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## Virginia Evans Jenny Dooley



Student Book \& Workbook


0010


Student Book \& Workbook

Virginia Evans - Jenny Dooley

Express Publishing

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## The Physical World

## Before you start...

- What was your summer vacation like? Tell the class.
-What are your plans for this academic/school year?
What's in the module?



## Vocabulary

- natural disasters
- celestial bodies
- anatomy of the human body
- elements in the periodic table


## Skills \& Strategies

- scan a text
- set a purpose for reading
- identify the author's purpose
- identify main ideas in paragraphs
- predict content using prior knowledge


## Reading Skills

- complete gapped texts
- multiple matching
- identify pronoun references
- reading comprehension
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## Writing Skills

- summarize a text
- describe your feelings
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- use linkers
- write a for-and-against essay


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- summarize a text
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- present main points
- agree/disagree on a topic
- describe impressive moments


## Find the page numbers for ...

- a sketch of the human body
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## Vocabulary

 Natural disasters1 G Listen and say. Have you heard of any of these disasters recently? Where did they occur? What happened? Tell the class.
 Reading
Scanning
2 Scan the text. What is it about? a) a specific earthquake? b) why earthquakes happen? c) how to protect ourselves in an earthquake? $\sigma^{7}$ Listen and check.

## EARTHQUAKES: a forbe of Matune

On March 11, 2011, a 33-foot-high tsunami hit northern Japan causing the country's worst destruction and loss of life since World War II. The tsunami was triggered by an earthquake in the Pacific Ocean. Measuring 9.0 on the Richter Scale, the earthquake was the sixth largest ever recorded by seismologists. 0 C $\quad$ Not only that, it shifted the Earth's axis by 10 inches. This deviation led to a shortening of the length of a day by 1.8 microseconds!
Earthquakes hit the headlines only rarely, but events like Japan's megaquake serve to remind us of their truly aweinspiring power. Every year, some 3 million earthquakes take place on the planet - equivalent to about 8,000 a day or one every 11 seconds. $1 \square$
Earthquakes happen because the Earth's crust is not contiguous. Rather, like a boiled egg with a broken shell, it is separated into about 20 pieces. These pieces are called tectonic plates.
The theory that explains the movement of these plates on the earth's surface is known as plate tectonics. According to plate tectonics, the Earth's plates are not stationary but are instead moving very slowly around the planet. $2 \square$ The result is that sometimes the plates crash into each other, sometimes they move away from each other, and sometimes they slide past each other. $3 \square$
Take, for example, plates that are sliding horizontally past each other. Because the edges of the plates are rough, they get stuck. However, even though the edges get stuck, the rest of the plate keeps moving. $4 \square$ At some point (i.e.,

when the plate has moved far enough), the edges suddenly become unstuck. The sudden unsticking and jerking apart of the plates releases the built-up pressure in an instant. The result is an earthquake.
There is a special region of the globe known as the Pacific Ring of Fire. 5 In the Pacific Ring of Fire, plates are crashing into each other constantly.
When two plates crash together, one of two things can happen. Either one plate is forced to slide beneath the other one, or the two plates push against each other to form mountains and volcanoes. In either case, earthquakes can result.
Earthquakes in the Pacific Ring of Fire result from plates colliding and slipping under each other. 6 It was the Pacific Plate sliding under the Eurasian Plate that caused the earthquake and tsunami in Japan on that fateful day in March 2011.

## Check these words

hit, destruction, trigger, shift, axis, deviation, awe-inspiring, Earth's crust, contiguous, stationary, slide past, rough, get stuck, jerk apart, release, built-up pressure, in an instant, the globe, collide, slip, fateful day


Fill in: trigger, recorded, shift, jerk apart, collide.
1 It was the most destructive earthquake $\qquad$ in the last 100 years.
2 An earthquake can $\qquad$ fires and damage a lot of buildings.
3 When tectonic plates $\qquad$ they cause earthquakes.
4 When the plates $\qquad$ , pressure is released and this causes an earthquake.
5 A 9.0 earthquake can $\qquad$ the Earth's axis.

## Checking understanding

## Gapped texts

Read the text quickly to see what it is about. Read it again sentence by sentence. Pay attention to the words before and after each blank as they will help you decide on your answer. Read the completed text again to see if it makes sense.

## Completing a gapped text

3 a) The article in Ex. 2 is about earthquakes. Seven sentences have been removed from it. Choose from the sentences (A-H) the one which fits each blank ( $1-6$ ). There is one extra sentence you don't need to use. There is an example at the beginning ( 0 ).
A The result is an enormous build-up of pressure.
B It is the movement of plates at their edges that causes earthquakes.
C So great was its power that it caused the entire island of Japan to move 16 feet eastwards.
D It is an explanation for mountains and volcanoes, not just earthquakes.
E The sudden drop of one plate below another, when it occurs under the sea, can generate a tsunami.
F Most are so small they go unnoticed, but a few (about 20 a year) are big enough to cause damage.
G It is here that an incredible $90 \%$ of all earthquakes (and $80 \%$ of the world's largest earthquakes) occur.
H Because the plates are interconnected, no single plate can move without affecting the others.
b) Which words helped you decide on each blank? Compare with your partner.

5 Complete the sentences. Compare with your partner.

1 The tsunami that hit Japan on March 11, 2011, was the result of $\qquad$ .
2 The earthquake measured $\qquad$ -

3 Because of the earthquake, the Earth's axis
$\qquad$ —.

4 Not all earthquakes cause $\qquad$ .
5 Earthquakes happen because the Earth's plates
$\qquad$ .
6 When the edges of tectonic plates become unstuck, the $\qquad$
7 The Pacific Ring of Fire is the place where
$\qquad$ -.
8 A tsunami is caused when $\qquad$ -

## Speaking \& Writing

Summarize the text using the words in the Check these words box (50-60 words). Tell your partner.

7 © (-) IT Collect information about a force of nature from Ex. 1. Present it to the class.

## QUOTATION

"Nature cannot be tricked or cheated. She will give up to you the object of your struggles only after you have paid her price."

Napoleon Hill, American author

PHYSICS

## HOIIDID ITALL BEGIN?

Vocabulary Celestial bodies
1 a) $\begin{aligned} & \text { Listen and say. }\end{aligned}$ Then, read the dictionary entries.
planet /plænit/ (n) a large round object in space that moves around a star. e.g., the Earth
asteroid /æstəroıd/ (n) a small celestial $S$ body that moves around the sun (mainly." between the orbits of Mars and Jupiter)
comet /kdimıt/ (n) a bright object withg a long tail that travels around the sun
galaxy /gæləksi/ (n) a large group of stars and planets that extends over many billions of light years
star /sta:/ (n) a large ball of burning gas in space
meteor /mitio/ ( n ) a small mass traveling through space
moon /muin/ ( n ) any planet's natural satellite
constellation /konstilerfon/ (n) a group of stars that form a pattern and are named after it

[^1]Throughout
history, mankind has wondered about the origin of the universe. Has it existed eternally with no beginning or end, or was it created at some point in time? Physicists still can't say for

## a The Big Bang Theory

Before the 20th century, people believed that the universe had existed forever, and had looked the same way forever. But in 1929, astronomers made a startling discovery. Looking through their telescopes they noticed that the galaxies in our universe are actually moving away from each other at enormous speed - our universe is expanding!
If our universe is expanding, then logically at some point in the past the entire universe was contained in a single point in space. The Big Bang Theory states that about 14 billion years ago, our universe exploded out of nowhere from a single point and it has been expanding ever since to form the universe we know today. Ōur universe, in other words, has not existed forever. It had a definite beginning. Before our universe came into existence there was nothing...no time, space, matter, energy ... nothing! The Big Bang created time, space and matter.
The Big Bang Theory is currently the most widely accepted hypothesis for the origin of the universe. However, it still leaves many questions unanswered. For instance, it doesn't explain why the big bang happened in the first place.

## в The Cyclical Universe Theory

The Cyclical Universe Theory addresses the question, "What caused the big bang?" The answer it gives is the collapse and expansion of a prior universe. According to the Cyclical Universe Theory, our universe began when another universe collapsed violently into a single point then exploded out again. Trillions of years from now, our own universe will stop expanding and begin to contract. Eventually, it will also collapse into a single point and explode out again giving rise to a new universe. Our universe is therefore just the latest in an endless series. Countless universes have preceded this universe and countless others will follow it. Space and time had no beginning. Cycles of expansion, contraction, collapse, and explosion have been going on forever.

## STUDY SKILLS

## Setting a purpose

Before you read a text, think what you already know about the topic. This will help you think what else you would like to learn about it.

## Check these words

eternally, exist, startling discovery, expand, logically, explode, widely accepted, hypothesis, collapse, prior, trillion, endless, countless, expansion, contraction, infinite, motivation

## c The Mulliple Universe Theory

According to the Multiple Universe Theory, what we have been calling the universe is actually nothing like we thought! It is just a single bubble in an infinite number of universes. We are actually living in a multiverse consisting of trillions of universes. The multiverse has existed forever, and each universe in it is different.
The main motivation behind the Multiple Universe Theory is to provide an explanation as to why our universe seems to be so perfectly suited towards supporting life. For many people, this fact demands an explanation. They feel it is too much of a coincidence that the conditions in our universe just happen to be right to make life possible.
The Multiple Universe Theory states that there is nothing mysterious about this. There are trillions upon trillions of universes in the multiverse and therefore at least a few of them will have conditions that make life possible. We simply happen to be living in one of these universes.

## Reading <br> Setting a purpose

2 What do you know about the origin of the universe? What would you like to know about it? Write down two questions.
Gisten and read the text. Can you answer your questions?

## Multiple Matching

3 Read the article again, then for questions 1-8, choose from theories A-C. The theories may be used more than once. Which theory/theories:
1 say(s) space, time, and matter have existed forever with no beginning or end?
2 do most physicists support?
3 suggests a reason why our universe has the ideal conditions for supporting life? $\qquad$
4 says our universe came from an earlier universe?
5 say only one universe exists at any one time?
6 is supported by evidence we can see? $\qquad$
7 says our universe will eventually disappear?
8 says our universe we are living in is unique?

Fill in: expanding, exploded, collapse, prior, infinite.

1 Astronomers have discovered that our universe has been $\qquad$ since it was formed.
2 Many universes may have existed $\qquad$ to the one we are living in.
3 Our universe might actually be just one of a(n)
$\qquad$ number of other universes.
4 One day our universe may $\qquad$ and give rise to a new universe.
5 According to the Big Bang Theory, our universe
$\qquad$ into existence from a single point.

## STUDY SKILLS

## Avoid repetition

Writers use pronouns to avoid repeating the same nouns again and again. Identifying the nouns they refer to will help you understand the text better.

## Identifying pronoun references

Look at the underlined pronouns in the text. Decide which noun each one refers to.

## Speaking \& Writing Checking understanding

6 a) Write one question for each theory in the text. Write the answers on a separate piece of paper.

How did the universe start according to the Big Bang Theory?
b) $\because$ Swap papers and answer your partner's questions. Check with your partner.

7 THiNK Read the quotation. Imagine you were with Neil Armstrong. In three minutes write a few sentences describing your feelings at that specific moment. Tell your partner. Discuss.

## QUOTATION

"It suddenly struck me that that tiny pea, pretty and blue, was the Earth. I put up my thumb and shut one eye, and my thumb blotted out the planet Earth. I didn't feel like a giant. I felt very, very small."

Neil Armstrong, U.S. astronaut

## Vocabulary

Human anatomy
1 Listen and repeat.


Reading
Identifying the author's purpose

## STUDY SKILLS

## Identifying the author's purpose

Authors write in order to inform, entertain, and persuade. Identifying the author's purpose helps us understand the text better.

2 Read the title then skim the text. What is the text about? What does the author want us to know about the topic?

## Identifying main ideas

3 Find the main idea in each paragraph. Compare with your partner.

## STUDY SKILLS

## Identifying main ideas

Paragraphs are usually laid out so that each one contains a main idea. Identifying the main idea helps us to understand what the paragraph is about. The main idea is usually found in the first or the last sentence of the paragraph. These sentences are called topic sentences.


The results of a recent experiment to slow the effects of the aging process in mice amazed scientists in Boston, USA. The scientists increased the amount of an enzyme called telomerase in the cells of the mice. Telomerase is an important enzyme because it repairs DNA. With increased telomerase in their cells, the mice's fertility improved, their fur began to look healthier, even their brains worked better. The scientists were hoping simply to slow the aging process in mice but, much to their surprise, they actually reversed it!

Could we use the same process to stop humans from aging? It's possible, but it wouldn't be without risks. Scientists believe increasing the level of telomerase in human cells would put people at greater risk of cancer. What's more, it's unlikely that simply increasing telomerase would be enough to keep us young because hundreds of enzymes are involved in the aging process.
3 Although scientists don't yet know exactly how and why we age, they have several theories. One theory is that as time passes, our bodies become less efficient at removing toxins from our cells. One way to try to stop the aging process is to keep cells as clean as possible. Scientists in New York successfully used this technique to restore the livers of old

## Check these words

 aging process, enzyme, cell, repair, fertility, process, reverse, efficient, toxin, technique, restore, breed, ability, protein, youthful, combat, artificially, development, prevent, serving, compare, wrinkles, fantasymice. The researchers bred special mice that did not lose their ability to remove damaged proteins from their livers. When these special mice were two years old, their livers were as healthy as the livers of ordinary one-month old mice. Although these special mice with youthful livers didn't live any longer than ordinary mice, scientists believe this study could eventually lead to ways of protecting humans from the diseases we get in old age.
4. Of course, if scientists ever do succeed in developing drugs that combat the aging process we will need to ask ourselves whether it is right to use them. For instance, should we keep people young and healthy artificially when, already, there are far too many people on the planet?
5) What if you can't wait for these future developments though? Well, scientists may not yet be able to stop you from aging, but they do know a way you can keep yourself looking younger - tomatoes! Tomatoes contain a substance called lycopene which helps prevent one of the main causes of skin aging: sun damage. Researchers in the UK asked a group of people to eat a serving of cooked tomatoes every day for 12 weeks. They then compared their skin to the skin of people who hadn't eaten any tomatoes. The skin of the people who ate the tomatoes was much less likely to burn in the sun. Eating tomatoes also increases the levels of procollagen in your skin. Procollagen helps keep skin firm, so the more you have in your skin, the less likely you are to get wrinkles. So while living forever is still just a fantasy, nature has at least provided a way for us to keep looking as young as possible, for as long as possible!

## Comprehension questions

## 4 Read the text and answer the questions.

1 What physical change did the Boston scientists see in the mice in their experiment?
2 What problem is there with performing the Boston procedure on people?
3 What builds up in our cells as we age?
4 What did the New York scientists achieve?
5 What global problem does the writer mention that could be affected by anti-aging treatments?
6 How does eating tomatoes help us achieve younger-looking skin?
7 Why might reversing the aging process one day become a reality?

Fill in: reversed, serving, combat, efficient, enzymes.

1 Scientists are trying to find ways to $\qquad$ the aging process and keep people looking young.
2 Our bodies are more $\qquad$ at removing toxins from our cells when we are young, than when we are old.

3 Eating a daily $\qquad$ of cooked tomatoes can help protect your skin against sun damage.
4 Scientists haven't just slowed down the aging process in mice; they have $\qquad$ it.

5 Telomerase is just one of hundreds of
$\qquad$ involved in the aging process.

## Checking understanding

## 6 Read the text again and mark the sentences

 $T$ (true) or $F$ (false). Correct the false statements.1 Telomerase is an enzyme that fixes damaged DNA.
2 There is no telomerase in human cells.
3 Scientists have bred mice that don't have proteins in their livers.
4 The diseases of old age may be the result of toxins building up in cells.
5 Lycopene increases your skin's sensitivity to the sun.

## Speaking \& Writing

7 THiNK In three minutes, write four things that you learned from the text. Tell the class.

8 THiNK How do you think your life today would be different if scientists had found a way to stop people from aging? In three minutes, write a few sentences. Tell the class. Discuss.

## QUOTATION

"I think your whole life shows in your face and you should be proud of that."

Lauren Bacall, American actress

## Vocabulary <br> Chemistry elements

# Taje a deep breath a <br> Sunprising facts about oxyceny 

## 1 Match the chemical symbols

 (1-8) to the correct element (a-h). Listen and check, then say.| 1 | O | a <br> 2 | nitrogen |
| :--- | :--- | :--- | :--- | :--- | Reading Using prior knowledge

## STUDY SKILLS

## Using prior knowledge

Before you read a text, think what you know about the topic. This will help you read the text more easily.

## What do you know about oxygen? Which of the sentences below are true?

## Һ Listen, read, and check.



1 Oxygen powers our bodies.
2 Oxygen is toxic in large amounts.
3 The first life forms needed oxygen to survive.
4 Oxygen is the main product of photosynthesis.
5 Animals were smaller in the past because of oxygen.
6 The amount of oxygen in the atmosphere has been constant through time.

They say too much of anything is bad for you. Believe it or not, that's true of the oxygen that powers our bodies. If we breathed air that was more than $75 \%$ oxygen, we could die within days. Our lungs couldn't cope. Our bodies are used to air that's $21 \%$ oxygen - and even that's harmful over a lifetime.
The body makes use of around $98 \%$ of the oxygen it takes in and the rest transforms into free radicals - molecules that attack and damage our cells over time. Oxygen, then, is actually toxic in large doses. But after 3-4 billion years of evolution of life on Earth, shouldn't our bodies be better at processing oxygen? To try to answer that question, it's important to understand that oxygen wasn't always present in the atmosphere. Because of this, scientists believe that the 10 first life forms on the planet were anaerobic; they were able to survive without oxygen. It was only after plants established themselves that oxygen appeared in the atmosphere. This appearance of oxygen in the Earth's atmosphere some 2.2 billion years ago is known as the Great Oxidation Event.
Plants, unlike animals, don't need oxygen, but produce it through 15 photosynthesis - the process by which they convert sunlight, water, and carbon dioxide into energy. Because oxygen is a by-product of photosynthesis, it took more than a billion years for enough of it to build up in the atmosphere and give rise to animal life.
Fossil evidence suggests animals first appeared about 700 million years ago, 20 in the oceans. The first animal life forms had extremely thin bodies in relation to their size. Scientists believe this allowed them to make maximum use of the low amounts of oxygen present in the ocean. Around 500 million years ago, atmospheric oxygen levels were high enough to enable animals to venture out of the ocean and onto land.
The amount of oxygen in our atmosphere has not increased steadily. In fact, 300 million years ago, oxygen was actually more abundant in the air than it is now, making up $50 \%$ of it. As a result, animals were much bigger than they are today. There were insects, for example, which measured more than 2.5 feet from the tip of one wing to another. Scientists recently bred dragonflies this size in $50 \%$-oxygen environments. They say the dragonflies were able to grow so big because in oxygen-rich atmospheres, insects don't need the large breathing systems which normally limit the size of their bodies. By 240 million years ago, though, oxygen 35 levels had fallen to just $12 \%$ of the air.
If it's surprising that the amount of oxygen in the atmosphere has varied during animal evolution, it's perhaps even more surprising to learn that the planet is more dependent on oxygen produced in the oceans than on land. Scientists estimate that sea algae replace around $90 \%$ of the oxygen in the biosphere. So, today's most complex life forms not only originated in an environment in which they now cannot breathe - the ocean - they rely on it for their survival! 45

## Check these words

power, cope, free radical, molecule, toxic, dose, evolution, establish oneself, photosynthesis, process, convert, by-product, give rise to, fossil evidence, venture, steadily, abundant, wing, breed, dependent, sea algae, biosphere, rely on

## STUDY SKILLS

## Multiple choice

Read through the text once to get a general idea what the text is about. Read the questions and possible answers and underline the key words. Read the text again. Find the parts of the text that contain the answer to each question. Look for paraphrases.

## Multiple Choice

Read the article on oxygen in the atmosphere. For questions 1-5, choose the correct answers (A, B, C, or D). Justify your answers.

1 Air that is mainly oxygen is
A low in free radicals.
B useful to the body.
C dangerous to humans.
D bad for evolution.
2 Oxygen is
A $50 \%$ of the atmosphere.
B necessary in order for life to exist.
C the result of atmospheric chemistry.
D unnecessary for plants.
3 According to the article, animals
A couldn't have evolved without plants.
B took a long time to get big in size.
C were anaerobic at first.
D needed large breathing systems in the past.
4 The dragonfly experiment suggests
A large creatures need less oxygen.
B insects develop more quickly in high oxygen environments.
C low levels of oxygen will result in large creatures.
D insects fly more easily in high-oxygen environments.

5 Without sea algae
A there would be no oxygen in the atmosphere.
B animals would stop evolving.
C all life in the oceans would die.
D all life on Earth would be in danger.

4 Fill in: carbon, large, support, breathe, sea, grow, make, animal.
1 $\qquad$ air
2 $\qquad$ use of
3 $\qquad$ doses
4 $\qquad$ dioxide
5
$\qquad$ life
6 $\qquad$ big
7 $\qquad$ algae
8 $\qquad$ evolution

5 Use words from the Check these words box in their correct form to complete the sentences.

1 Our lungs can't $\qquad$ with too much oxygen.
2 In the past, insects had bigger $\qquad$ than they do today.
3 Oxygen is $\qquad$ in large doses because it produces free radicals.
4 Scientists think that animals first $\qquad$ onto land about 500 million years ago.

## Checking understanding

6 Correct the statements. Compare with your partner.
1 Life on Earth arose in an oxygen-rich environment.
2 Our bodies process oxygen with $100 \%$ effectiveness.
3 The appearance of photosynthesis in plants is known as the Great Oxidation Event.
4 Evidence suggests animal life appeared on land and in the oceans at about the same time.
5 Land animals depend on land plants for most of their oxygen.

## Speaking \& Writing

7 © $\cdot$ Tell your partner five things you have learned from the text.

8 THiNK What was the author's purpose in writing this article? Write a few sentences. Justify your answer. Tell the class. Discuss.

## QUOTATION

"Life is not measured by the number of breaths we take, but by the moments that take our breath away!"

Anonymous

Read the rubric then read the model essay. Complete the table with points for/against and their justifications.

> You have had a class discussion about "designer babies". Your teacher has now asked you to write an essay presenting the arguments for and against parents being able to choose desirable traits for their children ( $200-250$ words).

Inthe future, genetic engineering may allow us to choose desirable characteristics for our children. If such technology becomes available, should parents be allowed to custom design their children?
There are some arguments in favor of allowing technology to "design" babies. First of all, by using genetic engineering we can prevent genetic diseases. This would mean healthy children, saving parents from the emotional strain of looking after an ill child. Secondly, being able to enhance the looks and intelligence of a baby would result in smarter, more beautiful people.
However, there are also some arguments against "designing babies." To start with, it is likely that the technology needed to produce "designer babies" will be very expensive. As a result, only the rich will be able to afford to give their children desirable characteristics. This could lead to even greater imbalances between the rich and the poor. Furthermore, many people believe that no one has the right to change an unborn human as every unborn child should have the right to remain genetically unmodified. After all, there is no guarantee that the parents will like the final outcome.
In conclusion, it appears that being able to create smarter, healthier, better-looking human beings may have its advantages. However, I believe if this technology is not available to everyone, it will introduce a whole new set of social problems.


| For | Justifications |
| :--- | :--- |
| Against | Justifications |
|  |  |

## STUDY SKILLS

## Topic/Supporting sentences

Main body paragraphs should begin with topic sentences. A topic sentence introduces or summarizes the main idea of the paragraph.
The topic sentence is followed by supporting sentences which provide justifications/examples, and details and/or reasons, to support the topic sentence.

Underline the topic sentences in the main body paragraphs in the model essay. Replace them with the topic sentences below.
a On the other hand, there are disadvantages to developing the technology to "design" babies.
b There are a number of advantages to "designing" babies.

3 a) Choose the appropriate topic sentences for the two paragraphs below.
a There are many advantages to solar energy.
b On the other hand, there are a number of arguments against cosmetic surgery.

1One of the main arguments is its lack of toxic emissions. Burning fossil fuels for energy emits carbon dioxide into the air, which is a major cause of global warming.

2 |
For instance, a patient risks developing complications that can sometimes be fatal. The risk of surgery of any kind is greater than most people realize, such as severe allergic reaction to medication.
b) $\because$ Write a topic sentence for this paragraph. Compare with another student.

Firstly, over 20 billion disposable diapers end up in landfills every year. They do not degrade well in landfills, as they need to be exposed to oxygen and sunlight to decompose. It takes hundreds of years for decomposition to be completed.

4 Read the paragraphs. Which one(s) contain a topic sentence and supporting sentences related to it? Which one(s) contain a topic sentence but the supporting sentences are not fully related to it?

There are some good arguments against poor countries investing in tsunami warning systems. To begin with, such systems are expensive. For this reason, many people argue that tsunamis happen so rarely the cost of implementing a warning system is not justified and the money is better spent fighting poverty.


Nevertheless, there are certain drawbacks to getting a PhD. For instance, research is absolutely essential to technological advancement. For this reason, it is important that governments keep subsidizing universities.

Experimenting on animals to gain scientific insight into human diseases has many disadvantages. Firstly, animals do not have the same physiology as humans. This means the test results are almost always meaningless for humans.

## 5 Use the prompts below to complete the

 paragraph. Use appropriate linkers.Topic sentence: However, there are also some arguments in favor of following a vegetarian diet.

- meat consumption/linked to several cancers/ avoid these health risks
- reduce factory farming/cruel to animals/poor quality of life and short lifespan

Choose the correct linker. Compare with your partner.
1 Besides,/Despite knowledge of mathematics is important in practically every area of our lives.
2 Even though/Nevertheless many mothers wish to breastfeed their babies, they are often unable to do so for various reasons beyond their control.
3 In conclusion,/Since, it is factories which create the most environmental pollution, not individuals.
4 Taking everything into account,/For instance, many people argue that transporting produce halfway around the world simply so people can eat strawberries in winter is a luxury the world can not afford.
5 Secondly,/Especially rich nations create more pollution per person than poor nations. What is more/However, the rapid industrialization of poor nations around the world means they will soon catch up.
6 Such as/To sum up, it is a relatively simple matter to recycle newspapers, magazines, and other paper waste.
7 It is argued/One reason that maintaining the existence of zoos is important is that zoos contribute to the conservation of endangered species.
8 In the first place,/While access to the Internet gives people access to information and information is power.

## Your Turn

a) Read the rubric and answer the questions.

You have had a class discussion about space exploration. Your teacher has now asked you to write an essay presenting the arguments for and against exploring space (200-250 words).

1 What are you going to write?
2 Who is going to read it?
3 What should your piece of writing be about?
b) Which of the following points are pros and which are cons?

1 may result in the discovery of a planet that can support life
2 very expensive and requires public funding
3 has already resulted in many indirect scientific achievements and there may be more
4 the distances in space are enormous
c) Match the justifications below ( $\mathrm{a}-\mathrm{d}$ ) to the pros/cons in Ex. 7b (1-4).
$\square$ a this money could be better spent on reducing poverty or fighting hunger and disease
 we can only ever explore a tiny part of the universe
c $\quad$ give humans somewhere to go if a disaster threatens to destroy life on Earth space exploration research led to the development of computers and lasers

8 Use the ideas from Ex. 7, and your own ideas, to write your essay. Follow the plan. Use the phrases from the Useful language box.

PLAN
Para 1 state topic
Para 2 points for \& justifications
Para 3 points against \& justifications
Para 4 summarize points (\& express opinion)

## Useful language

- It seems that ...
- There are arguments in favor of ...
- There are a number of points in favor of ...
- One advantage is that ...
- Firstly, ...
- Secondly, ...
- On the other hand, there are arguments against ...
- There are arguments against the ..., however.
- All in all, it seems that ...
- I think/I believe/To me ...


## Vocabulary

## 1 Choose the correct word.

1 The poison cyanide is highly $\qquad$ to animals and humans.
A radical
B toxic
C toxin

2 There are $\qquad$ stars in the sky.
A endless
B abundant
C countless

3 Physicists do not know whether the universe is
$\qquad$ or not.
A countless
B infinite
C contiguous

4 Carbon dioxide is a ___ of cellular respiration.
A deviation
B by-product
C biosphere

5 Many people these days spend a fortune attempting to $\qquad$ the signs of aging.
A collapse
B expand
C combat

6 Geologists believe the Earth's $\qquad$ is broken up into pieces.
A axis
B crust
C globe

7 Life expectancy around the world has increased $\qquad$ for nearly 200 years.
A steadily
B eternally
C artificially
8 Scientists believe an asteroid $\qquad$ with the Earth 65 million years ago.
A collided
B existed
C triggered

9 Mice $\qquad$ very quickly - a female can have 5-10 litters per year.
A breed
B exist
C restore

10 Their results have not been widely $\qquad$ .
A abundant
B accepted
C reversed
$10 \times 2=20$ points

2 Fill in the correct word: biosphere, fertility, venture, rely (on), motivation, prior, technique, hypothesis, free radicals, stationary

1 The Earth's plates are not $\qquad$ , they move slowly around the planet.
2 The large Hadron Collider was invented to test the $\qquad$ of the Big Bang Theory.
3 Telomerase is an enzyme that can increase the $\qquad$ of mice.
4 Some scientists believe in the existence of another universe $\qquad$ to this one.
5 Some scientists believe $\qquad$ damage our cells and cause aging.
6 Researchers are developing a $\qquad$
for the early detection of Alzheimer's disease.
7 The first creatures to $\qquad$ onto land from the sea did so about 500 million years ago.
8 Many people like the idea of exercise, but lack the $\qquad$ to actually do any.
9 All life on Earth exists in the $\qquad$ .
10 Math skills $\qquad$ logic as well as language to represent large numbers.
$10 \times 2=20$ points

## Listening

3 F Listen and mark the sentences $T$ (true) or
1 In June, China was hit by some of its most severe natural disasters in recent years.
2 Affected regions were mostly hit by floods and droughts.
3 The Yangtze River experienced high rainfall along its entire length.
4 Damage to farmland alone caused over 8 billion US dollars worth of economic losses.
5 Most of the affected areas are in isolated regions of the country.


Writing
5 Read the rubric. Match the points (1-4) to their justifications ( $a-d$ ). Write your essay.

You have had a class discussion on anti-aging research. Your teacher has asked you to write an essay presenting the arguments for and against the public funding of anti-aging research (200-250 words).

Pros/Cons
1 world is already overpopulated
2 it is likely that such research will help us understand the causes of many diseases
3 we have a moral obligation to make everyone's lives better
4 diverts funds away from more urgent problems

Justifications
a may save millions of lives and lots of money in the long run
b people living longer would just put more pressure on the environment
c the money could be spent on providing clean water and food for the poor
d we already do everything we can to extend people's lives when they are sick, so why not in this way

20 points

CHECK YOUR PROGRESS
2 Gliese 581 g is situated in the Libra Constellation. $\qquad$
3 Chemical analysis of Gliese 581 g 's atmosphere has been conducted. $\qquad$
4 Gliese 581g does not cross the face of its red dwarf star relative to our line of sight. $\qquad$
5 Astronomers think most stars in the universe have potentially-habitable planets orbiting them.

## Grammar Bank

## Some - Any - No \& Their Compounds

Some, any, and no are used with uncountable nouns and plural countable nouns.
We need some eggs and some butter.

- We use some and its compounds (somebody, someone, something, somewhere, etc.) in the affirmative.
She needs some time.
- We also use some and its compounds in questions for offers or requests.
Would you like some cake?
Can I have some milk with my coffee, please?
- We use any and its compounds (anyone, anything, etc.) in questions. Has anyone called?
- Not any is used in negative sentences. There isn't any fruit in the basket.
- Any and its compounds can also be used with negative words such as without, never, rarely.
I have never met anyone like him.
- When any and its compounds are used in affirmative sentences, there is a difference in meaning.
You can say anything you want to the journalist. (it doesn't matter what)
Anyone can take part in the competition. (it doesn't matter who)
- No and its compounds are used instead of not any in negative sentences.
They don't have any money./They have no money. They didn't buy anything./They bought nothing./ There wasn't anybody in the room./There was nobody in the room.
Note: We use a singular verb with compounds of some, any and no. There is someone in the room.


## Every - Each

- Every is used with singular countable nouns. It refers to a group of people or things and means "all, everyone, everything," etc.
Every student has a library card. (everyone)
- Each is used with singular countable nouns. It refers to the members of a group separately. Each visitor was given a day pass. (each visitor separately)
- Every one and each (one) can be followed by of. We normally use each when we talk about two people or things. We use every when we talk about three or more people or things.
She owns two apartments and she decorated each (one) of them beautifully.
Paul has written many novels. Every one of them has been a best seller.

A few/few - A little/little
A few and few are used with plural countable nouns. A little and little are used with uncountable nouns.

- A few means "not many, but enough." We have a few apples. We can make an apple pie. Few means "hardly any, almost none" and can be used with very for emphasis. There were (very) few visitors in the museum.
- A little means "not much, but enough." It's a little cold - would you like me to close the window?
- Little means "hardly any, almost none" and can be used with very for emphasis.
We have (very) little time left. We must hurry up.
A lot of/Lots of - Much - Many
- A lot of/Lots of are used with both plural countable and uncountable nouns. They are normally used in affirmative sentences. There are a lot/lots of opportunities for young graduates.
The of is omitted when a lot/lots are not followed by a noun. There's lots/a lot going on in town today.
- Much and many are usually used in negative sentences or questions. Much is used with uncountable nouns and many is used with plural countable nouns.
There aren't many books on the shelf.
Did you spend much money at the mall?


## Practice

## Choose the correct item.

1 Is there $\qquad$ cherry pie left?
A some
$B$ any
C no

2 Does $\qquad$ know where Alex is?
A someone
B no one
C anyone

3 $\qquad$ people attended the wedding.
A Much
B A lot of
C Little

4 They go to Italy on vacation year.
A every
B each
C some

5 $\qquad$ was happy with their exam results.
A Anybody
B Some
C Everyone

6 Very $\qquad$ people went to the party.
A few
B little
C many

7 She had a glass of orange juice in $\qquad$ hand.
A every
B each
C any

8 Sue speaks $\qquad$ French.
A a few B few
C a little

9 Was there $\qquad$ traffic on the roads?
A much B many
C lots

10 You can take $\qquad$ you like.
A something
B nothing
$C$ anything

11 There are $\qquad$ chocolates in the box.
A little
B no
C any

12 I've seen all of Brad Pitt's movies and I like
$\qquad$ of them.
A every
B each one
C every one

## Conditionals/Wishes

Conditionals: type 0/1

- Type 0 conditionals are used to express a general truth or a scientific fact. In this type of conditional we can use when instead of if.

| IF-CLAUSE | MAIN CLAUSE |
| :--- | :---: |
| If/When + simple present $\rightarrow$ simple present |  |
| If/When polluted water is not filtered, it is dangerous |  |
| for our health. |  |

- Type 1 conditionals are used to express a real or very probable situation in the present or future.

| IF-CLAUSE | MAIN CLAUSE |
| :--- | :---: |
| If + simple present | simple future, imperative, <br> can/must/may, etc. + <br> bare infinitive |
| If she does well at the interview, she will get the job. |  |

- When the hypothesis comes before the main clause, we separate the two parts with a comma. When the main clause comes before the if-clause, then we do not use a comma to separate them.
Note: With type 1 conditionals we can use unless + affirmative verb (= if + negative verb).
She will not speak to him unless he apologizes. If he doesn't apologize, she will not speak to him.)


## Conditionals: type 2 \& 3

- Type 2 conditionals (unreal present) are used to express imaginary situations which are contrary to facts in the present and therefore, are unlikely to happen in the present or the future. We can use either were or was for 1 st and 3 rd person singular in the if-clause. We can also use the structure If I were you, ... to give advice.

| IF-CLAUSE | MAIN CLAUSE |
| :--- | :---: |
| If + simple past/ <br> past progressive$\rightarrow$ would/could/might + |  |
| bare infinitive |  |

- Type 3 conditionals (unreal past) are used to express imaginary situations which are contrary to facts in the past. They are also used to express regrets or criticism.

| IF-CLAUSE | MAIN CLAUSE |
| :--- | :---: |
| If + past perfect/ <br> past perfect progressive$\rightarrow$would/could/might + <br> bare perfect infinitive |  |
| If I had studied harder, I would have passed the exams. <br> If he hadn't been studying that hard, he wouldn't have <br> passed his exams. |  |

- Conditionals are usually introduced by if. Other expressions are: unless ( $=$ if not), providing, provided (that), as long as, on condition (that), but for + -ing form/noun, otherwise, or else, what if, supposing, even if, only if.
Unless she starts studying harder, she's going to fail her exams.
Get up now or else you'll miss your appointment.
Note: When only if begins a sentence, the subject and the verb of the main clause are inverted.
Only if you are dressed formally, will you be allowed in.
- When the if-clause precedes the main clause, we separate the two clauses with a comma.
If you are feeling tired, you must rest.
BUT You must rest if you are feeling tired.
- In conditionals type 2 in formal English we normally use were instead of was after "if" for all persons.
If he were/was here, things would have been different.
- We do not normally use will, would, or should in ifclauses.
If you stay up late, you can get into trouble. (NOT: if you will stay) However will, would, or should can be used in if-clauses to make a request or express annoyance, doubt, uncertainty, or insistence.
If she should need help, ask her to call me. (doubt/ uncertainty - I doubt that she will need help.)
If you will stop arguing, we will find a solution. (request - Please stop arguing.)

[^2]
## Wishes

- We can use wish/if only to express a wish.

| VERB FORM |  | USE |
| :--- | :--- | :--- |
| + simple <br> past/past <br> progressive | I wish I was not <br> working right now. <br> (but I am) If only I <br> were going to the <br> concert tonight. <br> (but I'm not) | to say that we <br> would like <br> something to be <br> different about a <br> present situation |
| + past <br> perfect | I wish I had <br> studied harder. <br> (but I didn't) <br> If only I hadn't <br> been so foolish. <br> (but I was) | to express regret <br> about something <br> which happened or <br> didn't happen in the <br> past |
| + subject + <br> would + <br> bare inf. | I wish you <br> wouldn't be so <br> rude to your sister. <br> If only you would <br> stop arguing. | to express: <br> - a polite imperative <br> a desire for a <br> situation or <br> person's behavior <br> to change |

Note: If only is used in exactly the same way as I wish but it is more emphatic or more dramatic.

- We can use were instead of was after "wish" and "if only."
I wish I was/were young again.


## Practice

1 Put the verbs in parentheses into the correct tense.

1 If I were you, I (eat) less chocolate and more fruit.
2 She $\qquad$ (not/go) to the dentist tomorrow if she can cancel her appointment.
3 Nicole will lose weight if she $\qquad$ (exercise).
4 We will leave without her if she $\qquad$ (arrive) late.
5 | wish | $\qquad$ (have) more time to cook a better meal.
6 If he were scared, he $\qquad$ (call) us to go over to his house.

7 She wouldn't have missed the play if she $\qquad$ (leave) on time.
8 If you leave metal out in the rain, it $\qquad$ (rust).
9 IfI $\qquad$ (be)
you, I'd keep quiet about the accident.
10 Angelina won't come if she $\qquad$
$\qquad$ (not/get) a ride from her mom.
11 Kevin $\qquad$ (read) a book if there is nothing good on TV.
12 When you mix black and white, you $\qquad$ (get) gray.

## 2 Put the verbs in parentheses into the correct tense.

1 A: The weather is nice today.
B: If it continues like this, we $\qquad$
(go) to the beach.
2 A: She went to the supermarket.
B: If she buys tomatoes, I $\qquad$
$\qquad$ (make) my secret tomato sauce.
3 A: Mark's suggestions are rather unclear!
B: If he $\qquad$ (be) here with us, we would be able to ask him to clear it up.
4 A: I'm sorry, but my parents came over on Saturday morning.
B: If they $\qquad$ (not/come), we would have gone to the countryside.
5 A: I forgot my books at school!
B: If I lend you mine, $\qquad$
$\qquad$ (you/help) me with my homework?
6 A: I played the lottery yesterday, but I didn't win anything.
B: If you had won, what $\qquad$
(you/do) with the money?
7 A: My tooth hurts!
B: If it still hurts in the morning, I $\qquad$
(call) the dentist.
8 A: Jennifer left her house an hour ago.
B: If she $\qquad$ (get) here soon, tell her to come to my office.

## Grammar Bank

3 Complete the sentences using conditionals type 2 or 3 , as in the example.

1 If I knew you were coming over, I would have cooked dinner.
2 If the plane were delayed, $\qquad$ .
3 If the dentist was available, $\qquad$ .
4 If Aaron hadn't spoken, $\qquad$ .
5 If Steve had been on time, $\qquad$ .
6 If you start exercising, $\qquad$ .

4 Put the verbs in parentheses into the correct tense.
1 If only I $\qquad$ (not/break) my leg skiing yesterday!
$\qquad$ (be)
here with me now.
3 | feel sick. If only | $\qquad$ (not/eat) that second bowl of ice cream.
4 | can't remember all the ingredients. I wish |
$\qquad$ (write) down the recipe.
5 | wish | $\qquad$ (remember) to buy milk. Now I have to go out again.
6 If only Phil $\qquad$ (stop) playing that awful music.
7 Melina wishes she $\qquad$ (not/forget) her mom's birthday.
8 Sofia wishes she $\qquad$ (think) of the answer sooner.

## 5 Rewrite the following sentences to express either an unreal situation in the present, a regret about a past event, or a desire for a situation or someone's behavior to change.

1 I don't know how to cook. I wish I knew how to cook. (unreal situation in the present)
2 Bobby spends all his time on the Internet.
3 James forgot to tell me about the exam.
4 My brother annoys me all the time!
5 I can't swim.
6 l lost my wallet yesterday.
7 I don't have a car.
8 I overslept this morning.

6 Write sentences, as in the example.
1 You want to study law in Italy, but you don't speak Italian.
I wish I knew how to speak Italian. If could speak Italian, I would study law in Italy.
2 You wanted to surprise your family with dinner, but you overcooked the chicken.
3 You wanted to take dance lessons, but you didn't sign up for the class in time.
4 You wanted to go on vacation, but you didn't save enough money.
5 You can't go up the Eiffel Tower because you are afraid of heights.
6 You want to see a movie, but have nobody to go with.

## 7 Complete the second sentence so that it means

 the same as the first. Use the word in bold. Use two to five words.1 I don't think it would be a good idea to lie to your parents.
were Ifl
$\qquad$ lie to your parents.
2 Vince would like to go to New York if he had some time off work.
wishes Vince $\qquad$
$\qquad$ off work to go to New York.
3 It's a shame you broke your leg. You would have come skiing with us.
broken If $\qquad$
your leg, you would have come skiing with us.
4 There was a snowstorm and that's why the flight was delayed.
would If there hadn't been a snowstorm,
5 It's a shame that I missed the play. I would have really enjoyed it. wish I $\qquad$ the play. I would have really enjoyed it.

## Changing from the active to the passive:

- The object of the active sentence becomes the subject in the passive sentence.
- The active verb remains in the same tense but changes into the passive form.
- The subject of the active sentence becomes the agent, and is either introduced with the preposition by or is omitted.

ACTIVE


- Only transitive verbs (verbs that take an object) can be changed into the passive.
Active: Paul swims every day. (intransitive verb; no passive form).

Note: Some transitive verbs (have, exist, seem, fit, suit, resemble, lack, etc.) cannot be changed into the passive.
This color suits you. (NOT: This color is suited by you.)

- We can use the verb to get instead of the verb to be in everyday speech when we talk about things that happen by accident or unexpectedly.
He got hit by a truck.
By + the agent is used to say who or what carries out an action. With + instrument/material/ingredient is used to say what the agent used.
This photograph was taken by my brother. It was taken with a digital camera.
- The agent can be omitted when the subject is they, he, someone/somebody, people, one, etc.
Active: People have discovered the truth.
Passive: The truth has been discovered.
- The agent is not omitted when it is a specific or important person or when it is essential to the meaning of the sentence.
The novel was written by Graham Greene.
- With verbs which can take two objects, such as bring, tell, send, show, teach, promise, buy, sell, read, offer, give, lend, etc., we can form two different passive sentences.
Philip will send Sarah a gift. (active) Sarah will be sent a gift. (passive, more usual) A gift will be sent to Sarah by Philip. (passive, less usual)
- In passive questions with who, whom, or which we do not omit by. Who gave you this book? Who were you given this book by?
- Hear, help, make, and see are followed by a toinfinitive in the passive.
She made me lie. $\rightarrow$ I was made to lie.
Note: Hear, see, and watch can be followed by a present participle in the active and passive.
We saw her stealing. $\rightarrow$ She was seen stealing.


## Practice

## 1 Complete the exchanges using the passive

 voice.1 A: The soundtrack for this movie is great.
B: Yes! It $\qquad$ (write) by Ennio Morricone.
2 A: Didn't you bring your guitar with you today?
B: No, it $\qquad$ (repair) at the moment.
3 A: Have you seen Braveheart?
B: Of course. It (direct) by my favorite actor, Mel Gibson.
4 A : $\qquad$ (their new album/ release) yet?
B: No, it's due out next month.
5 A: When is the movie coming out?
B: I think the premiere (show) next Friday at the Palace Theater.
6 A: Did you hear what happened to Max?
B: Yes, he $\qquad$ (just/injure) in a car accident.
7 A: Isn't King Arthur a great movie?
B: Fantastic. Did you know it $\qquad$ (shoot) entirely in Ireland?
8 A: Why is the movie theater closed? B: It $\qquad$ (repaint) at the moment.
9 A: Why didn't Jane come to the party last night?
B: I don't think she $\qquad$ (invite), actually.
10 A: Could you send the tickets to my house?
B: Yes, they $\qquad$ (deliver) by courier tomorrow.
11 A: Where's your DVD player?
B: Oh, it (still not/fix).
12 A: Do you remember who starred in Gangs of New York?
B: Yes. Daniel Day-Lewis. He $\qquad$ (award) an Oscar for the leading role.


The Shakespeare Globe Trust $\mathbf{0}$ ) was founded (found) in 1970 by Sam Wanamaker and 1) $\qquad$ (dedicate) to the experience and international understanding of Shakespeare in performance. The Globe Trust wanted to celebrate the playwright's work and decided to construct a new theater in London in his name. In 1993, the construction of the Globe Theater began and it 2) $\qquad$ (complete) by 1997. Today, Shakespeare's Globe Theater 3) $\qquad$ (commit) to the enjoyment and exploration of Shakespeare and his contemporaries in performance. It 4) $\qquad$ (make up) of three sections: The Globe Theater where plays 5) $\qquad$ (perform), Globe Education which helps students understand Shakespeare's scripts in relation to the stage for which they were written, and Shakespeare's Globe Exhibition which 6) $\qquad$ (create) to inform the public about Shakespeare and his contemporaries who worked in theater. Over the last few years, Shakespeare's Globe 7) $\qquad$ (visit) by around 750,000 people per year. It is a great project, but more money 8) (need) to complete the program.

## 3 Rewrite the newspaper headlines as complete sentences, as in the example.

## Grammar Bank

4 Read the text and put the verbs in parentheses into the correct passive form.

A press conference 1) $\qquad$ (hold) this morning at the Regency Hotel by actor Ken Briggs' agent. It 2) $\qquad$ (announce) that the actor would not be starring in the sequel to Revenge. Specific reasons 3) $\qquad$ (not/give)
but it seems that Briggs 4)
(not/choose) by Paramount Pictures who are looking to replace him with a new face. The company's decision may be a breach of contract and some sources say that negotiations are taking place between the two parties at the moment. It 5) $\qquad$ (not/know) who is going to replace him and Paramount Pictures may have to deal with disappointed fans. A second press conference 6) $\qquad$ (hold) tomorrow morning and
Briggs' agent said that an interview 7)
(give) by the actor over the coming days.

## 5 Answer the questions using the words below.

1 A: Has the soundtrack been recorded yet?
B: Yes, the CDs/deliver/tomorrow.
Yes, the CDs will be delivered tomorrow.
2 A: Has the role been accepted yet?
B: Yes, the role/accept/Jake Hans.

3 A: Do you think there will be lots of fans?
B: Sure! All seats/fill/opening night.

4 A: Has the set been prepared yet?
B: No, the location/not choose/yet.

5 A: Have the costumes been delivered?
B: No/they/make/at the moment.
6 A: Will all the actors be at the party?
B: Well/all invitations/send/last Friday.
7 A: Is the movie based on a book?
B: No/it/base/TV series.

8 A: Were the actors interviewed by a journalist? B: No/they/interview/TV presenter.

6 Fill in by or with.

| 1 | The movie was directed | a | Ken Loach. talent. |
| :---: | :---: | :---: | :---: |
| 2 | The DVDs are made | a | plastic. <br> Sony. |
| 3 | The package was opened | a | a knife. <br> Mrs. Harris. |
| 4 | The set was made | a | Jean. <br> scrap metal. |
| 5 | The movie was paid for | $\begin{aligned} & a \\ & b \end{aligned}$ | Warner. company money. |

## 7 Change the question from the passive into the active.

1 Who was Jurassic Park directed by?
2 Why hasn't the set been finished yet?
3 Who will be chosen for the main role?
4 When will the play be performed?
5 Where will the movie be shot?
6 Who will the star be replaced by?
7 Why was the movie theater closed down?
8 Who was the soundtrack composed by?
9 How much was the actor paid?
10 When will the movie be released?

## 8 Change into the passive.

Warner Movies is shooting a sequel to Zombies in the Nordfold Woods area. Jason Delore is playing the main role, but many locals are playing minor roles in the movie. The movie has created hundreds of shortterm jobs and local companies are providing services for the cast and crew. Warner Movies says they will release the movie soon.

## Reported Speech

## Reported Speech

Direct speech is the exact words someone said. We use quotation marks in direct speech.
Reported speech is the exact meaning of what someone said, but not the exact words. We do not use quotation marks in reported speech. The word that can either be used or omitted after the introductory verb (say, tell, etc.).

## Say - Tell

- say + no personal object

She said (that) she was very happy.

- say + to + personal object

She said to me (that) she was very happy.

- tell + personal object

She told me (that) she was very happy.

- we use say + to-infinitive but never say about. We use tell sb, speak/talk about instead.
Ann said to wake her up at 3:00.
He told them/spoke/talked about the meeting.

| SAY | hello, good morning/afternoon, etc., something/ <br> nothing, so, a prayer, a few words, no more, for <br> certain/sure, etc. |
| :--- | :--- |
| TELL | the truth, a lie, a story, a secret, a joke, the time, <br> the difference, one from another, somebody <br> one's name, somebody the way, somebody so, <br> someone's fortune, etc. |
| ASK | a question, a favor, the price, about somebody, <br> the time, around, for something/somebody, etc. |

## Reported Statements

- In reported speech, personal/possessive pronouns and possessive adjectives change according to the meaning of the sentence. Helen said, "I'm having a party." (direct statement) Helen said (that) she was having a party. (reported statement)
- We can report someone's words either a long time after they were said (reporting the past) or a short time after they were said (up-to-date reporting).


## Up-to-date reporting

The tenses can either change or remain the same in reported speech.
Direct speech: Stella said, "I've ordered pizza."
Reported speech: Stella said (that) she has/had ordered pizza.

## Reporting the past

The introductory verb is in the simple past and the tenses change as follows:

| DIRECT SPEECH | REPORTED SPEECH |
| :---: | :---: |
| Simple Present $\rightarrow$ Simple Past |  |
| "I want to learn Japanese," she said. | She said (that) she wanted to learn Japanese. |
| Present Progressive $\rightarrow$ Past Progressive |  |
| "We are watching a movie," they said. | They said (that) they were watching a movie. |
| Present Perfect $\rightarrow$ Past Perfect |  |
| "I have brushed my teeth," she said. | She said (that) she had brushed her teeth. |
| Simple Past $\rightarrow$ Simple Past or Past Perfect |  |
| "I mowed the lawn," she | She said (that) she mowed/ had mowed the lawn. |
| Past Progressive $\rightarrow$ Past Progressive or Past Perfect Progressive |  |
| "He was playing the piano," she said. | She said (that) he was playing/had been playing the piano. |
| Will $\rightarrow$ Would |  |
| "I will meet you at 7:00," she said. | She said (that) she would meet me at 7:00. |

- Certain words and time expressions change according to the meaning as follows:
now $\rightarrow$ then, immediately
today $\rightarrow$ that day
yesterday $\rightarrow$ the day before, the previous day
tomorrow $\rightarrow$ the next/following day
this week $\rightarrow$ that week
last week $\rightarrow$ the week before, the previous week next week $\rightarrow$ the week after, the following week
ago $\rightarrow$ before
here $\rightarrow$ there
this, these $\rightarrow$ that, those
come $\rightarrow$ go
Tenses do not change in reported speech when:
- the reporting verb (said, told, etc.) is in the present, future, or present perfect. "I can't speak French," he says. $\rightarrow$ He says (that) he can't speak French.
- the speaker expresses general truths, permanent states or conditions. "The sun sets in the west," Mr. Thom said. Mr. Thom said that the sun sets in the west.
- the reported sentence deals with conditionals type 2/ type 3, wishes, or unreal past. "I wish I was a movie star," he said. $\rightarrow$ He said he wished he was a movie star.
- the speaker is reporting sth immediately after it was said. "The view is breathtaking," he said. $\rightarrow$ He said that the view is breathtaking.


## Grammar Bank

## Reported Questions

- Reported questions are usually introduced with the verbs ask, inquire, wonder, or the expression want to know.
- When the direct question begins with a question word (who, where, how, when, what, etc.), the reported question is introduced with the same question word.
"Where are you from?" she asked. (direct question) She asked me where I was from. (reported question)
- When the direct question begins with an auxiliary (be, do, have) or a modal verb (can, may, etc.), then the reported question is introduced with if or whether. He asked, "Do you want a ride to school?" (direct question)
He asked me if/whether I wanted a ride to school. (reported question)
- In reported questions, the verb is in the affirmative. The question mark and words/expressions such as please, well, oh, etc. are omitted. The verb tenses, pronouns, and time expressions change as in statements.
"Could you give me a hand, please?" he asked. (direct question)
He asked me whether I could give him a hand. (reported question)


## Indirect questions

- Indirect questions are used to ask for advice or information. They are introduced with: Could you tell me ...?, Do you know ...?, I wonder ..., I want to know ..., I doubt ..., etc. and the verb is in the affirmative. If the indirect question starts with I want to know ..., I wonder ... or I doubt ..., the question mark is omitted.
Direct question
Where is the library?
Indirect question
Do you know where the library is?


## Reported Commands/Requests/Suggestions

- Reported commands/requests/suggestions are introduced with a special introductory verb (advise, ask, beg, suggest, etc.) followed by a to-infinitive, an -ing form, or a that-clause depending on the introductory verb.
"Be careful," he said to me. $\rightarrow$ He advised me to be careful. (command)
"Please stop talking," he said to me. $\rightarrow$ He asked me to stop talking. (suggestion)
"Please, please don't go," he said to me. $\rightarrow$ He begged me not to go. (request)
"Let's watch a movie," he said. $\rightarrow$ He suggested watching a movie. (suggestion)
"You'd better take an aspirin," he said. $\rightarrow$ He suggested that I (should) take an aspirin. (suggestion)


## Reported Orders

- To report orders or instructions, we use the verbs order or tell + sb + (not) to-infinitive.
"Be patient!" she said to me. (direct order) She told me to be patient. (reported order) "Don't go!" he said to her. (direct order) He ordered her not to go. (reported order)


## Modal Verbs in Reported Speech

Note how the following modal verbs change in reported speech when the reported sentence is out of date. will/shall $\Rightarrow$ would, can $\Rightarrow$ could (present reference)/ would be able to (future reference), may $\Rightarrow$ might/could, shall $\Rightarrow$ should (asking for advice)/would (asking for information)/offer (expressing offers), must $\Rightarrow$ must/had to (obligation) (*must remains the same when it expresses possibility or deduction). Would, could, used to, mustn't, should, might, ought to, and had better remain unchanged in reported speech.

| DIRECT SPEECH | REPORTED SPEECH |
| :---: | :---: |
| He said, "I will always remember you." <br> He said, "I can't see you." <br> He said, "We can visit you soon." <br> He said, "It may rain." <br> He said, "What time shall we call her?" <br> He said, "Shall I buy this car?" <br> He said, "Shall I give you a hand?" <br> He said, "You must send him a reply." <br> He said, "She must be upset." <br> He said, "She had better be nice to me." <br> He said, "They should give me a receipt." | - He said (that) he would always remember me. <br> - He said (that) he couldn't see me. (present) <br> - He said (that) they would be able to visit me soon. (future) <br> - He said (that) it might rain. <br> - He asked what time we would call her. (information) <br> - He asked (me) if he should buy that car. (advice) <br> - He offered to give me a hand. (offer) <br> - He said (that) I had to send him a reply. (obligation) <br> - He said (that) she must be upset. (deduction) <br> - He said (that) she had better be nice to him. <br> - He said (that) they should give him a receipt. |




| Introductory verb | Direct Speech | Reported Speech |
| :---: | :---: | :---: |
| wonder where/what/ why/how + clause (when the subject of the introductory verb is not the same as the subject in the reported question) | He asked himself, "How could Sally win the award?" He asked himself, "Where is Paul?" <br> He asked himself, "Why is she so upset?" | $\Rightarrow$ He wondered how Sally could have won the award. <br> - He wondered where Paul was. <br> $\Rightarrow$ He wondered why she was so upset. |
| wonder + whether + clause | He asked himself, "Shall I go home?" | He wondered whether he should go home. |
| wonder where/what/ how + to-inf (when the subject of the infinitive is the same as the subject of the verb) | He asked himself, "Where shall I go?" <br> He asked himself, "What should I tell them?" <br> He asked himself, "How can I stop this?" | He wondered where to go. <br> - He wondered what to tell them. <br> He wondered how to stop that. |

## Reporting Conversations or Dialogues

Everyday conversations and dialogues are a mixture of statements, commands, and questions. To report these we use: and, as, adding that, and he/she added that, explaining that, because, but, since, so, and then he/she went on to say, while, then etc. or the introductory verb in the present participle form. Exclamations such as: Oh!, Ouch!, Oh nol etc. are omitted in reported speech.

| DIRECT SPEECH | REPORTED SPEECH |
| :--- | :--- |
| "Oh, it's a great day. | $=$He said that it was a <br> great day and suggested <br> Shall we go to the <br> park?" he said. <br> going to the park. |
| "I can't eat this," she |  |
| said. "It's too salty." | She said that she <br> couldn't eat it because it <br> was too salty. |
| "Let's call Brian," he |  |
| said. "I want to find out |  |
| what happened." |  | | He suggested that they |
| :--- |
| should call Brian, |
| explaining that he |
| wanted to find out what |
| happened. |

## Exclamations - "Yes/No" short answers Question tags

- Exclamations are replaced in reported speech with exclaim, thank, wish, say, cry out in pain etc., give an exclamation of surprise/horror/disgust/delight etc.

The exclamation mark becomes a period. Exclamatory words such as Oh!, Eek!, Wow!, Oh!, Oh dear!, Well! etc. are omitted in reported speech. "Aggh!" she said at the sight of blood. $\Rightarrow$ She gave an exclamation of horror at the sight of blood.

- Yes/No short answers are expressed in reported speech with subject + appropriate auxiliary verb or subject + appropriate introductory verb. "Will you forgive me?" he asked. "No," she said. = He asked her if she would forgive him but she said she wouldn't. or He asked her if she would forgive him but she refused.
- Question tags are omitted in reported speech. An appropriate introductory verb can be used if we want to retain their effect. "She is out shopping, isn't she?" he said. $\Rightarrow$ He wondered if she was out shopping.


## Practice

1 a) Fill in the blanks with say or tell in the correct tense.
"I ran into Tom the other day at the internet café," 1) $\qquad$ Grant. "He 2) $\qquad$ me that he had found a really interesting job in London and I 3) $\qquad$ him I was delighted for him." "I am happy to hear it too," 4) $\qquad$ Lara. "Did he 5) $\qquad$ you when he was leaving?" asked Kate.
"Yes, he 6) $\qquad$ he would be leaving next Sunday," said Grant. "He also 7) $\qquad$ that he was having a party on Saturday night and he 8) $\qquad$ me to ask you to come."

## b) Fill in the blanks with say or tell in the correct tense.

"Hey, Mark," 1) $\qquad$ Jerry. "Brian 2) $\qquad$ me that he saw you at the career seminar at school the other day. How was it?" " It was really interesting, Jerry, too bad you missed it, "3) $\qquad$ Mark. "Everyone there 4) $\qquad$ that it was the best one they've been to so far." "Please, 5) $\qquad$ no more;
I'm already upset I missed it," 6) $\qquad$ Jerry. "Brian also 7) $\qquad$ me that you 8) $\qquad$ something about going skating Friday." "Oh yes. I forgot to 9) $\qquad$ you. I'm thinking of booking the skating rink for my birthday. Just 10) $\qquad$ for sure if you're coming so I know how many to book for. OK?"

## 2 Turn the following statements into reported speech.

1 "He doesn't know the latest news," she said.
2 "I can store 32GB of music on this," said Troy.
3 "We have been using this software for a year," said Nick.
4 "I've always loved photography," said Jane.
5 "He will copy the CD for me," Orla told May.
6 "I am considering a career in show business," Ken told his dad.
7 "I downloaded the program for you," said Owen.
8 "I can't get this device to work," said Fran.
9 "You mustn't press this button," said Bob.
10 "I was playing video games all night," said Steven.

## 3 Turn the following questions into reported speech.

1 "Where is Dad?" Mary asked.
2 "Can you help me lift the piano?" Ted asked me.
3 "How long have you been working here?" she asked me.
4 "Did you finish typing the reports?" the boss asked Julie.
5 "What time will she arrive?" Ben asked.

## 4 Rewrite the orders in reported speech.

1 "Don't forget to recharge the battery," David told Jude.

2 "Remember to bring my MP3 player back," Elizabeth said to me.

3 "Be quiet!" she told him.

4 "Turn your computer on," said the teacher.

5 "Don't tell anyone what I said," Kate told Nora.

5 Match the speech bubbles $a-d$ to the sentences $1-4$. Then, complete the sentences using reported speech, as in the example.


1]a I had a letter to send, so I asked her where the post office was.
$2 \square$ We were both bored, so I $\qquad$ -
$3 \square$ My guests were getting hungry, so I $\qquad$ .
4 I I couldn't hear him, so I $\qquad$
$\qquad$ .

## Relative clauses

Relative clauses begin with a relative pronoun or a relative adverb.

We use:

- who $(\mathrm{m}) /$ that to refer to people.

The girl who/that lives next door to Jan is my cousin.

- which/that to refer to things.

The store which/that has just opened in Wendover Street is lovely.

- whose with people, animals, and objects to show possession.
She's the girl whose father is a pilot.
That's the car whose interior was destroyed by fire.
Who, which, and that can be omitted when they are the object of the relative clause.


## $\downarrow$

The woman (who) you met is my aunt Mary.

## Grammar Bank

Who, which, or that is not omitted when it is the subject of a relative clause.
A girl lives next door. She's a famous actress.
The girl who lives next door is a famous actress.

## Relative Adverbs

## We use:

- when/that to refer to a time.

That was the year (when/that) we got married.

- where to refer to a place.

The restaurant where we had dinner yesterday is very expensive.

- why to give a reason.

The reason (why) she was late is still unclear.

## Restrictive - Nonrestrictive clauses

- A restrictive relative clause gives necessary information which is essential to the meaning of the main clause. We do not put it in commas. It is introduced with who, whom, whose, which, or that.
The bank which was burglarized last week has reopened. (Which bank? The one which was burglarized last week.)
- A nonrestrictive relative clause gives extra information which is not essential to the meaning of the main clause. We put it in commas. It is introduced with who, whom, whose, or which, not that. Cate Blanchett, who stars in "The Lord of the Rings," is a great actress. (The relative clause adds information about Cate Blanchett. If we omit it, the meaning of the main clause does not change.)
- In nonrestrictive clauses we can use which to stand for the main clause. She has to wake up at 6 every day which she doesn't like. ("which" refers to the fact that she has to wake up at 6:00.)


## Relative Pronouns

| SUBJECT OF THE VERB OF THE RELATIVE CLAUSE (cannot be omitted) |  | OBJECT OF THE VERB OF THE RELATIVE CLAUSE (can be omitted) | POSSESSION (cannot be omitted) |
| :---: | :---: | :---: | :---: |
| used for people | who/that | who/whom/ that | whose |
|  | That's the girl who is a famous actress. | The man (who) whom/that) you spoke to is my brother. | That's the boy whose father is a pilot. |
| used for things/ animals | which/that | which/that | of which/ whose |
|  | I heard a song which/ that was written by Justin Timberlake. | The book (which/that) you borrowed is mine. | That's the book of which/whose (the) first page is missing. |

- Whom, which, and whose can be used in expressions of quantity with of (some of, many of, half of, etc.). She got a lot of job offers. Most of them were from investment banks. She got a lot of job offers, most of which were from investment banks.
- That can be used instead of who, whom, or which but it is never used after commas or prepositions. She's the girl who/that plays the piano very well. The person to whom you were speaking is my brother. ("that" is not possible)


## Practice

Fill in the relative pronoun, adding commas where necessary. Write $R$ for restrictive, NR for nonrestrictive, and whether the relative clause can be omitted or not.

1 The university where he studies has an excellent reputation. $\quad R \quad N R$
2 My computer teacher $\qquad$ name is Mr. Lynch is very nice.
3 This MP3 player $\qquad$ I got for my birthday is very expensive. $\qquad$
4 The students $\qquad$ designed the device won an award.
5 The apartment $\qquad$ he lives has all the modern conveniences.
6 Bill Gates $\qquad$ owns
Microsoft is a very rich man.
7 The software program
$\qquad$ I bought is very sophisticated.
8 My neighbor $\qquad$ is
a scientist earns a lot of money.
9 The store $\qquad$ I bought my digital camera has closed down.

## Grammar Bank

2 Fill in: who, which, where, when, why.
1 Martin is a DJ $\qquad$ plays music at weddings.
2 The Eiffel Tower, $\qquad$ is in Paris, is a popular tourist attraction.
3 That's the dog $\qquad$ barks all night long.
4 I saw the play ___ you recommended.
5 The little boy $\qquad$ you tutor passed his exam.
6 The bookstore $\qquad$ I shop has closed down.
7 That day $\qquad$ you called I was away on vacation.

8 That's the reason $\qquad$ she didn't come to the party.
9 That was the year $\qquad$ I got married.

3 Combine the sentences using relatives.
1 That's the man. He installed my phone. That's the man who installed my phone.
2 Greg's new digital camera doesn't work. It cost him a fortune.

3 Here's an ad for the laptop. I think I'll buy it.

4 This is the laptop. I bought it from a friend.

5 I'm reading The Time Machine. It was written by H.G. Wells.

6 My friend bought a new MP3 player. It stores up to 64 GB of music.

7 This is Mr. Key. He's my Physics teacher.

8 The CD-ROM was delivered today. I ordered it weeks ago.

9 That's the town. I was born there.

4 Complete the second sentence so that it means the same as the first. Use the word in bold. Use up to five words.

1 Mr. Jackson sold eighty laptops last month.
by Eighty laptops $\qquad$ last month.
2 Who sent the text message?
sent Who by?
3 My friend Julie lives nearby. who Julie, $\qquad$
$\qquad$
4 They delivered the DVDs on time.
delivered The DVDs $\qquad$
$\qquad$ on time.

5 We ate at a very nice restaurant last night. where The restaurant $\qquad$
$\qquad$ last night was very nice.
6 "No, I won't speak to her," he said.
to

He $\qquad$

7 "No, I didn't cheat on the test," this student said. denied The student $\qquad$ on the test.
8 Mike's digital camera can store up to 600 photographs. He just bought it.
which Mike's digital camera, $\qquad$
$\qquad$ , can store up to 600 photographs.
9 They will announce the winner of the competition next week.
announced The winner of the competition $\qquad$
$\qquad$ next week.
10 Students can log in if they have a password. who Students $\qquad$
$\qquad$ can $\log$ in.
11 My dad has a large collection of stamps. Many of them are foreign.
which My dad has a large collection of stamps, $\qquad$
$\qquad$ foreign.

### 1.1 Forces of Nature

1 Match the natural phenomena to the newspaper headlines.

| 1 | tsunami <br> wildfire <br> hailstorm <br> tornado <br> earthquake <br> drought <br> flood <br> blizzard |  |  |
| :---: | :---: | :---: | :---: |
| 2 |  |  | airport |
| 3 |  | C | Ice balls the size of golf balls destroy |
| 4 |  |  | local crops |
| 5 |  | D | More than 18,000 acres of forest |
| 6 |  |  | consumed in flames |
| 7 |  | E | Massive waves hit Indonesian |
| 8 |  |  | coastlines |
|  |  | F | Widespread destruction after river breaks banks |
|  |  | G | Funnel cloud touches down in Albany |
|  |  | H | Buildings collapse as the earth still shakes in Turkey |

Match the two columns.

awe-inspiring
A pressure
volcanic
B drop
lightning
C plates
tectonic
D eruption
built-up
sudden
E strike
F power

## 3 Choose the correct preposition.

1 According on/to seismologists, the Pacific Plate moves about 2 inches per year.
2 The aircraft was struck by lightning and it crashed to/in an open field.
3 Environmentalists wonder if Japan will move away from/ apart nuclear energy following the 2011 earthquake.
4 The Himalayas were formed when tectonic plates pushed to/against each other.
5 A tsunami is a series of destructive waves that result from/ of an earthquake.
6 What happens when a tectonic plate slides under/apart another tectonic plate?
7 Tectonic plates that slide past/back each other in opposite directions create faults.
8 The Earth's atmosphere is separated into/for five layers.

4 Fill in: destruction, deviation, axis, shortening, seismologists.

1 $\qquad$ monitor the earth's seismic movements and project where an earthquake is likely to take place.
2 The president flew in to examine the $\qquad$ caused by the hurricane.
3 The earth rotates on its $\qquad$ once every twenty-four hours.
4 Changes in the color of tree leaves are caused by cooler temperature and the $\qquad$ of daylight hours.
5 The earth's axis moved 10 inches. This $\qquad$ made our days shorter by 1.8 microseconds.

### 1.2 The Universe

Choose the correct answer.
1 Mars is the fourth $\qquad$ from the sun.
a planet b galaxy
2 English astronomer Edmund Halley observed a bright $\qquad$ with a long tail traveling around the sun.
a meteor $b$ comet
3 The Milky Way is the $\qquad$ that contains our Solar System. a galaxy $b$ moon
4 A ___ does not follow an orbit around the sun.
a comet $b$ meteor
5 ___ are also called minor planets and move between the orbits of Mars and Jupiter.
a Asteroids b Constellations

Fill in: celestial, natural, startling, infinite, entire.

1 The moon and the sun are $\qquad$ bodies located outside the earth's atmosphere.
2 The Planck telescope was able to capture the first image of the $\qquad$ universe.
3 There is $a(n)$ $\qquad$ number of stars in the universe. No one knows how many there really are.
4 The moon is a $\qquad$ satellite that orbits Earth.
5 Scientists have made $\qquad$ discoveries about the age and the evolution of our universe.

## 3 Choose the correct word.

1 Scientists cannot tell/ask/say for certain how the universe was formed.
2 Could the entire universe have come/gotten/ become into existence from nothing?
3 Space exploration has given pay/rise/ creation to technologies that will make space tourism possible.
4 The day-night cycle will continue/last/go on forever.
5 Earth's distance to the sun has made/ done/had life possible.
6 Scientists are addressing/doing/wondering the question "what happened before the Big Bang?"

4 Fill in: over, of, around, after, about.
1 The planets move $\qquad$ the sun.
2 Space exploration in the United States of America has extended $\qquad$ years.
3 The planet Mars was named $\qquad$ a Roman god.
4 Most people wonder $\qquad$ the origins of life on Earth.
5 Our solar system consists $\qquad$ eight planets.

5 Fill in: expansion, contraction, collapse, explosion, coincidence, motivation, constellation, discovery.

1 Cold weather causes the $\qquad$ of metal.

2 Orion is a $\qquad$ made up of stars and is in the shape of a hunter.
3 The $\qquad$ of the universe takes place as galaxies move further apart.
4 It's no $\qquad$ that the conditions on Earth are suitable for human survival.
5 Large stars $\qquad$ at the end of their life-time, often forming black holes.
6 The main $\qquad$ behind space exploration is to discover other life forms.
7 The recent $\qquad$ that Uranus has a bright spot in its atmosphere has intrigued scientists.
8 Big Bang theorists believe that life on Earth began following a massive $\qquad$ .

### 1.3 Human Biology

1 Match the words to their definitions.

| 1 | pharynx | 5 | stomach |
| :---: | :---: | :---: | :---: |
| 2 | lungs | 6 | veins |
| 3 | heart | 7 | muscles |
| 4 | kidneys | 8 | skeleton |

A the organ where the digestion of food takes place
B the tube which takes food to the stomach
C the frame of bones which support a human body
D the organ in your chest that sends the blood around your body
E thin tubes that carry blood to the heart from the other parts of the body
F two organs in the chest which help people breathe
G two organs in the body which take away waste matter from the blood
H a piece of tissue inside your body connecting two bones used when you make a movement.


[^0]:    Progress Check 4 (pp. 53-54)

[^1]:    b) Can you name the planets in our solar system? $\bigcirc$ Listen and check.

[^2]:    Omission of "if"
    If can be omitted in if-clauses. In this case should (cond. type 1), were (cond. type 2), and had (cond. type 3) come before the subject.
    If he should do well on the exam, he will apply to college. $\rightarrow$ Should he pass the exam, he will apply to college.
    If I had known, I would have told you. $\rightarrow$ Had I known, I would have told you.

