Министерство образования и науки Российской Федерации
НОВОСИБИРСКИЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ

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АНГЛИЙСКИЙ ЯЗЫК
БАЗОВЫЙ КУРС

УРОВЕНЬ А+

ЧАСТЬ 1

Утверждено
Редакционно-издательским советом университета
в качестве учебного пособия для студентов первого курса
всех технических специальностей

НОВОСИБИРСК
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Работа выполнена на кафедре иностранных языков ТФ НГТУ

Афонасова В.Н.

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Настоящее учебное пособие предназначено для студентов I курса всех технических специальностей НГТУ, изучающих английский язык (уровень владения языком А+).

Основная цель данного пособия – развитие и совершенствование иноязычных речевых навыков и умений у студентов.

Учебное пособие включает в себя вводно-корректив ный курс и три модуля: «Высшее образование в России и за рубежом», «Научно-технический прогресс и проблемы экологии», «Наука и технологии».

Задача вводно-коррективного курса - систематизация полученных в школе базовых фонетических и грамматических навыков. Этот раздел выполняет функцию справочного материала и может быть предложен студентам для самостоятельной работы дома.

Темы модулей рассматриваются с уклоном в проблематику по широкому профилю вуза и являются переходными к профессионально-ориентированному языковому и речевому материалу. В состав каждого модуля входят современные аутентичные тексты, лексические и грамматические упражнения, а также задания с элементами критического и творческого мышления. В.А. Афонасова написала модуль 1, 2 и вводно-корректив ный курс; Л.А. Семенова – модуль 3.

Избыточная информация текстов дает возможность преподавателю широко использовать различные дополнительные приемы и методы работы над языковыми аспектами и видами речевой деятельности.

Материалы и упражнения на аудирование предлагается находить и разрабатывать самостоятельно, исходя из тематики модулей.

Пособие разработано в основном для аудиторной работы, но некоторые учебные элементы модулей по выбору преподавателя можно предлагать студентам для самостоятельного изучения.

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Meet new people to learn English together!

Congratulations!

Now you are the students of Novosibirsk State Technical University (NSTU)!

1. Let's get to know each other!

Fill in the personal page in our special social network "@NSTU"and then tell the group about yourself.

Name: _____
Status: _____
Birthday: _____
Native place: _____
School you finished: _____
Faculty you entered: _____
Group index: _____
Hobby: _____
Favourite books: _____
Favourite music: _____
Favourite films: _____
Favourite TV programmes: _____
Favourite games: _____
Favourite quotations: _____

2. NSTU has a Latin quotation as its motto. Find it among other universities' mottos below:

I. Dominus Illuminatio Mea (*The Lord is my light*)
II. Docendo Discimus (*By teaching, we learn*)
III. Lux et Veritas (*Light and Truth*)
IV. Mens et Manus (*Mind and Hand*)
V. Hinc lucem et pocula sacra (*From this place, we gain enlightenment and precious knowledge*)
VI. Veritas (*Truth*)

3. Match each motto from Task 2 with its Russian variant and the University it belongs to.

1. Обучая, учимся сами	a. Yale University
2. Головой и руками	b. Massachusetts Institute of Technology (MIT)
3. Отсюда он – священный глоток света и знаний	c. Harvard University
4. Свет и Истина	d. University of Oxford
5. Господь - мой свет	e. Novosibirsk State Technical University
6. Истина	f. University of Cambridge

ВВОДНО-КОРРЕКТИВНЫЙ КУРС

ФОНЕТИКА

1. Буквы и звуки

В английском языке **26 букв**, которые в сочетаемости друг с другом или в зависимости от положения в слове передают **44 звука**.

20 согласных букв b, p, d, t, g, k, v, f, s, z, c, h, j, l, m, n, q, r, w, x передают

24 согласных звука:

[b], [p], [d], [t], [g], [k], [v], [f], [z], [s], [ð], [θ],
[ʒ], [ʃ], [ʤ], [ʧ], [h], [j], [l], [m], [n], [ŋ], [r], [w]

6 гласных букв a, e, i/y, o, u передают

20 гласных звуков:

1. [æ]	p**a**d	11. [ɜ:]	t**er**m
2. [ɑ:]	r**a**ther	12. [ə]	sist**er**
3. [e]	b**e**d, h**ea**d	13. [eɪ]	n**a**me, pl**ay**
4. [i:]	b**e**, t**eam**	14. [aɪ]	n**i**ne, fl**y**
5. [ɪ]	s**i**x	15. [ɔɪ]	b**oy**
6. [ɔ:]	st**ore**	16. [au]	n**ow**
7. [ɔ]	n**o**t	17. [əu]	l**ow**, n**o**
8. [u:]	p**oo**l	18. [ɛə]	f**air**
9. [u]	b**oo**k	19. [ɪə]	h**ere**
10. [ʌ]	b**u**s	20. [uə]	t**our**

2. Основные правила чтения

Произношение слова, а иногда и целого словосочетания, лучше всего проверять по словарю и запоминать каждый отдельный случай, например, ˌ***e****lementary 'particle – ele'm****e****ntary* ˌ*school*. Однако значительная часть слов английского языка все же подчиняется правилам чтения, зная которые, можно прочесть наибольшее количество слов.

Чтение гласных букв под ударением

Чтение **ударной гласной** буквы в слове зависит от типа слога, в котором она находится. Различают ***четыре типа*** ударного слога:

- **I тип** – ***открытый слог –*** слог заканчивается ударной гласной, т. е. при делении слова на слоги ударная гласная остается «открытой»:

*n**a**-me, P**e**-te, f**i**-ve, n**o**, st**u**-dent, m**y***

Гласные в первом типе слога произносятся, как в алфавите, за исключением буквы **y**, которая (если только она не стоит в начале слова) в **любом типе слога** читается так же, как буква **i**.

Буква **e** в конце слова, как правило, не читается (если она не единственная гласная в слове), она - «немая», и нужна для того, чтобы «открыть» ударный слог.

- **II тип** – **закрытый слог** – ударный слог заканчивается одной или несколькими согласными (кроме **r**), которые «закрывают» ударную гласную:

*b**a**nk, p**e**n, f**i**ll, n**o**t, s**u**m-mer, g**y**m*

Гласная буква в закрытом слоге передаёт краткий звук.

- **III тип** – ударный слог заканчивается буквой **r,** после которой могут следовать одна или несколько согласных:

***ударная гласная* + r (+*согласная*)**

*c**ar**, sp**or**t, h**er**, g**ir**l, s**ur**f*

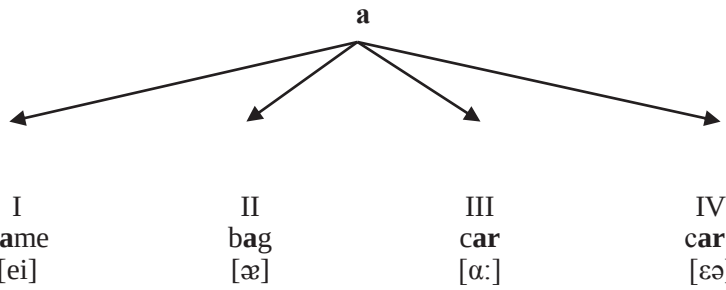
Гласная буква в сочетании с буквой **r** в третьем типе слога дает долгий звук.

- **IV тип –** ударный слог заканчивается буквой **r,** после которой обязательно есть гласная:

ударная гласная* + r + *гласная

*c**are**, h**ere**, f**ire**, c**ure**, t**yre**,, m**ore***

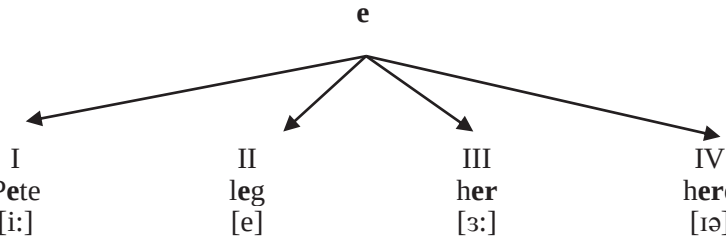
Гласная буква (кроме **o**, которая произносится как в третьем типе слога) в комбинации с буквой **r** + ***гласная*** представляет сочетание нескольких звуков.



Буквосочетания

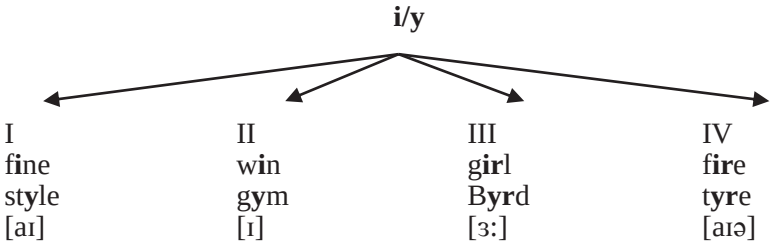
ai/ay	**air**	**au**	**aw**	w**ar,** qu**ar**	w**a,** qu**a** +согл. (*но не* ***r***)	**a+ll**	**al** +согл. (*буква* ***l*** *не произносится*)	**a+s** +согл
[ei]	[ɛə]	[ɔ:]	[ɔ:]	[ɔ:]	[ɔ]	[ɔ:]	[ɑ:]	[ɑ:]
*w**ai**t* *d**ay***	***f**air* *d**air**y***	***au**to* ***au**ra***	***l**aw* *d**aw**n***	*w**ar*** *qu**ar**ter*	*w**a**ter* *squ**a**sh*	*b**a**ll* *sm**a**ll*	***p**alm* *h**alf***	*p**a**ss* ***a**sk***

a+f +согл	**a+n** +согл. (*но не* ***n***)	**a+th**	**-a**nd, **-a**nce (в словах французского происхождения)	**-a**nge, **-a**the, **-a**ste
[ɑ:]	[ɑ:]	[ɑ:]	[ɑ:]	[ei]
*st**a**ff* ***a**fter***	*gr**a**nt* *br**a**nch*	*b**a**th* *p**a**th*	*dem**a**nd* *d**a**nce*	*ch**a**nge* *b**a**the* *w**a**ste*



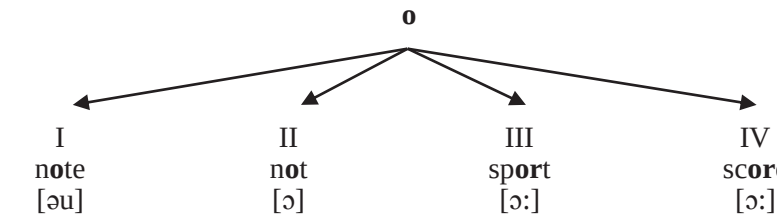
Буквосочетания

ee	**ea**	**ea+d**	**ea+th**	**ear, eer**	**ear** +согл. (*но не* ***s***)	**ei/ey**	**(c)ei**	**eu, ew** (но не после **j, l, r**-)	**j, l, r+ ew**
[i:]	[i:]	[e]	[e]	[ɪə]	[ɜ:]	[eɪ]	[(s)i:]	[ju:]	[u:]
*tr**ee** sp**ee**d*	*t**ea** l**ea**ve*	*h**ea**d br**ea**d*	*w**ea**ther d**ea**th*	*h**ear** **ear**s b**eer***	*h**ear**d **ear**th*	*f**ei**nt gr**ey***	***cei**ling rec**ei**ve*	*n**eu**tral f**ew***	*j**ew**elry fl**ew** cr**ew***



Буквосочетания

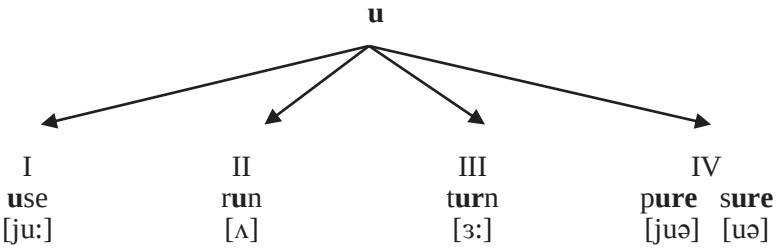
ia	**io**	**ie**+согл.	**i**ld, **i**nd	**i**gn (*буква* ***g*** *не произносится*)	**igh** (*буквосочетание* ***gh*** *не произносится*)	**y** (*в положении перед гласной)*
[aɪə]	[aɪə]	[i:]	[aɪ]	[aɪ]	[aɪ]	[j]
*d**ia**l v**ia***	*l**io**n v**io**let*	*f**ie**ld p**ie**ce*	*ch**i**ld k**i**nd*	*s**i**gn des**i**gn*	***h**igh* ***l**igh**t***	***y**es* ***y**ou **y**ard*



Буквосочетания

oa	**o**ld	**oi / oy**	**ou, ow**	**ou** (в словах французского происхождения)	**oo** + **l, m, n**	**oo** + **k**	**ough**t (*буквосочетание **gh** не произносится*)	**our, ower**
[əu]	[əu]	[ɔɪ]	[əu] или [au]	[u:]	[u:]	[u]	[ɔ:]	[auə]
*s**oa**p* *o**a**k*	*c**o**ld* *t**o**ld*	***oi**l* *b**oy***	*sh**ou**lder –* ***ou**t l**ow** –* *n**ow** kn**ow**n -* *t**ow**n*	*gr**ou**p* *y**ou*** *s**ou**p*	*t**oo**l* *m**oo**n* *n**oo**n*	*b**oo**k* *h**oo**k*	*b**ough**t th**ough**t*	*fl**our*** *fl**ower***

O+m, n, v, th			
[ʌ]			
*s**o**me* *c**o**me*	*s**o**n* *d**o**ne*	*ab**o**ve* *l**o**ve*	*m**o**ther* n**o***thing*



Буквосочетания

r, l, j+u	**p, b, f+ u +sh, ll**	**gu**+ударная гласная	**qu**+ударная гласная
[u:]	[u]	[g]	[kw]
*r**u**le* *fl**u**te* *J**u**ne*	*p**u**ll,* *p**u**sh* *b**u**ll* *f**u**ll*	***gu**ess* ***gu**ide*	***qu**estion* ***qui**te*

Чтение гласных букв в безударном положении

Гласные буквы в безударном положении чаще всего дают звук **[ə]** или **[ɪ]**:

a		**e**		**i**		**y**		**u**	**o**
[ə]	**[ɪ]**	**[ə]**	**[ɪ]**	**[ə]**	**[ɪ]**	**[ə]**	**[ɪ]**	**[ə]**	**[ə]**
asleep doll**a**r dat**a**	vill**a**ge pal**a**ce Sund**a**y	mom**e**nt wint**e**r	tel**e**phone hock**e**y	Apr**i**l tap**i**r	m**i**stake vis**i**t	mart**y**r	fift**y** synon**y**m	min**u**s dat**u**m s**u**rvive	monit**o**r less**o**n Aug**u**st

Кроме того, в ряде случаев буквы **i, o, u** в безударном положении дают звуки:

i	**[j]**	в сочетаниях **ion** после букв **l**, **n**, **p**	un**i**on, mill**i**on, champ**i**on
o	**[əu]**	обычно в конце слова	potat**o,** tomat**o**
u	**[ju:]**		**u**nite, **u**niversity
	[ju]		reg**u**lar
	[u]		thankf**u**l, handf**u**l
	[ʌ]	в префиксах	**u**ncommon, **u**pset

Тренировочные упражнения

Прочитайте сначала слова с открытым, а затем с закрытым ударным слогом.

Slide, slid, lime, slim, slope, slop, like, dam, male,, bag, mile, bet, bide, bade, bat, dome, lane, pin, pile, hale, hag, wide, wag, cape, rave, man, rate, dot, rope, pod, lane, wide, shop, dote, rot, bide, bad, made, mad, male, win, wine, hole, hill, case, shine, shin, duke, Jim, poke, dive, mite, cave, mute, rid, rove, cove, wave, rip, rope, ripe, mule, rule, man, mine, lone, mile, not, mole, time, bat, den, dine, pane, sum, dive, bun, cot, lake, try, tan, tub, pug, rode, bat, pile, dug, pup, date, hole, jut, nun, pole, fly, line, bug, dike, rate, cut, hag, chin, lone, gum, cope, chop, dame, dime, wig, rove.

Прочитайте сначала слова, относящиеся к III типу, затем к IV типу ударного слога. Не забывайте о правилах чтения безударных гласных.

Hurt, arm, cure, en'dure, 'purpose, 'Thursday, serve, dis'cord, here, term, zero, ab'sorb, de'part, inter'fere, im'merce, ex'port, soft'ware, 'carbon,

be'fore, dis'charge, 'surplus, 'market, 'mercury, re'port, 'purchase, re'verse, 'expert, 'garden, score, herb, en'large, spare, 'shortage, spare, im'portance, pre'serve, return, 'forecast, stare, corner, 'verbal, com'pare, harmful, bored, de'termine, share, charter, ex'plore, disturb, sin'cere.

Чтение некоторых согласных букв и сочетаний

Буква / Буквосочетание	Звук	Примеры	Примечания
c	**[s]**	centre, city, policy, face	перед **e, i, y**, в том числе перед нечитаемым/немым **e**
	[k]	cat, back, clock	в словах: soccer, Celt
(t)ch	**[k]**	chemistry, character, school	в словах, чаще всего заимствованных из греческого языка (в соответствующих русских словах пишется буква **x** – *хи-мия, ме**х**аника и др.*)
	[tʃ]	teacher, speech, chalk, witch, kitchen	
g	**[dʒ]**	dangerous, giant, gym, large	обычно перед **e, i, y**, в том числе перед нечитаемым /немым **e**
	[g]	bag, game, angry, got, gum	в словах: get, forget, target, give, girl и др.
n	**[ŋ]**	ink, pink, ankle	в сочетании **n+k**
ng	**[ŋ]**	long, song, wing	на конце любого слова
ph	**[f]**	telephone, photo	если обе буквы сочетания входят в состав одного слога
th	**[ð]**	this, with, father	в составе одного слога в служебных словах в любом слове между гласными
	[Ɵ]	thick, bath, tenth	в составе одного слога в полнозначных словах
s	**[z]**	those, easy, rose sees, beds, games	в положении между гласными на конце слова после гласного и звонкого согласного звука
	[ʒ]	pleasure, illusion	**гласная+s+ ion (ure)**
	[ʃ]	mission, pension, sure	в сочетании **согласная+s+ion (ure)**
sh	**[ʃ]**	ship, dish, washer	если буквы сочетания входят в состав одного слога
t	**[tʃ]**	future, nature, picture question, combustion	в сочетании **t+ ure** в сочетании **s+t+ ion**
	[ʃ]	revolution, patient	в сочетании **t+ion**
wh	**[w]**	what, which, wheel	в сочетании wh+любая гласная, кроме **o**
	[h]	who, whole	в сочетании **wh+o**

Основные правила ударения в двусложных и многосложных словах

1. В английском языке, особенно в многосложных словах, существует расхождение между количеством графических и фактически произносимых слогов: 'literature ('li-te-ra-tu-re ['lɪt-rə-ʧə]), 'interesting (in-te-res-ting ['ɪn-trəs-tɪŋ]. Ударение зависит, прежде всего, от фактически ***произносимых слогов***.

2. В ***двусложных и трехсложных*** словах ударение, как правило, падает на первый слог, если он не является префиксом: 'student, 'purity, 'conference, 'colleague ['kɔli:g].

3. Если слово состоит из ***четырех слогов***, ударение обычно падает на третий слог от конца слова: ac'tivity, en'vironment.

4. Если в слове ***больше четырех слогов***, то оно может иметь два ударения: главное – на втором или третьем слоге от конца слова и второстепенное – на первом или втором слоге от начала слова: re¸sponsi'bility, ¸inter'ference, ¸corre'spondent.

5. В существительных с суффиксами **-ic(-ical)** и **–tion(-sion)** главное ударение всегда падает на гласную, стоящую перед суффиксом: *¸peri'od**ical**, re'publ**ic**, evo'lu**tion***.

6. Ударение, как правило, сохраняется на том же слоге, если к корневой морфеме прибавляются словообразовательные суффиксы и префиксы: *'nature – 'natur**al**, 'power – 'power**ful**, in'form* - ***mis****in'form*. Однако правило это не абсолютно, и многочисленные исключения из него встречаются в научной лексике: ***'atom – a'tomic, 'carbon – car'bonic, 'industry – in'dustrial***.

Кроме того, префиксы **dis-, inter-, over-, re, super-, un- under-** часто несут на себе отдельное ударение, при этом ударение на корневую морфему сохраняется: *¸**disa**p'pear, ¸**inter**'rupt, ¸**over**'come, ¸**re**pro'duce, ¸**super**'visor, ¸**under**'stand*.

7. В ***сложных существительных*** ударение, как правило, падает на первый слог: 'blackboard, 'textbook.

8. В английском языке ударение служит средством для различия двух одинаковых по написанию слов (***омографов***), относящихся к ***разным частям речи***. В существительных ударение обычно приходится на первый, а в глаголах – на второй слог: ***'increase – in'crease, 'import – im'port, 'produce – pro'duce, 'present – pre'sent.*** В научно-технических текстах такие пары слов встречаются достаточно часто.

9. Одной из наиболее типичных произносительных ошибок является перенос словесного ударения из родного языка в иностранный: ***'molecule ['mɔlɪkju:l] – молéкула, – метáлл, 'element – элемéнт, 'detail – детáль.***

Тренировочные упражнения

I. Прочитайте слова-омографы в паре «существительное – глагол», правильно расставляя ударение. Переведите их на русский язык.

Образец: 'import – im'port – импорт – импортировать

Conduct, conflict, contest, decrease, suspect, desert, export, insult, transfer, permit, present, progress, protest, transport, record, reject, reprint, subject, upset, compress.

II. Прочитайте слова. При необходимости обращайтесь к справочному материалу, данному выше.

1. Tall, plant, ask, last, talk, walk, past, dance, salt, master, staff, call, bath, rather, rain, August, because, discount, fault, law, pause, square, raw, straw, equal.

2. Dead, news, head, heard, sphere, breath, perceive, search, learn, defeat, near, quest.

3. Wild, design, tight, believe, might, violin, assign, blind, bright, equip, right, highly, man'kind, night, niece, sight, diary, achieve, mind, require, highlight.

4. Point, told, cook, sound, brought, brother, low, core, tool, solve, load, thought, soil, worse, ore, other, allow, too, about, shook, school, coin, brown, shower, sold, food, noun, soon.

5. Bull, nurse, blue, during, pure, queen, pupil, guard, shuttle, tulip, furnace, cure.

6. Cross, crystal, cave, contact, cubic, watch, deck, stick, cycle, concert, Coke, celebrate, ice, circus, scar, cent, Dick, lucky, cheap, French, chaos, race, coat, topic, technical, excuse.

7. Dog, grey, large, gentle, caught, stage, egg, wage, cage, gas, thought, night, range, general, flight, gypsy.

8. Has, mission, maps, trams, also, prison, shape, nose, tables, explosion, shelf, measure, close, shake, wish, occasion, music.

9. With, myth, teeth, thick, thunder, that, this, athlete.

10. Philosophy, telegraph, phenomenon, sphere, physics, physicist, physician, microphone, earphones.

11. Singer, wing, trunk, English, sink, rang, drink, monkey, long, frank, meaning.

12. Wheel, who, wheat, whole, why, whale, where, whop, which, while.

13. Future, picture, question, nature, combustion, evolution, patient, capture, vocation, furniture, culture.

14. Graduation, attention, historical, economic, discussion, education, tradition, humanistic, motivation.

15. Overcome, superego, renovation, unacceptable, underground, disability, interpersonal, supervision, understandable.

16. 'Comfort, ki'lometer, con'trol, 'comment, la'boratory, 'interest, 'politics, 'competency, ex'periment, 'patent, 'discipline, in'tensive, i'deal.

ГРАММАТИКА

Имя существительное

Образование множественного числа существительных

Множественное число существительных в английском языке образуется при помощи формообразующего суффикса -s (или -es), который читается [s] после глухих согласных звуков, [z] после гласных и звонких согласных звуков, [iz] после шипящих и свистящих звуков.

*test – tes**ts** [s]; answer – answ**ers** [z] – ['a:nsəz], plan – pla**ns** [z]; match – mat**ches** [iz]*

Множественное число некоторых существительных образуется путем изменения корня слова:

Единственное число	**Множественное число**
a m**a**n – мужчина	m**e**n – мужчины
a wom**a**n – женщина	wom**e**n – женщины
a child – ребенок	children – дети
a f**oo**t – нога	f**ee**t – ноги
a t**oo**th – зуб	t**ee**th – зубы
a m**ou**se – мышь	m**i**ce – мыши

Отдельные существительные, заимствованные из греческого и латинского языков, сохранили свои формы множественного числа:

a phenomen**on** – явление	phenomen**a** – явления
a curricul**um** – программа	curricul**a** – программы
a gymnasi**um** – спортивный зал	gymnasi**a** – спортивные залы
an analys**is** – анализ	analys**es** – анализы
a bas**is** – основа	bases – основы
a dat**um** – данная величина	dat**a** – данные

I. Прочитайте существительные во множественном числе и назовите их в единственном числе:

Образец: students – a student

Departments, gentlemen, instructions, languages, schoolchildren, faculties, feet, activities, mottos, millennia, policemen.

Притяжательный падеж существительных

В английском языке имя существительное имеет два падежа: общий (Common Case), не имеющий окончаний (*a friend*), и притяжательный (Possessive Case), имеющий окончание **'s** у существительных в единственном числе (*friend'**s** pen)* или просто апостроф у существительных во множественном числе (*friends' pens*).

Существительные в притяжательном падеже выражают принадлежность предмета и отвечают на вопрос ***whose***? (***чей***?). Притяжательный падеж имеют в основном одушевленные существительные и заменяющие их местоимения: somebody, someone, anybody, anyone, everybody, everyone, nobody, no one (н-р, *somebody's pen*).

Неодушевленные существительные употребляются в конструкции с предлогом **of** *(the door of the house*). Однако есть ряд неодушевленных существительных, которые могут употребляться в притяжательном падеже, например:

continent + названия континентов	*continent's future, Europe's climate*
country + названия стран и территорий	*Russia's economy, Siberia's resources*
town, city+ названия городов	*city's day, Moscow's University*
слова, обозначающие сообщества людей	*company's product, group's meeting*
средства передвижения	*car's wheel, plane's flight*

Существительные в притяжательном падеже выполняют функцию определения: my **friend's** book - книга моего друга:

II. Переведите на русский язык. Помните, что перевод следует начинать с определяемого слова:

Образец: his friend's teacher→ учитель его друга

My brother's name, these students' names, my children's toys, these animals' food, his teacher's words, my friends' help, her child's skates, my dog's place, these gentlemen's hats.

Числительные

Количественные числительные отвечают на вопрос ***how many***? (***сколько*?**) Суффикс **-teen** служит для образования количественных числительных **от 13 до 19**:

four + ***teen*** – ***fourteen*** *(четыр**надцать**)*

Суффикс **-ty** служит для образования десятков **от 20 до 90**:

seven + ***ty*** – ***seventy*** *(семь**десят**)*

Порядковые числительные отвечают на вопрос ***which*? (*который по порядку*)?** Они образуются от соответствующих количественных числительных с помощью суффикса **-th**:

seven (*семь*) – ***the seventh*** (*седьмой*), *six* (*шесть*) – ***the sixth*** (*шестой*):

The academic year begins on ***the first*** *of September.*	*Учебный год начинается первого сентября.*
The 28th *of July is my birthday.*	*28 июля — мой День рождения.*

В **составных числительных** единицы присоединяются к десяткам через дефис: 47 – ***forty-seven***, 68 – ***sixty-eight***, а между сотнями и десятками стоит союз ***and***: 255 – *two hundred* ***and*** *fifty-five*, 3,485,219 – *three million four hundred* ***and*** *eighty-five thousand two hundred* ***and*** *nineteen.*

Хронологическая дата обозначается количественными числительными и при чтении цифры в ней делятся пополам: 1917 – ***nineteen seventeen***, in 1941 – ***in nineteen forty-one***.

Если в названии даты есть нули, то дата читается как:

2009 – ***two thousand and nine***

1905 – ***nineteen o [ou] five***

1900 – ***nineteen hundred***

В **простых дробях** числитель выражается количественными числительными, а знаменатель – порядковыми: 1/3 **– *a* (*one*) *third,*** 1/5 – ***a* (*one*) *fifth,*** 1/6 – ***a (one) sixth,*** 1/100 – ***a* (*one*) *hundredth***

Дроби со знаменателями **2** и **4** передаются словами: 1/2 – a (one) ***hal***f, 1/4 – a (one) ***quarter***

Если в числителе стоит число более единицы, то к слову, обозначающему знаменатель, прибавляется окончание **-s**: 2/3 – ***two thirds,*** 3/5 – ***three fifths,*** 9/10 – ***nine tenths***

Существительное, следующее за дробью, стоит в единственном числе: ***3/4 mile*** – ***three quarters of a mile*** (три четверти мили)

Смешанные числа, т.е. числа, состоящие из целого и дробного числа, читаются следующим образом: 2 1/4 – ***two and a quarter***, 5 3/4 – ***five and three quarters***.

В этом случае существительные, к которым относится дробное число, употребляются во множественном числе: 5 1/2 tons = five and a half tons или five tons and a half (пять с половиной тонн).

При чтении **десятичных дробей** каждая цифра читается отдельно, а точка, отделяющее целое число от дроби читается как "point": 3.2 – ***three point two***, 23.06 – ***two three point nought six.***

Ноль читается как ***nought***. Если целое число равно нулю, то оно часто не читается: 0.45 - *nought point four five* или ***point four five***.

III. Прочитайте по-английски:

30; 50; 90; 380; 500; 1,700; 285,000; 1981; 1945; 1799; 1985; 1800; 2000; 2012; 21.71 sec; 2.07 m; 10.91 sec; 3/4 m.

Конструкция there is/there are

Конструкция *there is/there are* употребляется для выражения наличия (или отсутствия) в определенном месте какого-нибудь лица или предмета. Форма глагола *to be* зависит от первого подлежащего. Перевод предложений с данной конструкцией на русский язык начинается с обстоятельства места, стоящего обычно в конце английского предложения:

There is a map and many desks in the classroom. (*1-е подлеж. в ед. ч.*)	В классе *есть* карта и много столов.
There were two books and a newspaper on this desk. (*1-е подлеж. во мн. ч.*)	На этом столе *были* две книги и газета.

Если обстоятельство места не упоминается, то перевод можно начинать с соответствующей формы слова «существовать», «иметь»: *There are some crazy ideas.* Существует (имеется) несколько сумасшедших идей.

Порядок слов в предложении с конструкцией there is/there are:

Утвердительное предложение	Вопросительное предложение	Отрицательное предложение
There is a student in the laboratory. There was an idea in his mind.	Is there a student in the laboratory? Was there an idea in his mind?	There is no student in the laboratory. There was no idea in his mind

IV. Поставьте следующие предложения в вопросительную и отрицательную формы:

1. There is a language laboratory in our university. 2. There are two windows in this laboratory. 3. There are 12 desks and a computer in this room. 4. There is a map of Great Britain on the wall. 5. There are some English textbooks on my table. 6. There are many examples of students' creativity.

V. Ответьте на вопросы, обращая внимание на употребление оборота there is/there are:

1. Is there a faculty of Humanities in NSTU? 2. How many foreign students are there in your group? 3. How many faculties are there in your university? 4. Are there many universities in Novosibirsk?

Неопределенные местоимения

Перевод на русский язык неопределенных местоимений и их производных зависит от того, в каком предложении они употребляются — в утвердительном, вопросительном или отрицательном.

Местоимение	+ **-thing**	+ **-body**	+ **-where**	Употребляется
some *некоторый, несколько, какой-то*	**something** *что-то, что-нибудь*	**somebody** *кто-то, кто-нибудь*	**somewhere** *где-то, где-нибудь*	в утвердительных предложениях
any *любой, всякий*	**anything** *все*	**anybody** *всякий*	**anywhere** *везде*	в утвердительных предложениях
any *какой-нибудь*	*что-то, что-нибудь*	*кто-то, кто-нибудь*	*где-то, где-нибудь*	в вопросительных предложениях
no, not any *никакой не*	**nothing** *ничто, ничего*	**nobody** *никто*	**nowhere** *нигде*	в отрицательных предложениях

VI. Переведите предложения, обращая внимание на неопределенные местоимения и их производные:

1. There is somebody in the room. 2. There isn't anything on the desk. 3. Nobody speaks Russian in his group. 4. I can see nothing there. 5. I'll go nowhere this summer. 6. It is nobody's business. 7. Does anybody want to see him? 8. You may go anywhere you like. 9. Any man can join some sports club.

Страдательный залог (Passive Voice)

Залог – это категория глагола, которая показывает отношение действия к субъекту или объекту. Когда субъект действия (подлежащее) является активным, т. е. сам действует, то сказуемое выражается в форме действительного залога (Active Voice), а когда субъект действия (подлежащее) является пассивным, т. е. действие направлено на него, сказуемое выражается глаголом в страдательном залоге (Passive Voice):

I **write** letters every day.	Я *пишу* письма каждый день.
These letters **are written** by me.	Эти письма *написаны* мной.

Сказуемое, выраженное глаголом в страдательном залоге, состоит из вспомогательного глагола **to be** в соответствующем времени и причастия II смыслового глагола: ***to be + причастие II*** *(to be done)*

Если указывается лицо или предмет, производящее действие, то оно вводится предлогами **by** или **with**, выражающими значение творительного падежа (кем? чем?):

A new research **was done by** this student.	Новое исследование *было проведено* этим студентом.

Если в функции сказуемого в страдательном залоге употребляются глаголы с предлогами, например: **to send for, to speak about, to act on, to look at, to refer to, to make use of, to pay attention to** и др., то при переводе на русский язык этот предлог ставится перед подлежащим:

The doctor was sent **for**.	*За доктором* послали.

Глаголы в страдательном залоге переводятся на русский язык:

а) сочетанием глагола *быть* в прошедшем или будущем времени с кратким причастием:

The record **was set** yesterday.	Рекорд *был установлен* вчера.
The record **will be** set tomorrow.	Рекорд *будет установлен* завтра.

б) неопределенно-личным предложением в действительном залоге:

The students **were shown** a new way of memorizing.	Студентам *показали* новый способ запоминания.

в) глаголом, оканчивающимся на **-сь, -ся**:

Many books **are published** in our country every year.	Каждый год в нашей стране *издается* много книг.

Сравните форму сказуемого в действительном и страдательном залогах во временах группы Simple:

Время	Залог	
	Действительный	Страдательный
Present Simple	ask/asks	am/is/are asked
Past Simple	asked	was/were asked
Future Simple	shall/will ask	shall/will be asked

VII. Переведите предложения, используя разные способы перевода глаголов в страдательном залоге:

1. The new words **were written** on the blackboard. 2. The guests **were shown** some students' inventions. 3. Modern technical laboratories **are opened** in our country**.** 4. Many theoretical and practical subjects **are studied** at the university. 5. The exams will be taken in a year.

Модальные глаголы и их эквиваленты

Модальные глаголы выражают не действие, а отношение к нему.

Глаголы **can, may** имеют форму настоящего и прошедшего времени. Глагол **must** имеет только форму настоящего времени. Для выражения отсутствующего времени употребляются эквиваленты модальных глаголов:

Модальный глагол и его эквиваленты	Выражает:	Present	Past	Future
can	физическую (или умственную) способность совершения действия	**can**	**could**	–
to be able (to)		**am/is/are able (to)** *могу, умею*	**was/were able (to)** *мог, умел*	**shall/will be able (to)** *сможет, сумеет*

Окончание табл.

Модальный глагол и его эквиваленты	Выражает:	Present	Past	Future
may	разрешение, просьбу	**may**	**might**	–
to be allowed (to)		**am/is/are allowed (to)** *можете, можно*	**was/were allowed (to)** *разрешили*	**shall/will be allowed (to)** *разрешат*
must	долженствование, необходимость совершения действия	**must** *должен*	–	–
to have (to)	необходимость совершения действия в зависимости от обстоятельств	**have (to), has (to)** *приходится*	**had (to)** *пришлось*	**shall/will have (to)** *придется*
to be (to)	необходимость совершения действия, заранее запланированного, или по договоренности	**am (to), is (to), are (to)** *должен, обязан*	**was (to), were (to)** *должен был*	–
should	рекомендация к действию, совет	**should** *должен, следует, рекомендуется*	–	–

Смысловой глагол, следующий за модальным глаголом, употребляется без частицы **to**.

Частица **to** употребляется после эквивалентов модальных глаголов**:** ***to be able (to), to be allowed (to), to have (to), to be (to).***

I ***can swim*** *well.* *Я могу (умею) хорошо плавать.*

Но:

He **will be able to swim** well soon. Скоро он *сможет* хорошо *плавать*.

Модальные глаголы имеют одну форму для всех лиц единственного и множественного числа:

He **can speak** English well.	Он *может* (*умеет*) хорошо говорить по-английски.
They **can speak** English well.	Они *могут* (*умеют*) хорошо говорить по-английски.

В вопросительной форе модальный глагол ставится в предложении перед подлежащим:

May I **come** in?	*Можно* мне *войти*?
Yes, you **may**.	Да, можно.
No, you ***can't.***	Нет, нельзя!

Обратите внимание на то, что при отрицательном ответе на просьбу **May I come in?** в значении «Нет, нельзя!» следует употреблять **No, you can't.**

VIII. Напишите следующие предложения в простом прошедшем (Past Simple) и будущем времени (Future Simple), используя эквиваленты модальных глаголов *must, can, may*:

Образец 1: *You must translate this letter today.* → *You* ***had to*** *translate this letter yesterday. You* ***will have to*** *translate it tomorrow.*

1. The student must finish the translation today. 2. You must read the text again. 3. He must learn the new words regularly. 4. He can speak English well. 5 We can hold this meeting today. 6. I can translate this article without your help. 7. You may bring the results of your experiment tomorrow.

IX. Ответьте на следующие вопросы, обращая внимание на модальные глаголы и их эквиваленты:

1. Do you have to get up early? 2. When do you have to get up? 3. Did you have to get up early yesterday? 4. Which days can you usually go to the cinema or theatre? 5. Will you be able to study all day long tomorrow?

Степени сравнения прилагательных и наречий. Сравнительные конструкции

а) Односложные и двусложные прилагательные образуют сравнительную степень путем прибавления к положительной степени суффикса **-er** и превосходную путем прибавления суффиска **-est**:

Положительная степень	Сравнительная степень	Превосходная степень
short *короткий* **big** *большой* **easy** *легкий*	**shorter** *короче* **bigger** *больше* **easier** *легче*	**shortest** *самый короткий* **biggest** *самый большой* **easiest** *самый легкий*

б) Многосложные прилагательные образуют степени сравнения с помощью слов **more** *более* в сравнительной и **most** *самый, наиболее* в превосходной степени:

Положительная степень	Сравнительная степень	Превосходная степень
interesting *интересный*	**more interesting** *более интересный*	**most interesting** *самый интересный*
beautiful *красивый*	**more beautiful** *более красивый*	**most beautiful** *самый красивый*

в) Прилагательные и наречия g**ood (well), bad, many (much), few (little), far** образуют степени сравнения от разных основ:

Положительная степень	Сравнительная степень	Превосходная степень
good (well) *хороший*	**better** *лучше*	**best** *лучший*
bad (badly) *плохой*	**worse** *хуже*	**worst** *самый плохой*
many (much) *много*	**more** *больше*	**most** *самый большой*
few (little) *мало*	**less** *меньше*	**least** *наименьший*
far *далеко*	**farther/further** *дальше*	**farthest/furthest** *самый дальний*
near *близко*	**nearer** *ближе*	**nearest/next** *ближайший*
late *поздно*	**later/latter** *позже*	**latest/last** *самый поздний*

г) Сравнительные конструкции**:**

Конструкция **as … as** употребляется при сравнении равных качеств двух предметов:

This river is **as** long **as** that one Эта река *такая же* длинная, *как* та

Конструкция **not so … as** используется при отрицании равенства двух предметов:

Europe in **not so** large **as** Asia Европа *не такая* большая, *как* Азия

Конструкции **more … than, less … than** употребляются при сравнении двух предметов неравного качества

Europe is **less than** Asia Европа *меньше, чем* Азия

Конструкция типа **the more … the better** переводится на русский язык при помощи парного союза *чем ..., тем*, например:

The more we know **the better** we study. – *Чем больше мы знаем, тем лучше мы учимся.*

X. Сравните качество предметов, понятий, явлений:

Образец: *Moscow, Novosibirsk (large).* → *Moscow is larger than Novosibirsk.*

1. The Lena (4,400 km), the Yenisei (4, 092 km) (long). 2. Lake Baikal, the Caspian Sea (deep). 3. This street, that one (wide). 4. The Pacific Ocean, the Indian Ocean (large).

XI. Выразите согласие с данными высказываниями, используя превосходную степень прилагательных:

Образец: *Lake Baikal is a very deep lake (in the world).* → *Yes, it is the deepest lake in the world*.

1. The Volga is a very long river (in the European part of Russia). 2. The Ob is a very long river (in the Asian part of Russia). 3. Moscow is a very important political, economic and cultural centre (in Russia). 4. St. Paul's Cathedral is a very famous building of London.

Времена группы Simple, Continuous и Perfect в действительном и страдательном залогах

Повторите формы глаголов-сказуемых to write и to ask во временах группы Simple, Continuous и Perfect в действительном и страдательном залогах:

Время Tense	Залог Voice	
	Действительный Active	Страдательный Passive
Простое настоящее Present Simple	**write, ask** **writes, asks**	**is | written** **are| asked**
Простое прошедшее Past Simple	**wrote** **asked**	**was | written** **were| asked**
Простое будущее Future Simple	**shall | write** **will | ask**	**shall be | written** **well be | asked**

Окончание табл.

Настоящее продолженное Present Continuous	**am | writing** **is | asking** **are |**	**am | being written** **is | being asked** **are |**
Прошедшее продолженное Past Continuous	**was | writing** **were| asking**	**was | being written** **were| being asked**
Будущее продолженное Future Continuous	**shall be | writing** **well be | asking**	–
Настоящее совершенное Present Perfect	**have | written** **has | asked**	**have | been written** **has | been asked**
Прошедшее совершенное Past Perfect	**had | written** **asked**	**had | been written** **been asked**
Будущее совершенное Future Perfect	**shall | have written** **will | have asked**	**shall | have been written** **will | have been asked**
Будущее в прошедшем Future in the Past	**should | write** **would | ask**	**should | be written** **would | be asked**

XII. Переведите следующие предложения. Обратите внимание на различия в употреблении Past Simple и Present Perfect.

1. The finals of the International Physics Olympiad were held in Moscow last year. 2. Exchanges of foreign students have become a common practice in our country. 3. NSTU has been listed among the leading universities of Siberia. 4. This company was founded in the second half of 20th century.

XIII. Переведите следующие пары предложений. Обратите внимание на различия в переводе глагола-сказуемого в Past Continuous и Past Perfect.

Образец:

She was reading a book when I came. *Она читала книгу, когда я пришел.*
She had read a book when I came. *Она уже прочитала книгу, когда я пришел.*

1. The negotiations were being held when our delegation arrived. The negotiations had been held when our delegation arrived.

2. They were performing on the stage when I entered the hall. They had performed on the stage when I entered the hall.

3. He was developing a presentation when I returned from my business trip. He had developed a presentation when I returned from my business trip.

MODULE I
HIGHER EDUCATION

Education's purpose is to replace an empty mind with an open one.

– Malcolm Forbes
Publisher of *Forbes* magazine (1919–1990)

UNIT 1
Problems of Modern Education

1.1. Do you think the Russian education system is in need of innovations? Why?/ Why not? Give your reasons.

1.2. The Unified State Examination (USE) or "EGE" is one of the disputable problems in our country.

Brainstorm your arguments for or against the USE.

FOR *(USEful)*	AGAINST *(USEless)*
a) no corruption on the University level	a) corruption on the secondary school level
b) _____	b) _____
c) _____	c) _____

HELPFUL HINTS:

devaluation of students' personal qualities	*(обесценивание) снижение значимости личных качеств учащихся*
equal opportunities to enter the university	*равные возможности при поступлении в университет*
combination of final exams and the university entrance exams	*объединение выпускного и вступительного экзаменов*
very expensive private tutors	*высокая стоимость услуг частных репетиторов*
tests at the same level of difficulty	*тесты с одинаковым уровнем трудности*
no subjective factors in students' evaluations	*отсутствие субъективных факторов при оценивании учащихся*

an independent commission to mark the tests	*оценки за тесты выставляются независимой комиссией*
teach to the test	*«натаскивать» на выполнение теста*

1.3. Study the Grammar Folder, translate the sentences below, and give your own examples using helpful hints from 1.2.

GRAMMAR FOLDER 1

Для эмоционально-экспрессивного выделения того или иного члена предложения (кроме сказуемого) в английском языке существует эмфатическая рамочная конструкция **it is_____ that (who, whose, which, when, where).** В русском языке она передается словом ***именно:***

It was *M.V. Lomonosov* ***who*** *founded Moscow University. –* ***Именно*** *Ломоносов основал Московский университет.*

Признаком эмфатической конструкции, является возможность убрать «рамку» **it is_____that** без искажения смысла предложения, лишь сняв эмфазу(усиление). Приведенный пример примет вид:

M.V. Lomonosov founded Moscow University. – Ломоносов основал Московский университет.

1. *It is* creative thinking and problem solving skills *which* children need to be taught.
2. *It was* three days ago *when* they passed their exams.
3. *It was* at the University *where* they passed their exams three days ago.
4. *It is* good news *that* we are waiting for.
5. *It is* entrepreneurial skills *that* everyone needs to have.

1.4. Scan Phil Mckinney's post about problems in modern education (Text A) and answer the questions.

1. What country is the post about?
2. When did he write his post?
3. How many skills does Phil underline?
4. How many comments has he got?

TEXT A

What Skills Do Children Need to Be Innovative?

By Phil Mckinney

During a recent meeting with educators and government officials, I shared my frustration with the US current educational system. In my opinion, the system is optimized to produce graduates with deep technical skills

and the ability to take tests. One competency that I see missing is the ability to apply creative problem solving skills to any given problem.

I believe that we are experiencing the transition to the creative economy. The ability to train future employees with innovation skills will determine the winners and losers among organizations and countries.

So what skills should we teach our children?

Creative Thinking and Problem Solving Skills: Children need to be taught how to think rather than how to memorize. It is not about finding the one right answer for a test but instead the ability to search out all of the possible answers to a question to find the optimal solution. Creative thinking and problem solving skills should not be a stand-alone subject. They should be taught across all subjects.

Entrepreneurial Skills: It's not longer about having deep expertise in a given area but also to have the broad understanding of how a given idea is transformed into an innovation. Understanding the structure, steps and process of running an organization is a fundamental skill that everyone needs to have.

Cultural Understanding: The world is flat and getting flatter. The ability to understand and collaborate with a global system of employees, partners and customers is very important.

What must parents do? They should find opportunities for their children to gain the skills to win the future creative economy. Children should learn how to invent, create and collaborate with people from different cultures.

Therefore, we need to change the educational system, and it is the parents that can have the most positive impact on this process.

(philmckinney.com/archives/2009/12/innovation-skills-for-children.html)

COMMENTS:

David Cordeiro *says***:**

I agree strongly with your post. The good news is that for motivated students and parents the Internet provides a number of global resources. One of the best resources for teaching creative problem solving is The Art of Problem Solving.

Sarah Firisen *says:*

I thought you might be interested in my recent blog posting on a similar topic http://www.3quarksdaily.com

VOCABULARY (Text A)

ability (*n*) умение, способность

ability to take tests – умение выполнять тесты, проходить тестирование

apply *(v)* применять, использовать
*apply **skills** – применять навыки*
deep technical skills – прочные технические навыки
collaborate *(v)* (**with**) работать совместно (с), сотрудничать
collaborate with a global system – совместно работать в едином мировом пространстве
competency = competence (*n*) компетенция
missing competency – недостающая, отсутствующая компетенция
creative thinking творческое мышление
cultural understanding понимание культурного контекста, взаимопонимание представителей разных культур
customer (*n*) потребитель, заказчик; клиент
determine [dɪ'tɜ:mɪn] *(v)* определять, устанавливать
to determine the winners and losers – определять победителей и проигравших
employee[ˌɪmplɔɪ'i:] (*n*) работающий по найму, работник
train future employees – обучать будущих работников
to employ [ɪm'plɔɪ] *– нанимать на работу*
*employ**er*** [ɪm'plɔɪə] *– работодатель*
entrepreneurial [ˌɔntrəprə'nɜ:rɪəl] (*adj*) предпринимательский, предприимчивый
entrepreneurial activities – предпринимательская деятельность
experience [ɪk'spɪərɪəns] *(v)* испытывать, чувствовать, переживать
expertise [ˌekspɜ:'ti:z] (*n*) знание дела, квалификация, мастерство, умение
to have deep expertise in a given area *– владеть высоким мастерством в определенной области*
flat (*adj*) однородный, единообразный, плоский
frustration (*n*) (**with**) чувство разочарования, неудовлетворённости (из-за невозможности каким-л. образом повлиять на ситуацию)
frustration with the "output" of the current educational system – неудовлетворенность результатами работы современной системы образования
to be frustrated with – испытывать разочарование в ч.-л./к.л. People are frustrated with the politicians.
graduate (*n*) выпускник университета (амер.: выпускник школы, колледжа, университета, – в зависимости от контекста. Например, college graduate – выпускник колледжа, high-school graduate – выпускник средней школы)
impact (*n*) (**on**) влияние (*на*)
have the most positive impact on the process – оказывать самое непосредственное влияние на процесс

invent *(v)* изобретать, создавать
rather than а не (в середине фразы)
to teach how to think rather than how to memorize – учить как думать, а не как запоминать
running an organization управление организацией, предприятием
share *(v)* делиться
to share one's problems with smb. — поделиться с кем-л. своими проблемами
solution (*n*) решение, разрешение (*проблемы и т.п.*)
solve *(v)* решать
problem solving – решение проблем
to apply creative problem solving skills to any given problem – применять навыки творческого решения любой проблемы
stand-alone(*adj*) отдельный, независимый, автономный
stand-alone subject – отдельный учебный предмет
transition (*n*) (**to**) переход *(к)*, переходный период
to experience the transition to the creative economy - переживать переходный период к экономике, основанной на творческом подходе

1.5. Read Text A again and answer some "what" questions.

1. What frustration did Phil share with the US officials?
2. What graduates does the American system produce?
3. What competency does the author consider missing?
4. What economy are we experiencing the transition to?
5. What will determine the winners and losers among countries in future?
6. What skills does the author highlight?
7. What skills do you consider the most important? Why?

1.6. Find all possible word partners in Text A to the words below. Give their Russian equivalents.

ability	skills	economy	problem
system	to apply	to determine	creative

Speak on the problems of the modern education system using these words and their word partners.

1.7. Write your comments on Phil Mckinney's post.

1.8. Study the Grammar Folder, translate the sentences below, and give your own examples.

GRAMMAR FOLDER 2

В английском языке имеются слова, которые употребляются в предложении для того, чтобы избежать повторения одного и того же слова, части предложения или целого предложения. Такие слова называются заместителями.

Слово-заместитель **one** употребляется вместо ранее упомянутого существительного в единственном числе, а **ones** – вместо существительного во множественном числе:

*I don't like these white flowers. Give me red **ones**.*	*Мне не нравятся эти белые цветы, дайте мне красные **(цветы)**.*
*I have no calendar. I must buy **one**.*	*У меня нет календаря. Я должен купить **его.***

Местоимения **one** как слово-заместитель или совсем не переводится на русский язык, или переводится соответствующим местоимением. Если оно употребляется с определенным артиклем или указательным местоимением, то переводится местоимением *тот* (*та*, *то*):

*This film is more interesting than that **one**.*	*Этот фильм более интересный, чем **тот** (фильм).*
*This book is more interesting than **the one** you gave me yesterday.*	*Эта книга более интересная, чем **та** (книга), которую вы мне дали вчера.*

В качестве слов-заместителей употребляются также указательные местоимения **this** (**these**) и **that** (**those**). При переводе этих местоимений на русский язык они либо опускаются, либо переводятся соответствующими существительными:

*Rivers in Great Britain are not so long as **those** in Russia.*	*Реки в Великобритании не такие длинные, как **(реки)** в России.*
*Your presentation is much better than **that** of your friend.*	*Ваша презентация лучше, чем **презентация** вашего друга.*

1. I don’t like this book, show me another one.
2. The tests were very difficult ones.
3. These ideas are more creative than those of the last meeting.
4. This experiment is more successful than the one we made a week ago.
5. The answers in the book are more accurate than those on the site.

1.9. Before reading Text B, decide if the statements below are True or False:

1. There are no problems in the Western education system.
2. In the real world, there is usually more than one "right" answer.
3. To be creative, there is no need to generate a lot of ideas.

4. Thomas Edison made a large number of experiments.
5. The quality of ideas does not depend on the quantity.

TEXT B

To Uncover Great Ideas, Generate a Large Quantity of Them

By Paul Sloane

One of the great problems with the Western education system is that it teaches that for most questions there is one correct answer. Examinations with multiple-choice questions force the student to try to select the right answer and avoid the wrong ones. So when our students leave school they are steeped in a system that says, "Find the "right answer" and you have solved the problem."

Unfortunately, the real world is not like that. For almost every problem, multiple solutions may solve the problem with varying degrees of effectiveness. In other words, in the real world, there is more than one "right" answer. We have to unlearn the school approach and instead adopt an attitude of always looking for more and better answers.

To be creative, you need to generate a large number of ideas. Why do you need more ideas? Because when you start generating ideas, you generate the obvious, easy answers. As you come up with more and more ideas, so you produce crazier, more creative ideas that can lead to radical solutions.

Real-world examples

Thomas Edison was prolific in his experiments. His development of the electric light took over 9,000 experiments. He still holds the record for the most patents - over 1,090 in his name. After his death, 3,500 notebooks full of his ideas were found. It was the talent that led him to so_many breakthroughs.

Picasso painted over 20,000 works. Bach composed at least one work a week. The great geniuses produced quantity as well as quality. Sometimes it is only by producing the many that we can produce the few great works or ideas.

Putting these lessons to work for you

When you start brainstorming or using other creative techniques, the best idea might not come in the first twenty - or even in the first 100 ideas. The quality of ideas does not degrade with quantity. Often the later ideas are the more radical ones from which a truly creative solution can be developed.

(http://www.business-strategy-innovation.com/innovation-blog.html)

VOCABULARY (Text B)

adopt *(v)* перенимать, усваивать
adopt smb.'s methods – перенять чьи-л. методы
approach [ə'prəʊʧ] (*n*) подход (*к решению проблемы, задачи*)
attitude ['ætɪt(j)uːd] *(n)* позиция; отношение
negative attitude – отрицательная позиция
positive attitude – положительное отношение
avoid *(v)* избегать
brainstorming ['breɪnˌstɔːmɪŋ] мозговая атака, мозговой штурм *(поиск творческого решения проблем путём коллективного обмена идеями)*
breakthrough ['breɪkθruː] (*n*) достижение, успех, открытие, прорыв
technological breakthrough – технологический прорыв
come up with придумать, предложить *(идею, лозунг)*
death [deθ] (*n*) смерть
degrade *(v)* ухудшаться, портиться
develop*(v)* развивать, создавать, разрабатывать
***developmen*t** создание, разработка
few мало *(об исчисл. сущ.)*
a few немного *(об исчисл. сущ.)*
force *(v)* заставлять, принуждать, вынуждать
generate ['ʤen(ə)reɪt] *(v)* генерировать, вырабатывать, производить
genius ['ʤiːnɪəs] (*n*) гений, талант
hold the record удерживать рекорд
multiple-choice questions вопросы с выбором ответа из множества
obvious *(adj)* очевидный, заметный
prolific *(adj)* плодовитый, продуктивный
prolific author — плодовитый автор
quantity ['kwɔntətɪ] (*n*) количество
quantity and quality – количество и качество
steep in погрузиться, пропитаться *(ч-л)*
to be steeped in a system – быть/стать частью системы
technique [tek'niːk] (*n*) прием, метод, способ
uncover [ʌn'kʌvə] *(v)* открывать (обнаруживать; раскрывать)
unfortunately [ʌn'fɔːʧ(ə)nətlɪ] к несчастью, к сожалению
varying degrees of effectiveness различная степень эффективности

1.10. Fill in the gaps with the words from Text B.

1. Most people think that answering *m*_____ – *q*_____ is pretty easy.
2. In real life *m*_____ *s*_____ for almost every problem are required.

3. It is important that students *a*_____ *an a*_____ of always looking for a number of answers.

4. Creativity is one of the greatest tools for *g*_____ *i*_____.

5. Who *h*_____ the *r*_____ for the most quantity of patents?

6. New studies may *l*_____*to* many *b*_____ in physics and chemistry.

7. Various *c*_____ *t*_____ help to *g*enerate ideas.

1.11. Read the text about modern approach to educating children. Replace the words in *italics* with the verbs from the box.

break	***rethink***	***require***	***synthesize***	***prepare***

We need to ***change our mind on*** (_____) how we educate our children because we need to ***make*** them ***ready*** (_____) for a different world. A world in which *flexibility, *adaptability, creativity, and problem solving will be of great importance.

Going forward we will need to ***change*** (_____) our physical and natural worlds understanding. This will ***need*** (_____) a new *generation of scientists and workers who can ***unite*** (_____) approaches from different cultures and disciplines that are masters of creative approaches to problem solving, and that have the *entrepreneurial spirit to break old barriers.

*flexibility [ˌfleksɪ'bɪlətɪ] гибкость
adaptability [əˌdæptə'bɪlətɪ] способность приспособиться
generation поколение
entrepreneurial [ˌɔntrəprə'nɜːrɪəl] spirit дух предпринимательства

1.12. Discussion Points:

1. What critical skills must students have to meet the needs of tomorrow's society? Why?

2. If you had a chance, what would you do for the Russian Education system? Why?

UNIT 2
Bologna Process

This Unit may seem rather difficult for you both in language and content, but it is critical for understanding the main field you are in now – Higher Education.

2.1. Do you know what the Bologna Process is? If yes, share the information with your group either in English or in Russian.

2.2. Scan the first two paragraphs of Text A to fill in the information gaps.

1. The Bologna Process is the European Union's _____.
2. The Bologna Process was aimed at _____.
3. The Bologna Process is named after _____.
4. The Bologna Declaration was signed in _____ on 19 June 1999.
5. The Russian Federation signed the Declaration in _____.
6. Today, the Process unites _____ countries.

TEXT A

About the Bologna Process

Today, the Bologna Process stands out as a highly significant reform that has initiated national-level reforms in higher education worldwide. The formation of the European Higher Education Area in 2010, as the main aim of the Bologna Process, further reinforced efforts to develop a comparable level of higher education across countries in Europe.

The Bologna Process is named after the Bologna Declaration, which was signed in the Italian city of Bologna on 19 June 1999 by ministers in charge of higher education from 29 European countries. The Russian Federation joined the process and signed the Declaration in 2003. Today, the Process unites 47 countries.

The broad objectives of the Bologna Process are to remove the obstacles to student mobility across Europe; to enhance the attractiveness of European higher education worldwide; to structure higher education along three cycles (Bachelor-Master-PhD).

The cycles are defined in terms of qualifications and European Credit Transfer and Accumulation System (ECTS) credits:

- 1st cycle: typically 180−240 ECTS credits, usually awarding a Bachelor's degree.
- 2nd cycle: typically 60−120 ECTS credits, usually awarding a Master's degree.
- 3rd cycle: Doctoral degree. No ECTS credits are given.

In most cases, these will take 3 or 4 (Bachelor), 2 (Master), and 3 (PhD) years to complete. The number of credits and actual naming of the degrees may vary from country to country.

The new model gives greater weight to practical training and to intensive research projects. The way credits are measured reflects how hard a student has worked. The new evaluation methods reflect not only a student's

performance on exams, but also his or her lab experiments, presentations, hours spent on study, innovation capacities, etc.

(http://www.europeunit.ac.uk/bologna_process/index.cfm)

VOCABULARY (Text A)

actual ['æktʃuəl] фактический, реальный
aim (*n*)/aim (*v*) цель / нацеливать
aimed at creating of - нацеленный на создание ч.-л.
attractiveness [ə'træktɪvnəs] привлекательность
award [ə'wɔ:d] (*v*) присуждать
awareness [ə'wɛənəs] (*n*) информированность, осведомлённость
Bachelor ['bæʧ(ə)lə] (*n*) бакалавр
be in charge of быть ответственным за *к.-л./ч.-л.*
Bologna [bə'lənjə], [bɔ'lənjə], [bə'ləunjə] Болонья (*город в Италии*)
capacity [kə'pæsətɪ] (*n*) способность (*ч.-л. делать*)
comparable [kəm'pærəbl] *(adj)* сопоставимый, соизмеримый, сравнимый
comparable degrees – сопоставимые степени
complete [kəm'pli:t] (*v*) завершать, заканчивать
credit (*n*) зачетная единица/кредит
cycle(*n*) цикл
define(*v*) определять, устанавливать
degree(*n*) степень
to award an academic degree – присуждать ученую степень
(syn.) - *to grant a degree*
enhance [ɪn'hɑ:n(t)s] (*v*) увеличивать, усиливать (*обычно какое-л. положительное свойство*)
European Credit Transfer and Accumulation System – Европейская система накопления и перевода кредитов/зачетных единиц
European Higher Education Area Европейское Пространство Высшего [ˌjuərə'pi:ən] ['haɪə] [ˌedʒu'keɪʃ(ə)n] ['ɛərɪə] Образования
evaluation [ɪˌvælju'eɪʃ(ə)n] (*n*) оценка, оценивание
in terms of на основе, исходя из
in terms of qualifications – на основе квалификаций
Master (*n*) магистр
measure ['meʒə] (*v*) измерять, оценивать, определять
The way credits are measured reflects how hard a student has worked. – Метод, при помощи которого определяется стоимость зачетных единиц, отражает то, насколько усердно студент занимался.
name after называть в честь *к.-л./ч.-л.*
objective [ɔb'dʒektɪv] (*n*) цель, стремление
obstacle(*n*) препятствие
performance [pə'fɔ:mən(t)s] (*n*) исполнение, выполнение, работа
a student's performance on exams – ответы студента на экзаменах

PhD [ˌpiːeɪʧ'diː] доктор философии *(учёная степень; соответствует степени кандидата наук в РФ; присваивается как в гуманитарных, так и в естественных науках. сокр. от Doctor of Philosophy)*
promote (*v*) продвигать
reinforce усиливать
remove (*v*) преодолевать
research [rɪ'sɜːʧ] (*n*) (научное) исследование
sign [saɪn] (*v*) подписывать (*документ*)
significant (*adj)* значительный, важный
take some time(*v*) занимать к.-л. время
It will take two hours to translate this article. Перевод этой статьи займёт два часа.
vary ['vɛəɪ] (*v*) меняться, изменяться
weight [weɪt] (*n*) вес, весомость

2.3. Scan Text A again and say what the following numbers refer to.

29 1999 2003 240 120 47 2010

2.4. Complete the word combinations using the word(s) from the box below. Give their Russian equivalents.

weight, objectives, Higher Education Area, capacities, the attractiveness, training, the process, system of higher education, experiments, from country to country, higher education, the obstacles, naming of a degree, in terms of qualifications, credits, a degree, performance, methods, the Declaration, projects

to create the European _____	ECTS _____
to promote the European _____	to award _____
to sign _____	actual_____
in charge of _____	to vary _____
to join _____	to give greater _____
broad _____	practical _____
to remove _____	evaluation _____
to enhance _____	student's _____
to define _____	innovation _____
research _____	lab _____

2.5. Answer the questions about the Bologna Process.

1. What is the Bologna Process?
2. Why is it called the Bologna Process?
3. What are the broad objectives of the Bologna Process?
4. How is the European higher education structured?

5. How many years does it usually take to get a PhD degree?

6. What are the advantages of the Bologna Process? Are there any disadvantages?

2.6. Study the Grammar Folder and write the correct forms of the verbs.

GRAMMAR FOLDER 3

В предложении грамматическая форма сказуемого зависит от подлежащего.

Это особенно актуально для времен группы ***Present.*** Однако очень часто подлежащее окружено зависимыми словами: артиклями, прилагательными и целыми конструкциями. В этом случае важно правильно найти «главное» подлежащее, поскольку оно «управляет» грамматической формой сказуемого.

*The actual **name** of the degrees* **differs** from country to country.

1. Today, 47 European countries either Western or Eastern ones (participate) _____ in the Bologna Process.

2. The Bologna Declaration, which was signed by ministers in charge of higher education, (be)_____ the most significant reform in Europe.

3. National qualification standards in different countries (describe)_____ what learners should know, understand, and be able to do.

4. The disappointment with the Bologna process (grow) _____ among University staff.

5. Many University students in Europe (oppose) _____ the Bologna Process reforms.

6. Lab experiments, presentations, hours spent on study, innovation capacities (be) _____ of great importance for a student's performance evaluation.

2.7. Put the right form of the verb at the correct position in the sentence.

Example: *An important characteristic of the Bologna Process the close cooperation between governments and higher education institutions. (be)*

Answer: *An important characteristic of the Bologna Process **is** the close cooperation between governments and higher education institutions.*

1. Bachelor's Degree typically 180−240 ECTS credits. (require)

2. The professor he cannot work in a system which is not good to the ideals of education. (say)

3. Mobility of students, graduates and higher education staff very important. (be)

4. Famous universities such as Harvard, Princeton, and Yale high-quality education. (provide)

5. Disappointment with the Bologna process among students and professors. (grow)

2.8. Scan the newspaper article about European Universities and the Bologna Process (Text B) and identify the following:

1. the country where the article was published
2. the country the article is about
3. who opposes the reform

TEXT B

European Universities and the Bologna Process

By Rudiger Punzet
The Hindu, Monday, Jan 18, 2010

The Bologna process, which was started by the Bologna Declaration on June 19, 1999, is the most significant reform in continental European higher education in 200 years. Under it, continental Europe will replace traditional diplomas with an Anglo-American system of three-year undergraduate and one- or two-year post graduate degrees from the start of the 2009-10 academic year.

European Union's attempt to form a European Higher Education Area by 2010 is a reaction to international competition in higher education.

In Germany, factors such as qualitative improvements in courses, an emphasis on graduate employability, and reductions in the length of courses, are the main concerns. Almost three quarters of the 12,300 courses at German universities now follow the new system. Furthermore, a system of easily comparable degrees has come into force.

Growing disappointment with the Bologna process is, however, obvious among staff and students. A sociology professor has gone to court contesting the merits of the Bologna process. A German theology professor has resigned his chair, saying he cannot work in a system which is inimical to the ideals of education.

German students, accustomed to the **Humboldtian system***, which provides plenty of time to pursue various interests, to travel abroad for research, and the option of completing the Diploma or Master degree in five to seven years, also oppose the reforms.

(http://www.thehindu.com/edu)

Wilhelm Humboldt ([ˈhʌmbəʊlt]) – **Вильгельм Гумбольдт (1767–1835) – немецкий филолог, философ, языковед, государственный деятель, дипломат, почетный член Петербургской АН (1832). В. Гумбольд осуществил реформу гимназического образования в Пруссии, основал в 1809 Берлинский университет (ныне университет имени Гумбольдта).*

According to Humboldt, universities must foster academic freedom and not just offer training for a particular profession; universities should be autonomous, free from governmental regulation, and free to select and organize studies. Teaching and research should form an inseparable unit. Humboldt envisaged a community of teachers and students among whom independent thinking and a sense of responsibility became the method and goal of education.

Many universities in England such as Oxford, Cambridge and the famous private universities in the U.S., such as Harvard, Princeton, and Yale, copied the German idea. The Humboldtian ideals led to Germany's winning more Nobel prizes in the first thirty years of the 20th century than any other country. Germany led not only in natural sciences but also in philosophy, history, art history and philology.

(http://www.thehindu.com/edu)

VOCABULARY (Text B)

accustom [ə'kʌstəm] (*v*) (*accustom to*) приучать, привыкать к (*ч-л)*
attempt [ə'tempt] (*n*) попытка
chair (*n*) кафедра, должность заведующего кафедрой в высшем учебном заведении

to hold a chair - заведовать кафедрой

to be appointed to a chair/ receive a chair – получить должность заведующего кафедрой

to give up / resign a chair – уходить с должности заведующего кафедрой

come into force вступать в силу
competition (*n*) конкуренция, соревнование
concern [kən'sɜːn] (*n*) вопрос, требующий решения
contest [kən'test] (*v*) оспаривать; опротестовывать
course [kɔːs] (*n*) курс *(лекций, обучения)*
court [kɔːt] (*n*) суд
disappointment [ˌdɪsə'pɔɪntmənt] (*n*) разочарование, досада, недовольство
emphasis ['emfəsɪs] (*n*) акцент, ударение
employability (*n*) возможность устроиться на работу
follow (*v*) следовать
furthermore [ˌfɜːðə'mɔː] к тому же, кроме того; более того
improvement (*n*) улучшение, усовершенствование

inimical[ɪ'nɪmɪk(ə)l] враждебный, вредный, неблагоприятный
length [leŋ(k)θ] (*n*) продолжительность
merit (*n*) достоинство
oppose (*v*) быть против, возражать
option ['ɔpʃ(ə)n] (*n*) выбор, (возможный) вариант
optional – необязательный, на выбор (по желанию)
post graduate degree *здесь:* степень магистра
pursue [pə'sjuː] (*v*) заниматься (*чем-л.*)
to pursue a hobby – иметь хобби
to pursue science – заниматься наукой
qualitative ['kwɔlɪtətɪv] качественный
qualitative change – качественное изменение
reduction(*n*) сокращение
replace (*v*) заменять
resign [rɪ'zaɪn] (*v*) уходить в отставку; оставлять пост
undergraduate degree [ˌʌndə'grædʒuət], [ˌʌndə'grædjuət] – степень бакалавра

2.9. Match the words from the article on the left to their synonyms on the right. Use a dictionary, if necessary. Then paraphrase the sentences from Text B using these synonyms.

1) reform	a) harmful
2) merit	b) apparent
3) attempt	c) similar
4) reaction	d) effort
5) reduction	e) decrease
6) competition	f) contest
7) comparable	g) response
8) obvious	h) advantage
9) inimical	i) restructuring

2.10. Study the verbs which are useful in speaking about positive and negative qualities. Analyse the examples, then give your own ones.

allow *(someone to do something)* позволять *(к.-л. сделать ч.-л.)*	The reform *allow*s Europe to create the European Higher Education Area.
enable *(someone to do something)* давать возможность *(к.-л. сделать ч.-л.)*	The academic mobility *enables* students to study in different countries.
teach *(someone to do something)*	Universities should *teach* students to learn.
prepare *(someone for something)* готовить, подготавливать (к.л. к ч.л.)	Universities *prepare* students for their future careers.
encourage *(something)* поощрять, поддерживать (*ч-л.*)	Intensive research work *encourages* innovations.

discourage *(something)* препятствовать, мешать осуществлению (*ч-л.*)	The strong opposition can *discourage* reforms.
create *(something)* *создавать* (*ч-л.*)	Reforms often *create* social problems.
promote *(something)* продвигать (*ч-л.*)	The Bologna Process *promotes* the European system of higher education.
provide *(something for someone)* давать, предоставлять; обеспечивать *(ч.л. для к.л.)*	Higher education reform *provides* many opportunities for students.
prevent *(someone from something)* мешать, препятствовать	High payments *prevent* some young people from getting university education.

2.11. Discussion Points:

1. In what way can Higher Education contribute to the development of the society?

2. What is the role of Higher Education reforms?

HELPFUL HINTS:

contribute to the development	*содействовать развитию*
advanced knowledge-based society	*развитое общество, основанное на знании*
sustainable economic development	*устойчивое, долгосрочное экономическое развитие*
social cohesion [kəu'hi:ʒ(ə)n]	*сплочённость; единство общества*

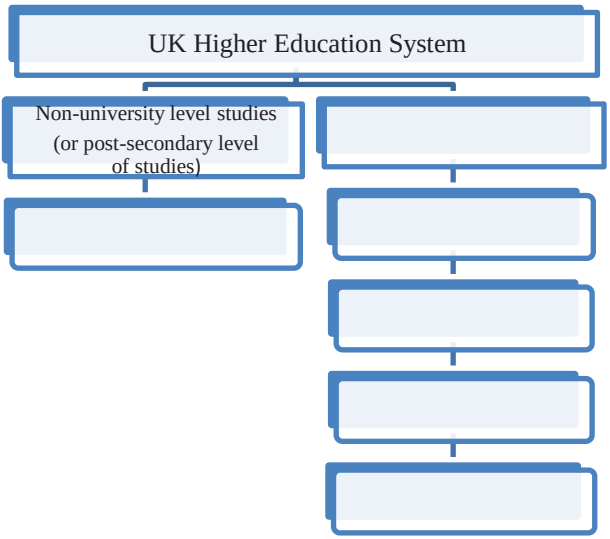
UNIT 3
Higher Education in the United Kingdom

3.1. Work in pairs and decide which of the phrases below you would associate with Higher Education in the United Kingdom. Do you know what they stand for?

four stages of university studies
provide tutoring
Master of Philosophy degree
University of Oxford
Candidate of Science
Harvard University

(*You will get to know their exact meanings after you come through Module I)*

3.2. Read the text and complete the chart "UK Higher Education System".



TEXT A.

UK Higher Education System

Higher education is a current policy priority for the UK government, with a target set to attract 50% of 18- to 30-year-olds to higher education.

There are two basic levels of higher education in the UK. They are classified as:

- Non-university level studies
- University level studies

Non-university level or post-secondary level of studies in the UK can lead the students to acquire diploma and vocational qualifications. About thirty institutions in the UK offer diploma and vocational degrees to the students through this system.

In the university level there are generally four stages of studies. The first undergraduate stage lasts three years to complete in England, Wales and Northern Ireland, while at Scottish universities they last four years. This stage leads to the award of a Bachelor's degree in Arts, Science or other fields like technology, law, engineering, etc.

At the graduate stage, a Master's degree is normally earned in one year, a research master's degree or MPhil degree (Master of Philosophy) takes two years. After usually three years of further study the candidate may present a thesis for the Doctorate of Philosophy, PhD degree that is the fourth stage of university studies in the UK education system.

Professional courses, such as medicine, veterinary medicine, law and teaching, usually are undertaken as five-year undergraduate degrees.

(Pohttp://www.britishcouncil.org/usa-education-uk-system-k-12-education.htmst-secondary and Higher Education)

VOCABULARY (Text A)

current *(adj)* текущий, современный, нынешний
current policy priority for a government – приоритет нынешней государственной политики

target ['tɑ:gɪt] *(n)* цель
set a target - устанавливать цель

attract *(v)* привлечь
attract attention to - привлекать внимание

level *(synonym* **stage**) *(n)* уровень, ступень
post-secondary level of studies – уровень среднее специального образования (после школы)

acquire [ə'kwaɪə] *(v)* получать, приобретать, овладевать

vocational профессиональный
acquire vocational qualification – приобретать профессиональную квалификацию (овладевать профессией)
vocation – профессия

through через, посредством
through this system – при помощи/посредством этой системы

Bachelor of Arts (*сокр.* **BA**) бакалавр искусств (*обладатель степени бакалавра по одной из гуманитарных или математических наук*)
Bachelor of Arts in Economics – бакалавр искусств в области экономики

Bachelor of Science (*сокр*. **BS** или **BSc.**) бакалавр (естественных) наук
Bachelor of Science in Engineering – бакалавр технических наук

earn [ɜ:n] *(v)* зарабатывать; получать, заслуживать
earn a degree - получить степень

research [rɪ'sɜ:ʧ] *(n)* (научное) исследование

Master of Philosophy магистр философии

further (study) дальнейшее (обучение)
***undertake** further study – продолжить обучение*

thesis ['θi:sɪs] *(n)* диссертация
present a thesis – представить диссертацию

3.3. Do you know what the difference between College and University in the UK is? Read the explanation and then give it in Russian.

In the United Kingdom, the difference between college and universities is very well defined. Colleges are specialized institutes of learning under the aegis of a university. Courses are taught in colleges, but the degree is granted by the university. University is the parent body and colleges adhere to its rules. Besides the colleges, a university in the UK may have its own research departments.

define *(v)*	определять, устанавливать
under the aegis['i:dʒɪs]	под эгидой, под руководством
adhere to [əd'hɪə]	твердо придерживаться (*правил*)
department *(n)*	кафедра

3.4. Read Text B about two oldest universities in the UK. Are these statements True (T), False (F), or Not Mentioned (NM)?

1. Oxford is situated closer to London than Cambridge.
2. There has been a university in Cambridge since the fourteenth century.
3. The oldest college was built in Oxford.
4. The famous physicist Max Born was educated in Cambridge.
5. It is tutorials that Cambridge and Oxford universities are famous for.
6. Colleges hold examinations and award degrees.

TEXT B

The Oldest Universities

Oxford is a beautiful city on the river Thames about fifty miles from London. Some people say it is more beautiful than any other city in England. Most of the Oxford colleges are fine buildings of grey or yellow stone and many of them have stood there for more than five hundred years.

Since the thirteenth century there has been a university in Oxford. It began when some teachers, each with a few students, decided to live and work together in the same house. Later they built colleges and little by little the great university we know today grew up. Several colleges say they are the oldest, but no other college is as old as Merton which began in 1264.

Cambridge is situated at a distance of seventy miles from London, the great part of the town lies on the left bank of the river Cam crossed by several bridges. The dominating factor in Cambridge is its world famous University, a centre of education and learning. Newton, Darwin, Rutherford and many other scientists and writers were educated at Cambridge.

Oxford and Cambridge universities are the ones known for their specific system of education. Great emphasis is laid at Oxford and Cambridge on what are called "tutorials" in which a Don (a university tutor) gives personal instruction in his subject at least once a week to the students numbering not more than four.

The central University, in general, arranges lectures for all students in a particular subject and holds examinations and grants degrees; an individual college provides residence and tutoring. This system of teaching differs greatly from that of other universities. Generally speaking the main difference is that the whole system is organized on a college basis rather than a centralized university.

VOCABULARY (Text B)

little by little мало-помалу, постепенно
be situated располагаться, находиться
several несколько
bridge*(n)* мост
river crossed by several bridges – река, которую пересекают несколько мостов
emphasis *(n)* упор, особое значение;
Great emphasis is laid on what are called "tutorials" – Огромное значение придают так называемому тьюторству (наставничеству, консультированию)
Don *(n)* преподаватель (*в Оксфорде и Кембридже*)
(syn. - professor)
tutor *(n)* (консультант; куратор), **тьютор** *(Точного аналога в русском языке не имеет. Преподаватель-консультант, наставник, куратор студента, помогающий ему выстраивать индивидуальную траекторию своего образования.)*
in general обычно, как правило
arrange *(v)* организовывать, обеспечивать
arrange lectures in a particular subject –обеспечивать чтение лекций по отдельному предмету
hold examination проводить экзамены
residence *(n)* проживание
provide residence – обеспечивать жильем
differ (*from*) *(v)* отличаться (*от*)
difference*(n)* разница

3.5. Read Text B again and answer the questions.

1. How old is the University of Oxford?
2. Which Oxford College is the oldest? How old is it?

3. What river is Cambridge situated on? What does its name mean?
4. What education system are these universities known for?
5. How many students does a tutor usually instruct?
6. What is the main difference of these Universities' system of teaching from that of other universities?

3.6. Replace Russian words by their English variants from the box.

a)

collegiate university developed rapidly meets the needs the oldest are represented most innovative and entrepreneurial clear date of foundation outstanding academic achievement international research community diverse range of library resources

University of Oxford

Oxford is *старейший* university in the English-speaking world. More than 130 nationalities *представлены* among a student population of over 18,000.

Oxford is a *университет, состоящий из нескольких самостоятельных колледжей*, with 39 self-governing colleges related to the University in a type of federal system.

There is no *точной даты основания*, but teaching existed at Oxford in some form in 1096 and *быстро развивалось* from 1167, when Henry II banned English students from attending the University of Paris.

Oxford is one of Europe's самых инновационных, занимающийся предпринимательской деятельностью universities with a centuries-old reputation for выдающиеся заслуги в научной сфере.

Oxford *отвечает потребностям* of students, teachers and the *международному научному сообществу* with an extremely rich and *разнообразным ассортиментом библиотечных ресурсов* provided by over 100 separate libraries.

(http://www.topuniversities.com/university/95/university-of-oxford)

b)

in accordance with; an independent institution; one of the largest; extensive resources; appoint their own staff; to interact with scholars of all levels; awarded by the University; one of the oldest universities

University of Cambridge

The University of Cambridge is *один из старейших университетов* in the world and *один из крупнейших* in the United Kingdom.

The high standards are the result of both the learning opportunities offered at Cambridge and by its *огромных ресурсов*, including libraries, museums and other collections.

Many opportunities exist for students *взаимодействовать с широким кругом ученых*, both formally and informally.

There are 31 Colleges in Cambridge. Three are for women and two admit only graduates.

Each College is *независимое учреждение* with its own property and income. The Colleges *самостоятельно нанимает персонал* and are responsible for selecting students, *в соответствии с* University regulations. The teaching of students is shared between the Colleges and University departments. Degrees are *присуждаются университетом*.

(http://www.topuniversities.com/university/95/university-of-cambridge)

3.7. Study the Grammar Folder and translate the sentences below.

GRAMMAR FOLDER 4

Парные союзы. Союз **neither** … **nor** – *ни … ни* употребляется в отрицательных предложениях для соединения однородных членов предложения. Следует помнить, что в английском предложении, в отличие от русского, употребляется только одно отрицание, следовательно, сказуемое всегда стоит в утвердительной форме.	
E.g. ***Neither*** my friend ***nor*** his parents *liked* the performance of our team. I *could* ***neither*** read ***nor*** write English last year	*Ни* моему другу, *ни* его родителям *не понравилось* выступления нашей команды. Я *не умел ни* читать, *ни* писать по-английски в прошлом году
Союз **either** … **or** – *или … или, либо … либо* употребляется для соединения однородных членов предложения в утвердительных предложениях:	
E.g. You can discuss it ***either*** in Russian ***or*** in English.	Вы можете обсудить это *либо* по-русски, *либо* по-английски
Союз **both** … **and** – *и … и, как … так и* тоже употребляется в утвердительных предложениях:	
E.g. **Both** my friend **and** I study English	*И* мой друг, *и* я изучаем английский

1. Both Oxford and Cambridge University have a tutorial system.
2. Neither Oxford nor Cambridge provide English classes for international students.

3. To get the most prestigious education you can enter either Oxford or Cambridge University.

4. Both students and staff are satisfied with the diverse range of library resources.

5. In fact neither Oxford nor Cambridge are singular institutions.

6. To get the most prestigious education you can enter either Oxford or Cambridge University.

7. Both Oxford and Cambridge are large towns of about 100,000 people with 25,000 of students.

3.8. Study the vocabulary. Can you guess what the main idea of Text C is?

VOCABULARY (Text C)

properly speaking — если называть вещи своими именами; по сути дела

distinguish [dɪ'stɪŋgwɪʃ] *(v)* — отличать, проводить различие

distinguished graduates' list — список знаменитых выпускников

it's hard to argue — трудно спорить

"dreaming spires" — стандартное клише, обозначающее Оксфорд с его многочисленными высокими «мечтающими шпилями»

"the backs" — живописные «задворки» колледжей Кембриджа, выходящие на берега реки Кем

iconic [aɪ'kɔnɪk] — символический, культовый

moreover — более того, кроме того

staying-power — жизнестойкость; жизнеспособность

[numerous] — многочисленный

flee (fled, fled) *(v)* — покидать, убегать, спасаться бегством

find oneself (found, found) — очутиться

set up — основывать, учреждать, открывать

though [ðəu] — несмотря на, (хотя)

though very independent of each other – несмотря на полную независимость друг от друга

existence — существование; бытие

in the many centuries of their existence – за многие века своего существования

reflect *(v)* — отражать

reflect changes in society – отражать изменения в обществе

steady ['stedɪ] — устойчивый; прочный

rival – *(syn.)* **compete** *(v)* — соперничать; конкурировать, соревноваться

compete for the position at the top of the academic league tables – соперничать за первые места в таблицах академических рейтингов

***rivalry** – соперничество; конкуренция, состязание*

annual	ежегодный
University Boat Race	состязания по гребле между университетами
house *(v)*	вместить, приютить, принять
strive (strove, striven) *(v)*	стремиться; стараться
maintain *(v)*	поддерживать, сохранять
take pride (in**)**	гордиться *чем-л.*

3.9. Skim the text. What is the main idea of the text?

***Look at the picture. Can you say what it stands for? Check your guesses.**

TEXT C

Oxbridge

Properly speaking, there's nothing to distinguish Oxbridge (a made-up combination of **Ox**ford and Cam**bridge**) from the rest of England's university system. Oxford and Cambridge are just two of the many fine universities of the country.

But it's hard to argue with the idea that the beautiful views of Oxford's "dreaming spires", or "the backs" in Cambridge, are iconic, indeed. Moreover, the 800 years of rich Oxbridge history have demonstrated the universities' staying-power, and given us numerous stories and traditions, and the two most distinguished graduates' lists in the world.

The oldest university in the English-speaking world began in Oxford more than 800 years ago. In 1209 scholars fleeing Oxford found themselves in Cambridge where they set up another university to rival the first. Though very independent of each other, they are known by a single word: Oxbridge.

In the many centuries of their existence, the two old universities have grown, their collegiate structures have developed, and they have reflected changes in society (with the first women arriving in the 20th century, for example). But not everything has changed. Their prestige has been more or less steady, and so too has their rivalry. These two institutions are competing for the position at the top of the academic league tables and (far more importantly) in the annual University Boat Race.

Today the 70 colleges that make up Oxford and Cambridge house some 35,000 undergraduate and graduate students from the UK and all over the world. They are striving to maintain the standards in which Oxbridge takes such pride.

(http://www.icons.org.uk/theicons/collection/oxbridge)

** It comprises two landmarks. On the left, there is the most famous King's College founded by Henry VI in Cambridge in 1441. On the right, there is Oxford's largest and most prestigious Christ Church College.*

3.10. Study the Grammar Folder and translate the sentences below.

GRAMMAR FOLDER 5

Для эмоционально-экспрессивного выделения второстепенных членов предложения в английском языке широко используется обратный порядок слов. Обратный порядок слов употребляется в эмфатических предложениях, содержащих союзы **so** (*а также; и),* **not only ... but** (also) (*не только ... но и),* **hardly ... when** / **scarcely ... when** (*едва ... как),* **no sooner ... than** (*как только),* **only** (*только),* **never** (*никогда),* **nowhere** (*нигде),* **neither** / **nor** (*и не; а также не).*

E.g.He *was absent* and ***so*** *was* his friend. – Он *отсутствовал, отсутствовал также* и его друг.

Nor *should* we *forget* the importance of this education. – *Не должны* мы забывать *и* весомость этого образования.

1. Nowhere can we see such staying-power as in Oxbridge.
2. Oxford is one of the top universities in the world, so is Cambridge.
3. Only upon the ban on English students from attending the University of Paris was Oxford developed rapidly from 1167.
4. Perhaps never was the university of Cambridge found, if it was not for scholars fleeing Oxford in 1209.
5. Hardly had Oxford University team won the race when Cambridge beat them again.

3.11. Write the summary of Text C by answering the questions.

1. What does the word "Oxbridge" mean? (*The word "Oxbridge" is a combination of…*)
2. Which University is the oldest? How old is it?
3. When and where did some scholars flee from Oxford? (*…fled from Oxford to…*)
4. What did they do in Cambridge?
5. What has been steady since those times? (*Since those times their … and … have been …*)
6. What are these universities competing for now? (*Now these universities are competing for…and…*)
7. How many colleges make up Oxford and Cambridge today?

8. How many students do the universities house?

9. What are Oxbridge students striving to maintain? (*Oxbridge students are striving to maintain…)*

3.12. Discussion Points

1. Would you like to study in the UK? Why? Why not?

2. Discuss some of the reasons why Oxford and Cambridge Universities are always at the top of the academic league tables.

UNIT 4
Higher Education in the United States

4.1. Why do people receive Higher education.? Make a list of your ideas. Check your list with a partner.

4.2. Read the text below *Why Americans receive Higher Education*. Are their reasons universal or specific?

Study the vocabulary before reading the text.

specifics особенности, подробности, детали
value ценность; важность
place a high value – придавать огромное значение
attitude отношение
maintain поддерживать
believe [bɪ'liːv] думать, полагать
intelligent осмысленный, разумный
voting голосование
participation участие
earn [ɜːn] зарабатывать
income доход
earn an income – получать доход
obtain получать
salary заработная плата (*служащего*); оклад
obtain a higher salary – получить более высокий оклад

Why Americans Receive Higher Education

Americans place a high value on university education. This is an attitude that goes back to the country's oldest political traditions. People in the United States have always believed that education is necessary for maintaining a democratic government. They believe that it prepares the individual for informed, intelligent political participation, including voting.

In addition to idealistic reasons for going to college, however, most Americans think about earning a good (or better) income. For some professions – law, medicine, education, and engineering – a college education is a necessary first step. Some professions do not require going to college, but many young Americans believe that having a degree will help them to obtain a higher salary on their first job.

4.3. What is the difference between College and University in the USA? Read the explanation and compare with that of the UK.

In the USA, the terms *college* and *university* are synonymous. There are some colleges here, which despite of being called colleges offer courses in a wide variety of subjects and are empowered to offer diplomas, degree courses, as well as doctorate degrees.

(http://www.path2usa.com/usainfo/education/higher_edu_usa.htm)

despite of	несмотря на
empower [ɪm'pauə]	давать право

4.4. Read Text A and fill the gaps using the sentences below.

a. The students earn credits for the courses they complete.

b. It can take a long time, and a lot of money.

c. Colleges accept only those students who have done well in high school.

d. These are subjects that will be important for their later work.

e. Therefore, some students have part-time jobs while they are at college.

TEXT A

Going to College

When young people leave school some of them will look for a job. Others are writing letters to three or four different colleges, and sending in forms.

1_____. Students choose from about 2000 colleges in the U.S. Top students may choose famous ”Ivy League”* colleges. They are the oldest universities in the county – excellent, but very expensive. Other students choose large state universities because they teach lots of different subjects. Some choose small religious colleges.

Whether a student chooses a small college or a large university, the cost of higher education in the United States is rising every year. Many people find it too expensive. 2_____.

A college diploma is called a degree. There are three degrees that students can earn.

Undergraduate Degree:

Generally, it takes four years of undergraduate study to earn a Bachelor degree.

The 4 year undergraduate program consists of:

1st Year called Freshman Year,

2nd Year called Sophomore Year,

3rd Year called Junior Year,

4th Year called Senior Year.

The first two years of undergraduate study mostly cover general subjects. A junior year student must choose a "major" field of study. They must take a certain number of courses in their field. There is usually time for students to choose several other extra (elective) courses in other subjects. 3 _____. They must have a certain number of credits in their most important subject and some credits in other subjects, too. Then they get a Bachelor degree.

Graduate Degrees:

With a Bachelor degree, college students can go on to graduate school. Unlike undergraduates, graduate students begin specialized study from the first day. After two or three years, they can get a Master degree. They take only subjects that lead to the Master degree. 4._____. Master degree is usually required in fields such as Engineering, Business Administration or Social work.

In the U.S., many students stay on at college to get a Master's degree, because a Bachelor's degree is often not enough to get the job they want. 5_____. It takes at least ten years to become a doctor, seven years to become a lawyer, and five or six years to become a teacher.

With a Master degree, students can also get a Doctor of Philosophy degree (PhD). It usually takes five to seven years to complete. Most university teachers must have a PhD.

*****Ivy League – "Лига плюща" – *объединение 8 старейших частных университетов США. Это название происходит от побегов плюща, обвивающих старые здания в этих университетах.*

VOCABULARY (Text A)

form *(n)*	заявление (на бланке)
accept *(v)*	принимать, брать
high school	*(амер.)* средняя школа
expensive	дорогой, дорогостоящий
whether	ли
therefore ['ðɛəfɔ:]	по этой причине, поэтому
part-time job	работа на неполный рабочий день
Freshman*(n)*	*(амер.)* студент первого курса, новичок (*в каком-л. деле)*
Sophomore ['sɔfəmɔ:] *(n)*	студент-второкурсник*(амер.),* второй по счёту
Junior ['ʤu:nɪə] *(n)*	*(амер.)* студент предпоследнего курса
Senior ['si:nɪə] *(n)*	*(амер.)* студент последнего курса; ученик выпускного класса
graduating senior – выпускник колледжа	
high-school senior – ученик выпускного класса средней школы	
cover *(v)*	охватывать
cover general subjects – охватывать общие предметы (предметы общей тематики)	
major	*(амер.)* специализация *(в вузе)*
choose a "major" field of study – выбрать область специализации	
take a course	пройти/изучить/освоить курс
certain number	определенное количество
elective	курс на выбор, *(амер.)* факультативный курс, (*не связанный с основной специализацией студента*)
graduate school	магистратура, последипломный курс
require*(v)*	требовать (*чего-л.*)

4.5. Scan Text B.

a) Which of the universities below do not belong to the Ivy League?

Brown University, University of Chicago, Columbia University, Stanford University, Cornell University, Dartmouth College, Harvard University, Princeton University, Massachusetts Institute of Technology, Duke University, the University of Pennsylvania, Yale University.

b) Which of the following did the term *The Ivy League* first apply to?

Educational philosophy, oldest universities, sports terminology, expensive private education, prestigious universities, best universities.

4.6. Read Text B. Is the information new for you? If yes, what is it?

TEXT B

The Ivy League

The **Ivy League** is the name generally applied to eight private universities in the Northeastern United States. These eight institutions are Brown University, Columbia University, Cornell University, Dartmouth College, Harvard University, Princeton University, the University of Pennsylvania, and Yale University.

The term became official, especially in sports terminology, after the formation of the NCAA Division I* athletic conference in 1954, when much of the nation polarized around favourite college teams. The use of the phrase is no longer limited to athletics, and now represents an educational philosophy usual to the nation's oldest universities. In addition, Ivy League universities are often viewed by the public as some of the most prestigious universities worldwide and are often ranked among the best universities in the United States and worldwide. The Ivy League is a registered brand**.**

All eight universities receive millions of dollars in research and other grants from federal and state government.

The term "Ivy Plus" is sometimes used to apply to the **Ivy League universities** plus several other schools. Among them there are Massachusetts Institute of Technology, Stanford University, University of Chicago and Duke University.

*NCAA – National Collegiate Athletic Association. (Национальная университетская спортивная ассоциация, в которую входят около 1300 различных спортивных организаций университетов США и Канады.)

Division I (or **D-I**) is the highest level of intercollegiate athletics. (Первый дивизион).

VOCABULARY (Text B)

conference *(n)*	*(амер.)* конференция (*объединение спортивных команд одного региона*)
polarize *(v)*	разбиваться на противоположные лагеря
athletics	занятия спортом
represent *(v)*	означать; символизировать; олицетворять
view *(v)*	рассматривать

These universities are viewed by the public as the most prestigious ones. – В обществе эти университеты считаются наиболее престижными.

rank *(v)* котироваться, занимать какое-л. место
to rank high – высоко котироваться

grant*(n)* грант; дотация, субсидия
research grant – грант на научные исследования

apply to*(v)* относиться; применяться; распространяться (*на кого-л. / что-л.*)

crimson *(adj)* багровый

Quaker квакер *(последователь протестантского религиозного течения, проповедующего пацифизм и благотворительность.)*

4.7. Analyse the information given in the table below and add some facts to Text B.

Institution	Location	Foundation	Athletic Nickname	Motto
Harvard University	Cambridge, Massachusetts	1636	Crimson	*Veritas* (Truth)
Yale University	New Haven, Connecticut	1701	Bulldogs	*Lux et veritas* (Light and truth)
University of Pennsylvania	Philadelphia, Pennsylvania	1740	Quakers	*Leges sine moribus vanae* (Laws without morals are useless)
Princeton University	Princeton, New Jersey	1746	Tigers	*Dei sub numine viget* (Under God's power she flourishes)
Columbia University	New York City, New York	1754	Lions	*In lumine Tuo videbimus lumen* (In Thy light shall we see the light)
Brown University	Providence, Rhode Island	1764	Bears	*In Deo Speramus* (In God We Hope)
Dartmouth College	Hanover, New Hampshire	1769	Big Green	*Vox clamantis in deserto* (A voice crying in the wilderness / The voice of one crying in the wilderness)
Cornell University	Ithaca, New York	1865	Big Red	I would found an institution where any person can find instruction in any study.

4.8. Before reading Text C decide, if the sentences are True or False. Then read the text and check yourself.

1. The Massachusetts Institute of Technology (MIT) is located in Cambridge.
2. MIT is a state research university.
3. MIT was founded in the 20th century.
4. MIT provides studies only in physics and engineering.
5. MIT is mostly oriented on theoretical aspects.
6. MIT has the largest number of Nobel Prize winners.

4.9. Read the text and write down all international words from it. Then use them like the key points to restore the text about MIT.

Massachusetts Institute of Technology

The Massachusetts Institute of Technology (MIT) is a private research university located in Cambridge, Massachusetts. It was founded by William Barton Rogers in 1861 in response to the increasing industrialization of the United States. Rogers stressed the pragmatic and practicable aspects. He believed that professional competence is best formed by combination teaching and research and by focusing attention on real-world problems.

MIT researchers were involved in developing computers, radar, and inertial guidance during World War II and the Cold War. In the past 60 years, MIT's educational disciplines have expanded beyond the physical sciences and engineering into fields like biology, brain science, economics, philosophy, linguistics, political science, and management.

Today MIT is a world-class educational institution. MIT has five schools and one college, containing 34 academic departments, divisions, and degree-granting programs, as well as numerous interdisciplinary centers, laboratories, and programs, with a strong emphasis on scientific and technological research important to the practical world. MIT holds a record of having 75 Nobel Prize winners among its staff and alumni.

(http://web.mit.edu/facts/mission.html)

Massachusetts [ˌmæsə'ʧu:sɪts] – Массачусетс (*штат США)*

VOCABULARY (Text B)

in response to — в ответ на

practicable — реальный; практически выполнимый
be involved in — участвовать
be involved in the development of new technology– быть вовлеченным в разработку новой технологии
develop *(v)* — создавать, разрабатывать, конструировать
inertial guidance ['gaɪd(ə)ns] — (*тех.)* инерциальная система наведения
expand *(v)* — расширятся
beyond — за пределами
expand beyond the physical sciences – выйти за пределы естественных наук
contain *(v)* — включать, иметь в своём составе
emphasis ['emfəsɪs] *(n)* — упор; особое значение; акцентирование
with a strong emphasis on research – с особым упором на исследования

4.10. Discussion Points

1. Would you like to study in the USA? Why?/ Why not?
2. In the U.S., many students stay on at college to get a Master degree, because a Bachelor degree is often not enough to get the job they want. Are you going to get a Master degree? Why?/Why not?

UNIT 5
Higher Education in the Russian Federation

5.1. Are you happy to be a university student? Why? / Why not?

5.2. Work in pairs. Discuss what you know about the structure of Higher Education in our country. Try to draw a chart of Higher Education structure in Russia.

5.3. Scan Text A and find English equivalents to the following.

1. Государственное образовательное учреждение
2. Аккредитованное негосударственное образовательное учреждение
3. Федеральное агентство по образованию (Рособразование)
4. Местные органы власти
5. Министерство Образования и Науки
6. В юрисдикции Министерства Образования и Науки
7. Федеральная служба по надзору в области образования и науки
8. Незаконченное высшее образование
9. Диплом специалиста

5.4. Study the vocabulary and read Text A.

approximately [ə'prɔksɪmətlɪ]	приблизительно, около, почти
tuition fee	плата за обучение
responsible for	быть ответственным за что-л.
quality assurance	обеспечение качества
duration	продолжительность
be authorized	иметь право
improve	поправлять, улучшать, совершенствовать

5.5. Read the text and improve your chart from Exercise 5.2. Use your chart as a plan and speak about our Higher Education system.

TEXT A

Higher Education in Russia

In Russia higher education is provided by state and non-state higher education institutions (HEIs). There are more than 700 state and about 400 accredited non-state higher education institutions in our country. The Federal Agency for Education finances half of state HEIs. The rest ones are financed by other Ministries or local authorities.

Approximately half of the State HEIs students pay for their studies. In non-state HEIs all students have to pay tuition fees. Higher education is within the Ministry of Education and Science's jurisdiction. The Federal Service of Supervision in Education and Science is responsible for quality assurance in education.

There are two levels of higher education: 1) 4-year programs leading to the Bachelor's degree, the first final university degree; 2) postgraduate studies with duration of 1-2 years leading to the Specialist Diploma or the Master's degree. HEIs are authorized to award the Master's degree after the completion of 2 years of study or the Specialist Diploma after 1 year of study following upon the Bachelor's degree.

Scientific degrees in Russia traditionally include two levels of doctoral degrees: the Candidate of Sciences (the first level, equivalent to PhD) and the Doctor of Sciences (the second, highest level).

(http://www.euroeducation.net/prof/russco.htm)

5.6. Work in pairs. Discuss what Russian university you would like to study at if you were not a student of NSTU. Why?

5.7. Before reading Text B match English phrases with their Russian variants. Learn some of them you can use to speak about NSTU.

1. long-term history	**a.** научный вклад
2. educational excellence	**b.** прикладные исследования
3. robotics and complex automation	**c.** информатика и системы управления
4. offered opportunities	**d.** ремесленное училище
5. vocational school	**e.** отличное качество образования
6. scientific contribution	**f.** многолетняя история
7. academic studies	g. робототехника и комплексная автоматизация
8. special machinery	h. специальное машиностроение
9. heating engineering	i. теплотехника
10. applied research	j. учебные занятия
11. mechanical engineering	k. энергомашиностроение
12. informatics and control systems	l. предлагаемые возможности
13. power engineering	m. машиностроение

5.8. Read the information about Moscow State Technical University. What do MSTU and NSTU have in common?

TEXT B

Moscow State Technical University (MSTU)

Founded in 1830 as Moscow Vocational School, Moscow State Technical University named after N.E. Bauman (*Nikolay Bauman)* always has been known as an Engineering University of educational excellence. A long-term history of University provides many examples of scientific contributions to space engineering, mechanical engineering, heating engineering, biophysics, aerodynamics, radio physics, radio electronics, optics, laser technology, etc.

Presently there are about 18000 students, concentrating their studies in science and engineering, and 1000 postgraduates, working on their PhD theses at MSTU. Opportunities offered by MSTU attract many international students. The main reason for students to enter the University is its academic reputation. The University closely co-operates with Russian Academy of Sciences.

MSTU curriculum combines the academic studies with fundamental and applied research. There are seven Research Institutes at the University: Materials and Technology, Radioelectronics and Laser Technology, Informa-

tics and Control Systems, Special Machinery, Robotics and Complex Automation, Power Engineering, Fundamental Sciences.

MSTU trains specialists at 13 Faculties: Materials and Technology, Radioelectronics and Laser Technology, Informatics and Control Systems, Special Machinery, Robotics and Complex Automation, Power Engineering, Fundamental Sciences, Engineering Business and Management, and others.

5.9. The sentences below should be the answers to your questions.

1. Moscow State Technical University was founded in 1830.
2. There are about 18000 students at MSTU now.
3. The main reason for students to enter the University is its academic reputation
4. MSTU curriculum combines the academic studies with fundamental and applied research.
5. There are seven Research Institutes at the University.
6. There are 13 faculties at the University.
7. MSTU has made great scientific contributions to many fields: space engineering, mechanical engineering, heating engineering, biophysics, aerodynamics, radio physics, radio electronics, optics, laser technology, etc/

5.10. Discussion Points

1. In Unit 3 we've got to know that higher education is a policy priority for the UK government. Can you say the same about the Russian government? Why? / Why not?
2. What reforms in Russian Higher education you would carry out if you were in charge of it.

Project work.

Work in pairs or small groups. Surf the Internet. Visit the NSTU website. Study the information about our University and develop presentation materials about NSTU in any of these formats:

- advertisement
- guide for newcomers
- history research
- current position research
- perspectives research
- new website

UNIT 6
Lifelong Learning

"Through the power of self-education you can be anything you want to be or do anything you want to do. Self-education power does not require money, fixed time or fixed life style. Options are extremely flexible. Rewards are unlimited. You can control your destiny."

Bob Webb

6.1. Work in pairs or in groups. Discuss what a life-long learning is. Then share your ideas with the whole group.

6.2. Scan the Jide Awe's post and identify the main idea:

- It's all about knowledge requirements in Information Technology.
- It's all about Lifelong Learning.
- It's all about doing career in modern economy.
- It's all about becoming a dinosaur.

Don't Become a Dinosaur*

These days we talk about doing career in the global knowledge economy. Learning is at the center of all we do. New technology means we must learn to make use and take advantage of these new tools. Knowledge is a key requirement in Information Technology. This applies to all - IT professionals and users.

Without Lifelong learning, you will not get anywhere. There are no shortcuts. Lifelong learning is a necessity for all of us.

You shouldn't expect meaningful career growth based only on knowledge you gained in the past. Only dinosaurs live in the past. Some see this state of affairs as a challenge; others view it as an opportunity.

Ignorance at any level is dangerous in IT. Like any disease, it is better to prevent ignorance than to cure it.

Do you use IT? Are you in IT? Continue to learn, and you will maintain what you've got. It isn't always easy, but you can't afford to become a dinosaur.

All the best in your IT Career.

Jide Awe,
Founder of Jidaw.com (www.jidaw.com/dinosaur1.h+m/)

***dinosaur** ['daɪnəsɔ:] – динозавр

6.3. Find the English variants in the text to the following:

Глобальная экономика знаний; пользоваться преимуществами; основное требование; это касается всех профессионалов; легких путей не существует; необходимость для всех; значительный карьерный рост; положение дел; считать вызовом; рассматривать как возможность; безграмотность на любом уровне; профилактика невежества лучше, чем устранение его последствий; поддерживать на должном уровне то, чего Вы уже добились.

6.4. Read the post again and answer the questions.

- What economy do we live in now?
- Does the lifelong learning approach apply to IT professionals only?
- Can we expect career growth based only on knowledge gained in the past?
- Is it easy to learn all life long?

6.5. Do you think that lifelong learning is a necessity for you personally? Why/Why not? Discuss with a partner.

6.6. Scan Text A to answer the questions:

1. How many key competences for lifelong learning are there?
2. What organization recommended these key competences?
3. When were these competences recommended?

6.7. How do you understand what a competence for lifelong learning is? Read the first abstract of Text A and its translation below the text. Do you have similar understanding?

6.8. Read and translate Text A.

TEXT A
Key Competences for Lifelong Learning

Recommendation of the European Parliament and of the Council, of 18 December 2006, on key competences for lifelong learning. *(Рекомендации Парламента и Совета Европы от 18 декабря 2006 г.о ключевых компетенциях обучения в течение жизни.)*

Key competences for lifelong learning are a combination of knowledge, skills and attitudes appropriate to the context. They are particularly necessary for personal fulfillment and development, social inclusion, active citizenship and employment.*

They are also a major factor in innovation, productivity and competitiveness, and they contribute to the motivation and satisfaction of workers and the quality of work.

These key competences are:

1. communication in the mother tongue

2. communication in foreign languages

3. mathematical competence and basic competences in science and technology

4. digital competence

5. learning to learn

6. social and civic competences

7. sense of initiative and entrepreneurship

8. cultural awareness and expression

These key competences are all interdependent, and the emphasis in each case is on critical thinking, creativity, initiative, problem solving, risk assessment, decision taking, and constructive management of feelings.

http://europa.eu/legislation_summaries/education_training_youth/lifelong_learning/c11090_en.htm)

* Ключевыми компетенциями для обучения в течение всей жизни является сочетание знаний, навыков и поведения в соответствии с контекстом. Они особенно необходимы для самореализации и развития, социальной интеграции, активной гражданской позиции и трудовой деятельности.

VOCUBULARY (Text A)

productivity	производительность
competitiveness	конкурентоспособность
satisfaction	удовлетворённость
interdependent	взаимозависимый
assessment	оценка
assess [ə'ses]	оценивать

6.9. Match a competence with its Russian variant.

1. communication in the mother tongue	**a.** социальные и гражданские компетенции
2. communication in foreign languages	**b.** математическая грамотность и базовые компетенции в науке и технологии
3. mathematical competence and basic competences in science and technology	**c.** осведомленность и способность выражать себя в культурной сфере

4. digital competence	**d.** общение на родном языке
5. learning to learn	**e.** общение на иностранных языках
6. social and civic competences	**f.** освоение навыков обучения
7. sense of initiative and entrepreneurship	**g.** компьютерная грамотность
8. cultural awareness and expression	**h.** инициативность и предпринимательства

6.10. Fill in the table below with appropriate words and phrases you would use to describe each key competence. Some words can be used twice.

listening, organize one's own learning, speaking, apply mathematical thinking, reading, writing, communication, democracy, intercultural understanding, music, plan and manage projects, knowledge of social and political concepts, methodologies which explain the natural world, commercial activity, information society technology, participate in social life, turn ideas into action, creative expression of ideas, experiences and emotions

communication in the mother tongue	
communication in foreign languages	
mathematical competence and basic competences in science and technology	
digital competence	
learning to learn	
social and civic competences	
sense of initiative and entrepreneurship	
cultural awareness and expression	

6.11. Read Text B and discuss with your partner if a self-education is important for lifelong learning.

TEXT B

Responsibility for Your Own Education: Self-Education

You have already understood that the only effective learning is the learning you do yourself. University work is much more than school work a process of self-education.

At university you will have to plan your work for weeks, even months ahead. You will have laboratory works, or translations, or papers to prepare for seminars in the interim, but the major exams are rather remote. You have

therefore to plan work for some time ahead. Thus, there is the need for developing good habits and methods of study.

Now it is the time, then, to consider the most effective ways of studying, and whether the habits and methods of study you have so far acquired at school area are likely to measure up to the heavy demands which university work is going to make upon you.

Many students mistakenly think that study is simply the memorizing of subject matter and its reproduction on the examinations. Of course, it is much more than that. It involves the mastery and practice of the methods of thinking, of experiment and appreciation, the understanding of theories, the solution of problems, the analysis and criticism of lectures, books and articles, the making of summaries and extracts, the writing of essays, reports and theses. In short, you have to digest knowledge from a wide variety of sources and make it part of you – living and ever-growing part of you.

VOCABULARY (Text A)

responsibility [rɪˌspɔn(t)sə'bɪlətɪ] *(*n) ответственность (*за что-л.*)
interim ['ɪnt(ə)rɪm] (*n*) промежуток времени
in the interim –в промежутке/в период между сессиями
remote *(v)* далёкий, отдалённый
rather remote - весьма отдаленный
ahead вперед
plan for some time ahead – планировать заранее
habit (n) привычка
whether (*союз)* ли
measure up to соответствовать (*чему-л.*), отвечать (*каким-л. требованиям*)
whether the methods of study measure up to the heavy demands – отвечают ли методы учебы высоким требованиям
memorize *(v)* заучивать наизусть
involve *(v)* включать; содержать; подразумевать
mastery *(n)* совершенное владение *(предметом)*
appreciation *(n)* понимание; умение хорошо разобраться (в чем-л.);
digest *(v)* усваивать, понимать
ever-growing постоянно увеличивающийся

6.12. There are some recommendations how to organize your self-education better. Which of them you consider most helpful? Why?

- Be goal-oriented and set firm aims.
- Set dates for finishing your study tasks.

- If you need to pass exams, plan your preparation time.
- Work at a steady pace.
- Be disciplined in getting your study and work done.
- As you study, memorize key points.
- Find help when you need it.

Can you add your recommendations?

6.13. Discussion Points

1. What is your attitude towards learning? Why is learning so critical?
2. Comment on the quote by American writer and futurist Alvin Toffler, *"The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn."*

MODULE II
ENVIRONMENTAL ISSUES

Our environment, the world in which we live and work, is a mirror of our attitudes and expectations.

Earl Nightingale (US motivational writer and author, 1921–1989)

Study the vocabulary you may need to speak about environment.

develop (v) развиваться, расти; совершенствоваться
developed countries *– развитые страны*
developing countries *– развивающиеся страны*
disease (n) [dɪ'ziːz] болезнь
fatal disease – смертельное заболевание
chronic disease – хроническое заболевание
serious disease – тяжёлая болезнь
disposal (n) [dɪs'pəuz(ə)l] утилизация; избавление; устранение
the disposal of rubbish – утилизация / вывоз мусора
solid waste disposal – утилизация твердых отходов
dispose (of) (v) утилизировать, избавляться
environment (n) [ɪn'vaɪər(ə)nmənt] окружающая среда
to preserve / protect the environment – охранять окружающую среду
environmental [ɪnˌvaɪər(ə)n'ment(ə)l] относящийся к окружающей среде
environmental issues – проблемы окружающей среды
environmental research – исследование окружающей среды
environmental engineer – специалист по охране окружающей среды
environmental engineering – методы охраны окружающей среды
greenhouse-gas emissions выбросы парниковых газов
health (n) здоровье
healthy *(adj)* полезный, благотворный, здоровый
Smoking is not healthy for you. – Курение опасно для вашего здоровья.
overpopulation (n) перенаселённость
to suffer from overpopulation – страдать от перенаселения
pollute (v) [pə'luːt] загрязнять, портить, понижать качество
to pollute the environment – загрязнять окружающую среду
pollution (n) [pə'luːʃ(ə)n] загрязнение

to control pollution – бороться с загрязнением
environmental pollution – загрязнение окружающей среды
air pollution – загрязнение воздуха
noise pollution / sound pollution – шумовое загрязнение окружающей среды

population (n) население; жители
recycling переработка отходов
(*для повторного использования*)
rural *(adj)* ['ruər(ə)l] сельский
rural economy – сельское хозяйство
sewage (n) ['s(j)uːɪʤ] сточные воды; нечистоты
to treat sewage – очищать сточные воды
raw / untreated sewage – сточные воды, не прошедшие очистку
sewage disposal – сброс сточных вод
sewerage (n) ['s(j)uːərɪʤ] канализация, канализационная система
urban *(adj)* ['ɜːb(ə)n] городской
urban area ['ɛərɪə] – городская территория
waste (n) отходы
to dump industrial waste into rivers and seas – сбрасывать промышленные отходы в реки и моря
to recycle household waste – перерабатывать бытовые отходы

UNIT 1
Environmental Effects of Urbanization

1.1. Choose one of the definitions below that is closest to your understanding of what "urbanization" is or try to construct your own definition. Compare with your partner's.

- *the social process when cities grow and societies become more urban*
(wordnetweb.princeton.edu/perl/webwn)
- *the process by which more and more people come to live in cities*
(oregonstate.edu/instruct/anth370/gloss.html)
- *an increasing concentration of the population in cities and a transformation of land use to an urban model of organization*
(www.mhhe.com/biosci/pae/glossaryu.html)
- *the process of the formation and growth of cities; the change in a country or region when its population migrates from rural to urban areas*
(en.wiktionary.org/wiki/urbanization)

1.2. Work in pairs and discuss what environmental effects of urbanization are. What are the most critical ones? Why?

1.3. Scan Text A to check your ideas and to answer the questions.

1. What can you say about the dynamics of urbanization?
2. What cities will grow more in future?
3. How does the polluted environment affect urban people?
4. Do consumption patterns of urban population differ from that of rural population? In what way?
5. What are usual urban environmental problems?

TEXT A

Environmental Effects of Urbanization

Within only 200 years, the world's urban population has grown from two percent to nearly 50 percent of all people. The most striking examples of the urbanization of the world are the megacities of 10 million or more people. In 1975 only four megacities existed; in 2000 there were 18. Moreover, by 2015 the UN estimates that there will be 22. Much of the future growth, however, will be in the small to medium-size cities around the world.

Urban populations interact with their environment. Urban people change their environment through their consumption of food, energy, water, and land. And in turn, the polluted urban environment affects the health and quality of life of the urban population.

People who live in urban areas have very different consumption patterns than people in rural areas. For example, urban populations consume much more food, energy, and durable goods than rural populations.

Urban environmental problems usually include inadequate water and sanitation, lack of rubbish disposal, and industrial pollution. These environmental problems cause respiratory infections and other infectious and parasitic diseases.

(http://www.prb.org/Articles/2004/UrbanizationAnEnvironmentalForcetoBeReckonedWith.aspx)

VOCABULARY (Text A)

affect (v) [ə'fekt] оказывать воздействие, влияние
to affect the health and quality of life – влиять на здоровье и качество жизни
consume (v) [kən'sju:m] потреблять
consume much energy – потреблять много энергии
consumption (n) [kən'sʌm(p)ʃ(ə)n] потребление
consumption pattern – модель потребления

durable *(adj)* ['djuərəbl] длительного пользования, долговечный
durable goods – товары длительного пользования со сроком службы свыше трёх лет)
fast moving goods –быстро реализуемые потребительские товары
in turn в свою очередь
inadequate *(adj)* [ɪn'ædɪkwɪt] недостаточный
inadequate water and sanitation – недостаточно развитая система водоснабжения и канализации
interact (v) [ˌɪntər'ækt] взаимодействовать; влиять друг на друга
lack of rubbish disposal отсутствие системы утилизации мусора
medium-size ['miːdɪəm saɪz] средней величины
small to medium-size cities growth – рост малых и средних городов
parasitic disease [ˌpærə'sɪtɪk dɪ'ziːz] болезнь, вызываемая паразитами
respiratory infection [rɪ'spɪrət(ə)rɪ] респираторная инфекция; инфекция дыхательных путей
sanitation (n) канализация; санитарные условия
striking ['straɪkɪŋ] поразительный, изумительный, выдающийся
striking examples – поразительные примеры
UN (*сокр.)* от United Nations ООН, Организация Объединённых Наций
the UN estimates – по оценке ООН

1.4. Read Text A again and fill the gaps with the words from the text.

1. The major cause of most environmental problems is the fast growing human *p*_____.
2. *U*_____ is associated with higher incomes, improved health and quality of life.
3. Urban *e*_____ *p*_____ can be grouped into two classes: associated with poverty and associated with economic growth.
4. An urban person in New York *c*_____ three times more water and generates eight times more garbage than does a person of Mumbai.
5. The air pollution is high in megacities; it affects the health and causes *r*____ *d*_____.
6. The consumption of developing countries moves toward the *c*_____ *p*_____ of developed countries.
7. Will global warming mean the increase of tropical *p*_____ *d*_____?
8. *I*_____ access to water and sanitation services kills and makes sick thousands of children in developing countries.

1.5. Work in pairs or groups. Make a list of the environmental problems your city suffers from. The information below may help you.

В России сейчас больше десятка городов-миллионеров – Москва, Санкт-Петербург, Новосибирск, Екатеринбург, Омск, Казань, Ростов-на-Дону, Волгоград, Пермь, Нижний Новгород, Самара, Челябинск, Красноярск и Уфа.

Города требуют концентрации еды, воды, энергии и материалов, которые природа уже не может обеспечить. Концентрируя эти материалы, а затем, выбрасывая их в виде отходов, сточных вод и загрязнителей воздуха и воды, городское управление постоянно сталкивается с новыми проблемами.

Большинство экспертов считают современные города местами, непригодными для жизни. Городской воздух загрязнен повсюду. Города, с их автомобильным транспортом, лишают людей необходимости выполнения хотя бы минимума физических упражнений. Это создает дисбаланс между количеством употребляемых калорий и их растратами. В результате ожирение достигает эпидемических масштабов в развивающихся и промышленных городах.

Насколько актуальна эта тема для Новосибирска? Наибольший вклад в загрязнение атмосферного воздуха Новосибирска вносит автотранспорт (76 % от валового объема выбросов). Что касается стационарных источников выбросов вредных веществ в атмосферу, то основное загрязнение происходит от предприятий топливно-энергетического комплекса и коммунальных котельных.

(http://experts.megansk.ru/full_news.html?id_news=67)

1.6. Read Text B and identify the environmental problems of Mexico City. Are they the same as in your city?

TEXT B

Mexico City

Mexico City today is one of the largest cities in the world. The environmental issues present in this megapolis are a good example of the problems that many cities around the world have.

The population of Mexico City is over 20 million people. Migrants from the economically depressed rural areas are continuously arriving to the City.

Waste

The health and environmental effects of inadequate solid waste disposal are seen outside the city in the form of water, land and air pollution over a wide area. The city produces about 10,000 tons of domestic garbage per day. Until 1987, most of the wastes were disposed of in open fields. Recent-

ly, a more modern system of sanitary filling into dredged pits has become operational. Improving waste collection, processing and disposal services is very important to control growing health problems and prevent more damage to the environment.

Water

Today, most of the food and water comes to the City from outside its borders. Many parts of the city suffer from water shortage and industrial use of water is very ineffective. Nearly 20% of the water supply is lost through deficient pipe systems. In general, the Mexico City water resources should be protected through the introduction of a variety of techniques, including: sanitary waste disposal facilities, urban storm water runoff and drainage programs, the promotion of recycling and reuse of wastewaters and solid wastes, and the control of industrial pollution sources.

Air

City streets full of traffic and air pollution is perhaps the worst problem the city faces. Most of the air pollution originates from automobile exhausts, which are responsible for 72% of all atmospheric pollutants in Mexico City. In order to minimize this problem, all vehicles according to the last digit of their number plate are not allowed to be driven once in a week.

Pollution monitoring is carried out by the Automatic Atmospheric Monitoring Network. Air quality reports are published daily through the national media. Based on this reports vehicle use and industrial activity are restricted, in order to protect Mexican people's health.

VOCABULARY (Text B)

border	граница
damage	вред, повреждение; ущерб, урон
prevent more damage – предотвратить ущерб	
deficient [dɪ'fɪʃ(ə)nt]	дефектный, не отвечающий требованиям
domestic garbage	бытовые отходы; бытовой мусор
drainage ['dreɪnɪʤ]	дренаж; дренажная система
dredged pits	*(здесь)* выкопанные земснарядом котлованы
exhaust [ɪg'zɔ:st]	выхлопные газы
face the problem	сталкиваться с проблемой
improve	улучшать; совершенствовать
inadequate	не отвечающий требованиям; недостаточный
number plate	номерной знак (*на автомобиле*)
per day	в день, за день
pipe system	система трубопроводов

processing ['prəusesɪŋ]	переработка
promotion	стимулирование, развитие, содействие
recently	недавно
restrict	ограничивать
sanitary filling	канализационные сбросы
sanitary waste disposal facilities	канализационные сооружения
shortage ['ʃɔːtɪʤ]	нехватка, недостаток; дефицит

to suffer from water shortage – страдать от недостатка воды

solid waste	твёрдые отходы
storm water runoff	сточные ливневые воды
vehicle ['viːɪkl]	транспортное средство, автомобиль
water supply	водоснабжение

1.7. Answer the questions.

1. Does an inadequate solid waste disposal have an effect only on the City?
2. In what way is domestic garbage disposed of in Mexico City these days?
3. What should be improved in the City to prevent more damage to the environment? Why?
4. Why is a great deal of water supply lost in Mexico City?
5. What techniques should be introduced in the City to protect water resources?
6. What is one of the worst problems of the City? What is the main reason for it?
7. What is done to minimize automobile exhausts problems?
8. Why is pollution monitoring carried out on daily basis in Mexico City?

1.8. Match two parts of the sentences about Mexico City.

1. Large concentrations of people in the city create	a) no access to running water.
2. In Mexico City many people have	b) closed to traffic.
3. Located in a valley, the city suffers so badly	c) a lot of environmental problems.
4. The city centre is periodically	d) in most large cities in the developing world.
5. Mexico City's problems are much the same	e) from air pollution.

1.9. Match the words and the prepositions as they are used in Text B.

1. produce tons of garbage	a. from	1. automobile exhausts
2. dispose	b. for	2. atmospheric pollutants
3. prevent more damage	c. through	3. the environment
4. suffer	d. through	4. the national media
5. lose water	e. to	5. deficient pipe systems
6. air pollution originates	f. per	6. in open fields
7. be responsible	g. of	7. day
8. be published daily	h. from	8. water shortage

1.10. Work in pairs or small groups. Scan the text below and complete the table. Add your own pros and cons of living in a big city.

Pros and Cons

Many people are not sure about big cities, believing that they symbolize the best and worst aspects of civilization. On the one hand, the diversity of peoples and activities encourages innovation and creativity, which in turn create opportunities that attract still more people. On the other, problems of overcrowding, crime, poverty, and pollution may be severe. Cities, therefore, have come to reflect the hopes and fears of the modern world.

Advantages of living in a big city	Disadvantages of living in a big city
• • • *access to information* •	• • • *sound pollution* •

1.11. Read and analyse the Internet Forum answers to the question what advantages and disadvantages of living in a big city are. Use a dictionary, if needed. What would your answer be?

(Note: the authors are responsible for their grammar.)

tin_bd1 Mon, 18 Apr 05 04:52 AM

I have a class topic: "The advantages and disadvantages of living in a big city". Can anyone help me? Thanks a lot.

painalex Thu, 09 Jun 05 04:01 PM

Frankly speaking, living in a big city has its pros but also cons as well. Opinions about big cities are divided. Some people who live there would give everything to have even a small house in the country; others are delighted about what they already have. I don't have exact opinion about this subject. One side is that living in a big city is more comfortable: cinemas, theaters, museums for those who like culture. For others, shops on every corner, lots of pubs and restaurants to choose, and that isn't enough: schools are incomparable with those in a small towns. It's also much easier to find a well paid job. On the other hand people in a big city are faceless, there is a very big competition–famous rat race. It's good but sometimes might go too far. Faceless is good in some situations, for example, the volume of gossips is less than in small town where strange people always know something about you from their friends who knows it from theirs! I hate it.

In spite of all those things about big cities it isn't hard to find some disadvantages. Firstly the pollutions, secondly horrible noise. We also can find there more robbers, murderers–the more people the more deviations we have.

silentwar Fri, 01 Jul 05 11:56 AM

advantages:

- make more friends and meet more people
- you can buy what you want in a big city "Shopping"
- good places hotels, parks, centers …..
- more colleges and universities

disadvantages:

- traffic jam, more cars
- pollution
- bad health because we can't breathe fresh air
- noisy
- more problems in family for example divorce

Lazarus Tue, 04 Oct 05 05:55 AM

Forgive me if these have been said:

Advantages of City Living: Greater cultural opportunities (more diverse populations, range of restaurants, languages). Less need for automobile; save $ on gasoline (public transportation is usually better in cities). Closer emergency services than in rural areas. More job opportunities.

Disadvantages of City Living: Noise Pollution. Higher crime rates. Often more expensive cost of living (particularly with home/apartment). High-

er likelihood of legal action against you (sounds weird, I know...but it's true). Lack of sense of "home" (because of its anonymity) There's a few, anyway!

Amazing Sun, 18 Jun 06 04:40 PM
live on the moon is better for u…
just kidding
well, best of all is to live in big city and have 1 or 2 months travelling to villages to breath fresh air and have nice time.

spinnaker Mon, 03 Oct 05 10:01 PM
Some advantages are:
- homes
- advances in technology
- jobs
- access to services

Some disadvantages are:
- shortage of land for building
- deforestation
- pollution
- bad housing conditions

I hope that I could help you.

(http://www.englishforums.com/English/LivingInABigCity/bbwqv/post.htm)

1.12. Match the opposites from this Unit. Use these words to make your own sentences.

1.	rural	a.	harmful
2.	healthy	b.	fast moving
3.	advantage	c.	sanitation
4.	durable	d.	health
5.	disease	e.	poverty
6.	pollution	f.	urban
7.	economic growth	g.	disadvantage
8.	cons	h.	pros

1.13. Discussion Points

Choose one of the environmental problems below. Discuss it with a partner and give some ideas of its solution.

Traffic

The quick growth in the number of motor vehicles is a big problem in many cities. Many city centers have major difficulties trying to cope with the chaotic automobile traffic. The traffic jams are extremely bad in many cities. The pollution is high due to constant traffic, causes respiratory diseases, and increases greenhouse-gas emissions.

Overpopulation

About 90 million babies are born each year. At this rate, by 2050 or so, the world population will reach nine billion, adding two Chinas to the number of people alive today. Those billions will be seeking food, water, housing and other resources on a planet where, scientists say, humans are already shaping climate and the way of life.

UNIT 2
Brown Agenda Versus Green Agenda*

*agenda [ə'ʤendə]	повестка дня
versus ['vɜːsəs]	в сравнении с (*чем-л.*), в отличие от (*чего-л.*)

2.1. Do you know any colours which are associated with environmental issues? Give your examples.

2.2. Read the text below and identify what "Green Agenda" is. Match the word combinations in the box with those underlined in the text.

renewable energy resources; railway transportation; energy performance of buildings; electricity network system growth; water resources management; waste management; green agenda; energy consumption; fuel-efficient car; thermal power plant; energy and ecological efficiency improvement; hydrocarbon flaring; greenhouse gas capture

Зеленая революция: Оздоровление планеты

Игорь Честин, Николай Иванов
11.06.2009

На фоне экономического кризиса, безработицы и нехватки финансирования на социальные нужды зеленая повестка дня должна, казалось бы, уйти на дальний план. Но этот взгляд поверхностен: многие правительства рассматривают сегодняшнюю ситуацию как шанс сделать свои экономики более эффективными – и с точки зрения энергопотребления, и с точки зрения уважения к окружающей среде.

Речь идет не о словах, а о конкретных действиях. На меры, направленные на повышение энергетической и экологической эффективности, приходится вполне осязаемая часть антикризисных пакетов – об этом свидетельствует доклад «Климат для выздоровления» (A Climate for Recovery), подготовленный аналитиками HSBC.* Эксперты проанализировали стимулирующие меры 20 государств общим «весом» $2,8 трлн, подсчитывая инвестиции в возобновляемые источники энергии, улавливание парниковых газов при сжигании углеводородов на теплоэлектростанциях, повышение энергоэффективности зданий, стимулирование производства экономичных автомобилей, развитие железнодорожного транспорта (как альтернативы авиации), развитие электросетей, управление водными ресурсами и отходами.

http://www.vedomosti.ru/newspaper/article.shtml?2009/06/11/199952

***HSBC – крупнейший британский банк**

2.3. Read the text below and identify what "Brown Agenda" is. Match the word combinations in box with those underlined in the text.

деградация экологически уязвимых земельных ресурсов; ненадлежащее удаление опасных отходов; канализация; снижение дохода и качества жизни; вредное воздействие окружающей среды; огромное количество; доступ к экологической инфраструктуре; пренебрегать до недавнего времени; рациональное использование природных ресурсов; низкая производительность; разнообразие форм жизни; неконтролируемые выбросы; экономическое богатство; скученность населения; утилизация твёрдых отходов; в пользу «зеленых» проблем

The "brown agenda" highest priority problems of increasing urbanization are sewerage, solid waste management, degradation of environmentally sensitive land, uncontrolled emissions, accidents linked to congestion of population, and improper disposal of hazardous waste, problems that result in poor health, lower productivity, reduced income and quality of life.

For the first time in human history, more than half of the world's population is living in cities. These cities generate two-thirds of economic wealth. Population and economic growth in cities create a trend – more people making more things demand more resources and generate more waste. The resulting set of environmental problems, known as the "Brown Agenda", consists of: a) access to environmental infrastructure and services; b) pollution from urban wastes; c) resource losses; d) environmental hazards; and e) global environmental issues.

A huge number of people are affected by urban environmental degradation: 1.1 billion people live in cities with high air pollution; 420 million have inadequate sanitation; and 220 million people do not have access to safe drinking water. However, the Brown Agenda has been neglected until recently in favour of "green" issues such as natural resource management, biodiversity and global warming.

http://www.gdrc.org/uem/sustainaing-cities.html

2.4. Match an English word with its definition and the Russian variant. Find these words in Text A and translate the sentences containing them.

1) proponent	a) active assistance and encouragement	A. опасность, угроза
2) impact	b) state of being poor	B. обеспечение, снабжение
3) consumption	c) something that is a source of danger	C. богатый
4) generation	d) somebody who advocates something	D. выработка
5) support	e) the using up of goods and services	E. сторонник, активист
6) threat	f) the act of providing or supplying something	F. пространственный
7) provision	g) relating to the position and size of things	G. сильное воздействие, влияние
8) affluent	h) the act of producing	H. поддержка; помощь
9) poverty	i) a strong effect	I. потребление
10) spatial	j) reach, wealthy	J. бедность

TEXT A

Conflicting Agendas?

There are often conflicts between proponents of the 'Green Agenda' and the 'Brown Agenda' over which environmental problems should receive priority. The Green Agenda concentrates on reducing the impact of urban-based production, consumption and waste generation, on natural resources and ecosystems and, finally, on the world's life support systems. The Brown Agenda emphasizes the need to reduce the environmental threats to health that arise from poor sanitary conditions, crowding, inadequate water provision, bad air and water pollution, and local increase of solid waste. General-

ly, the Brown Agenda is more pressing in poor cities and the Green Agenda is more pressing in affluent cities.

While there is no clear dividing line between the two agendas, they can be distinguished along three different dimensions: spatial, temporal and political. The Brown Agenda addresses issues that are more local, immediate and affect the poor. The Green Agenda addresses issues that are more universal, delayed and affect future generations. The Brown Agenda addresses the environmental problems more typically associated with poverty while the Green Agenda addresses the environmental problems more typically associated with affluence.

http://web.mit.edu/urbanupgrading/urbanenvironment/issues/green-agenda.html

2.5. Analyze the table below and speak about the contrasts between these two agendas.

VOCABULARY:

ecological / environmental sustainability экологическая устойчивость
environmental health санитарное состояние окружающей среды
excessive чрезмерный, неумеренный
generation 1) поколение
2) выработка, производство
hazardous pollutant опасное загрязняющее вещество
sustainability [sə¸steɪnə'bɪlətɪ] устойчивость; устойчивое развитие окружающей среды (*предполагает поддержание экологической целостности и запасов природных ресурсов*)

Aspects	The "Brown Agenda" (Environmental Health)	The "Green Agenda" (Sustainability)
Priority	Human health	Ecosystem health
Timing	Immediate	Delayed
Scale	Local	Global
Worst affected	Lower income groups	Future generations
Attitude to Nature	Manipulate to serve human needs	Protect and work with
Attitude to People	Work with	Educate
Attitude to Environmental Services	Provide more	Use less

Окончание табл.

Aspects	The "Brown Agenda" (Environmental Health)	The "Green Agenda" (Sustainability)
Priority for Water	Increase quantity, quality and accessibility	Prevent over-use and degradation
Priority for Air	Reduce hazardous pollutants	Reduce greenhouse gas (GHG) emissions
Priority for Solid Waste	Adequate provision for collection and disposal	Stop excessive generation
Typical proponent	Urbanist	Environmentalist

http://web.mit.edu/urbanupgrading/urbanenvironment/issues/green-agenda.html

2.6. Choose the correct words to fill in the gaps.

1. Brown Agenda focuses more on _____, local and health-related effects. (*immediate / delayed*)
2. Green Agenda focuses on _____, universal and ecological effects. (*immediate / delayed*)
3. To _____ is usually better than cure in both agendas. (*protect / prevent*)
4. The Brown Agenda focuses more on factors affecting _____ in the present. (*future generations / lower income groups*)
5. The Green Agenda focuses on factors likely to affect _____.(*future generations / lower income groups*)
6. Generally, the *Green Agenda* refers to _____, while the *Brown Agenda* to _____. (*pollution reduction / nature protection*)
7. The Green Agenda concentrates on _____ the human impact on natural resources and ecosystems. (*reducing / increasing*)
8. The Brown Agenda emphasizes the need to reduce _____. (*hazardous pollutants / greenhouse gas emissions*).
9. *There* are some *conflicts between* the *Brown Agenda*, which *concentrates* on _____ (*environmental health / sustainability*), and the *Green Agenda*, which *concentrates* on _____. (*environmental health / sustainability*).

2.7. Scan Text B and identify the following:

1. The key problem for modern city planners
2. The key innovations to solve the problem
3. The key reasons to open grocery stores at the stations

2.8. Read Text B and point out the innovations which are being implemented in your city. Give the examples, if possible.

TEXT B

Cities & Agendas

An important dilemma for urban planners and politicians trying to create sustainable cities is how to integrate the green and brown agendas.

The Green Agenda refers to the natural environment. It is about the natural systems that cities use as services for open space, water provision, health air, and reliable climate, food and clothing.

The Brown Agenda concerns the human environment. This agenda is about optimizing land use; engineering of waste systems; minimizing energy consumption and transport; reducing use of materials; and creating an efficiently built environment.

The rapid growth of cities in the past 50 years has shown that the brown functions of a city often degrade its green resources. This is no longer possible and cities need to minimize their impact on the natural environment, and ensure that ecosystems are protected from degradation.

Key innovations appear today to integrate the green and brown agendas.

They are as follows:

Development of renewable energy.

This enables cities to create healthy environments using minimum fossil fuels. Some urban areas are now partly powered by renewable solar, wind, hydro or geothermal energy technologies.

Increasing green infrastructure.

Providing food and materials locally is becoming part of urban infrastructural development.

Development of distributed power and water systems.

This aims to shift cities from large centralized power and water systems to small-scale ones. This will ensure a reduction in the use of water and power.

Sustainable Transport.

In many cities, modern electric rail system is now seen as the solution to limit the increased use of private cars. Since rail is run on electricity, it also reduces the dependency on fossil fuels.

Street Planning & Mobility Management.

Streets are used for many purposes, not just maximizing vehicle flow. Streets can be designed to favour pedestrian and cycle traffic. Whenever this is done, cities become more attractive and business friendly.

Gender needs to be considered in all stages of public transport planning. For example, many developed countries' recognition of women as the main users of public transport and the multipurpose nature of their trips has led to some innovative design solution. Many stations and terminals in cities (such as Tokyo, Japan; and Maryland, USA) now contain grocery stores and childcare centres.

http://www.unhabitat.org/documents/GRHS09/FS4.pdf

VOCABULARY (Text B)

distributed power and water systems	система распределённого энерго и водоснабжения
sustainable transport	рациональное использование транспорта
power *(v)*	снабжать энергией
refer to *(v)*	иметь отношение, относиться (*к ч.-л.)*
rapid growth	быстрый рост
degrade *(v)*	снижать, уменьшать
impact on	влияние на
renewable energy	возобновляемые источники энергии
fossil fuel	ископаемые виды топлива
ensure *(v)*	обеспечивать; гарантировать
vehicle ['vi:ɪk(ə)l] **flow**	транспортный поток
favour *(v)*	благоприятствовать; поддерживать
pedestrian [pə'destrɪən] *(n)*	пешеход
grocery store	продовольственный магазин

2.9. Replace Russian word combinations by their English variants from the box.

a)

is not being addressed; human health; global warming; developing nations; is releasing a list; identifying and fixing industrial pollution; industrial pollution; soil pollution; developed nations; environmental conversation

Browned Out

Global warming may top the world's green agenda, but don't forget old-fashioned industrial pollution.

In the early spring of the environmental movement, the focus was on *промышленное загрязнение*, the fouling of the air and water that directly impaired *здоровье человека*. Over time, *развитые страны* from the U.S. to Japan passed regulations and made technological changes that vastly re-

duced that kind of pollution; if you gave any doubts, compare Tokyo or Los Angeles today to how they were in the early 1970s. Now the environmental agenda can be summed up in two words: глобальное потепление. But just because climate change has come to dominate the *вопросы окружающей среды* it doesn't mean that industrial pollution has disappeared. Instead, it has simply shifted to *развивающиеся страны*, where it is still causing tremendous human suffering. One study by Cornell University estimates that up to 40% of deaths worldwide can be linked to air, water and *загрязнение почвы*. "It's hundreds of magnitudes worse now than it ever was before", says Richard Fulled, the founder of the New York City-based Blacksmith Institute. "This is a silent, serious problem *that не уделяется внимание.*"

Launched by Fuller in 1999, the Blacksmith Institute advances what he calls the "brown agenda": *определение и решение проблем, связанных с промышленным загрязнением* throughout the world, with a focus on developing nations. Now Blacksmith *выпускает список* of the 10 worst pollution problems in the world – all the toxic consequences of unimpeded industrial development, "This is the worst of the worst," says Fuller.

Time, October 27, 2008

2.10 Surf the Internet to identify if there are any Russian cities on the Blacksmith Institute list.

2.11. Discussion point.

Discuss in pairs or small groups if you are proponents of GA or BA or you consider that it would be inappropriate to treat these two agendas separately and ignore the potential complementarities between them?

2.12. Project work.

In groups analyse the ecological problems of your city and propose "a realistic plan" of its development for the city authorities.

MODULE III
SCIENCE AND TECHNOLOGY

"I never did anything worth doing by accident; nor did any of my inventions come by accident; they came by _____"

`Thomas Alva Edison

«All of the biggest technological inventions created by man – the airplane, the automobile, the computer – says little about his intelligence, but speaks volumes about his _____»

Mark Kennedy

Complete the quotations opening this module. Tip: the missing words are "laziness" and "work". Answer the questions.

1. What saying is closer to your own opinion? Give reasons.
2. What do you know about the authors of these quotations?
3. What contribution did each of them make to society?
4. What outstanding people had a considerable impact on the development of science and technologies?

Study the vocabulary you may need to speak about science and technology.

achieve a goal	/əˈtʃiːv/	достичь цели
achievement (n)	/əˈtʃiːvm(ə)nt/	достижение
application (n)	/aplɪˈkeɪʃ(ə)n/	применение
apply (v)	/əˈplʌɪ/	применять
award (v)	/əˈwɔːd/	награда, награждать
breakthrough (n)	/ˈbreɪkθruː/	прорыв, открытие, шаг вперед в определенной области
competitor (n)	/kəmˈpetɪtə/	конкурент, конкурсант
contribute to (v)	/kənˈtrɪbjuːt/	вносить вклад, способствовать
contribution (n)	/kɒntrɪˈbjuːʃ(ə)n/	вклад
convince (v)	/kənˈvɪns/	убеждать
copyright (n, v)	/ˈkɒpɪrʌɪt/	авторское право, обеспечивать авторское право
discover (v)	/dɪˈskʌvə/	сделать открытие
discovery (n)	/dɪˈskʌv(ə)ri/	открытие

establish a prize	/ɪˈst æ blɪʃ/	учреждать премию
experiment (n, v)	/ɪkˈspɛrɪm(ə)nt, ɛk-/	эксперимент, проводить эксперимент
impact (n)	/ˈɪmpəkt/	воздействие
in the field of…	/fiːld/	в области
innovation (n)	/ɪnəˈveɪʃ(ə)n/	инновация
invention (n)	/ɪnˈvɛnʃ(ə)n/	изобретение
inventor (n)	/ɪnˈvɛntə/	изобретатель
irreplaceable	/ɪrɪˈpleɪsəb(ə)l/	незаменимый
laboratory(n)	/ləˈbɒrəˌt(ə)ri/	лаборатория
license (n, v)	/ˈlʌɪs(ə)ns/	лицензия,выдавать лицензию,патент, разрешение
market a device	/ˈmɑːkɪt/	продвигать устройство на рынке
patent (n, v)	/ˈpeɪt(ə)nt/	патент, получать патент
property (n)	/ˈprɒpəti/	свойство
prototype (n, v)	/ˈprəʊtətʌɪp/	прототип, опытный образец
sign a document	/sʌɪn/	подписать документ
in honour of	/ˈɒnə/	в честь к-л.
do research		проводить исследование
technology (n)	/tɛkˈnɒlədʒi/	технология
trademark(n)	/ˈtreɪdmɑːk/	торговая марка
worldwide	/ˈwəːl(d)wʌɪd/	во всем мире

UNIT 1
Inventions: The Impact

"Modern technology owes ecology an apology."

Alan M. Eddison (the director of Green Earth Affairs headquarters at Zimbabwe)

"Technology... is a queer thing. It brings you great gifts with one hand, and it stabs you in the back with the other. "

C.P. Snow, *New York Times*, 15 March 1971

1.1. Discussion points.

1. Read the quotations above. What ideas do they imply? Which one do you agree with?
2. What kinds of things do people have to think about when they try to invent something?
3. What ways do inventions affect our lives? Do they have a positive or a negative impact? Give examples to support your ideas.

4. Has the recent development of technology helped to reduce damage to the environment? What technologies can be mentioned here?

5. Who is to blame for the damaging impact that modern technology has made on the environment: the inventor or the user?

6. Should ecology "forgive" modern technology?

1.2. Match the invention to the corresponding column according to its environmental impact. Enlarge the list with some extra examples.

bulldozers, cranes, recycling technology, nuclear weapons, guns, animal and plants conservation methods, hybrid vehicles, solar power stations, wind turbines, paper production

devastating impact	favourable impact

1.3. Vocabulary issues.

More and more people are becoming aware of the negative effects technology has had on the environment. Many inventors have taken steps to sustain the balance of nature. As a result, a lot of new sciences and technologies have appeared. This new trend resulted in a number of new words.

Match the items in the right and left columns to make as many words and word combinations as possible.

eco	tech
enviro	technology
clean	footprint
green	solution
carbon	lifestyle
	friendly
	gadget

Can you explain the meaning of the word combinations you've made?

Which word is used to denote "techniques used in manufacturing process that minimize the damage caused to the environment"?

1.4. Scan Text A and say what envirotech devices you have or would like to buy.

TEXT A

Top 10 Green Devices for 2013

By TreeLiving

Posted: 03/27/2013

Throughout history, advances in technology have often caused new environmental problems. But in today's world, manufacturers are more aware of the impact their products have on the earth. This has led to big advancements in **eco technology**, from rechargeable batteries to eco cars. Trying to make a difference, creative people have come up with a variety of **eco tech** gadgets. You may not need or want all of them, but there are some **enviro-tech** devices that will help you **reduce your carbon footprint** and **live a greener lifestyle**. Some items on this top 10 list will be familiar, while others belong to the future. They are all eco tech solutions with huge potential for energy savings and environmental conservation.

1) Let's start with an old invention that's been improved and is more important now than ever: **the electric bicycle**. With fuel consumption one of the biggest headaches around, this is an eco-friendly way to get around that's stood the test of time and has now been taken to the next level.

2) **LED Light Bulbs**. Governments in many countries, including the United States, are working on phasing out the inefficient incandescent light bulbs that we all grew up with. Energy saving light bulbs use between a third and a fifth of the power of standard incandescent bulbs and last 10 times longer, or more. Again, that's less energy consumed, less trash, and less pollution.

3) **USB Powered Rechargeable Batteries.** Rechargeable batteries are great but only if they hold a charge and are easily recharged. The new batteries are recharged by simply plugging them into the USB port on your computer or wall charger. According to the manufacturer the USB Cell saves 7kg of carbon and 3kg of toxic waste after just 50 uses.

4) **Lutron's Maestro Occupancy Light Switches.** Imagine a light switch that can tell if someone is in the room or not. These advanced energy saving gadgets help keep lights turned off when there's no one in the room. And they are sensitive. You won't find the lights turning off on you while you sit and quietly read. However, the lights will get turned off if no one is in the room. If you walk in the room, the lights will turn on but only if the ambient light requires it. Yep, you guess it, it also senses natural light and only turns on lights if necessary.

5) **Solar Charged Keyboards and More.** Solar power is nothing new, but these new gadgets are useful and functional. Logitech makes a solar

powered wireless keyboard that can charge in any light, including your desk light. It's wireless and runs on two AA batteries. It's a fully functional 107 key keyboard.

And if you're tired of changing the batteries in your television remote then consider a solar powered remote. Both Logitech and Powerplus Leopard manufacture solar powered universal remote controls. Simply place them in direct sunlight – on your windowsill, for example – and recharge when you're not using your remote.

6) **EcoBook Computer by Asus: Sounds Strange, but True**. Computers have never been considered as a green gadget. But with Asus launching its ecobook computers made of bamboo, even the severest critic who believed computers to be an environment hazard was astonished. The notebook from ASUS has recyclable plastic without any paints or sprays. The notebook even does not have electroplating on its components and is undoubtedly one of the most environment friendly computers you can find in the market.

7) **Televisions**. Flat-screen TVs are far more **eco-friendly** than their CRT predecessors, but there's still room for improvement. Manufacturers such as Philips and Sony have risen to the challenge, creating new models with interesting eco technology features such as sensors that switch the set to low-power mode when no one is in the room. There's also a growing movement toward the use of sustainable materials and practices in the manufacture of green TVs and computers.

8) **The eco tech kettle** isn't in every home, but it should be. You fill it up but tell it to boil only what you need. Trials suggest energy savings of up to 60 %.

9) **Energy Usage Monitors.** One of the hottest categories of green devices today is the home energy monitor. This piece of eco technology works with your smart meter to gather information about energy consumption in the home and shows where you can cut back. Such a monitor can help you achieve huge energy savings.

10) **Wind-Up Devices.** Gadgets that work on the clockwork principle aren't just energy efficient. Wind-up radios and torches have also made a big difference to the lives of people in under-developed countries.

Every day new gadgets are being invented and released to the public. Some control your blinds or the temperature of your home. Others help you enjoy life a little more. Embracing a few energy saving gadgets can both make your life easier and help improve the environment. It's **a win win*.**

***win win** is a situation in which each party benefits in some way

(http://www.treeliving.com/eco-tech/green-devices-2013)

1.5. Read the text and answer the questions.

1. Is the list of eco tech devices complete? What gadgets can you add? (You can visit www.treeliving.com for further information/)
2. What steps can you take to reduce your carbon footprint?
3. What do you personally do to save energy? Do you have a green lifestyle?
4. Are people of your generation aware of the environmental problems?
5. Is your future profession connected with eco technologies?

1.6. Match the halves of the sentences.

1. Some manufacturers created TVs with interesting envirotech features such as …
2. One of the most environment friendly computers is…..
3. The home energy monitor is….
4. Solar Charged Keyboard is …
5. Standard incandescent light bulbs are getting out-of-date because…
6. The electric bicycle is…

a) an eco-friendly way to get around.
b) a solar powered wireless gadget that can charge in any light.
c) sensors that switch the set to low-power mode when no one is in the room.
d) an ecobook computer by Asus made of bamboo.
e) they use 3-5 times as much power as LED Light bulbs.
f) one of the hottest categories of green devices gathering information about energy consumption in the home and helping you to cut energy consumption.

Using only the first parts of the sentences (1-6), complete the sentences from memory.

1.7 Choose a device from the text and explain why it is called green/eco tech. Describe its functions and impact on your life and environment. Advertise it to your group mates. Convince them that it is irreplaceable for people who want to reduce their carbon footprint.

1.8. Read Text B and match the headings (a – e) to the corresponding paragraphs (1–4).

There is one heading you don't need.

a) What Is Green Technology?

b) Go Green - If Not for Love Then Profit
c) Why Should Inventors Think Green?
d) Aiming for a Win Win
e) Examples of Green Technology

TEXT B

What Is Green Technology?

1.

As the name implies green technology is one that has a "green" purpose. By green we do not mean the color, however, mother nature is quite green, and the long and short term impact an invention has on the environment is what we are talking about. Green inventions are environmentally friendly inventions that often involve: energy efficiency, recycling, safety and health concerns, renewable resources, and more.

2.

One of the best known examples of green technology would be the solar cell. A solar cell directly converts the energy in light into electrical energy through the process of photovoltaics. Generating electricity from solar energy means less consumption of fossil fuels, reducing pollution and greenhouse gas emissions.

Another simple invention that can be considered green is the reusable water bottle. Drinking lots of water is healthy. Reducing plastic waste is great for the environment. Hence, trendy reusable water bottles that you can refill yourself are health-promoting, eco-friendly, and green.

3.

The world has a fixed amount of natural resources, some of which are already depleted or ruined. For example: household batteries and electronics often contain dangerous chemicals that can pollute the groundwater after disposal, contaminating our soil and water with chemicals that cannot be removed from the drinking water supply and the food crops grown on contaminated soil. The risks to human health are great.

4.

Inventors should know that green inventions and clean technologies are good business. These are fast growing markets with growing profits.

Consumers should know that buying green inventions can reduce your energy bill and that green inventions are often safer and healthier products.

1.9. Match the words and word combinations with their Russian equivalents.

energy efficiency	счет за электричество
solar cell	истощенный
convert the energy in light	меньшее потребление ископаемого топлива
photovoltaics	преобразовать энергию света
less consumption of fossil fuels	рациональное использование энергии
hence	солнечная батарея
depleted	преобразование световой энергии в электро-энергию
green inventions	следовательно
energy bill	изобретения, оказывающие положительное воздействие на экологию

1.10. Work in groups of 2 or 3. Design a Green Home (a house equipped with the most ingenious eco tech devices).

Present your project in class and prove that your Green Home is environmentally friendly and sustainable, focusing on the efficient use of energy, water, and building materials. (If you have an access to the Internet, use online resources for more ideas.)

1.11. Write an essay on the topic: "Modern technology owes ecology an apology".

UNIT 2
Inventions and Innovations

2.1. What is the difference between 'discovery', 'invention', and 'innovation'? Work in groups to define these words in one of the following ways:

1. a sentence
2. a list of 5 to 10 words or a wordweb
3. a pictorial representation
4. another way

Compare your results with the definitions given below.

discovery – something that existed but was not known before (e.g. penicillin)

invention – something new that didn't exist before (e.g. the radio)

innovation – 1) a new idea, method, or device; 2) making changes in something established, especially by introducing new methods, ideas, or products (e.g. eco-innovation – innovation for the environment).

2.2. Read the tip. What makes the difference between a clever invention and a commercially successful product?

	Innovation refers to the use of a better and, as a result, novel idea or method, whereas invention refers more directly to the creation of the idea or method itself. The word innovation derives from the Latin word *innovates*, which is the noun form of *innovare* "to renew or change". Innovation means taking an invention and developing it to make it a commercially viable product. The Walkman, for example, was invented by Sony's chairman who wanted to be able to play golf and listen to music at the same time. Innovation is the process which allowed Sony to mass-produce the Walkman and make it a huge commercial success.

2.3. Think of some more examples and complete the chart.

innovation	invention	discovery
eco-innovation- innovative products and processes that reduce environmental impacts	telephone	penicillin

2.4. Read the statements paying attention to the use of the vocabulary in bold. Express your opinion on the statements.

1. "Anything that won't sell, I don't want to **invent**." (Thomas A. Edison)
2. "Isn't it astonishing that all these secrets have been preserved for so many years just so we could **discover** them!" (Orville Wright)
3. Through technology and **innovation**, people can find ways to save the planet.

2.5. Complete the sentences with the correct word.

Invent	invention	discover	discovery	innovation

1. When archaeologists ____ evidence of human habitation, they call it "dark earth."

2. "If there were no God, it would be necessary to ____ him." (Voltaire)
3. The Hubble Telescope has allowed astronomers to make significant _____ about our galaxy.
4. Recent _____in English teaching have made it possible to encourage students' progress more effectively.
5. Many people feel bewildered by the speed of technological _____.
6. The dishwasher is a wonderful _____.
7. Do you think someone will ___ a flying car one day?

2.6. Replace the words in *italics* in sentences below with a word or expression from the box.

register and protect separate parts legal protection an important improvement name or symbol	established sold permission to produce an early developer first models

1. The business was ***founded*** in 1953 by Sir John Miller…..
2. When a ***trademark*** is patented no one else can copy it.
3. One of the ***prototypes*** was made from parts of other appliances.
4. There has been ***a breakthrough*** in the search for a vaccine.
5. The ***components*** are assembled in our factory in Ireland.
6. Henry Ford was ***a pioneer*** of techniques of mass production.
7. The ***copyright*** which writers have over their work is often ignored.
8. He ***licensed*** his invention for almost nothing.
9. You should ***patent*** your invention before someone copies it.

2.7. The words "invention" and "innovation" are often confused. To have a better understanding of these concepts, read a passage from the article written by Larry Magid (a tech-journalist) for forbes.com, on March 26, 2013 and say if you agree with the author or not.

TEXT A

Apple's 'Next Big Thing' Will Be an Innovation, Not an Invention

Larry Magid, contributor

I've never questioned that Apple is an innovator. Its iPod, iPhone and iPad were all very innovative products. But all of them were improvements of other companies' products or concepts in the same categories.

The iPod, introduced in October 2001, was not the first digital music player. Diamond Multimedia announced the Rio PMP 300 in 1998, and the Creative Nomad Jukebox and Archos Jukebox came out in 2000. Apple did a great job by combining the hardware with its iTunes software and its music store. And that, plus Steve Jobs' brilliant marketing, is why the iPod soon became the dominant music player.

The iPhone, which came out in 2007, was far from the first smartphone. Depending on how you define "smart," there were products from PSiAn, Symbian, Nokia and of course Research In Motion (now BlackBerry), which debuted in 1999.

But, as with the iPod, Apple did it right. It was the first touch-screen smartphone to be highly useful. It delighted millions of users and became the gold standard by which other phones continue to be judged. Even now, when BlackBerry, Samsung or anyone else introduces a new smartphone, reviewers immediately compare it to Apple's most recent iPhone.

The iPad, which first came out in 2010, was also an incredibly innovative product. But there were plenty of tablets on the market from a variety of companies going back more than 10 years.

For a bit of perspective on tablet computers, scroll down to view the 1994 video about the "Tablet Newspaper" from a design lab at Knight Ridder, which at the time was the parent company of the San Jose Mercury News and other newspapers. What you'll see in this 13 minute video is a tablet with a lot of features that ultimately appeared in the iPad. Of course, Knight Ridder never actually marketed the device. So, once again, Apple deserves the credit for turning a good idea into a great product.

So when thinking about what Apple will do next, look around at products that already exist but could use some major improvements. Some say it will be a "smart" watch. Indeed, there are already plenty of those on the market but none are blockbuster products. It could be an Internet-connected "smart" TV if Apple can find a way to greatly improve on what other companies have done, including Samsung, Sony and LG.

So let's hope CEO Tim Cook, along with Apple's engineers and designers, are busy looking around at other companies' promising products that don't quite meet up to Apple's high standards. Apple doesn't have to create new categories to change the world – it just has to build products that people love and then convince us that we can't live without them.

2.8. Answer the questions.

1. Why do you think Apple has taken the leading position on the market?
2. Do you appreciate Apple's products? Have you got any?
3. Why does the author sound sceptical sometimes?
4. What statements do you dis/agree with?
5. What products have been recently developed by Apple?
6. What are Apple's main competitors?
7. Have Apple's innovations and inventions changed the life of our society?

2.9. Read the comments to the article and add a comment of your own.

80s Man 3 weeks ago

Pretty sure Apple invented more things than you give credit for. They invented the Iphone look, the finger sliding… Other companies took what they made and innovated. You write like somebody who is spiteful toward Apple, but disguising it with passive aggressive nice words.

Nano 3 weeks ago

Weird, I didn't get that feeling out of this article. I think you have a bad conception of innovation, nothing wrong being an innovator and not an inventor. Look at the Industrial Revolution in England, they didn't invent any of the technology, but innovated existing technologies. Innovation adds great value to society.

I thought the facts were quite true in this article regarding Apple.

Mangy Dog 3 weeks ago

Nice, well-reasoned column, Larry.

Unfortunately, the media now expects Apple to pull a time machine out of its hat at will. Doesn't happen that way folks, so just relax. Apple will get around to surprising and delighting you when it's good and ready.

2.10. Exchange your notes with another student. Discuss your ideas. Agree/disagree with your partner's opinion. Use the phrases given in the table below.

Agreeing with an opinion	Disagreeing with an opinion
• Of course. • You're absolutely right. • Yes, I agree. • I think so too. • That's a good point. • Exactly. • I don't think so either. • So do I. • I'd go along with that. • That's true. • Neither do I. • I agree with you entirely. • That's just what I was thinking. • I couldn't agree more.	• That's different. • I don't agree with you. • However… • That's not entirely true. • On the contrary… • I'm sorry to disagree with you, but… • Yes, but don't you think… • That's not the same thing at all. • I'm afraid I have to disagree. • I'm not so sure about that. • I must take issue with you on that. • There's something in what you say but…

2.11. Over the centuries, there have been hundreds of inventions, some of which were immensely revolutionary. Without them the human civilization would not develop. Work in pairs. Make a list of the 3 most important inventions of all time. Give reasons for your choice. Then answer the questions.

1. Can the light bulb be added to your list?
2. What do you think life was like before the light bulb was invented?
3. What did people do to see at night or in the dark?
4. When do you think the light bulb was invented?
5. What kinds of problems did the invention of the light bulb solve?
6. In what ways did it make life easier for people and society?
7. Do you know who invented the light bulb?

Look at the title of the text. Can you explain its meaning? Read the text to check your predictions.

TEXT B

The Wizard of Menlo Park

Thomas Alva Edison (1847-1931) was an American inventor, scientist, and businessman whose inventions revolutionized the world.

When Edison was born, society still thought of electricity as a novelty, a fad. By the time he died, entire cities were lit by electricity. Much of the

credit for that progress goes to Edison. In his lifetime, Edison patented 1,093 inventions, earning him the nickname "The Wizard of Menlo Park."

Edison's first job was as a telegraph operator, and in the course of his duties, he redesigned the stock-ticker machine. It gave him the capital ($40,000) to set up a laboratory in Menlo Park, New Jersey, to invent full-time (with many employees).

The most famous of his inventions was an incandescent light bulb. Edison experimented with thousands of different light bulb filaments to find just the right materials to glow well, be long-lasting, and be inexpensive. In 1879, Edison discovered that a carbon filament in an oxygen-free bulb glowed but did not burn up for quite a while.

Besides the light bulb, Edison developed the phonograph and the "kinetoscope," a small box for viewing moving films. He also improved upon the original design of the stock ticker, the telegraph, and Alexander Graham Bell's telephone.

He believed in hard work, sometimes working twenty hours a day. Edison summed up the invention process with the quotation: "Genius is one percent inspiration and 99 percent perspiration." He proved that anyone who is inspired and hard working can create meaningful inventions or breakthroughs.

In tribute to this important American, electric lights in the United States were dimmed for one minute on October 21, 1931, a few days after his death. Owing to Edison’s hard work and genius the light bulb ultimately illuminated homes, buildings, and cities across the world, providing people with innumerable benefits.

VOCABULARY (Text B)

novelty /ˈnɒv(ə)lti /	новизна,нововведение
fad	кратковременная мода, увлечение
incandescent light bulb /ˌɪnkænˈdes(ə)nt/ /laɪt/ /bʌlb/	лампа накаливания
filament /ˈfɪləmənt/	нить накаливания
carbon /ˈkɑː(r)bən/	уголь, угольный
glow /gləʊ/	накаляться, светиться
for a while	в течение некоторого времени
stock ticker	биржевой телеграфный аппарат
inspiration /ˌɪnspəˈreɪʃ(ə)n/	вдохновение
perspiration /ˌpɜː(r)spəˈreɪʃ(ə)n/	пот, испарина
in tribute to /ˈtrɪbjuːt/	в честь (кого-л. чего-л.)
dim	приглушать, тушить

2.12. Answer the questions.

1. What was unique about Edison?
2. What nickname did he get? Why?
3. What did Edison invent?
4. What requirements did Edison have to the light bulb materials? What did his experiments with different light bulb filaments result in?
5. What personality traits are important to become an inventor?
6. What do Edison's words about genius mean for you? Why have these words become a popular quotation? Illustrate your ideas with examples.
7. What makes people want to invent new things?
8. What would life be like if people did not make inventions?
9. If you were an inventor, what kinds of tools, devices, or machines would you like to create? Why?

2.13. Match the words and the prepositions according to their use in Text B.

1. experiment	a. in	1. the original design of the stock ticker
2. provide people	b. with	2. the quotation
3. sum up the invention process	c. of	3. innumerable benefits
4. improve	d. to	4. different light bulb filaments
5. in tribute	e. upon	5. electricity
6. think	f. with	6. this important American
7. believe	g. with	7. hard work

2.14. Project: Making Posters for Edison

Work in groups of 2 or 3. Imagine that it is the late 19th century and you have been hired by Edison to make special posters that advertise the uses and benefits of the light bulb (or other important inventions, like the phonograph or the kinetoscope (motion picture camera)).

It is important to make the posters interesting and easy to understand. The posters should also have a big picture of the invention and show how it helps to solve problems or make life easier or more efficient.

Your poster should contain the following parts:

- A title (example: "Light Up Your Homes At Night!")
- A big picture of the invention being used (example: a light bulb lighting up a room)

- Show how it helps people (example: a smiling family sitting at a dinner table)

You can use some descriptive words and exclamations in your poster like "bright!", “breakthrough!”, and "perfect!" to attract people’s attention. You may also wish to use Edison's famous name to explain who created the new product.

Present your poster in class and advertise the invention. Try to sound persuasive to interest people in the purchase of this new device. Take a class vote on the most successful advertisement. (Before the vote decide together on the criteria to consider.)

UNIT 3
Young Inventors

Not all inventions are created by research workers. Many young people earned scholarships, recognition, and even wealth owing to their bright ideas and an unusual approach to solving a problem.

3.1. Read the stories about some kids’ inventions and complete the sentences with the past simple passive of the verbs.

Alaska Flag

The state flag of Alaska (1) _____ (design) by 13 year-old Bennie Benson from Chignik, Alaska in 1926. His design (2) _____ (chosen) over 700 others from a flag-designing contest. It became the official flag in 1959. The blue background is for the sky and the forget-me-not, the state flower. The flag also has the Big Dipper (a symbol of strength) and the North Star (also called Polaris) which represents Alaska's northern location. A $1000 scholarship and a watch (3) _____ (give) to Bennie for winning the contest. The prize money from the flag contest (4) _____ (use) by the young inventor for entering an engineering school.

The Calculator

Who would have thought the calculator was a poor seller? In 1642 the first counting machine (5) _____ (design) by 18 year-old Blaise Pascal. The machine (6) _____ (aim) for his father, a tax collector, to make his job easier. It (7) _____ (name) Pascaline. It was able to add two decimals together and subtract. He made about 50 of them but nobody (8) _____ (interest). People thought it would take jobs away. Blaise was obviously ahead of his time. 300 years went by before the calculator finally became a success. In 1968 the programming language, PASCAL, (9) _____ (name) after him.

3.2. Answer the questions.

1. Do you know the saying, "It only takes one person to make a difference"? Does that go for people of all ages?
2. Do you need to be a researcher to become an inventor?
3. Do you know any other examples of kids' inventions that made a difference?
4. Would you like to become an inventor?
5. What problem would you like to solve with your invention?

3.3. If computers are available, visit http://www.bkfk.com/kids and read bios of other young inventors and the inventions they came up with. Try to remember the key facts about one of them to report back to your class. Be sure to answer the questions below.

1. What have you learnt about these young inventors?
2. What made them special?
3. How do you think they were able to do this?
4. What did they have to think about before inventing their product?
5. Did they have a realistic goal?

3.4. Project. Making an invention.

The examples above show that anyone can be an inventor, as long as he or she is willing to work hard and to fail at first or even many times. You can also become great inventors or problem solvers.

If you were an inventor, what kinds of tools, devices, or machines would you like to create? Why?

You will work with your group to develop an idea for an invention. Then your group will present the idea to the class. Follow the plan below to make a successful report.

1. Getting an idea.

Inventors get ideas in many ways. Sometimes it is by accident. Sometimes it is when they are doing ordinary activities. They notice something that bothers them and try to solve the problem with an invention. Brainstorm your ideas and fill in the table below.

What bothers you about:	What is your solution?
Playing a sport?	
Doing your chores around the house?	
Getting to the university?	
…….	

Generate a list of possible 21st century invention needs. Begin the brainstorming session by suggesting some potential problems or needs including but not limited to ***pollution, aging, health, recreation, traffic, information management, literacy, clean energy sources, weather protection***. Choose a need you would like to fill by proposing a new invention.

2. Stating the purpose.

What can your invention be used for?
Whom will it benefit?
How could your invention help people?
Who will buy it?

3. Designing the device and drawing a sketch.

Sketch the device and write an explanation of how it works.

4. Thinking about the impact of the invention.

How could it help people?

How could it hurt people? (Discuss the effects that your invention might have, particularly on your own surroundings.)

What kinds of future problems could the _____ create for people? Why? (Problems might include high cost, unfair distribution, damage to the environment through waste, becoming outdated or replaced by newer inventions, etc.)

5. Naming the invention.

Inventors name their inventions in lots of ways. Some people use their own names to call the products they produce. Others name their inventions according to the functions they perform.

Some people think up funny names for their invention products (e.g. Hula Hoop).

3.5. Case study.

Ever since you were a child, you have enjoyed inventing things. You like working in your grandfather's garage experimenting with his old car. You are extremely interested in chemistry and think that air pollution with car fumes is the most aggravating problem in your city. Trying to find the solution, you have studied a number of researches on this topic and finally managed to invent a low-cost **water fuel cell**, an invention that runs an automobile using water as fuel. Your grandfather is not optimistic about your project. He doesn't believe you will make a fortune on your invention to pay for the broken car. But there is a friend, Peter, who believes in your success and helps you in your experiments from time to time.

Read the situations below and find the words and expressions in bold which correspond to their Russian equivalents in the box.

«патентная заявка находится на рассмотрении»
контрольный пакет акций
поддерживать высокие цены
правовое обязательство
подписать документ
заём
научно-исследовательские и опытно-конструкторские разработки
срочно
рекламный трюк (пиар-ход)
увеличить доходы

Work in groups and agree on an answer to each question.

1. You are proud of your invention. You:
   a) give interviews to journalists
   b) keep it a secret for as long as possible
   c) impress people by publishing the details.

2. Your business **urgently** needs cash. You approach your bank for a **loan**. You:
   a) use your family home as a guarantee
   b) offer a **controlling share** in your business in return for the loan
   c) ask friends and relatives instead.

3. The market leader in the domestic appliances field has heard about your invention. They want to see your prototype. You:
   a) ask for **a legal commitment** that they will not copy it
   b) leave the prototype with them
   c) show what the product can do without going into detail.

4. Peter wants his contribution to be recognized. You:
   a) formalize your partnership
   b) make an informal agreement and promise to give him a share later
   c) ask him **to sign a document** that the invention is yours alone.

5. You know that your invention needs to be protected. You:
   a) wait three years for worldwide patents
   b) go into production straightaway *and put* **'patent pending'** on the product
   c) only protect your product in the US, Japan, and Europe

6. You decide to set up a factory on your own. You want people to know about your product. You:

a) advertise in the normal way
b) organize **a publicity stunt**
c) hire a good PR agency which will get you coverage in newspapers and TV.

7. You are now moving into production in a big way. You:

a) keep the price high
b) sell it more cheaply than competing products
c) have a special promotion price for a limited period.

8. You are producing the water fuel cell and it is a great success, but you want **to increase profits** even further. You:

a) move your factory and research and development to a country where labour is cheaper
b) keep production in your own country
c) move production overseas but keep **research and development** at 'home'.

Turn to File 1 and work out your score.

File 1

1

a) **1 point** – quite a good way of getting early publicity, but why warn potential competitors what you are doing?

b) **2 points** – probably the best thing to do at this stage; by the time you are ready any competitor will be too far behind to catch up.

c) **0 points** – a seriously bad idea; someone else will copy your invention and make their fortune.

2

a) **2 points** – at some point most great inventors have to take a very big risk; it all depends on how much you believe in yourself,

b) **0 points** – if you give away a controlling share, you are at the mercy of people in suits who don't understand your invention and who will want to get rid of you if things become difficult,

c) **1 point** – OK to keep it in the family, but how will you face them if the business is a failure?

3

a) 1 **point** – OK but risky; a good lawyer will find a way of getting out of a contract,

b) **0 points** – a disastrous choice; why should you trust them?

c) 2 **points** – probably the best choice, but don't let them touch or examine it!

4

a) **1 point** – everything depends on the deal you make; does Peter deserve to be a 50:50 partner?

b) **0 points** – this could be extremely messy in the future**.**

c) **2 points** – always keep friendship separate from business.

5

a) **1 point** – safe but time-consuming; a lot can happen in three years,

b) **0 points** – this will give competitors the perfect opportunity to copy it; patent pending doesn't have much legal status,

c) **2 points** – it's better to be protected in your key markets.

6

a) **0 points** – the most expensive choice for a new business short of money.

b) **2 points** – the cheapest way of making a maximum impact; successful entrepreneurs like Richard Branson get lots of publicity for free.

c) **1 points** OK but the PR agency will just see you as a meal ticket (разг. кормилец).

7

a) **2 points** – your product is unique so you can sell it at a premium price

b) **1 point** – there is no pressure to do this at all; you just manufacture a headache for yourself.

c) **0 points** – people will think it is rubbish and won't buy it anyway.

8

a) 1 **point** – not usually a winning formula; will your key people want to leave their own countries for a less developed/uncomfortable location?

b**) 0 points** – you're just a sentimental fool!

c**) 2 points** – you are the genius behind the company; you should maximize profits for yourself and your shareholders, but you need to keep your staff happy.

Work in groups of 2 or 3 and make a conversation to sum up your ideas.

Student A is the inventor of a low-cost water fuel cell, Student B is his friend, Peter, Student C may be either the market leader (a famous car manufacturer) or the inventor's grandfather (the garage owner).

UNIT 4
Nobel Prize

4.1. Work in pairs and discuss the questions below.

1. Are researchers awarded for their work? What ways?
2. What prizes are given to scientists for their contribution?
3. Why was the Nobel Prize established?
4. How is it funded?
5. What Nobel Prize winners do you remember?
6. What achievements is the Nobel Prize given for?

Scan Text A to check your ideas.

TEXT A

Nobel Prize: The Prestigious Award That Captures the World's Attention

1	

The Nobel Prize is considered 1_____ in the world. 2_____ include X-rays, radioactivity and penicillin. Peace Laureates include Nelson Mandela and Barack Obama. Nobel Laureates in Literature, including Rudyard Kipling and Doris Lessing, have thrilled readers with works such as *The Jungle Book* and *The Grass is Singing*.

Every year in early October, the world turns its gaze towards Sweden and Norway as the Nobel Laureates are announced in 3_____. Millions of people visit the Nobel Foundation's website during this time.

The Nobel Prize has been awarded to people and organizations every year since 1901 (with a few exceptions such as during World War II) for 4_____ in physics, chemistry, physiology or medicine, literature and peace.

2	

December 10 is Nobel Day. For the prizewinners, it is the climax of a week of speeches, conferences and receptions.

At the Nobel Prize Award 5_____ in Stockholm that day, the Laureates in Physics, Chemistry, Physiology or Medicine, and Literature receive a medal from the King of Sweden, as well as a diploma and a cash award. The ceremony is followed by a gala banquet. The Nobel Peace Prize 6_____ in Oslo on the same day.

3	

In 1968, Sveriges Riksbank (Sweden's central bank) 7_____ the Prize in Economic Sciences in Memory of Alfred Nobel. The Prize is based on a donation received by the Nobel Foundation in 1968 from Sveriges Riksbank on the occasion of 8_____. The Prize in Economic Sciences is awarded by the Royal Swedish Academy of Sciences, following the same principles as for the Nobel Prizes.

4	

The Nobel Prize is the legacy of Alfred Nobel (1833–1896). Prizes are awarded to "those who, during the preceding year, shall have conferred the greatest benefit on mankind." 9_____, Nobel declared that most of his fortune should be converted into a fund and invested in safe securities.

5	

In 1900, the four institutions awarding the prizes agreed to create the Nobel Foundation, a private institution based on the will of Alfred Nobel. The Nobel Foundation would administer Alfred Nobel's willed assets, make public announcements and arrange the prize ceremonies. The prize amount each year is based on the most recent return on investment. The capital is currently worth around SEK 3.0 billion (USD 427 million, EUR 330 million), which is almost twice the amount of the initial capital.

The Nobel Prize is currently SEK 8 million (USD 1.1 million, EUR 0.8 million) for each prize category, even when the prize is shared. There may be no more than three Laureates for each prize category.

Between 1901 and 2012, 839 Laureates and 24 organizations have been awarded the Nobel Prize. Together, they represent a major contribution to the cultural and scientific history of the world.

(http://www.sweden.se/eng/Home/Education/Research/Facts/The-Nobel-Prize/)

4.2. Read the text and complete it with the words and phrases a-i.

a. Stockholm and Oslo
b. the most prestigious award
c. When he signed his last will in 1895
d. established
e. achievements
f. is awarded
g. Ceremony
h. the bank's 300th anniversary
i. Prize-winning discoveries

4.3. Read Text A again and match the headings a-f to each part 1-5 of the article. There is one heading which you do not need to use.

a. Nobel Day
b. Legacy of Alfred Nobel
c. Prestigious Annual Award
d. Prize in Economic Sciences
e. Alfred Nobel's Biography
f. Legacy of Alfred Nobel

4.4. Talk about the Nobel Prize and its effect on the cultural and scientific development of our society. Use the headings listed above as a plan.

4.5. What do you know about the life of Alfred Nobel?

Work in pairs and write a list of as many facts about this outstanding personality as you remember. Scan Text B to find out more information. Report back to your class.

4.6. Read Text B again and open the brackets using the correct passive forms of the verbs.

TEXT B

The father of dynamite

Alfred Nobel was a chemist, engineer, inventor and entrepreneur. He 1*was born* (bear) on October 21, 1833, in Stockholm and died on December 10, 1896, in San Remo. He 2_____ (devote) to the study of explosives, and his inventions include a blasting cap, dynamite and smokeless gunpowder. Nobel became famous across the world when the St. Gotthard Tunnel 3_____ (build) in 1882 and dynamite 4_____ (use) for the first time on such a large scale.

At the time of his death, Nobel held 355 patents in different countries. There were Nobel parent companies in some 20 countries and explosives of all kinds 5_____ (manufacture) under his patents in around 100 factories worldwide.

Nobel lived and worked in many countries, including Sweden, Russia, France, the United Kingdom, Germany and Italy. He spoke five languages, had a passionate interest in literature and wrote poetry and drama. He was never really concerned with making money or scientific discoveries, but he became a successful inventor and businessman. Alfred never expected any

reward for his achievements. His greatest wish was to help the poor and to put an end to wars. According to Alfred Nobel's will, a lot of money 5 _____ (spend) to achieve these goals. He could never have imagined how important his prize would become, or how much media attention future Nobel Laureates would attract.

4.7. Read the title and the first paragraph of Text C and answer the questions.

1. What discovery is this article about?
2. Have you ever heard about this material?
3. What way can it improve people's life?
4. What other Russian Nobel prize winners can you name?

TEXT C

Russians Win Physics Nobel Prize for Graphene Material

Two Russian-born scientists won the Nobel Prize in Physics for discovering graphene. This one-atom- thick "wonder material" may transform electronics, allowing for speedier computers and folding **touch-screens**.

Andre Geim, 51, now a Dutch citizen, and Konstantin Novoselov, 36, both professors at the University of Manchester in the U.K., **shared** the $1.5 million prize for their discovery in 2010. In a Friday afternoon experiment just for fun, Geim and Novoselov produced a simple and easy-to-make material, which has **properties** far surpassing most other materials. They used Scotch tape to obtain a layer of carbon just one atom thick from a piece of graphite, the substance found in pencils.

Samsung Electronics Co. and IBM Corp. are among the companies working with the material, the thinnest and strongest **substance** ever discovered. Nearly **transparent** yet **dense**, graphene conducts heat and electricity. It can be potentially used in light panels and computers. According to the Nobel academy, satellites, airplanes and cars could be made out of plastics mixed with graphene. Nokia is looking at several potential **applications** of graphene in mobile communications. Touchscreens are "a good candidate" to be the first consumer technology to use graphene, according to Ferrari.

Geim **declined** to predict which application of graphene might be the most important. "There are so many," he said.

Novoselov is a Russian and British citizen. He began working with Geim as a PhD student in the Netherlands, then followed the older scientist to the U.K., according to the academy's statement.

Geim said he was proud to be, as far as he knew, the only scientist to win both a Nobel and an Ig Nobel, an award given at Harvard University for "**achievements** that first make people laugh, and then make them think," according to the prize's website. He and Michael Berry of the University of Bristol shared the 2000 physics award for using magnets to levitate a frog.

"It takes some courage to accept an Ig Nobel", Geim said. "Having both, I think it will help people to promote a sense of humor in the scientific community."

(http://www.bloomberg.com/news/2010-10-05/novoselov-geim-share-2010-nobel-prize-in-physics-for-research-on-graphene.html)

4.8. Work in pairs: read the rest of the article and continue the sentences.

1. Andre Geim and Konstantin Novoselov were awarded the Nobel Prize for….
2. This "wonder material" has the following properties:
3. Graphene can be used in/for….
4. To obtain graphene, the scientists used …..
5. Novoselov is a citizen of….
6. An Ig Nobel is a prize given at …… for…..
7. Geim got an Ig Nobel for ….

4.9. Match the definitions a-i with the words in bold in Text C. Translate the sentences with these words into Russian.

a. [n: countable] something important that you succeed in doing by your own efforts

b. [n: uncountable and countable] practical purpose for which a machine, idea etc can be used, or a situation when this is used

c. [adj] if a substance has this property, you can see through it (= clear; opaque)

d. [n: countable usually plural] a quality or power that a substance, plant etc has(= quality, characteristic)

e. [n: countable]a type of computer screen that you touch in order to tell the computer what to do or to get information

f. [v] to take and possess in common, to receive a portion

g. [n: countable] a particular type of solid, liquid, or gas

h. [adj] a substance with this property has a lot of mass in relation to its size

i. [v] to refuse to do sth

4.10. Use the words in bold from the text again to complete the sentences. Choose the appropriate form of the words.

1. The company _____ to comment on the possible ecological impacts of their new technology.
2. Two American scientists, Robert J. Lefkowitz and Brian K. Kobilka, became 2012 Nobel laureates for their _____ in the field of chemistry.
3. Grow the bulbs in a _____ plastic box, so the children can see the roots growing.
4. Water is eight hundred times _____ than air.
5. Learn the chemical _____ of a substance for the next lesson.
6. This device has a lot of practical _____.
7. _____ devices have gone a long way in the first couple of years, but one problem has stayed the same: dirty screens.

4.11. Write a magazine article about a Nobel Laureate. Use these questions to help you.

1. What was this person honoured for?
2. Where and when did he/she do this work?
3. What else was going on in the world at that period of time?
4. What was their primary objective, and how did they work to succeed in it?
5. What do you think helped them to reach their goals?
6. What did their work contribute to?

4.12. Discussion points.

1) If you could make a new Nobel Prize category, what would it be and who would win it?
2) Should a Nobel Prize winner try to change the world?

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