

الدكتورة ميسون الزهري  
في مجال الترجمة العلمية  
يترجم الطالب من العربي الى الانجليزي ثم يقارن  
ترجمته مع الترجمة النموذجية الانجليزية. ثم  
يترجم بالعكس back translation للتأكد من  
دقة الترجمة.

ثم يبحث الطالب في النت ليحفظ التعابير  
الاصطلاحية المنبثقة عن المواضيع العلمية هذه.

## 3. Movement of an aircraft's propellers

The propellers of an aircraft which is flying in the sky push the aeroplane through the air just as if there were an invisible giant running with the aeroplane on the end of a long cord.

Maybe you will have noticed that the dropping of the wind makes the paper kite come back to you again. Similarly if the propellers stop, the aeroplane comes down to the ground. But it does not turn and twist in its descent like a paper kite because the pilot is controlling it. It is the gravity of the earth which pulls the aeroplane down when the propellers stop. The speed of the aircraft in descending creates sufficient air against its wings to prevent it from coming down in one fell swoop and it lands as if it were a ski sliding along a ridge of a hill. When the skier approaches level ground the ski is level; similarly the aeroplane levels out when it approaches the ground.

The propeller which is found at the nose of the aeroplane resembles a steamship's propeller which pushes it through the water and which is turned by an engine like that which moves the wheels of a motor-car. The only difference is that the engine of an aeroplane is much bigger than the engine of a motor-car and it goes at a great speed. When it turns, the blades of the aircraft propeller revolve with great speed and you cannot see them clearly and they look like a spinning turban.

## ٣ - حركة مراوح الطائرة

والمراوح في الطائرة التي تعلق في السماء تدفع الطائرة خلال الهواء كما لو كان هناك مارد لا تراه يجري مع الطائرة في نهاية خيط طويل . ولعلك تكون لاحظت أن توقف الريح يجعل طائرة الورق تعود إليك ثانية وكذلك إذا توقفت المراوح فإن الطائرة تنزل للأرض ولكنها لا تتلوى في نزولها مثل الطائرة الورق وذلك لأن الطيار يقودها - وجاذبية الأرض هي التي تجذب الطائرة إلى أسفل عندما تتوقف المراوح - وأن سرعة الطائرة في الهبوط تجعل هناك هواء كافيا مضادا لأجنحتها يمنعها من الهبوط دفعة واحدة ولكنها تبط كما لو كانت زحافة تنزلق على حافة تزل وكما هو الحال في حالة الانزلاق للزحافة التي تكون في وضع مستو عندما تقترب من سطح الأرض المستوي فإن الطائرة تستوي عندما تقترب من سطح الأرض . والمروحة التي توجد في مقدمة الطائرة تشبه مروحة الرقاص أو البريمة المحواة التي تدفع الباصرة أو المركب في الماء والتي تدور بحرك كالذي يحرك عجلات السيارة والفرق الوحيد هو أن محرك الطائرة أكبر بكثير من محرك السيارة وأنه يسير بسرعة فائقة - وعندما يدور ويقت سلاحا المروحة في الطائرة بسرعة كبيرة ، فإنك لا يمكنك أن تراهما بوضوح تماما ولكنها يظهران على شكل عمامة مستديرة .

Air is a gas composed of oxygen and nitrogen which surrounds the entire terrestrial globe. Like food, it is one of the essential factors of life. Mixed with air is another gas known as carbonic acid, water vapour, dust scattered from the earth's surface, argon, ammonia, and so on. The importance of air outside the body is the same as the importance of blood inside. Man takes in oxygen while breathing in and expels carbonic acid by breathing out. It was formerly believed that all plants did the same thing only in reverse, in that plants take in carbonic acid and expel oxygen in the operation of respiration. The truth is that the roots of a plant are unable to absorb carbon from the other substances from which the rest of the plant derives its nourishment. Since carbon is essential for forming their organic matter, they obtain it from carbonic acid gas which is found in the atmosphere, taking it by means of the pores which are found in the outer skin of their leaves, and it combines with the rising sap. When the sap comes into contact with the carbonic acid gas carried in the atmosphere an exchange of elements takes place which results in the formation of organic substances, of which the most important is starch. The starch, however, is insoluble in the sap and it cannot be absorbed through the walls of the cells. In order to dissolve it, viz. the starch, there is a requirement for the absorption of oxygen which affects the starchy substances by means of the enzyme found in its cells, known as diastase, and the starchy substance is converted into saccharides which can be absorbed. By this reaction the starch is changed into sugar which results in the expulsion of carbonic acid just as occurs in animals.

الهواء غاز مركب من الاوكسجين والازوت محيط بجميع الكرة الارضية وهو من العوامل الضرورية للحياة كالطعام ويختلط بالهواء غاز آخر يعرف بحمض الكربونيك وأبخرة مائية وغبار منتشر من سطح الارض وأرجون ونيون وبنادر وبخلاف ذلك ويمتزلة الهواء خارج الجسم كمنزلة الدم داخله ينتس منه الانسان غاز الاوكسجين أثناء عملية الشهيق ويخرج حمض الكربونيك بحركة الزفير كما تفعل ذلك جميع النباتات بعكس ما كان يعتقد من قبل من أن النباتات تأخذ حمض الكربونيك وتخرج الاوكسجين في عملية تنفسها والحققة هي أن جذور النباتات غير قادرة على امتصاص الكربون ضمن باقى المواد الأخرى التي تغذى منها باقى النبات وحيث أن الكربون ضروري لتكوين موادها العضوية فهي تحصل عليه من غاز حمض الكربونيك الموجود بالجو بان تأخذه بواسطة الثغور الموجودة في بشرة أوراقها فتتحد مع العصارة الصاعدة حتى اذا تلامست مع غاز حمض الكربونيك الأخرى في الجو تحصل بينهما تبادل عنصري ينشأ عنه تكوين مواد عضوية أهمها النشاء إلا أن هذا النشاء غير قابل للتدوير في عصارتها لسهولة استطيع حينذاك أن ينتشر في جذران الخلايا فتستعين بذوبانه أي النشاء باستشاق غاز الاوكسجين لكي يؤثر على المواد النشوية بمساعدة الانزيم الموجود داخل خلاياها المعروفة بالدياستاز فتتجهل المواد النشوية الى مواد سكرية قابلة للامتصاص وبهذا التفاعل تتحول المواد النشوية الى سكرية ينتج عنه خروج حمض الكربونيك كما تفعل ذلك الحيوانات .

The power which is used today in most types of motor-car and aircraft is derived from internal combustion engines. This power comes from successive explosions which occur inside the engine. These explosions are not the result of gunpowder as it may appear at first glance but from a mixture of petrol and air.

Because petrol engines are lighter and less bulky than steam engines men much prefer them and have introduced them into many branches of activity; they not only use them in motor cars and aircraft but they have been installed in churning machines used in cheese-manufacturing plants, ploughing machinery, tractors, and other agricultural machines.

The gun was the first type of internal combustion engine, the only difference being that gunpowder took the place of the petrol and air mixture, and the shell the place of the piston. When the gunpowder explodes, it is the force of the gases produced which propels the shell.

When in the seventeenth century men needed power for their various activities, they thought of obtaining it by exploding gunpowder. A man constructed a machine with the aim of getting it to work by this power but he was unable to control or regulate it. As a result this idea has been forgotten for about a hundred years and has now vanished entirely.

إن القوة التي تستعمل الآن في معظم أنواع السيارات والطائرات مستمدة من محركات الاحتراق الداخلي وهذه القوة تنتج عن انفجارات متوالية تحصل داخل الآلة وهذه الانفجارات ليست ناشئة عن البارود كما يتبادر إلى الذهن بل هي مزيج من البنزين والهواء.

ولأن محركات الاحتراق الداخلي أخف وزناً وأصغر حجماً من محركات البخار صار الناس يفضلونها كثيراً وتستخدمونها في فروع كثيرة من الأعمال فهي لا تستعمل في السيارات والطائرات فحسب بل تستعمل كذلك في آلات الخس في مصانع الخبز وآلات المحرك والمطارات وسائر آلات الزراعة. والمدفع هو أول نوع من أنواع محركات الاحتراق الداخلي وكل ما هناك من الفرق هو أن البارود قد حل فيه محل المزيج من البنزين والهواء وأخذت فيه القنبلة مكان «البنون» فإذا ما انفجر البارود أوجد القوة الغازية التي تدفع القنبلة.

ولما احتاج الناس في القرن السابع عشر إلى القوة في أعمالهم المتنوعة فكروا في استمدادها من انفجار البارود فصنع رجل مأكينة على زعم أن يديرها بنفسه القوة ولكنه لم يستطع أن يسيطر عليها ويضبطها فاندثرت هذه الفكرة من نحو مئة سنة وثلاثت من عالم الوجود.



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## How your body resembles a machine

We frequently use machines in our daily lives, for the car in which you ride and which carries you long distances moves by means of an engine, the water pump which irrigates the land and makes the green crops grow is also a machine, and the aeroplane which circles in the sky, moves, climbs, and lands by the use of engines. Every piece of equipment which we see and use in our daily lives has a motor somewhere inside it, be it simple or complicated, and the motors are made up of various-sized parts, some big, some small, some of which move, and others which are stationary. All these parts are used to enable the car to move and function, or facilitate the water pump to raise the water from below the earth to the surface, or assist the aeroplane to climb above the earth and to fly in the sky... and your body is also made up of numerous parts which work in harmony carrying out the things you want to do. Thus your body resembles a machine.

The motors in the body are constructed of various similar parts. These parts are made up of hundreds of tiny parts. There is the principal part of your body which is called the trunk and there are other parts called arms, legs, and head, and each of these parts is made up of tens of other parts.

Whereas the car moves and runs when it is supplied with petrol, however, you do not need petrol to move, but you do need food. You have a stomach which you supply with food three times a day in order to enable you to obtain the strength which will assist you to move. Your body uses this food much as the engine of the car uses petrol; and to keep moving both you and the engine constantly need food. And just as the parts of a car must be kept in good condition, by lubrication for example, or some engines have to be changed and repaired - just as the parts of the body need to renew their energy - for unless they are they will never operate quickly and with precision, likewise the parts of your body must also be kept in very good condition in order to do their work. So a stomach-ache, a headache, and a broken bone - all these hamper man in carrying out his work properly. Therefore your body and the engine, equally, must be kept constantly in working order.

## كيف يشبه جسمك الآلة

كثيراً ما نستخدم الآلات في حياتنا ، فالسيارة التي نركبها ونحملك إلى مسافات بعيدة تتحرك بواسطة الآلة ، ومضخة المياه التي تروى الأرض وتنمى الزروع الحضرية هي آلة ، والطائرة التي تحلق في السماء تتحرك وترتفع وتسير بعمل الآلات ، فكل ما نراه في حياتنا من وسائل نستخدمها في الحياة يدخل في تركيب أجزائها آلات بسيطة ومركبة ، وتركيب الآلة من أجزاء مختلفة الحجم منها الكبير ومنها الصغير ، وبها أجزاء متحركة وأخرى ثابتة . وجميع هذه الأجزاء تعمل لتتمكن السيارة من الحركة والسير ، أو لتسهل لمضخة المياه رفع الماء من باطن الأرض إلى أعلى ، أو تساعد الطائرة في ارتفاعها فوق سطح الأرض وطيرانها في السماء . . . وإن جسمك أيضاً يتكون من أجزاء عديدة تعمل متعاونة ، فتحقق ما تريد وبهذه الطريقة صار جسمك يشبه الآلة .

وجميع الآلات البشوية تتكون من أجهزة مختلفة متشابهة . وهذه الأجهزة تتكون من مئات الأجزاء الدقيقة . وهناك الجزء الرئيسي في جسمك ويسمى الجذع ، وتوجد أجزاء أخرى تسمى الذراع والرجل والرأس ويتكون كل منها من عشرات الأجزاء .

وإذا كانت السيارة تتحرك وتجري عندما تمدها بالبنزين إلا أنك لا تحتاج إلى بنزين لتتحرك وتجري ، ولكنك تحتاج إلى طعام . فلكذلك معدة تزودها بالطعام ثلاث مرات في اليوم حتى يمكنك أن تحصل على القوة التي تساعدك على الحركة . وجسمك يستخدم هذا الطعام بدرجة كبيرة مثلاً تستخدم آلة السيارة البنزين ، ولتواصل الحركة فإنك والآلة في حاجة مستمرة إلى الغذاء ، وكما أن أجزاء السيارة يجب أن تبقى في حالة جيدة بالتشحيم مثلاً أو تغيير بعض ألاتها وإصلاحه - فكذلك تحتاج أجزاء جسمك إلى أن يجدد نشاطها - ، وإلا فإنها لن تجري بسرعة وبدقة ، كذلك أجزاء جسمك يجب أن تبقى في حالة جيدة أيضاً لتؤدي عملها . فالغص في العدة والصداع في الرأس والكسر في العظم كلها تعوق الإنسان عن القيام بعمله بطريقة سليمة . لذلك يجب أن يبقى كل من جسمك والآلة في حالة جيدة باستمرار .

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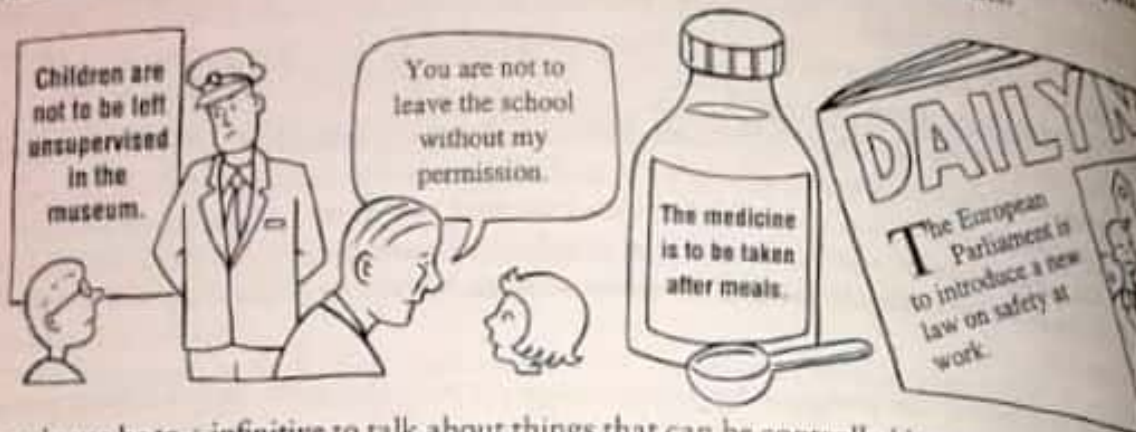


# Be to + infinitive (I am to do), future perfect (I will have done), and future perfect continuous (I will have been doing)

## A

## Be to + infinitive

Be to + infinitive is used to talk about formal or official arrangements, formal instructions, and to give orders. It is particularly common in news reports to talk about future events.



We only use be to + infinitive to talk about things that can be controlled by people:

- We don't know where the meteorite is going to land. (*not ...the meteorite is to land.*)
- I suppose we will all die eventually. (*not ...we are all to die...*)

## B

We often use be to + infinitive in *if*-clauses to say that something must take place first (in the *if*-clause) before something else can take place (in the *main*-clause):

- If humans are to survive as a species, we must address environmental issues now.
- The law needs to be revised *if* justice is to be done. (passive form)

Compare the use of be to + infinitive and the present simple for the future in *if*-clauses:

- Jones needs to improve his technique *if* he is to win gold at the next Olympics. *and*
- Jones has said that he will retire from athletics *if* he wins gold at the next Olympics.

## C

## Future perfect

We use the future perfect to say that something will be ended, completed, or achieved by a particular point in the future (see also Unit 18B):

- Let's hope the volcanic eruption will have finished *before we arrive on the island.*
- Although people are now angry about what he did, I'm sure that his behaviour will soon have been forgotten. (= passive form)
- *By the time you get home* I will have cleaned the house from top to bottom.

Notice that we can use other modal verbs instead of will to talk about the future in a less certain way:

- *By the time you get home* I will/may/should have cleaned the house...

## D

## Future perfect continuous

We can use the future perfect continuous to emphasise how long something has been going on by a particular point in the future:

- On Saturday, we will have been living in this house for a year.
- Next year I will have been working in the company for 30 years.

In sentences with the future perfect continuous we usually mention both the particular point in the future ('On Saturday...', 'Next year...') and the period of time until this point ('...for a year', '...for 20 years'). Notice that we don't usually use the future perfect continuous with verbs describing states (see Unit 2):

- Next month I will have known Derek for 20 years. (*not ...will have been knowing...*)