quarters of an hour late. I said that I would meet that young man for lunch at one o'clock, and it is now a quarter to two. If I arrive in a taxi, **it will at least seem as though I had tried not to be too late.**"

D 医者の適切な助言?

A man went to see his doctor one day because he was suffering from pains in his stomach. After the doctor had examined him carefully, he said to him, "There's nothing wrong with you in particular. Your only trouble is that you worry too much. Do you know, I had a man with the same trouble as you in here a week ago, and **I gave him the same advice as I'm going to give you.** He was worried because he couldn't pay his tailor's bills. I told him not to worry his head about the bills any more. He followed my advice, and when he came to see me again two days ago, he told me that he felt quite all right." "Yes, I know all about that," answered the patient sadly. "You see, I'm that man's tailor."

Unit 77 The Overpopulation Problem

(人口過剰の問題)

A 人口過剰の実態

One of the major problems which worries many people is overpopulation. **It is expected that by 2050, world population will have exceeded nine billion.**

Why is overpopulation a problem? First, a large part of population growth is taking place in countries that do not always have enough food for their people. Without a great deal of money, food, and medical help from other nations, these countries will not be able to support their growing population. Many of their people, perhaps millions of them, will die of starvation or disease.

The fast population increase in these countries comes from high birth rates. Birth rate is the usual number of children one woman will have in her life. Women in these countries usually have many children. They know that it is hard to provide food to and take care of so many children.

B 人口問題の解決法

What can we do to solve the problem of overpopulation? Different groups of people have different answers to this question. **One of the ways is for married couples to limit the number of children they have.** There are now a number of safe, modern methods of birth control. A married couple who uses birth control can choose the size of their family. Many countries with large populations have government programs.

But how successful are these birth control programs? In developing countries many of the birth control programs are not successful. There are many reasons for the failure of birth control programs in developing countries.

C 避妊の問題点

One reason is religion. Many people belong to religions which do not accept modern methods of birth control. For them, birth control is wrong, and they naturally do not listen to family-planning workers.

Another reason for the failure of birth control programs is the economy. Often a large number of children are necessary for very poor families in developing countries. Children can work and help to support the family. Also, without a welfare system, people have to depend upon their children for food, clothing and shelter in their old age. In these countries, people just cannot see any reason for small families.

For other people, birth control is surely not the answer the world needs to the overpopulation problem. **In their opinion, governments ought not to decide family size.** It is not right.

D 食糧増産のための援助

The answer which they suggest should be done is to increase world food production. They call our attention to the progress that scientists are making. For instance, water supply has enabled them to produce food in many parts of the world which did not produce anything fifteen or twenty years ago. It has even become possible to grow plants in water instead of in the field. However, this type of progress costs money: money for the modern farming machines; money for water-supply programs; money for new types of plants. The governments of rich countries will have to help the poor countries. Without financial help from the rich nations, poor countries will not be able to use the new products and new farming machines. Birth control and help from the rich nations are the two possible answers to the overpopulation problem.

Unit 78 The Student Council Election

(生徒会選挙)

A 明日は選挙

B: If I remember correctly, Naoki is a member of the student council, isn't he?

T: Yes, he's a chairperson. But he's going to quit at the end of this month.

B: Why will he quit the job? He's respected by everyone.

T: Well, third-year students must all retire during the second term.

B: I see. Who's going to be the next chairperson?

T: We're going to have an election tomorrow. One of the candidates is Shohei's younger brother Shota.

B: Really? I hope he will be elected.

T: **So do I.**

B: By the way, why did he run in the election?

T: He's always willing to become a representative. In his graduation composition in elementary school, he wrote that he wanted to become a prime minister.

B 翔太の公約

G: Did you hear Shota's speech?

M: Yes, I did. His words were full of humor, so it was very impressive.

G: What did he promise to do when he is elected?

M: He declared that he would make the school newspaper more interesting. He wants to buy a new printer and paper of higher quality, but they will cost a lot of money. **The question is whether our school will give us permission.**

G: Is that all he said?

M: Well, yes. Actually he made some questionnaires for students in advance, but it ended up a complete failure. The most popular request was that our school should abolish strict school rules. Our school strictly regulates the length of skirts and the color of socks. Teachers also forbid conversation on cellular phones.

G: I see. It's impossible for a chairperson to change that.

C 翔太の対抗者

B: When will the election committee announce the result?

T: Let me see... At about noon, during the assembly.

B: How many candidates are there?

T: There are two including Shota.

B: Only two? Then the probability is fifty percent. I'm relieved.

T: Don't be so secure. The opponent is a pretty girl who is popular among boys. What's more, most boys in our school vote for girls.

B: That's disappointing. This is not a popularity poll. **We must vote for someone who we think is appropriate, regardless of sex.**

D 選挙の結果

B: How was the result? Was Shota elected?

T: No, he was defeated by a narrow margin of only ten votes.

B: Oh, **I wish he had won the election!** Is he depressed?

T: No, not at all. This time he wasn't so confident in the beginning. Anyway he's always full of ambition and curiosity. I hope some day he will achieve something with more of a challenge.

B: By the way, who is the new chairperson?

T: Her name is Arisa. Her nationality is American. She has a twin sister.

B: Oh, I know her. She's a girl with a strong personality, but she's also very bright. She deserves to be chosen as the representative.

Unit 79 Galileo

(ガリレオ)

A 振り子の法則

Galileo Galilei was born in Pisa, Italy, in 1564. One day when he was a university student, he went to a church and saw many lamps hanging from the ceiling. When the wind blew from the window, the lamps began to swing. As he watched the swinging lamps, **he found that each swing took the same amount of time, no matter how big the swing was.** Afterwards he discovered the law of swinging; when the cords have the same length, each swing takes the same amount of time. Later a clock was invented by making use of this law.

His father encouraged Galileo to study medicine at the University of Pisa, but he became more interested in mathematics and philosophy.

B ガリレオの理論と発見

He returned to the university as a professor of mathematics when he was 25. At this time, **he discovered that all things fall at the same speed, whether they are light or heavy.** He went up to the top of a tower and dropped two iron balls from the same height at the same time. One ball was one pound, and the other ten pounds. They both hit the ground at the same time. However, people said that if an iron ball and a feather were dropped from the tower, they would not hit the ground together. Galileo argued that this was because the air slowed the fall of a feather, but he could not prove his theory because there was no place on earth without air.

In 1609 Galileo improved the telescope, and he discovered that the Milky Way was composed of millions of stars. He also discovered that Jupiter had more than four moons.

C コペルニクス説と教会

Most importantly, Galileo learned that the planets revolved around the sun, which did not move. Because of what he saw through his telescope, he agreed with the Copernican theory of the solar system. But the leaders of the Church and of Europe did not believe anyone who spoke against the teachings of the Bible.

In 1616 Galileo went to Rome with one of his telescopes to show the Pope and other high Church officials what he had discovered. However, showing them his proof with the telescope was not enough. Church officials told Galileo to stop agreeing with the Copernican system. At the same time, **the Church put Copernicus' work on the list of prohibited books, on which it stayed for 200 years.**

D 宗教裁判にかけられたガリレオ

In 1632, however, Galileo published his book Dialogue Concerning the Two Chief World Systems. In this book, he agreed with the Copernican idea that the Earth revolves around the sun.

Galileo was asked to come before the Inquisition, a group of Church officials that punished people for incorrect religious ideas. He was punished because he disagreed with the interpretation of the Bible. Finally, Galileo was forced to say that he did not believe in the Copernican theory, and he was ordered to be put into prison for the rest of his life. However, **he was such an important man that he was allowed to live in his home in Florence,** but he was not allowed to leave his house.

Galileo was never a free man again. For the last 10 years of his life, he was carefully watched by the Inquisition. He died in 1642 at the age of 78.

Unit 80 The Bad Effects of Smoking

(喫煙の悪影響)

A 喫煙を減らす試み

Everyone knows that smoking is bad for you. In 1964 the U.S. government first announced a report on the bad effects of smoking. And as more and more people have learned about them, the number of smokers has constantly decreased.

Today, health officials and anti-smoking groups are working harder than ever for a “smoke-free” society. And many of their efforts are directed to one group that keeps on smoking: teenagers. **Nearly all smokers start as teens even though it is against the law for children under 18 to buy cigarettes in most places.** In 1995, the U.S. government made up their mind to fight much harder to keep children from smoking. They put forward stricter rules that would make it more difficult for teens to buy tobacco products.

B タバコとガン

Teenagers have plenty of reasons why they should not start smoking. **Once you do that, your breath will get shorter, your teeth will get dirtier, your vigor will fail, and your breath, hair, and clothes will smell bad.** But those effects are slight when you think of the harm tobacco does to your health over a long period of time.

Cigarette smoke contains about 4,000 chemicals, and 43 of them are known to cause cancer. Smoking also causes heart and breathing diseases. Also, smokeless forms of tobacco are just as harmful. Chewing tobacco, for example, causes cancer of the mouth.

C ニコチンの影響

All forms of tobacco contain nicotine, a powerful drug. When a person smokes a cigarette, nicotine is taken in with the smoke. It passes from the lungs to the bloodstream. Then the bloodstream carries it to the brain. Nicotine makes the smoker quicker to notice things and raises the heart rate.

Since nicotine produces no feeling of extreme pleasure or excitement, people rarely think of it as a dangerous drug. In fact, nicotine’s effects disappear quickly, but as the body gets used to the drug it learns to want more. This way smokers who decide to stop may start having trouble sleeping, and becoming very nervous or exhausted and unable to work for a long time. These symptoms become weaker as time goes on and in the end they stop. But because of them heavy smokers feel it is very hard to decide to keep from smoking forever.

D 間接喫煙の害

Smokers aren’t the only people who are affected by their habit. There is also a lot of concern about the effect of “secondhand” smoke ---- smoke from other people’s cigarettes. Scientists say that each year thousands of lung cancer deaths are caused by secondhand smoke. **If we are to solve these health problems, many smokers must quit smoking and many other people must never start.**

In 1965, about 42 percent of Americans over age 18 were smokers. The percentage of smokers has decreased to 25 percent. However, there are still 48 million smokers.

Unit 81 Who Are Happier, Adults or Children?

(大人と子ども、どちらが幸せか?)

A 大人と子ども

Most people, when they are young, can't wait to grow up. Yet many adults look back on their childhood with nostalgia. Why is that?

When we are young, we think that adults have freedom and power. They can make decisions for us. They can do things that we cannot do, such as driving a car. They also have economic power. They can decide what things to buy for themselves and for us.

When we are a little bit older, we begin to realize that their freedom is, in part, an illusion. Of course, in theory, **adults can go wherever they want to go** and do whatever they want, but in practice adults are often worried about so many things that they do not feel free at all.

B 子どもの自由

Perhaps children have more freedom. After all, they don't have to work, to clean the house, or to prepare supper. They have more free time; time to play and discover new things. People will excuse a child for almost anything. If a child does something wrong, we say, "Oh, well, she's only a child", or "He doesn't really understand ---- he's just a child". We are much harder on adults who do something wrong.

Whatever we do in our childhood, it is new and attractive. In our adult lives it is hard to find something new and attractive which can excite us as some things did when we were children. In fact, one of the problems of adult life is that it is often boring.

C 子どもの抱える困難

However, childhood is not without its difficulties. Children can be terribly unkind to one another. They sometimes don't care how other children feel. If a child is a little different, the other children do not accept him or her. There is great pressure to act like other children if he or she wants to be accepted.

While adults have many responsibilities, school is children's responsibility, and it isn't always easy. **Not only can the work be hard, but there is often great pressure from teachers and other children.** There is almost nothing that children have free choices about at school, because they are powerless.

They are so powerless that being a child is frustrating. Your parents can suddenly decide to move to another city and rob you of your friends. They can serve things that you hate for dinner.

D もっとも幸せなのは

However, strangely enough, children also have great power over their parents. From the moment when we are crying babies, our parents arrange their lives around our needs. If babies cry, the parent must pick them up and hold them. And how many times have you seen children cry until their parents give them the things they want or take them where they want to go?

Whether it is better to be a child or an adult is difficult to decide. The happiness of a child is very different from the happiness of an adult. Perhaps the adult who has both the child's sense of excitement about the world and the greater freedom of movement and the deciding power of adulthood is the happiest of all.

Unit 82 A School Trip To Beijing

(北京修学旅行)

A 自由行動で中心街へ

M: Are we all ready to start?

G: Well, we're ready except that Shohei hasn't shown up yet.

M: You must be joking. He's always punctual.

G: Oh, here comes Shohei.

S: I'm sorry to have kept you waiting. My alarm didn't go off. Where are Naoki and Kenta?

G: They rented bicycles and rode downtown. Now, let's go. We have to come back here within two hours.

S: We'd better take the subway. We can't speak Chinese, but we can use a ticket vending machine. All we have to do is press a button.

G: Come to think of it, vending machines are very rare in Beijing, aren't they?

M: Yes, and some of them are usually out of order. **The government is reluctant to set up vending machines so as not to encourage crime.**

B 万里の長城を登る

H: We're lucky to be here on such a sunny day like this.

T: You're quite athletic, Helen. Why don't we take a break? My ankle hurts.

H: Come on, Takuya. **The higher we climb, the more beautiful the view will be.**

W: They say the Great Wall of China is the only man-made object that can be seen from space with the naked eye.

H: It looks like a huge dragon lying on vast land.

T: How long is it altogether?

W: The entire wall is more than 6,000 kilometers long. This length may change in the future. I believe that some parts of the wall are hidden beneath shifting sand.

C 王府井で買ったみやげ物

M: Where have you been?

G: We went to Wangfujing Avenue to buy souvenirs. I bought this ball-point pen and some other goods in a stationery store. Didn't you buy anything, Misaki?

M: No, I regret that I left my wallet in the safe.

H: I'll give you one of these: this silk butterfly handkerchief or this wooden-carved tiger. **You can choose whichever you like.**

M: Really? But they must have been expensive.

H: No, I bought them for a low price. They were on a fifty percent discount. Which do you want? It's up to you.

M: Then can I have this handkerchief? Thank you. Oh, how lovely!

D 中華料理店で

Z: Generally speaking, Chinese food is heavy. Chinese people like to drink tea after eating fatty food. Chinese tea can help digest your heavy food, and you can refresh yourselves.

S: Ms. Zhou, would you translate these menus into English?

Z: OK. This is a very spicy shrimp dish.

T: Believe it or not, I'm allergic to seafood. **I'd rather have lamb.**

Z: What a pity! Many kinds of Chinese seafood, such as shrimp and crab, are really good. As you know, China exports seafood and many other things to Japan.

S: Well, I've decided what to order. If you don't mind, would you be our interpreter?

Z: You're a little too timid, Shohei. Why don't you try to speak Chinese?

Unit 83 Potatoes Were Once Disliked

(ジャガイモはかつて嫌われていた)

A ジャガイモの起源

One of the most common foods is the potato, but that was not always true. In fact, people once refused to eat them. They would not even feed them to their pigs. Those roots that grew underground, they said, were poisonous.

The potato was first grown and eaten by the Indians of South America in the high plains of Chile, Colombia, and Peru. They grew well in areas where wheat did not grow well. Spanish soldiers brought the first potatoes to Europe from South America in about 1565. However, to most Europeans potatoes seemed to be just ugly roots. For about two hundred years hardly anyone paid any attention to them. Perhaps **people never would have discovered how good potatoes were had it not been for some clever people** in the French government. They realized that potatoes would increase the food supply.

B 嫌われたジャガイモ

They went to King Louis the Sixteenth. “The potato is bread already made,” they explained. “Take it just as it comes out of the ground and bake it in hot ashes or cook it in boiling water and you have a food as good as wheat and much less expensive.”

As you can imagine, the king was delighted. He ordered his nobles to plant fields of potatoes. The nobles planted the potatoes because the king told them to, but they didn’t eat them. The king’s officials even tried to give potato plants away, but no one would have anything to do with them.

Finally the officials had a brilliant idea. They planted a large field with potatoes. When the crop was ripe, **a huge fence was built around the field as if to protect a very valuable harvest.**

C 政府の作戦

Then the government spread the word among the people that no one would be permitted to touch the potatoes. They would be severely punished if they did. During the day guards kept strict watch over the potato field. **People didn’t even dare approach the fence.**

The guards also had secret orders to make a big show of force during the day but at night to go home and leave the field completely unguarded. As the days passed people began asking themselves: what is this plant that’s guarded with such care? It must be very precious indeed. Let’s try to get some when it gets dark.

D ジャガイモの普及

Sure enough, as soon as night fell, some people climbed over the fence. Quickly they pulled up a few of the potatoes and ran away with them. They looked carefully, but **no guards were to be seen.** Soon the rumor spread that the field was not guarded at night. Then the robberies began on a large scale.

Potatoes, which had always been disliked, were carried off in large quantities. Finally there was not a potato left in the field. The king and his government were delighted because they knew that the nation’s food supply would increase. Fewer people would starve. And they were right. As more people began sampling the potato they realized how good they were and how inexpensive. Once they learned, the news spread fast.

The news not only spread through France, but to other countries as well.

Unit 84 Hibernation

(冬眠)

A 春の始まりは寒い

- H: There was a bean-scattering ceremony in a nearby temple last night. People are shouting some strange words.
- K: I bet they were saying, "Go away, devils. Welcome, fortune!" In that way Japanese people celebrate the start of spring on the following day. By the lunar calendar, today is "risshun", which means the beginning of spring.
- H: The beginning of spring? No way! It's freezing cold.
- K: You're right. **As far as I know, today is the second coldest day this year so far.** I'm so sensitive to the cold that I feel like sleeping all day wrapped in a blanket. I wish I could sleep during the winter, like frogs and snakes!
- H: In English it's called "hibernation." The word comes from Latin and means "winter sleep."

B 冬眠する動物たち

- H: I wonder how long animals hibernate in a year.
- K: It depends on where they live. **In warm countries, where the winters are not very long or very cold, hibernation is not necessary.**
- H: I see. How about in very cold parts of the world, like the northern or eastern parts of Russia? Do animals hibernate all year round?
- K: No, on the contrary, not many animals hibernate in Russia. The ground is so hard that they cannot make a deep hole to spend the winter in. But animals in a large part of the northern hemisphere spend every winter fast asleep.
- H: I see. How can the animals live without eating for so many months?
- K: There are two answers. First, they have stored supplies of fat in their body during the summer and fall. Second, they use little energy, and need little food.

C 冬眠の場所

- H: Do animals use caves for hibernation?
- K: Well, most bears use caves, but other animals go to sleep in different places. Red squirrels disappear in trees. Frogs go deep under the mud. Many other animals dig tunnels under the earth, and some animals sleep under the snow.
- H: Under the snow? That sounds too cold.
- K: No, there is a lot of air in loose snow, and this helps to keep the cold out. Hibernating animals often appear dead at first sight. Their body feels so cold, and some animals breathe only once every five minutes. Their heart beats very slowly. **They don't feel pain however hard we pull their tails.**

D 冬眠する動物としない動物

- H: How can you explain that human beings don't hibernate?
- K: **Most warm-blooded animals, like dogs, wolves, or foxes, need not hibernate.** They lead an active life which keeps their usual body temperature up even in very cold winter weather. But for a cold-blooded creature such as a frog or a snake it is a different matter. When the air temperature is below zero degrees centigrade, the creature's blood temperature drops, too. It cannot move about in the usual way, and it has no choice: it must find a place where it can keep fairly warm. Moreover, it must be a place where its enemies cannot find it.
- H: I see. Then why do some warm-blooded animals like bears hibernate?
- K: Unlike cold-blooded animals, bears hibernate just because their food is not available during the winter.

Unit 85 Plants and Our Lives

(植物と私たちの生活)

A 植物の役割は？

If you live in a city, plants may not seem to play a big part in your life. There may be some growing in your garden, or in pots in your house, or in the nearby park or vacant lot. If you lead a busy life, you probably do not notice them most of the time. They remain in the background, except when they bloom and make life more colorful. Then everyone admires them.

In fact, though, plants play a very big part in our lives, whether we notice them or not. They not only give us beauty with their flowers, but those same flowers, leaves, and even the roots, support our lives every minute of the day. The part they play is so big that **without them we could not live.**

B 植物の呼吸

Just look around you for a moment. How many things can you see that come from plants? During a normal day, plants help to make food and drink, clothes, shampoos and soaps, oil and gas for energy, musical instruments, bats, balls, rackets and playing fields, and of course medicine. There are plenty of other examples.

Plants play another very important role which we notice even less. They breathe. Through their way of breathing, they keep themselves alive and they save human beings and animals from dying. Their breathing is a complicated process called photosynthesis. The leaves capture light energy from the sun and also breathe in carbon dioxide, the gas which humans breathe out. They mix all this with water in a special way. Then **they breathe out oxygen, without which we humans cannot live.**

C 植物がなくなったら...

We do not know how many species, or kinds, of plants there are in the world. Until now, nobody had ever thought of counting them. There simply was no need to. But now something quite alarming has started to happen. **Plants are disappearing from the earth very fast, which is bad news indeed.** So plant specialists, using modern methods, are trying to know what kinds of plants cover the earth and how to look after them. Otherwise, the day may come when there are no plants left. That would mean good-bye to human life on this planet.

D 植物の種類

So far scientists have identified about 270,000 different plants. There could be 10 to 30 percent more than that, they say. Of these, about 50,000 can be used for food. In fact, though, humans eat only 250 to 300 kinds of plants. According to one report published in 1993 by the United Nations, most of the world's farmed food comes from only 20 or so plant species, eight animal species and five bird species. There are many kinds of edible plants which we haven't even thought of eating yet. Also we may never get a chance if they continue disappearing. **In the United States there used to be 7,000 apple varieties, most of which are gone.** When plants come close to disappearing, they are called endangered species.

Unit 86 Lazy Jack

(なまけものジャック)

A ジャックお金をもらう

Once upon a time there was a boy whose name was Jack, and he lived with his mother in a small village. They were very poor, and the old woman earned her living by spinning, but Jack was so lazy that he would do nothing but bask in the sun in the hot weather, and sit by the corner of the hearth in the winter-time. So they called him Lazy Jack. His mother could not get him to do anything for her, and finally told him, one Monday, that if he did not begin to work for his bread she would kick him out to earn his living.

This roused Jack, and he went out and worked for a neighboring farmer the next day for a penny; but **as he was coming home, never having had any money before, he lost it in passing over a brook.** "You stupid boy," said his mother, "you should have put it in your pocket." "I'll do so in the future," replied Jack.

B 牛乳とチーズの運び方

On Wednesday, Jack went out again and worked for a cow-keeper, who gave him a jar of milk for his day's work. Jack took the jar and put it into the large pocket of his jacket, spilling it all, long before he got home. "You foolish fellow!" said the old woman, "you should have carried it on your head." "I'll do so in the future," replied Jack.

So on Thursday, Jack worked for a farmer again, who agreed to give him cream cheese for his services. In the evening Jack took the cheese, and went home with it on his head. By the time he got home **the cheese was all spoiled, part of it being lost, and part melted into his hair.** "You silly fellow!" said his mother, "you should have carried it very carefully in your hands." "I'll do so in the future," replied Jack.

C ネコと羊肉の運び方

On Friday, Lazy Jack again went out, and worked for a baker who would give him nothing for his work but a large cat. Jack took the cat and began carrying it very carefully in his hands, but in a short time the cat scratched him so much that he was compelled to let it go. When he got home, his mother said to him, "You silly boy. You should have tied it with a string, and dragged it along after you."

So on Saturday, Jack worked for a butcher, who gave him the handsome present of a shoulder of mutton. **Jack took the mutton, tied it to a string, and trailed it along after him in the dirt, so that by the time he had got home the meat was completely spoiled.** His mother was this time quite out of patience with him, for the next day was Sunday, and she was obliged to do with cabbage for her dinner. "You foolish fellow," she said to her son; "you should have carried it on your shoulder."

D ジャックがロバをかつぐ

On the next Monday, Lazy Jack went once more, and worked for a cattle-keeper, who gave him a donkey for his trouble. Jack found it hard to hoist the donkey on his shoulders, but at last he did it, and began walking slowly home with his prize. Now in the course of his journey there lived a rich man with his only daughter, a beautiful girl, but deaf and dumb. Now she had never laughed in her life, and the doctors said she would never speak till somebody made her laugh. This young lady happened to be looking out of the window when **Jack was passing with the donkey on his shoulders, with the legs sticking up in the air,** and the sight was so comical and strange that she burst into laughter, and immediately recovered her speech and hearing. Her father was overjoyed, and had her marry Lazy Jack, who was thus made a rich gentleman. They lived in a large house, and Jack's mother lived with them in great happiness until she died.

Unit 87 The History of Soccer

(サッカーの歴史)

A セクンドゥスのゲーム

In the middle of the invasion of England by the Roman army, Secundus was bored. He was seventeen years old and always wanted some activity. It was one thing to march through English villages with flags flying, but it was boring to sit around with nothing to do in a dirty camp while commanders planned their next move.

Secundus sighed. There had to be something to do during off-duty time. **He would start a game of harpastum**, a game which they played back home. The idea of the game was to get the ball, animal skin filled with air, across the other team's line. Soldiers dashed into one another as hard as they could to get the ball. Then they kicked it toward the other team's line. It was, as it were, war without swords. It was a violent game, with shouting, laughter, fighting, and pain.

B サッカーの禁止

Not knowing it, Secundus and his friends just introduced soccer to England. The game was very exciting to the English villagers who were watching. When the Romans invaded England, the villagers tried the new sport and loved it. By the year A.D. 1100, children all over England were playing a form of harpastum in the streets. In fact, the game was so popular that in 1314 the king banned it because he believed that evil spirits would appear from its great noise. "If you play such a game in the city in the future, you'll be put in prison," said the command. In other words, no more soccer! However, because the sport was so much a part of the people, they would not stop playing it. Another king called the game "idle practice" that went against the practice of archery. Archery was very important for the defense of the country, so once again soccer was banned.

C 初期サッカーの広まり

Unlike modern-day soccer, soccer in old England and Europe was wild. It often took up the entire length of the main village street. The game could last for hours, or until one team had no more players. Kicking was allowed ---- at the ball and at other players, too. The idea was to win at any cost.

By the middle of the 19th century, an early form of soccer was often played in most English schools. Kicking a leather ball in a field was becoming very popular. The trouble was that each school and each country played by its own set of rules. **Every time two English schools played against each other, for example, problems happened.** The game by then was called football. The word soccer was not yet invented.

D ラグビーとサッカー

Then during an 1823 game at Rugby College, one English player couldn't move the ball forward by kicking it. So he simply picked it up and ran with it. At this moment rugby was invented. However, that brought about more problems. Now there were two different kinds of football. **When planning a football game, people often asked, "What kind of football?"**

In 1863 some people wanted to keep football as a kicking game, and not to allow the ball to be carried by hand, formed the London Football Association. Rugby was quite popular by then, and they wanted to be sure that everybody knew the difference between the two games.

It took a little more time before the name soccer arrived. Fans began to call one game rugby and the other association football. The second one was soon called "assoc" football for short. This became soccer football.

Unit 88 What Makes the Behavior of Boys and Girls Different?

(男子と女子の行動が違うのはなぜか?)

A 男女の性差に対する理解

For hundreds or even thousands of years people have wondered about gender differences; that is, differences in how boys and girls, and men and women think and act. In ancient times people thought that men and women were different mostly because they were born that way, or because of nature. This meant that people usually believed that only men were good at some things and only women were good at other things. Of course, the effects of this kind of thinking usually prevented girls from studying as much as men and from doing the same jobs as men in adult society. Men worked outside the home and women worked inside it as mothers and wives, although women could also do certain kinds of “women’s work” outside the home too. Today the thinking has changed a lot due to the greater awareness of human rights, which requires equal treatment of men and women, for example, in education.

B 資質か養育か?

However, many people still argue about what makes men and women different, not physically of course, but in their behavior and ways of thinking. Since the mid-nineteenth century and with the development of modern social sciences, many people have paid more attention to social influences, and the effects of these influences on boys’ and girls’ behavior. Such people think that differences in boys’ and girls’ thinking, behavior and abilities are mostly due to how they are taught at home, in the schools and in society. For example, do girls really prefer dolls because they are different from boys at birth, or only because they are taught that way? We call this question “Nature (biological differences) versus Nurture (educational differences).”

C おもちゃについての調査

This essay explains what seem to be differences between boys and girls from birth to age two. Many people might think that the differences at these ages, especially infants, would be very small, but research tells us otherwise. It seems almost certain that both nature and nurture influence the different ways of thinking between boys and girls, and men and women. However, recently some evidence on this question comes from a surprising place: the study of children’s preferences for certain toys. For example, even when toy companies and parents try hard to interest boys in dolls and girls in action toys, they have little success. Some boys may like dolls and some girls may prefer action toys, but the number seems to be very small. In fact, as a recent television documentary showed, if boys are given Barbie dolls, they will use them in violent ways such as sword fighting, while girls will dress them up in the more expected ways of playing with dolls.

D ひとりの個人として

Some other differences in very young boys and girls are also clear. Girls consistently make more eye contact with parents and people close to them than boys do. When boys build things with toy blocks, they build upward toward the sky, while girls build outward. Boys build tower-like, vertical structures and girls build fences, walls and enclosures. In addition, international studies, which included children from different cultures, revealed generally that boys are more aggressive, more active and more interested in objects. Girls tend to be quieter, more interested in houses and home life and more talkative at earlier ages.

What does this kind of information contribute to the understanding of men and women’s differences? It suggests, for one thing, that at least some of the differences in behavior and ways of thinking do come from nature. However, socialization is also very important. We must always remember that all boys and girls are individuals. Even if boys and girls do tend to think and act differently from birth, anyone, as an individual, might be very good at anything he or she tries.

Unit 89 The Automobile and Our Lives

(自動車と私たちの生活)

A 自動車の利点

The automobile has many advantages. Above all, it offers people freedom to go where they want to go, when they want to go there. The basic purpose of a motor vehicle is to get from point A to point B as cheaply, quickly and safely as possible. However, to most people, cars also represent their intimate dreams of power, excitement and adventure.

In addition, much of the world's economy is built on producing motor vehicles and supplying roads, services and repairs for those vehicles. In the United States, one of every six dollars spent, and one of every six jobs, are connected to the automobile or related industries, such as oil and steel.

B 自動車の危険

In spite of their advantages, motor vehicles have many harmful effects on human lives and on natural resources. The automobile may be the most destructive machine ever invented. Though we tend to deny it, riding in cars is one of the most dangerous things we do in our daily lives.

Since 1885, when Karl Benz built the first automobile, almost 18 million people have been killed by motor vehicles. Every year cars and trucks worldwide kill an average of 250,000 people – as many as were killed in the atomic bomb attacks on Hiroshima and Nagasaki – and injure ten million more, some of them permanently. Half of the world's population will be involved in an auto accident at some time during their lives.

C 都市の交通事情

Almost three million Americans have been killed on the highways since the automobile was introduced, which is about twice the number of Americans killed on the battlefield in all U.S. wars. For the purpose of the tragic loss of life, these accidents cost American society about 60 billion dollars annually in lost income, and in insurance, administrative and legal expenses.

Los Angeles has become a global symbol of an urban area spread out over a vast network of highways. An estimated one-third of the city's total metropolitan area and two-thirds of its downtown area are devoted to roads, parking lots and other automobile-related uses. Each day its network of streets and highways is crowded with more than five million vehicles, which are responsible for 85 percent of both the air pollution and the noise in this urban area.

D 脅威的で便利なもの

If present trends continue, U.S. motorists will spend an average of two years of their lifetimes in traffic jams. Companies are losing billions of dollars because many of their employees can't get to work on time or arrive at work tired and irritated.

In 1907 the average speed of horse-drawn vehicles through New York City was 18.5 kilometers per hour. Today cars and trucks with the potential power of hundreds of horses creep along New York City streets at an average speed of 8 kilometers per hour. Streets that used to be for people are now for cars, as pedestrians and people riding bicycles in the streets are subjected to noise, pollution and danger. An increasing number of scientists are warning that we must take extraordinary measures in the near future to protect both ourselves and our environment from such threatening convenience.

Unit 90 Edison's Inventions

(エジソンの発明)

A 発明と改良

If one person can be said to have led the world into the age of technology it was Thomas Alva Edison. Not only did he invent and perfect many of the technologies vital to the modern world, he also set the standard for how research and development is done today.

Edison was guided by his belief that genius is one percent inspiration and 99 percent perspiration. Consequently, he worked day and night for much of his life. By the time he died in 1931, he had patented over 1,100 inventions. Some were his own, but many were improvements he had made to the inventions of others.

According to patent consultant, Ted Black, "Edison was really the first man to head a research and development department, like they have in every large company nowadays. A lot of invention nowadays is modification of existing products and processes to make them a little bit more commercial, a little bit more effective. And Edison started all that off."

B 電球とその電気のシステム

Edison concentrated much of his time and effort on further developing someone else's products rather than making entirely original inventions. One was the telephone. Alexander Graham Bell invented it, but it was Edison who improved the range and clarity of the sounds transmitted by the instrument so it could be put to practical use by ordinary people.

Moreover, some of the inventions attributed to Edison had already been invented. One example is the light bulb. This was first demonstrated in London in 1878 by its English inventor, Joseph Wilson Swan. However, when Edison demonstrated his light bulb in the US the following year, it was he who was credited for giving the world electric light.

One reason was because Edison did more than just supply a light bulb, as Brian Bowers of London's Science Museum explains. "Edison believed that, if you had electric light, then you should have an Edison electric lamp in an Edison lamp holder, connected by a piece of Edison wire, all the way back to the Edison generator in the Edison power station. It was a different concept — he was going for the whole system."

C 人の役に立つ発明を

In this Edison was unlike most scientists and inventors, who tend to concentrate on one particular idea or field. Edison never restricted himself. The reason, says his biographer, Neil Baldwin, is that he was motivated by the desire to improve people's lives.

"You can see this theme throughout his life — to help the people of America to better their lives. He designed mass housing for the working people; he designed a battery for an automobile; and he tried to make an electric car, to cut down on pollution in the environment."

In fact, so great was Edison's desire to invent things that would make life easier and better that he neglected to exploit many of his inventions because he didn't believe they would be of use to people, or that people would want them.

D エジソンの判断ミス

One of his biggest mistakes was to underestimate the attraction of cinema and radio. After inventing the motion picture camera, he abandoned film making because he believed movies should be used for education and not entertainment. And, although he was the first person to record sound, he failed to develop that technology because he didn't think people would want radios. His reasoning was that the public would not allow into their homes a source of entertainment they couldn't control.

Despite these occasional errors of judgment, Edison produced a steady supply of useful inventions throughout his life. At the time of his death at the age of 84, he had patented over 1,100 inventions, many of which are still helping to shape our world.