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АНГЛИЙСКИЙ ДЛЯ БАКАЛАВРОВ

*Утверждено Учёным советом университета
в качестве учебного пособия
для бакалавров инженерно-технических специальностей*



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Содержит материал, направленный на формирование различных видов инновационной деятельности, опережающей время; на поиски и разработки перспективных, фундаментально новых прорывных проектов; поддержание изобретательской и исследовательской активности молодёжи; повышение статуса изобретателя. Включены аутентичные материалы hi-tech-порталов, коммуникативные упражнения, задания по письменной практике и межкультурному общению. Представлены задания по аудированию в режиме on-line и презентациям, выполняемым с использованием инновационных девайсов.

Предназначено для бакалавров инженерно-технических специальностей.

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CONTENTS

Part I. INNOVATION ISSUES	4
Lesson 1. Inventors and their inventions	4
Lesson 2. The Nobel Prize	13
Lesson 3. Patent	20
Part II. THREE ITEMS OF TECHNOLOGICAL INNOVATION	28
Lesson 4. Computer	28
Lesson 5. Automobile	38
Lesson 6. Mobile phone	44
Part III. INVENTION INTO REALITY	50
Grammar Reference	52
List of References	59

Part I
INNOVATION ISSUES

Lesson 1

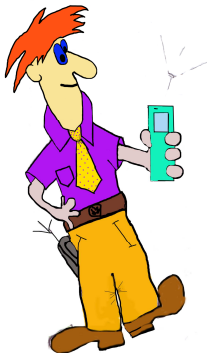
INVENTORS AND THEIR INVENTIONS

1. Warm-up. Visit the website address given below. Sing a funny song.



http://www.teachertube.com/viewVideo.php?video_id=196343

2. In pairs or small groups discuss the questions.



- Can you make a list of things that did not exist 100 years ago?
- Which of these could you not live without today?
- What do you think is the greatest invention of all time?
- Can you think of an invention that would make your life easier today?
- What are the three items of technology you use most often?

3. Visit the website address given below and fill in the gaps in this script with the words in the

box. <http://www.youtube.com/watch?v=k3OwvWw9U0A>



Inventors and their ingenious inventions have _____ society since the beginning of time; always searching for ways to make life _____, better and more _____. These people of extraordinary _____ and boundless energy left an incredible _____ of tools and ideas that improved the _____ of life and paved the way for future inventions. Learn about some of the most _____ inventors that ever lived.

talent
shaped
significant
easier
quality
convenient
legacy

4. Read the information about Ethics for Engineers. Learn it by heart. Find in the text English equivalents for the following:

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

- требующая знаний профессия;
- представители профессии;
- высокие стандарты честности;
- целостность натуры;
- прямое и живое влияние на качество жизни всех людей;
- беспристрастность, справедливость;
- объективность;
- благосостояние людей;
- приверженность самым высоким принципам этического поведения.

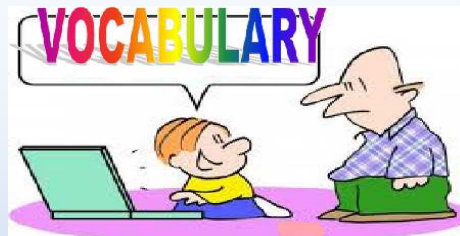


5. Read and translate the following extract into Russian and retell it.

An *inventor* is a person who creates or discovers new methods, means or devices for performing a task. The word "inventor" comes from the Latin verb *invenire*, *invent-*, to find. Inventors may be inspired to invent through a desire to create something new or better, simple altruism, or for competitive or commercial reasons. An invention may also result from a combination of these motivating factors. Although many inventors may have in mind the commercialization of their product, very few will **guarantee**¹ the funding and support often needed to develop and launch a product in the marketplace, and fewer still will experience lasting commercial success or the economic reward they may have expected. **Entrepreneurship**² and an awareness of the demands of a changing marketplace are typical characteristics of successful inventors.

An invention is an object, process, or technique which displays an element of **novelty**³. An invention may sometimes be based on earlier developments, **collaborations**⁴ or ideas, and the process of invention requires at least the awareness that an existing concept or method can be modified or transformed into an invention. However, some inventions also represent a radical breakthrough in science or technology which extends the **boundaries**⁵ of human knowledge. Over time, humanity invented objects and methods for **accomplishing**⁶ tasks which fulfill some purpose in a new or different manner, usually with the objective of realizing that purpose in a faster, more efficient, easier or cheaper way.

Although a new or useful object or method may be developed to fulfill a specific purpose, the original idea may never be fully realised as a working invention, perhaps because the concept is in some way unrealistic or impractical. On the other hand, any barriers to **implementation**⁷ may simply be an **issue**⁸ of engineering or technology which can be overcome in time with scientific advances. History is also **replete**⁹ with examples of ideas which have taken some time to reach physical reality, as demonstrated by various ideas originally **attributed**¹⁰ to Leonardo da Vinci which are now expressed in everyday physical form.



1. To guarantee (v) – гарантировать, обеспечивать; Syn.: *assure, warrant, certify, secure*.

All our electric motors are guaranteed for one year. – У всех наших двигателей гарантия год.

2. Entrepreneurship (n) – предпринимательство, предприимчивость.

Entrepreneurship is a typical characteristic of highly successful inventor. – Предприимчивость – типичная характеристика преуспевающего изобретателя.

Commercial enterprise – коммерческое предприятие;

entrepreneurial (adj) – антрепренёрский.

This manager has a strong entrepreneurial spirit. – У этого менеджера антрепренёрский склад ума.

3. Novelty (n) – новизна, инновация; Syn.: *news, innovation*.

In the contemporary western world, rapidly changing styles cater to a desire for novelty and individualism. – В современном западном мире быстро меняющаяся мода – это дань стремлению к новизне и индивидуализму.

4. Collaboration (n) – сотрудничество, участие, совместная работа; Syn.: *co-operate*.

An invention may sometimes be based on collaborations. – Иногда изобретение является результатом совместной работы.

5. Boundary (n) – граница, межа (between); Syn.: *border, confines, frontier, limit, bound.*

Some inventions represent a radical breakthrough in science or technology which extends the boundaries of human knowledge. – Некоторые изобретения представляют собой радикальные достижения в науке или технике, они расширяют границы человеческих знаний.

6. To accomplish (v) – совершать, достигать, доводить до конца; Syn.: *reach, realize.*

If we'd all work together, I think we could accomplish our goal. – Я думаю, если бы мы работали вместе, мы бы смогли выполнить нашу задачу.

7. Implementation (n) – выполнение, осуществление, реализация; Syn.: *realization, accomplishment.*

Any barriers to implementation may simply be an issue of engineering or technology. – Некоторые препятствия к обеспечению выполнения намеченного могут возникать из-за инженерной или технологической неполноценности.

To implement (v) – выполнять, осуществлять; обеспечивать выполнение;

Syn.: *perform, carry into effect, fulfill, complete, carry out, accomplish, execute.*

8. Issue (n) – результат, исход ч-л; Syn.: *termination, end.*

He hoped that his enterprise would have a prosperous outcome. – Он надеялся, что исход этого предприятия будет благополучным.

9. Replete (adj) – наполненный, насыщенный;

The very air seems replete with the humming and buzzing melodies of mobile phones. – Кажется, сам воздух насыщен жужжащими и гудящими звуками мобильных телефонов.

10. To attribute (v) – относить к, приписать; Syn.: *ascribe, credit, impute.*

They attributed their success to hard work. – Они приписали свой успех упорному труду.

Answer the questions.

1. What does an inventor create or discover? 2. How are they inspired to invent? 3. Many inventors have in mind the commercialization of their product, don't they? 4. What skills do you need to invent something? 4. Who supports and launches a product in the marketplace? 5. What does the term "invention" mean? 6. What does the process of invention require? 7. What is the potential of new inventions? 8. Why may the original idea never be fully realised as a working invention? 9. Are there any barriers which would prevent an idea being fully realised? 10. Can you suggest any of Leonardo da Vinci's ideas which are now used in everyday life?

1. Find in the text English equivalents for the following:

Выполнять работу (задание) • воодушевиться идеей изобретения • мотивационные факторы • помнить о коммерциализации • необходимое финансирование • поддержать развитие • вознаграждение • элементы новизны • сотрудничество • существующая концепция • метод может быть модифицирован • радикальное (научное/техническое) достижение • большая эффективность • история наполнена идеями • первоначально приписываемые.

**2. Say if the sentences below are true or false. If they are not true, correct them.
Don't forget to start your answer with one of these phrases:**

Oh, no, it isn't so. • I don't think it is right. • No, it's just wrong.

1. Inventors may be inspired to invent through a desire to create something new or better, simple altruism, or for competitive or commercial reasons.	True	False
2. Misunderstandings of changing marketplaces are typical characteristics of successful inventors.	True	False
3. Some inventions represent incompetence in science or technology.	True	False
4. The original idea may never be fully realised as a working invention, perhaps because the concept is in some way unrealistic or impractical.	True	False
5. History is full of examples of "glorious failure".	True	False

3. Read and translate the following phrases into Russian. Make up & write down a few sentences, using the given phrases.

To have an excellent opportunity • to have plenty of free time • to be a really good engineer • to achieve excellent results • to be seldom free • to think about the meaning of life • to be a famous scientist • scientific research work • to win the first prize at the championship • to encourage one's initiative • to master two foreign languages • to be injured at the car accident • to justify one's hopes • it's primary function to improve living conditions • it is governed by the executive board • to provide equipment.

1. Изобретатель – это человек, который создаёт или открывает новые методы, средства или устройства.

2. Изобретение – это процесс или устройство с элементами новизны.

3. Первоначальная идея некоторых изобретений может остаться нереализованной из-за непрактичности или нереальности её применения.

4. Ограничениями к внедрению изобретения могут являться технические или инженерные несовершенства.

5. История насыщена идеями, воплощение которых осуществилось со временем.

4. Translate the following sentences into English.

Matching

5. Choose the phrases on the right which complete the phrases on the left.

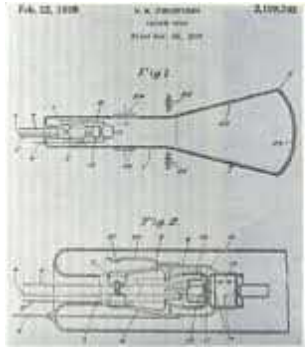
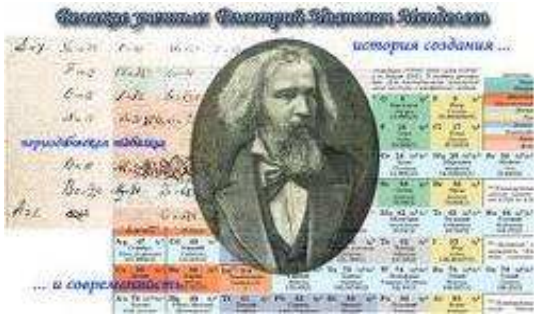
1. An inventor is a person who creates	a) something new or better, simple altruism, or for competitive or commercial reasons.
2. The word "inventor" comes from	b) which can be overcome in time with scientific advances.
3. Inventors may be inspired to invent through a desire to create	c) the Latin verb invenire, invent-, to find.
4. An invention is an object, process, or technique	d) or discovers new methods, means or devices for performing a task.
5. Some inventions also represent a radical breakthrough in science or technology	e) which displays an element of novelty.
6. Over time, humanity invented objects and methods for accomplishing tasks which fulfill some purpose in a new or different manner,	f) usually with the objective of realizing that purpose in a faster, more efficient, easier or cheaper way.
7. Any barriers to implementation may simply be an issue of engineering or technology	g) which have taken some time to reach physical reality.
8. History is full of examples of ideas	h) which extends the boundaries of human knowledge.



6. In pairs or small groups think of an object which you would like to modify or to invent. Your partner is interested in it. Answer his questions. When you have finished, change over.

Questions to think about

1. What can you substitute to make an improvement?
2. What if you swap this for that and what happens?
3. How can you substitute the place, time, materials or people?
4. What materials, features, processes, people, products or components can you combine?
5. Where can you build synergy?
6. What part of the product could you change? And exchange for what?
7. What if you were to change the characteristics of a component?
8. What happens if you warp or exaggerate a feature or component?
9. What will happen if you modify the process in some way?
10. What other market could you use this product in?
11. Who or what else might be able to use it?
12. Who else has solved this problem?
13. What similar area of expertise might have solved this problem?
14. Is there anyone else in the company who knows how to solve this?
15. What else could we use to solve the problem?
16. Where else might this problem have been solved?
17. What other companies might know how to solve this?
18. What other industries face the same problem and what do they do about it?



7. Choose the names on the left which complete the sentences on the right.

1. Sergei Pavlovich Korolev	a) physicist and electrical engineer – invented the cathode-ray tube called the kinescope.
2. Dmitri Ivanovich Mendeleev	b) helicopter and aircraft designer.
3. Vladimir Kosma Zworykin	c) rocket engineer and designer, "Father of the space program".
4. Igor Ivanovich Sikorsky	d) rocket scientist and pioneer of astronautics.
5. Konstantin Eduardovich Tsiolkovsky	e) has been credited with the invention of the periodic tab.

8. Visit the website address given below. Make up a conversation between you and one of the inventors.
<http://www.youtube.com/watch?v=m3BZER-DWZE>
<http://video.yandex.ru/#search?text=zwoy>
<http://www.youtube.com/watch?v=2m1CnIv9jBI>



9. Make nouns from these verbs. Use them in your own sentences in writing.
discover • explore • invent • suggest

1. Leonardo da Vinci *invented* scissors! He was a brilliant *inventor*.
2. Yuri Gagarin was the first to *explore* the space.
3. Mendeleev *discovered* the periodic law.
4. Cancer is a modern, man-made disease caused by environmental factors such as pollution and diet, a study by University of Manchester scientists has strongly *suggested*.



10. Visit the website address given below. Watch the clip and fill in the gaps in this script with the words in the box.
<http://www.google.ru/search?q=http%3A%2F%2Fwww.videojug.com%2Finterview%2Fgetting-rich-with-inventions-2%23can-i-modify-a-patented-product-and-call-it-an-invention++++&ie=utf-8&oe=utf-8&aq=t&rls=org.mozilla:ru:official&client=firefox>

What makes a great invention?
 To me, you have to look at the word "_____". Invention comes from a Latin root "to invent," and invention is saving people _____ and _____ or bringing something to market that helps people do something that they normally would find _____ or with extra effort so the idea of an invention is, for me, providing a product, a good or service that enables people to _____ time and money.

- laborious
- invention
- time
- money
- save



What's the difference between a great idea and an invention?
 Best ideas are found usually on Sunday at New York Central Park with the guys who feed the _____. Those are always brilliant ideas. _____ shops – brilliant ideas. And chit chat. After a couple of beers there is always someone who has a great idea. An idea is just that. It's an idea. It's very general, it's _____, it's usually traded from somebody's _____. An invention is where you take that idea and actually develop a _____ product that you can touch and see, or a program that actually works.

- coffee
- pigeons
- tangible
- lucid
- imagination

Can I have a career as an inventor?
 Part inventor, part product designer, very much entrepreneur and very much you have to be your number one fan. You have to be constantly _____ and criticized and wake up with a _____ on your face that you're pursuing your dream and your craft. But yeah, you could have a job as an inventor and I think that there's an interesting _____ of inventing. What's the _____ between a good invention, a great invention and a 'why didn't I think of that?' invention? I think there's categories and the longer you practice the craft you get into that realm when you make a _____ other people will comment, "Why didn't I think of that?" or "Brilliant _____". That's when you know you're doing your craft right.

- smile
- ridiculed
- topic
- a product
- idea
- difference



1. a. Match the four questions on the left with four appropriate answers on the right.

Normally or now?

1. What do you do?	a) In a hotel in the center of city.
2. What are you doing in this class?	b) I work for a large plant.
3. Where do you live?	c) I'm learning English.
4. Where are you staying?	d) I've got a flat in Moscow.

b. Look at the forms of the questions and explain why different tenses are used.

Grammar tip



Check

We use the Present Simple to talk about regular actions or normal situations.

I send SMS every day.

We use the Present Continuous to talk about a temporary situation or something that's happening now.

I am using Nick's phone while mine is being charged.

I'm writing a message now.

For more on this, turn to 'Grammar Reference'.

2. Use the underlined verb to complete the second sentence. Present Simple: affirmative.

1. I like chess. My flatmate likes computer games.
2. I go to Moscow University. My best friend ____ to Manchester University.
3. I study engineering. My girlfriend ____ medicine.
4. I watch films on TV. My neighbour ____ sport.
5. I do my homework on Friday. My partner ____ her homework on Sunday.
6. I listen to the radio in the car. My relative ____ to it in bed.

Grammar tip



Check

There are some verbs which are almost never used in the Present Continuous. Most of them come in these some categories:

1. Verbs of mind, e.g. *think, know, understand, believe, see, agree.*
2. Verbs of feeling, e.g. *like, love, hate, prefer.*
3. Verbs of wanting and possession, e.g. *want, need, own, belong.*

For more on this, turn to 'Grammar Reference'.

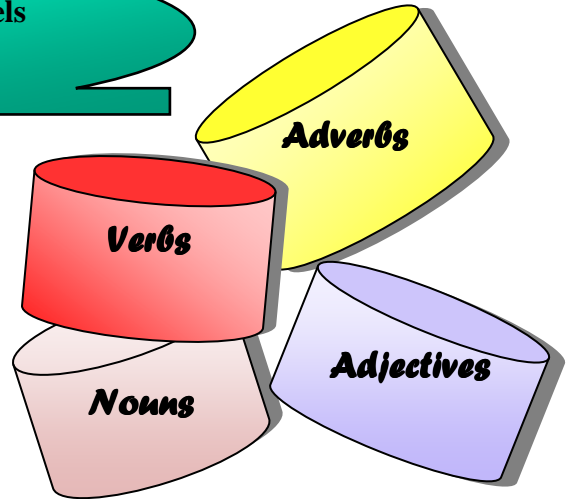
1. These days cars get more comfortable.
2. You are absolutely right! I am agreeing with you.
3. I don't know anything about I-PNNI.
4. Look. He works on a new project.
5. I'm writing an email to my program buddy.
6. How often are you receiving shipments?
7. At present we have used plastic packaging.
8. We receive raw materials from our partners.
9. I am using Nick's laptop while mine is being repaired.
10. We are collecting our new car at the weekend.
11. Antony's is doing a project on wind farms.
12. Does this mobile phone belong to you?

3. Five of the following sentences are wrong. In pairs identify which they are and discuss why they are wrong.



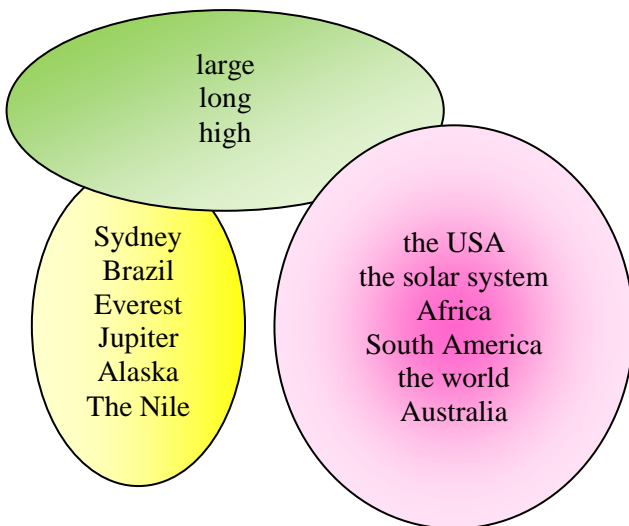
4. Divide the words into four vessels according to their part of speech.

Inventor • create • discover • devices • perform • come • inspire • desire • altruism • competitive • commercial • combination • support • often • develop • launch • marketplace • commercial • economic • reward • expect • entrepreneurship • awareness • demand • successful • novelty • sometimes • earlier • collaborations • require • concept • modify • transform • radical • breakthrough • extend • purpose • different • manner • usually • although • useful • fully • unrealistic • impractical • express.



5. Make up sentences from the words below.

comparative and superlative adjectives



adjective	comparative	superlative
cheap	cheaper	cheapest
small	smaller	smallest
big	bigger	biggest
funny	funnier	funniest
early	earlier	earliest
heavy	heavier	heaviest
careful	more careful	most careful
boring	more boring	most boring
expensive	more expensive	most expensive
interesting	more interesting	most interesting

For more on this, turn to 'Grammar Reference'.

Country • planet • city • state
• river • mountain

Example: Sydney is the largest city in Australia.

- Helen's car isn't very big. She wants a ____ one.
- My job isn't very interesting. I want to do something ____ .
- David doesn't work very hard. I work ____ .
- Your plan isn't very good. My plan is ____ .
- These flowers aren't very nice. The blue ones are ____ .
- My bag isn't very heavy. Your bag is ____ .
- I'm not very interested in art. I'm ____ in history.
- It isn't very warm today. It was ____ yesterday.
- Britain isn't very big. France is ____.
- London isn't very beautiful. Paris is ____.
- This knife isn't very sharp. Have you got a ____ one?
- People today aren't very polite. In the past they were ____.

6. Complete each space with the correct comparative forms in parentheses.

Lesson 2

THE NOBEL PRIZE

"The said interest shall be divided into five equal parts, which shall be apportioned as follows: /- - / one part to the person who shall have made the most important discovery or invention within the field of physics...".
(Excerpt from the will of Alfred Nobel)



- ✓ Who was Alfred Nobel?
- ✓ What Alfred Nobel wanted his dynamite to be used for?
- ✓ Who can be awarded the Nobel Prize?
- ✓ Would you like to be a winner of the Nobel Prize?
- ✓ How can a large amount of money affect our work, our home?

1. Warm-up. Visit the website address given below.

http://www.youtube.com/watch?v=jUv_K6EJL3Y&feature=related

In pairs practice the questions and answer them.

2. Can you guess the meaning of these international words?



Dynamite • grant • organization • recipient • laureate • prize • Physics • Physiology • Medicine • Literature • medal • diploma • engineer • creative • Nobel's instruction • fortune • Institute • finance • administration • inaugural • Swedish-Norwegian Club • potential • nomination.

3. a. What inventions do you associate these names with? Which inventors haven't won the prize or can't have won the prize?

Albert Einstein	Pierre Curie, Marie Curie
Wilhelm Conrad Röntgen	Ivan Petrovich Pavlov
William Shakespeare	Boris Pasternak
Andrei Dmitrievich Sakharov	Ilya Ilyich Mechnikov
Mikhail Aleksandrovich Sholokhov	Isaac Newton

b. Check your answers in

<http://www.google.ru/#sclient=psy&hl=ru&newwindow=1&source=hp&q=the+nobel+prize+wikipedia&aq=8&aqi=g10&aql=&oq=&pbx=1&psj=1&fp=9ff7f26ea45dbfb3&biw=700&bih=608>



4. In pairs or small groups scan this text and make questions for the answers below. Then discuss your answers.

The **Nobel Prizes** are **annual**¹ international **awards**² bestowed by Scandinavian committees in recognition of cultural and scientific advances. The **will**³ of the Swedish chemist Alfred Nobel, the inventor of dynamite, established the prizes in 1895. The prizes in Physics, Chemistry, Physiology or Medicine, Literature, and Peace were first awarded in 1901. The Peace Prize is awarded in Oslo, Norway, while the other prizes are awarded in Stockholm, Sweden. Each Nobel Prize is regarded as the most prestigious award in its field. In 1968, Sveriges Riksbank instituted an award that is often associated with the Nobel prizes, the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel. The first such prize was awarded in 1969. Although it is not an official Nobel Prize, its announcements and presentations are made along with the other prizes.

Alfred Nobel was born on 21 October 1833 in Stockholm, Sweden, into a family of engineers. He was a chemist, engineer, and inventor. In 1894 Nobel purchased the Bofors iron and steel mill, which he made into a major armaments manufacturer. Nobel also invented ballistite, a precursor to many smokeless military explosives, especially the British smokeless powder cordite. Nobel was even involved in a patent **infringement**⁴ lawsuit over **cordite**⁵. Nobel amassed a fortune during his lifetime. Most of his wealth was from his 355 inventions, of which dynamite is the most famous.

In 1888 Alfred was **astonished**⁶ to read his own obituary, titled 'The merchant of death is dead', in a French newspaper. As it was Alfred's brother Ludvig who had died, the **obituary**⁷ was eight years premature. The article **disconcerted**⁸ Nobel and made him apprehensive about how he would be remembered. This inspired him to change his will. On 10 December 1896 Alfred Nobel died in his villa in San Remo, Italy, from a cerebral **haemorrhage**⁹. He was 63 years old.

To widespread astonishment, Nobel's last will specified that his fortune be used to create a series of prizes for those who confer the "greatest benefit on mankind" in physics, chemistry, peace, physiology or medicine, and literature. Nobel wrote several wills during his lifetime. The last was written over a year before he died, signed at the Swedish-Norwegian Club in Paris on 27 November 1895.

First prizes. Wilhelm Conrad Röntgen received the first Physics Prize for his discovery of X-rays. Once the Nobel Foundation and its guidelines were in place, the Nobel Committees began collecting nominations for the inaugural prizes. **Subsequently**¹⁰ they sent a list of preliminary candidates to the prize-awarding institutions. Originally, the Norwegian Nobel Committee appointed prominent figures including Jorgen Lovland, Bjornstjerne Bjornson and Johannes Steen to give the Nobel Peace Prize credibility. The committee awarded the Peace Prize to two prominent figures in the growing peace movement around the end of the 19th century: Frédéric Passy was co-founder of the Inter-Parliamentary Union and Henry Dunant was founder of the International Committee of the Red Cross. The Nobel Committee's Physics Prize shortlist cited Wilhelm Conrad Röntgen's discovery of X-rays and Philipp Lenard's work on cathode rays. The Academy of Sciences selected Röntgen for the prize. In the last decades of the 19th century many chemists had made significant contributions. Thus, with the Chemistry Prize, the Academy "was chiefly faced with merely deciding the order in which these scientists should be awarded the prize". The Academy received 20 nominations, eleven of them for Jacobus van't Hoff. Van't Hoff was awarded the prize for his contributions in chemical thermodynamics.

Nominations. Nomination forms are sent by the Nobel Committee to about 3000 individuals, usually in September the year before the prizes are awarded. These individuals are often academics working in a relevant area. For the Peace Prize, **inquiries**¹¹ are sent to governments, members of international courts, professors and rectors, former Peace Prize laureates and current or former members of the Norwegian Nobel Committee. The deadline for the return of the nomination forms is 31 January of the year of the award. The Nobel Committee nominates about 300 potential laureates from these forms and additional names. The nominees are not publicly named, nor are they told that they are being considered for the prize. All nomination records for a prize are **sealed**¹² for 50 years from the awarding of the prize.

Selection. The Nobel Committee then prepares a report reflecting the advice of experts in the relevant fields. This, along with the list of preliminary candidates, is submitted to the prize-awarding institutions. The institutions meet to choose the laureate or laureates in each field by a majority vote. Their decision, which cannot be appealed, is announced immediately after the vote. A maximum of three laureates and two different works may be selected per award. Except for the Peace Prize, which can be awarded to institutions, the awards can only be given to individuals. If the Peace Prize is not awarded, the money is split among the scientific prizes. This has happened 19 times so far.

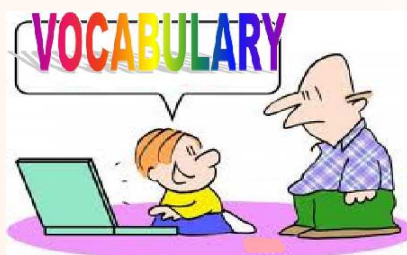
Nobel lectures. According to the statutes of the Nobel Foundation, each laureate is required to give a public lecture on a subject related to the topic of their prize. These lectures normally occur during Nobel Week (the week leading up to the award ceremony and banquet, which begins with the laureates arriving in Stockholm and normally ends with the Nobel banquet), but this is not mandatory. The laureate is only obliged to give the lecture within six months of receiving the prize. Some have happened even later. For example, US president Theodore Roosevelt won the Peace Prize in 1906 but gave his lecture in 1910, after his term in office. The lectures are organised by the same association who selected the laureates.

Medals. The Nobel Prize medals, minted by Myntverket in Sweden and the Mint of Norway since 1902, are registered trademarks of the Nobel Foundation. The medals for physics, chemistry, physiology or medicine, and literature have identical obverses, showing the image of Alfred Nobel and the years of his birth and death. Nobel's portrait also appears on the obverse of the Peace Prize medal and the medal for the Economics Prize, but with a slightly different design. For instance, the laureate's name is engraved on the rim of the Economics medal. The image on the reverse of a medal varies according to the institution awarding the prize. The reverse sides of the medals for chemistry and physics share the same design. Laureates receive a heavily decorated diploma together with a gold medal and the prize money.

Diplomas. Nobel laureates receive a diploma directly from the hands of the King of Sweden or the Chairman of the Norwegian Nobel Committee. Each diploma is uniquely designed by the prize-awarding institutions for the laureates that receive them. The diploma contains a picture and text which states the name of the laureate and normally a citation of why they received the prize. None of the Nobel Peace Prize laureates has ever had a citation on their diplomas.

Award money. The laureates are given a sum of money when they receive their prizes, in the form of a document confirming the amount awarded. The amount of prize money depends upon how much money the Nobel Foundation can award each year. The purse has increased since the 1980s, when the prize money was 880 000 SEK (c 2.6 million SEK or US\$350 000 today). In 2009 the monetary award was 10 million SEK (US\$1.4 million). If there are two laureates in a particular category, the award grant is divided equally between the recipients. If there are three, the awarding committee has the option of dividing the grant equally, or awarding one-half to one recipient and one-quarter to each of the others. It is not uncommon for recipients to donate prize money to benefit scientific, cultural, or humanitarian causes.

1. The Nobel Prizes. 2. The Sveriges Riksbank Prize. 3. The inventor of dynamite. 4. He was a chemist, engineer, and inventor. 5. In 1896. 6. On 27 November 1895. 7. X-rays and cathode rays. 8. The year before the prizes are awarded. 9. For 50 years from the awarding of the prize. 10. A maximum of three laureates. 11. A public lecture on a subject related to the topic of their prize. 12. Laureates receive a heavily decorated diploma together with a gold medal and the prize money. 13. US\$1.4 million. 14. It is not uncommon for recipients.



1. **Annual** (adj) – ежегодный, годичный, годовой.

An annual publication is a book or a magazine published yearly. – Ежегодная публикация – это книга или журнал, которые публикуются ежегодно.

2. **Award** (n) – присуждённая награда, премия или наказание.

For the third time since the Nobel Prizes were instituted the awards for both Physics and Chemistry have been given to British men of science. – В третий раз с тех пор, как существуют Нобелевские премии в области физики и химии, обе награды были присуждены британским учёным.

3. **Will** (n) – собственноручно составленное завещание (весь текст завещания написан самим завещателем, им же поставлены дата и подпись); **last will, last will and testament** – последняя воля, завещание.

Physics was the prize area which Alfred Nobel mentioned first in his will. – Физика была в числе первых завещаний Альфреда Нобеля.

4. **Infringement** (n) – нарушение (закона, клятвы), покушение, посягательство (на права, свободу).

This edict was an infringement on their autonomy. – Этот эдикт был посягательством на их право на самоуправление.

5. **Cordite** (n) – кордит (бездымный порох).

Cordite is a family of smokeless propellants developed in the United Kingdom – Кордит – название одного из видов нитроглицеринового бездымного пороха, разработанного в Великобритании.

6. **Astonish** (v) – изумлять, поражать, удивлять; **to be astonished at smb.'s conduct / manners** – удивляться ч.-л. поведению, манерам; Syn.: *surprise, amaze*.

It astonished us that they were able to survive. – Мы были поражены, что они сумели выжить.

7. **Obituary** (n) – некролог, газетное объявление о ч.-л. смерти.

He published his friend's an obituary. – Он опубликовал некролог о смерти своего друга.

8. **Disconcert** (v) – приводить в замешательство, сбивать с толку; нарушать спокойствие; смущать; Syn: *confuse, ruffle, put out*.

It disconcerted us that they had refused our offer. – Их отказ привёл нас в замешательство.

9. **Haemorrhage** (n) – кровоизлияние в мозг; Syn.: *extravasation, hemorrhage*.

An old man had a massive brain haemorrhage. – У пожилого мужчины произошло обширное внутреннее кровоизлияние в мозг.

10. **Subsequently** (adv) – впоследствии, позднее, позже, после, потом; Syn.: *later, afterward*.

Subsequently in 1901 the very first Nobel Prize in Physics was awarded to Wilhelm Röntgen for his discovery of X-rays. – Позднее, в 1901 году, самую первую Нобелевскую премию в области физики получил Вильгельм Рентген.

11. **Inquiry** (n) – вопрос, запрос, расспрашивание, наведение справок; Syn.: *question*.

You should make inquiries about a matter. – Вам следует навести справки о деле.

12. **Seal** (v) – скреплять печатью, запечатывать, опечатывать.

This agreement was sealed last month. – Это соглашение было скреплено печатью в прошлом месяце.

1. Find in the text English equivalents for the following:

Нобелевские премии • международная премия, присуждаемая за выдающиеся научные исследования • вклад в культуру или развитие общества • завещание Альфреда Нобеля • литература, физика, химия, физиология и медицина • содействие установлению мира во всём мире • номинация • лекция • банкет.

2. Choose the phrases on the right which complete the phrases on the left.

1. The Nobel Prizes are annual international awards bestowed by Scandinavian committees	a) the most prestigious award in its field.
2. In 1968 Sveriges Riksbank instituted an award that is often associated with the Nobel Prizes,	b) the inventor of dynamite, established the prizes in 1895.
3. The prizes in Physics, Chemistry, Physiology or Medicine, Literature, and Peace	c) in recognition of cultural and scientific advances.
4. The Peace Prize is awarded in Oslo, Norway,	d) the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel.
5. Each Nobel Prize is regarded as	e) while the other prizes are awarded in Stockholm, Sweden.
6. The will of the Swedish chemist Alfred Nobel,	f) were first awarded in 1901.

1. Test your grammar. Look at the sentences.



You

can
must
should
have to

ask.

2. Make the sentences negative. Make them into questions. Make them into the third person singular (He/she...). Which verb is different?

Grammar tip



Check

You use *have to* or *must* to talk about an obligation, although, when talking about responsibilities, *have to* is more common, e.g.

You have to lock this door every evening at 20.00.

The negative form *don't have to* is used when you don't have an obligation, e.g.

You don't have to arrive before 9.00.

But you use the negative form *mustn't* to talk about an obligation not to do something, e.g.

You mustn't speak during working hours.

For more on these grammar points, turn to 'Grammar Reference'.

**3. Read and translate the information below in writing.
Try to exchange some verbs into modal verbs where it possible.**

On November 27, 1895, in Paris, Alfred Bernhard Nobel signed his will. After his death in December 1896, many people tensely awaited the publication of the contents of the will, since it was widely known that Nobel had left one of the world's largest private fortunes. To the great disappointment of some of his relatives and friends, he declared the following last will:

The whole of my remaining realizable estate shall (must) be dealt with in the following way: the capital, invested in safe securities by my executors, shall constitute a fund, the interest on which shall be annually distributed in the form of prizes to those who, during the preceding year, shall have conferred the greatest benefit on mankind. The said interest shall be divided into five equal parts, which shall be apportioned as follows: one part to the person who shall have made the most important discovery or invention within the field of physics; one part to the person who shall have made the most important chemical discovery or improvement; one part to the person who shall have made the most important discovery within the domain of physiology or medicine; one part to the person who shall have produced in the field of literature the most outstanding work in an ideal direction; and one part to the person who shall have done the most or the best work for fraternity between nations, for the abolition or reduction of standing armies and for the holding and promotion of peace congresses. The prizes for physics and chemistry shall be awarded by the Swedish Academy of Sciences; that for physiological or medical work by the Caroline Institute in Stockholm; that for literature by the Academy in Stockholm, and that for champions of peace by a committee of five persons to be elected by the Norwegian Storting. It is my express wish that in awarding the prizes no consideration whatever shall be given to the nationality of the candidates, but that the most worthy shall receive the prize, whether he be a Scandinavian or not.

Some of the relatives sought to have the will declared invalid, and to begin with they had the support of King Oscar II, who held that family claims could not be set aside on the grounds of the aging Alfred Nobel's fanciful ideas. There were moreover many among Sweden's conservatives who hoped to see the realisation of the will prevented because it was "unpatriotic" – the prizes ought to have been reserved for Swedes. But following long and difficult negotiations, in which the Swedish Government was also involved, the executors Ragnar Sohlman and Rudolf Lilljequist finally succeeded in untangling the legal knots. On June 29, 1900, King Oscar II approved the statutes of the newly established Nobel Foundation. That meant that Alfred Nobel's grand vision could finally come to fruition. On December 10, 1901, the first Nobel Prizes were awarded in Stockholm and Oslo.

**✍️ 4. What would you do with your money if you were Alfred Bernhard Nobel?
Make up your will, using the given information.**

The Nobel Prize is awarded for outstanding contributions in Physics, Chemistry, Literature, Peace, and Physiology or Medicine. The Nobel Prize in Physics has been awarded 104 times to 189 Nobel Laureates between 1901 and 2010. John Bardeen is the only Nobel Laureate who has been awarded the Nobel Prize in Physics twice, in 1956 and 1972. This means that a total of 188 individuals have received the Nobel Prize in Physics.

**5. Make up a list of people who have won the Nobel Prize for Physics. Check your answers in
<http://www.google.ru/#sclient=psy&hl=ru&newwindow=1&source=hp&q=the+nobel+prize+wikipedia&aq=8&aqi=g10&aql=&oq=&pbx=1&psj=1&fp=9ff7f26ea45dbfb3&biw=700&bih=608>**



**6. Read the text 'Multiple laureates' and translate it.
Why do you think so few women have won the Nobel Prize?**

Multiple laureates. Four people have received two Nobel Prizes. Maria Skłodowska-Curie received the Physics Prize in 1903 for the discovery of radioactivity and the Chemistry Prize in 1911 for the isolation of pure radium. Linus Pauling won the 1954 Chemistry Prize for his research into the chemical bond and its application to the structure of complex substances. Pauling also won the Peace Prize in 1962 for his anti-nuclear activism, making him the only laureate of two unshared prizes. John Bardeen received the Physics Prize twice: in 1956 for the invention of the transistor and in 1972 for the theory of superconductivity. Frederick Sanger received the prize twice in Chemistry: in 1958 for determining the structure of the insulin molecule and in 1980 for inventing a method of determining base sequences in DNA. Two organisations have received the Peace Prize multiple times. The International Committee of the Red Cross received it three times: in 1917 and 1944 for its work during the world wars; and in 1963 during the year of its centenary. The United Nations High Commissioner for Refugees has won the Peace Prize twice for assisting refugees: in 1954 and 1981.

7. Read and translate the biography of a famous scientist.

Il'ja Mikhailovich Frank. Prize motivation: "for the discovery and the interpretation of the Cherenkov effect".

Il'ja Mikhailovich Frank was born in Leningrad on October 23, 1908, the younger son of Mikhail Lyudvigovic Frank, a Professor of Mathematics, and his wife, Dr. Yelizaveta Mikhailovna Gratsianova. He attended the Moscow State University as a pupil of Vavilov, and graduated in 1930. In 1931 he became a senior scientific officer in Professor A.N. Terenin's laboratory in the State Optical Institute in Leningrad, and in 1934 he joined the P.N. Lebedev Institute of Physics of the U.S.S.R. Academy of Sciences as a scientific officer. He was promoted firstly to senior scientific officer and, in 1941, to his present position as officer in charge of the Atomic Nucleus Laboratory. Since 1957 he has simultaneously occupied the post of Director of the Neutron Laboratory of the Joint Institute of Nuclear Investigations. The first investigations of I.M. Frank were in the field of photoluminescence and in photochemistry. From 1934 he began his work on nuclear physics in the Laboratory of Professor D.V. Skobelzyn. The experimental investigations of pair creation by g-rays and other problems connected with the measurements and application of g-rays were carried out by him. His further works were devoted to neutron physics, the investigation of reactions on light nuclei and nuclear fission by mesons. The subject of his theoretical investigations is the Vavilov-Cerenkov effect and related problems. Frank was awarded the degree of Doctor of Physico-Mathematical Sciences in 1935; in 1944 he was confirmed in the academic rank of Professor, and was elected a Corresponding Member of the U.S.S.R. Academy of Sciences in 1946. He married Ella Abramovna Beilikhis, a noted historian, in 1937. Their only child, Alexander, is also a physicist employed at the Dubna neutron research center.



Nobel Prize-winning physicist Frank Wilczek (the Nobel Prize in Physics 2004) explains the Large Hadron Collider, how it works, and what scientists hope to discover with it. **Visit the website** <http://www.youtube.com/watch?v=mPEGwrDhvA0>

8. In small groups imagine you are interviewing Mr.W.Frank. Make up a list of questions to ask him about his family, study and work to write his biography as an example above.

1. What field of science do you work in?
2. Did you work alone?
3. How long have you been ...?



Lesson 3


PATENT

1. Warm-up. Visit the website

<http://www.youtube.com/watch?v=ZutTveKoE0E>.


In pairs or small groups discuss the questions:



- 
1. How do you define the term 'Patent'?
 2. Would you like to be a patentee?
 3. If you were an inventor where would you apply to be granted?
 4. Can you list the items to become a patentee?

2. a. Can you guess the meaning of these international words?

Patent • grant • limit • period • public • procedure • exclusive • national • international • typically • industrial • subject • business • methods • mental • act • prevent • organization • aspect • technology • protection • minimum.

 b. Make up sentences of your own with the words above.

3. Read and translate the following text into Russian.

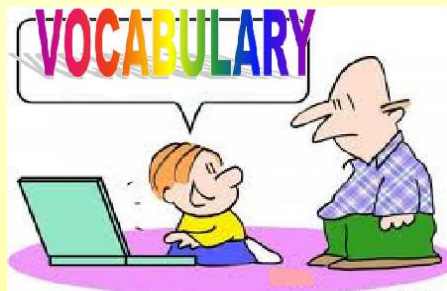
Get ready to retell the text.



A **patent**¹ is exclusive rights granted by a state to an inventor or their **assignee**² for a limited period of time in exchange for a public **disclosure**³ of an invention.

The **procedure**⁴ for **granting**⁵ patents, the requirements placed on the patentee, and the extent of the exclusive rights vary widely between countries according to national laws and international agreements. Typically, however, a patent application must include one or more **claims**⁶ defining the invention which must be new, non-obvious, and useful or industrially **applicable**⁷. In many countries certain subject areas are excluded from patents, such as business methods and **mental**⁸ acts. The exclusive right granted to a patentee in most countries is the right to prevent others from making, using, selling, or distributing the patented invention without permission. It is just a right to prevent others' use. A patent does not give the proprietor of the patent the right to use the patented invention, should it fall within the **scope**⁹ of an earlier patent.

Under the World Trade Organization's (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights, patents should be available in WTO member states for any inventions, in all fields of technology, and the term of protection available should be the minimum twenty years. Different types of patents may have varying patent terms (i.e. **durations**¹⁰).



1. Patent (/pætənt/ or /ˈpeɪtənt/) (n) – патент.

‘The Federal Service for Intellectual Property, Patents and Trademarks’ – ‘Rospatent’ – Федеральное государственное учреждение по интеллектуальной собственности, патентам и товарным знакам – Роспатент.

2. Assignee (n) – уполномоченный, правопреемник, цессионарий.

Last year this company became an assignee of patent. – В прошлом году эта компания стала правопреемником патентовладельца.

3. Disclosure (n) – открытие, обнаружение, сообщение.

MPs called for public disclosure of the committee's findings. – Члены парламента потребовали оглашения результатов работы комиссии.

4. Procedure (n) – процедура, порядок осуществления действия.

You can't just do it however you like – you must follow procedure. – Ты не можешь просто делать это, как тебе захочется, ты должен следовать установленной процедуре.

5. To grant (v) – оказывать материальную поддержку; *target grant* – целевая программа помощи.

We received a grant to attend the conference. – Мы получили стипендию для участия в конференции.

6. Claim(s) (n) – патентная формула; **claim** (v) – возбуждать иск о возмещении убытков.

You should claim against the car insurance. – Ты должен подать иск против компании, страхующей автомобили.

7. Applicable (adj) – применимый.

This is the rule applicable to both verbs and nouns. – Это правило, применяющееся как к глаголам, так и к существительным.

8. Mental (adj.) – интеллектуальный, умственный;

Syn.: *intellectual* – внутренний (происходящий в сознании), inner.

His physical and mental health had got worse. – Его физическое и душевное здоровье ухудшилось.

9. Scope (n) – границы, рамки, пределы.

Responsibility for office services is not within the scope of the department. – Ответственность за работу офисных служб не входит в компетенцию данного отдела.

10. Durations (n) – продолжительность, срок действия (договора); Syn.: *continuance, endurance*.

Macaulay duration is measured in years. – Срок погашения облигаций измеряется в годах.

? Answer the questions.

1. Who grants exclusive rights to an inventor?
2. How do you define the term ‘assignee’?
3. Does the patent have unlimited period of time?
4. Is there the procedure for granting patents?
5. Who is the patentee?
6. What kind of features should the invention have?
7. What is the exclusive right granted to a patentee in most countries?



Language practice

1. Find in the text English equivalent for the following:

Исключительное право • грант • процедура получения права собственности на изобретение • требования, возложенные на патентодержателя • международные соглашения • цессионарий • ограниченный период времени • промышленно применимая форма заявления на патент • утверждения, определяющие изобретение • предотвращать использование патента другими лицами • собственник патента • Всемирная торговая организация.

2. Spell and transcribe the fore forms of the following verbs.

To have • to grant • to change • to invent • to vary • to include • to be • to exclude • to prevent • to make • to use • to sell • to distribute • to do • to give • to fall • to have.

Oh, no, it isn't so. • I don't think it is right. • No, it's just wrong. • Not at all.

3. Say if the sentences below are true or false. If they are not true, correct them. Don't forget to start your answer with one of these phrases:

	True	False
1. A patent is exclusive rights granted by a state.		
2. The procedure for granting patents, the requirements placed on the patentee.		
3. The procedure for granting patents, the requirements placed on the patentee, and the extent of the exclusive rights are identical for all countries.		
4. The invention mustn't be new, non-obvious, and useful or industrially applicable.		
5. In many countries, certain subject areas are included in patents, business methods and mental acts.		
6. The exclusive right granted to a patentee is the right to prevent others from making, using, selling, or distributing the patented invention without permission.		
7. Different types of patents may have varying patent terms.		

Matching

1. Match the correct word with each definition.

- A. Mental
B. To grant
C. Assignee
D. Patent

- 1) a government grant to an inventor assuring him the sole right to make, use, and sell his invention for a limited period;
2) a person to whom some right, interest, or property is transferred;
3) to consent to perform or fulfill;
4) of or involving the mind or an intellectual process.

2. Make up four sentences of your own with the phrases above.

3. Choose the phrases on the right which complete the phrases on the left.

1. A patent is exclusive rights granted by a state to an inventor	a) vary widely between countries according to national laws and international agreements.
2. In many countries, certain subject areas are excluded from patents,	b) which must be new, non-obvious, and useful or industrially applicable.
3. It is just a right	c) varying patent terms.
4. Typically, however, a patent application must include one or more claims defining the invention	d) or their assignee for a limited period of time in exchange for a public disclosure of an invention.
5. The procedure for granting patents, the requirements placed on the patentee, and the extent of the exclusive rights	e) such as business methods and mental acts.
6. Different types of patents may have	f) to prevent others' use.



Have you ever ...?

1. a. Have you ever been to St. Petersburg?
b. Have you been to St. Petersburg last week?
2. a. Have you seen Ann yesterday?
b. Did you see Ann yesterday?
3. a. I am here for half an hour.
b. I have been here for half an hour.

1. Look at these pairs of sentences.
In each pair put a line through the sentence which is not grammatically correct.

Grammar tip



Check

Notice that when you are talking about a period of time from the past up to the present, you use the Present Perfect.

Have you done your project yet?

When you are talking about a finished action at a definite time in the past, you use the Past Simple.

When did you do your project?

For more on this, turn to 'Grammar Reference'.

2. Read & translate the text 'History of patent'. Make a presentation of any invention of that time with your commentaries in Present Perfect.

History of patent

In 500 BC, in the Greek city of Sybaris (located in what is now southern Italy), "encouragement was held out to all who should discover any new refinement in luxury, the profits arising from which were secured to the inventor by patent for the space of a year".

The Florentine architect Filippo Brunelleschi received a three-year patent for a barge with hoisting gear, that carried marble along the Arno River in 1421. In 1449 King Henry VI granted the first patent with a license of 20 years to John of Utynam for introducing the making of colored glass to England.

Patents in the modern sense originated in 1474, when the Republic of Venice enacted a decree that new and inventive devices, once put into practice, had to be communicated to the Republic to obtain the right to prevent others from using them.



Some top wonders of the world

3. A film studio is going to make a film about the latest inventions. You are invited to the studio as an expert to decide what invention should be included in the film. You are supposed to speak about one invention only.

Year 2010 has become our celebrations to celebrate the advancement in the fields of beauty, entertainment, cooking and many other electronics. Life will be great and easy after that.

http://www.youtube.com/watch?v=_pLjGqYauek

Insect Shield Travel Chair

Travel Chair has partnered with Insect Shield, the leader in invisible and odorless protection against potentially dangerous insects that can cause West Nile Virus, Lyme Disease and Malaria.

The new Insect Shield Travel Chair helps in protecting from annoying and pesky little bugs, while also reducing the need for application of bug repellent. Appropriate for use by children of any age and women who are pregnant or nursing, this chair is perfect for sitting around the campfire or for a day out fishing.

<http://asia.cnet.com/videos/cnet-challenge-will-a-scooter-luggage-hybrid-save-you-time-at-the-airport-45370488.htm>

Have you ever heard about luggage bag as a mini scooter?

Dragging your luggage around with you is a mundane and painful task, especially on the way back from an action-packed, or relaxing holiday. Well now you have stopped pulling around your luggage and wheeling it back home, thanks to this new invention. The Samsonite luggage bag has also been invented as a mini scooter, allowing you to scoot around with your luggage safely tucked away.

Just think about when everyone else is carrying around their luggage, whilst you just jump on your scooter and fly by them, shortening your trip back home, and also making it a little more fun! It's a simple idea, but an extremely effective product, which we think will prove immensely popular, so look out in airports near you for scooters flying past you from all directions.

The scooter also folds up, allowing you to use it as a normal luggage carrier, but why minimise the fun?! The bag itself is rather small, so you may very well be able to use this for your on-board luggage bag.



http://www.useddishwasherparts.com/videos-lg-steam-dishwasher-%5BSC_IPaoHBSI%5D.cfm

Steam Dishwasher

Every one of you might be running different cycles for your delicate glass dishes to avoid chipping and for those crusty pots and pans which require a powerful cleaning. Also you would be running a full wash cycle for your stored and less used dusty dishes. This new LG dishwasher is the only one in its type that allows you to select different water sprays settings for top and the bottom racks. Their short steam-powered freshening cycle allows you to have a quick and gentle cleansing of dust from your china dish wares.

1. Which of these has had the biggest influence on our daily lives?
2. How has it changed our lives?
3. Which of these has had the biggest effect on business?
4. What other recent inventions have changed your life?
5. What was life like before these products?

4. Try to state the functions of the "-ing" form in the texts above.

Grammar tip



Check

The -ing form can be used like a noun, like an adjective or like a verb.

Smoking is forbidden. • I have a long working day. • I don't like dancing.

Notice that when 'to' is used as a preposition, it is followed by the -ing form.

I don't object to working this Sunday. • I'm looking forward to seeing him again. • I'm used to working long hours.

There are many verb + -ing combinations. Here are some common ones:

I admit telling her. • I appreciate having the raise. • I avoid speaking to him.

For more on this, turn to 'Grammar Reference'.

5. Read the following information about The Federal Service for Intellectual Property, Patents and Trademarks and translate into Russian in writing.

The Federal Service for Intellectual Property, Patents and Trademarks is a Federal executive authority performing functions of control and supervision in the area of the legal protection and exploitation of intellectual property rights, including patents and trademarks.

The Federal Service for Intellectual Property, Patents and Trademarks is under the Ministry of Education and Science of the Russian Federation.

The main functions of the Federal Service for Intellectual Property, Patents and Trademarks are as follows:

- 1) the provision of the procedure for affording in the Russian Federation the legal protection to intellectual property rights and also the procedure for their exploitation, said procedures are established by the Constitution of the Russian Federation, the Federal constitutional laws, the Federal laws and other statutory legal acts;
- 2) the performance of control and supervision of examination of applications for intellectual property rights and the issue of protective titles in the manner established by legislation of the Russian Federation;
- 3) the registration of intellectual property rights and also license agreements and assignment agreements in the sphere of intellectual property and publication of data on the registered intellectual property rights;
- 4) the performance of control and supervision of the observance of the procedure for paying patent fees and registration charges;
- 5) the performance of certification and registration of patent attorneys of the Russian Federation and the performance of control of the fulfillment by them of requirements provided for by legislation of the Russian Federation.

6. In small groups imagine you are interviewing a member of The Federal Service for Intellectual Property, Patents and Trademarks. Make a list of questions to ask him (her).

1. What does the Federal Service for Intellectual Property, Patents and Trademarks respond for?
2. _____

**7. Act out the conversation with a partner.
Rewrite all your questions using indirect language.**

Grammar tip



Check

When we ask for information, we often say 'Do you know...?' / 'Could you tell me...?' etc. If you begin a question like this, the word order is different from a simple question.

'Where has Ann gone?' → Do you know where Ann has gone?

For more on this, turn to 'Grammar Reference'.

1. *Could you tell us* what the Federal Service for Intellectual Property, Patents and Trademarks responds for?
2. *Would you mind telling me* how _____
3. _____

8. Transform the dialogue into indirect speech.

Grammar tip



Check

If the reporting verb is a Past Tense, the verb in the order clause moves one tense back.

'I'm leaving'. → *He said he was leaving.*

If you are talking about the future, use *would* in the other clause.

'I will see you tomorrow'. → *He said he would see me tomorrow.*

If the reporting verb is in the present, there's no change.

'I can't do it today'. → *He says he can't do it today.*

The same changes in word order happen in reported questions.

For more on this, turn to 'Grammar Reference'.

9. In pairs or small groups discuss the following:

How many people have you talked today by phone? Write their names down in the order in which you talked with them. Try to remember one thing you said to them and one thing they said to you. Now tell your partner.

– *Nick said that he was going to build a fleet of six spaceliners.*



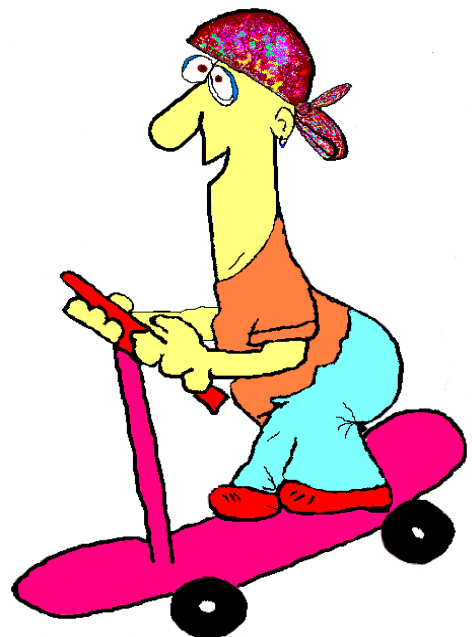
10. Visit the website address given below. Watch the clip. Do you agree or disagree with all of the choices? Why? What would you change in a list of top inventions?

<http://www.youtube.com/watch?v=Fh9JMrCzcf4&NR=1>

11. Arrange a conference

Ten top wonders of the world in 2011.

Use the vocabulary of the unit.



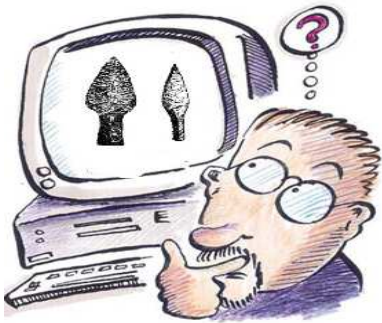
Part II

THREE ITEMS OF TECHNOLOGICAL INNOVATION

Lesson 4



computer



1. Warm-up. In pairs or small groups discuss the questions:

- Have computers revolutionized the way we live and work?
- Can you imagine our life without computer?
- In fifty years' time, how do you think, computer systems will be different?
- Are you a "computer nerd" or a "technophobe"?
- How often do you use a computer?

**2. Can you guess the meaning of these international words?
Compare your answers with a partner. Make a list of other similar words that you know.**

Computer • machine • manipulate • instruction • physical • concept • battery • icon • control
industrial • robot • camera • program • extremely • calculator • minimum • principle • assistant •
corporation • technology • realization • practical • algebra • vacuum • model • problem • architecture
• standard • definition • human • context • cable • printers • material • protocol • hybrid • modify •
method • monitor • video • component • stereo • instruction • command • punctuation • specialize •
combination • graphics • adapter • disk • format • megabyte.

3. Visit the website address given below. Use Interactive Transcript.

**Historian George Dyson tells stories from the birth of the modern computer – from its
17th century origins to the hilarious notebooks of some early computer engineers.**

http://www.ted.com/talks/george_dyson_at_the_birth_of_the_computer.html

Make up a brief description of a story.

4. Major revolutions in the industrial or business world also produce changes in language. Here are some examples of the way the digital revolution is changing the English and Russian languages.

Fill in the gaps using the definitions underneath:

Word	Original meaning	New meaning	Russian meaning
1. To surf	to ride on a board on the waves of the sea	to move around the Internet	
2. A bug	a small insect	an error in a computer program	
3. To boot	to kick	to start a computer	
4. To crack	to make something split	to break a computer code	
5. A flame	a red or yellow burning gas	an insulting or unfriendly e-mail	
6. A geek	an entertainer who bites the heads off live chickens	a rich successful person in the computer industry	

- a) маленькая незаконная компьютерная программа, которая предназначена для того, чтобы каким-то способом обмануть другую программу, якобы зарегистрировав её;
- b) грубое или оскорбительное сообщение на форуме Интернета;
- c) создать серьёзную программную или аппаратную ошибку;
- d) компьютерный фанат;
- e) перемещаться по сети;
- f) делать начальную загрузку.

5. Add to the list other technologies and services which you think are in the middle of a revolution.

6. Your friend wants to buy a scanner. Could you help him? Make up a conversation using the information.

What do you get if you cross a **scanner** with a book? Well one of these I guess. This idea seems a little bizarre, but it is definitely unique and actually makes a rather bland looking scanner look slightly more impressive. A scanner has been modified to appear like a book, and charted his progress on his own website. Being tired of the boring aesthetics of a flatbed scanner, DataMancer took it upon himself to solve this issue, and add a degree of style to it. By hollowing out a book, the scanner was placed inside, and I'm assuming that any type of book can be used to suit your own personality.

It's always the strangest ideas that seem to achieve the highest attention, and I wouldn't be surprised to see scanner modifications popping up all over the internet fairly soon. How about a scanner, disguised as a coffee table, or a scanner disguised as a lamp shade? Ok, now we're being silly...

You can view the scanner / book and the progress made throughout his modification at [his website](#).

The thing I like is ...
 In my opinion ...
 Sorry to interrupt, but ...
 To return to the subject ...
 Yes, but as I was saying ...



**7. Read and translate the following text into Russian in writing.
Retell the text**

"Who invented the computer?" is not a question with a simple answer. The real answer is that many inventors contributed to the history of computers and that a computer is a complex piece of machinery or programmable machine that receives input, stores and manipulates data, and provides output in a useful format, made up of many parts, each of which can be considered a separate invention. A computer is a machine which manipulates data according to a list of instructions. The earliest known tool for use in computation was the abacus, and it was thought to have been invented in Babylon circa 2400 BCE. Computers take numerous physical forms. Early electronic computers were the size of a large room, consuming as much **power**¹ as several hundred modern personal computers. Today, simple computers may be made small enough to fit into a wrist watch and be powered from a watch battery. Personal computers in various forms are icons of the information age and are what most people think of as "a computer". However, the most common form of computer in use today is by far the **embedded**² computer. Embedded computers are small, simple devices that are often used to control other devices – for example they may be found in machines ranging from fighter aircraft to industrial robots, **digital**³ cameras, and even children's toys. The ability to store and execute lists of instructions called programs makes computers extremely **versatile**⁴ and distinguishes them from calculators. Any computer with a certain minimum capability is, in principle, capable of performing the same tasks that any other computer can perform. Therefore, computers with capability and complexity ranging from that of a personal digital assistant to a supercomputer are all able to perform the same computational tasks given enough time and storage capacity.

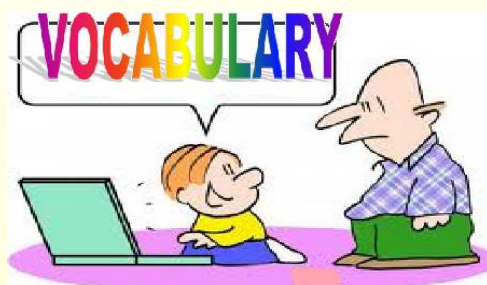
A succession of steadily more powerful and flexible computing devices were constructed in the 1930s and 1940s, gradually adding the key features that are seen in modern computers. The use of digital electronics (largely invented by Claude Shannon in 1937) and more flexible programmability were vitally important steps.

Nearly all modern computers **implement**⁵ some form of the stored program architecture, making it the single trait by which the word "computer" is now defined. By this standard, many earlier devices would no longer be called computers by today's definition, but are usually referred to as such in their historical context. EDSAC* was one of the first computers to implement the stored program architecture. The term **hardware**⁶ covers all of those parts of a computer that are tangible objects. Circuits, displays, power supplies, cables, **keyboards**⁷, printers and **mice**⁸ are all hardware.

Software⁹ refers to parts of the computer which do not have a material form, such as programs, data, protocols, etc. When software is stored in hardware that cannot easily be modified (such as BIOS ROM in an IBM PC compatible), it is sometimes called "**firmware**"¹⁰ to indicate that it falls into an uncertain area somewhere between hardware and software. **Programming languages** provide various ways of specifying programs for computers to run. Unlike natural languages, programming languages are designed to permit no ambiguity and to be concise. They are purely written languages and are often difficult to read aloud. They are generally either translated into machine language by a compiler or an assembler before being run, or translated directly at run time by an interpreter. Sometimes programs are executed by a hybrid method of the two techniques. There are thousands of different programming languages – some intended to be general purpose, others useful only for highly specialized applications.

As the use of computers has spread throughout society, there are an increasing number of careers involving computers. Following the theme of hardware, software and firmware, the brains of people who work in the industry are sometimes known irreverently as **wetware**¹¹ or "meatware".

*EDSAC – Electronic Delay Storage Automatic Computer.



1. **Power** (n) – энергия, мощность; Syn.: *strength, might, vigour, energy, force*.

What is the power of this engine? – Какая мощность этого двигателя?

2. **Embedded** (adj) – встроенное, встраиваемое устройство, используемое в составе другого оборудования (т.е. интегрированное в него); Syn.: *integral*.

All modern devices have embedded computers. – Все современные приборы имеют встроенные компьютеры.

3. **Digital** (adj) – цифровой, числовой; Syn.: *numerical*.

This company produces digital semiconductors. – Эта компания является производителем цифровых микропроцессоров.

4. **Versatile** (adj) – многоцелевой, многосторонний, многогранный;

Syn.: *polygonal, many-sided*.

Computer letter keys are versatile. – Буквенные клавиши на компьютере многофункциональны.

5. **Implement** (v) – выполнять, осуществлять; обеспечивать выполнение, приводить в исполнение; Syn.: *perform, fulfill, complete, carry out, accomplish, execute*.

If we'd all work together, I think we could implement our goal. – Я думаю, если бы мы работали вместе, мы бы смогли выполнить нашу задачу.

6. **Hardware** (n) – аппаратура, аппаратное обеспечение.

My friend is a specialist in computer hardware. – Мой друг – специалист аппаратного обеспечения.

7. **Keyboard** (n) – клавиатура, доска для ключей.

The keyboard was about an inch thick because it was part of the same unit as the computer. – Клавиатура имела толщину всего лишь около дюйма, поскольку была частью системного блока компьютера.

8. **Mice** (n) – the plural of **mouse**.

Usually it takes some time to learn to use a mouse. – Для того чтобы научиться работать мышью, обычно требуется время.

9. **Software** (n) – программное обеспечение (ПО), компьютерные программы, "софт".

You can buy a computer and the necessary software as well. – Вместе с компьютером вы можете приобрести программное обеспечение.

10. **Firmware** (n) – встроенное ПО; Syn.: *romware*.

You need to update your firmware. – Тебе нужно обновить микропрограммы.

11. **Wetware** (n) – "человеческая составляющая", рассматриваемая как часть большой компьютерной системы hardware, software; Syn.: *liveware*.

It's a wetware problem. – Здесь надо пораскинуть мозгами.

? Answer the questions.

1. Who invented the computer?
2. What is a computer?
3. Have you ever used an abacus?
4. What was the size of early electronic computer?
5. What is the size of the smallest modern embedded computer?
6. What is a program called?
7. How can you describe the defining feature of modern computer?
8. Are computer instructions simple?
9. What are they?
10. Where these instructions are read?
11. What is the flow of control?
12. Do you know the differences between hardware and software?
13. What is a programming language?
14. What is a hybrid method of language?
15. Are the computers increasing numbers of careers?
16. What are they?

8. Check your answers with the help of the text.

Language practice

1. Read the sentences and circle each True or False according to the text above. Compare and discuss your answers in pairs.

1. "Who invented the computer?" is a question with a simple answer.	True	False
2. A computer is a counting device which manipulates data according to a list of instructions.	True	False
3. Embedded computers are big, complicated devices that are often used to control other devices.	True	False
4. The ability to store and execute lists of instructions called programs makes computers extremely versatile.	True	False
5. The use of digital electronics and more flexible programmability were vitally important steps.	True	False

2. Find in the text English equivalents for the following:

Вносить вклад • область действий • манипулировать • доля пространства • наручные часы • отображения наработки информации • встроенный компьютер • простое устройство • истребитель • выполнять перечень инструкций • многоцелевой • вычислительные задачи • единственная особенность • память компьютера • программа передачи управления • род деятельности, связанный с компьютером.

3. Make up some predictions with these phrases.

Use **Future Tense (will or to be going to?)**

Visit website
http://www.youtube.com/watch?v=SmSKJ-t8IJ8&feature=player_em

Grammar tip



Check

You can use both *will (or 'll)* & *going to* to talk about a future intention. Use *will* when you make your decision at the moment of speaking.

I'll deal with that later.

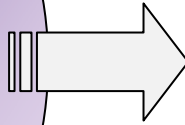
Use *going to* when you have taken your decision in advance.
We're going to launch our new device at the end of the year.
 For more on the future tenses, turn to 'Grammar Reference'.

Matching



4. Match the correct word with each definition.

1. Resemble
2. Mouse
3. Trait
4. Mouse
5. Wetware
6. Abacus
7. Hardware



- a) to possess some similarity to;
- b) the physical equipment used in a computer system, such as the central processing unit, peripheral devices, and memory;
- c) a hand-held device used to control the cursor movement and select computing functions without keying;
- d) the programs that can be used with a particular computer system;
- e) a characteristic feature or quality distinguishing a particular person or thing;
- f) the nervous system of the brain;
- g) a counting device that consists of a frame holding rods on which a specific number of beads are free to move.



5. Complete the table with these verbs in the Past Simple:

Infect • pretend • come • haul • open • decide • be • make • spread • send • add • clog • open • start • can • scare • read • hide • capture • grow • become • may • damage • receive • reload • seem • cause • do • receive • turn • connect • become • work.

Irregular

Regular

6. Write a short text (100 – 150 words).

Giving your opinion for & against about these statements. Choose one of them.

1. Progressive technology leads to social and environmental problems.
2. New technology solves all the world's problems.
3. The pace of technological change is too fast in some countries.
4. Inventors of modern technology should share ideas, not protect them.
5. We rely on innovative technology too much these days.



7. Imagine yourself a computer in ten years. Add some more characteristic features of a perfect computer. Make up a dialogue using the material above.

8. There are many kinds of virus, all work in slightly different ways. Read this information and discuss the six questions below. Put the verbs into the correct tenses (Past simple or Past continuous).

COMPUTER VIRUSES

A computer virus is a computer program that is written by a malicious author. They spread by copying themselves, then transferring on to other computers. A computer virus can do anything from popping up a short message to wiping key files so your computer doesn't work. The "ILOVEYOU" virus (infect) _____ up to 45 million computers, causing £7 billion worth of damage world-wide.

There are many kinds of virus, all work in slightly different ways.

Worms. These viruses spread via computer networks. The ILOVEYOU virus above was a classic example of a worm. These viruses are becoming an increasing threat as a growing number of computers are permanently connected to networks. Worms can spread over corporate networks or via emails sent over the Internet.

Trojans. A Trojan virus takes its name from a story in Homer's *Iliad* where Greek soldiers (pretend) _____ to make peace with their enemies, the Trojans. First they (not know) _____ how to do it. But then the Greeks (make) _____ a grand peace-keeping gesture – the gift of a large wooden horse. When the Trojans (haul) _____ inside their city gates, a small band of Greek warriors (leap) _____ out. They (open) _____ the gates and (let) _____ the rest of the Greek army storm in to capture the city. A Trojan virus is one that opens your computer up to malicious intruders, allowing them to read your files.

File viruses. A file virus is one that replaces a key system file on your computer. These viruses can reload themselves every time you start your computer up. Once they're in the memory, they can spread by writing themselves to any disk you insert into your disk drive.

Boot sector viruses. This was an early type of computer virus that (spread) _____ by hiding itself in an invisible location on your hard drive or floppy disk. While a computer (read) _____ an infected floppy disk, the virus was copied from the disk to the computer's memory.

From there, it wrote itself to the 'boot sector' on your hard drive. The boot sector was read each time you turn your computer. So the virus is constantly reloaded and copy itself on to other floppy disks. These viruses are fairly rare nowadays, as they are easy to catch.

Macroviruses. A macrovirus infects word processor files, such as Microsoft Word documents. Although not as dangerous as other viruses, they can spread quickly if a Word file is sent via email. After an initial scare, Microsoft (add) _____ protection into later versions of Word, so you receive a warning about infected documents.

Hoaxes. The virus hoax (come) _____ about after friends (send) _____ each other emails about a new virus threat. Someone (decide) _____ that they (can) _____ cause just as much trouble by sending out fake warnings rather than real viruses.

Hoaxes may seem harmless, but they do a great deal of damage to the Internet as a whole. Not only do they slow down traffic and clog up email servers, but they also cause people to panic. Companies can spend money and time investigating what is just someone's idea of a joke. So the virus is constantly reloaded and copy itself on to other floppy disks. These viruses are fairly rare nowadays, as they are easy to catch.

1. What is a computer virus?
2. What types of virus are flying around the Internet?
3. How do computer viruses work?
4. Are you clued up about computer viruses?
5. How to avoid computer viruses?
6. Have you ever had a computer virus?

Grammar tip



Check

We use the Past Simple tense to talk about a finished action which happened at a definite time.

Greek soldiers pretended to make peace with their enemies.

The negative form is:

Greek soldiers didn't pretend to make peace with their enemies.

And the question form is:

Did Greek soldiers pretend to make peace with their enemies?

For more on the Past Simple, turn to 'Grammar Reference'.

9. Find English equivalents for the following:

malicious author
 popping up
 to haul
 warrior
 intruder
 Iliad
 wiping key file
 clog
 Trojans
 to be clued up
 fake

- злонамеренный создатель
- Троянский
- неожиданно возникнувший
- уничтожающий ключевой файл
- Илиада
- втянуть, транспортировать
- воин
- незваный гость, навязчивый
- обманный, фальшивый
- засорять
- быть проинформированным



Grammar tip



Check

Two main tenses are used to tell about viruses:

- the Past Continuous, e.g. *While a computer was reading an infected floppy disk ...*
- the Past Simple, e.g. *The "ILOVEYOU" virus infected up to 45 million computers.*

Can you explain why these different tenses are used?

For more on the Past Continuous and Past Simple, turn to 'Grammar Reference'.

10. Read our survival guide.

Do's	Don't
Stay calm. A computer virus isn't dangerous until the infected email is opened. Delete any mail you think is infected and empty your deleted items folder.	Don't open any attachment you are not sure about, even if you have a virus scanner.
Read the email. Check that the contents of the message makes sense before you open any attachments.	Don't forward any attachment to a friend without being sure it is safe.
Look out for hoaxes. There are many emails warning of "the most destructive virus ever", but often these viruses don't exist.	Don't send an email about a "new virus" without checking it out. Visit sites like vmyths.com to check for hoaxes.
Send any email you think is infected to an anti-virus company (you may have to own a copy of their virus software). They can tell you if it is a virus or not.	Don't send mail that may contain a virus to anyone other than official virus companies. Mail filtering systems will probably delete it anyway.
Make sure you have a recent backup of your most important work.	Don't place backup floppy disks in your computer if you think you have a virus, as the virus could spread to your backups.
If you get a computer virus you'll need to use a virus scanner to get rid of it.	Don't be blasé just because you have a virus scanner. You will still need to keep your eyes open in case a new virus emerges.

Grammar tip



Check

Definition: Imperatives are verbs used to give orders, commands, warning or instructions, and (if you use 'please') to make a request.

To make the imperative, use the infinitive of the verb without 'to'.

To make a negative imperative, put 'do not' or 'don't' before the verb:

For example:

- *Don't go!*
- *Do not walk on the grass.*

For more on this, turn to 'Grammar Reference'.

11. Imperatives: negative. Make sentences by putting the words in order.

- attachment/don't/any/is /a friend/it/safe/forward /being sure/without/to
Don't forward any attachment to a friend without being sure it is safe.
- you/place in/your /don't/if/ think/ have a virus/computer/backup floppy disks/ you

- have/any/you/are not sure/attachment/ if/you/ a virus/open/ scanner/don't/even/about/

- scanner/blasé/because/you/a virus /don't/just/have

- a "new virus"/without/an email/checking it / send out/ don't/about

- send/that/virus/to/other/official/virus/may/don't/mail/contain/anyone/ than/companies/a/

12. Your colleague is a creative engineer at International Programmable Machines (IPM), which makes computers. He is responsible for currently problems which people face in everyday life using computer. Can you give him some advice to be done to solve problems? Don't forget to visit website. Taking responsibility for one's actions is an important part of being an engineer.

<http://www.youtube.com/watch?v=r5yGTtKQLco>



You may start with:

- First of all the best way to improve safety is... .
- You'd (had) better make a note of all the problems people currently face using computer.
- This needs to be your prime objective as an engineer.
- Then
- Finally

You may finish with:

So what are you waiting for?
Start your own invention journey now!
Good luck!

13. What do you think is the greatest technological innovation? Write an email to your colleague from London about it. Give your reasons. Use the phrases:

- ✚ *Dear Mr. James,*
- ✚ *Thank you for your email of 8 February*
- ✚ *I was very impressed*
- ✚ *I would like to*
- ✚ *Should you have any questions, please do not hesitate to contact me.*
- ✚ *I look forward to hearing from you.*
- ✚ *Yours sincerely,*

Lesson 5

AUTOMOBILE



1. Warm-up. In pairs or small groups discuss the questions.

- Can you imagine our life without automobile? Why?
- What kind of cars shall we have in future?
- Would you like to go on a joy ride in Karl Benz's "Velo" model?

2. Visit the website address given below. Describe the first car – Mercedes Benz.

<http://www.youtube.com/watch?v=5YMG0EDffa>

<http://www.youtube.com/watch?v=lcObjfXzjl0&feature=relmfu>



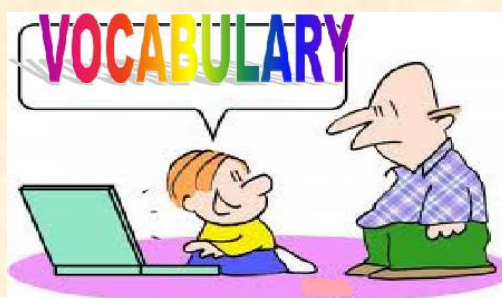
3. Read and translate the text into Russian.

Travelling by car at a high speed is an exciting experience. But how it all began? An automobile (via French from Greek *auto*, self and Latin *mobilis* moving, a **vehicle**¹ that moves itself rather than being moved by another vehicle or animal) or motor car (usually shortened to just car) is a wheeled passenger vehicle that carries its own motor. Most definitions of the term specify that automobiles are designed to run primarily on roads, to have seating for one to eight people, to typically have four **wheels**², and to be constructed principally for the transport of people rather than goods. However, the term is far from precise because there are many types of vehicles that do similar tasks.

One of the earliest sketches of a vehicle were made by Leonardo di ser Piero da Vinci (1452 – 1519), but one of the earliest attempts to propel a vehicle by mechanical power was suggested by Isaac Newton. Although Nicolas-Joseph Cugnot is often credited with building the first self-propelled mechanical vehicle or automobile. He built a steam-driven **engine**³ which had three wheels, carried two passengers and ran at maximum speed of four miles. In Russia Ivan Kulibin constructed a vehicle which had **fly-wheel**⁴, **brakes**⁵, **gearbox**⁶, thrust **bearing**⁷. François Isaac de Rivaz, a Swiss inventor, designed the first internal **combustion**⁸ engine which was fuelled by a mixture of hydrogen and oxygen and used it to develop the world's first vehicle to run on such an engine.

The first to perfect **gasoline**⁹ engine was N. Otto who introduced the four-stroke cycle of operation. But **Karl Benz** is generally acknowledged as the inventor of the modern automobile and Rudolf Diesel as a builder of the first Diesel Engine (1897).

The cars of that time were very small, two-seated cars with no roof, driven by an engine placed under the seat. Motorists had to carry large cans of **fuel**¹⁰ and separate spare tires, for there were no repair or filling stations to serve them.



1. Vehicle (n) – транспортное средство, автомобиль; Syn.: *car, automobile*.

The first vehicle was a great achievement but it was far from perfect – Первый автомобиль был величайшим открытием, но он был далёк от совершенства.

2. Wheel (n) – колесо, механизм; Syn.: *automobile, car*.

Nobody knows when the wheel was invented. – Никто не знает, когда было изобретено колесо.

3. Engine (n) – машина, двигатель, мотор; Syn.: *motor*.

He got into the driving seat and started the engine. – Он сел за руль и завёл двигатель.

4. Fly-wheel (n) – маховое колесо, маховик; Syn.: *handwheel*.

Behind the flywheel is the clutch. – Коробка передач располагается за маховиком.

5. Brake(s) (n) – тормоза; Syn.: *antirotation block, decelerator*.

Brakes are hydraulic so that a total braking failure is very rare. – Неисправность тормозов случается крайне редко благодаря гидравлической системе торможения.

6. Gearbox (n) – коробка скоростей; коробка передач; Syn.: *gearcase*.

The problem to be solved was to make the gearbox more silent. – Проблема состояла в том, чтобы сделать более бесшумную коробку передач.

7. Bearing (n) – подшипник; Syn.: *chock*.

Modern automobiles have highly efficient bearing. – Современные машины оснащены надёжными подшипниками.

8. Combustion (n) – сгорание; Syn.: *burning, conflagration*.

The first electric cars were built before internal combustion powered cars appeared. – Первые электрические автомобили были созданы до появления машин с двигателем внутреннего сгорания.

9. Gasoline (n) – бензин; Syn.: *petrol*.

Most automobiles in use today are propelled by gasoline. – Сегодня большинство автомобилей работают на бензине.

10. Fuel (n) – горючее; Syn.: *combustible*.

To fuel (v) – заправляться топливом.

The long-distance trailer truck has to stop at service station to fuel up. – Грузовому автомобилю, следующему дальним рейсом, приходится совершать дозаправку.

? Answer the questions.

1. What does the word "vehicle" mean? 2. Who made the earliest sketches of a vehicle? 3. Who made the earliest attempts to propel a vehicle by mechanical power? 4. Why is Nicolas-Joseph Cugnot mentioned? 5. What kind of features did Kulibin's vehicle have? 6. What mixture was the first internal combustion engine fuelled by? 7. What kind of engine did N. Otto use for the four-stroke cycle of operation? 8. Who is generally acknowledged as the inventor of the modern automobile? 9. When was the first Diesel Engine built? 10. How can you describe the cars of that time?



Language practice

1. Can you guess the meaning of these international words?

Compare your answers with a partner. Make a list of other similar words that you know.

Automobile • motor • transport • mechanical • maximum • mile • construct • design • mixture • gasoline • cycle • operation • modern • diesel • motorist.

1. Первые чертежи автомобиля принадлежат Леонардо да Винчи.
2. И. Ньютон предложил транспортное средство привести в механическое движение.
3. "Тележка Кюньо" приводилась в движение паровым двигателем.
4. Иван Кулибин сконструировал повозку, в которой применил маховое колесо, тормоз, коробку скоростей, подшипники качения.

2. Translate the following sentences into English.

3. Work in group. Have you ever driven these cars?

Take turns sharing your experience with other members of your group.

Bus • executive • 4×4 • jeep • lorry • luxury • medium • mini • multi-purpose vehicle (MPV) • people carrier • pickup • small family • sports • supermini • truck • van.

4. In pairs or small groups debate the following:

Transportation is a major contributor to *air pollution* in most industrialised nations. Do you believe that one day stopping for petrol is likely to become a thing of the past?

Automobile propulsion technologies under development include gasoline/electric and plug-in hybrids, battery electric vehicles, hydrogen cars, biofuels and various alternative fuels. Add ideas of your own fuel?

modern car

Grammar tip



Check

The passive of a verb is formed by using *to be* in the appropriate tense and adding the past participle of the verb:

For example:

Active

• *She is doing it.*

• *She will do it.*

• *She did it.*

Passive

It is being done (by her).

It will be done (by her).

It was done (by her).

For more on this, turn to 'Grammar Reference'.

5. Advertising plays an important role in promoting the features of car. Which features do you think are the most and least important for your car? Why? Take turns sharing your ideas with the other members of your group.

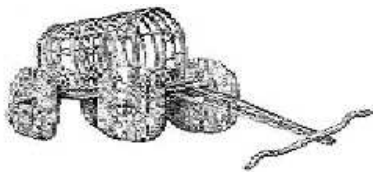
•Advanced braking system (ABS) • air condition • airbag • alarm • alloy wheels • central locking • climate control • electric windows • immobilizer • (PAS) • sunroof.

6. Visit the website address given below and watch the video.

MIT is working on a smart car that can reduce congestion on the highway and solve the many parking problems our country faces! To accomplish this, the car is designed to fold in half! Dean Kamen shows us how.

<http://planetgreen.discovery.com/videos/dean-of-invention-car-that-folds-in-half.html>

7. Read the text below and compose your own presentation of an ideal modern car. Discuss your presentations in class and decide whose idea of a modern car sounds more attractive.



Here is an article reviewing a modern car. Put the verb in brackets into either Present Simple or Present Simple passive.

Building a car ____ (take) a long time – from research, through design to final development. First, researchers need to determine what consumers _____ (want), and then suggest what kind of automobile to make. During the design phase, new ideas _____ (convert) into tangible parts or products. At the same time engineers _____ (modify) existing parts and features for the new model and draft new plans for the prototype (a working example of a new design). Then manufacturers _____ (begin) to construct a few prototypes. These ____ extensively _____ (test) in wind tunnels and dust tunnels, factory tracks, water-proofing bays, desert heat, arctic cold and crashes. At the next stage a plant _____ (set) up to build the new model and the necessary components. Product planners monitor the process to ensure that the new car programme _____ (finish) on time and within budget. Managers must also coordinate different activities, including producing the cars, purchasing materials, and training the workers.

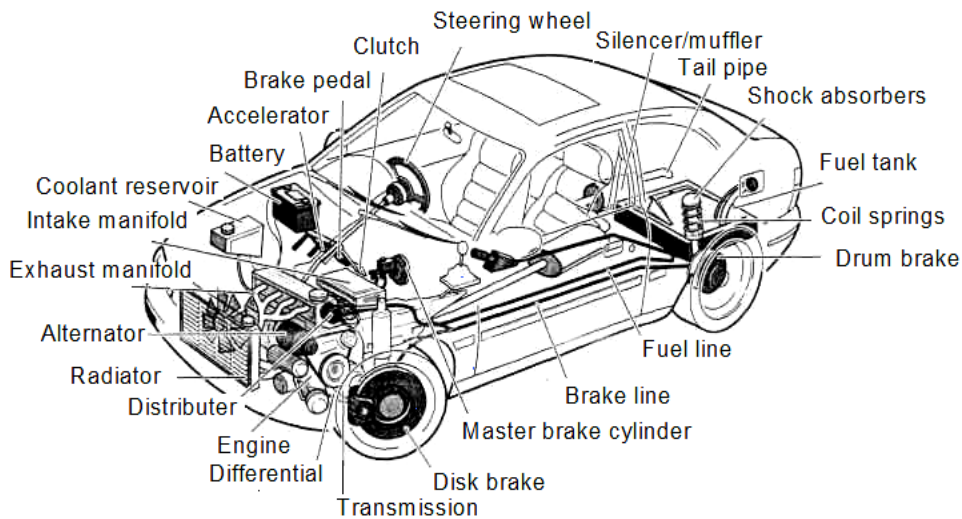
This car must meet up-to-date requirements. What ____ (be) these features? The automobile must have high efficiency, long service life, driving safety, easy of handling and maintenance, exclusive appearance. Also it must _____ (be) rapid in acceleration, have smooth acting clutch, silent gearbox, dependable ignition system, low fuel consumption, comfortable and ecological.

Marketing teams must then sell the car. Every year the major car manufactures _____ (launch) their new models, but a single car design can take several years from the drawing board to the showroom floor.

8. Rewrite the sentences in an active into a passive if it is possible. Read them to your partner.

Matching

1. In pairs or small groups match the part of the car with its function.



- a) exhaust manifold
- b) steering wheel
- c) radiator
- d) fuel tank
- e) silencer/muffler
- f) battery
- g) brake line
- h) differential
- i) clutch
- j) engine
- k) accelerator
- l) brake cylinder
- m) distributor
- n) alternator

- a) глушитель
- b) выхлопной патрубок
- c) рулевой механизм
- d) генератор переменного тока
- e) тормозная магистраль
- f) аккумулятор
- g) топливный бак
- h) сцепление
- i) двигатель
- j) тормозной цилиндр
- k) педаль газа
- l) распределитель зажигания
- m) аккумулятор
- n) дифференциал

1. a wheel turned by the driver of a motor vehicle when he wishes to change direction. It is connected to the front wheels.
2. a large container or reservoir for the storage of fuel.
3. carries waste gases to the exhaust pipe.
4. a device for cooling an internal-combustion engine
5. slows or stops car.
6. a device that reduces noise.
7. provides a source of electric current.
8. a device that connects or disconnects the engine to the gearbox.
9. enables the driving wheels to rotate at different speeds while turning the car.
10. converts energy (heat energy, into mechanical work).
11. holds brake fluid.
12. a pedal that makes a car go faster and controls the fuel intake in a vehicle.
13. in a petrol engine that distributes the high-tension voltage to the sparking plugs in the sequence of the firing order.
14. an electrical machine that generates an alternating current.

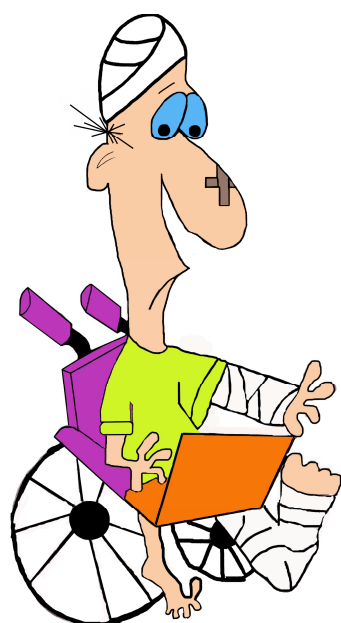
2. Make up a description of any system in a car.
Let the students guess what it is.

Exhaust system • Steering system • Electrical system
• Coolant system • Fuel system • Brake system

3. Choose the sentences on the right which complete the sentences on the left.

1. Двигатель – это источник энергии.	a) The main function of the gearbox is to change the speed of the car.
2. Ходовая часть включает в себя раму с осями, колёса и рессоры.	b) The running gear consists of a frame with axles, wheels and springs.
3. Тормоза используются для остановки или снижения скорости автомобиля.	c) The steering wheel is designed for changing the direction of the car. It is connected to the front wheels.
4. Рулевой механизм предназначен для изменения направления движения автомобиля. Он соединён с ведущими колёсами.	d) The differential enables the driving wheels to turn at different speeds which is necessary when turning the car.
5. Двигатель включает в себя топливную, охлаждающую и электрическую системы.	e) The brakes are used for stopping the car or for decreasing its speed.
6. Дифференциал позволяет ведущим колёсам вращаться с разной скоростью при повороте автомобиля.	f) The engine is the source of power.
7. Коробка передач предназначена для изменения скорости автомобиля.	g) The fuel tank is a reservoir for the storage of combustible.
8. Топливный бак – это резервуар для хранения горючего.	h) The engine includes fuel, coolant and electric systems.

4. Find in the text English equivalents for the following:



Обратить в реальность • модифицировать существующие детали • разработать новый план • сконструировать несколько аналогов • аэродинамическая труба • заводской трек • водонепроницаемые отсеки • аварийная ситуация • отвечать современным требованиям • долгий срок службы • приемистость • плавное сцепление • бесшумная коробка передач • малый расход топлива • система зажигания • кондиционер • подушка безопасности • аварийная сигнализация • колесо из лёгкого сплава • система запираания дверей с центральным управлением • автоматическая система кондиционирования воздуха • стекло двери с электрическим подъёмником • иммобилайзер (блокиратор зажигания) • "солярый".

5. Make up the sentences of your own with the words above in Passive.

Lesson 6



MOBILE PHONE



1. Warm-up. In pairs or small groups discuss the questions.

- Do you spend much time talking on the phone?
- Does your mobile phone work in the mountains?
- Are the mobile phones dangerous?

2. Visit the website address given below & watch the video.

<http://www.youtube.com/watch?v=sJFK0tqO3Ik>

Act out a conversation between Alexander Graham Bell & Thomas Watson.

3. Guess the meaning of the words from the text above:

Mobile • phone • electronic • communication • standard • function • telephone • service • SMS • email • Internet • MMS • photo • video • radio • category • automatic • user • April • commerce • telegraph • Corporation • automatic • system • Europe • modern • technology • Radiolinja • Finland • decade • commerce • jacket • install • miniaturization • components • manufacture • group • practical • Nokia • Motorola • Samsung • Sony • Ericsson • LG • specific • region • Mitsubishi • Panasonic • Electric • Philips • Sanyo • Sharp • Siemens • Toshiba • million • active • Luxembourg • Hong Kong • population • Africa • India • business • elite • culture • person • text • computer • etiquette • toilet • doctors • office • auditorium • Faraday • signal • distance • ignore • aeroplane • antenna • result • photograph • examination • disqualification • subject • student.

4. Create a short presentation of your mobile phone and things to be done to improve it.

There is a certain structure to the opening of a Presentation \$ some suggestions.

1. Get people's attention – *Let's get started; Perhaps, we should begin?*
2. Welcome them – *Thank you for coming today; Good morning, ladies and gentlemen.*
3. Introduce yourself – *For those of you who don't know me, my name's ...*
4. State the purpose of your presentation – *This morning I'd like to present our new processor.*
5. State how you want to deal with questions – *There will be plenty of time for questions at the end.*

5. Short message service.

1. Write words that sound like these letters & numbers:

B C I Q R T U Y; 8 2 4

2. Write this text message in complete sentences.

- ✓ *R u coming 2night;*
- ✓ *PLZ;*
- ✓ *B here b4 8 will w8;*
- ✓ *c u l8er;*
- ✓ *Wen r u going 2 b here;*
- ✓ *How r u;*
- ✓ *I cnt believe u did dat;*
- ✓ *mt me 2moro nite @ 10;*
- ✓ *wld u mt me 2nite @ 8;*
- ✓ *cld we chnge the mtng 2 b4 lch;*
- ✓ *?4u;*
- ✓ *cn i c u 2dy? thnx;*
- ✓ *gt hr asap.*



6. By skimming and scanning the text, you can increase your reading speed and find answers more efficiently.

The mobile phone or **cellular**¹ phone is a long-range, portable electronic device used for mobile communication. In addition to the standard voice function of a telephone, current mobile phones can support many additional services such as SMS for text messaging, email, Bluetooth, packet switching for access to the Internet, and MMS for sending and receiving photos and video.

Radiophones have a long and varied history. In 1945, the zero generation (0G) of mobile telephones was introduced. Due to their low establishment costs and rapid deployment, mobile phone networks have since spread rapidly throughout the world, **outstripping**² the growth of fixed telephony. 0G mobile telephones, such as Mobile Telephone Service, were not officially categorized as mobile phones, since they did not support the automatic change of channel frequency during calls, which allows the user to move from one cell to another cell, a feature called "**handover**"³.

Motorola is widely considered to be the inventor of the first practical mobile phone for **handheld**⁴ use in a non-vehicle setting. Using a modern, if somewhat heavy portable handset, Motorola manager Martin Cooper made the first call on a handheld mobile phone on April 3, 1973.

The first commercial cellular network was launched in Japan by Nippon* Telegraph and Telephone Corporation (NTT) in 1979. Fully automatic cellular networks were first introduced in the early to mid 1980s (the 1G generation) with the Nordic** Mobile Telephone (NMT) system in 1981. This was followed by a boom in mobile telephone usage, particularly in Northern Europe.

The first "modern" network technology on digital 2G (second generation) cellular technology was launched by Radiolinja (now part of Elisa Group) in 1991 in Finland on the GSM standard. A decade later, the first commercial launch of 3G (Third Generation) was again in Japan by NTT on the WCDMA standard.

Until the early 1990s, most mobile phones were too large to be carried in a jacket pocket, so they were typically installed in vehicles as car phones. With the miniaturization of digital components, mobile phones have become increasingly handy over the years.

The mobile phone manufacturers can be grouped into two. The top five are available in practically all countries and **comprise**⁵ about 75% of all phones sold – Nokia, Motorola, Samsung, Sony Ericsson and LG. A second tier of small manufacturers exists with phones mostly sold only in specific regions or for niche markets – Apple Inc., Audiovox (now UT Starcom), Benetton, BenQ-Siemens, High Tech Computer Corporation (HTC), Fujitsu, Kyocera, LG Mobile, Mitsubishi, NEC, Neonode, Panasonic (Matsushita Electric), Pantech Curitel, Philips, Research In Motion, Sagem, Sanyo, Sharp, Siemens, Sierra Wireless, T&A Alcatel, Toshiba and Verizon.

Several countries, including the UK, now have more mobile phones than people. There are over five hundred million active mobile phone accounts in China, as of 2007. Luxembourg has the highest mobile phone penetration rate in the world, at 164% in December 2001. In Hong Kong the penetration rate reached 117% of the population in September 2004. The total number of mobile phone subscribers in the world was estimated at 2.14 billion in 2005. The subscriber count reached 3.7 billion by end of 2010 according to Informa.

Around 80% of the world's population enjoys mobile phone coverage as of 2006. This figure is expected to increase to 95% by the year 2011.

At present Africa has the largest growth rate of cellular subscribers in the world, its markets expanding nearly twice as fast as Asian markets. On a numerical basis, India is the largest growth market, adding about 6 million cell phones every month. With 156.31 million cell phones, market penetration in the country is still low at 17.45% India expects to reach 500 million subscribers by end of 2010.

In less than twenty years the mobile telephone has gone from being **rare**⁶, expensive equipment of the business elite to a pervasive, low-cost personal item. Given the high levels of societal mobile telephone service penetration, it is a key means for people to communicate with each other.

The SMS feature **spawned**⁷ the "texting" culture. In December 1993, the first person-to-person SMS text message was transmitted in Finland. Currently, texting is the most widely-used data service.

Many telephones offer Instant Messenger services for simple, easy texting. Mobile phones have Internet service, offering text messaging via e-mail. In Europe 30 – 40 per cent of internet access is via mobile telephone. Most mobile internet access is much different from computer access and mobile internet access is hurried and short.

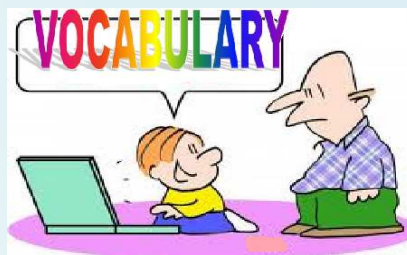
Mobile telephone use etiquette is an important matter of social discourtesy, phones ringing during funerals, weddings, in toilets, cinemas and plays. Users often speak loudly, leading to book shops, libraries, bathrooms, cinemas, doctors' offices. Some new buildings, such as auditoriums, have installed wire **mesh**⁸ in the walls (making it a Faraday cage) which prevents signal penetration.

Trains, particularly those involving long-distance services, often offer a "quiet car" where phone use is prohibited, much like the **designated**⁹ non-smoking car in the past. However many users tend to ignore this as it is rarely enforced. Mobile phone use on aircraft is also prohibited and many airlines claim in their in-plane announcements that this prohibition is due to possible interference with aircraft radio communications. Shut-off mobile phones do not interfere with aircraft avionics. The **nuisance**¹⁰ of telephones on while aeroplanes take off and land, is that they disrupt the ground mobile telephone networks.

As customers want to be connected on planes, now several airlines are experimenting with base station and antenna systems installed to the aeroplane, allowing low power, short-range connection of any phones aboard to remain connected to the aircraft's base station. Thus, they would not attempt connection to the ground base stations as during take off and landing.

In a similar vein, signs are put up in UK petrol stations prohibiting the use of mobile phones, due to possible safety issues. Most schools in the United States have prohibited mobile phones in the classroom, due to the large number of class disruptions that result from their use, the potential for cheating via text messaging, and the possibility of photographing someone without consent. In the UK possession of a mobile phone in an examination can result in immediate disqualification from that subject or from all that student's subjects.

Nippon* – Ниппон – японское название Японии (Japan); *Nordic* – нордический, скандинавский.



1. Cellular (adj) (cellular phone/cell phone) – сотовый телефон, мобильный телефон;
Syn.: *mobile, mobile phone*.

Trap-and-trace information from phone company might then allow us to pin him down even if he was using a cellular phone. – Трассировочная информация от телефонной компании, возможно, позволит нам определить злоумышленника, даже если он использовал сотовый телефон.

2. Outstrip (v) – обгонять, обходить, опережать (в ч.-л.); Syn.: *distance, outrun*.

Demand for metals like tungsten will outstrip supply. – Спрос на такие металлы, как вольфрам, будет превышать предложение.

3. Handover (n) – переключение, переход; Syn.: *transmission*.

Handover from satellite-to-satellite – Переход с заходящего на восходящий ИСЗ (искусственный спутник Земли).

4. Handheld (adj) – переносной, портативный; Syn.: *Portable*.

He walked around the table and studied the screen of my handheld. – Он обошёл вокруг стола и уставился на экран моего ноутбука.

5. Comprise (v) – составлять, заключать в себе, содержать, включать;
Syn.: *sum up, include, compose, constitute*.

About 7 percent of American military forces are comprised of women. – Около семи процентов личного состава американских вооружённых сил составляют женщины.

6. Rare (adj) – редкий, редкостный; Syn.: *unusual, uncommon, scarce, infrequent*.

A cellphone of rare device. – Мобильный телефон замечательной конструкции.

7. Spawn (v) – рождать (в большом количестве); Syn.: *give birth to*.

The general atmospheric conditions in which hurricanes are spawned are known. – Атмосферные условия, вызывающие ураганы, известны.

8. Mesh (n) – блокировка; Syn.: *interlock*.

A wire mesh was installed in a new car. – На новой машине была установлена блокировка.

9. Designate (v) – (for) предназначать (для ч.-л.); Syn.: *name, denominate, entitle, style*.

Usually they take parking spaces designated for the disabled. – Обычно они занимают места, предназначенные для парковки автомобилей, которыми управляют инвалиды.

10. Nuisance (n) – неприятность; Syn.: *vexation, annoyance, injury, hurt, harm*.

It's a nuisance that there's no cellular phone! – Какая неприятность, что нет сотового телефона!



Answer the questions.

1. What is mobile phone used for?
2. What kind of additional services current cellular phone can support?
3. When was 0G of mobile telephones introduced?
4. Where was the first commercial cellular network launched?
5. When and where was the first "modern" network technology on digital 2G cellular technology launched?
6. What are the top five phones in our country?
7. Several countries now have more mobile phones than people, don't they?
8. Which country has the largest growth rate of cellular subscribers in the world?
9. What is the most widely-used data service by cellphone?
10. Is it important to obey rules of using phone?
11. According to the text are they crazy or sensible?



Language practice

1. The following headings have been taken out of the article. Read the article quickly and match a heading with a paragraph.

1. **Subscriptions.** 2. **Etiquette.** 3. **SMS.**
 4. **Manufacturers** 5. **Not so modern!**

2. Find the English equivalent of the expressions from the text above.

Портативное электронное устройство • стандартные голосовые функции • поддерживать дополнительный сервис • доступ к Интернету • посылать и получать фотографии • быстро распространяться по всему миру • официально категоризировать • (рабочая) частота канала связи • миниатюризация цифровых компонентов • рыночный сегмент • второе поколение сотовых технологий • деловая элита • ускоренный доступ • иметь связь (мобильную) на самолёте • базовые станции и антенные системы • короткодействующий диапазон связи • заправочные станции • потенциал для списывания • лишение права.

3. Read 'THE DO'S AND DON'TS OF MOBILE PHONE USE'. Make your own conversation about it using first & second conditional. The phrases below may help you.

Do's	Don'ts
Only use your phone when necessary.	Don't buy a phone with an internal aerial, you want the aerial as far away from your head as possible.
Keep the calls short.	Don't use your phone when the reception is weak, the phone needs more power to communicate with the base station, and so the radiowave emissions are higher.
Carry the phone away from your body when it is on standby.	Don't buy a phone with a high 'SAR' value, this means that it emits more radiation.
Buy a phone with a long 'talk time'. It is more efficient, with less powerful emissions.	Don't buy protective gadgets unless they have been independently tested.

Yes but ... • I can't agree... • I disagree, I'm afraid ... • I don't think that's right • Nonsense! • True enough ... • That's quite right.

Grammar tip









Here is a way of remembering the use of first and second conditional sentences in English.

First conditional		Second conditional	
Realistic condition → result		Hypothetical condition → result	
<i>If you do that,</i>	<i>this will happen.</i>	<i>If you did that,</i>	<i>this would happen.</i>
<i>Present Simple</i>	<i>'will' future</i>	<i>Past Simple</i>	<i>'would' + verb</i>

For more on first and second conditional sentences, turn to 'Grammar Reference'.

Matching

4. Match the abbreviation with English and Russian definitions.

	Multimedia Message Service	система цифровой сотовой связи в Европе (её аналог в США CDMA) на частотах 900 МГц на основе TDMA.
	The Short Message Service	компания США, производящая процессоры, полупроводниковые, электронные устройства, средства связи, компьютеры и периферию.
	Global System for Mobile Communications	служба коротких сообщений, предусматривает передачу текстовых сообщений длиной до 140 байт между абонентами сотовых сетей.
	Wideband Code Division Multiple Access	широкополосный многостанционный доступ с кодовым разделением каналов, обеспечивает скорость передачи до 2 Мбит/с.
	National Executive Committee	служба передачи мультимедиа-сообщений.
	Time Division Multiple Access	многостанционный доступ с временным разделением каналов, МДВР один из двух стандартов для цифровых сетей сотовой связи в США, появился в 1992 г.

5. There is a mistake in each sentence. Correct it.

1. She'd have sent you a message if she had has your address.
2. If I'll pass math tomorrow, I'll call you.
3. I'd be much happier if I can use the third conditional.
4. Joy will be able to take photos of the nomination day tomorrow if she would bring his camera.
5. I buy you a new mobile phone if you really need it.
6. If you'd bought me an expensive ring, I marry you.
7. As long as we drive this far, we might as well go on.
8. If my mobile phone battery hadn't run out, I have sent you a text message.
9. If the Internet hasn't been invented, we wouldn't be able to send emails.
10. If I hadn't bought a laptop computer, I will have to go to Internet cafes.
11. If we had invested in renewable energy sources, we won't have lost so many natural resources.
12. If I had seen you, I will would have talked to you.
13. If that car isn't too expensive, I buy it.
14. If I were you I will learn English.
15. If I had studied harder, I would had passed the test.
16. Will you do it differently if you had to do it over again?

Grammar tip



Here is a way of remembering the use of third conditional sentences in English.

Third conditional	
Unrealistic condition → result	
<i>If you had been there,</i>	<i>you would have seen her.</i>
<i>Past Perfect</i>	<i>Would/could/might + have + V₃</i>

For more on first and second conditional sentences, turn to 'Grammar Reference'.

Part III

INVENTION INTO REALITY

Five Key Factors To Consider About Your Invention

It can prove difficult, as well as confusing, to transform your invention into reality from an initial concept. Without assistance, ordinary matters become difficult, whether it be deciding whom you need to speak to, ways to patent your invention or which path you need to take while pursuing it. Below are five factors that you need to consider regarding your invention.

1. Find out the problems that your invention might likely solve. Every great idea stems from the attempts at solving a common problem. Individuals have problems regularly and inventors chase solutions. Before you pursue an idea, understand what problems your invention is going to solve. Confirm if your solution indeed works and whether the idea requires some external help. If the idea is too complicated to handle alone, then working in coordination with a reliable company, which understands engineering and design, might help clarify problems along with giving you possible solutions.

2. Get to know where to market the invention. After knowing the problems, which your idea is able to solve, think where to market the idea, so that it sells well. This helps greatly in each step that you take. Furthermore, compare the invention to similar products, as well as to companies making them. It helps in the future, when you will decide on a company for licensing your invention.

3. Give importance to the security aspect as well. People, who wish others to know about their invention, whether they are family members, companies or attorneys, need to think of the security aspect beforehand. The biggest fear that inventors usually have is losing their idea to others. In addition, dealing with outside companies for assistance regarding your invention might prove risky. Make sure that they have enough security measures for protecting your invention. Also, while dealing online, confirm the legitimacy of the company and know if it has security systems in place.

4. Build a product sample for ensuring your invention's success. Lack of a product sample will deter you from truly understanding the function of your invention. You will have trouble while holding business conversation. The development of product sample calls for excellent design work, prototyping and engineering. It is important to keep everything streamlined to retain your existing focus.

5. Lastly, understand the right methods to patent your invention. Many a time, the primary concern on an inventor's mind is how to finally patent it. Here, more relevant question ought to be when to patent the invention or is the inventing process actually over. Many companies push inventors for patenting their idea at once. The process is time-consuming, and costly, resulting often in frustration, when inventors learn that they need to alter their idea for pleasing a purchaser or for making it manufacturable. In fact, preparing a product sample helps in identifying critical areas of your invention, further safeguarding it into a patent. It even keeps those rivals at bay, who may have considered stealing your idea.

Overall, at the time of pursuing any invention, always bear in mind and consider these five key factors, which will save enough time, money and effort.

How To Think Up A Profitable Invention

The trick is very simple. You need to invent something that turns out to be a solution for many people, who are facing a particular kind of a problem. Once your invention succeeds in reducing the number of problems that people face, you are sure to get the desired appreciation, thereby making the invention highly profitable.

Almost every company is in the race of attempting to solve the problems of people. It is very important for you to come up with a highly competitive invention. For instance, people these days are in search of household appliances that consume the least amount of electricity. You can try inventing an appliance manufactured by other companies. If you succeed in doing so, your invention will definitely turn out to be very profitable.

In order to make sure that your invention works effectively, you first need to try it out for yourself. A non-experimented product may fail to gain the trust of people. Experimenting on the product will also help you eradicate errors, if any, before bringing it to the marketplace. Moreover, you may come across an area that needs some more improvement.

However, coming up with an invention completely depends on your personal areas of interest. If you try inventing something that is actually not a part of your interest, then you will not have the necessary passion and desire to perfect the idea.

A successful invention idea stems identification from the identification of a common need and then tries to fill that need by finding a workable solution. There are many ways to approach these problems; however, not all of these ways are simple. Finding such ways will give you the most profitable invention. In fact, inventing something requires you to put in a lot of time and effort; therefore it is important you remain patient throughout the procedure. There may be chances where you might think to give up when things do not turn out the way you want them to be. Just do things at a slower pace and are sure to get the desired result.

The only thing that differentiates an ordinary person from the most successful inventor is a different way of thinking. Once you get an idea about what you actually want to invent, you can then get started by adding in your own creativity in various areas of the invention. The best way to progress smoothly with the invention is to combine two or more ideas to find the right solution. Make sure you completely research both ideas that you apply.

The word **engineer** is derived from the Latin root *ingenium*, meaning "**cleverness**".

The work of engineers forms the link between scientific discoveries and the applications that meet the needs of society. Engineers have obligations to the public, their clients, employers and the profession. Many engineering societies have established codes of practice and **codes of ethics** to guide members and inform the public at large. Each engineering discipline and professional society maintains a code of ethics, which the members pledge to uphold.

Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health, and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

Coming up with an invention, which is capable of changing the lives of millions, can definitely make your dream come true. People will truly recognize you as the most profitable invention with fame and fortune awaiting you at the end of the journey!

GRAMMAR REFERENCE

Active	continuous be V _{ing}	simple V	perfect have V ₃	perfect continuous have been V _{ing}
Present	am is V _{ing} are	"_" V-Vs "?" Do, does V	have V ₃ has	have been V _{ing} has
Past	was were V _{ing}	"_" V ₂ "?" Did V ₁	had V ₃	had been V _{ing}
Future	will shall be V _{ing}	will V shall	will have V ₃ shall	will have been V _{ing} shall
Future in the past	would be V _{ing}	would V	would have V ₃	would have been V _{ing}
Passive	continuous be being V ₃	simple be V ₃	perfect have been V ₃	perfect continuous
Present	am is being V ₃ are	am is V ₃ are	have been V ₃ has	
Past	was were being V ₃	was were V ₃	had been V ₃	
Future		will be V ₃	will have been V ₃	
Future in the past		would be V ₃	would have been V ₃	

PRESENT CONTINUOUS

The Present Continuous is used to talk about present situations which we see as short-term or temporary. In these examples, the action is taking place at the time of speaking.

Who is Bob talking to on the phone? I'm not looking. My eyes are closed tightly.

In these examples, the action is true at the present time but we don't think it will be true in the long term.

I'm looking for a new separate apartment. He's thinking about leaving his job. They're considering making an appeal against the judgment.

In these examples, the action is at a definite point in the future and it has already been arranged.

I'm meeting him at 7.30; They aren't arriving until Sunday.

We are having a special dinner at a top restaurant for all the senior managers. Isn't she coming to the dinner?

PRESENT SIMPLE

We use the Present Simple to talk about actions we see as long term or permanent. It is a very common tense. Here, we are talking about regular actions or events.

They drive to the office every day. He doesn't come here every day. The news usually starts at 8.00 PM.

Do you usually have porridge and eggs for breakfast?

Here, we are talking about facts.

Water freezes at 0° C or 32° F. What does his dead-pan expression mean? The Tsna flows through Tambov.

Here, we are talking about future facts, usually found in a timetable or a chart.

Christmas Day falls on a Monday this year. The plane leaves at 6.00 tomorrow morning.

The working day doesn't start at 5.00.

Here, we are talking about our thoughts and feelings at the time of speaking. Although these feelings can be short-term, we use the Present Simple and not the Present Continuous.

They don't ever agree with us. I think you are right. He doesn't want you to do it.

PRESENT SIMPLE OR CONTINUOUS

The Present Simple is used for:

regular actions or events – *He plays football most weekends.*

facts – *The sun rises in the east.*

facts known about the future – *We leave at 8.30 next Monday.*

thoughts and feelings about the time of speaking – *I don't feel very well.*

The Present Continuous is used for:

the time of speaking ('now') – *Shh, I'm trying to hear what they are saying.*

things which are true at the moment but not always – *We're looking for a new flat.*

the present plans for the future – *We're having dinner with them next week.*

Look at these examples :

I don't usually have bacon for breakfast but I'm having some this morning because there is nothing else.

I often cycle to work but I'm taking the taxi this morning because it's raining very hard.

I'm thinking about having my hair cut short but I don't think my husband will be very happy about it.

My parents live in Moscow but I'm just visiting.

Note how, in all these examples, we use the Present Continuous to talk about events which are temporary/limited in time and the Present Simple to talk about events which are habits/permanent.

PAST SIMPLE

We use the Past Simple to talk about actions and states which we see as completed in the past. We can use it to talk about a specific point in time. – *She came back last Monday. I saw them in the street.*

It can also be used to talk about a period of time. – *She lived in London for five years.*

They were in New York from Monday to Thursday of last week.

When I was living in St. Petersburg, I went to all the art exhibitions I could.

You will often find the Past Simple used with time expressions such as these:

Yesterday; three weeks ago; last year; in 2009; from May to July; for a long time; for 7 weeks.

PAST CONTINUOUS

We use the Past Simple to talk about actions and states which we see as completed in the past. We can use it to talk about a specific point in time. We use the Past Continuous to talk about past events which went on for a period of time.

We use it when we want to emphasize the continuing process of an activity or the period of that activity. (If we just want to talk about the past event as a simple fact, we use the Past Simple.)

Were you expecting any visitors? Sorry, were you having a rest? I was just making some coffee. I was thinking about him last night. In the 1990s few people were using mobile phones.

We often use it to describe a "background action" when something else happened.

I was walking in the street when I suddenly saw him. She was talking to me on the phone and it suddenly went dead. They were still waiting for the bus when I spoke to them. We were just talking about it before they arrived. I was making a presentation in front of 100 people when the microphone stopped working.

PAST SIMPLE OR CONTINUOUS

Both the Past Simple and the Past Continuous refer to completed actions in the past.

Most of the time when we are talking about such actions, we use the Past Simple. This is by far the most common way of talking about the past.

I lived there for 8 years. I only found out a few moments ago. I asked him but he didn't know anything.

Only use the Past Continuous when you want to emphasize the continuity of the action.

Everybody was talking about it all day. We were really trying hard but couldn't do it.

When we use these two forms in the same sentence, we use the Past Continuous to talk about the "background action" and the Past Simple to talk about the shorter completed action.

It was raining hard when we left the building. I was reading the book when you rang.

PRESENT PERFECT

We use the Present Perfect when we want to look back from the present to the past.

We can use it to look back on the recent past. I've broken my phone so I don't know what time it is. We have cancelled the meeting. He's taken my project. I don't have one.

When we look back on the recent past, we often use the words '*just*', '*already*' or the word '*yet*' (in negatives and questions only).

They've already talked about that. She hasn't arrived yet. We've just done it. We don't know yet. Have they spoken to him yet?

It can also be used to look back on the more distant past.

We've been to Novgorod a lot over the last few years. She's done this type of project many times before.

When we look back on the more distant past, we often use the words 'ever' (in questions) and 'never'.

Have you ever been to France? Has he ever talked to you about the trouble? I've never met Jim and Sally.

We've never considered investing in Pakistan.

PRESENT PERFECT CONTINUOUS

This tense is used to talk about an action or actions that started in the past and continued until recently or that continue into the future.

We can use it to refer to an action that has finished but you can still see evidence.

Oh, the kitchen is a mess. Who has been cooking? You look tired. Have you been sleeping properly?

It can refer to an action that has not finished.

I've been waiting for him for 30 minutes and he still hasn't arrived

It can refer to a series of actions.

She's been writing to her regularly for a couple of years. The university has been sending students here for over ten years to do work experience.

The Present Perfect Continuous is often used with '*since*', '*for*', '*all week*', '*for days*', '*lately*', '*recently*', '*over the last few months*'.

PRESENT PERFECT OR PAST SIMPLE

The Past Simple is used to talk about actions in the past that have finished. It talks about 'then' and definitely excludes 'now'. The Present Perfect Simple to look back on actions in the past from the present. It always includes 'now'.

These sentences are in the past with no connection to the present.

I first got to know him 10 years ago. I started work here in 1989. I had too much to eat at lunchtime.

Now look at these same situations seen from the present.

I've known him for 20 years. I've worked here since 1988.

We use time expressions like 'yesterday', 'ago', 'last year', 'in 1999' with the Past Simple.

We spoke to him yesterday. She joined the company in 1989.

FUTURE

Going to

There is no one 'future tense' in English. There are 4 future forms. The one which is used most often in spoken English is 'going to', not 'will'. – *They're going to launch it next month. I'm not going to talk for very long.*

Notice that this plan does not have to be for the near future.

When I retire I'm going to go back to Barbados to live.

In ten years time, I'm going to be boss of my own successful company.

We use 'going to' when we want to make a prediction based on evidence we can see now.

Look out! That cup is going to fall off.

We can replace 'going to go' by 'going'.

They are going out later. He's going to the exhibition tomorrow.

Will (shall)

Some people have been taught that 'will' is 'the future' in English. This is not correct. Sometimes when we talk about the future we cannot use 'will'. Sometimes when we use 'will' we are not talking about the future.

We can use 'will' to talk about future events we believe to be certain.

The sun will rise over there tomorrow morning. Next year, I'll be 50. That train will be late. It always is.

Often we add 'perhaps', 'maybe', 'probably', 'possibly' to make the belief less certain.

I'll probably come back later. He'll possibly find out when he sees Jenny. Maybe it will be OK.

THE -ing FORM

When it is used like a noun it may or may not have an article before it.

Marketing is a very inexact science. The marketing of the product will continue for a few months yet.

It can also be part of a 'noun phrase'.

Speaking to an audience is always stressful. Swimming after work is very relaxing.

In formal English, we would use a possessive with the -ing form. In informal English, many people do not.

I'm angry about his missing the meeting. Do you mind my coming?

As an adjective, the -ing form can be used before a noun.

I was met by a welcoming party at the airport. Let's go to the meeting room.

The -ing form is used after prepositions.

Before leaving, you need to speak to Sarah. After discussing it with her, I've changed my mind.

Instead of feeling sorry for yourself, do some work for charity.

There are many verb + -ing combinations. Here are some common ones:

I consider blowing your nose in public to be wrong. I delayed coming until the last possible moment.

He denied telling her. I detest going to parties. I enjoy dancing. I feel like having a party.

I've finished writing the report. I've given up going to the gym. I can't help thinking about it.

I can't imagine ever leaving this company. I don't mind doing that. He put off talking to her as long as he could.

I can't stand drinking beer.

Some verbs can be followed by either the infinitive or -ing form but with different meanings. Here are some common ones:

I stopped smoking last month. (I no longer smoke.)

I stopped to smoke a cigarette. (I stopped what I was doing and had a cigarette.)

I remember telling him. (A memory of the past.) I must remember to tell him. (Something to remember for the future.)

I'm interested in finding out more details. (Interested about the future.)

I was interested to read his report. (Interested in the past.)

Some verbs can be followed by either the infinitive or -ing form but with the same meaning. Here are some common ones:

I love to go shopping. I love going shopping. I'm afraid to fly. I'm afraid of flying.

I started to learn English 5 years ago. I started learning English 5 years ago.

THE PASSIVE

We use the active form to say what the subject does. For example: *I speak English every day at work.*

We use the passive form to say what happens to people and things, to say what is done to them. For example: *English is spoken here.*

We use the passive form when we don't know who did the action. For example: *The car was damaged while it was parked on the street.*

THE IMPERATIVE

We can use the imperative to give a direct order. *Take that chewing gum out of your mouth. Stand up straight.*

We can use the imperative to give instructions.

Open your book. Take two tablets every evening. Take a left and then a right.

We can use the imperative to make an invitation.

Come in and sit down. Make yourself at home. Please start without me. I'll be there shortly. Have a piece of this cake. It's delicious.

We can use the imperative on signs and notices. *Push. Do not use. Insert one dollar.*

We can use the imperative to give friendly informal advice.

Speak to him. Tell him how you feel. Don't go. Stay at home and rest up. Get some sleep and recover.

We can make the imperative 'more polite' by adding 'do'. *Do be quiet. Do come. Do sit down.*

MODAL VERBS		
Modal verb	Usage	Example
can can't cannot	ability	He can do several things at the same time.
	when something is possible	You can't leave your car in that parking space.
	permission	You can start now.
	informal requests	Can you do that?
could	past form of "can"	He phoned to say he couldn't come.
	polite requests	Could you help me, please?
	possibility	It could be that he missed the bus.
may	possibility	It may wind tomorrow.
	ask or give permission (formal)	May I come in?
might	past form of "may"	He said he might do his project.
	possibility	You might have dropped it in the street.
must	you have to do it	We must obey the law.
	it's very logical or very likely to happen	They left so early, they must be home by now.
must not/ mustn't	you are not allowed to do it	You mustn't smoke in here.
shall	future for "I" and "we"	I shall see her tomorrow.
	questions and suggestions for "I" and "we"	Let's go, shall we?
should	the right thing to do	He should call the hospital.
	advice	– What should I do? – You should stop thinking about it.
	what is likely or expected to happen	We should be back by midnight.
will	future action or states (not plans)	Prices will go up next year.
	promises and intentions	It's alright, I'll pick it up.
would	past form of "will"	She told me she would phone.
	imagined situations	What would you do if you were her?
	for polite requests, offers and invitations	– Would you please stand up? – Would you like some juice? – We are meeting with Susann next Sunday, would you like to come along?
	to say what you want to do or have	I would like a piece of cheese.
ought to	the right thing to do	We ought to apologize.

REPORTED SPEECH

We use reported speech when we are saying what other people say, think or believe.

He says he wants it. We think you are right. I believe he loves her.

Yesterday you said you didn't like it but now you do!

She told me he had asked her to marry him. I told you she was ill. We thought he was in Australia.

When we are reporting things in the present, future or present perfect we don't change the tense.

He thinks he loves her. I'll tell her you are coming. He has said he'll do it.

When we tell people what someone has said in the past, we generally make the tense 'more in the past'.

You look very nice. = I told him he looked very nice.

He's working in Siberia now. = She told me he was working in Siberia now.

Polly has bought a new car. = She said Polly had bought a new car.

Jo can't come for the weekend. = She said Jo couldn't come for the weekend.

Paul called and left a message. = He told me Paul had called and had left me a message.

I'll give you a hand. = He said he would give me a hand.

However, when we are reporting something that was said in the past but is still true, it is not obligatory to make the tense 'more in the past'. The choice is up to the speaker. For example:

"The train doesn't stop here". He said the train doesn't stop here. He said the train didn't stop here.

"I like Sarah". She said she likes Sarah. She said she liked Sarah.

When we are reporting what was said, we sometimes have to change other words in the sentence.

We have to change the pronoun if we are reporting what someone else said. Compare these two sentences. In each case the person actually said: "I don't want to go".

I said I didn't want to go. Bill said he didn't want to go.

We have to change words referring to 'here and now' if we are reporting what was said in a different place or time.

Compare these two sentences. In each case the person actually said: "I'll be there at ten tomorrow".

(If it is later the same day) He said he would be there at ten tomorrow.

(If it is the next day) He said he would be there at ten today.

Now compare these two sentences.

(If we are in a different place) He said he would be there tomorrow at ten.

(If we are in the place he is coming to) He said he would be here at ten tomorrow.

CONDITIONAL

The first conditional

We use the first conditional to talk about future events that are likely to happen.

If we take Jack, he'll be really pleased. If you give me some money, I'll pay you back tomorrow.

The 'if' clause can be used with different present forms.

If I go to Moscow again, I'll buy you Matryoshka. If he's feeling better, he'll come.

If she hasn't heard the bad news yet, I'll tell her.

The "future clause" can contain 'going to' or the future perfect as well as 'will'.

If I see him, I'm going to tell him exactly how angry I am.

If we don't get the contract, we'll have wasted a lot of time and money.

The "future clause" can also contain other modal verbs such as 'can' and 'must'.

If you go to New York, you must have the cheesecake in Lindy's. If he comes, you can get a lift home with him.

The second conditional

The second conditional is used to talk about 'impossible' situations.

If we were in London today, we would be able to go to the concert in Hyde Park.

If I had millions dollars, I'd give a lot to charity.

If there were no hungry people in this world, it would be a much better place.

If everyone had clean water to drink, there would be a lot less disease.

Note that after I/he/she/it we often use the subjunctive form 'were' and not 'was'. (Some people think that 'were' is the only 'correct' form but other people think 'was' is equally 'correct'.)

If she were happy in her job, she wouldn't be looking for another one.

If I lived in Japan, I'd have sushi every day. If they were to enter our market, we'd have big problems.

Note the form 'If I were you' which is often used to give advice.

If I were you, I'd look for a new place to live. If I were you, I'd go back to school and get more qualifications.

The second conditional is also used to talk about 'unlikely' situations.

If I went to China, I'd visit the Great Wall. If I was the President, I'd reduce taxes.

If you were in my position, you'd understand.

Note that the choice between the first and the second conditional is often a question of the speaker's attitude rather than of facts. Compare these examples. Otto thinks these things are possible, Peter doesn't.

Otto – If I win the lottery, I'll buy a big house.

Peter – If I won the lottery, I'd buy a big house.

Otto – If I get promoted, I'll throw a big party.

Peter – If I got promoted, I'd throw a big party.

Otto – If my team win the Cup, I'll buy champagne for everybody.

Peter – If my team won the Cup, I'd buy champagne for everybody.

Note that the 'If clause' can contain the Past Simple or the Past Continuous.

If I was still working in Brighton, I would commute by train.

If she were coming, she would be here by now. If they were thinking of selling, I would want to buy.

Note that the main clause can contain 'would' 'could' or 'might'.

If I had the chance to do it again, I would do it differently. If we met up for lunch, we could go to that new restaurant.

If I spoke to him directly, I might be able to persuade him.

Also note that sometimes the 'if clause' is implied rather than spoken.

What would I do without you? ("if you weren't here") Where would I get one at this time of night? ("if I wanted one")

He wouldn't agree. ("if I asked him")

The third conditional

We can use the third conditional to talk about 'impossible' conditions, impossible because they are in the past and we cannot change what has happened.

If I had worked harder at school, I would have got better grades.

If I had had time, I would have gone to see him. But I didn't have time.

If we had bought that house, we would have had to rebuild the kitchen.

If we had caught the earlier train, we would have got there on time but we were late.

Notice that the main clause can contain 'would', 'could' or 'might'.

If I had seen him at the meeting, I would have asked him. (But he wasn't there so I didn't.)

If I had seen him at the meeting, I could have asked him. (But he wasn't there so it wasn't possible.)

If I had seen him at the meeting, I might have asked him. (But I'm not sure. Perhaps if the opportunity had arisen.)

If I had paid more attention in class, I would have understood the lesson.

Also notice that sometimes the 'if clause' is implied rather than spoken.

I'd have done it. ("if you had asked me but you didn't".)

I wouldn't have said that. ("if I'd been there".)

He wouldn't have let him get away with that. ("if he had tried that with me".)

USED TO

We use 'used to' for something that happened regularly in the past but no longer happens.

I used to smoke a packet a day but I stopped two years ago.

Ben used to travel a lot in his job but now, since his promotion, he doesn't.

I used to drive to work but now I take the bus.

We also use it for something that was true but no longer is.

There used to be a cinema in the town but now there isn't. She used to have really long hair but she's had it all cut off.

I didn't use to like him but now I do.

'Used to do' is different from 'to be used to doing' and 'to get used to doing'

to be used to doing

We use 'to be used to doing' to say that something is normal, not unusual.

I'm used to living on my own. I've done it for quite a long time.

Hans has lived in England for over a year so he is used to driving on the left now.

They've always lived in hot countries so they aren't used to the cold weather here.

to get used to doing

We use 'to get used to doing' to talk about the process of something becoming normal for us.

I didn't understand the accent when I first moved here but I quickly got used to it.

She has started working nights and is still getting used to sleeping during the day.

I have always lived in the country but now I'm beginning to get used to living in the city.

ASKING QUESTIONS 1

The basic rule for asking questions in English is straightforward: Invert the order of the subject and the first auxiliary verb. *It is snowing.* = *Is it snowing?* *He can speak German.* = *Can he speak German?* *They have lived here a long time.* = *Have they lived here a long time?* *She will arrive at ten o'clock.* = *Will she arrive at ten o'clock?* *He was driving fast.* = *Was he driving fast?* *You have been smoking.* = *Have you been smoking?*

If there is no auxiliary, use part of the verb 'to do'.

You speak fluent French. = *Do you speak fluent French?* *She lives in Brussels.* = *Does she live in Brussels?*

They lived in Manchester. = *Did they live in Manchester?* *He had an accident.* = *Did he have an accident?*

Most questions with question words are made in the same way:

How often does she use it? Why don't you come? Where do you work? How many did you buy? What time did you go?

Which one do you like? Whose car were you driving?

Note who, what and which can be the subject. Compare:

Who is coming to lunch? (who is the subject of the verb) Who do you want to invite to lunch? (you is the subject of the verb)

What happened? (what is the subject of the verb) What did you do? (you is the subject of the verb)

Note the position of the prepositions in these questions:

Who did you speak to?

What are you looking at?

Where does he come from?

ASKING QUESTIONS 2

In the section Questions 1 we looked at how to ask direct questions. To make a question, we invert the order of the subject and the first auxiliary verb.

Where is Johnny? Has he found it yet?

If there is no auxiliary, use part of the verb 'to do'. For example: *What time did he arrive? How often do you play tennis?*

However, when we ask for information, we often say 'Do you know...?' or 'Could you tell me...?' These are indirect questions and more polite.

Note that the word order is different. For example: *Do you know where Johnny is? Have you any idea if he has found it?*

Note that we don't use 'do', 'does' or 'did'. For example: *Could you tell me what time he arrived?*

Would you mind telling me how often you play tennis?

Use 'if' or 'whether' when there is no question word.

Has he done it? = Do you know if he has done it? Is it ready? = Can you tell me if it is ready?

The same changes in word order happen when we report questions. Note that in reported questions, the verb changes to the past: *What are you doing? = He asked me what I was doing. What have you done about it? = He asked me what I had done about it. Do you work with Pamela? = He asked me if I worked with Pamela.*

QUESTION TAGS

We use tags in spoken English but not in formal written English. They are not really questions but are a way of asking the other person to make a comment and so keep the conversation open.

Making a tag is very mechanical. To make a tag, use the first auxiliary. If there is no auxiliary, use 'do', 'does' or 'did'. With a positive sentence, make a negative tag and with a negative sentence, make a positive tag.

It's beautiful, isn't it? He has been, hasn't he? You can, can't you? It must be, mustn't it? You know him, don't you? He finished it, didn't he? He will come, won't he? It isn't very good, is it? It hasn't rained, has it? It can't be, can it? Jenny doesn't know James, does she? They didn't leave, did they? He won't do it, will he? Notice these: There isn't an ATM here, is there? Let's have a cup of coffee, shall we?

To reply, use the same auxiliary:

It's beautiful, isn't it? ~ Yes, it is. I think it's fabulous. It isn't very good, is it? ~ No, it isn't. In fact, it's terrible.

SUPPOSE 1

We often use 'suppose' to mean 'imagine' or 'guess'.

I suppose you'll be meeting Danielle when you go to Paris? When you weren't there, I supposed you must have been held up. I suppose you two know each other?

Notice that 'suppose' is not normally used in the continuous form. We do not usually say 'I am supposing'.

Now I suppose we'll have to do something else. We're waiting for John and I suppose he must be stuck in traffic. At this moment I suppose it doesn't matter.

Notice that for 'imagine not' or 'guess not' that we make 'suppose' negative, not the other verb.

I don't suppose you know where Mary is?

I don't suppose he'll do anything. I don't suppose you have a Nokia phone charger here?

When responding to an idea with 'suppose', you can use 'so' to avoid repeating the idea that has already been expressed. *Is Susan coming to this meeting? ~ I suppose so.*

SUPPOSE 2

'Supposed to be' can be used to mean 'it is said/believed'.

The new James Bond movie is supposed to be excellent. He is supposed to have been rude to Mark but I don't believe it. It is supposed to be the best restaurant in town.

'Supposed to be' can also be used to talk about what is arranged, intended or expected. It is a bit like 'should'.

I'm supposed to get to work by 8. John is supposed to turn off all the lights when he leaves.

I'm supposed to pay my rent on the first of the month. It's not supposed to be here.

Often there is a suggestion that the action 'supposed to' happen does not actually happen.

I'm supposed to be there before 8 but I'm often late. You were supposed to phone me.

I'm supposed to be getting on a plane to Tokyo at this very minute.

'Not supposed to' often suggests that something is not allowed or prohibited.

You're not supposed to smoke in here.

I'm not supposed to tell you.

We're not supposed to use the Internet for personal reasons at work.

'Suppose' can also be used as a conjunction to mean 'what if'. Notice that the verb which follows it is sometimes, but not always, put 'more in the past'.

Suppose we take the earlier train to Munich? It would give us more time there.

Suppose we took the plane instead? That would give us even more time.

There's nobody in reception to let our visitors in. Suppose I sit there until somebody comes?

I'm going to ask him for a pay increase. ~ Suppose he said 'no'? What would you do?

HAVE SOMETHING DONE

If you 'have something done', you get somebody else to do something for you.

I'm going to have my hair cut. She's having her house redecorated. I'm having a copy of the report sent to you.

In informal English, we can replace 'have' by 'get'.

We're getting a new telephone system installed. They will be getting the system repaired as quickly as they can.

I got the bill sent direct to the company.

John had all his money stolen from his hotel bedroom. We had our car damaged by a falling tree.

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