

Unit 8 Inventions

Communication Task

Before reading “Four Great Inventions”, discuss the following questions with your partners.

1. What do you think is the most important invention in human history?
2. What do you think is the most important invention in China?

Reading

FOUR GREAT INVENTIONS

The compass, papermaking, gunpowder and printing are considered the Four Great Inventions of ancient China.

COMPASS

The compass was invented in the 11th century. The compass made it easier to locate other places. It was used to travel and transport goods, such as tea and silk, to far-away places. Therefore, the compass played an important role in connecting people around the world.



PAPERMAKING



In the Eastern Han Dynasty (25 – 220 A. D.), papermaking was invented by an eunuch named Cai Lun. Bamboo, the most important material used to produce paper, was soaked in water for several days before it was transformed into paper. Before Cai Lun invented paper, stones and silk had been used to record characters. Compared with these, paper was lighter and cheaper. After paper was invented, more and more people could read books. In that way, paper made a great contribution to transmitting culture around the world.

GUNPOWDER

In the 9th century, gunpowder was discovered accidentally by Chinese chemists. Later, it was used to produce fireworks. Fireworks still play an integral part in many Chinese cultural festivals.





PRINTING

Printing was created in China around 600 A. D. During the Northern Song Dynasty (960 - 1127 A. D.), printing was improved by Bi Shen. About 200 years later, printing was adopted by other countries. Printing has made great contributions to the dissemination of human culture.

Reading Tasks

Read the passage and complete the information in the following table.

| Inventions | Compass | Papermaking | Gunpowder | Printing |
|----------------------|--|----------------------------|-------------------------------|--|
| When? | _____ | in the Eastern Han Dynasty | _____ | (was produced) <i>around 600 A.D</i> (was improved) _____ |
| Who? | the ancient Chinese | _____ | _____ | (was improved) by _____ |
| Function? | _____ | _____ | was used to produce fireworks | _____ |
| Contribution? | played an important role in connecting people around the world | _____ | _____ | made great contributions to the dissemination of human culture |

Read the passage again and answer the following questions in your own words.

1. According to the passage, before the invention of papermaking, people wrote characters on heavy materials like bamboo, or on expensive white silk. So how has the invention of papermaking changed our way of life?
2. Why do people consider these inventions to be the Four Great Inventions of ancient China? How have they influenced human society?

Vocabulary Tasks

Match the vocabulary with their definitions.

dissemination
contribution
invention

offering or giving something to others
new creations
the act of spreading something

obviously
accidentally
widely

over a large area or range
clearly or evidently
in an unexpected situation

soak
discover
improve

make something better
leave something in liquid for a long time
find something not previously known

Complete the following passage with the appropriate form of the words above.

The computer is a great invention in modern society. It is being used _____ everywhere. Computers have a lot of functions. For example, they help us search for information online or send emails to others. Anything we want can be looked up on the internet by using a computer. Because of the invention of the computer, any news can be _____ in a second. _____, the computer has made a great _____ to the development of modern society.



All the words in the table form strong partnerships with the words *improve*. How many can you work out?

| improve + noun |
|---------------------|
| q _ al _ t _ |
| s _ rv _ c _ |
| p _ rf _ rm _ n _ e |
| pr _ d _ ct _ vity |
| _ ffic _ enc _ |

Grammar Tasks

Correct the following sentences.

Example: Gunpowder **is discovered** accidentally by Chinese chemists. → *Gunpowder was discovered accidentally by Chinese chemists.*

1. Biology courses were offered next year.

2. This computer will be used ten years ago.

3. The dinner is being prepared when my father came back home.

4. I doubted whether this problem was solved in the next week.

Change the following active sentences to passive sentences.

Example: Bi Shen improved printing. → *Printing was improved (by Bi Shen).*

1. A passerby witnessed a terrible car accident. → _____.

2. The doctor asked me to do sports regularly. → _____.

3. Tony finished his homework before the deadline. → _____.

4. My father is repairing his bike in the yard. → _____.

Following the example, change the following sentences into questions by using passive voice.

Example: **The compass** was used to locate places. → *What was used to locate places?*

1. Some delicious cakes are being sold in this supermarket. → _____.
2. Tom is being interviewed for the position of manager. → _____.
3. They were asking me a difficult question when Amy came in. → _____.
4. My brother has finished his mathematic homework. → _____.

Writing Task

Write about five sentences to introduce the inventor, time of invention, functions and significance of the iPad.

| | |
|--------------------------|--|
| Invention | iPad |
| Inventor | Apple |
| Time of invention | 2010 |
| Functions | Shoot video, Take photos, Play music, Play games, etc. |
| Significance | Business, education, etc. |



Example: *The iPad was invented by It can be used to ...*

Dialogue

Role-play the conversation.

Amy is reading a novel on her cellphone. Tom is passing by.

Tom: Hey, Amy, what are you doing?

Amy: I'm reading "Harry Potter".

Tom: Reading such a long novel on your phone? Your eyes will be damaged. Why don't you buy the printed book?

Amy: They are too expensive and heavy. On my cellphone, I can read whatever, wherever and whenever I want. It is very convenient.

Tom: Yes, you are right, but I think reading a printed book provides you with an enjoyable feeling.

Amy: I don't think so. I only feel guilty that so many trees are being cut down to produce printed books.



Answer the following questions in your own words.

1. Why does Tom support reading printed books?
2. Why does Amy support reading books using cellphones?
3. Who do you agree with? Why?

Vocabulary Task

Correct the following sentences.

Example: She thought we should find a convenient time to the meeting.

She thought we should find a convenient time **for** the meeting.

1. The supermarket is convenient for my house.

2. We are convenient to hold an activity in such a big room.

3. Will you be convenient to start to work next week?

Speaking Task

Brainstorm: work in pairs to discuss the advantages and disadvantages of cellphones.

Advantages

1. *Convenient*

2. _____

3. _____

4. _____

5. _____

...

Disadvantages

1. *Expensive*

2. _____

3. _____

4. _____

5. _____

...

Choose one of the following topics and work in pairs to create a dialogue (An example is given).

Example:

Topic A: TV is a useful tool in children's education.

Debate:

Student A: I think TV is a useful tool in children's education. There are lots of interesting educational programs on TV which can be used to arouse students' interest in learning.

Student B: I don't think so. Some students watch TV just for fun and spend too much time on it. As a result, they cannot finish their homework on time. So very often, students' attention is easily distracted by TV.



Topic B: Cars are a great invention.

Topic C: E-books are a useful study aid.

Useful Expressions

- What do you think of...?
- I think....
- I don't think so, because I think...
- I can't agree with you more, but...
- I agree with...
- I don't agree with...
- I believe...
- In my opinion, ...
- The reasons why I think...are...
- Firstly...
- In addition...
- Moreover...

Writing Task

Discuss whether students should be allowed to use cellphones in school. Write about 80 words. The first and the last sentences are given to you.



I think students _____ (should/shouldn't) be allowed to use cellphones in school.

Given the above, I believe that it's necessary for students _____ (not to/to) use cellphones in school.

Listening

Read the questions first, then listen to the passage and fill in the blanks.

Do you know how to make *recycled* _____ by yourself? Making recycled paper is lots of fun. Let's try to do it.

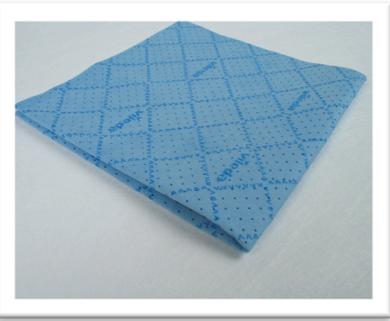
First, we should prepare _____, water, some cloth, a _____ and a piece of _____.

Listen to the passage again and then reorder the sentences.

- () Pour the mixture on the cloth
- (1) Clean all the materials.
- () Put the pieces into the blender.
- () Soak the pieces in water.
- () Put the cloth on the table.
- () Dry the cloth with a piece of rag.
- () Cut newspapers into pieces.



BLENDER



RAG

Grammar Awareness: Passive Voice

- In a sentence, if the subject performs the action, we use active voice.
e.g. Cai Lun invented papermaking during the Eastern Han Dynasty.

If the subject is unimportant or unknown, we use passive voice.

e.g. Papermaking was invented during the Eastern Han Dynasty.

Therefore, the relationship between active voice and passive voice is as follows:

Cai Lun *invented* papermaking during the Eastern Han Dynasty.

| | | |
|-------------|---------------------|--|
| Papermaking | <i>was invented</i> | by Cai Lun during the Eastern Han Dynasty. |
| (Subject) | (was + verb-ed) | (by-doer) |

Passive voice pattern:



Subject + be + past participle (+ by doer)

(Notice: *by doer* is usually omitted because we don't know who is the doer or we don't want to say who does it.)

e.g. The compass **was invented** in the 11th century.

Printing **was created** around 600 A. D.

Paper **is made** from tress.

- **The rules for changing verbs into their past participle forms (V-ed):**

Regular Verbs: most verbs end with –ed.

| Basic form | Simple past | Past participle |
|------------|-------------|-----------------|
| use | used | used |
| plan | planned | planned |
| dry | dried | dried |
| soak | soaked | soaked |

Irregular Verbs: no standard rules.

| Basic form | Simple past | Past participle |
|------------|-------------|-----------------|
| begin | began | begun |
| become | became | become |
| make | made | made |
| put | put | put |

(Tips: the entire list of participles of irregular verbs is at the end of the unit.)

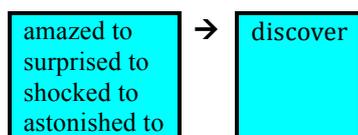
- **Below are examples of passive voice used in all the common tenses.**

| | The simple tense |
|--------------------|---|
| Present | E.g. Television <i>is considered</i> a great invention in modern society. |
| Past | E.g. The concert <i>was held</i> in the music hall last night. |
| Future | E.g. These new books <i>will be sent</i> to a middle school tomorrow. |
| Future-in-the-past | E.g. She told me that these students <i>would be taught</i> by a new English teacher. |

| | The continuous tense |
|---------|---|
| Present | E.g. The computer <i>is being used</i> now. |
| Past | E.g. This question <i>was being discussed</i> when she came in. |

| | The perfect tense |
|--------------------|--|
| Present | E.g. This book <i>has been written</i> for two years. |
| Past | E.g. The room <i>had been cleaned</i> before he came back. |
| Future | E.g. The bike <i>will have been repaired</i> before you come back. |
| Future-in-the-past | E.g. She said that this film <i>would have been directed</i> by her, had she not gotten ill last year. |

Word Awareness



Words you need to know

accidentally (Adv) If something happens accidentally, it means it happens in an unexpected situation.
偶然的

character (N) Characters refer to symbols written on some materials. 字符

compass (N) Compass refers to a navigational instrument which is used to find directions. 指南针

contribution (N) If you make a contribution, you offer or give something to others. 贡献

convenient (Adj) If a way of doing something is convenient it means this method is suitable to the purpose or easy to use. 方便的

defend (V) If a person defends something, it means he or she takes action to protect it. 保卫

direction (N) Directions refer to the places towards which something is moving. 方向

discover (V) If a person discovers something, it means he/she finds something not previously known.
发现

dissemination (N) Dissemination refers to the act of spreading something. 传播

eunuch (N) Eunuchs refer to the men who did not have testicles in ancient China. 太监

gunpowder (N) Gunpowder refers to an explosive substance that is used to make fireworks or cause explosions. 火药

improve (V) If a person improves something, it means he or she makes it better. 改善

invention (N) Inventions refer to new creations. 发明

obviously (Adv) Obviously has the same meaning as clearly or evidently. 明显的

papermaking (N) Papermaking refers to the technology of making paper. 造纸术

printing (N) Printing refers to the technology of producing printed material, such as books and newspapers. 印刷术

recycled paper (N) Recycled paper refers to the paper that can be reused after it is reprocessed. 再生纸

soak (V) If a person soaks something, it means he or she leaves it in liquid for a long time. 浸泡

transport (V) If a person transports something, it means he or she takes it from one place to another.
运输

widely (Adv) If something is used widely, it means it is used by a lot of people. 广泛的

Appendix

Principal irregular verbs

| PRESENT | PAST | PAST PARTICIPLE |
|---------|------------------------------|---------------------------|
| arise | arose | arisen |
| be | were (<i>singular was</i>) | been |
| beat | beat | beaten (<i>or beat</i>) |
| become | became | become |
| begin | began | begun |
| bend | bent | bent |
| bite | bit | bitten |
| bleed | bled | bled |
| blow | blew | blown |
| break | broke | broken |
| bring | brought | brought |
| build | built | built |
| burst | burst | burst |
| buy | bought | bought |
| cast | cast | cast |
| catch | caught | caught |
| choose | chose | chosen |

| | | |
|----------------|-----------------------------|-----------------------------|
| cling | clung | clung |
| come | came | come |
| cost | cost | cost |
| cut | cut | cut |
| deal | dealt | dealt |
| dig | dug | dug |
| dive | dived (<i>or dove</i>) | dived |
| do | did | done |
| draw | drew | drawn |
| drink | drank | drunk |
| drive | drove | driven |
| eat | ate | eaten |
| fall | fell | fallen |
| feed | fed | fed |
| feel | felt | felt |
| fight | fought | fought |
| find | found | found |
| fly | flew | flown |
| forget | forgot | forgotten |
| freeze | froze | frozen |
| get | got | got (<i>or gotten</i>) |
| give | gave | given |
| go | went | gone |
| grow | grew | grown |
| hang (execute) | hanged | hanged |
| hang (suspend) | hung | hung |
| have | had | had |
| hear | heard | heard |
| hide | hid | hidden |
| hit | hit | hit |
| hold | held | held |
| hurt | hurt | hurt |
| keep | kept | kept |
| kneel | knelt (<i>or kneeled</i>) | knelt (<i>or kneeled</i>) |
| knit | knitted (<i>or knit</i>) | knitted (<i>or knit</i>) |
| know | knew | known |
| lay | laid | laid |
| leave | left | left |
| lend | lent | lent |
| let | let | let |
| lie(recline) | lay | lain |
| lie (fib) | lied | lied |
| light | lighted (<i>or lit</i>) | lighted (<i>or lit</i>) |
| lose | lost | lost |
| make | made | made |
| mean | meant | meant |
| meet | met | met |
| mow | mowed | mowed (<i>or mown</i>) |
| pay | paid | paid |
| prove | proved | proved (<i>or proven</i>) |
| put | put | put |
| read | read | read |
| rid | rid (<i>or ridded</i>) | rid (<i>or ridded</i>) |
| ride | rode | ridden |
| ring | rang | rung |
| rise | rose | risen |
| run | ran | run |
| see | saw | seen |
| say | said | said |
| seek | sought | sought |
| sell | sold | sold |
| send | sent | sent |
| set | set | set |
| sew | sewed | sewed (<i>or sewn</i>) |
| shake | shook | shaken |
| shine | shone | shone |
| shoot | shot | shot |
| show | showed | shown |
| shrink | shrank (<i>or shrunk</i>) | shrank (<i>or shrunk</i>) |
| shut | shut | shut |
| sing | sang | sung |
| sink | sank (<i>or sunk</i>) | sunk (<i>or sunken</i>) |
| sit | sat | sat |
| sleep | slept | slept |
| slide | slid | slid |

| | | |
|--------|--------------------|--------------------------|
| sling | slung | slung |
| slit | slit | slit |
| speak | spoke | spoken |
| speed | sped (or speeded) | sped (or speeded) |
| spin | spun | spun |
| split | split | split |
| spread | spread | spread |
| spring | sprang (or sprung) | sprung |
| stand | stood | stood |
| steal | stole | stolen |
| stick | stuck | stuck |
| sting | stung | stung |
| stink | stank (or stunk) | stunk |
| strike | struck | struck (or stricken) |
| string | strung | strung |
| swear | swore | sworn |
| sweep | swept | swept |
| swell | swelled | swelled (or swollen) |
| swim | swam | swum |
| swing | swung | swung |
| take | took | taken |
| teach | taught | taught |
| tear | tore | torn |
| tell | told | told |
| think | thought | thought |
| throw | threw | thrown |
| thrust | thrust | thrust |
| wake | woke (or waked) | woke (or waked or woken) |
| wear | wore | worn |
| weave | wove | woven |
| weep | wept | wept |
| win | won | won |
| wind | wound | wound |
| write | wrote | written |