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SCIENTIFIC INNOVATIONS IN MULTICULTURAL SOCIETY

НАВЧАЛЬНИЙ ПОСІБНИК

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Навчальний посібник «Scientific innovations in multicultural society» знайомить студентів-магістрантів спеціальності «Переклад» з базовими поняттями, необхідними для перекладу англомовних науково-технічних і науково-популярних текстів, наукової фантастики тощо.

У посібнику надано основну інформацію про нові наукові винаходи сьогодення та інноваційні ідеї, що ще мають бути впроваджені. Поряд с текстами для двостороннього перекладу представлено вправи для розвитку навичок і вмінь говоріння, аналізу наданої інформації, переказу, а також завдання, спрямовані на дебатування та аргументування своєї точки зору, поглиблення культурно-освітнього фону студента-перекладача в умовах процесу глобалізації.

Для студентів вищих навчальних закладів філологічних, перекладацьких, відділень (факультетів) університетів, педагогічних інститутів IV рівнів акредитації, аспірантів, викладачів і всіх тих, хто цікавиться проблемами перекладу текстів науково-технічної тематики.

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CONTENT

ВСТУП

"The world is moving so fast these days that the man who says it can't be done is generally interrupted by someone doing it."

– Elbert Hubbard

Навчальний посібник «Scientific innovations in multicultural society» узагальнює досвід викладання теми «Наукові технології» з дисциплін «Іноземна мова І та практика перекладу» та «Іноземна мова ІІ та практика перекладу» з аспекту «Практика усного та писемного мовлення» та «Практика перекладу» для студентів ОС «Магістр» спеціальності «Переклад» денної та заочної форми навчання. Навчальний посібник відповідає державним освітнім стандартам вищої освіти України та Програмі з англійської мови для університетів (п'ятий рік навчання). Навчальний посібник знайомить студентів-магістрантів з базовими поняттями, необхідними для перекладу англомовних фахових текстів за науково-технічним напрямком.

Особливості перекладу сучасних науково-технічних текстів, зокрема популярної наукової літератури, є одними з актуальних напрямів досліджень у вітчизняному та зарубіжному перекладознавстві.

Посібник складається з шістьох частин, присвячених темам робототехніки, космічним дослідженням, домашнім інноваційним приладам, мобільним, комп'ютерним гаджетам та науковим інноваціям у сфері екології. Кожна частина містить три блоки, що орієнтовані на розвиток навичок і вмінь читання, перекладу та усного мовлення.

Навчальний посібник розрахований для студентів вищих навчальних закладів філологічних, перекладацьких відділень (факультетів) університетів, педагогічних інститутів IV рівнів акредитації, аспірантів, викладачів і всіх тих, хто цікавиться проблемами перекладу популярної наукової літератури.

PART I. ROBOTICS

BLOCK A. READING SKILLS.

Task 1 – Read the text and provide the equivalents to the italicized words below.

ROBOTICS: FACTS

What are Robots?

Robot comes from the Czech word “robota” which means “forced work or labor.” We use the word "Robot" today to mean any man-made machine that can perform work or other actions normally performed by humans, either automatically or by remote control. Robotics is the science and study of robots.

What do Robots do?

Imagine if your job was to tighten one screw on a toaster. And you did this over and over again on toaster after toaster, day after day, for weeks, months, or years. This kind of job is better done by robots than by humans. Most robots today are used to do repetitive actions or jobs considered too dangerous for humans. A robot is ideal for going into a building that has a possible bomb. Robots are also used in factories to build things like cars, candy bars, and electronics. Robots are now used in medicine, for military tactics, for finding objects underwater and to explore other planets. Robotic technology has helped people who have lost arms or legs. Robots are a great tool to help mankind.

A brief history

Robots seem like a modern day invention, but in reality evidence suggests that automations were created for everything from toys to parts for religious ceremonies in ancient Greece and Rome. Leonardo da Vinci sketched plans for a humanoid robot in the late 1400s. Jacques de Vaucanson was famous in the 18th century for his automated human figure that played the flute and for a duck that could flap its wings.

Many automated inventions that could behave in similar fashion to a human have been documented throughout history. Most were created largely for entertainment purposes. Fiction writers found great success in writing about robots in all sorts of situations which meant that the robot was part of daily conversation and imagination. In 1956 George Devol and Joseph Engelberger formed the world's first robot company. By the 1960s robots were introduced into the General Motors automobile plant in New Jersey for moving car parts around. Robots continued to develop and can now be found in homes as

toys, vacuums, and as programmable pets. Today robots are a part of many aspects of industry, medicine, science, space exploration, construction, food packaging and are even used to *perform surgery*. Watson, a robot with artificial intelligence from IBM, defeated the human players in an episode of Jeopardy.

So Why Use Robots?

The reason robots are used is that it is often cheaper to use them over humans, easier for robots to do some jobs and sometimes the only possible way to accomplish some tasks! Robots can explore inside gas tanks, inside volcanoes, travel the surface of Mars or other places too dangerous for humans to go where extreme temperatures or *contaminated environments* exist.

Robots can also do the same thing over and over again without getting bored. They can drill, they can weld, they can paint, they *can handle hazardous materials*, and in some situations, robots are much more accurate than a human which can cut back on production costs, mistakes or hazards. Robots never get sick, don't need sleep, don't need food, don't need to take a day off, and best of all they don't ever complain! There are a lot of benefits to using robots.

Parts of a Robot

Robots can be made from a variety of materials including metals and plastics. Most robots are composed of 3 main parts:

1. The Controller also known as the "brain" which is run by a computer program. Often, the program is very detailed as it give commands for the moving parts of the robot to follow.
2. Mechanical parts motors, *pistons, grippers, wheels, and gears* that make the robot move, grab, turn, and lift. These parts are usually powered by air, water, or electricity.
3. Sensors to tell the robot about its surroundings. Sensors allow the robot to determine sizes, shapes, space between objects, direction, and other relations and properties of substances. Many robots can even identify the amount of pressure necessary to apply to grab an item without crushing it.

All of these parts work together to control how the robot operates.

Nanorobots

Nano-robots or nanobots are robots scaled down to microscopic size in order to put them into very small spaces to perform a function. Currently nanobots are still in the developmental stage. Future nanobots could be placed in the blood stream to perform surgical procedures that are too delicate or too difficult for standard surgery. Nanobots could fight bacteria by tracking down and *eliminating each bacterial cell* or could repair individual organ cells in the body.

Imagine if a nanobot could target cancer cells and destroy them without touching healthy cells nearby. Nanobots would probably carry medication and surgical tools on board. They would need to be able to navigate through the human

body and then find their way out too. Nanobots could be used in other situations too. Tiny nanobot gears and tools could allow construction of objects at the tiniest of scale. Some of the things we only imagine in science fiction could one day be reality. Maybe you will one day be a scientist who works with nanobots.

Artificial Intelligence

Artificial intelligence is also known as machine intelligence or AI for short. Some computers and robots have been given the opportunity to act with *human-like behavior*. *Face recognition software*, *complicated scheduling software*, or computer games that give players a response based on the players actions are all forms of artificial intelligence. The goal for AI was, at one time, to *recreate the intelligence* of a human being. At the present time, insect intelligence is the focus of research and development because insects and their behavior are easier to mimic. Nanobots could be based on *insect behavior*, working in swarms together to perform a function.

Some robots and computers have been given the ability to learn and to use information from previous activities to make future decisions. A robot that fills a box with cookies might be able to "count" the number of cookies in the box, or a computer could determine the amount of traffic on a street to calculate when to change the light. This science is in the early stages, but robots are being developed that can make decisions in order to serve food, translate words from one language to another, and get information from outside resources to solve problems.

Robot Limitations

Unlike in the movies, Robots are unable to think or make decisions; they are only tools to help us get things done. Robots are machines with programed movements that allow them to move in certain directions or s*equences*. *Artificial intelligence* has given robots more ability to process information and to "learn." But, they are still limited by the information that they are given and the functions they are given to perform.

WORD	***TRANSLATION***	***WORD***	***TRANSLATION***
perform surgery		*contaminated environments*	
can handle hazardous materials		*pistons, grippers, wheels, and gears*	
eliminating each bacterial cell		*Face recognition software*	
complicated scheduling software		*recreate the intelligence*	

insect behavior		*human-like behavior.*	
sequences		*Artificial intelligence*	

State if the sentences given below are True of False

Robot comes from the Czech word “robota”	T/F
Robotic technology has helped people who have lost arms or legs	T/F
Robots don’t perform surgery at present	T/F
Robots can get sick because of the computer viruses	T/F
Nano-robots or nanobots are robots scaled down to macroscopic size	T/F
Nanobots are based on insect behavior	T/F
Some robots can think or make decisions	T/F

Task 2 – Robot reading – Jeeves Machine

Before you read the article, decide if the following statements are true or false for you:

1) I would like to have a robot in my house
2) I think that in ten years’ time most people will have robots in their homes
3) Research into robots is a waste of money

Read the article and then answer the questions in pairs or small groups.

JEEVES MACHINE

Having robots around to do the laundry sounds like a great idea. But will they be polite? And how will you teach them not to always have the TV remote control?

In only three years time there will be more than four million robots in domestic service in homes throughout the world! That’s according to the latest United Nations report. They won’t, however, be like C-3PO with their very own list of psychological ‘issues’, although they will still need to follow codes of behaviour. But how can you teach a robot social skills?

A Research Group at Hertfordshire University’s School of Computer Science is trying to answer this question. Advances in technologies are making the dream of autonomous household robots into a reality that is closer than we may think.

In the very near future, robots could be as common as vacuum cleaners and blenders, so their ‘personalities’ are going to be important. That is why the Hertfordshire University group has hired behavioural psychologists to work alongside programmers and electronics engineers.

The team is conducting experiments in which robots interact with people, assist them with various tasks, and even play with children. Observations and post-experimental surveys are revealing. The person's own personality-type, age and gender influences perceptions of the robot. Service robots should really be able to assess different types of people and react accordingly – much as we do ourselves.

It is hoped the guidelines for robot etiquette will be established for when technology makes robots ready to share a house with people. And for when people are ready to share a house with robots. How long will that be? 'It might take five years, it might take twenty or more,' says Dautenhahn, cautiously.

However long, it is probably inevitable. Sceptics should note that large companies including Dyson, Electrolux and Hoover, are seriously investing in home robotics. They should also remember similar reservations expressed about the potential for home computers. Of course the friendly C-3PO is not the only model of electronic companion. Anyone who has seen The Terminator will probably need little persuading as to the benefits of a charm school for robots.

This article was adapted from the British Council Culture Lab UK website. The original writer was Don Connigale

1. Do you believe that in three years' time more than four million homes will have domestic robots?
2. Do you think that robots can be given personalities?
3. Do you think it's possible to create polite robots?
4. What jobs do you think may be replaced by robots in the future?
5. Do you think a robot could be used to teach languages? Why / not?

BLOCK B. TRANSLATION SKILLS.

Task 3 – Read the text and translate it into your native language. Fill in the gaps with the missing words.

Robots Ready to Work in Restaurants

chef	seasonings	vehicle
wrapping	mechanical	peel
activities	human	rescue
sushi	taste	husband

For many years, machines have been doing work that people once did, including some difficult jobs. Search and _____operations in dangerous environments are often seen as the first areas that will employ high technology robots. But there is another area that may soon take jobs traditionally held by _____beings: the restaurant industry.

Teams from around the world competed in early June at the DARPA Robotic Challenge Finals in California. A team from South Korea and its robot, called DRC-

Hubo, won first place in the competition. The second and third place finishers were from the United States.

The robots were required to drive a_____, climb up steps and do _____work. Such _____are easy for humans to perform, but more difficult for machines.

Not all of the competitors were successful. The failures showed how difficult it is to design effective walking machines.

Recently, crowds gathered for the food machinery and technology show in Tokyo, Japan. They witnessed a robotic _____ preparing food. Other machines cooked, baked tasty pastries and even made sushi.

Akihiro Suzuki works at Yaskawa Electric, a company that develops robots. He says robots cannot do everything a human can, but they are able to work without becoming tired.

He says robots cannot _____food, change heating levels or _____ to get the best flavor. But he says if a food can be easily prepared, a robot can repeat the same movement to reproduce the same meal.

One Japanese woman who saw the robots working wanted to bring them home.

Masayo Mori says she would like to have a _____who could work like a robot.

Suzumo Machinery demonstrated its sushi maker robot. It performs the often difficult work of _____the popular Japanese food. Hiroshi Monden is an official with the company.

He says people all over the world now eat_____, but there are not enough skilled workers to prepare it. He says his machine can help anyone make sushi.

Other robots have been created to help decorate cakes and cut and _____ apples.

* ***pastry*** – n. *a small, baked sweet food*

seasoning(s) – n. *a substance (such as salt, pepper, a spice or an herb) that is used to add flavor to food*

Task 4 – Translate the text from Russian into English

В Китае открылся робо-ресторан

Небольшой ресторан в китайском Куньшане начал использовать более десятка роботов, которые готовят и приносят еду. Механический персонал приветствует клиентов, доставляет блюда до столов, а также жарит мясо и овощи.

«Моя дочь попросила меня изобрести робота, который смог бы ей помогать по

дому. С этого все и началось», сказал основатель ресторана Сун Юганг.

Два робота расположены около двери, для того, чтобы приветствовать клиентов, еще 4 гуманоидных робота носят еду из кухни к столикам посетителей. На кухне работают еще 3 робота, двое из которых специализируются на жарке мяса и овощей, а третий варит пельмени.

Сун, давая интервью в местную газету Modern Times, сказал, что стоимость одного такого робота составляет 40 000 юаней ($6 500), а это составляет годовой оклад человеческого сотрудника.

«Роботы понимают 40 повседневных фраз. Они не болеют и не просят отпуск. После двух часов подзарядки они могут работать в течение пяти часов», добавил Сун.

Рост затрат на рабочую силу в Китае призвал производителей обратиться к автоматизации, и в прошлом году именно Китай обошел Японию и стал самым крупным в мире потребителем промышленных роботов.

Роботы кулинары имеют фиксированное количество блюд, которое они могут приготовить из-за ограниченности искусственного интеллекта. Список блюд загружает персонал (человек), также помогающий делать некоторые блюда.

Всем клиентам в ресторане очень интересно попробовать суп, рис или яичницу с помидором, приготовленный робо-поваром.

«Мои дети очень рады роботам», говорит Ян Лимэй, мать троих детей.

Каждый робо-официант двигается только по определенным дорожкам, которые идут из кухни к столикам. Если на их пути стоит человек, то он вежливо просит их отойти, чтобы продолжить свой путь.

«Я никогда не видел роботов, которые подают еду», говорит Юань, посетитель ресторана — «Я очень удивлен».

Task 5 – Read the text and insert one of the words given below into the gaps. Retell the text.

online	messages	animation
monitor	compatible	unmanned
derives	launched	leap
counterpart	permanent	mediator

Kirobo is world's first talking robot sent into space

Japan has _____the world's first talking robot into space to serve as companion to astronaut Kochi Wakata who will begin his mission in November.

The android took off from the island of Tanegashima in an _____rocket also carrying supplies for crew onboard the International Space Station (ISS).

Measuring 34cm (13 inches), Kirobo is due to arrive at the ISS on 9 August.

It is part of a study to see how machines can lend emotional support to people isolated over long periods.

The launch of the H-2B rocket was broadcast _____by the Japan Aerospace Exploration Agency (Jaxa).

The unmanned rocket is also carrying drinking water, food, clothing and work supplies to the six _____crew members based at the ISS.

Kirobo's name _____from the Japanese words for "hope" and "robot".

The small android weighs about 1kg (2.2 pounds) and has a wide range of physical motion. Its design was inspired by the legendary _____character Astro Boy.

Kirobo has been programmed to communicate in Japanese and keep records of its conversations with Mr Wakata who will take over as commander of the ISS later this year.

In addition, it is expected to relay _____from the control room to the astronaut.

"Kirobo will remember Mr Wakata's face so it can recognise him when they reunite up in space," the robot's developer, Tomotaka Takahashi said.

"I wish for this robot to function as a _____between a person and machine, or a person and the Internet, and sometimes even between people."

The biggest challenge was to make the android _____with space, Mr Takahashi added.

Dozens of tests were carried out over nine months to ensure Kirobo's reliability.

Kirobo has a twin robot on Earth called Mirata, which will _____any problems its electronic _____may experience in space.

"It's one small step for me, a giant_____ for robots," Mirata said of the mission last month.

The endeavour is a joint project between Mr Takahashi, car producer Toyota and advertising company Dentsu.

Task 6 – Write down the text using shorthand translation.

В Японії фермерів замінять роботами

У Японії стартував проект, в ході якого фермерів замінять роботами.

Уряд країни має намір виділити на реалізацію реформи понад 37 мільйонів доларів. Про старт програми повідомив міністр сільського господарства Японії Хіроші Дайдо, передає видання Bloomberg.

В рамках проекту будуть впроваджені не тільки роботизовані механізми, але і безпілотники, які будуть здійснювати контроль над урожаєм і деякі інші

функції. Найближчим часом у країні мають намір відкрити кілька повністю роботизовані ферм.

В даний час велика частина приладів проходить випробування, які завершаться вже до кінця травня цього року. Раніше вчені припустили, що до 2020 року через розвиток робототехніки без роботи залишаться 5 мільйонів чоловік.

На думку вчених, постраждають, насамперед, і в більшій мірі від технологічної революції адміністративні та офісні працівники ("білі комірці"), втрати робочих місць у цій категорії складуть дві третини.

BLOCK C. SPEECH SKILLS.

Task 7 – Jobs for Robots

What jobs do you think robots could do?

Imagine you have a robot to help you at home and at university. Which three jobs would you like your robot to do? Put your top three here:

1)
2)
3)

Now compare your top 3 ideas with the rest of the class.

Task 8 – Robofilms

Discuss the questions:

1. What films have you seen with robots in?
2. Do you like films with robots? Why / not?
3. What were the abilities of the film robots?
4. Do you think that robots with these abilities will ever exist?
5. Do you think that in the future robots will become a normal part of our lives?

Task 9 – Back to the future

Think of how your life has already changed thanks to technology. Complete the columns with as much information as you can.

PAST	PRESENT	FUTURE
wrote letters	send e-mails	?

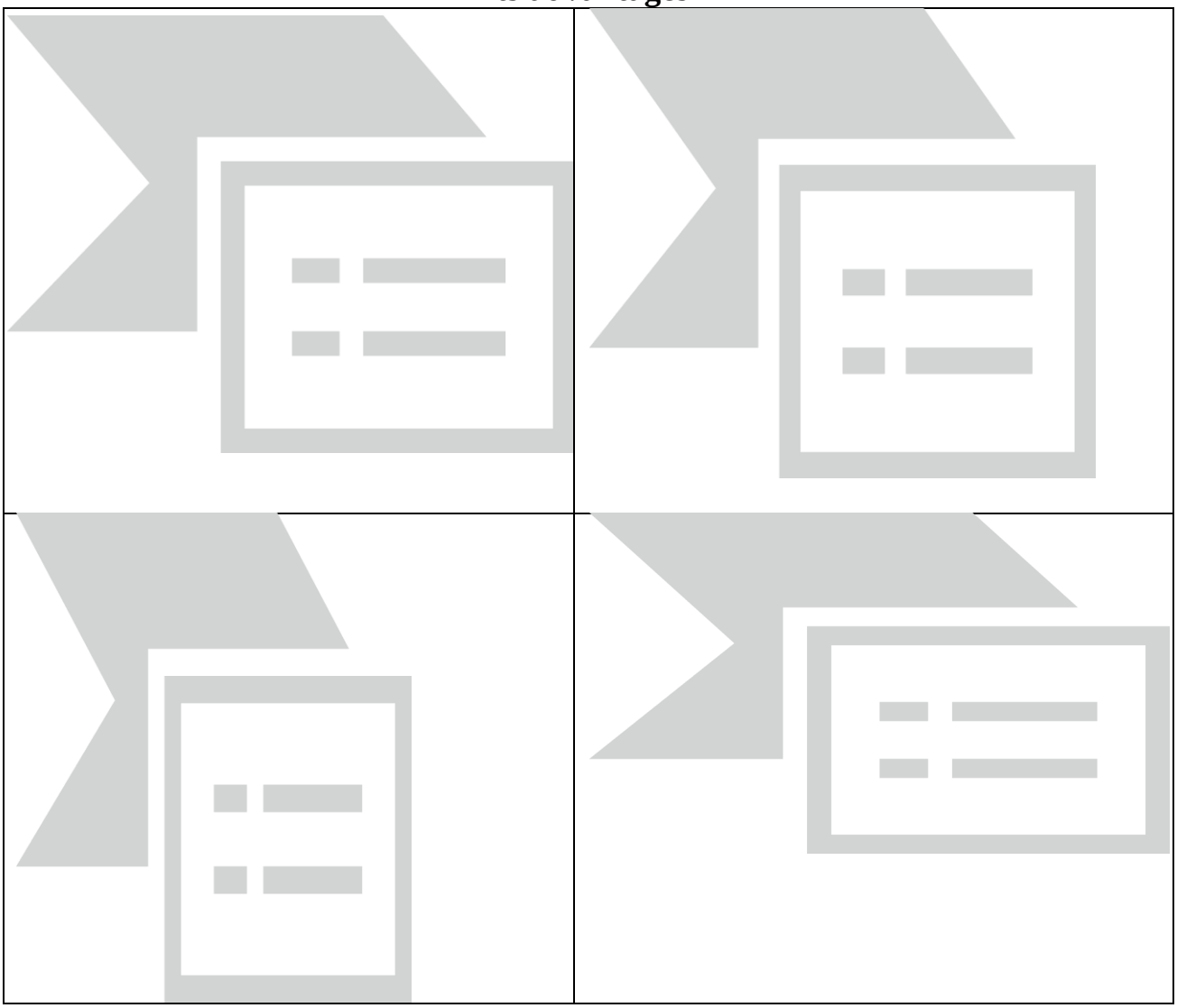
Task 10 – Design your own robot

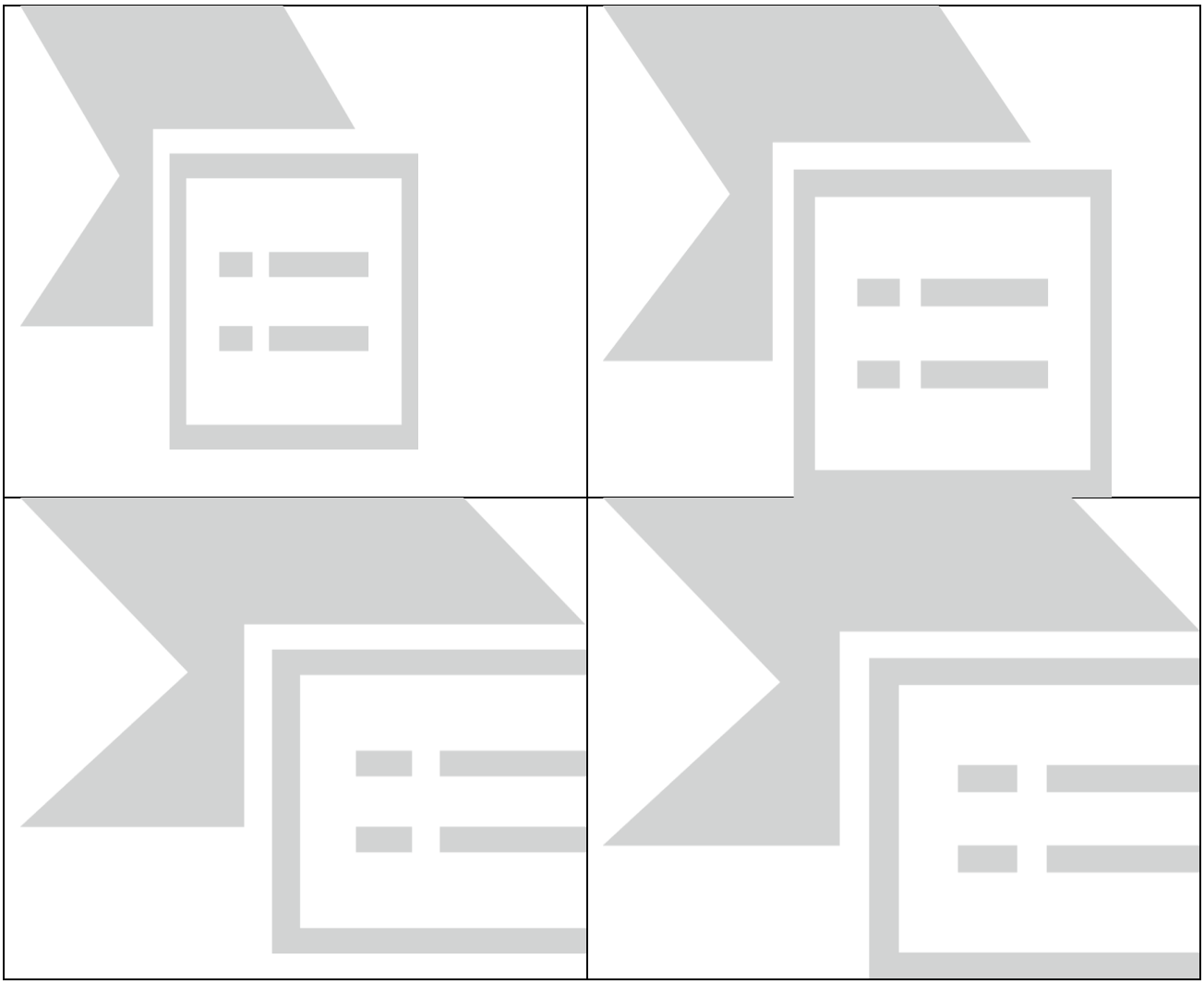
Imagine that you work for a robot design company. You and your team are responsible for designing the next generation of robots for the home. Talk to your team and decide on these points:

- What will your robot be able to do?
- What will your robot look like?
- How much will your robot cost to buy?
- What type of people will want to buy your robot?
- What brand name will you give your robot?

Now draw your robot and tell the other teams about your design.

Task 11 – Choose a device that you like most and describe it emphasizing its advantages





Task 12 – Robot Word Scramble

QUESTIONS	ANSWERS
1. TEFURU	1.
2. GNLYTCOHOE	2.
3. ENEENLIICTLG	3.
4. OSESSNR	4.
5. CINHEMA	5.
6. MROGARP	6.
7. MDNOIAUH	7.
8. INGNETORCOI	8.
9. ETCPRMUO	9.
10. IAIARIFTCL	10.

PART II. SPACE MACHINES

BLOCK A. READING SKILLS.

Task 1 – Read the text and provide the equivalents to the italicized words below.

10 Most Amazing Flying Machines Ever

Humanity has reached out to the stars on the wings and rockets of incredible flying machines, *culminating* in a permanent space station orbiting above the Earth. But the journey from the skies to space includes many smaller steps that opened humans' eyes to knowing what is possible under the heavens.

Each step represented a human flight of fancy transformed into a real flying machine — the Wright Brothers *flyer*, the supersonic Blackbird *spy plane*, and the huge Apollo rocket that carried men to the moon. Each machine, whether it resembled the fragile Wright flyer or *the sleek* SpaceShipOne, channeled human spirit and ingenuity through its mechanical shell to do amazing things.

The First Airplane: Wright Flyer: Kites, *gliders* and a toy helicopter inspired the Wright Flyer's *boxy design* that became the first manned, powered, heavier-than-air and controlled flying machine. The brothers achieved their first historic 12-second flight at Kitty Hawk on Dec. 17, 1903, after hundreds of previous gliding tests and experiments with a homemade wind tunnel.

The Red Baron & Aerial Weapons of World War I: Manfred von Richthofen, the World War I flying ace known as the Red Baron, viewed his German fighter aircraft as flying platforms for his guns rather than aerial stunt machines. But he and his fellow pilots on both sides pushed the limits of their *biplanes and triplanes* to shape their designs into graceful and speedy weapons of war.

The Zeppelin Hindenburg: When Airships Ruled: The luxurious Hindenburg represented the queen of the skies as the largest aircraft ever built, before it met the fiery ending that reduced it to a *smoldering wreck* within 32 seconds. The zeppelin airship loomed larger than three jumbo jets in order to carry a dining room, a lounge room with a grand piano, sleeping quarters and its own post office during transatlantic voyages.

The First Fighter Jet: Me 262 Schwalbe: Germany's secret flying weapon, the Messerschmidt Me 262, arrived too late to save Hitler's Third Reich from its downfall. But the world's first *operational fighter jet racked up* an impressive kill ratio against the much slower Allied bombers and fighters, and influenced later designs of U.S. military jet aircraft.

SR-71 Blackbird: Supersonic Spy Aircraft: The U.S. military's demand for a supersonic spy aircraft capable of flying fast and high beyond the reach of fighter jet interceptors or missiles led to the SR-71 Blackbird. The record-holder for fastest manned air-breathing jet aircraft could regularly fly beyond 2,000 mph (Mach 3) and at altitudes that required its crew to wear astronaut-style suits just in case.

Saturn V Rocket & Apollo Spacecraft: When American astronauts flew to the moon, they rode into space aboard the largest and most powerful rocket ever built. The Saturn V Rocket stood taller than a 36-story building and thundered into space with the power of five engines creating 7.5 million pounds of thrust at liftoff.

Space Shuttle: The First Reusable Spacecraft: The U.S. space shuttle launched like a rocket and returned like a glider as it *ferried satellites*, science equipment and astronauts into Earth orbit. Five of them served as the workhorses for constructing the International Space Station as well as launching and repairing the Hubble Space Telescope, but not without tragedy striking twice.

International Space Station: The largest structure put into space by humans required 15 countries and $100 billion to assemble its living quarters, laboratories and solar panels. Astronauts who have lived aboard the International Space Station had stunning views of Earth as they circled the globe every 90 minutes at a speed of about 17,500 miles per hour (28,000 kph).

SpaceShipOne: First Private Spacecraft: A $10 million prize inspired the first privately funded reusable spacecraft — the cigar-shaped SpaceShipOne that launched in midair from beneath the belly of its airplane mother ship. Its early success led to SpaceShipTwo, a spacecraft designed to fly two pilots and six passengers on suborbital trips that give everyone a few minutes of weightlessness.

V-22 Osprey: Controversial Dream Machine: The V-22 Osprey has fulfilled the longstanding dream of making an aircraft that can hover like a helicopter and fly like an airplane — a feat requiring *wing-mounted rotors* that can tilt to act as helicopter blades or propellers. But the U.S. military aircraft only emerged after years of development troubles.

WORD	***TRANSLATION***	***WORD***	***TRANSLATION***
culminating		*biplanes and triplanes*	
flyer		*smoldering wreck*	
spy plane		*operational fighter jet*	
the sleek		*racked up*	
gliders		*ferried satellites*	
boxy design		*wing-mounted rotors*	

State if the sentences given below are True of False

Apollo rocket carried men to the moon	T/F

The first airplane was named Me 262 Schwalbe	T/F
A lounge room with a grand piano was on the board of V-22 Osprey	T/F
International Space Station is a shuttle	T/F
The Saturn V Rocket was taller than a 36-story building	T/F

Task 2 – Before you read the article, decide if the following statements are true or false for you:

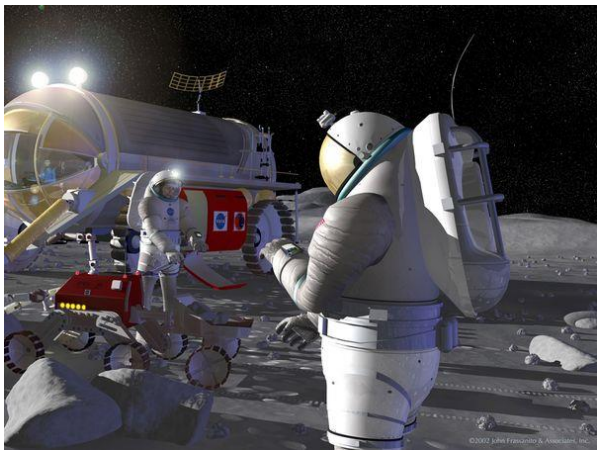
1) I believe than going to Mars will be possible during the next 25 years
2) Personally I want to step down on the surface of Mars
3) Why should I go to Mars if there are so many places to visit on the Earth?

Read the article and then answer the questions in pairs or small groups.

Let's go to Mars! The future of space travel

SpaceX, Virgin Galactic and other private endeavours are paving the way for a future Mars landing.

This year, scientists made one of the most important space discoveries in a long time, one that brings the mission of landing humans on the surface of another planet into laser focus -- and I'm not talking about Pluto's heart. They found compelling evidence that there is liquid water flowing on Mars, and that means there's the potential for life on the Red Planet.



You don't have to be a Space Camp alum like I am to feel your heart race at the very thought. Potentially finding water on Mars is an enormous triumph any way you look at it, and its discovery is sure to spur manned exploration of Mars' surface, something that's eluded us in the 46 years since landing on the moon.

Outside of the scientific community's renewed interest in Martian exploration, there's another reason why I'm hopeful we'll set foot on Mars in my lifetime: we already have technology far more advanced than the spacecraft and control systems that got us to the moon, most of which ran on computers no more powerful than a **calculator**. These days, we also have the entrepreneurial hunger it takes to put people on the dusty red planet. A handful of smart people who share my passion for outer space have the drive and resources (ahem, money) to make it happen.

In my lifetime, human exploration of Earth's closest neighbor isn't just the province of space disaster movies like the Martian (thanks, Matt Damon), or abduction films like Mars Attacks and Mars Needs Moms. It's closer to reality than ever. Here are some of the important programs and people on our planet that will help put us on the Red Planet.

Entrepreneurs and advocates

Like me, entrepreneur Elon Musk, the man behind SpaceX, the first private company to send supplies to the International Space Station (ISS), dreams of a Mars landing. Musk believes that humans could reach the planet in as few as 10 years.

Then there's billionaire Richard Branson, whose tourism venture, Virgin Galactic, is currently working on sending civilians (not just astronauts) into sub-orbital flight with a private spacecraft. Virgin Galactic isn't setting its sights on Mars just yet, but the company's work could one day help us get to the Red Planet.

Apollo 11 astronaut Buzz Aldrin is vocal about Mars too, advocating in his book " Mission to Mars" that it should be our next exploration goal. Meanwhile, Dutch non-profit foundation Mars One is planning and raising money for a one-way mission where some brave people establish a permanent base there, never to return to Earth. The Mars One group faces criticism from the scientific community, though, for not having a feasible plan to actually reach the planet with volunteers and sufficient supplies.

More credibly, NASA, the long-standing agency in charge of the US's space travel efforts, is optimistic about getting us to at least orbit Mars by President Obama's mid-2030 timeline, and has early-stageplans to make it real.

Though no one company or organization has an imminently viable action plan to get us to Mars just yet, these advancements and advocacy by the big players will hopefully pave the way for a mission to Mars.

The tech to get us there

Right now, the biggest challenges in getting to Mars are paying for the costly trip (the cheapest proposed plan would cost $76 million), keeping the astronauts healthy, and figuring out the right type of fuel for a round-trip voyage. Mars is an average 140 million miles from Earth (depending on its position in its orbit around the sun, and it would take a crew of astronauts around 200 days or 6 months to get there, at least. In order to cover that distance, we need sufficient fuel to power a spacecraft, and NASA is researching the best kind of ship and propulsion for such a trip.

SpaceX believes it has the right ship with the Dragon capsule, a manned spacecraft that could one day carry astronauts on interplanetary trips. Similarly, Texas-based rocket company Ad Astra Rocket is building the Vasmir electric engine that could possibly power a spaceship to Mars.

Meanwhile, SpaceWorks, an aerospace engineering firm out of Atlanta,has proposed the possibility of putting astronauts in torpor -- a hibernation-like state -- during the trip to conserve food and supplies and reduce the health risks associated with traveling in zero-gravity, like bone density loss. Though it sounds like something out of science fiction (in fact, astronauts were in a torpor state in the movies "Interstellar" and "2001: A Space Odyssey"), it could be a real, practical way to get humans to Mars as safely as possible.

The human factor

The six-month trip to Mars won't be easy on the astronauts, as they face long stints of isolation, extended stays in cramped quarters and harsh weather conditions

on the Martian surface. In order to keep them healthy, happy and safe, several organizations are currently conducting experiments that simulate conditions of being on Mars and traveling to the planet.

The NASA-funded Hawaii Space Exploration Analog and Simulation missions are studying a group of six humans living together in a confined, enclosed habitat, similar to what astronauts would live in on the surface of Mars during a mission. Meanwhile, astronauts from the European Space Agency (ESA) are in Antarctica at the Concordia research facility, a highly isolated compound that simulates what it's like to be on long space journeys in harsh conditions, hundreds of miles away from other humans.

Disasters are part of the route

The road to Mars through both private and government-funded space travel hasn't been easy so far. SpaceX's unmanned Falcon 9 rocket exploded just after launch in June 2015 during a resupply mission to the ISS. Likewise, Virgin Galactic's SpaceShipTwo crashed in the fall of 2014 during a test flight in California, killing one person.

These accidents stir up memories of the prominent tragedies NASA has endured over the last 50 years; Apollo 1 catching on fire on the launchpad during testing, the Challenger space shuttle exploding 73 seconds after launch and the Columbia space shuttle disintegrating during re-entry into the Earth's atmosphere. Each of those accidents claimed the lives of the crews on board.

The unfortunate truth is that in the quest for space travel, there will be near misses, failures and disasters. NASA carried on from its setbacks and so will SpaceX, Virgin Galactic and others, driven by the deep desire to explore uncharted territory.

Next stop, Mars

Scientists, space agencies and private companies are still in the early stages of any kind of Mars mission, but their advancements in space travel are nothing short of astounding. Roughly 50 years ago, we were scrambling to send people on the week-long journey to the moon.

Now, we've sent astronauts to orbit the Earth for more than a year at a time, launched unmanned rovers to Mars to gather data about the planet's ability to host our species, and currently maintain a crew of people continuously living at the ISS (and posting pictures of the spectacular view to Twitter).

There are still untold hurdles to tackle before we can put a small crew of trained astronauts on the Red Planet, and many more after that until commercial rockets blast off for Mars with civilian spectators inside. But give it 50 more years, and I'm betting that we'll have a ship breaking away from Earth on a flight plan straight towards Mars. And when those first humans touch down, I'll be with the other fervent stargazers, watching every minute of it.

1. Do you believe that there could have been life in Mars?
2. Name those people or organizations who/which invest into the space explorations.

3. What are the difficulties that now people do not travel to Mars?

4. Tell the rest of the class about the disasters connected with space explorations.

5. Did you want to become an astronaut when you were a child?

BLOCK B. TRANSLATION SKILLS.

Task 3 – Read the text and translate it into your native language. Fill in the gaps with the missing words.

taxpayers	space tourism	headquarters
UFO	lease agreement	fatal test flight
anchor tenant	impressed	spaceport
facilities	research purposes	aliens

Spaceport America: Space Tourism Launch Site

Spaceport America is a launching facility for numerous private space companies. Several observers have called it the first _____dedicated to commercial spaceflight.

The spaceport broke ground in 2006 in New Mexico and was substantially complete around 2012.

Virgin Galactic is considered the _____of Spaceport America; public money contributed at least $209 million to attract Virgin founder Richard Branson and others to establish _____there. The company has undergone numerous delays in its plans to operate commercial spaceflights. This has led some critics to say that a lot of money has been spent on what is now an only partially operational spaceport.

Luring Virgin to the state

The age of space tourism officially launched when SpaceShipOne — financed jointly by Scaled Composites and Microsoft co-founder Paul Allen — successfully flew into space twice in 2004.

By making the trip, SpaceShipOne secured the Ansari X-Prize and $10 million. Its technology _____Branson, who announced in 2004 that Virgin would fund the development of a successor spacecraft called SpaceShipTwo. He alsoannounced he was taking reservations for commercial tickets to space for an estimated $200,000 apiece.

The X-Prize also spurred interest in Spaceport America. In 2004, New Mexico won a bid to host the X-Prize Cup, which was intended to be an exhibition to showcase the technologies available for_____. The first event occurred in October 2005, drawing 20,000 people to Las Cruces.

Two months later, Branson and then-New Mexico governor Bill Richardson announced a deal to bring the Virgin headquarters to the state. The state would build a facility to host several companies, but Virgin would be the chief tenant.

"We're going where no one has gone before. There's no model to follow, nothing to copy. That is what makes this so exciting," Branson said at the

announcement that December. "We might even be able to allow those _____who landed at Roswell 50 years ago in a _____a chance to go home."

At the time, officials estimated that construction would begin as early as 2007, with the facility opening in 2009 or 2010 for business. Virgin also planned to fly its first commercial spaceflight by the end of the decade.

However, both sides experienced development delays that pushed back their estimates by several years. The target date for Virgin Galactic flights now appears to be fall 2017, according to Forbes. Reported issues affecting Spaceport America include environmental assessment findings and problems with the design of the _____interior.

Building the facility

Spaceport America is fairly isolated from large population centers, with the largest nearby city being Las Cruces — 55 miles away. Government officials spent several months negotiating with landowners for the space that the facility would require to run commercial spaceflights.

On Dec. 11, 2006, an agreement was brokered allowing for 18,000 acres of state trust land. Participants in the pact included the New Mexico Spaceport Authority, the State Land Office, Sierra County and two ranch owners.

Design concepts for the spaceport rolled out in 2007 as two counties agreed to contribute tax money for the construction. Then in 2008, Virgin signed a 20-year _____with the state of New Mexico to put its headquarters and operations at Spaceport America.

Although some flights were already running from launch pads, the official groundbreaking of the facility didn't take place until 2009. Virgin's "Eve" carrier spacecraft — designed to hoist the first SpaceShipTwo above the ground for suborbital runs — made a flypast during the ceremony.

But officials emphasized that they were not relying on Virgin to make their money. Small satellites for military and _____were some of the other client types sought.

"We can't have a spaceport that just has a one-sided mission. Because if that mission has a hiccup, then we and this investment are going to have a very bad day," said Steve Landeene, then-executive director of the New Mexico Spaceport Authority, in 2009. "The key is a diverse portfolio."

Waiting for business

In 2014, Virgin Galactic experienced a _____that killed one pilot and also pushed back its plans again for a commercial spaceflight.

In December, the Wall Street Journal wrote that the spaceport still is "largely vacant, with little benefit to surrounding communities" -- and locals were worrying

about the future given the crash. At the time, spaceport officials said they were looking for other tenants to complement Virgin (SpaceX is also a tenant.)

In early 2015, a bill moved by New Mexico Senator George K. Muñoz suggested selling Spaceport America, citing problems with waiting for operations to begin. The bill was stranded in finance committee in March 2015, with officials saying there wasn't a lot of widespread support for the idea.

"There was a lot of hoopla before that if 'we build it … they will come,' but it has been several years now and nobody's shown up yet," Muñoz said in a debatecited on Space.com. "New Mexican _____are continuing to foot the bill for a $250 million empty facility that is providing the Legislature shaky operational information at best."

The spaceport also generates money through space work (such as an UP Aerospace launch in mid-2016) and tourism-related activities: "we also host special events, photo-shoots, filming and air-related activities," the facility says on its website. Anderson also emphasizes that the facility is a "long-term investment" that will require help from the state legislature, although Virgin remains committed to the facility.

Task 4 – Translate the text from Russian into English

США Показали миру самую мощную ракету в истории

Американское аэрокосмическое агентство NASA представило проект новой сверхтяжелой ракеты-носителя для пилотируемых полетов. В отдаленной перспективе, по планам агентства, именно на этой ракете человек полетит на Марс, говорится в сообщении ведомства.

"Эта ракета... обеспечит США лидерство в космосе и вдохновит миллионы людей во всем мире", - заявил глава NASA Чарльз Болден. По его словам, "в американской истории освоения космоса сегодня начинается новая глава".

Проект - это пока только компьютерная анимация, но представляют его в Вашингтоне как революционный прорыв в освоении космоса. Эта ракета - компиляция тех технологий, что накоплены NASA за последние десятилетия: бросаются в глаза пять двигателей, которые так напоминают маршевые двигатели шаттлов. Почти наверняка новая ракета будет выводить в космос

корабль "Орион", что является частью программы "Созвездие", от которой недавно отказалась администрация Обамы, сообщает телеканал "Россия 24".

Новая космическая система - Space Launch System (SLS) - станет самой мощной американской ракетой со времен "Сатурнов", которые в 1960-1970-е годы выводили в космос "Аполлоны" лунных миссий. Первая ступень носителя будет оснащена

водородно-кислородными двигателями RS-25D/E (новая версия двигателей шаттлов RS-25), а вторая - разработанными для проекта "Созвездие" (Constellation) двигателями J-2X на том же топливе.

Первые варианты новой ракеты будут способны поднимать 70-100 тонн, а затем ее грузоподъемность будет увеличена до 130 тонн. На ранних этапах будут использоваться твердотопливные ускорители, применявшиеся для запуска шаттлов и другие уже существующие космические разработки. Первый полет ракеты, как ожидается, состоится в 2017 году, а первый полет с пилотируемым кораблем - в 2021 году.

Ракета SLS будет доставлять в космос будущие американские пилотируемые корабли "Орион", главной задачей которых станет исследование пространства за пределами околоземной орбиты. В частности, США планируют пилотируемую миссию по исследованию астероида (2025 год) и полет на Марс в 2030-е годы.

Корабль "Орион", напоминающий по своей конструкции "Аполлоны", был частью программы "Созвездие", начатой во времена президента Джорджа Буша-младшего с целью вернуть американских астронавтов на Луну, а затем отправить миссию на Марс. Нынешний президент США Барак Обама в 2010 году свернул эту программу.

В мае NASA приняло решение, что будущие американские пилотируемые корабли, предназначенные для полетов за пределы околоземной орбиты, будут основаны на технических идеях, которые разрабатывались ранее в рамках проекта "Орион".

Объем жилого помещения корабля должен составить 316 кубических футов (8,95 кубического метра). Объем жилого пространства трехместных "Аполлонов" составлял 210 кубических футов (5,9 кубометра). Новый корабль, как ожидается, будет в десять раз безопаснее при спуске и входе в атмосферу по сравнению с шаттлами.

В случае экспедиции к Марсу потребуется несколько запусков новой сверхтяжелой ракеты.

NASA сосредоточится на SLS, переложив легкие ракеты на частные компании

Заявление NASA стало завершением многомесячной работы его разработчиков на фоне жесткой полемики между администрацией агентства и конгрессом США. Многие конгрессмены упрекали руководство NASA в том, что агентство не торопится выполнять задачи, поставленные в законе о финансировании NASA в 2010 году.

35 миллиардов плюс еще по три миллиарда каждый год - во столько обойдется космический грузовик.

В настоящее время NASA не имеет собственных средств доставки грузов и людей на борт МКС и в течение нескольких лет будет полагаться на российскую систему "Союз".

Напомним, несколько коммерческих компаний ведут сейчас разработку новой коммерческой ракеты-носителя Liberty, но старт первой из них

состоится не раньше 2015 года. Кроме того, ни одна из этих ракет не имеет такой грузоподъемности, как система SLS.

NASA надеется, что если коммерческие компании возьмут на себя доставку грузов и людей на низкие орбиты, она сможет сосредоточить все финансовые и технические ресурсы на создании ракеты-носителя SLS и корабля "Орион" к 2017 году.

NASA до сих пор не имеет утвержденной программы использования новой космической техники. Президент Барак Обама говорил только о возможности пилотируемого полёта к астероиду к 2025 году, а также об экспедициях на Марс в отдаленном будущем.

Новая супертяжелая ракета-носитель может использоваться также для выведения массивных грузов, например, спутников связи нового поколения, на геостационарные орбиты высотой 36600 км.

Task 5 – Read the text and insert one of the words given below into the gaps. Retell the text.

How To Become An Astronaut

Astronauts are people who do activities related to human space exploration. The most visible parts of their job take place while they're working in orbit, but most of their careers will be spent on the ground training and supporting other missions.

Becoming an astronaut doesn't just happen overnight. It takes many years of education and experience to meet the basic qualifications. Many people aren't accepted on the first try, either, requiring them to learn more to be better prepared for the next try. Even then, only a small percentage of _____become astronaut candidates, making it a hard job to get.

This article focuses on the selection process for NASA, which applies to American citizens. While many of the qualifications can be generalized to astronaut programs in other countries, it's important to note that each space agency has its own selection process.

Non-U.S. citizens in the following geographical areas should consult one of these agencies for more information on becoming an astronaut:

- European Space Agency
- Japanese Aerospace Exploration Agency
- Canadian Space Agency
- Russian Federal Space Agency
- China National Space Administration

The right stuff

The first step to being an astronaut is getting relevant experience in school. There are two main classes of astronaut applicants: military applicants and civilian applicants. Military application procedures vary depending on the branch of the U.S. armed forces you are working for, since you apply through your respective branch. Civilians apply to NASA directly.

No matter the background, NASA wants its astronauts to have at least a bachelor's degree in engineering, biological science, physical science or mathematics. (The agency maintains a list of _____ to these degrees, such as geography or aviation management.) Many astronauts have a _____or even a Ph.D. in their field. Some astronauts, such as Story Musgrave (now retired), have degrees even beyond that.

It takes more than school to gain a foothold as an astronaut selection candidate, however. NASA wants at least three years of "related, progressively responsible, professional experience" or (in a nod to military candidates) at least 1,000 hours of "_____ time in jet aircraft." Advanced degrees are considered equivalent to this experience, however, with a master's equaling one year of experience and a doctorate three years of experience.

A notable exception to these requirements are teachers, who still must have a technical bachelor's degree but can qualify through the act of teaching — even for elementary school children.

NASA astronaut candidates must also pass a _____physical. Among the requirements:

- 20/20 vision (either naturally or with corrective lenses)
- blood pressure not more than 140/90 in a _____position
- a height of between 62 and 75 inches

In general, you must be in extremely good shape to be an astronaut as it's expensive to make an emergency return to Earth in case of medical emergency in orbit.

There also are interviews during the selection process to figure out if a candidate is physically and psychologically able to work as an astronaut. Flexibility, group work skills and a love of learning are some of the personality traits NASA looks for.

Astronaut candidacy and path to flight

Once selected, NASA does not consider you to be a full astronaut yet. There are two years of basic training ahead in which you are considered an "astronaut candidate." The candidates receive basic classroom learning about theInternational Space Station and spaceflight generally. They also become qualified _____divers, do military water survival training, undergo swimming tests, are exposed to high and low atmospheric pressures, do flights in the "vomit comet" and get media and Russian language training, among other things. [6 Everyday Things that Turn Strange in _____]

After graduating, many astronauts are not assigned to a flight for years. They will back up other astronauts in orbit through serving as a "CapCom" in Mission Control, doing _____spacewalks in NASA's Neutral Buoyancy Laboratory and picking up more skills they will need for their time in orbit. They spend time not only at NASA, but also international partners with training facilities (such as Canada, to learn how to operate the station's robotic arm.) All astronauts also must maintain flight _____on T-38 aircraft, flying a certain number of hours per month.

Once an astronaut is selected for a flight, the _____takes another couple of years. They start by reading textbooks and receive classroom training, then do simulation after simulation to learn the stuff for real. Their training takes place all over the world, both individually and with their c_____.

"Several full-scale mockups and trainers are also used to train astronauts. These mockups and trainers are used for onboard systems orientation and habitability training. Astronauts practice meal preparation, equipment stowage, trash management, use of cameras, and experiment operations," NASA stated.

A typical spaceflight these days for a NASA astronaut lasts six months on the International Space Station, but some astronauts are now being assigned to year-long flights to learn more about the human body. Science will take up most of an astronaut's time in orbit.

applicants	demanding	simulated
proficiency	exceptions	pilot-in-command
master's degree	Weightlessness	mission training
scuba	rewmates	sitting

Task 6 – Write down the text using shorthand translation.

Валентина Терешкова

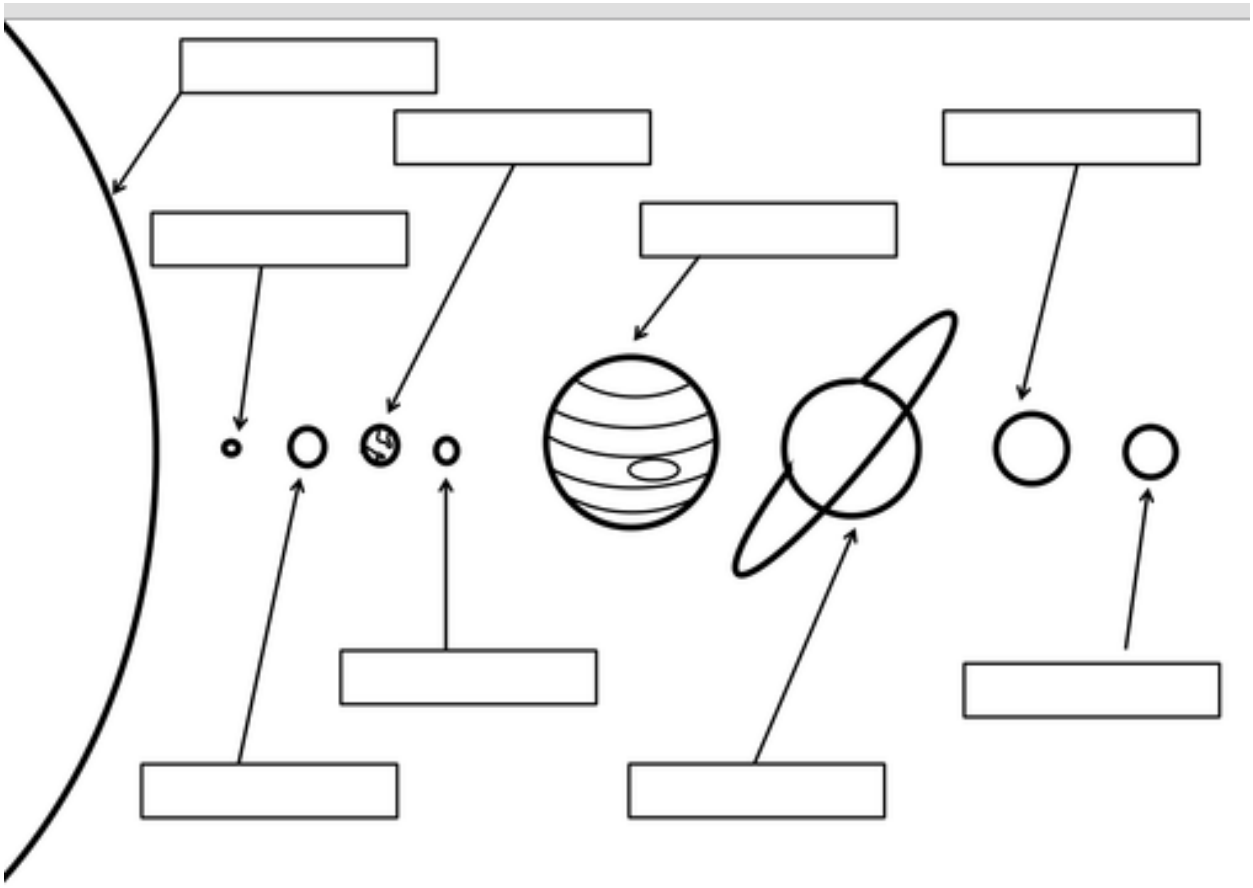
Перші успішні польоти радянських космонавтів зародили думка у головного конструктора Сергія Корольова запустити в космос і жінку. З 1962 року по всій країні відбирали претенденток. З п'яти підготовлених кандидатів була обрана саме Терешкова, в тому числі завдяки своєму робочому походженням.

Свій перший політ жінка-космонавт скоїла 16 червня 1963 року на кораблі " Восток-6. Перебування в космосі зайняло три доби. Але в польоті виникли проблеми з орієнтацією корабля. Виявилося, що Терешкова відчувала себе не найкращим чином, так як у космосі жіноча фізіологія дає про себе знати. Про це знали вчені, розташувавши з-за цього в списку кандидатів Валентину лише на 5-му місці.

Однак Хрущов і Корольов не послухали медичну комісію. Схід-6 приземлився в Алтайському краї. Аж до 1997 року Валентина Терешкова служила інструктором-космонавтом. Потім вона перейшла в Центр підготовки космонавтів. Перша жінка-космонавт вела багату громадську і державну діяльність, будучи народним депутатом у вищих органах різних скликань. Терешкової вдається залишатися єдиною жінкою, яка здійснила космічний політ на самоті.

BLOCK C. SPEECH SKILLS.

Task 7 – How many planets are there? Can you name all of them? Which planets have we visited?



Task 8 – Answer the questions.

1. Now that Pluto is no longer included, how many planets are there in the Solar System?
2. What is the smallest planet in the Solar System?
3. What is the largest planet in the Solar System?
4. What is the hottest planet in the Solar System?
5. The sixth planet from the Sun features an extensive ring system, what is the name of this planet?
6. The chemical element uranium was named after what planet?
7. What planet in the solar system is farthest from the Sun?
8. What is the second smallest planet in the solar system?
9. What planet is closest in size to Earth?
10. The moon Titan orbits what planet?
11. What planet is nicknamed the ‘Red Planet’?

12. True or false? Neptune is larger than Saturn.
13. The Galilean moons orbit what planet?
14. What planet is closest to the Sun?
15. What is the seventh planet from the Sun?
16. True or false? Venus has more atmospheric pressure than Earth?
17. Triton is the largest moon of what planet?
18. What is the brightest planet in the night sky?
19. What is the third planet from the Sun?
20. Phobos and Deimos are moons of what planet?

Task 9 – Act as an interpreter

Hitch your wagon to a star

Mary. Betty, quickly, turn on the TV, please! The Galileo orbiter was broadcasted to have reached Jupiter.	
	- Боже мой! Когда ты это слышала?
	- Только несколько минут назад. Сообщили, что в 1989 году был запущен космический корабль многоразового использования «Атлантис» с орбитальным комплексом «Галилей» в пятилетнее космическое путешествие.
B. And? What else did they say?	
M. Unfortunately, I only heard that bit because I turned on the radio at the end of the news.	
B. The subject will surely be covered on TV soon. We should wait a little. Meanwhile we can look through the newspapers. We get a lot of them.	
	- Но в гостиной их мало.

	- А, это, наверное, Дейв взял их. Дейв! Ты сейчас читаешь газеты?
Dave. Yes, Betty, we are in Dad's study with Nick. He is watching TV. Join us if you want.	
	- Знаешь, Мэри, всем членам нашей семьи приходится смотреть телевизор в своих комнатах. В Штатах много телевизионных программ, тысяча станций в 50 штатах, и в большинстве штатов имеется выбор из 5-6 каналов. Так что выбор членов нашей семьи редко совпадает.
D. That's true, Mary, we often argued on what programme to watch, as mother likes serials, father prefers news and serious discussion programmes. Betty would choose musicals and comedies, the twins - cartoons, whereas I like sport programmes.	
	- Я тоже. Мне трудно также отказаться и от детективов. Но не выношу, когда их прерывают рекламой. Эти перерывы действуют мне на нервы.
	- Да, но они неизбежны. Почти все телевидение в этой стране коммерческое. Хотя есть один канал, принадлежащий компании Пи-би-эс (Общественная вещательная служба), на котором нет рекламных пауз.
	- Нельзя ли нам посмотреть сейчас новости? На каких каналах новости передают наверняка?
B. NEC (the National Broadcasting	

Company), CBS (Columbia Broadcasting System) and ABC (the American Broadcasting Corporation). They are the major companies.	
	- Да, мы живем в густом информационном «бульоне». Похоже, что американские журналисты сделали новости необходимой частью жизни человека. Если бы не газеты и телевидение, мы стали бы немыми, нам не о чем было бы говорить с друзьями, я думаю.
N. From the papers' point of view there is nothing else in the world but sensation. How many sensations can someone's head deal with? About 5 are all it can take. Nevertheless we readily allow ourselves to be idiotic time and time again.	.
	- «Много шума из ничего»,- Шекспир назвал бы это.
M. I m sorry, boys, I wanted	- Извините, мальчики, я хотела узнать, не было ли новостей об исследовании космоса. Мне не удалось много услышать по радио. Вы что-нибудь читали об этом в газетах?
N. There is lots of interesting information in American newspapers on the topic. And you know, the quality of some papers is very high and a lot of facts are quoted by many papers in the world.	
D. If only all of the huge quantity of American papers were of high quality! Out of the 2,000 titles of	

daily papers the "yellow press" makes up a considerable part.	
	- В «Вашингтон пост» статья об исследовании внутренних планет солнечной системы - Меркурия. Марса и. Венеры космическими кораблями «Маринер», «Викинг» и «Пионер». Упоминается, что, проходя мимо Сатурна в 1980, космические корабли «Вояджер» обнаружили в районе экватора планеты ветры, скорость которых достигает 1600 километров в час. Стало известно, что Сатурн имеет сотни, даже тысячи колец. «Вояджер-2» миновал Уран в 1986 году, обнаружив, что он тоже имеет кольца. В 1989 году он миновал Нептун.
B. I've seen colour images of the planets sent back by spacecrafts in magazines. Mars, Jupiter and Saturn happen to be vivid places, possessing craters, volcanoes, auroras, moons, alive with winds, storms and lightning. Oh, excuse my interrupting you, Nick.	-
N. Never mind. I only wanted to conclude that the US is reported to be planning several interplanetary launches, including one in which an unmanned spacecraft will study an asteroid, then rendezvous and ily in tandem with a comet for several years. In the future NASA (National Aeronautics and Space Administration) plans missions to take a sample of a comet's core for analysis.	
	- Невообразима Вселенная! Чем

	непостижимее кажется космос, тем сильнее влечет меня его притягательная сила.
	- Мэри, считают, что беспилотные полеты приведут к пилотируемым исследованиям солнечной системы в XXI в. Может случиться, что ты будешь одной из тех, кто прикоснется к чуйу рукой.
D. "Hitch your wagon to a star," said Ralph W. Emerson... Do you want to know what the New York Times writes about the Hubble Space Telescope?	
	- Я читал, что он назван так в честь американского астронома ЭдвинаХаббла (1889-1953). Известно, что он весит 12 тонн и является самым большим телескопом, когда-либо устанавливавшимся в космосе.
	- Да. Его камеры могут заглянуть на расстояние в 20000 миллионов световых лет и увидеть окраины известной Вселенной, проникая в прошлое как во времени, так и в пространстве. С помощью телескопа ученые надеются исследовать форму и возраст самой Вселенной.
	- Как он будет управляться? Он будет пилотируемым?
D. No, the telescope was launched into orbit by the space shuttle, and 18 ground based computers and 20,000 daily radio commands aim the telescope and operate its complex instruments.	

	- Сможем ли мы узнать с его помощью о существовании внеземной жизни?
D. The telescope will be pointed at nearby stars and it the cameras find planetary systems surrounding these stars, it may increase the possibility that extraterrestrial life exists.	.
N. Just think, it will be certain to produce images of quasars, pulsars and exploding galaxies thousands of light years away from Earth!	- Подумай только, он наверняка произведет изображение квазаров, пульсаров и взрывающихся галактик на расстоянии тысяч световых лет от Земли!
	- Я читала о гипотезе «большого взрыва» - невообразимо мощного взрыва, который считают началом Вселенной. Расширяющая область энергии и вещества потом остыла и срослась, образовав галактики, звезды, планеты - Вселенную.
D. You see, the telescope is believed to be able to help check this theory of the origin of the Universe. It may be capable of "looking back" to what existed right after the Big Bang - the Universe at the beginning of time.	
	- Нет! Это потрясающе! Я просто не в состоянии представить все эти космические размеры. Бесконечность и вечность за пределами моего понимания.
D. That's what space technology, skylab spacecrafts and satellites are used for. And not only that. Communication satellites transmit computer data, radio and television broadcasts, and telephone calls.	

M. Don't forget that when we are back in Britain, please.	
B. Of course not, Mary, dear! As long as space communication exists we shall never lose each other.	
N. Hush! Here are the NBC news at last.	
	- Это Майкл Херст с программой новостей Эн-би-си. Орбитальный космический аппарат «Галилей», запущенный в октябре 1989 года в исторический 6-летний полет, достиг планеты Юпитер. Впервые «Галилей» спустил зонд в атмосферу внешней планеты. Зонд производил измерения в течение 75 минут, прежде чем был разрушен атмосферным давлением. Орбитальный аппарат будет проводить исследование Юпитера в течение 20 месяцев. Ожидается, что «Галилей» даст новую информацию о происхождении солнечной системы.
M. That's what I have been waiting to hear!	

Task 10 – Space Quiz

1.Which is the correct order, starting with the smallest and ending with the largest?

- planet - star - galaxy
- planet - galaxy - star
- star - planet - galaxy

2.What do we call an object that is in orbit around a planet?

- a star
- a satellite
- a comet

3.Which is the third planet from the Sun?

- Mars
- Venus
- Earth

4.Which force keeps the planets in orbit?

- friction
- gravity
- tension

5.The orbits of the planets are:

- perfect circles
- slightly squashed circles
- spheres

6.The further away from the Sun:

- the faster the planet moves.
- the hotter the planet is.
- the longer the planet's orbit takes.

7.Why is a day on Mars about 37 minutes longer than a day on Earth?

- Martian watches don't keep very good time.
- Mars spins more slowly on its axis than Earth does.
- Mars spins faster on its axis than Earth does.

8.In which direction does the Earth spin?

- from west to east.
- from east to west.
- from north to south.

9.Why do we have seasons on Earth?

- the Earth is closer to the Sun in summer than it is in winter.
- the Sun is brighter in summer than it is in winter.
- the Earth's axis is tilted.

10.At midday in summer in the Northen hemisphere, the Sun can be seen in the south. Where would you see the Sun at midday in the winter?

- in the north.
- in the south but higher in the sky.
- in the south but lower in the sky.

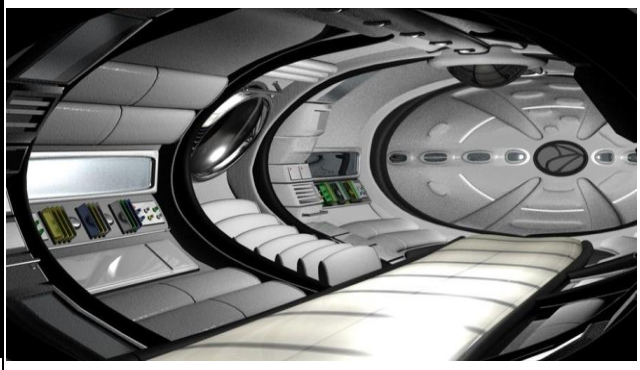
11.Which phase of the Moon is this?

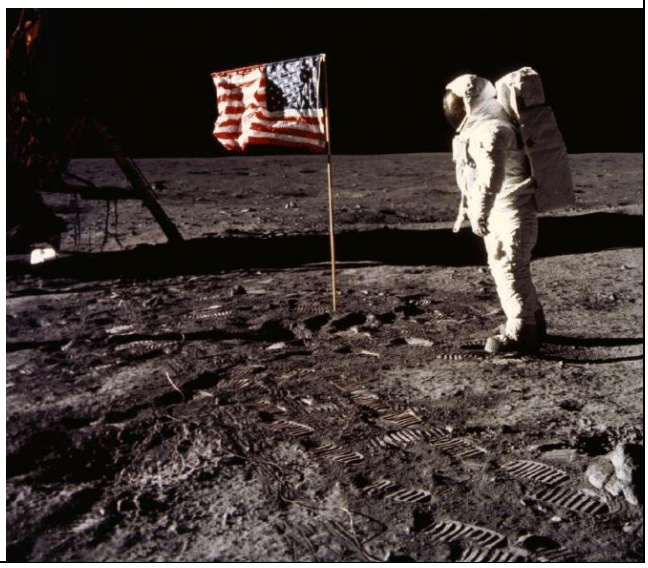
- full Moon.
- new Moon.
- crescent Moon.

12.Which of the following is not a use of artificial satellites?

- spying.
- weather forecasting.
- travelling to other planets.

Task 11 – Make up a story using the pictures below





Task 12 – Space Word Scramble

QUESTIONS	ANSWERS
1. XAGAYL	1.
2. CNOTOLASEINTL	2.
3. LCUHAN	3.
4. TESULHT	4.
5. CEPSEOLET	5.
6. NRAUOTSAT	6.
7. IAYLWMKY	7.
8. PCSPAIHES	8.
9. SURTC	9.
10. LSOTSSEARYM	10.

PART III. HOUSE GADGETS

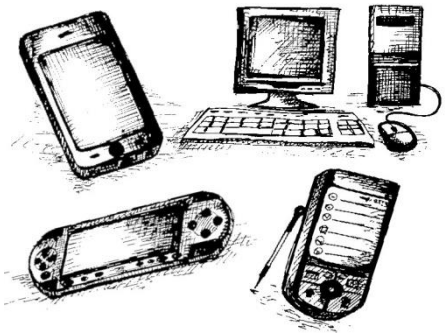
BLOCK A. READING SKILLS.

Task 1 – Read the text and provide the equivalents to the italicized words below.

House gadgets: general information

What are gadgets?

A gadget is a small tool such as a machine that has a particular function, but is often thought of as a novelty. Gadgets in particular are small tools powered by electronic principles (a *circuit board*). As a gadget becomes widely used, it is no longer referred to as a gadget. The origins of the word "gadget" trace back to the 19th century. The etymology of the word is disputed. A widely circulated story holds that the word gadget was "invented" when Gadget, Gauthier &Cie, the company behind the repoussé construction of the Statue of Liberty, made a small-scale version of the monument and *named it after* their firm. Other sources cite a derivation from the French gâchette which has been applied to various pieces of a firing mechanism, or the French gagée, a small tool or *accessory*.



What do house gadgets do?

Every house today is full of smart gadgets, such *washing machine*, *dishwasher*, *vacuum cleaner*, *microwave*, stereo system, etc. These objects have drastically changed people's lives. They made it easier to cope with *household chores*. It seems that new technologies govern the lives of all people on planet. It's simply impossible to imagine modern life without *labor-saving gadgets*. Although, there are, of course, some disadvantages of rapid technological progress. Firstly, doctors state that all electronic gadgets are dangerous for health. Secondly, all modern gadgets make us lazy and clumsy. Thus, we easily *gain* excessive *weight*. Thirdly, people have become too dependent on these gadgets. Nevertheless, it is hard to underestimate the role of new technologies in our life. For sure gadgets make people`s lives easier. They do all kinds of dirty and hard work, as cleaning, washing, cooking etc. They help us do our housework quicker and better. So we clean our clothes with the help of a washing machine.We use vacuum cleaners for cleaning our homes. We can say that modern kitchen is *overflowing* with different electrical appliances.We boil water with electrical kettles and put dirty dishes in the dishwasher. Only some years ago people spent much time preparing food. Many people watch films using flat screen TVs, DVDs or video players. They use personal stereo to listen to music. Our life became easier and better with house gadgets.

Kinds of house gadgets

Maybe the most popular house gadget is a TV set with DVD player. A television is a machine with a screen. Televisions receive *broadcast signals* and turn them into pictures and sound. The word "television" comes from the words tele (Greek for far away) and vision (sight).Sometimes a television can look like a box. Newer TVs are much lighter and flatter. TVs can also show movies from VCD and DVD players.

Along with TV sets we use DVD players and their ancestor – *VCD*. Videocassette recorder (VCR) is an electronic device that records and plays *videotapes*. To watch a recording using a VCR, the VCR has to be connected to a television set. In the mid-1980s, VCRs became a very popular way for people to watch movies and other recorded programs on their home television. Until the 21st century, video rental stores offered a large selection of movies recorded on VHS tapes that customers could rent.

In the late 1990s and throughout the 2000s, the DVD player replaced the VCR as the most common way to watch movies on a home television. A DVD player is a device that plays discs produced under both the DVD-Video and DVD-Audio technical standards. Some DVD players will also play audio CDs. DVD players are connected to a television to watch the DVD content, which could be a movie, a recorded TV show, or other content.

There are successors to the DVD player: the HD DVD player and the Blu-ray Disc player, utilizing two incompatible technologies that reproduce higher quality video images than standard DVD.

Another house gadget that we can't live without especially in summer is an air conditioner. An air conditioner is a system or a machine that treats air in a defined, usually enclosed area via a *refrigeration cycle* in which warm air is removed and replaced with cooler and more *humid air*.Whether in homes, offices or vehicles, its purpose is to provide comfort by altering the properties of the air, usually by cooling the air inside. Air conditioning has as much influence on human health as any generic heating system. Poorly maintained air conditioning systems can occasionally promote the growth and spread of microorganisms.

The vacuum cleaner is the gadget that frightens the cat, is chased by the dog, and, perhaps, gives a home the most immediate appearance of being clean. Portable vacuum cleaners are made in many general configurations, providing a range of cleaning actions to meet a broad range of customer requirements. The vacuum cleaner has a body containing the motor, fan, and other *operating parts*, and a removable, disposable *dust bag*. The vacuum cleaner is an essential part of every home no matter how small. It's typically one of the first small appliances purchased.

Most people have automatic washing machines. A washing machine is a machine that washes dirty clothes. It contains a barrel into which the clothes are placed. This barrel is filled with water, and then rotated very quickly to make the water remove dirt from the clothes. These can help make the clothes cleaner.

Sometimes a washing machine and *a clothes dryer* are put together. A clothes dryer is a machine that is used to remove water from clothing after it is washed. Dryers can use electricity to both operate the machine and create heat to dry the clothes. Others use natural gas to create the heat.

The kitchen is full of different gadgets like a refrigerator, a dishwasher, a food processor, a bread machine, a microwave oven,a food mixer, a blender, a juicer, a toaster, a multicooker etc..About them we will discuss later.

So now you can see that our houses are full of different gadgets. And these gadgets make our life easier and we spend less time doing our house work.

Smart house system

"*Smart home*" is the term commonly used to define a residence that has appliances, lighting, heating, air conditioning, TVs, computers, entertainment audio & video systems, security, and camera systems that are capable of communicating with one another and can be controlled remotely by a time schedule, from any room in the home, as well as remotely from any location in the world by phone or internet.

Smart homes use "*home automation*" technologies to provide home owners with "intelligent" feedback and information by monitoring many aspects of a home. For example, a smart home's refrigerator may be able to catalogue its contents, suggest menus, recommend healthy alternatives, and order replacements as food is used up. A smart home might even take care of feeding the cat and watering the plants.

The range of different smart home technologies available is expanding rapidly along with developments in computer controls and sensors.

Imagine being able to check messages, open windows, operate lights and curtains and monitor how much money your house has made you from your renewable energy system, through your smart phone, from anywhere in the world!

The idea of a smart home may sound like something out of Hollywood. In fact, a 1999 Disney movie titled "*Smart House"* presents the comical antics of an American family that wins a "*house of the future*" with an android maid who causes havoc. Other films show science fiction visions of smart home technology that seems improbable.

Two things are needed to make homes truly "smart" – first are *sensors*, *actuators* and *appliances* that obey commands and provide status information.

Second are *protocols and tools* that enable all of these devices, regardless of vendor, to communicate with each other.

Home energy management systems have been the first wave of smart home devices, with hardware and software that monitors and controls a home's heating, ventilation, and air conditioning systems.

Word	Translation	Word	Translation
name after		*refrigeration cycle*	
circuit board		*humid air*	
washing machine, dishwasher, vacuum cleaner, microwave,		*operating parts*	
household chores		*dust bag*	
accessory		*a clothes dryer*	
gain weight		*smart home*	
broadcast signals		*home automation*	
overflowing		*house of the future*	
labor-saving gadgets		*sensors*, *actuators* and *appliances*	
videotapes		*protocols and tools*	

State if the sentences given below are True of False

The etymology of the word is not disputed.	T/F
Every house today is full of smart gadgets.	T/F
All modern gadgets make us work harder.	T/F
Air conditioning has no influence on human health.	T/F
Smart homes use "home automation" technologies to provide home owners with "intelligent" feedback and information by monitoring many aspects of a home.	T/F
We have no different gadgets in the kitchen.	T/F
A smart home takes care of feeding the cat and watering the plants.	T/F

Task 2 – House gadgets reading – Kitchen gadgets

Read the article and then answer the questions in pairs or small groups.

Kitchen gadgets

A kitchen is a room or part of a room used for cooking and food preparation in a dwelling. A modern residential kitchen is typically equipped with a stove, a sink with hot and cold running water, a refrigerator, counters and kitchen cabinets. Many households have a microwave oven, a dishwasher and other electric appliances. The main function of a kitchen is serving as a location for storing, cooking and preparing food, but it may also be used for dining and entertaining.

An integral part of each kitchen is a refrigerator or just fridge. A refrigerator is a machine for keeping thing cold. People put food and drinks in it, to keep those items cold or unspoiled for a longer time. A refrigerator has a heat pump. It takes heat away from the air inside the fridge. The heat gets added to the air outside. The heat pump is usually driven by an electric motor.

The refrigerator is an essential food storage technique in developed countries. In the early 1950s most refrigerators were white, but from the mid-1950s through present day designers and manufacturers put color onto refrigerators. Most modern refrigerators are available in a variety of colours, although normally fridges are white.

Another essential gadget of the modern kitchen is a microwave oven. It is a kitchen appliance that heats and cooks food using microwaves, a type of radio wave. A microwave oven heats food by passing microwave radiation through it. Microwave ovens are popular for reheating previously cooked foods and cooking a variety of foods. They are also useful for rapid heating of otherwise slowly prepared cooking items, such as hot butter, fats, and chocolate. Food is placed inside the oven, and buttonson the screen are pressed to set how long the food should be cooked. All microwaves use a timer for the cooking time, at the end of cooking time, the oven switches itself off. A microwave oven is one of the fastest ways of cooking.

Modern kitchens in developed countries are equipped with dishwashers. It is a mechanical device for cleaning dishware and cutlery. The mechanical dishwasher cleans by spraying hot water at the dishes. A domestic dishwasher was invented in the 1920s, but it did not see widespread use. Dishwashers became more common in wealthy homes in the 1950s. By the 1970s dishwashers had become common. Present-day machines are either stainless steel or plastic. Dishwashers can be used to cook certain foods, in particular salmon.

Another house gadget that we can see in each kitchen is a blender – an electric kitchen gadget used for making drinks, mixing liquids, and puréeing (chopping up into small bits) fruits and vegetables for sauces and soups. A blender consists of a glass or plastic container with a mounted blade in the bottom, and a base that has an electric motor and switches to turn on the motor or change its speed.

Food processors are similar to blenders in many forms. The primary difference is that food processors use interchangeable blades and disks (attachments) rather than a fixed blade. Also, their bowls are wider and shorter, a more proper shape for the solid or semi-solid foods usually worked in a food processor. Usually, little or no liquid is required in the operation of the food processor, unlike a blender, which requires a certain amount of liquid for the particles to move around the blade. Food processors normally have multiple functions, depending on the placement and type of attachment or blade. These functions normally include:

slicing/chopping vegetables, grinding items such as nuts, seeds (e.g. spices), meat, or dried fruit, shredding or grating cheese or vegetables, pureeing, and mixing.

The similar to blender and food processor are mixers – kitchen utensils which use a gear-driven mechanism to rotate a set of beaters in a bowl containing the food to be prepared. It automates the repetitive tasks of stirring, whisking or beating. A mixer may be a handheld mechanism known as an eggbeater, a handheld motorized beater, or a stand mixer.

A juicer (also known as juicing machine or juice extractor) is a tool used to extract juice from fruits, herbs, leafy greens and other types of vegetables in a process called juicing. Some types of juicers can also function as a food processor.

American people usually start their day with a cup of coffee and a toast prepared by toaster. It is a small electric appliance designed to brown sliced bread. Modern toasters are typically one of three varieties: pop-up toasters, toaster ovens, and conveyor belt toasters. For home use, consumers typically choose a pop-up toaster.

For hundreds of years, making a cup of coffee was a simple but time-taking process. Nowadays we can save our time with help of coffeemakers or coffee machines – cooking gadgets used to brew coffee. While there are many different types of coffeemakers using a number of different brewing principles, in the most common devices, coffee grounds are placed in a paper or metal filter inside a funnel, which is set over a glass or ceramic coffee pot, a cooking pot in the kettle family. Cold water is poured into a separate chamber, which is then heated up to the boiling point, and directed into the funnel.

Cooking is one of the many splendors of life. But it could be easy with some house gadgets like a food steamer, a multicooker and bread maker.

A food steamer or steam cooker is a small kitchen appliance used to cook or prepare various foods with steamheat. Most steam cookers also feature a juice catchment which allows all nutrients (otherwise lost as steam) to be consumed. Due to their health aspect, food steamers are used extensively in health oriented diets. Food steamers release less heat to the kitchen environment, therefore helping keep the kitchen cool during hot summers.

A multicooker is an electric kitchen gadget for automated cooking using a timer. A typical multicooker is able to boil, simmer, bake, fry, deep fry, grill, roast, stew, steam and brown food. The device is operated by placing ingredients inside, selecting the corresponding program, and leaving the multicooker to cook according to the program, typically without any need for further user intervention. In addition to cooking programs, a multicooker may have functions to keep food warm, reheat it or to cook it at a later time.

A bread maker is a home appliance for baking bread. It consists of a bread pan (or "tin"), at the bottom of which are one or more built-in paddles, mounted in the center of a small special-purpose oven. This small oven is usually controlled by a simple built-in computer using settings input via a control panel. Many bread makers have a timer to allow the bread machine to activate without operator attendance. Traditionally, breadmakers take between three and four hours to bake a loaf.

In general, appliances can help make everyday tasks faster and easier to complete. All these above mentioned gadgets save our time for more interesting activities.

1. What is a kitchen? What is the main function of the kitchen?
2. Why do we have refrigerator in our kitchen?
3. What is the fastest way of cooking?
4. What is dishwasher?
5. Do you know the difference between mixer, blender and food processor? Tell about the difference.
6. Do you have a toaster or a coffeemaker at home?
7. Have you ever used multicooker? Tell about its advantages.

BLOCK B. TRANSLATION SKILLS.

Task 3 – Read the text and translate it into your native language. Fill in the gaps with the missing words.

Household robots

1) chores	5) robot	9) surveillance
2) lawn mowers	6) household	10) around
3) entertain	7) wheeled	11) cleaner
4) toy	8) robotic	12) levels

So what exactly _____ robots are and what do they do? You probably have heard something about three D's – Dull, Dirty and Dangerous. This is a designation for jobs that are usually entrusted to robots. Maybe _____ are not very dangerous but they can be rather dirty and dull.

Of course, not everything in a household can be done by robots, at least not yet. Still, there are jobs where robot application can be justified at the moment. There are two main criteria that should be met when thinking about buying a household robot.

At first, you should find out how effectively a robot can do its job. Different applications could require different _____ of efficiency.

Second, a robot's use should be economically justifiable. Maybe it's cheaper to pay someone to do the job than to buy a robot.

Human emotions also come in the equation. If you really, really want a household robot there's no reason why you should prohibit something to yourself.

So what exactly are those jobs that household robots are able to do at the moment? Let us tell you.

In our opinion, _____ vacuum cleaners are the most known household robots to general public. It's so because of the most known of all vacuuming robots - iRobot Roomba. Nevertheless, roomba is not the only one. There are many vacuuming robots in a wide price range for different applications made by different companies.

Anyone has something they have to watch for. For example a dog – are you sure that he doesn't sit on a couch when you are not home? Well... Now you can log on your _____ robot using the internet and shout to your dog to get off the couch.

Lawn mowing seems quite similar to vacuuming only outdoor and in a bigger scale, right? If there are many vacuuming robots there should be many robotic _____ too. Well, that is right. Lawn mowing could be the second largest robot application in a household.

Pools are nice and offer you a lot of joyful moments when you can use it for recreation. However, cleaning them is not so nice. Of course, you can always pay someone to do the job but a robotic pool _____ could be a cheaper solution.

Well, we are not really sure if these devices can be called robots but they do a dirty job. The idea is simple – a cat does its thing in the litter _____ which can detect when a cat leaves. When it happens it will roll cat's things off the surface into a special compartment.

Of course, you can't buy friends at a store. But there are robots that can _____ you in your daily duties that can be viewed as borderline toys.

The possible device range is quite large. There are robots that can follow you _____ and entertain. There are robots that can wake you up and run away and hide from you – more like _____ alarm clocks. There are also PC-based robots that you can assemble and program as you wish.

There are some other robots that could be regarded as household robots. Many of them are in development stage and many that can't really do something useful. Of

course, _____ robots can also be counted into this type. However, here we focus primarily on robots that can do chores and other useful things for us.

http://www.allonrobots.com/household-robots.html

Task 4 – Translate the text from Russian into English

Система Умный Дом — технология экономии, удобства и комфорта высокого уровня

Надоело решать бытовые задачи? Ваш Умный Дом позаботится об этом сам! Он угадает все Ваши желания и подстроится под Ваше настроение. Обеспечит охрану и безопасность пока Вас нет дома, организует комфортную температуру в помещении, польет газон, предотвратит утечку газа или воды и сообщит об этом Вам.

СИСТЕМА «УМНЫЙ ДОМ» УПРАВЛЯЕТ ВСЕМИ ОСНОВНЫМИ ФУНКЦИЯМИ ЖИЛИЩА

Система Умный Дом — это интеллектуальная проводка, которая управляет Вашим домом, экономит Ваше время, денежные средства на отопление и электроэнергию. Теперь вся надомная работа делается за Вас! Фантастика? Это реальность! Технология Умный Дом доступна каждому!

Что умеет система Умный Дом? Описание возможностей системы. Когда Вас нет дома…

Запишет видео что у Вас происходит дома и в его окрестностях, будет имитировать Ваше присутствие — управление освещением, шторами, жалюзи, шлагбаумом, аудио- и видео-аппаратурой, устранит утечку газа и воды, включит пожарную / охранную сигнализации в случае пожара или постороннего вторжения в дом, переключит все бытовые устройства в экономный режим, проконтролирует доступ в помещения и к отдельным функциям дома друзей, детей , создаст комфортную температуру и климат в помещениях, разморозит въезд в гараж, включит обогрев сауны, разогреет подготовленный ужин.

Когда Вы дома…

Включит вентиляцию после принятия ванны, покажет Вашего гостя у двери, когда Вы проснётесь, включит музыкальное сопровождение, переключит Ваш любимый фильм на телевизор в другой комнате, отрегулирует температуру помещений дома, переключится с автоматического на ручное управление.

Зачем нужна система Умный Дом?

Применение «умной» технологии экономит Ваше дополнительное время, которое Вы больше не тратите каждый день на включение / выключение освещения, открытие / закрытие штор, регулировку температуры радиаторов. Няня не требующая зарплаты. Вы спокойны за детей, все электро точки и

электрические контуры выключены. Ваш дом — всевидящее око. Вы наблюдаете что происходит дома ГДЕ и КОГДА угодно. Технология Умный Дом позволит Вам сэкономить на освещении до 40% и на отоплении до 30%. Дома хорошо, а с технологией Умный Дом еще лучше! Вы будете избавлены от хлопот и насладитесь неслыханным прежде комфортом.

Бюджет Умного Дома зависит от количества заложенных функций в систему, набора оборудования и проекта. Система модульная и расширяемая. Вы выбираете только те элементы, которые Вам необходимы.

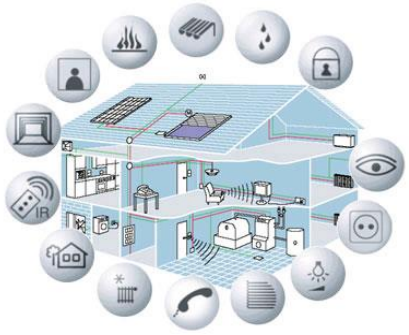
http://smarton.com.ua/smart_home/systema_umniy_dom_intro/

Task 5 – Read the text and insert one of the words given below into the gaps. Retell the text.

Domotics

space	security	automatized
domotic	on	systems
off	information	application
technologies	routine	building

Domotics (from the latin word "domus", house), it's the encounter of _____ technology, electrotechnics and electronics that makes a home become "smart".



It's the tool that allows to control _____, devices and automations with the aim of increase the living and comfort quality of the domestic _____, but not only.

The _____ starts to develop its "own intelligence", characterized not by the amount of high technology it contains, but by the way in which the technologies integration is projected and by how these _____ are able to satisfy the individuals' needs, which are always in evolution.

The word _____ is now part of the Italian vocabulary as "Science that concerns electronics and information _____ to domestic life (household appliances and control systems), and that concerns the use of the appliances".

In every building there are _____ processes in which we can observe repetitive habits or similar situations that may be easily _____. Some daily examples might be: turning _____ the lights of a dark stairs and turning it _____ when no one is around, turning on and off the lights even when there is nobody in the house, in order to simulate presences, reducing automatically the air conditioning when the external temperature goes down, controlling cameras and security devices, etc. In every implementation sector, domotics, as a control home integrated system, gives to the final user a new comfort and _____standard that couldn't be achieved through old traditional systems or partial automations.

http://www.easydom.com/en/discover/what-is-domotics

Task 6 – Write down the text using shorthand translation.

НЕОБЫЧНЫЕ ДОМАШНИЕ ГАДЖЕТЫ, КОТОРЫЕ ИЗМЕНЯТ ВАШУ ЖИЗНЬ

В современных квартирах полно разнообразных гаджетов, к которым мы давно привыкли. В арсенале каждого человека есть целый ряд полезных устройств – плойки, электрические зубные щетки, компьютеры, кухонные приборы. Однако этим уже никого не удивишь. Прогресс не стоит на месте, и изобретений, которые будут полезны для вашего дома, становится все больше и больше. Вот некоторые из них:

Беспроводной датчик влажности почвы – эта вещь самостоятельно определяет время, когда необходимо полить комнатные растения. Датчик вычисляет влажность земли и возможность ее удерживания. Полив растений станет очень простым, эффективным и необременительным. Уведомления можно получать по SMS и электронной почте.

Устройство для поиска – этот прибор отлично экономит время и нервы при поиске потерянных предметов, например, ключей, пульта, телефона – тех вещей, которые обычно теряются в самый неподходящий момент. Всего одним нажатием кнопки можно избежать поиска, который может затянуться на очень долгое время. Работает на расстоянии до 25 метров с громким сигналом и светом.

«Умная» чашка - чашка определяет количество калорий, уровень сахара, микроэлементов, кофеина и полезных веществ в ваших напитках. Отличный выбор для тех, кто сидит на диете и следит за своим рационом. Теперь не нужно будет тратить время на подсчет калорий. Чашку можно синхронизировать с мобильным телефоном, чтобы облегчить получение информации в специальном приложении. Также умная чашка сама определяет вид напитка, причем неважно, известный ли напиток, или вы приготовили его в домашних условиях.

Каждый ценит свое время, которое может быть потрачено в кругу семьи, на общение с родными. Поэтому различные «умные» устройства, облегчающие жизнь, просто необходимы современному человеку, а в его квартире всегда найдется место для нового гаджета.

https://formulalubvi.com/zhizn/neobyichnyie-domashnie-gadzhetyi-kotoryie-izmenyat-vashu-zhizn/

Task 7 –Translate the text into your native language.

The household robots who will do your chores

Robots are rather multi-talented machines. They can drum, for a start, help in search and rescue missions, work as receptionists and even go into space. The question we're all asking, though, is this: how can these supremely intelligent machines, whose capacity for learning surpasses that of many humans, be best utilised to do our housework? At least one team is trying to find out.

One team, from Columbia University, has recently unveiled a robot that can iron your clothes. Described as a "novel solution" to regular ironing, the system uses a “curvature scan”, to estimate the "height deviation of the cloth surface", and a “discontinuity scan”, which detects wrinkles in cloth.

The robot is then able to detect the areas of your clothes that need ironing and – obviously – iron them.

Robots designed for other purposes can also be utilised for housework, as evidenced by Atlas, the robot designed and operated by the the Florida Institute for Human & Machine Cognition (IHMC).

Atlas, which came second place at the DARPA Robotics Challenge, was designed to compete in a number of search and rescue categories, such as stair climbing, door opening and vehicle driving – a selection of challenging tasks for a robot. That doesn't mean Atlas is above household chores, though, and the team taught it to clean a house.

Your house is clean, your ironing done – what left is there for your robot pal to do? If you're peckish, RobotHow's PR2 can whip you up pizza or pancakes. The tasks – which are simple for humans – are fairly difficult for robots to carry out, but PR2 is able to unscrew a jar, pick up a glass of water and even make your dinner.

Similarly, Barrett WM, a robot developed at the Italian Institute of Technology, can flip pancakes with ease.

And if these domestic tasks don't appeal? There's always the robot who punches through doors.

http://www.wired.co.uk/article/household-robots

BLOCK C. SPEECH SKILLS.

Task 8 – Your house gadgets

How many house gadgets do you have at home? Name at least 3 house gadgets that you can’t live without. Why? Tell about their functions.

Task 9 – House gadgets of the future

Imagine that in 30 years you will have a house. What new gadgets will be there? How will they look like? Describe their functions.

Task 10 – Choose the most important house gadget in your opinion and tell about its benefits

PART IV. MOBILE GADGETS

BLOCK A. READING SKILLS.

Task 1 – Read the text and provide the equivalents to the italicized words below.

In today's life we try to maximize our tasks within ***an allotted time***. Without the use of modern gadgets it is not possible to accomplish our daily tasks and we are also not able to do our work with efficiency. We cannot even dare to imagine our life without laptop, smart phones, cell phones, notebooks, microwaves and so on. Obviously many questions will ***peer into the mind*** like how will I keep in touch with my friend sand colleagues? How will I text my relatives and friends? Today's gadgets are the only way we can make our life comfortable and easier.

Gadgets for our daily communication

Communication gadgets are a category of gadget which control almost the most of our life but it is not the only gadgets that can ***increase the efficiency***. Just think of the morning when you start using the gadgets. From the very first in the morning you need to use the alarm clock to wake you up until you want to gate late. Then you make your coffee using a coffee maker followed by watching of television to catch the latest news and ***stock market***. Similarly throughout the day you are using many more gadgets that we cannot even remember. Today we are not controlling gadgets instead the gadgets are controlling our life. It has influenced our lives to such an extent that we cannot think a day without them. Starting from the early morning till the time we reach the bed we are making use of some of other gadgets in various ways.

Life helper and optimizer

Again gadgets not only increased the flexibility and efficiency in our daily life but it also helps us to increase our life expectancy. With the advancement in the technology new ***sophisticated machines*** is coming up that enable in surgeries and diagnostic thus preventing people from frequent deaths. In earlier times due to lack of medical development usually people die before the time but recently medical science has developed so much that people can now get medicines for every disease and illness. Even for minor things like measuring blood pressure, sugar level and other there are various kinds of machines. You no longer

have to wait for monthly check up or rolled down to the hospital and wait for hours to measure your blood sugar. Today you can get everything ***at the tip of your finger.***

Memory Tools

Using the sophisticated devices crime investigation has also become very easy. With GPS tracking, CCTV camera, ***surveillance devices*** lives have become much safer and secured. Gadgets have also helped to bring joy and entertainment to our lives. It brings joy to the family and now no one have to stay apart from each other and feel the pain of separation. With the advent of gadgets like computer, mobile phone, camera you can now contact with everyone whenever you want at the most reasonable prices. It also enable in our small works because many gadgets come in compact form like knife, spoon, ***tweezers***, bottle opener and fork in a single gadget.

Benefits of gadgets

Gadgets have made our life pleasurable like the use of AC during the summer season followed by a room heater during the cold chilly winter seasons. Fans, ***dryers, washers, sewing machine, air purifiers*** are all gadgets. Wherever you look you will able to see a gadget. Even for taking care of our hair we need gadgets like hair dryer, hair straightener and so on. Gadgets are also beneficial for ***disabled people.*** Take electronic eyes for the blinds. It can help them to detect the zebra crossing and thus ensure safety to cross the roads. Similarly there are many other gadgets like Braille PDA`s, electronic arm etc.

Gadgets can also help in saving a lot of space. Earlier while using a telephone you need to sit at a single place to talk with the other person but now you can travel anywhere with your Smartphone and talk sitting wherever you want. Nowadays Develop Android Apps have come to bring a revolution in the world of gadget. Again the facility of internet, camera eliminates the need of purchasing ***a desktop*** or a camera separately. Gadgets are also meant for fun, for example iPod, MP3, video system, DVD and not the least our favorite “idiot box” – TV. All these are possible only because of the advent in technology. These gadgets can bring the family together and also a smile on your face. These gadgets have become very essential in life and they also help to remove boredom and loneliness in our daily life.

Gadgets make our life comfortable and also save our time and money. Just think when you can get everything stuffed in a single item. If you can get internet, email, songs, video, camera, and every feature like that of a computer into a mobile phone

then why will you go for purchasing, a notebook, video recorder, music system separately?

WORD	*TRANSLATION*	*WORD*	*TRANSLATION*
an allotted time		***at the tip of your finger***	
peer into the mind		***surveillance devices***	
increase the efficiency		***dryers, washers, sewing machine, air purifiers***	
stock market		***disabled people***	
sophisticated machines		***a desktop***	

State if the sentences given below are True of False

It is possible to accomplish our daily task without gadgets.	T/F
Gadgets control our life.	T/F
Gadgets do not help to increase our life expectancy.	T/F
Now people do not die before the time.	T/F
We can`t escape feeling of separation.	T/F
Gadgets help to save space.	T/F
Nothing can remove boredom and loneliness in our daily life.	T/F

Task 2 – Gadgets reading – ChefJet Candy Printer

Before you read the article, decide if the following statements are true or false for you:

1) The more mobile gadgets I have the better my life is.
2) I think that in twenty years' time most people will not be able to perform any kind of work themselves.
3) I can`t live without my mobile phone.
4) I am open for everything new.
5) The price is not important when the gadget really worth it.

Read the article and then answer the questions in pairs or small groups.

ChefJet Candy Printer

3D printing has been all the rage for a while now, with the couple of main

vendors constantly improving their printer functionality. What was originally just 3D-printed plastic has been adapted and improved to the point where now you can use 3D printing to make amazing things with all sorts of different materials. Many of these printers are actually affordable to own in your own house — sure, they aren't cheap yet, but they cost less than a big screen TV did just a few years ago.

ChefJet in action

Now they've taken things to a completely different level with the 3D Systems ChefJet printer that can print candy in any shape you can imagine, using flavors like chocolate, mint, vanilla, and even watermelon. They have one that prints in monochrome and runs $5000, and then a pro model that prints in full color and costs double.

So maybe it isn't practical yet for the home user. But imagine if you own a bakery or a high-end restaurant — you could print out all sorts of weird and interesting combinations for after dinner mints, or make a cake topper with the Eiffel Tower in candy.

Get ready for some really weird looking candy.

1. Would you like to have a ChefJet in your house?
2. Would you like to taste a printed candy?
3. How do you think, is it possible to print a piece of furniture or even a house?
4. What would you buy first a big screen TV or a ChefJet?

BLOCK B. TRANSLATION SKILLS.

Task 3 – Read the text and translate it into your native language. Fill in the gaps with the missing words.

USB Heated Slippers

high-tech	to warm up	charged
computer	selection	around
convenient	expand	to climb
happy	futuristic	household

Anyone looking for convenient, high-tech _____ products are sure to love these novelty slippers. Give the gift or warmth this winter, and maybe even treat yourself to toasty tootsies with these instantly-warm slippers. You wonder how you've very lived without them!

So, what makes USB heated slippers so _____? You plug them into any USB port using the detachable USB on each slipper. This means you can plug them into your desktop, laptop or video game console to start heating things up. You can even use any 5-volt USB power source. So, why should you buy USB heated slippers? There are some good reasons.

Warm feet are _____ feet, so make sure your tootsies are toasty this winter with USB heating slippers. You'll be ready to _____ out of bed on chilly mornings

if you can protect your feet from the cold floor. You can even wear the heated slippers during the day to keep you feet—and you—warm and comfy.

You feet are warmed the instant you slide them into your slippers. There's no need to wait for body heat to start warming you up. They stay warm as you work at your computer or play your favorite video game. There is no reason to ever have cold feet again.

While companies _____ on the amount of products electronics to use for home use, everything is becoming more _____to simplify customer's everyday lives. And the USB heating slippers are just one of the convenient ways to stay warm this winter.

Are you looking for a gift for a techie on your list or someone who has everything? USB heating slippers makes the perfect holiday gift. Everyone loves warm slippers, comfortable slippers to wear _____ the house in winter, and with the large _____ of colors and designs, you're to find something for everyone on your gift list.

Cordless models are even better than the original. With the corded varieties, there are limits to how far you move away from your computer. These are fine if you spend a lot of time at your _____, but what if you're on the move?

Cordless USB slippers have built-in lithium batteries that keep the warmth flowing as long as they remained charged. You can set your slippers on high or low heat and walk around the house freely. No more walking on chilly floors. Once slippers are fully _____, they keep your feet warm for about 2 hours. You can even wear them as they recharge, so you never have to have cold feet again.

USB heated slippers are sure _____ the coldest of chilly feet in the winter. Jump out of bed on chilly mornings without walking on chilly floors. Work at your computer on chilly days and keep your feet toasty. These slippers are the _____ slippers of the future. They are sure to make a great gift for anyone on your holiday gift list.

Task 4 – Translate the text from Russian into English

Календарь, неумолимый как время

Один из журналистов как-то в шутку предположил, что развитие многофункциональных устройств вскоре приведет к тому, что гибрид принтера со сканером дополнят заодно и встроенным шредером — чтобы можно было уничтожать особо секретные распечатки сразу же после прочтения. Каково же было наше удивление, когда выяснилось, что подобная идея уже воплощена в работающем устройстве, причем сконструированном с глубоким философским подтекстом.

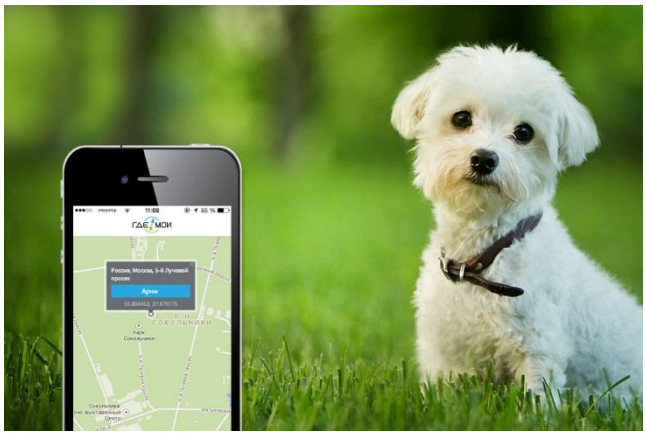
Немецкий дизайнер Сюзанна Хертрич (Susanna Hertrich) создала оригинальный календарь Chrono Shredder, название которого можно приблизительно перевести как «уничтожитель времени». На первый взгляд оно похоже на обычный настенный календарь, однако есть и некоторые отличия. Список дат для Хроно Шедер напечатан на бумажном рулоне, рассчитанном на год. Кроме того, если в привычных отрывных календарях текущую дату необходимо «актуализировать» вручную (срывая листок), в случае Хроно Шедер эта операция выполняется автоматически: встроенный в устройство шредер каждые сутки превращает в бумажную лапшу участок рулона, соответствующий прошедшему дню. Характерно, что выключателя питания в конструкции Хроно Шедер не предусмотрено: ворох исполосованных дат увеличивается столь же неумолимо, как и утекают минуты и часы нашего времени.

Согласно замыслу автора, основная функция Хроно Шедер заключается отнюдь не в отображении текущей даты, а в том, чтобы заставить людей задуматься о растраченных впустую часах и минутах своей жизни. На создание этого необычного гибрида календаря со шредером Сюзанну Хертрич подвигло изучение медицинского исследования о растущем количестве заболеваний, вызванных гиподинамией. Она надеется, что висящий на стене Хроно Шедер заставит наблюдающих за его работой людей задуматься о ценности своего времени и вести активный образ жизни.

Task 5 – Read the text and insert one of the words given below into the gaps. Retell the text.

GPS Dog Collar

a visit	advances	purchasing
to connect	attention	innovative
information	press	easier
monitor	centers	to track



As a lifelong animal lover, you want nothing more than to keep the animals in your life safe. While pet owner technology has gone from simple collars with bone-shaped name tags to the microchip, there's not a lot on the market that will let you _____ your canine's everyday whereabouts. Before the Buddy Dog Collar, the closest we have come is the microchip that is inserted into your pet. But only veterinarians, animal shelters and animal control _____ have the equipment _____ your pet's location via microchip. Plus the microchip only comes into play if your dog is missing.

Buddy the Dog Collar is a simple solution for technologically savvy dog owners. Buddy is a fully integrated LED dog collar that has made finding your best friend infinitely _____. Use Buddy to track your dog by way of GPS technology. Whenever you want to know what your furry pal is up to, all you have to do is ____ a button.

You can use Buddy for more than just locating your furry best friend. This collar's technology gives you vital stats on your dog, such as temperature and food intake. One of the great things about this collar is that you don't have to wait until you're on your laptop to get this _____. Buddy can also send you alerts to your cell phone.

Buddy the Dog Collar stands out from the pack when it comes to pet accessories. One reason is that it utilizes LED technology in its streamlined design. The LED lighting technology allows you and everyone else to quickly spot your dog. Because of this _____feature, your dog can be illuminated, keeping himself safe from motorists, cyclists and pedestrians who are not paying _____ to their surroundings. The LED lighting will also allow your dog to see where she's going, so she can avoid dangerous situations on her own.

When it comes to Buddy and its technology, there's a lot more to talk about than LED lighting and its design. There's the ability _____ to Buddy via Bluetooth. Buddy's batteries also last up to two full weeks. When the time comes to recharge, simply put in its WiFi charging dock. This innovative dog collar is also 100% waterproof.

Another feature that makes Buddy the Dog Collar worth _____ is its futuristic design. In addition to the LED lighting, this dog collar showcases a sleek, stylish design aesthetic that will have your pooch the talk of the dog park. It's streamlined, innovative design will allow you to get rid of your other dog collars that each serve different functions.

With all of the technological _____ that are packed into this forward-looking accessory, you won't miss those other collars! For just $180 USD, you can ensure that your dog gets enough exercise, he doesn't wander off past a boundary pre-

determined by you, that he never misses _____ to the vet, or eat more than is appropriate for his breed and weight. For all of those features plus the peace of mind that your furry pal will be safer when she's outside, that's a bargain!

Task 6 – Write down the text using shorthand translation.

Интересные гаджеты. Топ 5

Новые интересные гаджеты еще выходят в виде прототипов, но на сайтах разработчиков, огромные армии поклонников помогают улучшить продукцию, которая только начинает разрабатываться. Переходим непосредственно к топ 5 гаджетов, которые появятся в кротчайшие сроки на рынке информационных технологий. Заранее хотелось бы уточнить одну вещь, так как устройства находятся в стадии прототипов, названия могут изменяться.

5 место. Bluetooth - динамик

Эффектно выглядящий bluetooth - динамик, который плавает на поверхности полу шара. Это происходит из за одноименных зарядов магнита установленных в самом динамике и в подставке, во время воспроизведения звука, динамик начинает медленно вращаться по всей поверхности данной окружности, что придает изюминку этому устройству.

4 место. Машина будущего Mercedes Benz

Предоставлены чертежи и прототип от компании Мерседес, данный вид транспорта уже разрабатывается инженерами компании и в скором времени появится в наличие, автомобиль выглядит потрясающе, напоминает космический корабль из фантастических фильмов. Стоит ждать и следить за данным автомобилем однозначно.

3 место. Браслет Nabu X

Бюджетный проект наручных браслетов от компании Razer, на данный момент является самым дешевым умным браслетом доступных на рынке на сегодняшний день. Отслеживает важные жизненные ритмы, фазу сна и т.д. Синхронизируется со всеми типами смартфонов.

2 место. Автоматический ремень

Французское устройство, которое было разработано для пользователей, живущих в ритме города и предпочитающих носить классическую одежду. Часто ли кто-то из Вас сталкивался с проблемой, что когда сильно затягивал ремень садясь на стул или на скамейку, чувствовал дискомфорт в области живота, потому как ремень всё перетягивал? Знакомая ситуация? С данным ремнем можно навсегда забыть про данное неудобство, устройство само автоматически будет ослаблять или затягивать себя, для удобства пользователя. Если вам понравился такой стильный ремень, следует обратить на него внимание.

1 место. Часы Blocks

Новейший гаджет smartwatch, дизайн, которого каждый пользователь может выбрать перед покупкой. Имеется 3 дизайна на выбор каждого пользователя: с круглым дисплеем, с дисплеем в виде квадрата, с дисплеем в

виде прямоугольника. Устройство работает на новейшей операционной системе Android.

BLOCK C. SPEECH SKILLS.

Task 7 - Gadgets applications

What gadgets can help to make your life easier? If you had a chance to choose any 3 gadgets to improve your being, what would you like them to do?

1)
2)
3)

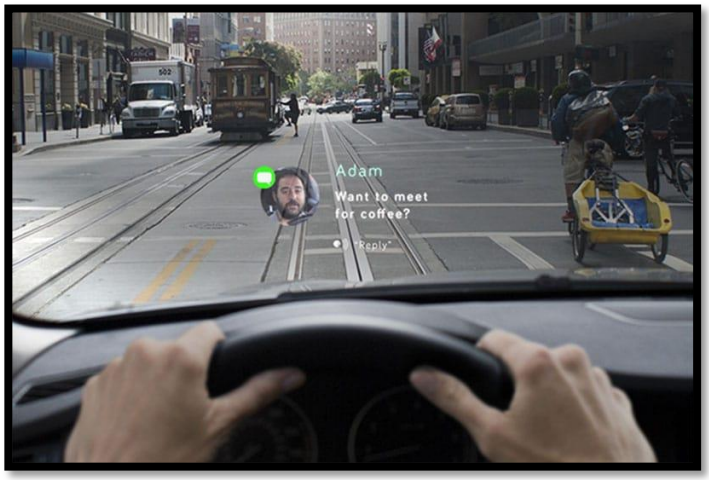
Task 8 - Back to the future

Think of how your life has already changed thanks to technology. Complete the columns with as much information as you can. What interesting Gad gadgets do you know?

PAST	PRESENT	FUTURE

Task 9 – Choose a mobile gadget that you like most and describe it emphasizing on its advantages

Navdy Car portable heads-up Display



Wireless Key Finder

Hot Dog Toaster

Invisible Ink Pen

Window Phone: A Window Mobile Phone to an imaginary future!

PART V. COMPUTER GADGETS

BLOCK A. READING SKILLS.

Task 1 – Read the text and provide the equivalents to the italicized words below.

A computer system consists of mainly four basic units; namely ***input unit, storage unit, central processing unit and output unit***. Central Processing unit further includes Arithmetic logic unit and control unit. A computer performs five major operations or functions irrespective of its size and make. These are

- it accepts data or instructions as input,
- it stores data and instruction
- it processes data as per the instructions,
- it controls all operations inside a computer,

and • it gives results in the form of output.

Functional Units:

a. Input Unit: This unit is used for entering data and programs into the computer system by the user for processing.
b. Storage Unit: The storage unit is used for storing data and instructions before and after processing.
c. Output Unit: The output unit is used for storing the result as output produced by the computer after processing.
d. Processing: The task of performing operations like arithmetic and logical operations is called processing. The Central Processing Unit (CPU) takes data and instructions from the storage unit and makes all sorts of calculations based on the instructions given and the type of data provided. It is then sent back to the storage unit. CPU **includes Arithmetic logic unit (ALU) and control unit (CU)**
• Arithmetic Logic Unit: All calculations and comparisons, based on the instructions provided, are *carried out* within the ALU. It performs arithmetic functions like addition, subtraction, multiplication, division and also logical operations like greater than, less than and equal to etc.
• Control Unit: Controlling of all operations like input, processing and output are performed by control unit. It takes care of step by step processing of all operations in side the computer.

Input / Output Devices:
These devices are used to enter information and instructions into a computer for storage or processing and to deliver the processed data to a user. Input/Output devices are required for users to communicate with the computer. In simple terms, input devices bring information INTO the computer and output devices bring information OUT of a computer system. These input/output devices are also known as peripherals since they surround the CPU and memory of a computer system.
Input Devices
An input device is any device that provides input to a computer. There are many input devices, but the two most common ones are a keyboard and mouse. Every key you press on the keyboard and every movement or click you make with the mouse sends a specific input signal to the computer.

Keyboard
• **Keyboard**: The keyboard is very much like a standard typewriter keyboard with a few additional keys. The basic QWERTY ***layout*** of characters is maintained to make it easy to use the system. The additional keys are included to perform certain special functions. These are known as function keys that vary in number from keyboard to keyboard.

• **Mouse**: A device that controls the movement of the cursor or pointer on a display screen. A mouse is a small

object you can roll along a hard and flat surface. Its name is derived from its shape, which looks a bit like a mouse. As you move the mouse, the pointer on the display screen moves in the same direction.

• **Trackball**: A trackball is an input device used to enter motion data into computers or other electronic devices. It serves the same purpose as a mouse, but is designed with a moveable ball on the top, which can be rolled in any direction.

• **Touchpad**: A touch pad is a device for pointing (controlling input positioning) on a computer display screen. It is an alternative to the mouse. Originally incorporated in laptop computers, touch pads are also being made for use with desktop computers. A touch pad works by sensing the user's finger movement and downward pressure. • Touch Screen: It allows the user to operate/make selections by simply touching the display screen. A display screen that is sensitive to the touch of a finger or stylus. Widely used on ATM machines, retail point-of-sale terminals, car navigation systems, medical monitors and industrial control panels.

Scanner

Scanner is an input device that can read text or illustration printed on paper and translates the information into a form that the computer can use. A scanner works by digitizing an image.

Output Devices:

Output device receives information from the CPU and presents it to the user in the desired from. The processed data, stored in the memory of the computer is sent to the output unit, which then converts it into a form that can be understood by the user. The output is usually produced in one of the two ways – on the display device, or on paper (hard copy).

•**Monitor**: is often used ***synonymously*** with "computer screen" or "display." Monitor is an output device that ***resembles*** the television screen. It may use a ***Cathode Ray Tube*** (CRT) to display information. The monitor is associated with a keyboard for manual input of characters and displays the information as it is keyed in. It also displays the program or application output. Like the television, monitors are also available in different sizes.

• **Printer**: Printers are used to produce paper (commonly known as hard copy) output. Based on the technology used, they can be classified as Impact or Non-impact printers.

Impact printers use the typewriting printing mechanism wherein a hammer strikes the paper through a ribbon in order to produce output. Dot-matrix and Character printers ***fall under*** this category.

Non-impact printers do not touch the paper while printing. They use chemical, heat or electrical signals ***to etch*** the symbols on paper. Inkjet, Deskjet, Laser, Thermal printers fall under this category of printers.

• **Plotter**: Plotters are used to print graphical output on paper. It interprets computer commands and makes line drawings on paper using multi colored automated pens. It is capable of producing graphs, drawings, charts, maps etc.

• **Facsimile (FAX)**: Facsimile machine, a device that can send or receive pictures and text over a telephone line. Fax machines work by digitizing an image.

Plotter

• **Sound cards and Speaker(s)**: An expansion board that enables a computer to manipulate and output sounds**.** ***Sound cards*** are necessary for nearly all CD-ROMs and have become commonplace on modern personal computers. Sound cards enable the computer to output sound through speakers connected to the board, to record sound input from a microphone connected to the computer, and manipulate sound stored on a disk.

WORD	***TRANSLATION***	***WORD***	***TRANSLATION***
input unit		***layout***	
output unit		***synonymously***	
storage unit		***to resemble***	
processing unit		***Cathode Ray Tube***	
to carry out		***to fall under***	
sound cards		***to etch***	

State if the sentences given below are True of False

Computer system consists of five basic units.	T/F
Processing is a functional unit.	T/F
Input/Output devices are required for users to communicate with the computer.	T/F
Trackball is an alternative to the mouth.	T/F
Monitors are available in one size only.	T/F
Non-impact printers touch the paper while printing.	T/F
CD cards are not common for modern computers.	T/F

Task 2 – Computer gadgets reading- The Best Portable Computer Gadgets

Before you read the article, decide if the following statements are true or false for you:

1)

2)

3)

Read the article and then answer the questions in pairs or small groups.

There are simply too many portable computer gadgets out there in the market, so picking just one of them as the best portable computer gadget isn't really possible. But, here's a compilation of top portable computer gadgets that are really worth buying.

Western Digital 1TB My Book AV DVR

Whether you're a soccer freak, movie lover, or hardcore music fan, the Western Digital 1TB My Book AV DVR allows you to record more and delete less! Indeed, with 1TB capacity on the offer, you won't have to think of deleting too many items, unless they really get old. And, by the time you exhaust your 1TB, the old video clips, movies, and music files get outdated to say the least.

The additional recording hours facilitate enhanced viewing pleasure, as you may couple it to compatible USB or eSATA DVRs. This simply means you can create as much as storage as you want, so as to accommodate your favorite movies, sporting events, and TV shows.

You get a convenient camcorder storage companion so that you may transfer data between your MY Book DVR and compatible camcorders without really requiring a PC as an interface.

The AV-optimized drive is guaranteed to deliver a flawless 24x7 operation, and smooth video recording, thanks to the SilkStream™ playback mechanism. Last, but definitely not the least, it is an eco-friendly device with WD GreenPower Technology.

Lacie XtremKey Robust USB Drive

Well, if you're one of those who needs to transport sensitive material regularly, (which is kind of irreplaceable), it may not be wise enough to risk it, and Lacie XtremKey is the way to go! It's not just a little water that it can really withstand, but you can even immerse it up to 333 feet deep in water, and the device won't really lose anything out of its storage.

Sure, this isn't really the prettiest USB drive that you'll find, nonetheless it does its job of protecting your valuable data even in extreme weather conditions. What's more, it can even survive a bad fall, and its Zamac shell is so robust that even if a ten ton truck runs over it, the device is highly unlikely to crack!

Yes you heard that right, and you don't really have to spend a million dollars to grab this impressive Lacie XtremKey, as it it just costs about $50 for 8GB model. The pricing varies depending upon storage capacity (8-64GB), and few other factors. It is expected to hit the dealerships in about 2 months.

1. Would you like to have all necessary portable computer gadgets?
2. Is it important for you to follow the gadgets fashion and why?
3. What characteristics must have the computer gadgets for you to buy them?

Task 3 – Put the correct words from a–d below in the article.

Children into computers younger than ever

Children are using and owning consumer (1) ____ from a younger age than ever before, according to US market researcher NPD. Its research (2) ____ the average age at which children begin using computers, games and other electronic gadgets (3) ____ declined from 8.1 years in 2005 to 6.7 years in 2007. The NPD report, "Kids and Consumer Electronics Trends III", says the youngest consumers are also getting choosy about what they buy. More and (4) ____ young children now own a DVD player, portable video game, digital camera or cell phone. NPD's Anita Frazier said: "Kids are (5) ____ to the latest and greatest digital devices just as their parents are." She added: "They appear to have no fear of technology and adopt it easily and without (6) ____, making these devices a part of their everyday lives."

The study is (7) ____ on data collected via an online survey to a sample of American adults aged 25 and older who had children aged between four and fourteen. The survey also found that kids use electronic devices an average (8) ____ three days per week. (9) ____, many of the families surveyed were not regular consumer electronics buyers. Almost 25 percent of parents surveyed said they had made no electronics purchases during the previous 12 months. Father (10) ____ two Robert Garside, 38, said he was amazed at what his children want to buy. He admits to often (11) ____ to ask his nine-year-old how to operate his Sony PlayStation. "Children nowadays are so tech savvy that soon Sony will bring (12) ____ a PlayStation for babies," he said. His son Robert Junior said all the gadgets around him really were child's play.

1.	(a)	electrons	(b)	electrics	(c)	electronics	(d)	electricity
2.	(a)	shows	(b)	showing	(c)	show	(d)	shower
3.	(a)	be	(b)	did	(c)	was	(d)	has
4.	(a)	most	(b)	more	(c)	mostly	(d)	many
5.	(a)	drawn	(b)	painted	(c)	sketched	(d)	doodled
6.	(a)	affair	(b)	airfare	(c)	funfair	(d)	fanfare
7.	(a)	basked	(b)	basted	(c)	based	(d)	bashed
8.	(a)	an	(b)	of	(c)	to	(d)	with
9.	(a)	surprised	(b)	surprisingly	(c)	surprise	(d)	surprises
10.	(a)	by	(b)	and	(c)	with	(d)	of
11.	(a)	having	(b)	have	(c)	has	(d)	had
12.	(a)	down	(b)	up	(c)	out	(d)	in

http://www.breakingnewsenglish.com/0706/070607-electronics.html

BLOCK B. TRANSLATION SKILLS.

Task 4 – Read the text and translate it into your native language. Fill in the gaps with the missing words.

Super Cool USB Office Gadgets

storage device	to look up	a pencil
grinds	crumbs	lasts
scents	monitor	alive
barrages	colleagues	a purpose

There are USB office gadgets that serve_____, USB office gadgets that are just for fun and then there are those that do a little bit of both. Following is a list of 10 USB office gadgets that are sure to brighten your work day.

USB Birthday Kit

How many birthdays have you spent at your desk? Unless you are lucky enough to work for a business that considers your special day a paid holiday, chances are you and your _____have eaten lots of cake and ice cream together. Why not make every office birthday a little more festive . The kit includes a string of colorful USB powered lights that you can wrap around the honoree's monitor, a celebratory mouse pad and even a birthday party hat .

USB Rocket Launcher

Do you have a colleague who constantly _____ you with his work overflow? Keep him at bay with these cool USB office gadgets. Plug the launcher into any USB port and you can shoot its three foam "missiles" up to fifteen feet in either direction using your mouse or keyboard as the control pad.

USB Stress Button

A wise person once said that if you are experiencing stress it means you are _____. However, sometimes work-related stress is just too much. That is where this USB office gadget comes in. The USB Stress Button bears a strong resemblance to the one used in a certain office supply chain's advertising. The difference is that this button connects to a USB port on your computer and, when pressed, a countdown appears on your computer _____ followed by your choice of three screen effects, such as a loud explosion.

USB Aromatherapy Flower

If you have stress-filled days but simply do not feel as though violence, even simulated, is the answer, perhaps this is the USB office gadget for you. The USB Aromatherapy Flower plugs into a USB port and releases soothing floral _____, such as ocean breeze, chamomile, jasmine or lavender. Each flower comes with three scent cartridges and each cartridge ____ approximately one month.

USB Desk Vacuum

If you frequently lunch or snack at your desk, you can end up with _____ everywhere. With the

USB Desk Vacuum, cleanup is a little more fun. Unlike more utilitarian keyboard vacs, this office gadget is a miniature, retro-styled upright vacuum with a 45-inch cord.

USB Pencil Sharpener

Prefer to jot down potential appointments and brainstorming ideas in pencil? If so, you will adore this USB office gadget. The USB Pencil Sharpener not only _____ your pencils to a precisely sharp point, it also puts on an LED light show while doing it. Simply plug the sharpener into any USB port, insert _____ into the sharpener opening and enjoy the display.

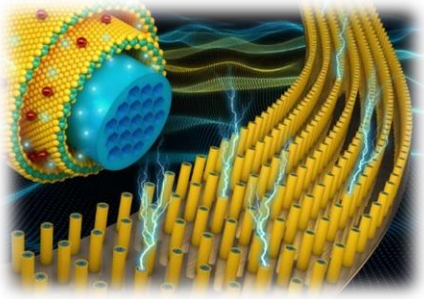
USB Dictionary and Thesaurus

If you are a logophile or simply need _____ words on a regular basis, you will appreciate the Merriam-Webster USB Dictionary and Thesaurus Portable Storage Device. While it resembles an ordinary flash drive - and is indeed a functioning portable _____ with 256 MB total memory - it is also a dictionary with 300,000 definitions, a thesaurus with 500,000 synonyms and antonyms. It includes a grammar guide, a crossword puzzle solver and more, as well.

Task 5. Translate the text from Russian into English

Американские учёные разработали технологию, которая позволит заряжать смартфоны за несколько секунд

Из года в год смартфоны становятся мощнее и делают более качественные снимки, но их автономность практически не улучшается. С помощью оптимизации программного обеспечения производители немного увеличивают время работы, но в среднем смартфоны всё равно приходится заряжать каждый день. Одним из решений этой проблемы является быстрая зарядка, позволяющая за считанные минуты пополнить заряд, чтобы устройство проработало ещё несколько часов. Удивительную разработку представили исследователи Университета центральной Флориды.



В Университете центральной Флориды разработали новый процесс создания гибких суперконденсаторов, которые могут хранить больше энергии и не терять свою ёмкость на протяжении 30 000 циклов зарядки. «Если заменить батареи на этот суперконденсатор, то вы сможете зарядить свой мобильный телефон за несколько секунд, и вам не нужно будет делать это в течение всей недели», — заявил Нитин Чудхари, один из разработчиков этой технологии. При создании суперконденсаторов исследовали использовали недавно обнаруженные двумерные материалы толщиной всего в несколько атомов. Это не первый подобный случай в индустрии, но до этого попытки не увенчались успехом. «Мы разработали простой химический синтез, позволяющий нам

интегрировать существующие материалы с двумерными материалами», — рассказал руководитель проекта Эрик Юнг, доцент в Технологическом центре нанонауки и Департаменте науки и конструкционных материалов.

Команде Университета центральной Флориды удалось создать суперконденсаторы, состоящие из миллионов нанометровых проволок, покрытых оболочками из двумерных материалов. Высокопроводящий сердечник облегчает быструю передачу электронов для быстрой зарядки и разрядки. При этом равномерное покрытие двумерных материалов обеспечивает большее количество и плотность энергии. «Эта технология ещё не готова к коммерциализации. Однако уже сейчас можно сказать, что её внедрение повлечёт за собой колоссальные изменения в многих областях», — уверен Эрик Юнг.

Task 6– Write down the text using shorthand translation.

Awesome gadgets for teachers

Taking notes is an important part of learning; these tech gadgets we have here for teachers and the students makes teaching much better.

Neo Smartpen N2: This smartpen bridges the gap between paper and digital, it writes on paper and also mirrors into smart devices. It works along with its companions N notebooks and Neo Notes app and integrates your real and digital worlds by transforming what you write or draw on paper. It writes like any other pen, features ergonomic, useful and beautiful design, comes with Bluetooth 4.0 LE, and is iOS and Android compatible.

Mbot is an affordable educational robot kit for kids that allows them to get hands-on experience about graphical programming, electronics, and robotics. It contains only about 45 pieces in total and can be assembled in 10 minutes. Based on Scratch 2.0, a new software was developed called mBlock to use Scratch-style coding to program Arduino and robots.

The Albert clock is a digital wall clock for kids that keeps them sharp with mathematics, and can be set to different levels of difficulty. It lets them improve their mathematical skills in a playful way simply by reading the time.

ScratchJr enables kids to create their own interactive stories and more, they can connect together graphical programming blocks to make characters move, sing, jump, and dance. Apart from these they can even modify characters in the paint editor, insert their photos, voices and sounds and use the programming blocks to make their characters come to life.

BLOCK C. SPEECH SKILLS.

Task 7 – Technology Quiz

Take our fun technology quiz and learn more about interesting technology subjects such as computers, science innovations, IT, video games, gadgets and the Internet.

Have fun using the questions & answers to test how much you know and enjoy the wide range of cool technology trivia for kids.

1. Solar power generates electricity from what source?
2. Did the Apple iPhone first become available in 2005, 2006 or 2007?
3. In terms of computing, what does CPU stand for?
4. True or false? Nintendo was founded after the year 1900.
5. The Hubble Space Telescope is named after which American astronomer?
6. Is the wavelength of infrared light too long or short to be seen by humans?
7. Firefox, Opera, Chrome, Safari and Explorer are types of what?
8. True or false? Gold is not a good conductor of electricity?
9. The technologically advanced humanoid robot ASIMO is made by which car company?
10. True or false? Atomic bombs work by atomic fission.
11. In terms of computing, what does ROM stand for?
12. Did the original Sony Playstation use CDs or cartridges to play games?
13. What is the Earth's primary source of energy?
14. IBM is a well known computer and information technology company, what does IBM stand for?
15. Along with whom did Bill Gates found Microsoft?
16. What science fiction writer wrote the three laws of robotics?
17. True or false? In computing, keyboards are used as input devices.
18. What does the abbreviation WWW stand for?
19. Nano, Shuffle, Classic and Touch are variations of what?
20. True or false? DNA is an abbreviation for 'Deoxyribonucleic acid'.

Technology Quiz Answers

1. The Sun	2. 2007	3. Central Processing Unit	4. False - 1889
5. Edwin Hubble	6. Long	7. Web browsers	8. False
9. Honda	10. True	11. Read Only Memory	12. CDs
13. The Sun	14. International	15. Paul Allen	16. Isaac Asimov

	Business Machines		
17. True	18. World Wide Web	19. The Apple iPod	20. True

Task 8 – Conversation Questions

- Are you computer literate?
- Are you connected to the Internet?
  - Do you access the Internet with your computer?
  - Can you access the Internet from your home?
  - What is your favorite "news" site?
  - What Internet sites do you visit regularly?

  Can your mother and father use a computer?

  Do you have a computer?
  - Do you have a computer at work and at home?
  - Do you have a laptop or a desktop computer? Do you have both?
  - Do you use your computer when you do homework for school?
  - Have you ever studied English using your computer?
  - How many times have you upgraded your computer?
  - How powerful is your computer?
  - What company made your computer?
  - What kind of computer do you have?
  - What size is your computer screen?
    - What do you think is the best size to have?
  - Where do you use your computer?
  - Where in your room is your computer?
  - Why did you buy your computer?

  Do you have a digital camera?
  - Do you send photos by email?
  - What kind of pictures do you take with your digital camera?

  Do you have a scanner?
  - What kind of scanner do you have?

  Do you have a web page?
  - What's the URL?
  - When did you start it?
  - How much time did it take to make?
  - How much time do you spend keeping it updated?

  Do you know any computer programming languages?
  - How many computer programming languages do you know?
  - Which languages do you know?
  - Which language do you use the most often?

  Do you read computer magazines?
  - Which computer magazines do you read?

  Do you use a computer?
  - Are you good at using a computer?
  - Are you still using your first computer?

- Did you learn to use a computer in high school?
- Do you know how to type well?
- How often do you use a computer?
- What are some of your favorite computer games?
- What do you use a computer for?
- What operating system do you use?
- What software do you use the most often?
- When did you first start using a computer?
- Who taught you to use a computer?

Do you use chat rooms? If so, what chat rooms do you use and who do you talk to?

Do you use e mail?

- Do you use e mail every day?
- Do you write e mail in English?
- Have you ever sent an e mail to your teacher?
- How many e-mails do you get a day?
- How many e mails do you send a day?
- How many times a day do you access your e mail?
- What's your e mail address?
- How many e mail addresses do you have?

Do you have a Facebook account?

- How often do you access it?
- How often do you update it.
- How many friends do you have?
- How many hours a day do you spend looking at it?

Do you want a more powerful computer? If so, what computer do you want?

Does your family have a computer?

How fast can you type?

Have you ever taken a course at school where you used a computer?

Have you tried Mac-OS, Windows and Linux?

How do you study English with your computer?

How does email work?

How many people in your family can use a computer?

How much did your first computer cost? How much did you last computer cost?

How much does it cost by buy a computer?

- What's the least expensive computer?
- What's the most expensive computer?

How much does your Internet service provider cost?

- Which ISP do you use?

If you could buy a new computer, what would you like to buy?

If you had lots of money, what kind of computer system would you like to buy?

What is the difference between software and hardware?

Which do you like better, a laptop computer or a desktop computer?

What is your favorite website?

Do you ever visit English websites?
Do you think our lives have been improved by computer technology?

- Think of a few examples of how computers have an educational or an entertainment value.
- Could you do without them?

What is multimedia?

- What are the components and the element of multimedia?

When did you first get a computer?

- What kind of computer was it?
- About how much did it cost?
- Do you still have it?
- Do you still use it?

Do you remember the first time you used a computer or the Internet?

- What did you think about it?

How long have there been personal computers in your country?

- When did the average person start using a computer?

Can your parents operate a computer?

- How do they use their computer?
- Do you chat with your parents?
- What kind of computer do they use?
- Do they enjoy using their computer?

Can your children use a computer?
Do you think a computer can bring us happiness?
Do you have a computer?
Do you know any computer languages like C or C++?
What is configuration of your PC?
How often do you perform a backup?

- What kind of backup method do you use?
- What kind of backup media do you use?

What are some good things about having a computer?
What are some bad things about having a computer?
Does having a computer make life more complicated or less complicated?
What computer games have you played?
Which are your favorites?

- Which do you think are not so interesting?

Do you use chat rooms and instant messaging?

- Which ones do you use?
- Why do you use them?
- What are some things to think about when using them?
- Why can these be dangerous for you and your kids?

What do you do when your computer doesn't work properly?

- Do you have more than one computer?
- Can you do everything you need to do when your computer is broken?

Do you have a webpage?

- Did you make your own webpage?
- What is on this webpage?
- Why do you think people have webpages?
- What would you like to add to your webpage?

Do you know what a blog is?

- Do you have one? Why/ why not?
- Why do people have blogs?

What do you think about file sharing?

On the Internet, you can say whatever you want. Is that true?

- Is it a good or a bad thing? Why?
- What is artificial intelligence?

Task 9 – Computer **gadgets**

Look at these pictures and think about functions and benefits of these computer gadgets.

PART VI. Ecological innovations

BLOCK A. READING SKILLS.

Task 1 – Read the text and provide the equivalents to the italicized words below.

Ecological innovations: FACTS

What is ecological innovation?

The term “innovation” is derived from the Latin word innovates, which meant “to renew, to change, to improve”. Today, this word is commonly associated only with totally new inventions, products and services. It is difficult to agree with such an approach to innovation. The role of innovation as the process of improving and finding new applications for the already existing ideas, concepts, goods and services should be emphasized.

Ecological innovation (eco-innovation) is the development of products and processes that contribute to *sustainable development*, applying the commercial application of knowledge to elicit direct or indirect ecological improvements. This includes a range of related ideas, from environmentally friendly technological advances to socially acceptable innovative paths towards sustainability. The field of research that seeks to explain how, why, and at what rate new "ecological" ideas and technology spread is called eco-innovation diffusion.

The European Commission funded a project called MEI (Measuring Eco-Innovation) with the aim of developing a classification of eco-innovation. According this classification ecological innovation is divided into – environmental technologies (*pollution control*, cleaning and green energy technologies); organizational innovation for environment (pollution prevention schemes, cooperation between companies); product and service innovation offering environmental benefits (environmentally improved and green financial products); green system innovations (biological agriculture and a renewables-based energy system).

The concept of ecological innovation

The idea of eco-innovation is fairly recent. One of the first appearances of the concept of eco-innovation in the literature is in the book by Claude Fussler and Peter James. In a subsequent article, Peter James defines eco-innovation as "new products and processes which provide customer and business value but significantly decrease *environmental impacts*".

Eco-innovation is closely linked to a variety of related concepts. It is often used interchangeably with "environmental innovation", and is also often linked

with *environmental technology, eco-efficiency, eco-design, environmental design, sustainable design, or sustainable innovation*.

The most common usage of the term "eco-innovation" is to refer to innovative products and processes that reduce environmental impacts. This is often used in conjunction with eco-efficiency and eco-design. Leaders in many industries have been developing innovative technologies in order to work towards sustainability. However, these are not always practical, or enforced by policy and legislation.

Eco-innovation must point to: less energy in productive process, improving energy efficiency, taking into account the source of energy, less energy in the use of product/services, improving energy efficiency of products and services, taking into account the source of energy, reduce the input materials, do not exceed the *regenerative capacity* of the sinks, produce a minimum amount of wastes, pollution or emissions, do not exceed the *absorption capacity* of sink.

Why focus on eco-innovation?

Historically, changing the way people do things or think about doing them has constituted a source of wealth and improvement. Change, be it technological, social or environmental, is now receiving ever-increasing attention as an answer to many of our most pressing problems such as unemployment, low economic growth, or natural resource depletion.

But the capacity of humans for change has brought about unforeseen consequences and many now see innovation as a source of environmental degradation, *social disruption* and cultural loss. Accordingly, the main struggle is no longer between humans and a hostile natural environment but rather, between humans and the consequences of the transformations they have brought about.

Sustainable development depends on our capacity to reconcile the utilitarian "production-oriented" approach and the conservationist and social justice agenda. In that view, eco-innovations represent the building blocks of a genuinely sustainable type of development.

Even though eco-innovation is enjoying an ever-rising status in UN and EU policy agenda, its actors face recurrent cross-sectoral and cross-societal barriers that hamper its full realization.

Eco-innovation policy in the EU

European innovation policy is primarily focused on the promotion of international cooperation. The Framework Programmes are the main instrument for this. Environment and sustainable development are explicitly part of all Framework Programmes. In the Sixth Framework Programme, 2.1 billion EUR is labelled for the priority theme sustainable energy, environment and transport. Although innovation has always been seen as part of the solution in environmental

problems, prior to 2005 few programmes at the EU-level specifically addressed the stimulation of environmental innovations.

Over the past six years, eco-innovation has received growing attention. An important EU initiative in the field of environmental innovations is ETAP: the Environmental Technologies Action Plan. This strategic program was adopted in January 2004. It is a joint initiative of DG Environment and DG Research (European Commission, 2004). ETAP seeks to exploit the potential of environmental technologies to improve both the environment as well as European competitiveness, thus contributing to growth and job creation. Furthermore, mutual learning between Member States in the area of financial instruments for the introduction of new environmental technologies into the market has been promoted (European Commission, 2004).
All Member States have policies for eco-innovation. Member States also use a range of policies, the majority of which relate to regulation and raising environmental awareness.

One philosophy of eco-innovation

Zero Waste is a philosophy that encourages the redesign of resource life cycles so that all products are reused. No trash is sent to *landfills* or *incinerators*. The process recommended is one similar to the way that resources are reused in nature.

Zero Waste is a goal that is ethical, economical, efficient and visionary, to guide people in changing their lifestyles and practices to *emulate* sustainable natural cycles, where all discarded materials are designed to become resources for others to use.

Zero Waste means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them.

Implementing Zero Waste will eliminate all discharges to land, water or air that are a threat to planetary, human, animal or plant health.

Zero waste is more of a goal or ideal rather than a hard target. Zero Waste provides guiding principles for continually working towards eliminating wastes. A Zero waste strategy may be applied to businesses, communities, industrial sectors, schools and homes.

The latest development in Zero Waste is the city of Masdar in Abu Dhabi which promises to be a Zero Waste city. Innovation and technology is encouraged by government creating an innovation friendly environment without being prescriptive.
https://sapiens.revues.org/1169

WORD	***TRANSLATION***	***WORD***	***TRANSLATION***
ecological		*absorption capacity*	

innovation			
sustainable development		*social disruption*	
pollution control		*landfills,incinerators*	
environmental impacts		*emulate*	
environmental technology, eco-efficiency, sustainable design		*eco-design, environmental design,*	
regenerative capacity		*sustainable innovation*	

State if the sentences given below are True of False

The term “innovation” has Greek origin.	T/F
Ecological innovation is the development of products and processes that contribute to sustainable development.	T/F
The idea of eco-innovation is long-standing.	T/F
Sustainable development depends only on our capacity to reconcile the utilitarian "production-oriented" approach.	T/F
EU doesn’t support eco-innovation.	T/F
All Member States have policies for eco-innovation.	T/F
Implementing Zero Waste will eliminate all discharges to land, water or air.	T/F

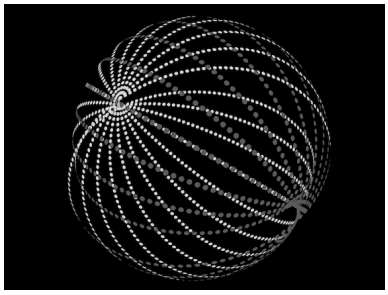
Task 2 – **Eco-innovation reading**

Read the article and then answer the questions in pairs or small groups.

The Best Environmental Innovations of 2015!

Yes! Every single one of these items has an exclamation point! Why? Because every single one of these stories offers a spectacular invention or initiative to change the world for the better!

Last Thursday, Japanese scientists made a spectacular breakthrough in wireless energy transmission. What this means in a nutshell is that humanity has now officially begun to realize one of the most ambitious thought experiments of the twentieth century: The Dyson Sphere.



Using microwaves, JAXA’s researchers were able to send 1.8 kilowatts of energy through the *air*to a receiver 170 feet away. BOOM. Is your mind blown yet?

No wires, no cables, no pipelines, no trains, no trucks, no nothing. Energy. Through the air. Granted, it’s not a lot of energy – 1.8 kW is about enough to run an electric kettle – but it’s a hell of a start.

"This was the first time anyone has managed to send a high output of nearly two kilowatts of electric power via microwaves to a small target, using a delicate directivity control device," a JAXA spokesman said on Thursday.

Now we can get into what this wireless energy transfer is for: JAXA has been working on a system that would use solar-powered satellites to beam energy directly to the Earth. This Space Solar Power System would mean that solar power would be available anywhere on the planet, at any time of day, regardless of weather or whether or not the sun was even shining on that side of the planet.

Imagine the potential of this power. By the end of this century we could have access to a renewable, sustainable and nigh-endless source of energy (for at least the next five billion years). That's kind of a big deal.

Vertical Farm Will Produce 5 Acres' Worth of Vegetables on a 3-Story Parking Lot

The town of Jackson, Wyoming will soon be on the cusp of agricultural engineering with a space-saving, sustainable and vertical farm built on a section of parking garage.

The initiative has been undertaken by Vertical Harvest, a Wyoming-based agri-business that wants to enhance the local economy with fresh, locally grown produce that is available 365 days a year. Presently, the long, snowy winters in Jackson make for poor growing conditions, forcing the town to import fruits and vegetables from other states and countries.

By converting a section of a local parking garage into their vertical farm, the founders of the project say that they can yield five acres' worth of produce from a space that is just 30 feet by 150 feet. This is done via the use of hydroponics and a rotating carousel that gives plants equal time in natural light.

According to Vertical Harvest, this allows the plants to grow 30 percent faster while using 90 percent less water.

The design of the growing carousel "is also specifically designed to provide a safe and meaningful work environment for adults with developmental disabilities," the company explains on its kickstarter page. "With this technology, Vertical Harvest will wrap agricultural, architectural and social innovation into one project that will be a critical milestone in urban agriculture.

Once finished, the vertical farm is projected to yield over 4,400 pounds of herbs, over 37,000 pounds of greens and 44,000 pounds of tomatoes.

The vertical farm initiative was established in collaboration with Jackson's authorities and partially funded by an enthusiastic kickstarter campaign. In January 2013, the campaign had collected over $36,000 of its $30,000 goal.

The founders of Vertical Harvest, Nona Yehia and Penny McBride, told The Verge that, though the greenhouse will require a lot of energy to power, the cost is still a net gain over importing produce.

http://www.planetexperts.com/the-10-best-environmental-innovations-of-2015/

1. *Do you believe that we can change the world with ecological innovations?*
2. *What kinds of eco-innovations do you know?*
3. *Have you ever heard about the Dyson Sphere?*
4. *Do you believe that the solar power would be available anywhere on the planet by the end of this century?*
5. *Do you think that the vertical farm is a good idea? Can we use this technology in Ukraine?*

BLOCK B. TRANSLATION SKILLS.

Task 3 – Read the text and translate it into your native language. Fill in the gaps with the missing words

World's first streetlights powered by footsteps installed in Las Vegas

fueled	service	streetlights
access	raise	solar
costs	pollution	carbon
free	renewable	panels

When most people think "clean energy," _____ panels and wind turbines typically come to mind. But what if the simple act of walking could create emissions-_____ electricity? Las Vegas is proving that kinetic energy is a real world solution to harmful carbon _____ that is causing global warming – by installing the world's first smart streetlights powered by pedestrian footsteps. NYC-based EnGoPLANET partnered with the city to install lamps powered by solar _____ and kinetic energy pads at Boulder A.

"We want to provide the highest _____ levels while also looking to the future and ensuring that we are sustainable," Las Vegas Mayor Carolyn G. Goodman said. "Through our LEED certified buildings, solar projects, water reclamation, alternative-_____ vehicles and sustainable streetlights, Las Vegas continues to lead the way. Las Vegas strives to be on the cutting edge of all things, and this project coincides with plans to develop an innovation district in our downtown."

EnGoPLANET estimates that the world spends more than $40 billion per year in energy _____ for the more than 300 million traditional streetlights that result in more than 100 million tons of _____ pollution annually. So solar-kinetic streetlights are a massive opportunity to help governments meet their climate targets as more cities announce plans to achieve net zero emissions and go 100 percent _____ energy.

The company also wants to bring emissions-free solar-kinetic streetlights to the 1.4 billion people that do not have _____ to street lighting. They started

a crowd-funding campaign on Indiegogo to _____ money for a project to install solar-kinetic_____ in 10 villages in Africa.

http://inhabitat.com/worlds-first-streetlights-powered-by-footsteps-installed-in-las-vegas/

Task 4 – Translate the text from Russian into English

Экологические инновации: почему они внедряются с таким трудом?

Стопорят внедрение экологических инноваций олигархи. Ведь появление новых дешевых, экологических источников энергии, материалов, продуктов бьет по их карманам.

Бытует расхожее мнение, что экологическая основа в инновациях является жестко радикальным образцом действия закрывающих технологий.

На практике закрывающие технологи представляют собой прогресс технологий. Он опережает доминирующий социально-экономический фактор, при этом уничтожая общепринятую схему распределения богатства. Впрочем, в большей части соответствующей литературы термин «закрывающие технологии» объясняется как технологии, которые в ходе инноваций определенные сегменты рынка, делающие непригодными, то есть вреда от них больше, чем пользы.

Каждое реальное ноу-хау приводит к сворачиванию деятельности для нефтяного бизнеса, химических предприятий, фармакологов и «пищевиков», а значит, к сокращению прибыли олигархов. В то же время современные инновационные прорывы в экологии рушат уже сложившиеся, устоявшиеся социально-экономические взаимоотношения в обществе. Поэтому так тяжело внедряются эти самые экологические инновации.

Придумать двигатель на воде просто, возможно, а вот реализовать идею на практике титанически трудно. Олигархам выгоднее лишить изобретателей возможности творить, чем допустить в широкое пользование «дармовые» источники энергии.

Показательные примеры. Прорыв в сфере разработок экологических и дешевых стройматериалов уже вынудил свернуть бизнес многих промышленников, верховодивших на рынке. А создание технологии беспроводного электричества стала настоящей финансовой гибелью для многих владельцев медных рудников.

Что в итоге? Миллионы безработных, разоренные олигархи, экономический хаос, социальные взрывы. Вот потому так стопорятся экологические инновации. Ведь они дают свободу, которая лишает олигархов возможности манипулировать массами и наживаться на них.

http://novostynauki.com/e-kologicheskie-innovatsii-pochemu-oni-vnedryayutsya-s-takim-trudom/

Task 5 – Read the text and insert one of the words given below into the gaps. Retell the text.

Egloo launches brilliant electricity free heater

climb	the dome	chilly
combustion	heater	thanks
grill	warm on	innovative
warm up	weather	composed

The Egloo, a brilliant little _____ that uses a simple concept to heat your home for just pennies a day – without electricity. Now, Egloo is finally hitting the market – and you can get your hands on one for your _____ spaces. Like it or not, winter is on the way – and Egloo offers an _____way to deal with chilly temperatures. The cute little terracotta dome keeps rooms _____the cheap without having to blast your entire house with heat.

With just four candles, Egloo can heat a room up to 90 square feet in size, which means you can _____ those spaces that just refuse to get toasty. Once you light the candles, Egloo is ready to go in 5 minutes and, after 30 minutes, the space around the heater will _____ 10 degrees. It's the perfect thing for chilly rooms or your patio during the cooler _____.

The Egloo's terracotta warms up and retains heat _____ to a few candles placed under _____. According to the manufacturer, Egloo is _____ of four elements: "the base, the grill and the two domes. The base offers a space for the positioning of the candles that, once you light them up, will warm the domes up. There is a metal _____ placed on the base, serving as a support for the domes. It makes a space to let the air in, necessary for the _____ of the candles."

The 3D-printed heater comes in a variety of colors and finishes – like matte black, lacquered purple or simple terracotta – and the base model starts at about 50 dollars.

http://inhabitat.com/egloo-launches-brilliant-electricity-free-heater-that-warms-your-home-for-just-pennies-a-day/

Task 6 – Write down the text using shorthand translation.

4 экологических инноваций, которые изменят мир

Кажется, что развитие чистых технологий с каждым годом растет в геометрической прогрессии. Представленные ниже экологически-дружественные изобретения могут соревноваться со своими обычными аналогами, а в некоторых случаях и превосходят их. Это напоминание о том, что единственная вещь, связывающая нас со старыми, менее экологически чистыми технологиями – это нехватка изобретательности. Предлагаем познакомиться со списком наиболее новых чистых технологий, направленных на борьбу за благосостояние нашей планеты.

Энергия нанотрубок

Исследователи Массачусетского института технологий разработали энергетическую технологию, с помощью которой можно производить постоянное напряжение путем пропускания электронов через углеродные нанотрубки. Открытие настолько значительное, что может понадобиться создание целой отрасли науки и техники, чтобы исследовать новый вид производства энергии. В более практичном аспекте термоэлектрическое устройство из углеродных нанотрубок может обеспечить такой же выход энергии, как и литиево-ионная батарея, при этом будучи лишь 1/100 ее размеров. Представьте, что ваш ноутбук будет получать энергию от устройства размером с ваш ноготь!

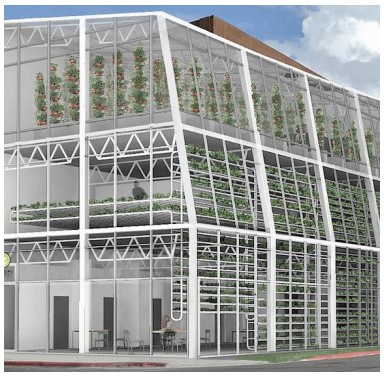
Технология ZenithSolar

Используя изогнутые зеркала, которые могут собирать в пять раз больше солнечной энергии, чем обычные гелиоколлекторы, новая технология, разработанная израильской компанией «ZenithSolar», впервые делает стоимость солнечной энергии конкурентоспособной по сравнению с ископаемым топливом. Невероятный технологический прыжок может повысить общую эффективность производства солнечной энергии на 75%. Изогнутые зеркала компании расположены на территории лишь 12 квадратных километров, и 10% населения Израиля может жить на полученной энергии.

Кровли из солнечных панелей

Если располагать панели с солнечными элементами на крышах домов, то пропадет необходимость строить солнечные энергоцентры на открытых земельных площадках. Теперь благодаря технологии, разработанной компанией «Dow Chemical», эта возможность вплотную приблизилась к реальности. Компания разработала кровельное покрытие, которое работает еще и как солнечные панели, сделанные из тонкопленочных элементов из диселенидов галлия-индия-меди. Так как их могут устанавливать кровельщики без специальных знаний по работе с солнечными панелями, стоимость использования крыши в качестве электростанции не может быть еще меньше.

Вертикальные фермы



Несмотря на уменьшение площадей сельскохозяйственных земель в связи с изменением их целевого назначения, сегодня фермеры должны производить все больше и больше пищи, чтобы удовлетворить растущие нужды. Решением этой проблемы, предоставленным компанией под названием «Valcent», является размещение пахотных угодий по типу небоскребов – вверх. Компания изобрела гидропонную фермерскую систему, которая выращивает растения чередующимися рядами, один над другим. Такое чередование не только обеспечивает точный объем света

для каждого растения, но и требует меньше воды, чем обычные методы земледелия.

http://facepla.net/the-news/tech-news-mnu/1709-11-eco-technologies.html

Task 7 – Write down abstract from the text and translate it into native language.

Science City Stores Warm Air from Summer to Heat Buildings in Winter

Humans are pretty temperature-sensitive creatures, which means we use a ton of power every year through heating and air-conditioning systems. But imagine if there were a way to save the summer's hot air and use it to heat buildings throughout the winter. Sounds like science fiction, right? Well one Swiss University has a plan to make that dream a reality with their campus, Science City.

Honggerberg Campus in Switzerland aims to create such a heating and cooling system on its Science City Campus. Every summer, appliances, computer servers, and people themselves give off a lot of heat. In most cases, this heat is pumped out into the environment through fans and cooling devices, essentially wasting a natural power source. Through an innovative plan developed by Gehrard Schmitt, Science City will harness that natural heat, pump it underground, and store it during the summer. Then, when temperatures dip low during the winter months, that warm air will be pushed back up into buildings where it will act as a heating system. The scheme is the first of its kind, and if all goes according to plan, it will allow the university to manage its energy while minimizing carbon emissions.

Two heat storage fields are currently being constructed on the campus. Eventually, the system will be made up of about 800 pipes that stretch 200 meters each. The pipes are to be laid five meters deep in the ground beneath buildings and alongside structures. The system of tubes will act as a heat storage unit, and will be connected to the building's supply network.

Schmitt's revolutionary heating and cooling system uses low-energy, or "anergy." Once completed in 2020, Science City will only need to rely on traditional electricity for one-twelfth of its heating and cooling needs. The rest of the energy will be provided through Schmitt's heat-exchanger system. Now that's a plan that makes those sweaty, summer months seem a little more bearable.

http://inhabitat.com/science-city-stores-warm-air-from-summer-to-heat-buildings-in-winter/

BLOCK C. SPEECH SKILLS.

Task 8 – Eco Friendly Shopping

Read a guide about eco friendly shopping and discuss with your group the main paragraphs. Do you agree to these paragraphs? Why/not?

Here is a quick guide to how we can shop to our hearts content with a clear conscience:

- ***Buy local produce.*** *This reduces the energy used to transport the goods to the shelf and resulting emissions.*

Eat seasonally*. Even local produce can be harmful to the environment if lots of energy was used to cultivate the crop, for example, to heat a greenhouse in Scotland in the middle of winter.*

- ***Get food delivered****. This may sound illogical at first, and it's true that the lorry or van used to deliver your produce will produce 5 times more carbon dioxide than your car. However, the aforementioned lorry or van can carry on average the equivalent amount of shopping to 1000 journeys in a regular car!*
- ***Make fewer trips in the car.*** *This one sounds obvious, but it is still estimated that a quarter of all car journeys are less than 2 miles. Try walking.*

Task 9 – Useful ecological innovations

In the previous tasks you read about different eco-innovations. What is the most useful eco-innovation in your opinion? Why? Tell about its benefits.

Task 10 – Design your own ecological innovation

Imagine you are scientist and you work on eco-innovation.
What would it be?
What is its function?
What does it look like?

Task 11 – Eco-gadgets

Look at these pictures and think about functions and benefits of these eco-gadgets.


MAKE
YOUR
MARK
ONE PERSON
CAN MAKE A
DIFFERENCE
ACT NOW


Vegetables and herbs
can be grown
Misters to keep
the roots hydrated
Running water to
keep oxygen flowing

TASKS FOR INDIVIDUAL WORK

Айзек Азимов

РОББИ

Развязка наступила наконец в Музее науки и промышленности. Там для детей была устроена специальная выставка, на которой демонстрировались всевозможные ухищрения и чудеса науки, приспособленные к детскому разумению. Конечно, Вестоны включили эту выставку в свою обязательную программу.

И в тот момент, когда Вестоны стояли, полностью поглощенные созерцанием мощного электромагнита, миссис Вестон внезапно обнаружила, что Глории с ними нет. Первый приступ паники сменился спокойной решимостью, и Вестоны с помощью трех сотрудников музея приступили к тщательным поискам.

Между тем Глория была далека от того, чтобы бесцельно бродить по музею. Для своего возраста она была необыкновенно решительной и целеустремленной девочкой, в этом она определенно пошла в мать. Она заметила на третьем этаже огромную надпись: «К ГОВОРЯЩЕМУ РОБОТУ». Прочитав ее по складам и заметив, что родители не проявляют желания идти в нужном направлении, она приняла самое простое решение. Выждав подходящий момент, когда родители отвлеклись, она спокойно покинула их и пошла туда, куда звала надпись.

Говорящий Робот представлял собой нечто необыкновенное. Это было совершенно непрактичное устройство, имевшее чисто рекламную ценность. Каждый час к нему пускали группу людей в сопровождении экскурсоводов. Дежурному инженеру осторожным шепотом задавали вопросы. Те из них, которые инженер считал подходящими для Робота, передавались ему.

Все это было довольно скучно. Конечно, хорошо знать, что 14 в квадрате равно 196, что температура в данный момент 22,2њ, а давление воздуха – 762,508 мм ртутного столба и что атомный вес натрия 23. Но для этого нет необходимости в роботе. Особенно в такой громоздкой, совершенно непортативной массе проводов и катушек, занимавшей больше двадцати пяти квадратных метров.

Редко кто возвращался к Роботу во второй раз. Лишь одна девушка лет пятнадцати тихо сидела на скамейке, ожидая третьего сеанса, когда в комнату вошла Глория.

Глория даже не взглянула на нее. В этот момент люди ее почти не интересовали. Все ее внимание было приковано к огромному механизму на колесиках. На какое-то мгновение она забеспокоилась – Говорящий Робот не был похож на тех, которых она видела. Осторожно, с нотками сомнения в тоненьком голосе Глория начала:

– Мистер Робот, простите, пожалуйста, это вы – Говорящий Робот?

Ей казалось, что робот, который на самом деле говорит, заслуживает самой изысканной вежливости.

(На худом, некрасивом лице сидевшей в комнате девушки отразилось напряженное размышление… Она вытащила маленький блокнот и начала что-то быстро писать неразборчивыми каракулями.

Послышалось маслянистое жужжание шестерен, и механический голос без всякой интонации прогремел:

– Я… робот, который… говорит.

Глория разочарованно смотрела на Робота. Действительно, он говорил, но звуки исходили откуда-то изнутри механизма. У Робота не было лица, к которому можно было бы обращаться.

Она сказала:

– Не можете ли вы мне помочь, мистер Робот?

Говорящий Робот был создан для того, чтобы отвечать на вопросы. До сих пор ему задавали только такие вопросы, на которые он мог ответить. Поэтому он был вполне уверен в своих возможностях.

– Я… могу… помочь… вам.

– Большое спасибо, мистер Робот. Вы не видели Робби?

– Кто… это… Робби?

– Это робот, мистер Робот. – Она приподнялась на цыпочки. – Он примерно вот такого роста, мистер Робот, немножечко выше, и он очень хороший. Знаете, у него есть голова. У вас нет, мистер Робот, а у него есть.

Говорящий Робот не мог за ней поспеть.

– Робот?

– Да, мистер Робот. Как вы, мистер Робот, только он, конечно, не умеет говорить, и он очень похож на настоящего человека.

– Робот… как… я?

– Да, мистер Робот.

Единственным ответом Говорящего Робота было невразумительное шипение, которое время от времени прерывалось бессвязными звуками. Ожидавшееся от него смелое обобщение-представление о себе не как об индивидуальном объекте, а как о части более общей группы, – превышало его силы. Верный своему назначению, он все-таки попытался осмыслить это понятие, в результате чего полдюжины катушек перегорели. Зажужжали аварийные сигналы.

(В этот момент девушка, сидевшая на скамейке, встала и вышла. У нее накопилось уже достаточно материала для доклада «Роботы с практической точки зрения». Это было первое из многих исследований Сюзен Кэлвин на данную тему.) Глория, скрывая нетерпение, ждала ответа. Вдруг девочка услышала позади себя крик: «Вот она!» – и узнала голос своей матери.

– Что ты здесь делаешь, противная девчонка?! – кричала миссис Вестон, у которой тревога тут же перешла в гнев. – Ты знаешь, что папа и мама перепугались чуть не до смерти? Зачем ты убежала?

В комнату ворвался дежурный инженер. Схватившись за голову, он потребовал, чтобы ему сообщили, кто из собравшейся толпы испортил машину.

– Вы что, читать не умеете? – вопил он. – Здесь запрещено находиться без экскурсовода!

Глория повысила голос, чтобы перекричать шум:

– Я только хотела посмотреть на Говорящего Робота, мама. Я думала, он может знать, где Робби – ведь они оба, роботы.

Снова вспомнив о Робби, она разразилась горючими слезами.

– Я должна найти Робби! Мама, хочу Робби!

Миссис Вестон, подавив невольное рыдание, сказала:

– О господи! Идем, Джордж! Я больше не могу!

Вечером Джордж Вестон на несколько часов куда-то ушел. На следующее утро он подошел к жене с подозрительно самодовольным видом.

– У меня есть идея, Грейс.

– Насчет чего? – послышался мрачный, равнодушный ответ.

– Насчет Глории.

– Ты не собираешься предложить снова купить этого робота?

– Нет, конечно.

– Ну, тогда я слушаю. Может, хоть ты что-нибудь придумаешь. Все, что я сделала, ни к чему, не привело.

– Так вот что мне пришло в голову. Дело в том, что Глория думает о Робби как о человеке, а не как о машине. Естественно, она не может забыть его. А вот если бы нам удалось убедить ее, что Робби – это всего-навсего куча стальных листов и медного провода, оживленная электричеством, тогда она перестанет по нему тосковать. Это психологический подход.

– Как ты предполагаешь это сделать?

– Очень просто. Как ты думаешь, где я был вчера вечером? Я уговорил Робертсона из «Ю. С. Роботс энд Мекэникел Мэн» показать нам завтра все его владения. Мы пойдем втроем, и вот увидишь, когда мы все посмотрим, Глория поймет, что робот – не живое существо.

Глаза миссис Вестон широко раскрылись, и в них появилось что-то похожее на восхищение.

– Послушай, Джордж, это неплохая идея!

Джордж Вестон гордо выпрямился.

– А у меня других не бывает! – заявил он.

Мистер Стразерс был добросовестным управляющим и от природы очень разговорчивым человеком. В результате этой комбинации каждый шаг экскурсии сопровождался подробнейшими – пожалуй, слишком подробными – объяснениями. Тем не менее миссис Вестон слушала внимательно. Она даже несколько раз прерывала его и просила повторить некоторые объяснения как можно проще, чтобы их поняла Глория. Такая высокая оценка его повествовательных способностей приводила мистера Стразерса в благодушное настроение и делала его еще более разговорчивым, если только это было возможно. Но Вестон проявлял все растущее нетерпение.

– Извините меня, Стразерс, – сказал он, прерывая на середине лекцию о фотоэлементах. – А есть ли у вас на заводе участок, где работают одни роботы?

– Что? Ах, да! Конечно! – Стразерс улыбнулся миссис Вестон. – Некоторым образом заколдованный круг: роботы производят новых роботов. Конечно, как правило, мы этого не практикуем. Во-первых, нам этого не позволили бы профсоюзы. Но очень небольшое количество роботов собирается руками роботов – просто в качестве научного эксперимента. Видите ли, – сняв пенсне, он похлопал им по ладони, – профсоюзы не понимают одного, – а я говорю это как человек, который всегда очень симпатизировал профсоюзному движению, – они не понимают, что появление роботов, вначале связанное с некоторыми неурядицами, в будущем неизбежно должно…

– Да, Стразерс, – сказал Вестон, – а как насчет этого участка, о котором вы говорили? Можно нам на него взглянуть? Это было бы очень интересно.

– Да, да, конечно. – Мистер Стразерс одним судорожным движением надел пенсне и в замешательстве кашлянул. – Сюда, пожалуйста.

Провожая Вестонов по длинному коридору и спускаясь по лестнице, он был сравнительно немногословен. Но как только они вошли в хорошо освещенную комнату, наполненную металлическим лязгом, шлюзы открылись, и поток объяснений полился с новой силой.

– Вот! – сказал он гордо. – Одни роботы! Пять человек только присматривают за ними – они даже не находятся в этой комнате. За пять лет, с тех пор как мы начали эксперимент, не было ни единой неисправности. Конечно, здесь собирают сравнительно простых роботов, но…

Для Глории голос управляющего уже давно слился в усыпляющее жужжание. Вся экскурсия казалась ей скучной и бесцельной. Хотя кругом было много роботов, но ни один из них не был даже отдаленно похож на ее Робби, и она смотрела на них с нескрываемым презрением.

Она заметила, что в этой комнате совсем не было людей. Потом ее взгляд упал на шесть или семь роботов, выполнявших какую-то работу за круглым столом посередине комнаты. Ее глаза изумленно и недоверчиво раскрылись. Комната была слишком большой, и она не могла быть окончательно уверена в своей догадке, но один из роботов был похож… был похож… да, это был он!

– Робби!

Ее крик пронизал воздух. Один из роботов за столом вздрогнул и уронил инструмент, который держал в руках. Глория пришла в неистовство от радости. Протиснувшись сквозь ограждение, прежде чем родители успели ее остановить, она легко спрыгнула на пол, расположенный на несколько футов ниже, и, размахивая руками, помчалась к своему Робби. А трое взрослых остолбенели от ужаса. Они увидели то, чего не заметила взволнованная девочка. Огромный автоматический трактор, тяжело громыхая, надвигался на Глорию.

В считанные доли секунды Вестон опомнился. Но эти доли секунды решили все. Глорию уже нельзя было догнать. Вестон мгновенно перемахнул через перила, однако это была явно безнадежная попытка. Мистер Стразерс отчаянно замахал руками, давая знак рабочим остановить трактор. Но они были всего лишь людьми, и им нужно было время, чтобы выполнить команду.

Один только Робби действовал без промедления и точно. Делая гигантские шаги своими металлическими ногами, он устремился навстречу своей маленькой хозяйке. Дальше все произошло почти одновременно. Одним взмахом руки, ни на мгновение не уменьшив своей скорости, Робби поднял Глорию, так что у нее захватило дыхание. Вестон, не совсем понимая, что происходит, не то что увидел, а скорее почувствовал, как Робби пронесся мимо него, и растерянно остановился. Трактор проехал до тому месту, где должна была находиться Глория, на полсекунды позже Робби, прокатился еще метра три и, заскрежетав, затормозил.

Отдышавшись и вырвавшись из объятий родителей, Глория радостно повернулась к Робби. Для нее произошло лишь одно – она нашла своего друга.

Но на лице миссис Вестон облегчение сменилось подозрением. Она повернулась к мужу. Несмотря на волнение и растрепанные волосы, она выглядела внушительно.

– Это ты устроил?

Джордж Вестон вытер вспотевший лоб. Его рука тряслась, и губы могли сложиться лишь в дрожащую, крайне жалкую улыбку. Миссис Вестон продолжала:

– Робби не предназначался для работы на заводе. Ты нарочно устроил так, чтобы его посадили здесь и чтобы Глория его нашла. Это все ты устроил.

– Ну, я, – сказал Вестон. – Но, Грейс, откуда я мог знать, что встреча будет такой бурной? И потом, Робби спас ей жизнь – ты должна это признать. Ты не сможешь отослать его снова.

Грейс Вестон задумалась. Она рассеянно взглянула в сторону Глории и Робби. Глория так крепко обхватила шею робота, что будь на его месте существо из плоти и крови, оно бы давно задохнулось. Вне себя от счастья, девочка оживленно болтала всякую чепуху на ухо роботу. Руки Робби, отлитые из хромированной стали и способные завязать бантиком двухдюймовый стальной стержень, нежно обвивались вокруг девочки, а его глаза светились темно-красным светом.

– Ну, – сказала наконец миссис Вестон, – пожалуй, он может остаться у нас, пока его ржавчина не съест.

Сьюзен Кэлвин пожала плечами.

– Конечно, до этого не дошло. Все произошло в 1998 году. К 2002 году изобрели подвижного говорящего робота, и неговорящие модели устарели. Все противники роботов восприняли это как последнюю каплю, переполнившую чашу. Между 2003 и 2007 годами большинство правительств запретило использовать роботов на Земле для любых целей, за исключением научных.

– Так что Глории пришлось в конце концов расстаться с Робби?

– Боюсь, что да. Я думаю, впрочем, что в пятнадцать лет ей это было легче, чем в восемь. Но все же это было глупо и ненужно. Когда я в 2008 году поступила на «Ю. С. Роботс», фирма была в самом тяжелом финансовом положении. Сначала 8 даже думала, что через несколько месяцев останусь без работы. Но выход был найден: мы начали осваивать внеземной рынок.

– И все, конечно, уладилось?

– Не совсем. Мы начали с того, что допытались использовать уже существовавшие модели. Например, этих первых говорящих роботов. Они были трех с половиной метров ростом, очень неуклюжие, и пользы от них было немного. Мы послали их на Меркурий, чтобы они помогли построить там рудник. И они не справились.

Я удивленно взглянул на нее.

– Разве? Но ведь сейчас компания «Меркюри Майнз» – огромный концерн с многомиллиардным капиталом.

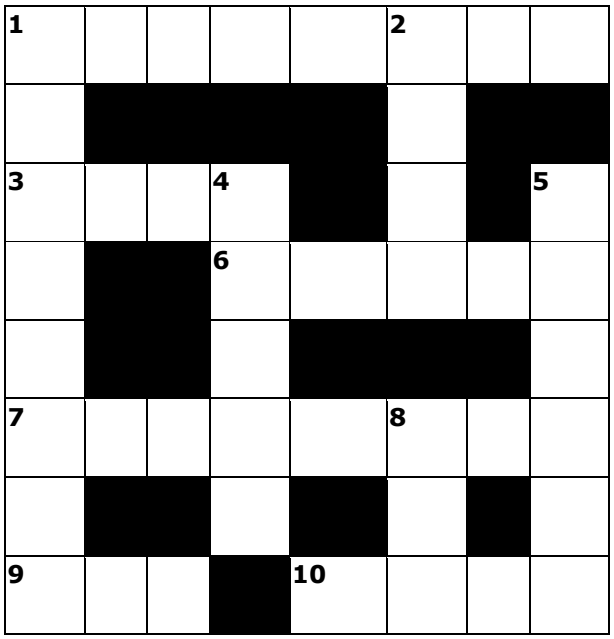
– Да, сейчас. Но удалась только вторая попытка. Если вы, молодой человек, хотите об этом услышать, я бы посоветовала вам разыскать Грегори Пауэлла. Они с Майклом Донованом занимались у нас в 10-х и 20-х годах самыми трудными делами. Я уже много лет не слышала ничего о Доноване, а Пауэлл живет здесь, в Нью-Йорке. Он теперь дедушка – мне очень трудно привыкнуть к этой мысли. Я помню его молодым. Ну конечно, и я была моложе…

– Может быть, если бы вы рассказали мне что-нибудь в самых общих чертах, то потом мистер Пауэлл дополнил бы ваш рассказ? Начните хотя бы с Меркурия.

– Ну ладно. Вторую экспедицию на Меркурий послали, кажется, в 2015 году. Это была разведочная экспедиция, которую финансировали «Ю. С. Роботс» и фирма «Солар Минерала». Экспедиция состояла из Грегори Пауэлла, Майкла Донована и опытного образца робота новой конструкции…

APPENDIX

Do the Science and Technology crossword puzzles

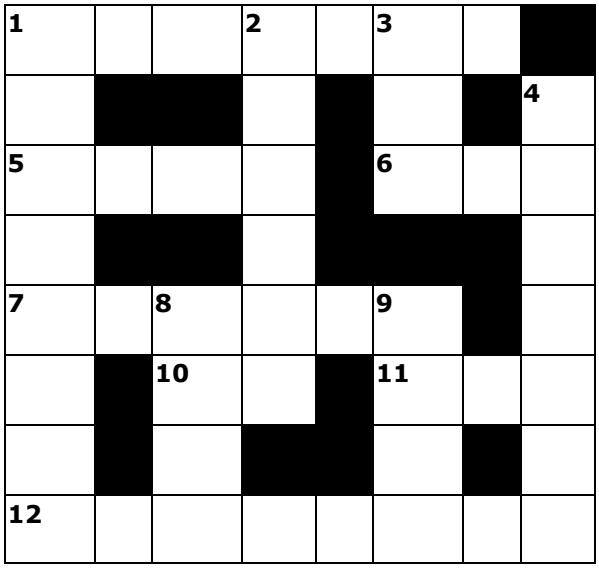


Across

1. Relating to chemistry
3. Fourth planet from the sun
6. The Earth has two _ _ _ _ _ ice caps.
7. A line on which events are placed
9. The colour of '3 across'
10. One time

Down

1. A machine that computes
2. Opposite of "warm"
4. How fast something moves
5. If you _ _ _ _ _ _ water it becomes ice.
8. A charged particle

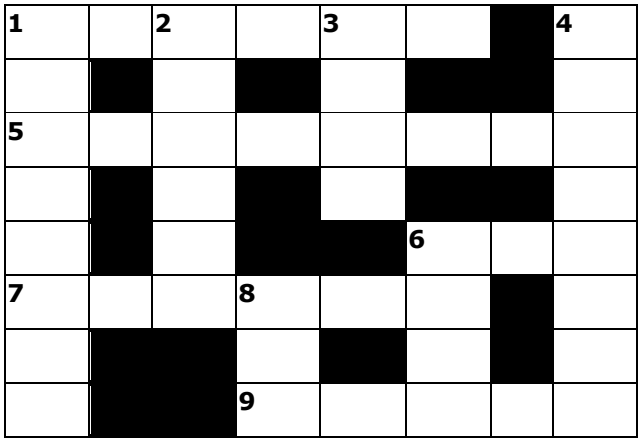


Across

1. Mathematical relationship in symbols
5. Standardised quantity
6. Prefix signifying "life"
7. Natural watercourses
10. Symbol for element "argon"
11. Hot drink made by infusion
12. Powered by batteries, for example

Down

1. Chemical that reduces tooth decay
2. Physical substance
3. Site of scientific experiments
4. Type of battery
8. Windmill or turbine blade
9. Light-emitting celestial body

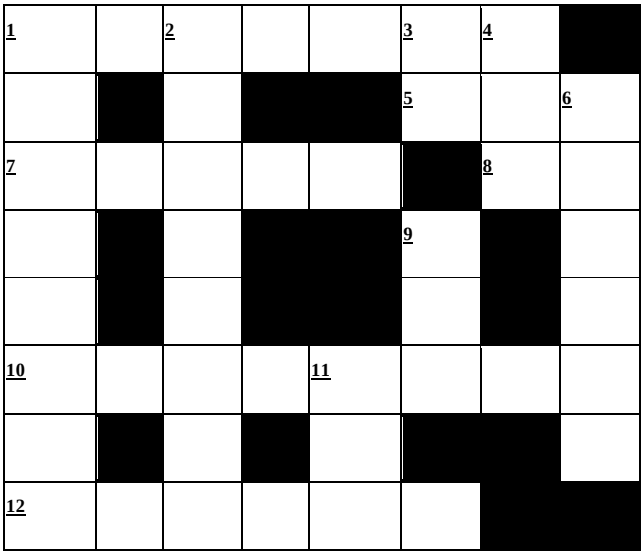


Across

1. We must stop _ _ _ _ warming.
5. Substance in food
6. Grass ear bristle
7. Small six-legged anthropod
9. Object in space with a tail

Down

1. Study of heredity
2. Study of sight and light
3. Dry, of climate
4. Plant scientist
6. Basic unit of matter
8. Acronym of "Error Recovery Control"



Across

1. Computer screen
5. Total amount
7. It consists of photons
8. Sodium's symbol
10. The Big Bang began it
12. Force or power

Down

1. Group of bonded atoms
2. Less than zero
3. Operating System
4. We need cars that _ _ _ on electricity.
6. A piece of iron that attracts iron
9. Type of graph
11. Unit of '12 across'

VOCABULARY

Progress words

When you write and speak about computers and technology, very often you will be asked to say how technology has changed or progressed.

word	other word forms	phrase
innovation	innovative	the cloud is one of the **latest innovations** in computer technology
advance		**one major advance** is in the use of computers in transport regulation
develop	development	it is not easy to predict how this technology is going to **develop**
progress		the 21st century has already seen **considerable progress in** computer technology
revolution	revolutionary/ revolutionise	it is undeniable that computers have **revolutionised** our lives
breakthrough		one of the greatest **technological breakthroughs** ever made was the microchip

notes

Progress is an uncountable word, while advance is countable. So you say that "digital technology is an advance" but you cannot say that "digital technology is progress"

Impact words

Another common topic is to talk about what effect computer technology has had on our lives

word	other word forms	
change		it goes without saying that **the computer revolution has changed** all our lives
affect	effect	generally speaking, most techology **has had a beneficial effect on** our lives
influence	influential	few inventions **have had a greater influence on** mankind than the computer
impact		it remains to be seen what **the long-term impact** of this technology will be

notes

Be careful with the difference between “affect” (generally a verb) and “effect” (generally a noun). Just to confuse you, in English they sound exactly the same.

“impact” and “influence” are often used with the preposition “on”

Technology and computer words

It is very easy to keep on repeating the same word without knowing it. One way not to do this is to change the form of the word or to use it in a different phrase.

word	example
technology	one of the disadvantages for consumers of **modern technology** is that it rapidly becomes obsolete
technological	simple as it is, I believe that cell phone is the most significant **techological** innovation
technophobe	there are a minority of people who remain **technophobes** and do not have mobile phones or even know how to text
technophile	others, of course, are **technophiles** and will buy the latest gadget whether they need it or not
computer technology/ ICT	nowadays one of the core subjects on any school's curriculum is **ICT** and it is essential for school leavers to be computer literate
information technology/IT	while computers have many possible applications, their greatest use is to allow us to exchange information - hence the name **information technology**
digital native	young people have an advantage by being **digital natives** and having grown up with laptops and mobile phones
computer literate	it is now almost impossible to work in an office, if you are not **computer literate**
the computer age	in fact, we could now be said to live in **the computer age**

notes

Be careful with the spelling of te**chn**ology.

A “technophile” loves technology and a “technophobe” hates it. In speaking, you could use the less formal word “geek” for technophile, but I would avoid it writing.

There is no great difference between “ICT” and “IT”. However, as my example shows ICT is most frequently used as the name of an academic subject.

Adjectives

adjective	example
cutting-edge	one such **cutting-edge** innovation is the concept of the cloud
state-of-the-art	it is not always, however, necessary to have the latest **state-of-the-art technology**
modern	**modern technology** has changed the way in which we lead our lives and communicate with one another
labour-saving	perhaps the most influential inventions are relatively simple **labour-saving devices** such as the vacuum cleaner
advanced	more **advanced technology** is not always the best
high	an example of this is how some **high tech solutions** are less reliable than the technology they replaced
outdated	the pace of change in the computer industry means that hardware can **become outdated or even obsolete** within the space of 2 years

notes

It is normal to use hyphens (-) in adjective phrases such as "state-of-the-art" when they are used before nouns ("state-of-the-art technology"), but you do not always need them when they are used without a noun ("this technology is state of the art").

"obsolete" is similar in meaning to "outdated", but is a stronger word to show that the technology is so old that it cannot be used any longer.

It is normal to write "high tech" rather than "high technology".

Device words

This is a rather confusing set of words to describe different kinds of objects.

word	example
device	we now have more leisure time because of **labour-saving devices** in the home such as the dishwasher
equipment	a computer is no longer a luxury, but has become an essential **piece of equipment** for any student or employee
gadget	we should not forget that many **technological gadgets** not only make out lives easier but are also fun to use
appliance	almost all modern kitchens have several **electrical appliances** that save our time

notes

A “device” is often something fairly small that allows you to complete a task. There is a strong collocation (very common phrase): “labour-saving device”.

“Equipment” is an uncountable word so you need to say “a piece of equipment”. It is a very general use word that can be used to describe almost anything mechanical.

“Gadget” is a word often used to describe objects that are either small or have a less serious purpose.

“Appliance” is typically used in the phrase “electrical appliances” (eg irons and kettles) that are less advanced technology.

Other useful words

This is a selection of other words that may come in useful when discussing technology

word	phrase/example	phrase/example
connection	have an internet connection	
online	go online	shop online
e-books	e-commerce	e-ticket
digital	digital camera	digital technology
cyber	cyber-crime	cyberspace
access to	have access to the internet	access a document
game	be addicted to computer games	
application	the application of IT	

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