Документ подписан простой электронной подписью
Информация о владельце:
ФИО: Куижева Саида Казбековна
Должность: Ректор
Дата подписания: 12.12.2024 19:16:04
Уникальный программный ключ:
71183e1134ef9cfa69b206d480271b3c1a975e6f

Ministry of Science and Higher Education of the Russian Federation
Federal State Budget Educational Institution of Higher Education
"Maykop State Technological University"

English for Medical Professionals

coursebook

Part 1

Maykop 2018

УДК 811.111(07)
ББК 81.2Англ
Е 56

This coursebook has been published based on the decision taken by the scientific and technical council of Maykop State Technological University.

Compilers:

Associate Professor of the Foreign Languages Department at Maykop State Technological University, Candidate of Philological Sciences (PhD in Philology) **L.V. Chistobaeva**

Chair of the Foreign Languages Department at Maykop State Technological University, Candidate of Philological Sciences (PhD in Philology),Associate Professor **Z.M. Shadzhe**

Reviewers:

Associate Professor of the Foreign Languages Department at Maykop State Technological University, Candidate of Pedagogical Sciences (PhD in Pedagogy) **E.V. Bibikova**

Associate Professor of the Foreign Languages Department at Maykop State Technological University, Candidate of Pedagogical Sciences (PhD in Pedagogy) **E.V. Kiseleva**

E 56 English for Medical Professionals - coursebook. /Comp.L.V. Chistobaeva, Z.M. Shadzhe. –Maykop: Publisher «O.G. Magarin», 2018. – 240 c.
ISBN 978-5-91692-650-7

The course is aimed at medical students and covers topical core subjects, i.e., future profession, the skeletal system, the muscle system, the cardiovascular system, the digestive system, the nervous system, the respiratory system etc. The units in the textbook contain information, data, and examples of practical situations that doctors often encounter. The textbook supplies medical students and other medical professionals with target vocabulary and commonly-used expressions that are essential to basic oral and written communication. The course facilitates creation of the set of professional competences required within the framework of the foreign language training as an integral part of university professional training. It can be used to supplement a regular course book, as a stand-alone intensive specialist course or for self-study.

УДК 811.111(07)
ББК 81.2Англ

© L.V. Chistobaeva, Z.M. Shadzhe.2018

Foreword

English for Medical Professionals is a skills-based course for doctors, medical students and other medical professionals who need to communicate with patients and medical colleagues.

Each of the eleven units focuses on one particular medical area, which allows to combine students' knowledge in the fields of medicine and medical English.

It provides practice in the key academic skills that students need, such as listening to lectures and speaking in seminars. It also equips students with the specialist language they need to participate successfully within the medical institute. There is a focus on the key medical concepts and vocabulary that students will need.

The coursebook can be used for preparing for examinations, scientific and practical conferences in English, or for writing scientific articles within the framework of the problems outlined in it. Besides, the course book is designed to help learners master the range of skills necessary for professional activities, for example, reading scientific articles and periodicals that cover the spectrum of modern medicine and feature the latest research in the field.

All reading texts contain comprehensive coverage at the appropriate level of depth and detail for the course. The selection of learning material is aimed at reading it closely and subsequent checking for complete, detailed understanding.

The content encourages the development of necessary skills of analysis, interpretation, and application; it promotes understanding of wide range of issues explored by modern medicine and further research.

If necessary, the lecturer can diversify the work with the learning material in accordance with the objectives of the class and the students' level of English.

The course does not require specialist knowledge on the part of the teacher.

The coursebook covers the following areas:

My future profession;
Healthy life style;
Medical practitioners;
Talking about symptoms;
Parts of the human body;
The skeletal system;

The muscular system;
The cardiovascular (circulatory) system;
The human blood;
The digestive system;
The nervous system;
The respiratory system.

Key Features

- Focus on the specialist language
- Systematic approach to developing academic skills through relevant content
- Focus on receptive skills (reading and listening) to activate productive skills (writing and speaking) in subject area

Unit 1

My future profession

Reading

Useful links:

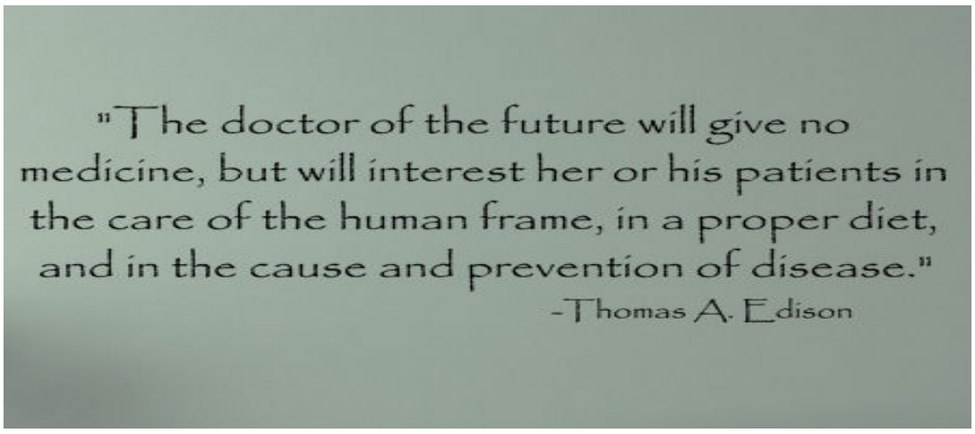
https://www.youtube.com/watch?v=kskWZSRAoeg

http://dictionary.cambridge.org/ru

http://dictionary.cambridge.org/dictionary/english/

Reading

I am a future doctor



Hello, let me first introduce myself. My name is Veronica. My last name is Svetlova. I was born on 14 June 1999, in Maykop, Adygea. I am 18.

I am a first-year student of Maykop Medical Institute. By the way, I am very proud of being a medical student and eager to become a qualified doctor in a few years. I'd love to be a paediatrician, as I am good with children. I am aware of the need to work hard and believe my parents will never be ashamed of me.

Let me describe my appearance in short. I am tall and slim, I've got dark hair and green eyes. I take after my father in some ways but I look like my mother. My friends say I am good-looking.

Let me tell you about myself as a personality. First of all, I'd like to tell you about my character, my hobbies and interests, my hopes and ambitions. I think, I am sociable, good-tempered, open-minded and fun to be with but I am not always punctual, it's easy to oversleep when I go to bed after midnight. I am confident that I'm a truly loyal friend and completely incapable of any betrayal, so my friends can always confide in me.

I love modern music and sports. I like swimming and playing tennis to stay fit and improve my health. I believe, I am good at these sports and I am proud of my results greatly. Unfortunately, I don't go in for sports professionally, I am just an amateur. I realize that I am fully responsible for my health, so I don't smoke, drink any alcohol or take drugs either. I don't spend much time watching TV, I think it's just a waste of time. Besides, I am interested in reading scientific articles, historical novels, and I am fond of travelling. By the way, last summer I went on a coach tour around Europe with my friends. We visited France, Germany, the Netherlands and Luxemburg. The knowledge of English helped me a lot during the journey. I'm going to visit Italy soon. My motto is: "Where there is a will, there is a way".

I'd also like to tell you a few words about my family. I'm a proud member of a close family. I've got my mum Galina, my dad Vladimir and my younger brother Andrey. My dad is 52. He is a surgeon. My mum is 48. She is a cardiologist. So, now you know why I've decided to embark on a medical career, it's in my genes. My younger brother is 14. He is a schoolboy; he studies in the 8th grade. I try to help my parents about the house as they are often short of time. At times, our interests, tastes and

opinions are quite different but we always do our best to find common ground to be able to understand each other. I love my family very much.

Vocabulary

personality	личность
first- year student	студент- первокурсник
slim	стройный
to believe	верить, полагать
confide in smb	доверять ч-л личное, доверяться к-л
amateur	любитель
to be safe and sound	быть в хорошей форме
motto	девиз
to embark on a medical career	выбрать профессию врача
to do one's best	делать все возможное
to find common ground	находить общий язык

to be	fond of	быть привязанным, сильно любить
	proud of	гордиться
	interested in	интересоваться
	good/bad/ at	умелый, способный/ неумелый, неспособный
	going to	собираться, намереваться
	eager to	страстно желать, жаждать
	ashamed of	стыдиться
	aware/conscious of	осознавать
	responsible for	отвечать за
	different from	отличаться от
	confident of	быть уверенным в
	short of	ощущать, испытывать недостаток в
	capable/incapable of	быть способным / неспособным на

Focus on vocabulary

Character traits

A Multifaceted Personality

Having a multi-faceted personality means one's personality has many layers or aspects

1.a)Translate the following words using the dictionary (look up their pronunciation in the dictionary if you need).

b) Mark the personal qualities you possess with a tick.

wise
stubborn
intelligent (smart, bright)
brave
communicative (sociable)
tactful
honest
talkative
short-tempered/hot-tempered
good-tempered/good-natured
lazy
careful
organized
decisive
sympathetic
patient
polite
cheerful
kind-hearted
caring
shy
creative
open-minded
logical
practical
realistic
reasonable

considerate
greedy
witty
calm
prudent
conservative
reserved
frank
enthusiastic
accurate
creative
loyal
independent
tolerant
generous
punctual
hard-working
selfish
childish
hard-working
open-minded
moody

confident
easy-going

emotional
able to work in team
observant
compassionate

2. a) Describe yourself as a personality, having positive and negative qualities.

I am + **but** *I am* *(I am a bit/ I can be…at times)* –

b) What qualities would you like to get rid of (избавиться)? (I WOULDN'T LIKE TO BE…/I DON'T WANT TO BE….)

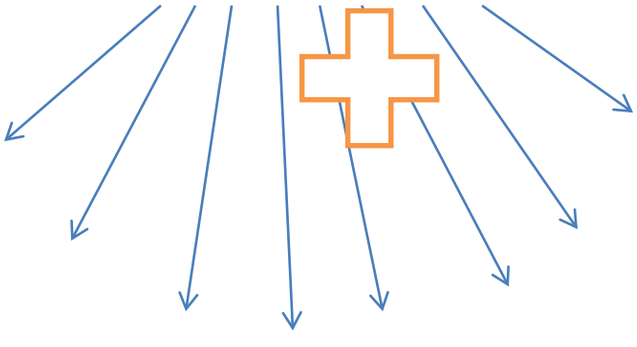
c) What qualities would you like to add to your personality? (I'D LIKE TO BE (MORE)…

d) Which of your personal qualities are of great use for your future job?

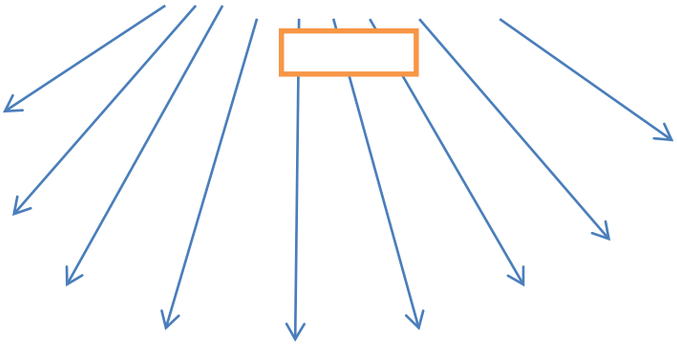
e) Which of these qualities are absolutely necessary for your future job?

In this job you **need to (be)**
must (be)
have to (be)

A GOOD …MUST be:



A GOOD …MUST NOT be:



f) Which of this qualities can be taught?

g)Where can they be taught?

3.Appearance

Translate and transcribe the following words and word- combinations using the dictionary:

Height/weight	***Face and head***
Tall	dark skin/dark hair/brown eyes
Short	blonde(fair)hair/fair skin/blue eyes
Of medium height	short/long; straight/curly hair
(Really) slim	
(very)thin	
Overweight	

General	***Age***
Beautiful/pretty woman	young/middle-aged/old/
Average-looking (man or woman)	elderly people (more polite than old)
Good- looking/handsome man	
Ugly man/woman	

Expressions:

How tall is he?

How heavy are you?/ How much do you weigh?

How old is she?

What does Maria look like?

4.Describe the physical appearance of any member of your family in detail. Ask your partner a few questions about the appearance of his/her family members.

5.Expressing preference and attitude

a)Use the verbs to complete the sentences.

	can't stand		I really… doing exams.
	love		I… talking in front of the class.
	like		I… going to the parties very much.
I	*don't like*	*do**ing** smth.*	I …listening to modern music.
	quite like		I…reading.
	prefer		I … sitting and doing nothing.
	enjoy		I… talking to my friends.
	hate		I… talking to strangers.

b)Use the adjectives to complete the sentences.

	interesting		It is … for me to speak English.
	easy		It is … for me to sit doing nothing.
	difficult		It is… for me to do my morning exercises.
It is	*useful*	**for me to** *do smth* .	It is… for me to miss classes.
	possible		It is ... for me to pass exams brilliantly.
	impossible		It is… for me to get up early in the morning.
	boring		It is …for me to travel abroad.

6. Introduce your family and yourself to your group mates. Use family photos. The questions below will help you.

a) What's your first name?

b) What's your surname?

c) Are you an only child?

d) Where and when were you born?

e) Have you got a family?

f) How many people are there in your family?

g) Are you a part of a very close family?

h) Do you look like your father or mother?

i) In character who do you take after?

j) Where do you live?

k) Who is your best friend?

l) Why have you chosen Maykop Medical Institute to enter?

m) What will your specialty be?

n) What is your favourite subject?

o) What kind of character do you have?

p) What sports do you do?

q) Do you still live with your parents?

7.Growing up and growing old. Look through the following information, translate into Russian.

age	stage
0-1 approximately	a baby
1-2	a toddler
2-12 approximately	a child-this period is your childhood
13-17 approximately	a teenager(14=early teens)
18+	an adult
20-29	in your twenties(24-26=mid-twenties)
30-39	in your thirties(38=late thirties)
40+	people are middle-aged
60 or 65	retirement(=when people stop work; they are retired)
75+	old age(you can describe people as elderly)

Focus on Grammar

1.Глагол Be

Глагол be как глагол-связка соединяет подлежащее с именной частью сказуемого, которая описывает подлежащее (т.е., что собой представляет подлежащее или какие у него качества). За глаголом-связкой be может следовать существительное, прилагательное, числительное, местоимение, инфинитив, герундий.

На русский язык такое сказуемое может переводиться одним из следующих способов:

1.являться+ существительное или прилагательное.

2.глагол «являться» отсутствует, но подразумевается (вместо него ставят «-»)

3.кратким прилагательным.

Translate into Russian.

1. My name is Veronica Svetlova.

2.I am a medical student.

3.I am in the classroom now.

4.I am very proud of being a medical student.

5.I am good with children.

6.I am confident that I’m a truly loyal friend.

7.I am interested in reading scientific articles, historical novels.

8. I am fond of travelling.

2. **Смысловые глаголы(Notional verbs)**

Смысловые глаголы(Notional verbs) имеют самостоятельное значение и употребляются в предложении в роли простого глагольного сказуемого.

a)Translate into Russian.

1.I speak English.

2.I love travelling.

3.I love modern music and sports.

4.I like swimming and playing tennis. I

5. The knowledge of the English language helped me a lot during the journey.

b) Write regular and irregular verbs in two columns, translate them, then write their four forms.

V1->V2->V3>V4

introduce bear be become love work believe describe have take look say tell think sleep go confide swim play stay improve realize smoke drink spend watch read visit help know decide study try do find understand

3. Порядок слов в повествовательном предложении.

Предложение – это группа слов, содержащая подлежащее и сказуемое и выражающая законченную мысль. Порядок слов организует отдельные слова в предложения определённым образом и указывает, где найти подлежащее, сказуемое и другие члены предложения. Порядок слов и контекст помогают выявить значения отдельных слов. Наиболее распространённая модель базового порядка слов в повествовательных предложениях: подлежащее ставится в начале предложения перед сказуемым; сказуемое следует за подлежащим; дополнение ставится после сказуемого; обстоятельство ставится после дополнения (или после глагола, если дополнения нет); определение (прилагательное) ставится перед своим существительным (определения в виде существительного с предлогом ставятся после своих существительных).

I like reading books in the evenings.

ПОРЯДОК СЛОВ В ПРОСТОМ РАСПРОСТРАНЕННОМ ПРЕДЛОЖЕНИИ								
Вопросительное слово	**Вспомогательный глагол**	**Обстоятельство**	**Подлежащее**	**Значимая часть сказуемого**	**Дополнение**			**Обстоятельство**
					косвенное	**прямое**	**предложное**	
		0	**1**	**2**	**3**	**3**	**3**	**4**
Утвердительные предложения								
			Students	have		lessons		at the Institute every day.
			My friend	gave	me	the book	for Kate	yesterday.
Отрицательные предложения								
			We	have no		English lessons		today.
		Yesterday	Pete	didn’t give	me	that interesting book	for Kate.	
Вопросительные предложения								
	Did		Pete	give	you	the book	for Kate	yesterday
When and where	did		Pete	give	you	that new book	for Kate	
			Who	gave	you	that book		
	Do		you	have	your	lessons		every day
	Are		you	a first-year student				

Вопросительные предложения в настоящем времени (The Present Simple)

Вопросительные предложения в настоящем времени образуются при помощи вспомогательных глаголов **do/does**

Общие вопросы

Вспомогательный глагол + подлежащее + основной глагол (+ дополнение + обстоятельство) **Do we…? Do they…? Do you…? Do I…?**

Does she…? Does he…?

Do *you like green tea?*

Специальные вопросы

Вопросительное слово + вспомогательный глагол + подлежащее + основной глагол (+ дополнение + обстоятельство)

Вопросительные слова **What? What kind of? When? Where? How? How much? How many? How old? Why? Who? Whom? Whose?**

What do we…? Why do they…? Where do you…? Why do I…?

When dos she…? Where does he…?

Where ***do*** *you study?*

Вопрос к подлежащему не требует вспомогательного глагола.

Who like**s** travelling? **Who** want**s** to become a doctor? У смыслового глагола появляется окончание –s (окончание 3 лица,ед.ч) соответствует русским окончаниям- ит,-ет. Кто люб**ит** путешествовать? Кто хоч**ет** стать врачом?

Альтернативные вопросы

Альтернативные вопросы – это вопросы с возможностью выбора. Порядок слов до "or" такой же, как в общих вопросах.

Do we…or…? Do they…or…? Do you…or…? Do I…or…?

Does she…or…? Does he…or…?

***Does** she study at university **or** college?*

Отрицательные предложения в настоящем времени (The Present Simple)

Отрицательные предложения **в настоящем времени (The Present Simple)** предложения в настоящем времени образуются при помощи вспомогательных глаголов do/does +not (соответсвуют “не” в русском).

I don’t…we don’t…you don’t… they don’t…

*They **don’t** go in for sport professionally.*

She doesn’t… He doesn’t…

*She **doesn’t** want to be a surgeon, she’d like to be a paediatrician.*

Consolidation

Make up affirmative, interrogative or negative sentences using the table below.

a)

	ask many questions at the seminars	**regularly take part in scientific conferences and webinars to stay updated**	**spend lots of time preparing for practical classes**	**try to study well**	**prepare reports and presentations on a regular basis**
I	**-**	?	What?	Who?	Who?
You	+	How often?	How much time?	?	What?
He	Why?	or?	or?	Who?	or?

She	or?	-	-	-	?
We	Who?	Who?	?	+	+
They	-	Why?	+	Why?	-

b)

	spend much time looking for information on the internet	**try to be well-prepared for classes**	**want to pass exams brilliantly**	**want to be an excellent surgeon**	**translate professional texts**
I	**-**	+	What?	Who?	Who?
You	+	What…for?	How ?	?	Why?
He	How much time ?	or?	or?	What?	or?
She	or?	-	-	-	?
We	Who?	Who?	?	+	+
They	-	Why?	+	Why?	-

c) Look through the following and translate into English.

Am/is/are (формы глагола be)являться, находиться
Have got иметь
Can мочь
May позволять
Must должен
Should следует
Would исп.в сослагательном наклонении (соотв. русскому «бы»)
Shall/Will будущее время

c)Translate into English.

Be(am/is/are)

Я-студент медицинского института.

Have (has) got

У меня есть семья.

Can

Я могу водить автомобиль, плавать, готовить, петь, нырять с аквалангом, кататься на лыжах, играть в теннис, футбол, волейбол.

May (may not)

Мне можно гулять по вечерам с друзьями, ходить в кафе и кинотеатр, но нельзя употреблять алкоголь, курить, пропускать занятия.

Must

Я должен хорошо учиться, уважать родителей, заботиться о здоровье, сдавать экзамены хорошо.

Should (be)

Мне следует быть аккуратным и внимательным (attentive) на лекциях, рано вставать, быть вежливым.

Would

Мне бы хотелось посетить Канаду, США ,Италию и Турцию. Я бы хотел попробовать прыгнуть с парашютом, японскую еду.

Shall/Will

Я буду успешным, счастливым и хорошо образованным человеком с широким кругозором и знанием трех (или более?) языков.

d)Вышеперечисленным глаголам не требуются вспомогательные глаголы при образовании вопроса и отрицания. В вопросительных предложениях они ставятся перед подлежащим, в отрицательных к ним добавляется частица not.

Consolidation

Make up affirmative, interrogative or negative sentences using the table below.

	can find many medical articles information on the internet	**Must be well-prepared for seminars**	**should try to pass the exams well**	**have (has)got lots to learn in Anatomy**	**shall/will become a good cardiologist**
I	+	+	What?	Who?	Who?
You	?	What…for?	How ?	?	What kind of?
He	or?	or?	or?	What?	or?
She	or?	+	Why?	-	?
We	Where?	Who?	?	+	+
They	What?	Why?	+	What subject…?	-

Speaking

1.Everyday communication. Make up dialogues with your group mates. Use the phrases below.

Greetings

Good Morning (evening, afternoon)

How do you do?

Hello. Hi!

How are you? I'm fine, thanks, and you?

Partings

Good Bye. Bye now. See you later.

It has been nice seeing you.

I hope to see you again soon.

Introducing people

Let me introduce myself.

Let me introduce you to my friend Nell.

Nell, this is Max Swan.

Let me introduce Nell to you.

Max ,this is Nell Foster.

Pleased to meet you. Pleased to meet you too.

Nice to meet you. You too.

2.Use this personality questionnaire to prepare and give a talk about yourself as a person. You have to speak continuously for 4-5 minutes.

1.What's your (first/given)name?

2. What's your family(last)name?

3. Where do you come from? /What's your country of birth?

4.Do you hold any other nationalities?

5.Where do you live?

6.Where do you study?

7.What do you do in your free time?

8.What kind of person are you?+ -

9.What free time activities you like/love/enjoy?

10. What makes you happy?

11.What kind of things do you dislike?

12.What are you interested in?

13.What are you good/bad at?

14.What or who are you fond of?

15.What or who are you proud of?

16.What country are you eager to travel to?

17.What and who are you responsible for?

18. Complete: It's easy for me to… It's difficult for me to…It's interesting for me to…It's useful for me to…It's boring for me to…It's impossible for me to…

19. Say any quotation which can be your motto.

Med Quiz and Your Personality

http://www.gpoptions.com.au/medquiz/

Take the Med Quiz to find out more about your personality traits and use it is a starting point, to look at how your personality can impact and influence people around you and different areas of your life, especially when making decisions.

We all know our personality affects parts of our lives and how we navigate our career will certainly be affected by our personality. It's important to understand who we are, so we can always play to our strengths and mitigate our weaknesses and we can then develop strategies to ensure we always perform at our best for the benefit of both our patients and our colleagues.

After completing Med Quiz, you will receive an overview of your personality traits at this point in time. You may choose to use the results to identify areas of your personality that you relate to or that may be currently impacting you, such as your decision making styles, your environment, and approaches to conflict, study habits and strategies for handling stress. You may also view the results as way to assist you when making more informed choices such as focusing on your pathway to General Practice.

3.Situations for acting out:

a) You are punctual, careful and prudent; your hostel roommate is completely different from you, so it can be challenging to share your room with him/her.

b) You are talking to your English-speaking friend on Skype. Tell him/her a few words about yourself, explain why you have decided to be a doctor.

4. Study the two photographs. In 1.5 minutes be ready to compare and contrast the photographs:

• give a brief description of the photos (action, location)

• say what the pictures have in common

• say in what way the pictures are different

Writing

Transliteration rules. Look through the rules of transliteration given below, write your name, and your last name, the name of your native town/city as well as your address in English. Make sure you spell everything correctly.

Russian letters	English letters	Russian letters	English letters
Е----------	e,yo(Semyonov)	ч----------	ch(Chekhov)
ж----------	zh(Zhukov)	ш----------	sh(Shukshin)
з----------	z,s(Kuzmin)	щ----------	shch (Khrushchov)
й----------	ei,iy,ai(Chaikovsky)		
ы----------	y(Bykov)	ь----------	’(Belen’kiy)
х----------	kh,h(Khrushov)	ю----------	iu,yu(Yurkin)
ц----------	ts(Tsokov)	я----------	ia,ya(Yakovlev)

Additional information

Quotations

Look through the quotations below, choose any of them you like best, comment on it.

Be yourself; everyone else is already taken. **Oscar Wilde**

He is all fault who has no fault at all. **A. Tennyson.**

There is only one corner of the Universe, you can be certain of improving, and that's your own self. **A. Huxley**

A man's reach should exceed his grasp. **R. Browning**

The roots of education are bitter but the fruit is sweet. **Aristotle**

To be conscious that you are ignorant is a great step to knowledge.

B. Disraeli

Education is the most powerful weapon which you can use to change the world. ***Nelson Mandela***

Education is the movement from darkness to light.***Allan Bloom***

An investment in knowledge pays the best interest. ***Benjamin Franklin***

Education costs money, but then so does ignorance." ***Sir Claus Moser***

Education is the best friend. An educated person is respected everywhere.

Education beats the beauty and the youth. ***Chanakya***

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

Malcolm S. Forbes

Education is the transmission of civilization. ***Ariel and Will Durant***

A different language is a different vision of life. ***Federico Fellini***

Those who know nothing of foreign languages know nothing of their own.

Johann Wolfgang von Goethe

Knowledge of languages is the doorway to wisdom**.** ***Roger Bacon***

Learning another language is not only learning different words for the same things, but learning another way to think about things. ***Flora Lewis***

If you talk to a man in a language he understands, that goes to his head. If you talk to him in his language, that goes to his heart. ***Nelson Mandela***

2.Read and translate into Russian.

HIPPOCRATIC OATH: MODERN VERSION

I swear to fulfill, to the best of my ability and judgment, this covenant:
I will respect the hard-won scientific gains of those physicians in whose steps I walk, and gladly share such knowledge as is mine with those who are to follow.
I will apply, for the benefit of the sick, all measures that are required, avoiding those twin traps of overtreatment and therapeutic nihilism.
I will remember that there is art to medicine as well as science, and that warmth, sympathy, and understanding may outweigh the surgeon's knife or the chemist's drug.
I will not be ashamed to say "I know not," nor will I fail to call in my colleagues when the skills of another are needed for a patient's recovery.
I will respect the privacy of my patients, for their problems are not disclosed to me that the world may know. Most especially must I tread with care in matters of life and death. If it is given me to save a life, all thanks. But it may also be within my power to take a life; this awesome responsibility must be faced with great humbleness and awareness of my own frailty. Above all, I must not play at God.
I will remember that I do not treat a fever chart, a cancerous growth, but a sick human being, whose illness may affect the person's family and economic stability. My responsibility includes these related problems, if I am to care adequately for the sick.
I will prevent disease whenever I can, for prevention is preferable to cure.
I will remember that I remain a member of society, with special obligations to all my fellow human beings, those sound of mind and body as well as the infirm.
If I do not violate this oath, may I enjoy life and art, respected while I live and remembered with affection thereafter. May I always act so as to preserve the finest traditions of my calling and may I long experience the joy of healing those who seek my help.

Written in 1964 by Louis Lasagna, Academic Dean of the School of Medicine at Tufts University, and used in many medical schools today.

Unit 2

Healthy life style

Reading

Useful links:

http://www.youtube.com/watch?v=sKkKLduuO1w

http://www.youtube.com/watch?v=3_FDmbOLKaI

Many factors affect your health. Some you cannot control, such as your genetic makeup or your age. But you can make changes to your lifestyle. By taking steps toward healthy living, you can help reduce your risk of heart disease, cancer, stroke and other serious diseases:

- Get the screening tests you need
- Maintain a healthy weight
- Eat a variety of healthy foods, and limit calories and saturated fat
- Be physically active
- Control your blood pressure and cholesterol
- Don't smoke
- Protect yourself from too much sun
- Drink alcohol in moderation, or don't drink at all

Good health is not something we are able to buy at the chemist's and we can't depend on getting it back with a quick visit to the doctor when we're ill, either. We often ruin our health by poor diet, stress, a bad working environment and carelessness. Nowadays, health specialists promote the idea of wellness for everybody. Wellness means achieving the best possible health within the limits of your body. Changing bad habits or the surrounding conditions, we can make our body last without major problems. Many parents in the USA want their families to eat healthy and nutritious food nowadays. Fatty foods are dangerous not only for adults but for children as well. Research also shows that children are heavier today than they used to be some 20–30 years ago. More and more parents worry about what their children eat, and bring into their family diets more fresh fruit, vegetables and fish. They avoid paying regular visits to fast-food restaurants, because McDonald’s and the like serve mostly unhealthy, fatty, high cholesterol food. People believe that low-fat diets and lots of exercise will help grow a healthy generation.

Food is very important for your health. You should try to eat three well-balanced meals every day, with servings from four basic food groups. Junk foods, such as potato chips, candy, soft drink will not do you good. Try to avoid going without any food for hours. Water is just as important as food, so you should drink several glasses of water every day. You can live for quite some time without food, but you must drink enough water every day for good health

Exercises help build your muscles, lungs, heart, and blood circulation. One of the most interesting facts about your body is that the more you use it and the harder you work it, the stronger and healthier it becomes. But what exercises are best? There are many kinds

of physical activities that can be considered exercises, and many of them are lots of fun. Walking, running, hiking, cycling, swimming, and jumping rope are fun, and they are good exercises, too. Just 15 minutes of aerobics and 30 minutes of swimming work wonders. They are very refreshing. After that you feel fine and are ready for next week's marathon of work! Instead of swimming or jogging you may go on a cycling tour. This kind of sport also does people a lot of good.

Good food, good rest and exercise help make you strong and healthy inside.

Remember, good health is much more than not being sick. Good health is a strong, energetic body and mind working together and growing together, challenging the world and being challenged by the world. And most of all, good health is a Fun!

Vocabulary

at the chemist's	в аптеке
to ruin one's health	разрушать здоровье
to promote the idea of	способствовать распространению идеи
nutritious	питательный
high cholesterol food	продукты с выс. содержанием холестерина
low-fat diet	низкокалорийная диета
well-balanced meal	сбалансированная еда
junk food	суррогатная пища
to avoid doing smth	избегать ч-л
lungs	легкие
to be sick	быть больным
to challenge	бросать вызов

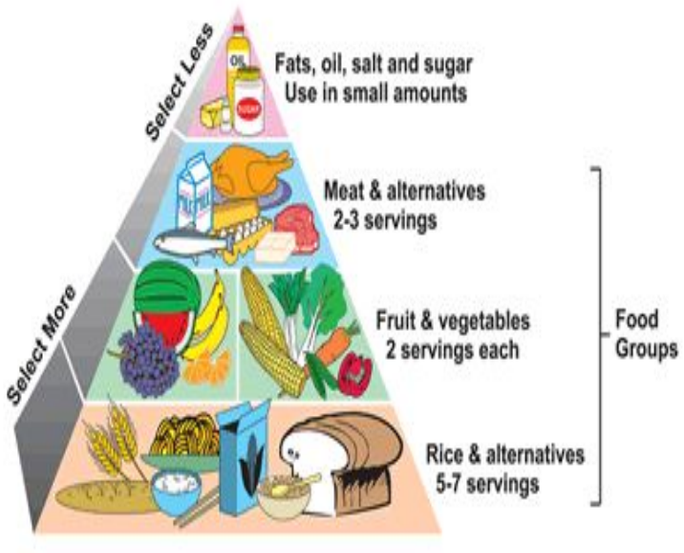
Focus on vocabulary

1.Say whether these statements are true or false.

- Buying medicines at the chemist's can help you be healthy.
- Our health is often ruined by many negative factors.
- It is very difficult to keep your body fit.
- Many people are concerned about eating unhealthy food nowadays.
- People avoid paying regular visits to fast-food restaurants, because McDonald's and the like because they serve tasteless food.
- Fatty food, potato chips, candy and soft drinks are useless for your organism.
- Water is just as important as food.
- The harder you work, the weaker and unhealthier your body becomes.
- Many kinds of physical activities can give lots of fun.
- Good health means not to be sick.

2. Ask 7-8 questions to cover the contents of the text.

3.Read the following and make a healthy menu for a day.



The four basic food groups:

Fruit and vegetables	Bread, cereals and grains	Milk and milk products	Poultry, fish,meat, eggs, nuts
apples, pears, oranges, bananas, peaches, grapes, fruit juice	whole-wheat bread, rye, oat-meal, rice, cornbread, whole-grain cereals	milk, butter, cheese, ice-cream, curds, sour cream	chicken, fish, peas and beans, lentil, soybeans, pork, lamb, beef, nuts,seeds

4. Check if you know the secret of Longevity

A Secret of Longevity

Do you eat 5 portions of different fruit and vegetables every day? Don't be lazy, check up! If the answer is positive, everything is all right, you receive necessary quantity of antioxidants deducing heavy metals and radioactive substances from your organism.1 portion consists of:

- 1 apple, orange or banana
- 1 piece of water melon or pine-apple
- 2 plums or kiwi
- 1 cup of of raspberry, strawberry or grapes;
- 2-3 table-spoons of fruit salad
- ½-1 table-spoon of dried fruits
- 1 glass of fruit juice
- 2 table spoons of fresh vegetables
- 1 plate of salad

5. Now try to answer the questions. More than one question is possible.

1.Which of these people can suffer from a lot of stress?

a) police officers
c) factory workers
b) students
d) teachers

2.Which of these factors can cause stress?

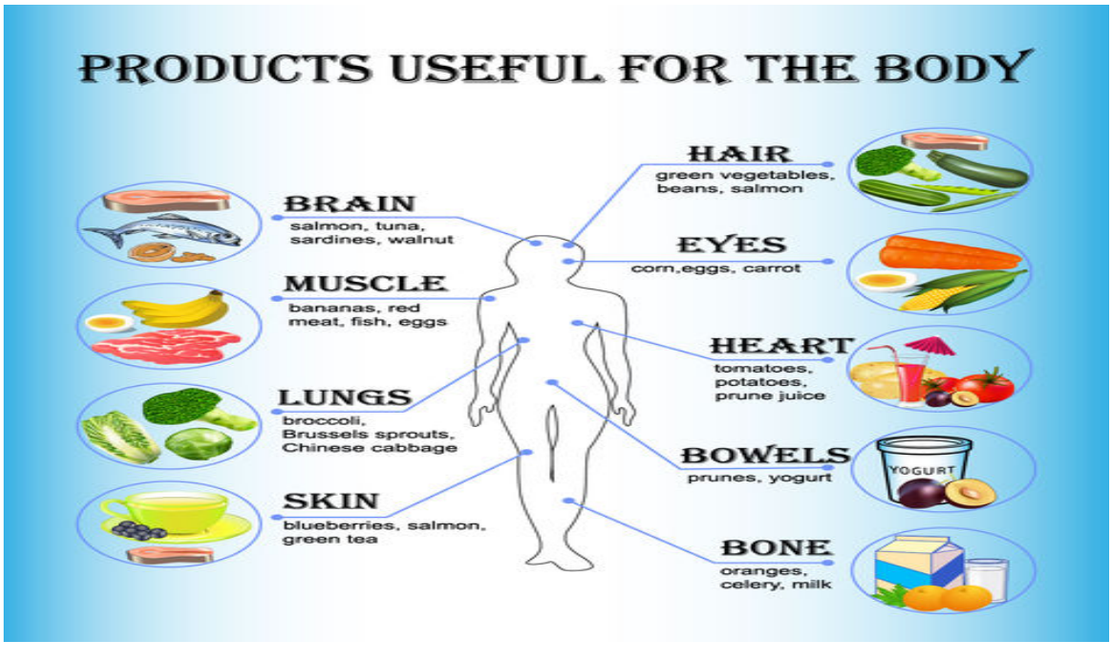
a) a lot of free time
c) some social situations
b) problems with people
d) doing sport

3.What can we do to relax and reduce stress?

a) organize our work/ studies
c) do exercise
b) eat a lot
d) talk to people about problems.

6.Discuss the following questions in groups.

1. When do students suffer from stress?
2. What social occasion can be difficult for shy people?
3. What is a good way of organizing work or studies?
4. Who can people talk to about their problems?
5. What exercises can help reduce stress?



7.Write the words in the correct list.

The long jump, tennis, athletics, handball, fast, three metres, football, the 1,000 metres, basketball, the high jump, hockey, gymnastics, volleyball.

play *do* *jump* *run*

8.Complete the table

Stressful activities	Relaxing activities
doing exams,…	swimming,…

9.Read the following stories and give some advice you think the doctor is going to give Mr. Scott and George Smith.

a) Mr. Scott is a businessman. He has just had a heart attack and is now in hospital. Mr. Stott works very, very hard, both at office and at home. He also worries about his work. He drives a big comfortable car and never takes any exercise. He is married with two lovely children, though he

doesn't see them very often. The last time he had a real holiday was three years ago.

b) George Smith smokes 40 cigarettes a day. He gets up late every morning, and drives to a cafe in the next street. He has a big break fast and takes three spoons of sugar in his tea. Then he drives to the pub, and has 3 or 4 pints of beer before a big lunch. He never has any fruit after his lunch, because he prefers to have cake or sweets. The only exercise he gets is when he walks upstairs for his afternoon sleep. Later, he has a few more pints of beer and a big dinner, and then he watches television till midnight. At 2.00 he goes to bed, and has a few last cigarettes, and goes to sleep with all his windows closed.

Speaking

1. Describe people you know or know about. Say why they are in the condition they are.

Example: My friend John is totally out of condition. But it's not surprising. He never takes exercise and he eats big lunches. His sister Kate is in pretty good shape, though. She does aerobics and plays a lot of volleyball.

2. Make up a dialogue for the following situation.

Someone who is unfit, overweight or feeling generally run down asks a friend for advice.

3.Answer the questions.

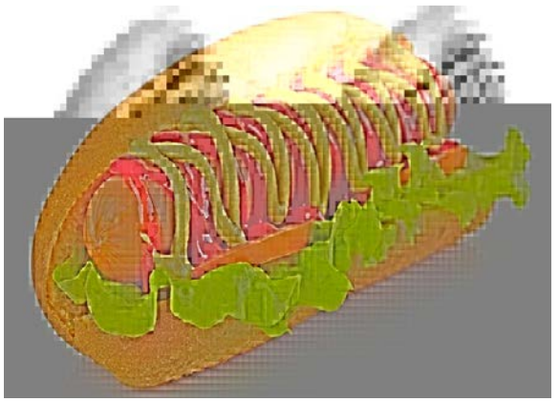
1. Is fitness important?
2. What is good health to you? What do you personally do about your health? How do you maintain health?
3. What exercise do you do every day?
4. Share your idea physical and spiritual beauty.
5. What are some of the ways in which people can get exercise in their

spare time?

6. What is the attitude towards health, fitness and food safety in your country?

7. Express your personal attitude to the problem of healthy life style. Explain how you keep fit.

4.Study the two photographs. In 1.5 minutes be ready to compare and contrast the photographs:



- give a brief description of the photos (action, location)
- say what the pictures have in common
- say in what way the pictures are different

Questionnaire.

1.How healthy and fit are you? Do this polling to find it out, then check your answers.

1.**Do you take some energetic exercise?** **YES NO**

a) Every day

b) Every other day

c) More than once a week

d) Once a week

e) Less

2. If you take regular exercise, in which of the following ways do you take it?

a) aerobics

b) swimming

c) cycling

d) jogging

e) pumping iron

f) dance

g) yoga

h) walking

3. Do you usually take the lift rather than walk up five floors?

4. Have you walked at least one and a half kilometers at any time in the last week?

5. Do you ever get out of breath?

6. Do you eat too much sugary or fatty food?

7. Do you eat fruit every day?

8. Do you drink too much coffee?

9. Do you smoke?

10. Do you fall asleep while watching TV?

Key

1 a + 50; 1 b + 40; 1 c + 30; 1 d + 20; 1 e -10; 2a + 50; 2 b + 40; 2 c + 35; 2 d + 30; 2 e + 25; 2 f + 20; 2 g + 10; 2 h - 10.

3 YES - -10, NO = +10; 4 YES - +10, NO - -10; 5 YES = -10, NO - +10; 6 YES -+20, NO - -20; 7 YES - -20, NO = 0; 8 YES --20, NO = +20; 9 YES = -20, NO - +20; 10YES = -10, NO = 0.

If you scored +100 or more, you are already taking most of the right steps for health and fitness. Well done, and keep up the good work!

If you scored -100 or worse, you seriously need to change your lifestyle. Start today!

If you scored between +100 and -100, have you thought about how you could improve the way you look after yourself? Perhaps more exercise? A more careful diet?

2.The following list includes movements that physically fit people should be able to do. Analyse how well you can do these activities and decide how physically fit you are.

- walk or run a mile in less than 15 minutes;
- bicycle 10 miles
- lift one-half your weight over your head;
- do six push-ups in a row;
- do three chin-ups;
- touch your toes without bending your legs;
- kick your foot above shoulder height;
- sit cross-legged without something to support your back;
- hang from a bar, supporting your own weight for 20 seconds.

Would you describe yourself as:

- very fit;
- quite fit;
- out of condition;
- unfit?

Additional activities

I.Read the article.

a)List three “good” changes and three “bad” changes in British eating habits.

Eating in Britain

Popular English meal

Years ago a Frenchman said that the only way to eat well in Britain was to eat breakfast three times a day. And, let's be honest, most British food was terrible overcooked vegetables, greasy sausages, boring sandwiches. For a lot of people, eating was something you had to do to survive; it was certainly not an enjoyable experience. But things have changed ...

Food has become very important in Britain. TV cooks are more famous than writers and their recipe books are bestsellers. More of us eat out regularly and we can get excellent food in lots of different kinds of restaurants -

French, Indian, Italian, Greek, Thai, Indonesian ... even British! Traditional British pubs serve surprisingly good meals at good prices. British supermarkets are now full of exotic cooking ingredients, sauces, pasta, cheese, fruit and vegetables.

The British love all kinds of 'international food. The most popular is now pizza and, according to a recent survey, 40% of British families have a curry for Sunday lunch, instead of traditional dishes like roast beef. We eat less meat and more fresh fruit and vegetables. A growing number of people are becoming vegetarians. Even children know about sugar-free sweets.

That is the good news. Unfortunately, there is also some bad news. As we. work harder and have less time, we are eating more and more fast food and doing less exercise. For lunch, many of us have a hamburger or sandwich and when we come home in the evening we put our ready-made dinner into the microwave before sitting down in front of the TV. Meals are no longer family occasions.

b)List some differences between eating habits in Britain and your country.

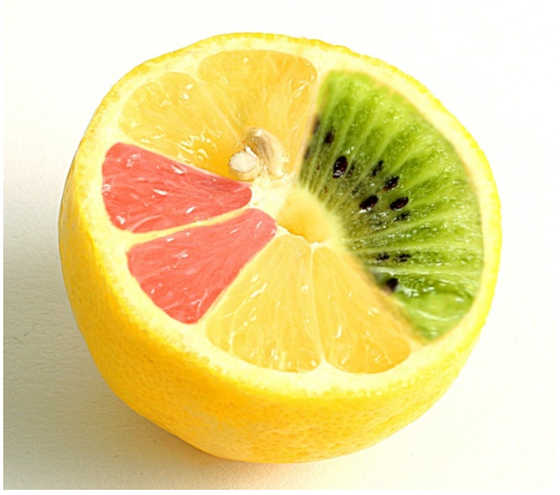
Example Curries are not popular in my country.

c)Write a description of food and eating habits in your country for a foreign visitor.

II. Read the following information and express your attitude to irradiated and genetically engineered food. Think about some pros and cons.

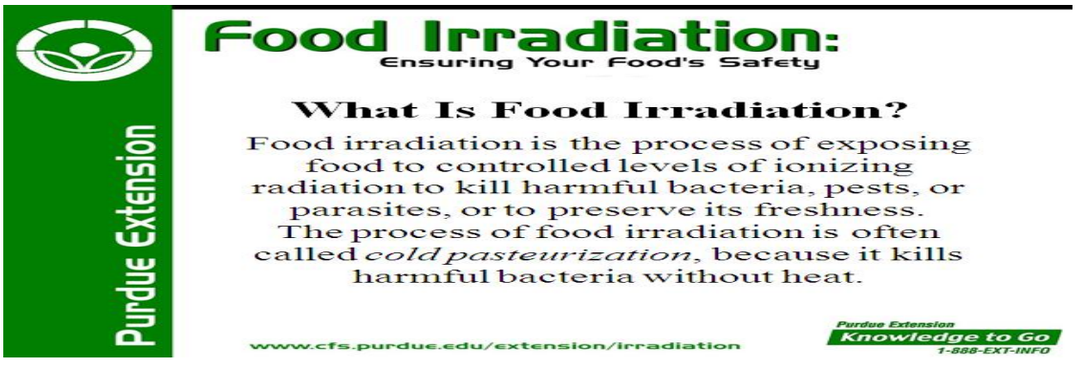
Case study1

Genetic engineering



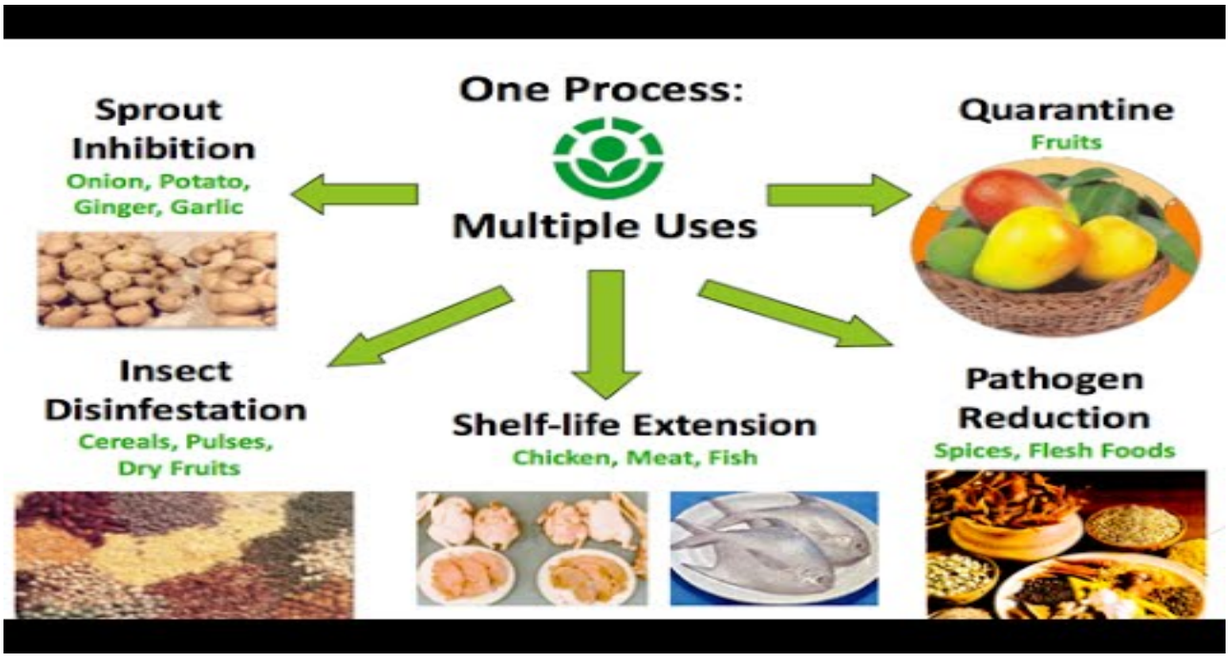
1.While plant biotechnology has been used for centuries to enhance plants, microorganisms and animals for food, only recently it has allowed the transfer of genes from one organism to another. Selective breeding is a much longer and more expensive process than genetic engineering. There is now a widespread controversy over the harmful and beneficial effects of genetic engineering to which, at this time, there seems to be no concrete solution. Scientists have identified a number of ways in which genetically engineered organisms could potentially adversely impact both human health and the environment.

Case study2



Food	Approved Use	Dose
Spices, herbs, seasoning	decontaminates and controls insects and microorganisms	30 kGys Dry
enzyme preparations	controls insects and microorganisms	10 kGys
All Foods	controls insects	1 kGy
Fresh foods	delays maturation	1 kGy
Poultry	controls disease-causing microorganisms	3 kGys
Red meat	spoilage and disease-causing microorganisms	4.5 kGys (fresh) 7 kGys (frozen)

Source: (cfsan.fda.gov)



Irradiated food will almost certainly become a larger and larger part of our supermarket food, although not all foods are suitable for irradiation. It is entirely safe with regard to presence of radioactive particles, as the food is effectively being x-rayed-not having uranium sprinkled on it! The high energy particle passing through the food kill bacteria, enhancing food safety and

extending the shelf life. Scientific studies are conflicting on whether food chemistry changes are of any great significance. Irradiation diminishes some vitamin levels to variable degrees. So long as irradiated food is labeled like all kinds of genetically engineered food , we can chose ourselves whether to buy it. If the government chooses for us by refusing to mandate compulsory labeling, consumers will have to eat it, or turn to de facto standards such as "organic" produce.

Writing

1. Writing

Comment on the following statement:

Chemical preservatives are substances modern society can't do without.

Chemical Preservatives

- The purpose of using a chemical agent as a preservative **is to retard food spoilage** caused by microorganisms the WHO has estimated that 20% of the world's food is lost by this type of spoilage.
- Partial prevention of this spoilage can be achieved through the use of refrigeration, drying, freezing and fermentation.
- The use of chemical additives or preservatives will prolong the shelf life of the food even further

Chemical Preservatives

4. Antioxidants
   - ❖ Butylated Hydroxy Anisole (BHA)
   - ❖ Butylated Hydroxy Toluence (BHT)
   - ❖ Propyl Gallate
   - ❖ Natural/Synthetic Tocophelos (Vitamin E)
   - ❖ Ascorbic Acid (vitamin C) and
   - ❖ Lecithin.
5. Colour additives
6. Flavour additives
7. Sweeteners
8. Emulsifiers

What is your opinion? Do you agree with this statement? Write 200-250 words.

Use the following plan:

• make an introduction (state the problem)

• express your personal opinion and give 2-3 reasons for your opinion

• express an opposing opinion and give 1-2 reasons for this opposing opinion

• explain why you don't agree with the opposing opinion

• make a conclusion restating your position

2.Project: "How to start living a healthier lifestyle?" Decide which project is the most inspiring and realistic one.

Here are a few ideas for you

http://www.helpguide.org/articles/healthy-eating/healthy-eating.htm

http://www.nutrition.org.uk/healthyliving/healthyeating/8tips.html

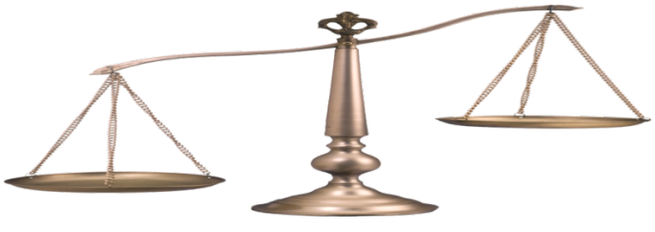
Focus on Grammar

Образование множественного числа в английском языке

Способ образования	Примеры
1. Большинство существительных + **-s**	a cat – cats a table – tables a book – books
2. Слова, заканчивающиеся на **-s, -ss, -sh, -ch, -tch, -z, -x** + **-es**	a bus – buses a glass – glasses a brush – brushes a torch – torches a match – matches a buzz – buzzes a box — boxes
3. Слова, заканчивающиеся на **-y** –> **-i** + **-es**	a family – families an army – armies a lady – ladies
4. Слова, заканчивающиеся на **-ay, -ey, -oy** + **-s**	a day – days a key – keys a boy — boys

But:

5. Слова, заканчивающиеся на **-o** + **-es**	a hero – heroes a potato – potatoes a torpedo – torpedoes	a piano – pianos a kilo – kilos a photo – photos a video – videos
6. Слова, заканчивающиеся на **-f** –> **-v** + **-es**	a wife – wives a knife – knives a life – lives a leaf – leaves a thief – thieves a half – halves	**But:** chiefs, roofs, safes handkerchiefs



ONLY PLURAL	ONLY SINGULAR
trousers, shorts, tights, jeans	news, billiards
clothes	measles, mumps
scissors	information
forceps	hair
tongs	money
scales	advice
glasses	knowledge
spectacles	progress
goods	fruit
remains	statistics
belongings	mathematics
riches	physics
wages	phonetics
	linguistics
	economics
	politics
	gymnastics
	acoustics
	athletics, education
	luggage, furniture
	sugar, love, music

forceps a metal instrument with two handles used in medical operations for picking up, pulling, and holding things
tongs a device used for picking up objects, consisting of two long pieces joined at one end and pressed together at the other end in order to hold an object between them
measles an infectious disease that produces small, red spots all over the body
mumps an infectious disease that causes painful swelling in the neck and slight fever

IRREGULAR NOUNS

Some nouns have the same singular and plural form.	**Некоторые существительные имеют одну и ту же форму ед. и мн. числа.**
one sheep – two sheep;	одна овца – две овцы;
a deer – two deer;	один олень – два оленя;
a swine – several swine;	свинья – несколько свиней;
a fish – two fish;	рыба – две рыбы;
a dozen – two dozen;	дюжина – две дюжины;
an aircraft – two aircraft;	воздушное судно – два воздушных судна;
a means – means;	средство – средства;

a series – two series;	серия – две серии;
a species – different species;	вид, род – разные виды;
a headquarters – headquarters;	штаб – штабы;

Some nouns form their plural not by adding the ending s/es, but by changing the letters in the root of the word.	**Некоторые существительные образуют множественное число не прибавлением окончания s/es, а изменением букв в корне слова.**
man – men;	мужчина – мужчины;
woman – women;	женщина – женщины;
child – children;	ребенок – дети;
ox – oxen;	бык – быки, рогатый скот;
mouse – mice;	мышь – мыши;
louse – lice;	вошь – вши;
foot – feet;	ступня – ступни;
tooth – teeth;	зуб – зубы;
goose – geese.	гусь – гуси.

Latin and Greek plural forms

Some nouns of Latin or Greek origin have kept their Latin or Greek plural endings. The plural ending "es" as in the word "analyses" is pronounced [i:z]; the ending "i" as in the word "alumni" is pronounced [ai]; the ending "ae" as in "vertebrae" is pronounced [i:].	Некоторые существительные латинского или греческого происхождения сохранили свои латинские или греческие окончания мн. числа. Напр.окончание мн. числа "es" как в слове "analyses" произносится [i:z]; окончание "i" как в слове "alumni" произносится [ai]; окончание "ae" как в слове "vertebrae" произносится [i:].

a stimulus – stimuli	analysis-analyses
a datum – data	hypothesis – hypotheses
phenomenon -phenomena	synopsis – synopses
a bacterium – bacteria	basis- bases
criterion – criteria	vertebra – vertebra
genesis – geneses	

Task: Pronounce and translate the nouns below, write their plural forms (if it's possible) and pronounce them.

Bone,skeleton,body,pair,backbone,knowledge,naturalist,animal,class,fruit,column,framework,medicine,head, trunk, limb, skull, brain, jaw, memorandum, analysis, bacterium, woman, half, glass, video, brush, mumps, rib, breastbone, cage, chest, heart, lung, collarbone, extremity, shoulder blade, means, shoulder, hair, elbow, arm, wrist, hand, palm, thumb, finger, foot, child, species, information, education.

Суффиксы существительных

-ment: argument, document;	аргумент, документ;
-ness: kindness, happiness;	доброта, счастье;
-ion: station, illusion;	станция, иллюзия;
-er, -or: worker, doctor;	работник, доктор;
-ism: capitalism, idealism;	капитализм, идеализм;
-ist: idealist, psychologist;	идеалист, психолог;
-age: courage, passage;	смелость, проход;
-ty, -ity: safety, clarity;	безопасность, ясность;
-ship: friendship, ownership;	дружба, владение;
-ance, -ence: distance, absence;	расстояние, отсутствие;
-ency: agency, urgency;	агентство, срочность;
-ure: picture, treasure.	картина, сокровище.

Additional information

Read proverbs, sayings and quotations below, learn by heart those you like best.

Proverbs and sayings

Early to bed, early to rise makes a man healthy, wealthy, and wise.

An apple a day keeps a doctor away.

When the wine is in the wise is out.

One man’s meat is another man’s poison.

Eat at pleasure drink with measure.

He who takes medicine and neglects to diet wastes the skill of his doctors. (Chinese Proverb)

A good laugh and a long sleep are the best cures in the doctor’s book. (Irish Proverb)

Quotations

Bad men live that they may eat and drink, good men eat and drink that they may live. **Socrates, Greece.**

Happiness is good health and a bad memory. **Ingrid Bergman**

"The greatest wealth is health." **Virgil**

"Happiness lies, first of all, in health." **George William Curtis**

"A vigorous five-mile walk will do more good for an unhappy but otherwise healthy adult than all the medicine and psychology in the world." **Paul Dudley White**

"Health and intellect are the two blessings of life." **Menander**

"Lack of activity destroys the good condition of every human being, while movement and methodical physical exercise save it and preserve it." **Plato**

"To insure good health: eat lightly, breathe deeply, live moderately, cultivate cheerfulness, and maintain an interest in life." **William Londen**

"The human body has been designed to resist an infinite number of changes and attacks brought about by its environment. The secret of good health lies in successful adjustment to changing stresses on the body." **Harry J. Johnson**

"Prevention is better than cure." **Desiderius Erasmus**

"Take care of your body. It's the only place you have to live." **Jim Rohn**

"People who laugh actually live longer than those who don't laugh. Few persons realize that health actually varies according to the amount of laughter." **James J. Walsh**

"The reason I exercise is for the quality of life I enjoy." **Kenneth H. Cooper**

"The groundwork for all happiness is good health." **Leigh Hunt**

Idioms

as right as a rain/as sound as a bell/as merry as a cricket/safe and sound

в добром здравии

to take one's own medicine принять свое же лекарство

to swallow the pill проглотить пилюлю

Unit 3

Medical practitioners

Useful links:

http://dictionary.cambridge.org/ru

http://dictionary.cambridge.org/dictionary/english/

https://www.youtube.com/watch?v=h8aA2C_sLRM

Practitioners

In Britain, doctors, also known as medical practitioners, must be qualified: have a university degree in medicine. They must also be registered-included in the General Medical Council's list, or register-in order to practise. A doctor who treats patients, as opposed to one who only does research, is called clinician. A doctor who provides primary care for patients is known as general practitioner (GP), or family doctor. GP's usually work in a group practice. Larger group practices work in a building called a health centre.

Specialties

Specialist doctors, for example, paediatricians, generally work in hospitals. However,those who work outside the NHS(National Health System),providing private health care,may have consulting rooms outside a hospital. The two main branches of medicine are surgery and internal medicine, and the doctors who practice these branches are called surgeons and physicians.

A cardiologist specializes in diseases of the heart and circulation, or cardiology. A geriatrician is a specialist in diseases of elderly patients, or geriatrics. An anaesthetist specialises in anaesthetics. Other specialties include allergists, dermatologists, gastroenterologists, gynaecologists

(gynecologists), internists, obstetricians, ophthalmologists , osteopaths, paediatricians (pediatricians),podiatrists psychiatrists, urologists etc.

Choosing a specialty

Vivian Mathews has just graduated from medical school and is talking about her future.

I haven't decided what to specialize in yet. I need more experience before I decide, but I'm quite attracted to the idea of paediatrics because I like working with children. I'd certainly prefer to work with children than, say, elderly patients-so I don't fancy geriatrics. I was never interested in detailed anatomy, so the surgical specialties like neurosurgery don't really appeal. You have to be good with your hands, which I don't is a problem for me-I've assisted at the operations several times, and I've even done some minor ops by myself-but surgeons have to be able to do the same thing again and again without getting bored. I don't think that would be a problem for me, but they need to make decisions fast and I'm not too good at that. I like to have time to think, which means surgery's probably not right for me.

Vocabulary

clinician /klɪˈnɪʃ.ən/ 1) клиницист 2) врач-консультант 3) практикующий врач

general practitioner(GP) /ˌdʒen.ər.əl /prækˈtɪʃ.ən.ər/ врач о́бщей пра́ктики, терапе́вт

surgeon /ˈsɜː.dʒən/ хирург

physician /fɪˈzɪʃ.ən/ врач,доктор

geriatrician /ˌdʒer.i.əˈtrɪʃ.ən/ гериатр

anaesthetist /əˈniːs.θə.tɪst/ анастезилог

allergist /ˈæl.ə.dʒist/аллерголог

cardiologist /ˌkɑː.diˈɒl.ə.dʒɪst/ кардиолог

dermatologist /ˌdɜː.məˈtɒl.ə.dʒɪst/ дерматолог

gastroenterologist /ˌgæs.trəʊˌen.təˈrɒl.ə.dʒɪst/ гпстороэнтеролог

gynaecologist (gynecologist) /ˌgaɪ.nəˈkɒl.ə.dʒɪst/ гинеколог

internist /ˈɪn.tɜː.nɪst/ терапевт

obstetrician /ˌɒb.stəˈtrɪʃ.ən/ акушер

ophthalmologist /ˌɒf.θælˈmɒl.ə.dʒɪst/ офтальмолог

osteopath /ˈɒs.ti.ə.pæθ/ остеопат

paediatrician (pediatrician) /ˌpiː.di.əˈtrɪʃ.ən/ педиатр

podiatrist /pəˈdaɪ.ə.trɪst/ врач-ортопед, специализирующийся на лечении заболеваний стоп

psychiatrist /saɪˈkaɪə.trɪst/ психиатр

urologist /jʊəˈrɒl.ə.dʒɪst/ уролог

haematologist /ˌhiː.məˈtɒl.ə.dʒɪst/ гематолог

rheumatologist /ruː.məˈtɒl.ə.dʒist/ ревматолог

roentgenologist./rɒntgəʹnɒlədʒɪst/ рентгенолог

Focus on vocabulary

1.Write sentences to describe the work of the specialist in each branch of medicine.

1.dermatology /ˌdɜː.məˈtɒl.ə.dʒi/ *A dermatologist specializes in diseases of the skin.*

2.rheumatology /ruː.məˈtɒl.ə.dʒi/

3.traumatology /trɔːˈ məˈtɒl.ə.dʒi/

4.paediatrics /ˌpiː.diːˈæt.rɪks/

5. obstetrics /ɒbˈstet.rɪks/

2.Complete the table with the words from the text and their related forms.

specialise		
practise		
consult		
assist		
graduate		
qualify	x	

3.Fill in prepositions that can be used to make word combinations with the words below. Then use the correct forms to complete the sentences.

good *interested* *specialise* *work*

1.A pathologist _____ _____diagnosing disease through examining cells and tissue.

2.A paediatrician must enjoy _____ _____ children.

3.An oncologist is _____ _____ the diagnosis and treatment cancer.

4.A psychiatrist must be _____ _____ counseling.

5.A neurosurgeon must be _____ _____ her hands.

4.Make word combinations using a words from each column. Two words can be used twice.

consulting	centre
general	practice
group	specialties
health	medicine
internal	practitioner
surgical	room

5.Name the specialist that a person would go to for the treatment of…

1.skin rash that won’t go away.
2.a heart condition.
3.chronic depression.
4.constant sneezing in spring or summer.
5.a pregnancy.
6.frequent back pain.
7.a painful ingrown toenail.
8.blurry vision.

6. Match the specialty to its definition

obstetrician	a doctor who studies and treats diseases of the nerves
hematologist	a doctor who specializes in eye diseases
ultrasound specialist	a doctor who specializes in tumors, including cancer
venereologist	a doctor who specializes in performing plastic surgery
urologist	a surgeon who specializes in operating on organs inside the chest, including the heart and lungs
thoracic surgeon	a doctor who specializes in treating diseases of the parts of the body that produce and carry urine
plastic surgeon	a doctor who specializes in pregnancy and childbirth
orthopedic surgeon	a doctor who specializes in identifying and treating diseases that do not need surgery
neurologic surgeon	a doctor who specializes in women's reproductive systems
radiologist	a doctor who specializes in the care and treatment of old people
psychiatrist	a doctor who specializes in treating conditions that do not need a hospital visit
pediatrician	a physician who works at an

	emergency department to care for acutely ill patients. He/she specializes in in advanced (высокотехнологичный)cardiac life support, trauma care such as fractures and soft tissue injuries, and management of other life-threatening situations.
otolaryngologist	a doctor who specializes in treating skin diseases
ophthalmologist	a doctor who specializes in diagnosing and treating diseases or conditions of the heart and blood vessels—the cardiovascular system.
oncologist	a doctor who specializes in pain prevention during surgery
neurologist	specializes in determining food and environmental allergies
internist	a doctor who specializes in blood and the body tissues that make it
gynecologist	a healthcare professional, who specializes in the use of ultrasonic imaging devices to produce diagnostic images, scans, and videos
geriatrician	a doctor who specializes in treating diseases that are spread through sexual activity (venereal /vəˈnɪə.ri.əl/ diseases)
general practitioner a GP	a doctor who specializes in performing medical orthopedic operations
emergency physician	a doctor who specializes in performing operations involving the brain or nerves
dermatologist	a doctor who specializes in imaging tests

cardiologist	a doctor who specializes in psychiatry /saɪˈkaɪə.tri/ (the part of medicine that studies mental illness)
anesthesiologist	a doctor who specializes in diseases of the ear and throat
allergist	a doctor who specializes in treating babies and children

7.Learn the medical specialties below, use the link to make sure you pronounce them correctly.

https://www.youtube.com/watch?v=jrovC9x5awU

Medical Specialties /ˈspeʃ.əl.tiz/

allergist specializes in determining food and environmental allergies

anesthesiologist /ˌæn.əsˌθiː.ziˈɒl.ə.dʒɪst/ specializes in pain prevention during surgery

cardiologist heart specialist

dermatologist skin specialist

emergency medicine /ɪˈmɜː.dʒən.si/ /ˈmed.sən/ or /ˈmed.ɪ.sən/ неотложная медицинская помощь

family physician a doctor who provides general medical treatment for people who live in a particular area семейный врач

general practitioner a GP (= a doctor) treats the people who live in the local area, he treats conditions that do not need a hospital visit участковый терапевт, врач общей практики, основной лечащий врач

geriatrics /ˌdʒer.iˈæt.rɪks/ the care and treatment of old people

gynecologist /ˌgɑɪ·nəˈkɑl·ə·dʒəst/ specializes in women's needs

internist

/ˈɪn.tɜː.nɪst/ a doctor who specializes in identifying and treating diseases that do not need surgery (= cutting into the body) врач по внутренним болезням,врач-терапевт, интернист

neurologist a doctor who studies and treats diseases of the nerves

obstetrician specialist for pregnant women

oncologist tumour specialist, including cancer

ophthalmologist /ˌɒf.θælˈmɒl.ə.dʒɪst/ specializes in eye diseases

otolaryngologist /ˌəʊ.təʊ.lær.ɪŋˈgɒl.ə.dʒɪst/

a doctor who specializes in diseases of the ear and throat

pathologist /pəˈθɒl.ə.dʒɪst/ an expert in the study of diseases, especially someone who examines a dead person's body and cuts it open to discover how they died

pediatrician /ˌpiː.di.əˈtrɪʃ.ən/ specialist for babies and children

preventive medicine профилактическая медицина

psychiatrist /saɪˈkaɪə.trɪst/ a doctor who is also trained in psychiatry (psychotherapist /ˌsaɪ.kəˈθer.ə.pɪst/ a specialist who practices treatment of mental illness by discussing someone's problems with them, instead of using drugs or operations -психотерапевт)

radiologist /ˌreɪ.diˈɒl.ə.dʒɪst/ specializes in imaging tests

surgeon a doctor who is specially trained to perform medical operations

general surgeon /ˈdʒen.ər.əl/ /ˈsɜː.dʒən/ специалист по общей хирургии

neurologic surgeon /ˌnjʊə.rəˈlɒdʒ.ɪk/ /ˈsɜː.dʒən/ **= neurosurgeon** /ˈnjʊə.rəʊˌsɜː.dʒən/ a doctor who performs operations involving the brain or nerves

orthopedic surgeon a doctor who specializes in performing medical orthopedic operations

plastic surgeon a doctor who performs plastic surgery

thoracic surgeon - торакальный хирург – специалист по хирургии грудной клетки и средостения) **thoracic surgery** (торакальная хирургия- хирургия органов грудной клетки)

urologist /jʊəˈrɒl.ə.dʒɪst/ a doctor who specializes in treating diseases of the parts of the body that produce and carry urine

Additional Medical Specialties

venereologist /vəˌnɪə.riˈɒl.ə.dʒist/ a doctor who specializes in treating diseases that are spread through sexual activity (venereal /vəˈnɪə.ri.əl/ diseases)

ultrasound specialist =diagnostic medical sonographer /səʊ.’nɒˈg ərfə/= **ultrasonographer** a healthcare professional, who specialise in the use of ultrasonic imaging devices to produce diagnostic images, scans, and videos. A sonograph /ˈsəʊ.nə.grɑːf/ is an image produced using sound waves

hematologist /ˌhiː.məˈtɒl.ə.dʒist/ a doctor who specializes in blood and the body tissues that make it

Speaking

Study the two photographs. In 1.5 minutes be ready to compare and contrast the photographs:

• give a brief description of the photos (action, location)

• say what the pictures have in common

• say in what way the pictures are different

Unit 4

Talking about symptoms

Learn the topical vocabulary:

What are your symptoms? Какие у вас симптомы?

I've got…у меня

a cold простуда

a cough /kɒf/ кашель

a sore throat /sɔːr/ /θrəʊt/ больное горло

a stomach ache /ˈstʌmək/ /eɪk/ боль в желудке

a head ache головная боль

chest pains боль в груди

earache боль в ухе

a pain in my side боль в боку

an itchy rash /ræʃ/ on my…/**spots on my**…чешущаяся сыпь на

a bruise on my…кровоподтек,синяк на…

a black eye синяк на глазу

a lump on my…опухоль на

indigestion /ˌɪndɪˈdʒestʃən/ несварение желудка

sickness and diarrhoea /ˌdaɪəˈrɪə/ /an upset stomach тошнота и диарея

sunburn /ˈsʌnbɜːn/ солнечный ожог

swollen,painful joints опухшие,болезненные суставы

blister/ˈblɪstər/ волдырь

running nose насморк

I feel…

sick себя нездоровым **dizzy** головокружение **breathless** затрудненное дыхание **shivery** дрожь,озноб

faint /feɪnt/ я близок к потере сознания

I am…

depressed

constipated страдаю запором

tired

my leg/arm/foot/right ankle hurts

I've lost my appetite/ voice

I **can't sleep/walk/see very well**

What do doctors do?

Where exactly does it hurt?Где именно вы испытываете боль?

Let me take your temperature Давайте я измерю темпетатуру

Let me take your blood pressure Давайте я измерю вам давление

Let me weigh /wei/ and measure you Давайте я вас взвешу и измеряю ваш рост

Let me listen to your chest Позвольте мне прослушать сердце и легкие

I am going to send you to the hospital for further tests я намерен послать вас в больницу для проведения дальнейших анализов

What's the diagnosis?

You've got…

Flu грипп

Chickenpox /ˈtʃɪk.ɪn.pɒks/ ветрянка

Mumps свинка, эпидемический паротит

Pneumonia /njuːˈməʊ.ni.ə/ пневмония

Rheumatism /ˈruː.mə.tɪ.zəm/

An ulcer /ˈʌlsə/ язва

A virus/a bug инфекция, вирус

You have …

Broken your wrist поломали запястье

Sprained/dislocated your ankle растянули /вывихнули голеностопный сустав

You are…

pregnant беременны

hypochondriac /ˌhaɪpəˈkɒndriæk/ страдаете ипохондрией (ипохондрия —невротическое расстройство, при котором основным симптомом является чрезмерная озабоченность собственным здоровьем в целом, или функционированием какого-либо органа)

He died of…(он умер от)

lung cancer рака легкого

heart attack сердечного приступа

brain haemorrhage /ˈhemərɪdʒ/ кровоизлияния в мозг

AIDS / eɪdz/acquired immune deficiency syndrome СПИДа

With a partner act out the roles below.

1.

Doctor: Ask him/her if the patient has health insurance (мед.страховка). **Patient's answer.**

Ask the patient if he/she is taking any medication. **Patient's answer.**

If he/she had any operations before. **Patient's answer.**

If the patient is allergic to anything. **Patient's answer.**

Ask the patient about his/her symptoms. **Patient:** Describe your symptoms.

Doctor: Examine the patient.

Tell the patient about his/her initial diagnose (*I think, you've got flu,pneumonia,a cold…/*

You have broken your wrist…/ You are pregnant)

Tell him/her you are going to send the patient to the hospital for further tests treatment or surgery **OR**

Tell him/her you are going to send the patient home to be on the sick leave (на больничном) for …days.

Prescribe some medication.

Unit 5

Parts of the human body

https://learnenglish.britishcouncil.org/en/magazine/parts-body

https://www.youtube.com/watch?v=cCbi3hMn2To

https://www.youtube.com/watch?v=MAXhg3B5xMQ

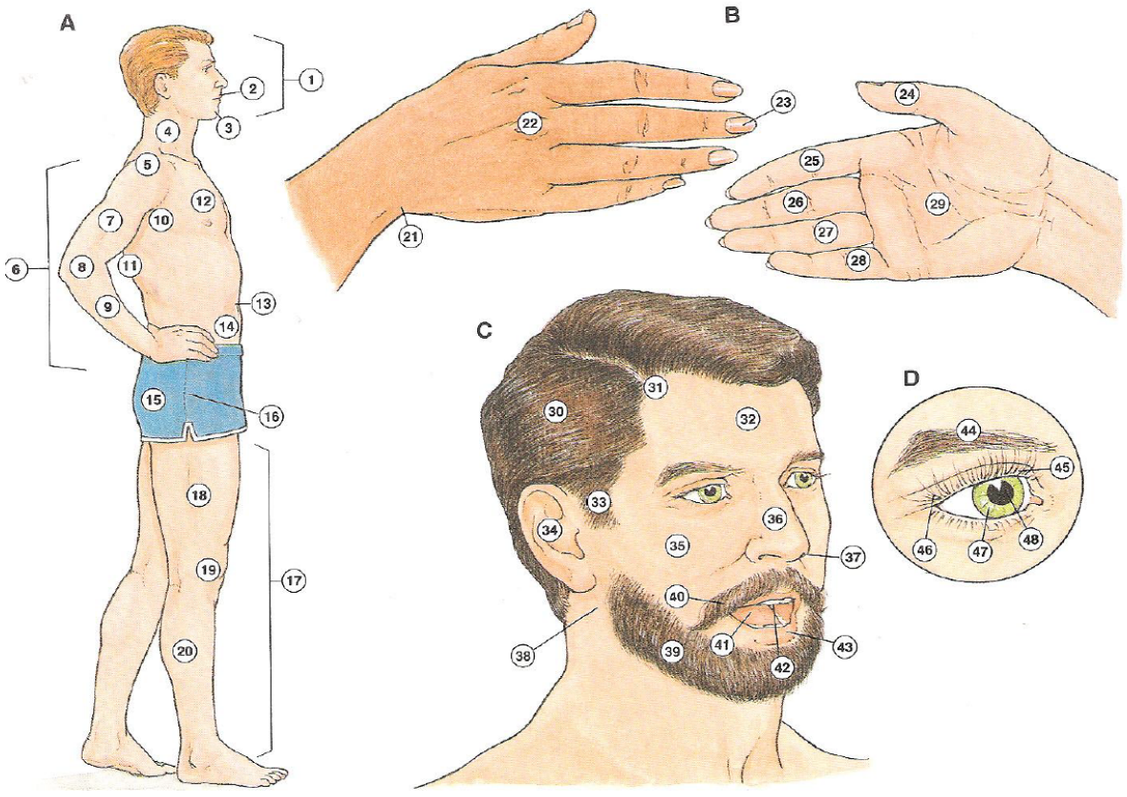
Pre-reading

1. What parts of the human body can you say in English?

2.Study the list of words and the pictures below for 3 minutes,how many other parts of the body can you name?

3. You've got another 5 minutes to look through the pictures and words. Now hide the list of the body parts and label the pictures with as many words as you can.

4 The Human Body



A. The Body

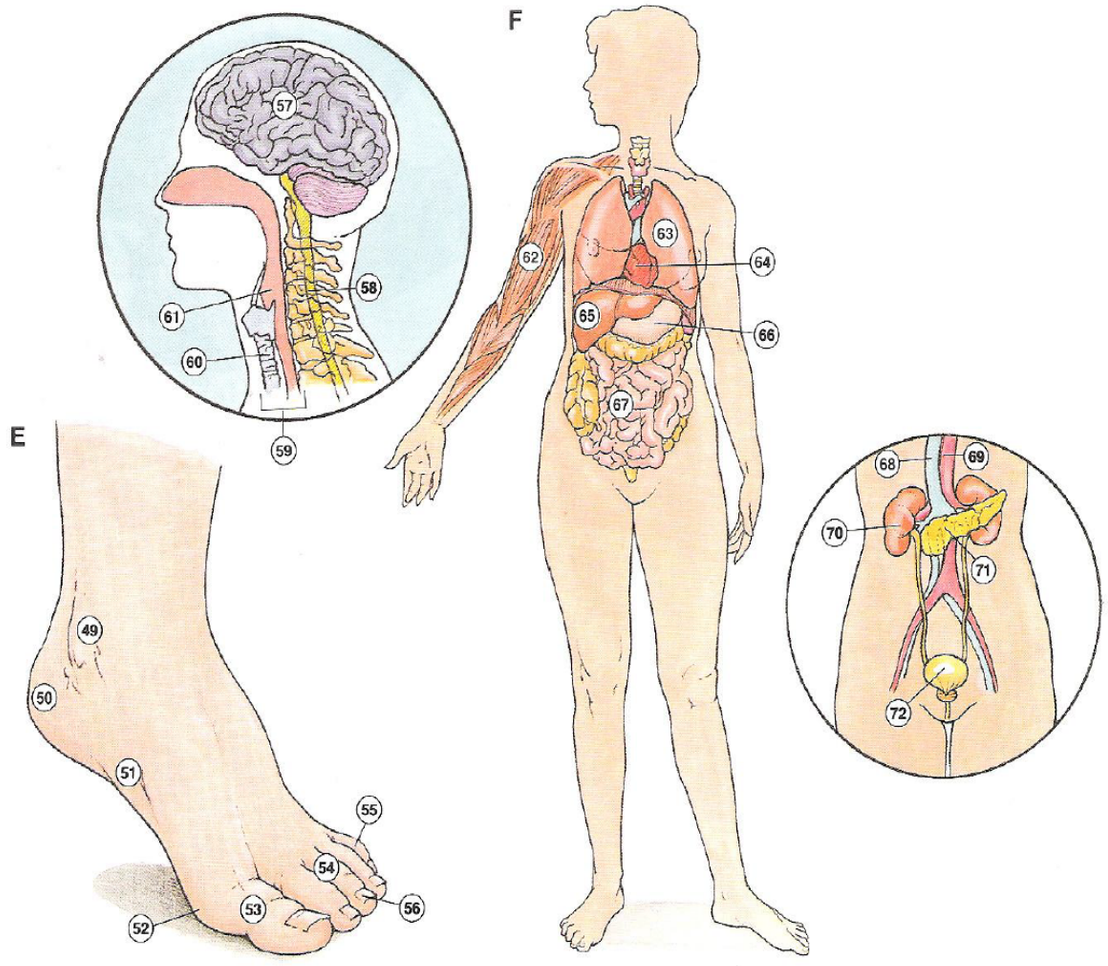
1. face
2. mouth
3. chin
4. neck
5. shoulder
6. arm
7. upper arm
8. elbow
9. forearm
10. armpit
11. back
12. chest
13. waist
14. abdomen
15. buttocks
16. hip
17. leg
18. thigh
19. knee
20. calf

B. The Hand

21. wrist
22. knuckle
23. fingernail
24. thumb
25. (index) finger
26. middle finger
27. ring finger
28. little finger
29. palm

C. The Head

30. hair
31. part
32. forehead
33. sideburn
34. ear
35. cheek
36. nose
37. nostril
38. jaw
39. beard
40. mustache
41. tongue
42. tooth
43. lip



D. The Eye

44. eyebrow
45. eyelid
46. eyelashes
47. iris
48. pupil

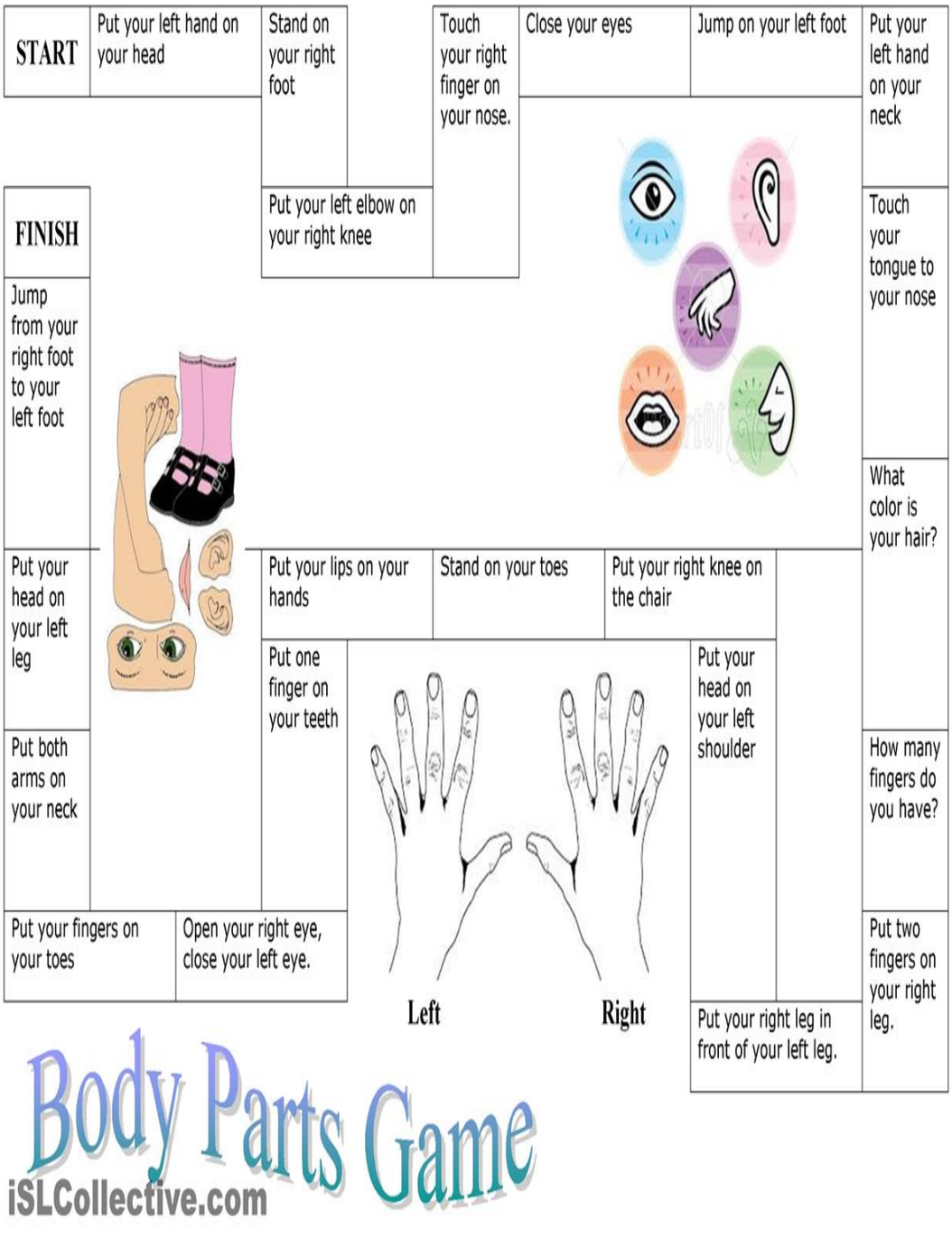
E. The Foot

49. ankle
50. heel
51. instep
52. ball
53. big toe
54. toe
55. little toe
56. toenail

F. The Internal Organs

57. brain
58. spinal cord
59. throat
60. windpipe
61. esophagus
62. muscle
63. lung
64. heart
65. liver
66. stomach
67. intestines
68. vein
69. artery
70. kidney
71. pancreas
72. bladder

4. Play the body parts game with your group mates.



Reading

I. Read the text and do the tasks below.

The human body has many parts. People have two arms and two legs. We have two hands and two feet. We have five ***fingers*** on each hand. We have five toes on each foot.

We each have two eyes on our ***face***. We see with our eyes. We each have two ears. We hear with our ears. We each have one nose on our face. We smell with our nose. We each have one ***tongue***. We taste with our tongue. We each have one brain. We think with our brain. We each have two ***lungs*** in our chest. We breathe with our lungs.

Humans can do many things. People can walk. We use our legs and feet to walk. We can run. Running is faster than walking. We use our legs and feet to run. We can climb. We use our arms, hands, legs and feet to ***climb***. We can climb up trees or climb up ladders. We can eat and drink. We use our mouth and teeth to eat. We eat meat, fruit, vegetables, and other foods. We can drink lots of things, but we drink water the most. We also use our mouth and teeth to talk.

Questions:

1) Each human has five…

A. feet on each leg.
B. toes on each foot.
C. hands on each arm.
D. Both A and B are correct.

2) How many ears does each human have?

A. 1
B. 2
C. 5
D. 10

3) What do we smell with?

A. Our toes
B. Our nose
C. Our lungs
D. Our fingers

4) We use our legs to…

A. run.
B. walk.
C. climb.
D. All of the above

5) What do humans eat?

A. Meat
B. Water
C. Ladders
D. Coffee

Vocabulary:

1) ***Fingers*** are part of your…

A. leg
B. foot
C. nose
D. hand

2) Your ***face*** has your…

A. eyes, nose and mouth.
B. arms, legs and feet.
C. fingers and toes.
D. feet and toes.

3) Your ***tongue*** is part of your…

A. ear.
B. nose.
C. chest.
D. mouth.

4) You use your ***lungs*** to…

A. eat.
B. hear.
C. smell.
D. breathe.

5) To ***climb*** is to…

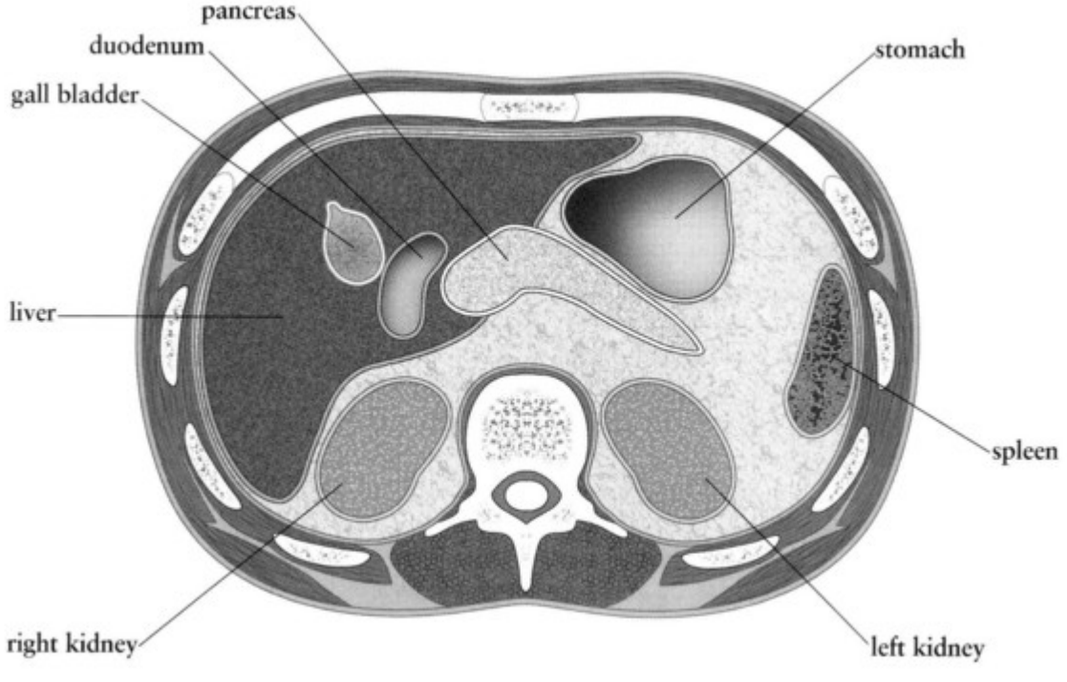
A. go in.
B. go up.
C. taste food.
D. drink water.

II. Read the text and do the tasks below.

Inside the human body

The abdomen

The main organs of the body have ordinary English names and doctors use them. But when adjective is needed they often use an anatomical word. For example, we can say disease of the liver or hepatic disease. When doctors talk about the main parts of the digestive system, they use the words bowel or intestine: the small intestine or the small bowel, the large intestine or the large bowel. When speaking to patients, doctors may refer to the anus and rectum as the back passage.



The chest

The chest (thorax) contains the organs of respiration and the heart.The main parts of the respiratory system are the airways and the lungs.The left lung is divided into two lobes, and the right into three. The airways consist of the larynx, the trachea (or windpipe),the right and left

bronchus, and the bronchioles. The chest is separated from the abdomen by the diaphragm.

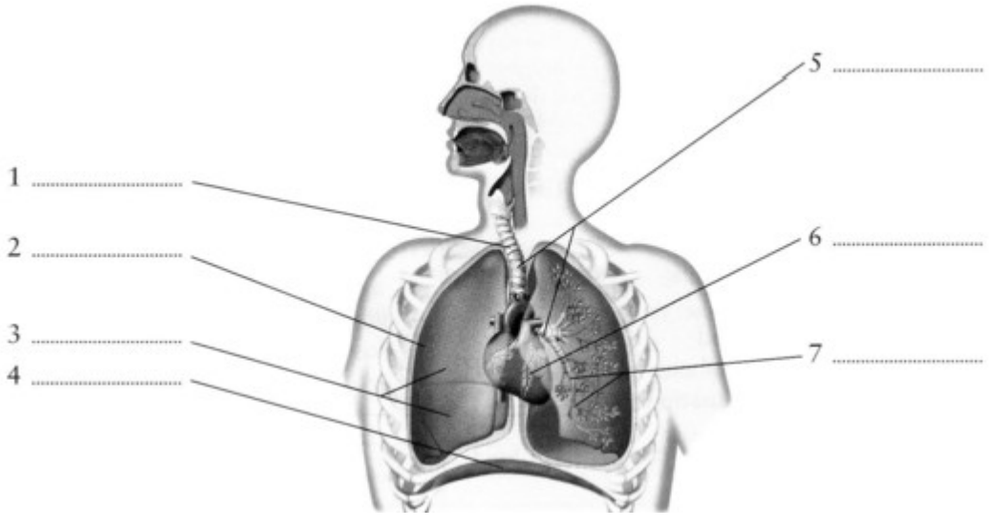
The pelvis

A doctor is explaining the function of the bladder to a patient.

The bladder is situated in the pelvis, as you know, and is connected to each kidney by a long tube called the ureter-one on each side. The ureters carry the urine from the kidneys to the bladder, where it is stored until you decide to empty your bladder. When that happens, the urine passes down another tube, called urethra, to the outside.

1.Label the diagram using words below.

Diaphragm, lung, lobes, airways, windpipe , bronchioles, heart



2.Match the conditions (1-8) with the organs(a-h), using your medical knowledge.

1.hepatitis

2.pneumonia

3.nephritis

4.gastric ulcer

5.cystitis

6.angina pectoris

7.cholecystitis

8.ulcerative colitis

a.bladder

b.gall bladder

c.heart

d.kidney

e.liver

f.lung

g.stomach

h.large bowel

3.Complete the textbook extract.

Examination of the abdomen

To examine the patient for enlarged abdominal 1_____,first feel for he 2_____ and the 3_____ on the right side. To do this,ask the patient to take a deep breath,while pressing with the fingers upwards and inwards. Next,feel for the right 4_____ and then cross over to the other side for the left 5_____. Still on the left side,palpate for an enlarged 6_____. Finally,moving to the lower abdomen,feel for the 8_____ which is only felt if it is full.

III. Read the article. Next go to the task below and do the activity.

Parts of the body

There are 50 trillion cells in the human body, 206 bones, 32 teeth, and more than five and a half litres of blood. There is also at least one part of the body for every letter of the English alphabet. Here are 25 of them. Can you guess what they are?

A: This is a 10cm long piece of the intestines and nobody can really work out what it's for. It's probably a leftover from the days when our ancestors were vegetarian, and many people have it removed when it becomes infected.

B: A muscular bag which expands to collect urine from the kidneys. It can hold as much as half a litre of it.

C: The part of a person's face below their mouth. Some people have clefts in theirs, others let hair grow on them.

D: The muscle that separates the chest from the lower part of the body.

E: In sleep, it is covered by a lid. Close one and you wink, close two and you blink.

F: Any of the long, thin, separate parts of the hand, especially those that are not thumbs. They help us read if we cannot see, and help us speak when we cannot hear.

G: either of the two areas of firm pink flesh inside the mouth that cover the bones into which the teeth are fixed.

H: The size of a fist, it beats 70 times a minute without stopping for more than 60 years.

I: It opens and closes in reaction to light and gives colour to the eye. It is now scanned to check people's identity.

J: The bone that opens and closes the mouth and holds your teeth.

K: The middle joint of the leg that allows the leg to bend. Bend it and you get shorter, get down on it and you show respect. Footballers and skiers put it under great stress.

L: Some people fill theirs with smoke, although they are supposed to be used for getting oxygen to the blood and removing carbon dioxide. The

right one is bigger than the left one. They have enough airways to cover a tennis court.

M: There are 650 of these and we move when they get shorter. They often work in pairs. Some you can't control at all.

N: The 'wires' which pass messages to and from the brain to all parts of the body by using electrical pulses and chemical changes. If the blood to them gets cut off, they get irritated and the result is 'pins and needles'. There are over 70km of them in the skin alone.

O: Either of the pair of organs in a woman's body that produce an unfertilized human egg every month or so for about thirty years. They also release the hormones.

P: The bones that form a bowl-shaped structure in the area below the waist at the top of the legs, and to which the leg bones and spine are joined.

R: Twelve pairs in both men and women form a cage to protect various vital organs inside. Some of them 'float' because they don't meet in the middle. If you crack one, you just have to wait until it heals.

S: This is our surface covering. It takes a month for each new cell to move through the three layers to the top, after which it drops off. You lose about 50 kilos of it by the time you are 70. It comes in a variety of colours to protect us from the sun, and gets wrinkled as we get older.

T: 60,000 litres of water pass down it in the average lifetime.It contains one pipe for food and one for air. Pressure on the outside can lead to strangulation, a blockage inside can cause suffocation.

U: The thing that hangs down at the back of your mouth. This is what you see when you yawn, and can sometimes cause people to snore when they are asleep.

V: This makes your blood look blue. Medical professionals use them if they need to extract a specimen for testing. They can become varicose if you spend too much time in one position.

W: A joint that links fifteen separate bones, it is located between the hand and the arm.

X: A long continuous piece of DNA, containing around 1,000 genes, this is one of the 23 pairs that are found in human cells. Women have two of them, men one.

Y: A long continuous piece of DNA, containing between 70 and 300 genes. Its sequence has now been mapped by the Human Genome Project. It is found only inside the cells of the male of the species.

Z: The bony arch of the cheek formed by connection of the zygomatic and temporal bones. It's another name for the cheekbone.

In the first table are the letters of the alphabet. In the second table are the parts of the body described in the text above, with the first letter missing from each. Can you match the rest of the word to the first letter in each case?

A	E	J	O	V
B	F	K	P	W
C	G	L	R	X
D	H	M	S	Y
E	I	N	T	Z

www.britishcouncil

…elvis	**…aw**	**…hroat**	**…ung**	**…inger**
…nee	**…ein**	**…ladder**	**…kin**	**…ib**
…uscle	**…ppendix**	**…vula**	**…ye**	**…is**
…ygoma	**…erves**	**…chromosome**	**…hin**	**…chromosome**
…um	**…rist**	**…iaphragm**	**…eart**	**…vary**

Focus on vocabulary

1.Define word-building elements and parts of speech, translate into Russian.

Extremity, principle, external, cavity, framework, injury, upper, lower.

2.Translate into English.

голова	плечо
туловище	верхняя часть руки
конечность	предплечье
лоб	запястье
рот	кисть
язык	палец
нёбо	большой палец руки
десны	большой палец ноги
зуб	верхняя часть бедра
дышать	бедро
желудок	колено
печень	голень
селезенка	голень (от бедра до ступни)
почка	икроножная мышца
желчный пузырь	лодыжка
мочевой пузырь	стопа

3.Translate into Russian.

human body, upper extremity, lower limb, to consist of the forehead, skull, to contain the brain, soft palate, to breathe deeply, the heart beats, stomach, liver, bones of the trunk, to support the soft parts, to protect the organs from injury, ankle, to be covered with skin.

4. Guess what part of body or organ it is.

1. the top part of your leg above your knee
2. the back of your leg below your knee
3. one of the parts of your finger where it bends
4. one of the two parts of your body above your leg and below your waist
5. the part around the middle of your body where you wear a belt
6. the bottom part of your face, below your mouth
7. one of the two parts of the body at each side of the neck that join the arms to the rest of the body
8. the part of the body between the hand and the arm
9. the long part at each side of the human body, ending in a hand
10. the part of your body under your arm, where your upper arm meets your shoulder
11. the lower part of a person or animal's body, containing the stomach and other organs
12. one of the two sides of your bottom
13. the piece of skin that covers your eye when you close it
14. the thin line of hair that is above each eye
15. the black, round part in the centre of your eye
16. the middle part of your leg where it bends
17. the hard, thin part on the top of the end of your finger
18. the short, thick finger on the side of your hand that can touch the top of all your other fingers
19. the inside surface of your hand
20. the part of your leg that is just above your foot
21. the curved upper part of the foot between the toes and the heel
22. the finger next to the thumb
23. the padded (containing a layer of soft material used for protection or to give shape) portion of the sole between the toes and the arch, underneath the heads of the metatarsal bones
24. any of the five separate parts at the end of the foot
25. the flat part of the face, above the eyes and below the hair
26. either of the two openings in the nose through which air moves when you breathe

27. the lower part of your face that moves when you open your mouth
28. the large, soft piece of flesh in the mouth that you can move, and is used for tasting, speaking, etc.
29. the organ inside the head that controls thought, memory, feelings, and activity
30. the set of nerves inside the spine that connect the brain to other nerves in the body
31. the front of the neck, or the space inside the neck down which food and air can go
32. the tube in the body that carries air that has been breathed in from the upper end of the throat to the lungs
33. the tube in the body that takes food from the mouth to the stomach
34. either of the two organs in the chest with which people and some animals breathe
35. the organ in your chest that sends the blood around your body
36. a large organ in the body that cleans the blood and produces bile
37. an organ in the body where food is digested, or the soft front part of your body just below the chest
38. a long tube through which food travels while it is being digested after leaving the stomach
39. a tube that carries blood to the heart from the other parts of the body
40. one of the thick tubes that carry blood from the heart to other parts of the body
41. either of a pair of small organs in the body that take away waste matter from the blood to produce urine
42. an organ in the body that produces insulin (= a chemical substance that controls the amount of sugar in the blood) and substances that help to digest food so that it can be used by the body
43. an organ like a bag inside the body of a person or animal, where urine is stored before it leaves the body
44. the part in the middle of the arm where it bends, or the part of a piece of clothing that covers this area

Focus on grammar

1.Read and translate the sentences with Participle II и Passive Voice.

1. The framework of bones called the skeleton supports the soft parts and protects the organs from injury.
2. The principle organs located in the chest are the lungs, the heart and the gullet (esophagus).
3. The upper extremity is connected with the chest by the shoulder.
4. The lower extremity is connected with the trunk by the hip.
5. The skeleton is covered with the muscles.
6. The stomach connected with the mouth by the gullet is in the abdominal cavity.

2.Read the text, find the sentences with Participle II и Passive voice. Translate them into Russian.

We study Anatomy

In the practical anatomy class we study the human body. The principle parts of the human body are the head, the trunk and the limbs (extremities). We speak of the upper extremities (arms) and the lower extremities (legs).

The head consists of two parts: the skull which contains the brain, and the face which consists of the forehead, the eyes, the nose, the mouth, the cheeks, the ears and the chin. In the mouth there are gums with teeth, the tongue and the palate. The head is connected with the trunk by the neck.

The upper part of the trunk is the chest and the lower one is the abdomen. The principle organs in the chest are the lungs, the heart and

the gullet (esophagus). We breathe with the lungs. The heart contracts and makes 60-80 beats per minute.

The principle organs in the abdominal cavity are the stomach, the liver, the spleen, the intestine, the kidneys, the gall-bladder and the bladder.

The framework of the bones is called the skeleton; it supports the soft parts and protects the organs form injury. The bones are covered with muscles.

The upper extremity is connected with the chest by the shoulder. Each arm consists of the upper arm, forearm, elbow, wrist and hand. We have four fingers and a thumb on each hand. The lower extremity (the leg) consists of the hip (the thigh), knee, calf, ankle and foot. The body is covered with skin.

3.Find the equivalents of the following words and word-combinations in the text, use them to make up sentences.

- защищает органы от повреждений;
- верхняя часть туловища;
- верхние конечности – руки;
- нижние конечности – ноги;
- легкие, сердце, пищевод – основные органы в грудной клетки;
- печень, селезенка, желудок, почки, желчный пузырь, кишечник, мочевой пузырь – основные органы в абдоминальной полости;
- голова состоит из двух частей - черепа, лица;
- головной мозг;
- лицо состоит изо лба, глаз, щек, ушей, носа, рта, подбородка;
- десны, зубы, язык, нёбо находятся во рту;
- сердце совершает 60-80 ударов в минуту;

- кости покрыты мышцами.

4.Complete the sentences.

1. A man has four (конечностей).
2. (Глаза) are under the (лоб).
3. (Язык) is the organ for speech.
4. The heart is in the (грудная клетка).
5. We breathe with the (легкие).
6. The skull contains (головной мозг).
7. (Шея) connects the head with the (туловище).
8. The spleen is in the (брюшная полость).
9. (Плечо) connects the upper extremity with the chest.
10. The leg consists of the hip, thigh, knee, (голень), ankle and the foot.

5.Match the nouns with the verbs.

1.to smell	a.speech
2.to hear	b.touch
3.to taste	c.taste
4.to touch	d.hearing
5.to think	e.thinking
6.to see	f.sight
7.to speak	g.smell

6.Use the nouns above to fill in the gaps.

1. The brain is the organ of … .
2. The eye is the organ of … .
3. The nose is the organ of … .
4. The tongue is the organ of … .
5. The ear is the organ of … .

7.Answer the questions.

1. What is studied at anatomy classes?
2. What are the principal parts of the human body?
3. What is the organ of thinking called?
4. What is there in the mouth?
5. What is the head connected with the trunk by?
6. How many beats per minute does the heart make?
7. Which organs are located in the abdominal cavity?
8. What is the skeleton?
9. What is the function of the skeleton?
10. What does the arm consist of?
11. What does the lower extremity consist of?

Speaking

Tell your group mates about the anatomy of the human body.

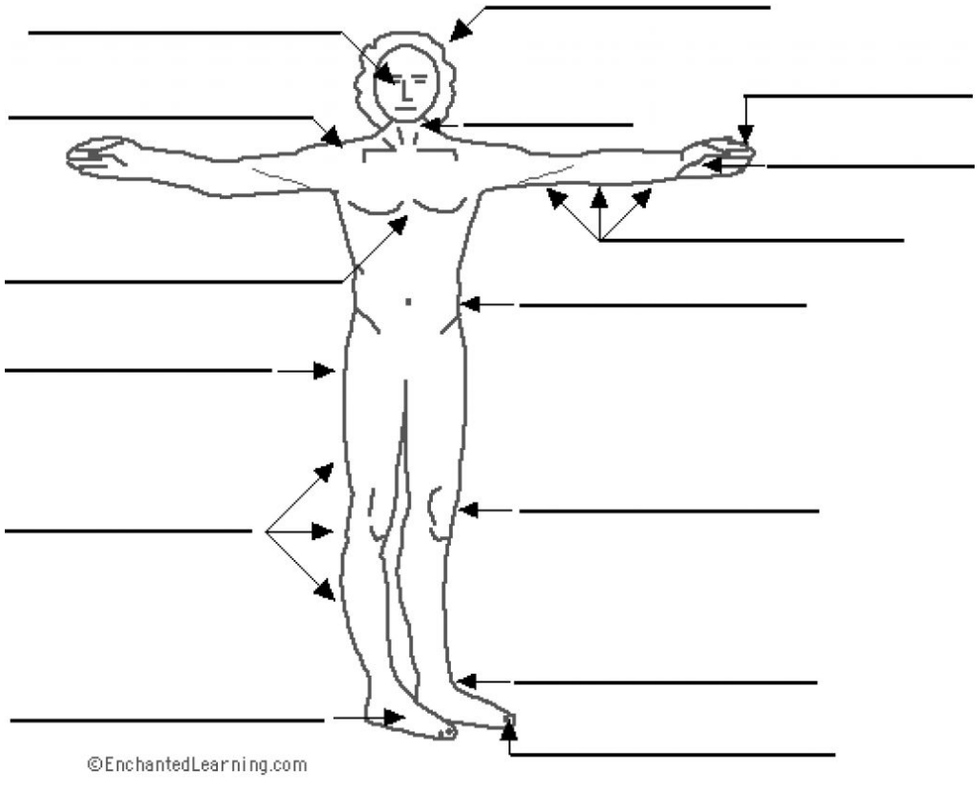
Additional tasks

1.Most external parts of the body have ordinary English names as well as anatomical names.

a)Translate the terms.

1 ear
2 cheek
3 jaw (mandible)
4 neck
5 shoulder
6 armpit (axilla)
7 upper arm
8 elbow
9 loin
10 forearm
11 buttock
12 wrist
13 hand
14 thumb
15 finger
16 thigh
17 calf
18 leg
19 foot
20 toe
21 hair
22 forehead
23 nose
24 chin
25 Adam's apple (laryngeal prominence)
26 chest (thorax)
27 nipple
28 breast
29 stomach, tummy, belly (abdomen)
30 navel, belly button (umbilicus)
31 hip
32 palm
33 groin (inguinal region)
34 genitals (penis and testicles)
35 knee (patella = kneecap)
36 shin
37 ankle
38 big toe
39 sole
40 heel

b)Label the picture.



2.Write the ordinary English words for the corresponding anatomical terms in the table using your medical knowledge.

Anatomical term	Common word
abdomen	
axilla	
carpus	
coxa	
cubitus	
mamma	
nates	
patella	

3.Complete the sentences using ordinary English words.

A male patient describing angina pectoris.

It's like a tightness across my 1_____,and it goes up 2_____my 3_____and into my left 4_____and 5_____the left 6_____.

4.Complete the sentences.

Anatomical term	Patient's statement
1.inguinal swelling	I've got a lump in the ….
2.abdominal pain	My little boy got a …ache.
3.periumbilical rash	I've got some spots around my …
4.thoracis pain	I've got a pain in the middle of the…
5. enlarged axillary node	There's a painful swelling in my…
6.mandibular pain	I've got a pain in my…

5.Complete the table with the words.

abdomen,knee,elbow,chest,loin,arm,wrist,leg,thigh,finger.

Trunk	**Upper limb**	**Lower limb**
abdomen		

Unit 6

The skeletal system

Pre-reading

Answer the questions.

What do you know about human's skeletal system?

What do bones protect?

Useful link:

https://www.youtube.com/watch?v=Of3XS-gU8dc

http://www.innerbody.com/image/skelfov.html

Reading

I.Read the extract below. Retell it in brief.

The Skeleton

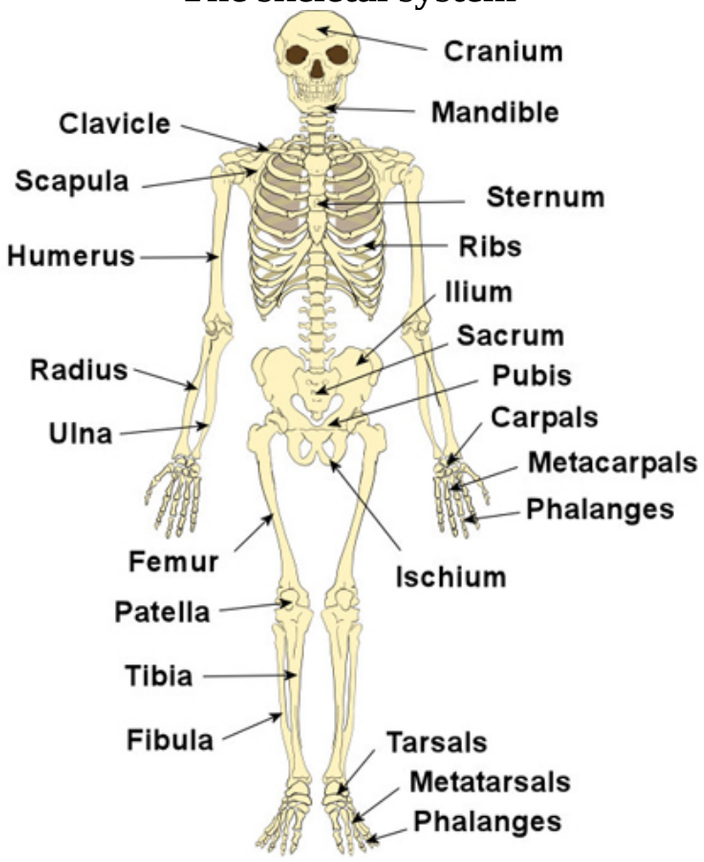
An adult has 206 bones altogether. Some bones **protect** more fragile parts of body. For example, the skull protects the brain. The **largest** bone in the body is in the **thigh** and the **smallest** bones are in the **ear**.

Bones connect to other bones at places called **joints**. Joints allow us to bend and move.

A break in a bone is called a **fracture**. A **radiographer** will take an **x-ray photograph to find out a bone is broken**. A broken bone is treated with a special bandage called a **cast**.

II.Read the text.

The skeletal system



The skeletal system includes all of the bones and joints in the body. Each bone is a complex living organ that is made up of many cells, protein fibers, and minerals. The skeleton acts as a scaffold by providing support and protection for the soft tissues that make up the rest of the body. The skeletal system also provides attachment points for muscles to allow movements at the joints. New blood cells are produced by the red bone marrow inside of our bones. Bones act as the body's warehouse for calcium, iron, and energy in the form of fat. Finally, the skeleton grows throughout childhood and provides a framework for the rest of the body to grow along with it.

The skeletal system in an adult body is made up of 206 individual bones.

Skull

The skull is composed of 22 bones that are fused together except for the mandible. These 21 fused bones are separate in children to allow the skull and brain to grow, but fuse to give added strength and protection as an

adult. The mandible remains as a movable jaw bone and forms the only movable joint in the skull with the temporal bone.

The bones of the superior portion of the skull are known as the cranium and protect the brain from damage. The bones of the inferior and anterior portion of the skull are known as facial bones and support the eyes, nose, and mouth.

Ribs and Sternum

The sternum, or breastbone, is a thin, knife-shaped bone located along the midline of the anterior side of the thoracic region of the skeleton. The sternum connects to the ribs by thin bands of cartilage called the costal cartilage.

There are 12 pairs of ribs that together with the sternum form the ribcage of the thoracic region.

Upper Limb

The humerus is the bone of the upper arm. It forms the ball and socket joint of the shoulder with the scapula and forms the elbow joint with the lower arm bones. The radius and ulna are the two bones of the forearm. The ulna is on the medial side of the forearm and forms a hinge joint with the humerus at the elbow. The radius allows the forearm and hand to turn over at the wrist joint.

The lower arm bones form the wrist joint with the carpals, a group of eight small bones that give added flexibility to the wrist. The carpals are connected to the five metacarpals that form the bones of the hand and connect to each of the fingers. Each finger has three bones known as phalanges, except for the thumb, which only has two phalanges.

Lower Limb

The femur is the largest bone in the body and the only bone of the thigh region. The femur forms the ball and socket hip joint with the hip bone and

forms the knee joint with the tibia and patella. Commonly called the kneecap, the patella is special because it is one of the few bones that are not present at birth. The patella forms in early childhood to support the knee for walking and crawling.

The tibia and fibula are the bones of the lower leg. The tibia is much larger than the fibula and bears almost all of the body's weight. The fibula is mainly a muscle attachment point and is used to help maintain balance. The tibia and fibula form the ankle joint with the talus, one of the seven tarsal bones in the foot.

Vocabulary

scaffold опора
soft tissues мягкие ткани
attachment points точки присоединения(крепления)
red bone marrow красный костный мозг
warehouse хранилище
fused together соединены вместе
temporal bone височная кость
anterior передний
costal cartilage реберный хрящ
ribcage грудная клетка
ball and socket joint шаровидный сустав
medial side медиальная поверхность
hinge joint шарнир, шарнирное соединение
carpals (*carpal bones)* кости запястья
the ball and socket hip joint шаровидный тазобедренный сустав
crawling ползание
talus лодыжка, таранная кость, надпяточная кость стопы
tarsal bone предплюсневая кость

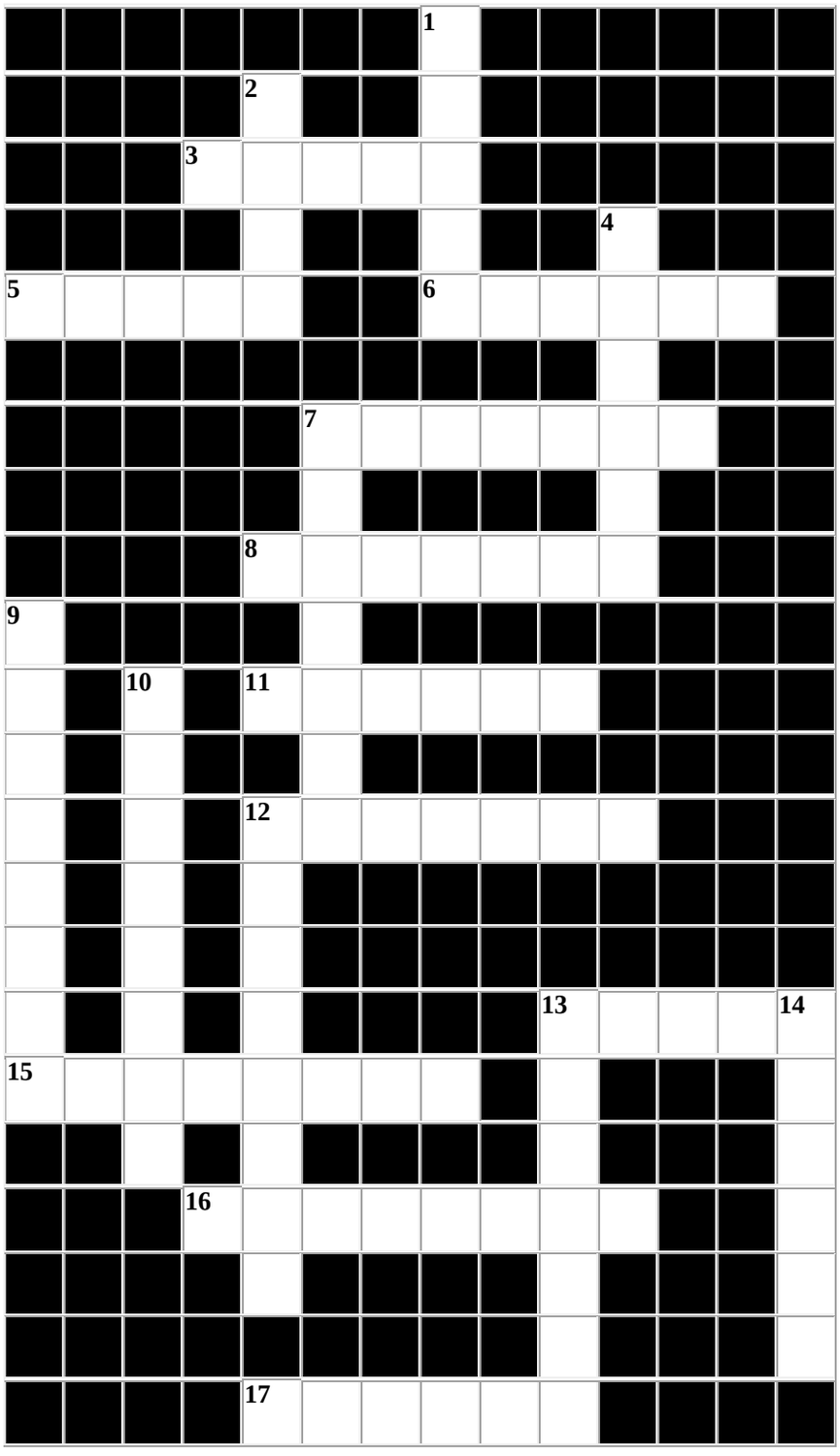
Focus on vocabulary

1.Read aloud. Write the Russian names next to the English ones.

maxilla/mækˈsɪl.ə/	
mandible /ˈmæn.dɪ.bəl/	
cervical/ˈsəːvɪ.kəl/	
vertebra/ˈvɜː.tɪ.brə/	
clavicle /ˈklæv.ɪ.kəl/	
scapula/ˈskæp.jə.lə/	
sternum/ˈstɜː.nəm	
thoracic /θəˈræs.ɪk/	
lumbar/ˈlʌm.bə/	
ulna/ˈʌl.nə/	
ilium/ˈɪl.i.əm/	
radius/ˈreɪ.di.əs/	
sacrum/ˈseɪ.krəm/	
pubis/ˈpjuː.bɪs/	
coccyx/ˈkɒk.sɪks/	
phalanx/ˈfæl.æŋks/	
femur/ˈfiː.mə/	
patella/pəˈtel.ə/	
tibia /ˈtɪb.i.ə/	
fibula/ˈfɪb.jə.lə/	

2.Crossword puzzle.

The skeleton

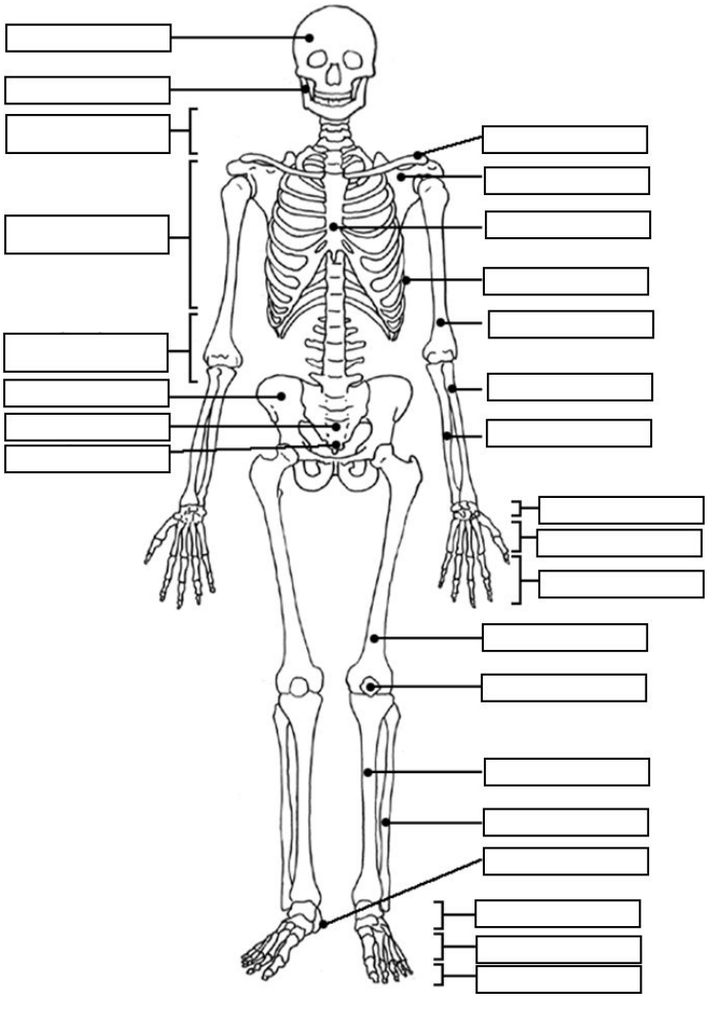


Across:

Down:

3	3.the widest of the three bones that form the pelvis	**1**	1.the long bone in the upper part of the leg
5	5.the large bone at the front of the lower leg	**2**	2.a long, thin bone in the lower part of your arm
6	6.the thicker of the two bones in the lower arm	**4**	4.the outer of the two bones in the lower part of the human leg
7	7.the breastbone	**7**	7.the shoulder blade
8	8.the bone at the front of the knee joint	**9**	9.in humans and animals, relating to chest
11	11.relating to the lower part of the back	**10**	10.one of the small bones that form the spine (= back bone)
12	12.the upper jaw bone that supports the upper teeth and forms part of the eye sockets and nasal cavity	**12**	12.in a person or animal, the lower jaw bone
13	13.one of the three main bones of the pelvis	**13**	13.any one of the small bones of the fingers and toes
15	15.relating to the neck	**14**	14.a triangle-shaped bone at the base of the lower back above the coccyx (= a smallbone at the base of the spine)
16	16.the bone between the shoulder and neck		
17	17.a small bone at the base of the spine of humans and some apes		

3. Fill in the gaps in the chart.



4.Define word-building elements and parts of speech, translate into Russian.

Vertebral, forming, substance, compressible, partition, flexibility, attachment, ligament, passage, elastic, outward, forward, framework, protection, internal.

5.Translate into Russian.

Framework; sustain the softer parts of the human organism; the spine serves as support; afford; consist of bones; cervical vertebrae, vertebral column, backbone, spinal cord, marrow, compressible, passages of the blood vessels; to pass out of, to extend outward and forward; to be flat, triangular in form; shoulder-blade, collar-bone.

6.Use the English words to complete the sentences.

1. The skeleton consists of bones and constitutes (остов) which sustains the (мягкие части) of the human body.
2. (Позвоночник) or the spine serves as support to the body.
3. In a man (имеются) seven cervical vertebrae, twelve (грудных), five (шейных).
4. There is (отверстие) or hole in every vertebra, between the body and processes.
5. The vertebra and their processes afford (прикрепление) for a number of muscles and (связок). On the upper part of the back there are two flat (треугольные кости), the shoulder blade or (лопатки).
6.The skull or the cranium is (костный каркас) that forms the framework of the head and (включает) the brain.

7. Answer the questions based on the text "The skeletal system".

1.What does the skeletal system include?
2. What are bones made up of?
3. What are the main functions of the skeletal system? Describe each function in brief.
4. How many bones are there in an adult, in a newborn baby?
5. How many bones is the skull is composed of ?
6. Is there any movable bone in the skull?
7.Why are skull bones (except for one) fused together? Why are they separate in children?
8. What are the bones of the superior portion of the skull known as? What do they protect?
9. What are the bones of the inferior and anterior portion of the skull known as? What is their function?
10.What does the sternum look like?
11. What does the sternum connect to the ribs by?

12.What is the ribcage formed by?

13.What do you know about the upper limb?

14. What do you know about the lower limb?

Focus on grammar

1.Write the plural forms of the nouns below.

Bone,skeleton,body,pair,backbone,naturalist,animal,class,column, framework,head,trunk,limb,skull,brain,jaw,rib,breastbone,cage,chest, heart,lung,collarbone,extremity,shoulderblade,shoulder,elbow,arm,wrist,hand,palm,thumb, finger.

2. Study the table and write the comparative and superlative forms of the following adjectives and adverbs. Some adjectives and adverbs are irregular. Use the link below to find out which are irregular.

Useful link:

http://engblog.ru/comparison-of-adjectives

		Adjective	Comparative	Superlative
Short adjective	+ *-er* / *-est*	small	smaller	smallest
Adjective ending in *-e*	+ *-r* / *-st*	large	larger	larggest
Short adjective ending in vowel + consonant, except *-w*	double the consonant + *-er* / *-est*	big	bigger	biggest
Adjective of two or more syllables	*more* / *most* + adjective	modern expensive	more modern more expensive	the most modern the most expensive
Adjective ending in consonant + *-y*	change *-y* to *-i* + *-er* / *-est*	early	earlier	earliest
Irregular adjective		good bad far	better worse farther / further	best worst farthest / furthest

Important, high, low, long, interesting, new, significant, bright, wonderful, big, careful, healthy, hot, bad, little, far, many, early.

3. Write the regular and irregular verbs in 2 columns. Give their 4 forms. Translate the first form into Russian.

Form, be, divide, have, call, include, make, join, consist, bind, separate.

4. Translate into Russian, paying attention to Participles I and II.

the form of the skull **depending** upon the form of the bones;

the bones **forming** the framework of the body;

the hand and wrist **consisting** of twenty-seven bones

higher animals **having** a backbone

the bones of the head **including** the skull and the lower jaw

the shoulder **consisting** of two bones

animals **divided** into two classes

animals **called** vertebrate

Chemistry and other sciences **studied** at university

the English language **spoken** in many countries worldwide

5.Fill in the gaps and translate into Russian.

1.There _____ a lot of students in the laboratory.

2.How many students_____there_____at the lecture tomorrow?

3.There _____a regular programme of immunization in our country.

4.There _____an interesting meeting at our faculty last week.

5. There _____32 teeth in the mouth of an adult.

6. Translate into Russian.

Bone, bony, backbone, breastbone; divide into, division, subdivide, subdivision, divisible; include, exclude, included, excluded, exclusively; joint, join, joined, jointly; to place, to replace, replacement, to be placed.

Self-test

Translate into Russian.

The Skeleton

The skeleton is composed of bones. In the adult the skeleton has over 200 bones. The bones of the skull consist of cranial and facial parts. There are 26 bones in the skull.

The bones of the trunk are the spinal column or the spine and the chest (ribs and the breastbone). The spine consists of the cervical, thoracic, lumbar and sacral vertebrae and the coccyx.

The vertebra is a small bone, which is formed by the body and the arches2. All the vertebrae compose the spinal column or the spine. There are 32 or 34 vertebrae in the spine of the adult. In the spinal column there are seven cervical vertebrae, twelve thoracic vertebrae, five lumbar, five sacral vertebrae and from one to five vertebrae which form the coccyx. The cervical part of the spine is formed by seven cervical vertebrae. Twelve thoracic vertebrae have large bodies. The lumbar vertebrae are the largest vertebrae in the spinal column. They have oval bodies.

The chest (thorax) is composed of 12 thoracic vertebrae, the breastbone and 12 pairs (пар) of ribs. The breastbone is a long bone in the middle of the chest. It is composed of three main parts. The basic part of the chest is formed by the ribs. On each side of the chest seven ribs are connected with the breastbone by cartilages. The cartilages of three other ribs are connected with each other and with the seventh rib. But the cartilages of these ribs are not connected with the breastbone. The eleventh and the twelfth ribs are not connected with the breastbone either (также). They are not connected with other ribs, they are free. Each rib is composed of a head, neck and body.

The lower extremity consists of the thigh, leg and foot. It is connected with the trunk by the pelvis. The upper extremity is formed by the arm, forearm and hand. It is connected with the trunk by the shoulder girdle (пояс). The bones of the skeleton are connected together by the joints or by the cartilages and ligaments. The bones consist of organic and inorganic substance. The main part of the head and face is called the skull. The skull is composed of twenty-six bones. These bones form two basic parts of the skull, that is facial and cranial parts.

The bones of the skull are connected with the first cervical vertebra. The bones of the skull are connected together so firmly that it is very difficult to separate them.

The bones of the skull form one large cavity and some smaller cavities. The large cavity is called the cranial cavity. The brain is in the cranial cavity. One of the smaller cavities is the cavity of the nose. The other two cavities are the orbits. The eyeballs are in the orbits.

Speaking

1.Use the internet to make some further exploration into the Structure of the human skeleton. Follow the plan and tell your group mates about it.

1. What does the skeleton consist of?
2. What is the function of the spine?
3. Does the spinal column consist of a single elongated bone or a number of independent bones?
4. What are the independent irregular bones composing the spinal column termed?
5. How many vertebrae are there in man?
6. What are the principal parts of a typical vertebra?

7. What is a foramen?

8. The vertebral foramina are placed one above another, aren’t they?

9. What is located in the canal formed by the vertebral foramina?

10. What are the vertebrae connected to one another by?

11. The vertebrae afford areas for the attachments of muscles and passages for blood vessels and nerves, don’t they?

12. What do we call the elastic arches of bone, which are connected behind with the vertebral column and form a large part of the skeleton of the thorax?

13. How many ribs are there on each side?

14. What internal organs do the ribs afford protection to?

15. What bones form the shoulder or thoracic girdle?

16. What girdle are the lower extremities attached to?

17. What is the skeleton of the head termed?

18. State the names of the bones composing the skull.

2.Human skeleton quiz.

Human skeletal system

1.How many bones are there in an adult, in a newborn baby?

2.What is the function of tendons?

3.What is the function of ligaments?

4.What is the strongest tissue in a human body?

5. What are the main functions of the skeletal system? Describe each of these functions in brief.

6. Are human bones easy to break?

7. What happens if you break or fracture a bone?

8.In what way does your body repair broken or fractured bones?

9. In what way are bones classified by their shape?

10. What’s the smallest bone in the human body? What is its length?

11.What’s the biggest and the strongest bone in the human body?

12.What’s the human body part having the highest amount of the bones? How many bones are there in this part?

13.What’s the most fragile bone in your body?

14.What’s the difference between bone and cartilage?

Vocabulary

Protective shield /ʃiːld/ защитный экран

To protect защищать

To repair восстанавливать, “ремонтировать”

To put a plaster around a fractured bone наложить гипсовую повязку

Living cell живая клетка

To bend =to flex сгибать

To straighten выпрямлять

Enamel /ɪˈnæm.l/ эмаль

Tendon сухожилие

Ligament связка

To move around двигаться

Platelet /ˈpleɪt.lət/= thrombocyte /ˌθrɒmbəˈsaɪt/ тромбоцит

Erythrocyte /ɪˈrɪθ.rəʊ.saɪt/=red blood cell эритроцит

Bone marrow костный мозг

To store хранить, сохранять

Leucocyte /ˈljuː.kə.saɪt/=white blood cell лейкоцит

Fracture /ˈfræk.tʃə/ сущ.перелом; гл.сломать

Sesamoid bone /ˈses.ə.mɔɪd bəun/ - сесамовидная кость (кость, вставленная в сухожилие мышцы и поэтому увеличивающие плечо силы мышцы, способствующие усилению ее действия).

Irregular неправильной формы

Flat плоский

Eye socket /ˈaɪ ˌsɒk.ɪt/ глазница

Haematopoiesis /hi:mətəʊpɔɪˈi:sɪs/ (the formation of blood cellular components) кроветворение

Sutural bone /suːˈtʃʊə.rəl bəun/ шовная кость (шовные кости располагаются по ходу швов между постоянными костями черепа)

Unit 7

The muscular system

Useful links:

http://www.innerbody.com/image/musfov.html

https://www.youtube.com/watch?v=rMcg9YzNSEs

Pre-reading

1.Answer the questions.

1.What muscles of the human body do you know? 2.Which of them can be easily seen?

2.Match the English and the Russian equivalents.

1.Contractility (the ability to contract=to become shorter)

2.Excitability (the ability to receive and respond to a stimulus)

3.Extensibility (the capability of being stretched)

4.Elasticity (the capability of a strained body to recover its size and shape after deformation)

a. способность восстанавливать исходный размер и форму после деформации, вызванной приложением нагрузки **b.**Возбудимость **c.**способность сокращаться **d.**способность растягиваться.

3.Watch the video and study the diagram below to refresh your knowledge of the human muscular system.

https://www.youtube.com/watch?v=WiZH02_W-kI

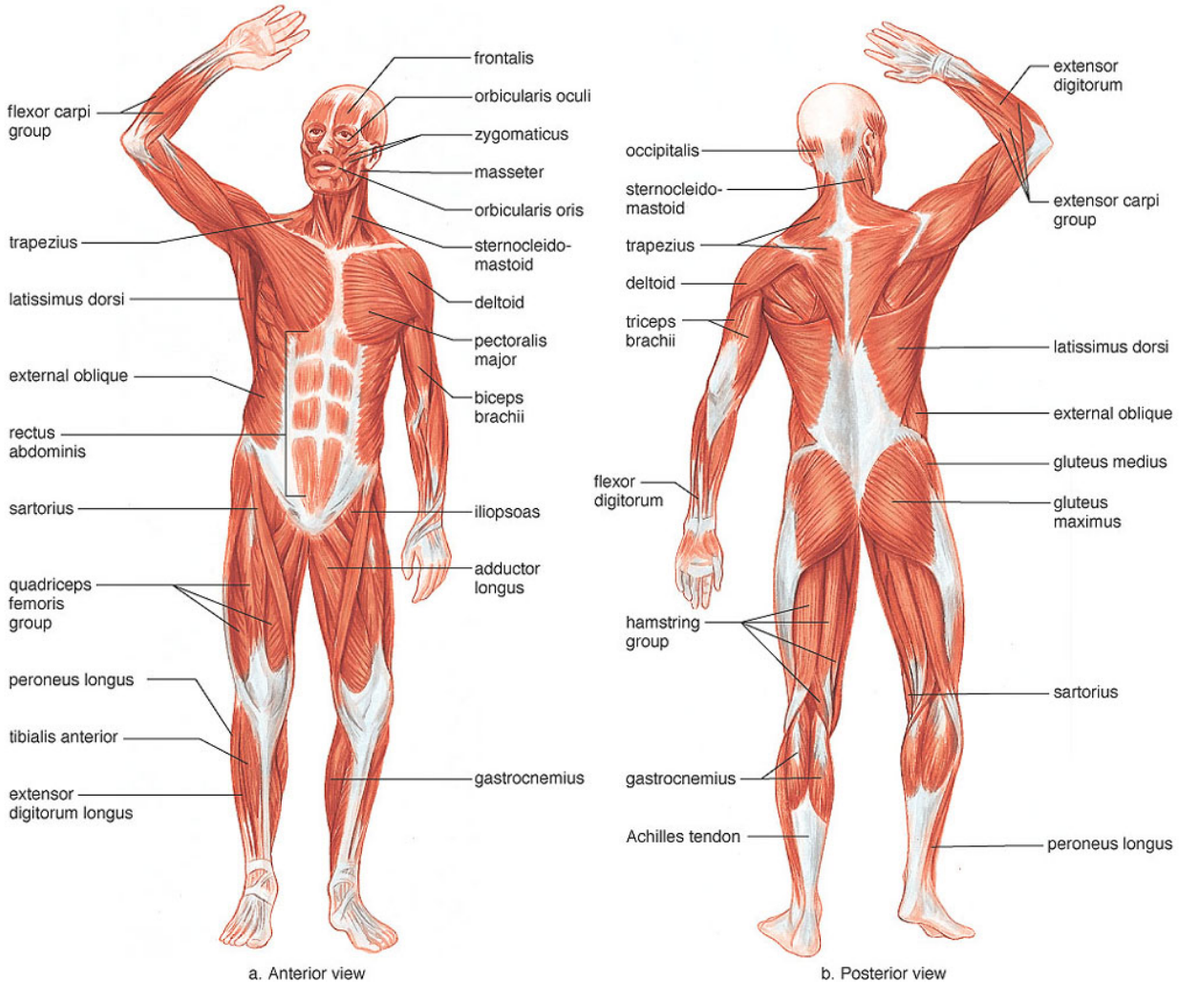
4.Answer the questions.

What are 3 types of muscle tissue?

Which functions of muscles can you name?

What are 4 functional characteristics of muscle tissue?

Study the diagram.



Reading

The muscular system

The word “muscle”, according to one theory, comes from a Latin word that means “little mouse” that is when a man’s muscles are contracting they look as if a little mouse runs about under his skin. The muscular system is responsible for the movement of the human body. Attached to the bones of the skeletal system are about 700 named muscles that make up roughly half of a person’s body weight. Each of these muscles is a discrete organ constructed of skeletal muscle tissue, blood vessels, tendons, and nerves. Muscle tissue is also found inside of the heart, digestive organs, and blood vessels. In these organs, muscles serve to move substances throughout the body.

Muscular system anatomy

Muscle Types

There are three main types of muscle tissue that we identify and classify on the basis of structure and functions: smooth or visceral muscle, striated or skeletal muscle, and cardiac muscle.

Smooth or visceral muscle

Visceral muscle is found inside of organs like the stomach, intestines, and blood vessels. The weakest of all muscle tissues, visceral muscle makes organs contract to move substances through the organ. Because visceral muscle is controlled by the unconscious part of the brain, it is known as involuntary muscle—it cannot be directly controlled by the conscious mind. The term “smooth muscle” is often used to describe visceral muscle because it has a very smooth, uniform appearance when viewed under a microscope. This smooth appearance contrasts with the banded appearance of cardiac and skeletal muscles.

Striated or skeletal muscle

Skeletal muscle is the only voluntary muscle tissue in the human body—it is controlled consciously. Every physical action that a person consciously performs (e.g. speaking, walking, or writing) requires skeletal muscle. The

function of skeletal muscle is to contract to move parts of the body closer to the bone that the muscle is attached to. Striated just like cardiac muscle, these skeletal muscle fibers are very strong. Skeletal muscle derives its name from the fact that these muscles always connect to the skeleton in at least one place.

Cardiac Muscle

Found only in the heart, cardiac muscle is responsible for pumping blood throughout the body. Cardiac muscle tissue cannot be controlled consciously, so it is an involuntary muscle. While hormones and signals from the brain adjust the rate of contraction, cardiac muscle stimulates itself to contract. The cells of cardiac muscle tissue are striated—that is, they appear to have light and dark stripes when viewed under a light microscope. Striations indicate that a muscle cell is very strong, unlike visceral muscles.

Vocabulary

Note 1: to contract- to make or become shorter or narrower or generally smaller in size.

to constrict- to become tighter and narrower, or to make something become tighter and narrower.

Note 2: Fascia is a layer of strong, stretchy tissue that covers, separates, or holds together different organs, muscles, blood vessels, and nerves.

Translate the words into Russian, and then pronounce them.

skin	constriction	tissue	musculature
layer /ˈleɪ.ə/	constrictor	/ˈtɪʃ.uː/ /ˈtɪs.juː/	/ˈmʌskjʊlətʃə/
average /ˈav(ə)rɪdʒ/	vary /ˈveə.ri/	smooth /smuːð/	fascia /ˈfæʃ.ə/
female	various /ˈveə.ri.əs/	viscera /ˈvɪs(ə)rə/pl.	(pl.fasciae /ˈfæʃɪ.ɪ/)
male	intervention	visceral	percent /pəˈsent/
cell	will	to cause /kɔːz/	cardiac /ˈkɑː.di.æk/
striated /strʌɪˈeɪtɪd/	to expand	response	feature /ˈfiː.tʃə/
to contract	/ɪkˈspænd/	to effect /ɪˈfekt/	tendon
/kənˈtrækt/	voluntary	environment	hormone
contractile	/ˈvɒl.ən.tər.i/	/ɪnˈvaɪrənm(ə)nt/	/ˈhɔː.məʊn/
/kənˈtraktʌɪl/	involuntary	volition /vəˈlɪʃ(ə)n/	connective
contractility	fibre (fiber)	muscle /ˈmʌs(ə)l/	/kəˈnek.tɪv/
contraction	/ˈfaɪ.bə/	muscular	posture/ˈpɒs.tʃə/
to constrict	blood	/ˈmʌskjʊlə/	nucleus/ˈnjuː.kli.əs/
/kənˈstrɪkt/	vessel /ˈves.əl/		nuclei /ˈnjuːklɪaɪ/

1.Focus on vocabulary

Define word-building elements and parts of speech, translate into Russian.

Connective, supply, directly, subcutaneous, superficial, layer, skeletal, fiber, muscular, action, correlation, insertion, thrown, forearm.

2.Complete the sentences using the English equivalents of the words in brackets.

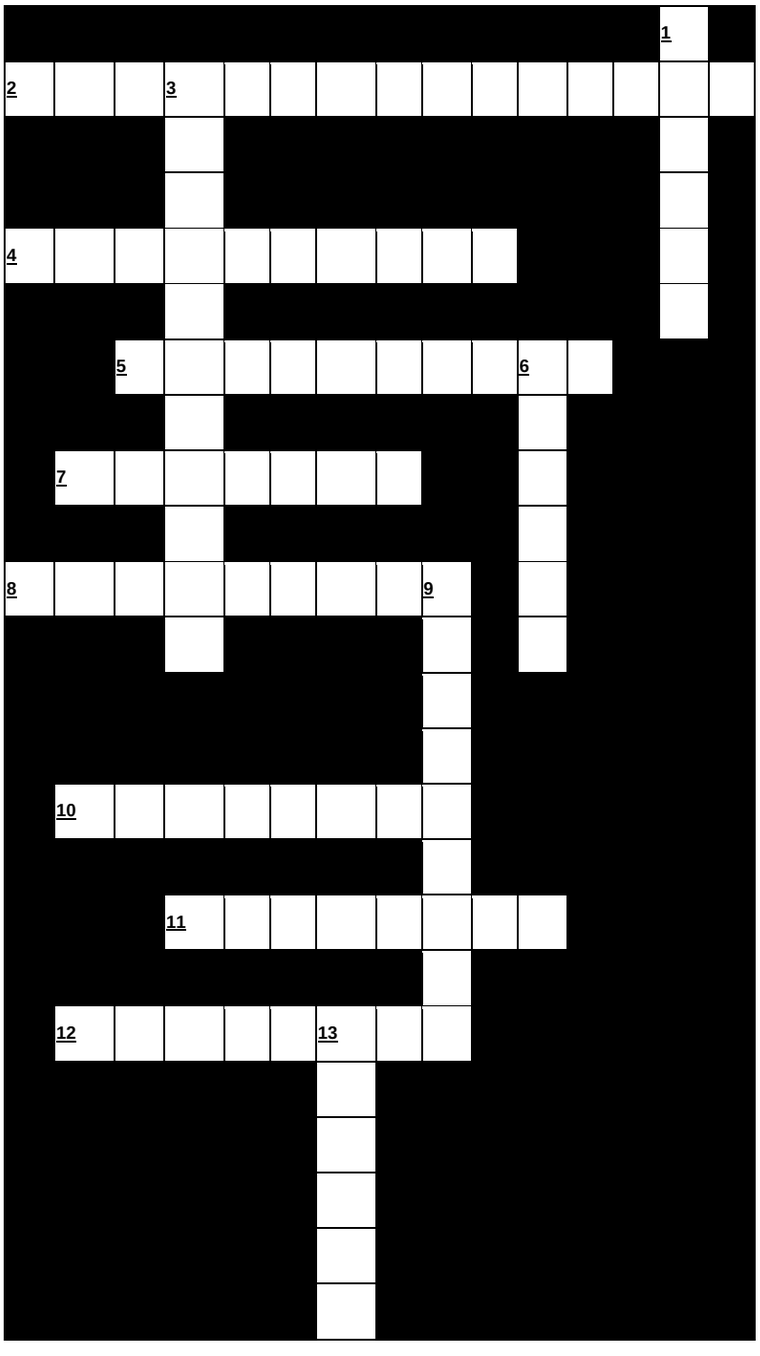
1. The body is covered with (кожа).
2. (Кости) protect the organs of the body.
3. (Мышцы) are formed by a mass of muscle cells.
4. The muscular fibers are connected together by (соединительная ткань).
5. The skeleton is covered by подкожная (subcutaneous) соединительная ткань.
6. There are many blood (сосудов) in the human body.
7. The body (состоит из) about 600 skeletal muscles.

3.Translate into English.

1.Мышечные волокна соединяются соединительной тканью.
2. На концах мышц находятся сухожилия.
3. Нервы соединяют мышцы и центральную нервную систему.
4. Скелет покрыт кожей, слоем подкожной ткани и мышцами.
5. Кожа состоит из двух слоев: наружного слоя и внутреннего.
6. Мышцы - это активные факторы движения и сокращения.
7. В мышцах находятся кровеносные сосуды и нервы.

4.Crossword puzzle

Muscles



Check

Across:

2. a muscle of the bottom part of the arm that helps to bend that part of the arm at the elbow

4. an acid that exists in sour milk and is produced in muscles after a lot of exercise

5. the cell membrane of muscle fibers

7. extreme tiredness

8. Latin word meaning "of the abdomen", used in the names of abdominal muscles, for example the transverse abdominis muscle

10. a protein found especially in the joints (= places where two bones are connected)of humans and animals

11. of or like a skeleton (= frame of bones)

12. a muscle that moves a part of the body towards the middle of the body or towards another body part, often used to refer to the three large thigh muscles

Down:

1. a group of connected cells in an animal or plant that are similar to each other, have the same purpose, and form the stated part of the animal or plant

3. the fact of something becoming smaller or shorter

6. one of many tissues in the body that can tighten and relax to produce movement

9. a muscle in the front of the arm that is involved in turning the palms (= inside part) of the hands upward

13. a strong piece of tissue in the body connecting a muscle to a bone

Focus on grammar

1.The Present Simple Active of the verb to be(is,are)

Translate into Russian.

1. There **are** three main types of muscular tissue.

2. Striated muscles **are** the most necessary for walking, running, turning the head, etc.

3. Cardiac muscle **is** under complete involuntary control.

4. The heart **is** a huge net of muscles in which all elements are continuous with each other.

2.Notional verbs.

a)Translate the verbs, then write their 4 forms in your copybooks.

V1->V2->V3>V4

come, mean, contract, look(like), run, enclose, lay, know, constitute, depend (on), identify, classify, react(to), respond(to), do, depend(on),expand, cause (cause smth/smb to do smth), consist(of), bind(into),contain, include, refer(to),walk, turn, call, become, have, resemble, lift.

b) Make up collocations and conjugate any 5 verbs in the Present Simple, the Past Simple, the Future Simple.

3.Modals

a) can (Выражает способность или возможность совершения действия. Отрицание-**cannot(can't)** .The Past Simple-**could.**Не имеет формы будущего времени**.** Эквивалент-**to be able to**-употребляется во всех временах). *Smooth muscles **can** contract slowly.*

*We **cannot** deliberately cause smooth muscles to lift our arm or open our mouth.*

b)may(Выражает допустимость совершения действия. Отрицание-may not. The Past Simple-**might.** Не имеет формы будущего времени**.** Эквиваленты-**to be allowed to/to be permitted to** -употребляется во всех временах). *We may call them involuntary muscles.*

c)must (Выражает долженствование, приказание или совет. Отрицание- must not (mustn't).Не имеет форм прошедшего или будущего времени. Эквивалент-**to have to-приходится, вынужден** употребляется во всех временах, эквивалент **to be to-должен** употребляется в настоящем и прошедшем времени, означает долженствование, вытекающее из предварительной договоренности или плана). *Skeletal muscles **must** react quickly to changes in the environment.*

4. The Present Continuous Active (выражает действие в процессе его совершения) **Be+Ving**

When a man's muscles **are contracting** they look as of a little mouse runs under his skin.

The walls of the blood vessels **are contracting** or **expanding** when they respond to certain chemicals in the blood or the effect of temperature.

5. Passives The Present Simple Passive (Be +V3)

Smooth muscles fibers **are bound** into bundles by connective tissue.

6.Определите залог предложений. Переведите предложения на русский язык.

1. Muscles are called long, short and broad according to their size and shape.
2. Muscles have nerve fibers and blood vessels.
3. The muscular system produces movements of the body.
4. Skeletal muscles are complex in structure.
5. Muscular fibers are united in bundles.
6. Muscles are attached by tendons to bones.

7. Skeletal muscles make up about two-fifths of the body weight in adults.

7.Adjectives and adverbs

Write comparatives and superlatives of the following adjectives and adverbs.

little,approximately,much,average,various,slowly,necessary,large,deliberately,smooth.

8. Plurals

Write the plurals of the following nouns.

Mouse,muscle,system,tendon,body,fascia,nerve,bundle,fiber,vessel,tract, tissue, basis.

9.Prepositions (предлоги)

Основные пространственные предлоги

at местонахождение — **где?** *у предмета, у лица:* He is **at** the window. **(у)** в здании, во время процесса (действия): He is **at** the cinema. **(в)** He is **at** the lecture. **(на)**	**to** движение — **куда?** *по направлению к предмету, к лицу:* Go to the table, please. **(к)** в здание, к месту действия: Go **to** the institute. **(в)** Go to the lecture. **(на)**	**from** движение — **откуда?** *удаление от предмета, от лица:* I came back **from** my friend's at 7 o'clock. **(от)** уход из здания, с места действия: I come home **from** the Institute at 4 o'clock. **(из)** He came **from** the lectures late. **(с)**
in местонахождение — где? *внутри, ограниченного пространства:* I am **in** the room. **(в)**	**into** движение — **куда?** *внутрь ограниченного пространства:* Come into the room, please, **(в)**	**out of** движение — **откуда?** *из ограниченного пространства:* I take the book out of my bag. **(из)**
on местонахождение — где? *на поверхности:* The pen is **on** the table. (на)		

Прочие предлоги

Английские предлоги	*Их перевод*	*Примеры*	
about	*о* *по*	**about** Moscow **about** the room	*о* Москве *по* комнате
above	*над*	**above** the table	*над* столом
across	*через*	**across** the road	*через* дорогу
after	*после*	**after** 2 o'clock	*после* двух часов
against	*против*	**against** the diseases	*против* болезней
along	*вдоль (по)* *по*	**along** the street **along** the arm	*вдоль* по улице *по* руке
among	*среди (многих)*	**among** the students	*среди* студентов
around	*вокруг* *по*	**around** the table **around** the ward	*вокруг* стола *по* палате
before	*перед* *до(раньше)*	**before** dinner **before** 2 o'clock	*перед* обедом *до* (раньше) двух часов
behind	*за (позади)*	**behind** the sternum	*за* (позади) грудиной
below	*ниже*	**below** the liver	*ниже* печени
between	*между (двумя)*	**between** the lungs	*между* легкими
by	*к* *рядом, (у)*	**by** 2 o'clock **by** the window	*к* двум часам *у* окна (возле) окна
down	*по вниз*	**down** the arm	*вниз* по руке
during	*в течение* *во время*	**during** the lecture	*в течение* (во время) лекции
for	*в течение* *на* *для* *за* *от*	**for** 2 hours **for** 2 days **for** me **for** peace **for** the grippe	в течение двух часов на два дня *для* меня *за* мир *от* гриппа
from... to (till)	*от ... до*	**from** 2 **to (till)** 4	*от* двух *до* четырех
inside	*внутри*	**inside** the abdomen	*внутри* брюшной полости
near	*возле* *около* *рядом*	**near** the hospital	*рядом* с больницей
over	*над* *свыше*	**over** the head **over** 60 years	*над* головой *свыше* (старше) 60 лет
since	*с* *с тех пор*	**since** 2 o'clock **since** then	*с* двух часов *с* тех пор
through	*через* *по*	**through** the vessels **through** the septum	*по* сосудам *через* перегородку
under	*под*	**under** the diaphragm	*под* диафрагмой
up	*вверх*	**up** the lower extremity	*вверх* по нижней конечности
within	*в пределах*	**within** a year	*в* течение года
without	*без*	**without** the treatment	*без* лечения

Под кожей, у среднестатистического мужчины, на основе, без вмешательства, на пересечении между, под контролем.

10. Conjunctions (союзы и союзные слова)

Write the following in Russian.

For this reason, in other words, according to, such as, since, through, which, when, where.

11.Make up questions to the following sentences.

1. Muscles act in groups.

2. Muscle is composed of elongated cells.

3. Muscular system consists of skeletal muscles and their associated structures.

4. Muscular system is one of the main systems of the body.

5. Skeletal muscles are formed by the muscles of the head, the trunk and limbs.

6. Striated muscle is connected with the central nervous system.

7. Striated muscle, smooth muscle, cardiac muscles occur in the body.

12. Make up questions to the following answers.

1. Bundles of fibers form the muscle.

2. Many small nuclei are found in the fibers.

3. Muscles are functionally divided into two groups: voluntary and involuntary muscles.

4. Voluntary muscles contract by the will of man.

5. The contraction of involuntary muscles is not controlled by man.

6. Involuntary muscles form the walls of internal organs, blood vessels and the skin.

Speaking

Get prepared to speak about the muscles in the human body. Use the questions to structure your speech.

1.What are the theories of the origin of the word “muscle”?

2.How much of the body weight do muscles constitute?

3.How many types of muscular tissue do you know? What are they?

4.What is their classification based on?

5.What do smooth muscles make up?

6.How do we call smooth muscles? Why?

7.Do smooth muscles contract with or without intervention of the will?

8.What does this type of muscles respond to?

9.What does smooth muscle tissue consist of?

10. What are smooth muscle fibres bound into?

11.What are they bound by?

12.What is another name of striated muscles?

13. What does striated muscle tissue consist of?

14.What are striated muscles most necessary for?

15. What does this type of muscle tissue include?

16.In what way does this type of muscles react to changes in the environment?

17.Are these voluntary or involuntary muscles?

18. What is characteristic feature of cardiac muscle?

19.How strong is it?

20.Is it voluntary or involuntary muscle?

Self-test

Translate the text into Russian. Use a medical dictionary.

Skeletal Muscles as Organs of the Muscular System.

The skeletal muscles are the organs of the muscular system. They number over 400 in the human body. Each has an arterial, venous, lymphatic and nervous supply as well as a connective tissue framework - the whole constituting an independent unit. However, muscles never act singly but in groups. We seldom contract an individual muscle; we execute a movement and in the performance of that movement whole groups of muscles are involved. Skeletal muscles, then, are not

functionally separate and unrelated parts but are grouped into a system which exhibits correlation and cooperation of its parts.

Attachments of Muscles Each striated muscle consists of a body and two attachments. The body contains the muscular tissue; the attachments are composed of white fibrous tissue. The attachment of muscle to bone may be of one of three types: direct to the periosteum, by means of a tendon, or by means of an aponeurosis. In a direct attachment the white fibers of the connective tissue framework of the muscle fuse with the fibrous layers of the periosteum of the bone. A tendon is a band or cord of white fibrous tissue serving to connect a muscle to a bone. The sarcolemma and the connective tissue surrounding the muscle bundles fuse with the collagenous fibers of the tendon. An aponeurosis is a heavy sheet of white fibrous tissue serving to connect a muscle to a bone or in some instances to connect muscles.

Origin and Insertion The more fixed attachment of a muscle which serves as a basis of action is called the origin. The movable attachment where the effects of movement are produced is the insertion. Generally the origin is near the spinal axis of the body while the insertion is peripheral.

Muscle Action If the attachments of a muscle are known, its action may be determined by recalling that the insertion moves toward the origin when the muscle contracts. Muscles are arranged in opposing or antagonistic groups: flexors and extensors, adductors and abductors, internal rotators and external rotators. When the muscles flexing the forearm contract, the muscles which have the opposite effect, the

extensors, are thrown into physiological relaxation; elongating and giving way to the movement.

Writing

Write an essay “Human muscular system” (25-30 sentences).

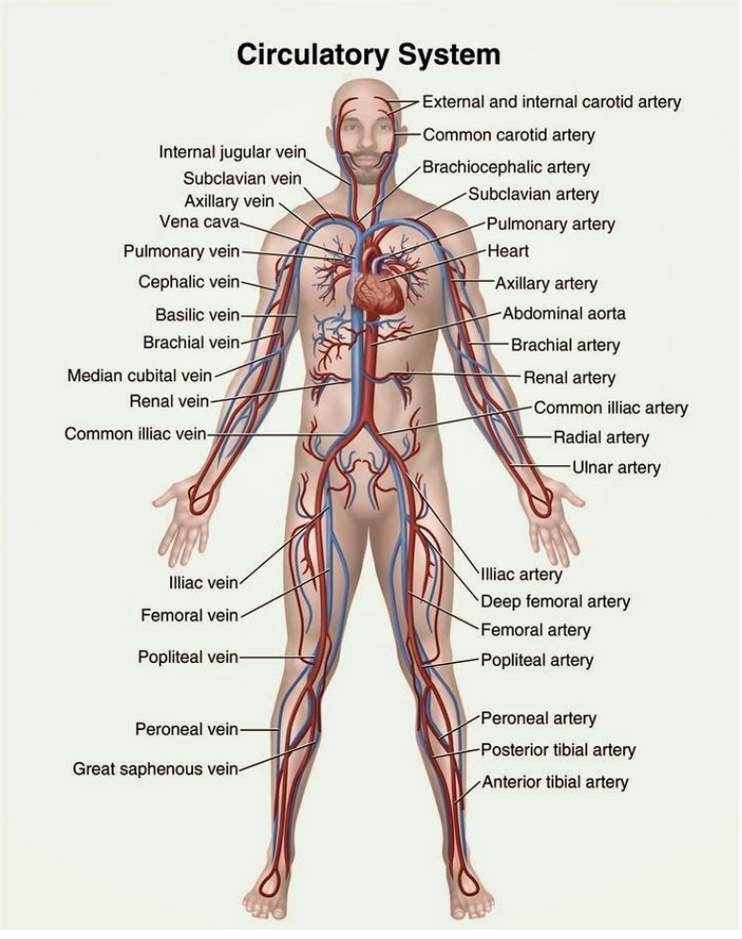
Unit 8

The Cardiovascular (circulatory) system

Pre-reading

1.What is the main part of the circulatory system?

2.How does blood move through the circulatory system?



Useful links:

http://www.innerbody.com/image/cardov.html

https://www.youtube.com/watch?v=_lgd03h3te8

Reading

Text A

The cardiovascular system consists of the heart, blood vessels, and the approximately 5 liters of blood that the blood vessels transport. Responsible for transporting oxygen, nutrients, hormones, and cellular waste products throughout the body, the cardiovascular system is powered by the body's hardest-working organ — the heart, which is only about the size of a closed fist. Even at rest, the average heart easily pumps over 5 liters of blood throughout the body every minute.

During the life blood flows continually along the blood vessels carrying oxygen to the tissues of the body, giving every cell the substances necessary for its life and receiving back from it the products of its activity or waste. The blood passes three different circuits: the gastrointestinal hepatic circuit, the small pulmonary circuit and the large or systemic circuit. The heart regulates the rate at which the blood circulates and gives direction to the blood flow. The blood flows along two systems of vessels: arterial consisting of the aorta, arteries, and arterioles and venous, consisting of the venules, veins and venae cavae: inferior and superior. The capillary network is inserted between the arterial and venous systems in their turn consisting of the arterial and venous parts. We speak of venous blood and of arterial blood. Venous blood carries carbon dioxide. Arterial blood carries oxygen and chemical constituents necessary to the life of cells.

The venous blood reaches the heart via the two veins, venae cavae. From

there the blood enters the right ventricle. The contractions of this chamber push the venous blood into the pulmonary artery and it flows through the vascular system to the lungs. There, in the capillaries, the blood gives off carbon dioxide and takes in oxygen. Via the four pulmonary veins, the blood finally reaches the left auricle of the heart. We call this circuit the small or pulmonary circuit.

The blood from the left auricle enters the left ventricle and then the big artery, the aorta, leads off from the heart. From there the arterial blood streams to all the peripheral parts of the body, to all the inner organs. It streams through smaller and smaller arteries and arterioles into a capillary network. The arterial part of the capillaries goes over into a venous part and from there the blood streams through venules and veins into the two big veins, venae cavae. We call the peripheral circulation and the circulation of the inner organs with the exception of the gastrointestinal tract, the pancreas and the spleen, the large systemic circuit. The arterial blood reaches the gastro-intestinal tract, pancreas and spleen from the venous part of the capillaries, venules, veins and portal veins. The arterial blood comes to the liver from the aorta via the liver artery, the hepatic artery. We call this system gastro-intestinal hepatic circuit.

Vocabulary

waste products продукты распада

atrium/auricle предсердие

chamber камера

constituent составная часть

to circulate – циркулировать

circulatory циркуляторный

circulation кровообращение

artery артерия

vein вена

ventricle желудочек

valve клапан

aorta аорта

network сеть

to push толкать

via через,посредством

circuit(syn.loop) зд.круг кровообращения

vena cava (pl.venae cavae [‘vi:ni ‘keivi:])полая вена

broad – широкий

endocardium – эндокард, внутренняя оболочка сердца

epicardium – эпикард, наружная оболочка сердца

Focus on vocabulary

1.Translate into Russian.

arterial system, venous parts, capillary network, chemical constituents, contractions of a chamber, pulmonary circuit, blood circulation, to lead off from the heart, peripheral circulation, pancreas, via the liver artery.

2.Find the English equivalents.

Кровеносные сосуды, венозная кровь, артериальная кровь, верхняя полая вена, нижняя полая вена, капиллярная сеть, легочный круг кровообращения, большой системный круг кровообращения,

артериальная система сосудов, венозная система сосудов, кровяное русло, химические элементы, необходимые для жизни клеток, предсердие, желудочек, камера, сосудистая система, периферические части тела, артериальная часть капилляров, венозная часть капилляров, желудочно-кишечный тракт.

3.Translate into English.

1. Кровь циркулирует по трем кругам: легочному, системному и желудочно- кишечному.
2. В человеческом теле имеется две системы сосудов: артериальная и венозная.
3. Капиллярная сеть тоже состоит из венозной и артериальной частей.
4. В легкие кровь поступает по четырем легочным артериям.
5. По этим артериям течет венозная кровь, богатая двуокисью углерода и бедная кислородом.
6. Артериальная кровь, насыщена кислородом и бедна двуокисью углерода.
7. Венозная кровь получает в легких кислород и отдает углекислый газ.
8. Процесс газообмена происходит в капиллярах легких.
9. Левый желудочек сердца выталкивает кровь в аорту, которая делится на более мелкие артерии и артериолы, переходя в капиллярную сеть.
10. В капиллярах тканей и органов происходит газообмен.
11. Кровь отдает кислород и химические вещества тканям и поглощает углекислый газ.

12. По двум полым венам кровь входит в правое предсердие, затем в желудочек и направляется в легочный круг.

13.Система кровообращения доставляет питательные вещества и кислород ко всем клеткам тела.

14.Система кровообращения, образованная артериями, капиллярами, венами, играет важную роль в организме человека.

15. Аорта — это самая большая артерия тела.

16. Абдоминальная аорта, идущая от уровня двенадцатого дорсального к четвертому поясничному позвонку, делится на две артерии.

17. Грудная аорта проходит через аортное отверстие диафрагмы.

Reading comprehension

Look back at the text and answer the questions.

1. What does the blood flow along during the life?
2. What does the blood carry to the tissues?
3. When does the blood receive back from every cell the products of its activity?
4. What circuits does the blood pass?
5. What regulates the rate of blood circulation?
6. What systems of vessels does the blood flow along?
7. Where is the capillary network inserted?
8. What blood carries oxygen to cells?
9. What is venous blood?
10. Where does the contraction of the right ventricle push the venous blood?

11. Where does the systemic circuit begin?

12. What system is called a gastro-intestinal circuit?

Listening comprehension

Follow the link and answer the questions.

https://www.youtube.com/watch?v=_lgd03h3te8

The cardiovascular system (from 00.00 to 06.02)

1.What is circulatory system?

2.What are its three main components?

3.What is the main function of the heart?

4.What are the two main circulatory pathways(circulatory circuits)?

5.What part of the heart pushes the blood to the pulmonary pathway (circuit) so it can be oxygenated?

6.Where does the left side of the heart pump oxygenated blood?

7.Via what circulatory pathway is the blood then returned to the heart?

8.What are the left and the right sides of the human heart divided by?

9.Is the heart voluntary muscle?

10.What does the human heart look like? What does it consist of?

11.What three layers of tissues is the human heart made up of?

12.What is the function of blood vessels?

13.Where does the blood flow through the arterial blood vessels?

14.What is the largest of the arteries?

15.What are arteries subdivided into?

16.What are arterioles?

17.What is the function of the capillaries?

18.Through what does the blood flow back from the body to the heart?

19.How do we call the largest veins?

20.What is blood?

21.What is plasma mainly made up of?

22.What are three main corpuscular elements found in the blood ?

Self-test

Translate the text using a medical dictionary.

Blood Vessels

Blood vessels are the body's highways that allow blood to flow quickly and efficiently from the heart to every region of the body and back again. The size of blood vessels corresponds with the amount of blood that passes through the vessel. All blood vessels contain a hollow area called the lumen through which blood is able to flow. Around the lumen is the wall of the vessel, which may be thin in the case of capillaries or very thick in the case of arteries.

All blood vessels are lined with a thin layer of simple squamous epithelium known as the endothelium that keeps blood cells inside of the blood vessels and prevents clots from forming. The endothelium lines the entire circulatory system, all the way to the interior of the heart, where it is called the endocardium.

There are three major types of blood vessels: arteries, capillaries and veins. Blood vessels are often named after either the region of the body through which they carry blood or for nearby structures.

Arteries and arterioles: Arteries are blood vessels that carry blood away from the heart. Blood carried by arteries is usually highly oxygenated, having just left the lungs on its way to the body's tissues. The

pulmonary trunk and arteries of the pulmonary circulation loop provide an exception to this rule – these arteries carry deoxygenated blood from the heart to the lungs to be oxygenated.

Arteries face high levels of blood pressure as they carry blood being pushed from the heart under great force. To withstand this pressure, the walls of the arteries are thicker, more elastic, and more muscular than those of other vessels. The largest arteries of the body contain a high percentage of elastic tissue that allows them to stretch and accommodate the pressure of the heart.

Smaller arteries are more muscular in the structure of their walls. The smooth muscles of the arterial walls of these smaller arteries contract or expand to regulate the flow of blood through their lumen. In this way, the body controls how much blood flows to different parts of the body under varying circumstances. The regulation of blood flow also affects blood pressure, as smaller arteries give blood less area to flow through and therefore increases the pressure of the blood on arterial walls. Arterioles are narrower arteries that branch off from the ends of arteries and carry blood to capillaries. They face much lower blood pressures than arteries due to their greater number, decreased blood volume, and distance from the direct pressure of the heart. Thus arteriole walls are much thinner than those of arteries. Arterioles, like arteries, are able to use smooth muscle to control their aperture and regulate blood flow and blood pressure.

Capillaries: Capillaries are the smallest and thinnest of the blood vessels in the body and also the most common. They can be found running

throughout almost every tissue of the body and border the edges of the body's avascular tissues. Capillaries connect to arterioles on one end and venules on the other.

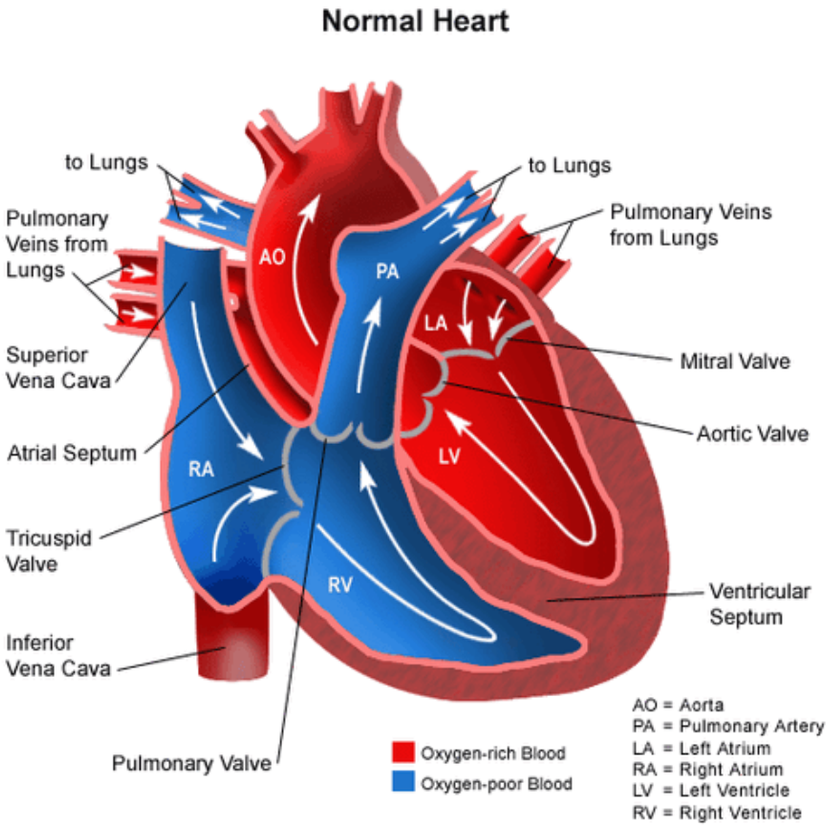
Capillaries carry blood very close to the cells of the tissues of the body in order to exchange gases, nutrients, and waste products. The walls of capillaries consist of only a thin layer of endothelium so that there is the minimum amount of structure possible between the blood and the tissues. The endothelium acts as a filter to keep blood cells inside of the vessels while allowing liquids, dissolved gases, and other chemicals to diffuse along their concentration gradients into or out of tissues. *Veins and venules*: Veins are the large return vessels of the body and act as the blood return counterparts of arteries. Because the arteries, arterioles, and capillaries absorb most of the force of the heart's contractions, veins and venules are subjected to very low blood pressures. This lack of pressure allows the walls of veins to be much thinner, less elastic, and less muscular than the walls of arteries. Veins rely on gravity, inertia, and the force of skeletal muscle contractions to help push blood back to the heart. To facilitate the movement of blood, some veins contain many one-way valves that prevent blood from flowing away from the heart. As skeletal muscles in the body contract, they squeeze nearby veins and push blood through valves closer to the heart.

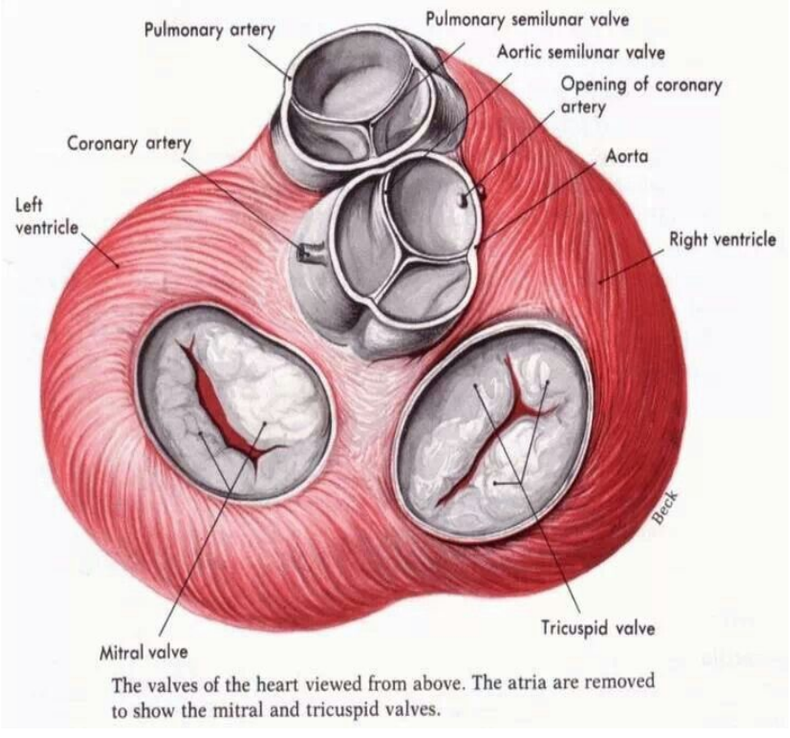
Speaking

Make additional research into the structure and function of arteries veins and capillaries. Prepare a classroom presentation.

Text B
The human heart

Reading





The valves of the heart viewed from above. The atria are removed to show the mitral and tricuspid valves.

The heart is a muscular pumping organ located medial to the lungs along the body's midline in the thoracic region. The bottom tip of the heart, known as its apex, is turned to the left, so that about 2/3 of the heart is located on the body's left side with the other 1/3 on right. The top of the heart, known as the heart's base, connects to the great blood vessels of the body: the aorta, vena cava, pulmonary trunk, and pulmonary veins.

Heart is a hollow muscular organ with four cavities; each provided at its outlet with a valve, whose function is to maintain the circulation of the blood. The two upper cavities are known as atria or auricles, the two lower ones as ventricles. The heart lies in the chest between the two lungs, but projecting more to the left side than to the right. On the left side its apex reaches out almost to the nipple; and lies beneath the fifth rib, while its right border extends only a short distance, at most an inch, beyond the margin of the breast-bone. Its lower border rests upon the diaphragm by which it is separated from the liver and stomach. Above, the heart extends to the level of the second rib, where the great vessels, the aorta on the right side and the pulmonary artery on the left, lie behind the breast-bone. One end of the heart is pointed (apex), the other is broad (base).

Structure The heart lies within a strong fibrous bag, known as the pericardium, and since the inner surface of this bag and the outer surface of the heart are both covered with a smooth, glistening membrane faced with flat cells and lubricated by a little serous fluid, the movements of the heart are accomplished almost without friction. The main thickness of the heart wall consists of bundles of muscle fibers.

Within all the cavities is a smooth lining membrane continuous with that lining the vessels which open into the heart. The investing smooth membrane is known as epicardium, the muscular substance as myocardium, and the smooth lining membrane as endocardium. For the regulation of the heart's action there are important nervous connections, especially with the vagus and with the sympathetic nerves. There is no direct communication between the cavities on the right side and those on the left; but the right auricle opens into the right ventricle by a large circular opening, and similarly the left auricle into the left ventricle. Into the right auricle open two large veins, the superior and inferior venae cavae, with some smaller veins from the wall of the heart itself, and into the left auricle open two pulmonary veins from each lung. One opening leads out of each ventricle, to the aorta in the case of the left ventricle, to the pulmonary artery from the right.

As stated above there are four valves. Two of these are placed at the openings

leading from auricle into ventricle, the «tricuspid valve» on the right side, the «mitral valve» on the left, so as completely to prevent blood from running back into the auricle when the ventricle contracts. Two more, the «pulmonary valve» and the «aortic valve», are placed at the entrance to these arteries, and prevent regurgitation into the ventricles of blood which has been driven from them into the arteries. The noises made by these valves in closing are known as the heart sounds, and can be heard by anyone who applies his ear to the front of a person's chest.

Action At each heart-beat the two auricles contract and expel their contents into the ventricles, which at the same time they stimulate to contract together, so that the blood is driven into the arteries, to be returned again to the auricles after having completed a circuit through the body or lungs as the case may be. The heart beats from sixty to ninety times a minute, the rate in any given healthy person being about four times that of the respirations. The heart is to some extent regulated by a nerve centre in the medulla oblongata, closely connected with those centres which govern the lungs and stomach, and nerve-fibers pass to it in the vagus nerve. By some of these fibers its rate and force can be diminished, by others increased, according to the needs of the various organs of the body. If this nerve centre be injured or poisoned, for example by want of fresh air, etc., the heart stops beating in human beings, though in some of the lower animals e. g., frogs, fishes, and reptiles - the heart may under favourable conditions go on beating for hours even after its entire removal from the body.

1.Find the English equivalents of the following:

1. Сердце - это полый мышечный орган с четырьмя полостями, ...
2. Сердце находится в грудной клетке между двумя легкими, но...
3. Один конец сердца - это верхушка, а другой ...
4. Для регуляции работы сердца существуют важные нервные соединения, особенно…
5. Не существует прямой связи между полостями на правой стороне и …находятся четыре клапана.
6. При каждом биение сердца два предсердия сокращаются и ....

7. Сердце совершает от 60-80 ударов в минуту, частота...

2.Translate into English.

1. Эта научная работа предназначена для специалистов, которые работают в области кардиохирургии.
2. Цель нашего исследования - понять причины сердечно–сосудистых заболеваний.
3. Получить знания о функции сердца во время сна - цель данной работы.
4. Сердце - это внутренний орган, расположенный в грудной полости.
5. Две верхние полости сердца известны как предсердия, а две нижние как желудочки.
6. Сердце располагается внутри плотной фиброзной сумки, перикарда.
7. Работа сердца определенным образом регулируется нервным центром.
8. У некоторых низших животных сердце не прекращает биться даже при неблагоприятных условиях.

3.Look through the extract and do the tasks.

The circulatory system carries oxygen in blood to all parts of the body. Blood begins its journey in the heart, which beats to pump it to the rest of the body. Valves control how blood moves through the heart. Blood picks up oxygen in the lungs by travelling through the pulmonary artery. It then leaves the heart through the aorta, the body’s largest artery. Blood flows throughout the body in arteries. At the and of arteries are

tiny capillaries. Here, oxygen moves to parts of the body. Blood without oxygen returns to the heart in veins. The largest of these, the vena cava, empties into the heart's right atrium. Then the cycle begins again.

a)Mark the following statements as true (T) or false (F).

1.Blood travels through the aorta to the lungs.

2.Oxygen leaves blood through capillaries.

3.The vena cava is the largest artery in the body.

b)Match the words(1-5) with the definitions(A-E).

1.___pulmonary

2.___valve

3.___vein

4.___capillary

5.___artery

a. a blood vessel that carries blood away from the heart

b. the smallest kind of blood vessel in the body

c.a blood vessel that carries blood towards the heart

d.having to do with the lungs

e.a flap in a bodily system that allows passage of material in one direction but prevents passage in the other direction

c)Fill in the blanks with the correct words and phrases.

heart aorta circulatory system vena cava atrium

1.Can you tell me what organs make up the _____?

2.The _____ branches into two smaller arteries in the lower body.

3.Does blood without oxygen return to the left or right _____?

4.The superior_____ returns blood without oxygen from the head and arms.

5.If you live 66 years, your _____ will beat 25 billion times.

d)Match the Russian and the English equivalents.

Камера, правые отделы сердца, левые отделы сердца, кислород, обогащать кислородом, питательные вещества (питание), сеть, ответвление, обогащать питательными веществами, мелкий, делить, подразделять, односторонний клапан, арка.

arch, the right heart, chamber, oxygen, divide, the left heart, nourish, oxygenate, nourishment, branch, network, fine, subdivide, one-way valve.

e)Match the terms to their definitions.

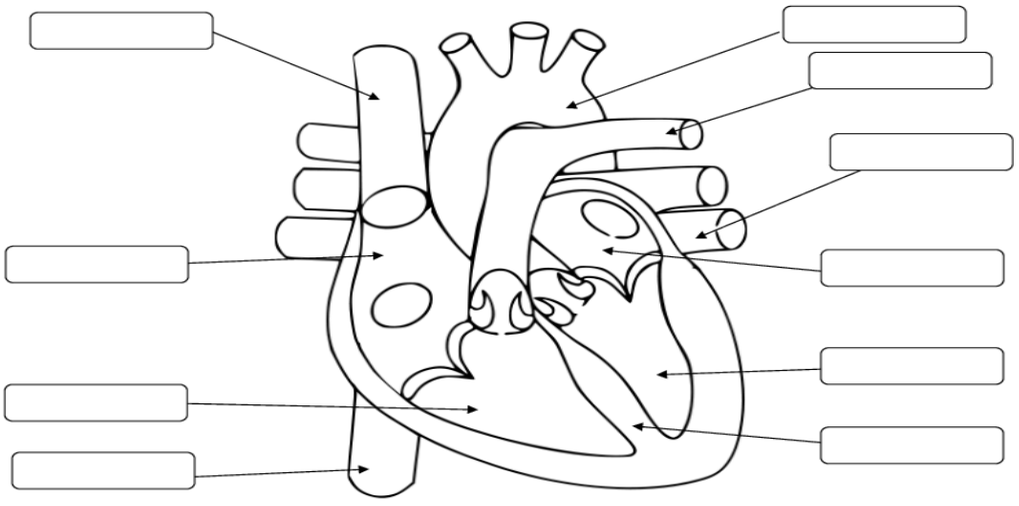
1.circulatory system /ˌsɜː.kjəˈleɪ.tər.i/ /ˈsɝː.kjə.lə.tɔːr.i/	**a.** a very thin tube, especially one of the smaller tubes that carry blood around the body
2.tricuspid valve /traɪˈkʌs.pɪd ˌvælv/	**b**.the main artery (= thick tube carrying blood fro m the heart) that takes blood to the other parts of the body
3.vena cava/ˌviː.nə ˈkeɪ.və/	**c**.one of the thick tubes that carry blood from the heart to other parts of the body.
4.artery /ˈɑː.tər.i/	**d.**one of the two spaces in the top part of the heart that receive blood from the veins and push it down into the ventricles (= lower spaces)
5.mitral valve /ˈmaɪ.trəl ˌvælv/	**e.**a tube that carries blood to the heart from the other parts of the body
6.aorta /eɪˈɔː.tə/	**f**.the valve (= a structure that opens and closes) in the heart that stops blood from returning into the left atrium (= upper space) from the left ventricle (= lower space)
7.atrium/ˈeɪ.tri.əm/	**g**.the valve having a semilunar shape that lies between the right ventricle and the pulmonary artery and has three cusps

8.pulmonary valve	**h.**either of two small, hollow spaces, one in each side of the heart, that force blood into the tubes leading from the heart to the other parts of the body
9.aortic valve disease	**i.**between the ventricles (= hollow spaces in the heart that pump blood)
10.ventricle /ˈven.trɪ.kəl/	**j**.a thin part dividing tissues or spaces in an organ such as the nose or heart
11.interventricular /ˌɪn.tə.venˈtrɪk.jə.lər/	**k**.a very small vein
12.septum /ˈsep.təm/	**l**.a condition in which the valve between the heart and the aorta (= the body's largest artery) does not work properly
13.venule /ˈviːnjuːl/	**m.** the red liquid that is sent around the body by the heart, and carries oxygen and important substances to organs and tissue, and removes waste products
14.blood	**n**.the valve (= the structure that opens and closes) in the heart that stops blood from returning into the right atrium (= upper space) from the right ventricle (= lower space)
15.vein	**o.**one of the two very large veins through which blood returns to the heart, one from the upper body and head and one from all of the body below the chest
16.capillary /kəˈpɪl.ər.i/	**p.**a tube that carries liquids such as blood through the body
17.vessel	**q**.a very small artery that often joins onto a capillary
18.arteriole /ɑːˈtɪə.ri.əʊl/	**r**.the system that moves blood through the body and that includes the heart, arteries, and veins

4.Fill in the gaps in the chart.

Name: _____ Date: _____

Label the identified part of the heart. Color the parts with oxygenated blood in red and deoxygenated blood in purple or deep red. When done complete the chart below with the function and oxygen level of each heart part.



http://commons.wikimedia.org/wiki/File:Heart.svg

	Oxygenated/ Deoxygenated Blood	Function
Vena cava		
Aorta		
Pulmonary Artery		
Pulmonary Vein		
Right Atrium		
Right Ventricle		
Left Atrium		

© 2013 The Tech Savvy Science Teacher http://techsavvyscience.blogspot.com

Focus on Grammar

1.The Present Simple Active

To Be (is, are)

Translate into Russian.

1.The cardiovascular system is the system of blood circulation.

2.The centre of the circulatory system is the heart.

3.The human heart is a cone-shaped organ, about 5 inches long and 3 ½ inches broad.

4.The heart is a hollow muscle which has four chambers.

5.Anatomically and functionally the heart is a unit consisting of two pumps (the “right heart” and the” left heart”).

6. Between upper and lower chambers is a one-way valve, the tricuspid valve.

7.The valve that separates two chambers of the left heart is the mitral valve.

8.The artery taking up the blood from the right ventricle and carrying it to the lungs is the pulmonary artery.

9. The smallest arteries are the arterioles.

10.The smallest veins are venules.

11. The particular vein into which the capillaries and venules of the lungs unite is the pulmonary vein.

12.The aorta is the largest artery in the body.

13.Capillaries are much finer that hairs.

14.The blood is red.

15. The blood is a fluid, which coagulates when escapes from a blood vessel.

2.Notional verbs.

A Понимание и перевод английского предложения зависят от правильного определения ядра предложения (подлежащего и сказуемого), что важно для сохранения логического центра высказывания при передаче на русский язык. Найти ядро английского предложения можно, проанализировав формальные признаки глагола-сказуемого, т. е., например, окончание *-s /-es* у глаголов в 3-ем лице единственного числа настоящего времени.

B 1) При переводе на русский язык необходимо сохранять логический центр высказывания (т. е. ядро) английского предложения.

N Vs
Friction between two objects produces heat.
Ns V
Certain chemical reactions **produce** heat.

C Translate into Russian. Explain the –s ending of the verbs.

1.From the left heart the well-oxygenated blood move**s** into a large artery, the aorta.

2.The contraction of the left ventricle force**s** the blood through a one-way valve into the aorta.

3.In the lungs the blood receive**s** oxygen.

4.The arteries continue to divide and subdivide and form smaller and smaller vessels with thinner and thinner walls.

D Translate the verbs, write their 4 forms.

V1->V2->V3>V4

Mean,weigh,lie,consist,have(has),separate,call,think,receive,pump,mov, return,dissolve,come,pass (through),nourish, form, join, get, become, lead (away),assume, carry, take (up), divide, begin, unite, make(up),force(through),move(upward),arch (over),coagulate, ascend, escape.

3.

Present Perfect

We use the Present Perfect to talk about something that has happened recently. We sometimes use *just* to emphasize a very recent event.

*The patient **has** (just) **discharged** himself.*

*You **haven't broken** your arm.*

= *have / has* (+ *not*) + past participle

Translate into Rissian.

1.The walls of the capillaries are so thin that the dissolved nourishment that **has come** from the digestive system and the oxygen that **has come** from the lungs can pass through the walls of the capillaries into the tissues of the body to nourish it.

2.When the pressure in the right atrium **has increased** the blood passes into the right ventricle from the right atrium.

3.When the right ventricle **has pumped** the venous blood into the pulmonary artery it enters the pulmonary circulation.

4.When the blood **has discharged** out carbon dioxide it takes in oxygen in the lungs.

5.The blood which **has become** oxygenated passes from the venous part of the pulmonary capillary system into the venules and veins.

4. Prepositions.

a)Translate into Russian.

in the heart, in blood, to all parts of the body, to the rest of the body, through the heart, in the lungs, through the pulmonary artery, flows throughout the body in arteries, at the end of arteries, in veins, empties into the heart's right atrium, through the aorta.

b)Find prepositions in the sentences below, translate them into Russian.

1.The heart lies in the thoracic cavity, just behind the breastbone and between the lungs.

2.Between the atrium and the ventricle is a tricuspid valve.

3.The right heart receives blood from the veins and pumps it into the lungs by way of the lesser circulatory system.

4.In the lungs the blood receives oxygen.

5.From the left heart the well-oxygenated blood moves into a large artery, the aorta.

6.The blood returns to the heart by means of the veins.

7.The dissolved nourishment from the digestive system and the oxygen from the lungs can pass through the walls of the capillaries into the tissues of the body to nourish it.

5.Word-building

Прилагательное+ **-ly** =наречие gradual постепенный-gradually-постепенно;fresh-freshly

Существит.+**ate**[eit] =глагол oxygen кислород –oxygenate насыщать кислородом; circulation –circulate; separation-separate;

-ate [it] суффикс прилагательных и существ. delegate, complete, accurate, ultimate.

-ward(s) встречается у прилагательных, наречиях, предлогах, обозначая направление.

Translate:

to oxygenate blood, the freshly oxygenated blood, gradually the capillaries join into larger vessels, the downward course, the aorta moves upward at first.

6.Write the plural forms of the following nouns (where it is possible):

System,heart,artery,vein,capillary,body,organ,male,female,man,woman, chamber,breastbone,lung,cavity,valve,pump,oxygen,blood,wall,tissue,network,vessel,ventricle,venule,plasma,serum,corpuscle.

7.Write comparative and superlative forms of the adjectives and adverbs:

a) Broad, low, well, close, large, early, bad, small, thin, fine, important, freshly, tiny, big, good, deep, sharp, many, little, far.

b)Write comparative and superlative forms of the adjectives in brackets:

1.The veins are (large) than capillaries.2.The aorta is the(large) artery which distributes the blood throughout the body. 3. I know the structure of the heart (good) that that of the lungs. 4. The human heart weighs (little) than a pound.

8.Use the correct form of the verbs to complete the sentences.

1. The heart (to be located) **between the lungs.**

2. The heart (to be) a **muscular** organ.

3. The heart (to be divided) into **four** cavities: the right auricle and ventricle, left

auricle and ventricle.

4. **Ventricles** (to form) the lower and larger cavities of the heart.

5. Auricles (to comprise) **the two upper chambers of the heart.**

6. The inner surface of the heart (to cover) by **the endocardium.**

9.Define the functions of the infinitives ,translate into Russian.

1. The valves help *to maintain* the pressure necessary for the circulation.

2. It is important *to point* out the clinical aspects of the case under discussion.

3. *To prevent* heart disease is the main task.

4. *To understand* the origin of the illness is a desire of every doctor.

5. The management of cardiovascular problems can *be* the key to preventive medicine.

6. Cardiovascular disease is one of the most important *to study.*

7. A doctor listens to a patient's heart *to determine and diagnose* any heart failure.

8. This book deserves *to be* on the shelf of a practicing cardiologist.

9. The method is too complicated *to use.*

10. He wants *to deal* with this problem himself.

11. Ann was the last *to present* her papers.

Reading comprehension

Look back at the text and answer the questions.

1. What is the heart?

2. Where is the heart located?

3. What are the cavities of the heart?

4. What is the difference between the left and the right side of the heart?

5. What is the structure of the heart like?

6. How many beats per minute does the heart make?

7. When can the heart stop beating?

Listening comprehension

Follow the links, watch the videos and answer the questions.

https://www.youtube.com/watch?v=zUam38Zk-6Q&t=4s

https://www.youtube.com/watch?v=H04d3rJCLCE

1.The structure of the human heart

1.What is the heart?

2.Where is the human heart located?

3.Where are two thirds of the heart located?

4.What is the size of an adult’s heart?

5.What is the heart divided into internally?

6. What are the upper two chambers called?

7.What are the two lower chambers called?

8.What does the right atrium open into? Via which valve?

9.Via what valve does the left atrium open into the left ventricle?

10.What is the septum?

11.What is the pericardium?

12.What type of muscle tissue is the heart made up of?

2.How the human heart works

1.What is the most important muscle in the human body?

2.How many times a day can the human heart beat?

3.What are its four main chambers?

4.What type of blood does the right part of heart receive?

5.What artery does the right part of the heart pump the blood through?

6.Where does the blood from this artery go to?

7.What type of blood does the left part of the heart receive?

8.What does the left part of the heart pump the blood through?

9.Where does the blood go from here?

10.What does blood deliver to tissues through capillaries while circulating through the body?

11.What does the blood pick up?

12. Where do veins return the de-oxygenated blood?

13.What happens next?

14.How many valves does the heart have?

15.What is a valve?

16.What are these valves made up of?

17. How do these work?

18.What is opening and closing of the valves controlled by?

19.Where is the tricuspid valve positioned?

20.Where is the pulmonic valve located? What is its function?

21.Where is the mitral valve positioned?

22. What is the aortic valve?

Speaking

Make a research and create a WebQuest to examine different types of heart disease.

Follow the plan:

Causes> symptoms> effects>prevention.

Prepare a classroom report and a presentation. Speak for 3 minutes.

The three most common types of acquired heart disease are:

Coronary Artery Disease (acronym CAD) – This is a problem with the blood vessels that deliver blood to the heart muscle. If these blood vessels get very small, or if they become blocked, blood cannot flow through them normally. Since less blood is supplied to the heart muscle, the muscle cannot work at normal capacity. The heart muscle can become sick and weak. Heart muscle can even die if blood flow stops. Blocked arteries in the heart are often caused by smoking, high cholesterol, high blood pressure, diabetes, and inherited traits from parents. All of these problems damage the lining of the heart's blood vessels and make them become narrowed or blocked completely.

Congestive Heart Failure (CHF) – This is a condition that means that the heart is not pumping at normal levels. Two common causes are a weak or sick heart muscle and abnormal heart valves. The valves may not let enough blood through because they are too narrowed. Or the valve may "leak" and let blood flow backwards (the wrong direction)

inside the heart. When the heart valves do not work normally, the heart muscle has to do extra work and it can become tired.

Bad Heart Rhythms – This is a problem with electrical activity in the heart. This can make the heart beat too fast or too slow. Very bad heart rhythms may make the heart stop pumping blood. The heart needs a normal rhythm to pump the blood well. If the rhythm is too fast, the heart may not have time for blood to enter the chambers, so there is not enough blood moving through the heart with each beat. If the heart is too slow, there may not be enough contractions of the heart to supply the body with the blood that it needs.

Congenital heart disease

Congenital heart disease refers to a form of heart problem that starts before birth (congenital). Congenital heart disease includes a large number of conditions. The formation of the heart before birth is very complex and is sometimes abnormal. For example, if a part of the main artery that comes from the heart is narrowed. There may be holes inside the heart which keep the blood from flowing normally inside the heart. Other congenital heart problems are caused by abnormal heart valves. In some cases, congenital heart problems are discovered at birth. Other times the problems may not be detected until the person is an adult.

Useful links:

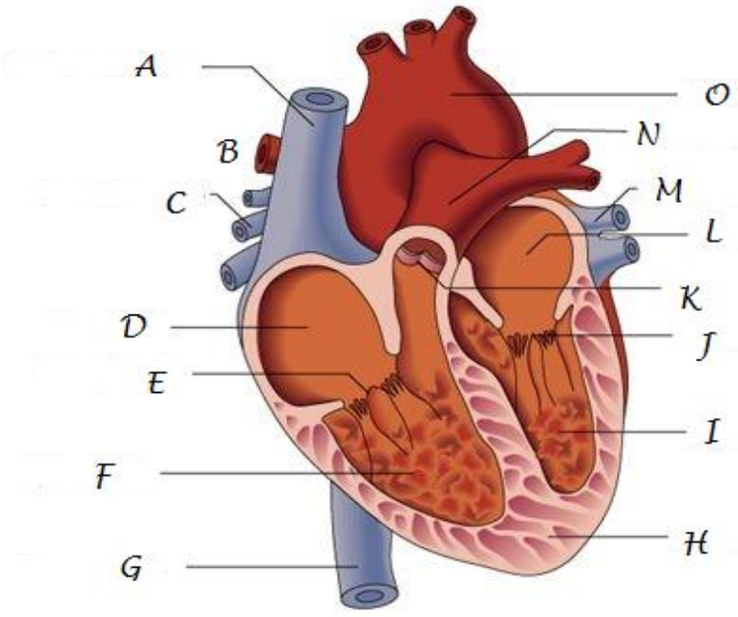
https://www.youtube.com/watch?v=CIvA71cQJmQ

https://www.youtube.com/watch?v=lTCF8y7e1Bw

https://www.youtube.com/watch?v=k9QETgv4pto

Self-test

1.Fill in the gaps.



Helicon Publishing Ltd. 1999 All rights reserved

2.Translate into Russian.

Text A. Work of the Human Heart

The human heart contracts from the first moment of life until the last one. The contractions of the heart pump the blood through the arteries to all the parts of the body. Scientists have determined that the total weight of the blood pumped by the heart daily is about ten tons.

The rate of heart contractions is regulated by two groups of nerve fibers. It varies in different persons and at different age.

Physiologists have determined that in the adult the heart makes from 60 to 72 beats per minute. In children the rate of heartbeat is much higher. Research work of many scientists has helped to determine that the rate of heartbeat increases depending on different emotions.

Each beat of the heart is followed by a period of rest for the cardiac muscle. Each wave of contraction and a period of rest following it compose a cardiac cycle.

Research work has given physiologists the possibility to find out that the heart muscle works or contracts about one third of the time of the person's life. The period of rest is shorter during greater physical exertion and longer when the body is at rest.

Each cardiac cycle consists of three phases: physiologists have called the first phase of short contraction of both atria — *the atrial systole.* They have called the second phase of a more prolonged contraction of both ventricles—*the ventricular systole.* The period of rest of the cardiac muscle is called *the diastole.*

The left ventricle discharges out the blood received by the left atrium from the pulmonary circulation through the aorta to the systemic circulation.

The blood received from the systemic circulation by the right atrium is discharged out of the right ventricle to the lungs through the pulmonary arteries.

Prolonged research work of many physiologists has given the possibility to estimate the role of the ventricles which serve as the main pump. The atria act as receiving chambers. The contraction of the atria which sends the final portion of the blood into the ventricle is considerably less.

3. Translate into English.

Система Кровообращения

Кровообращение происходит по двум основным путям, называемым кругами, соединёнными в последовательную цепочку: малому и большому кругу кровообращения. По малому кругу кровь циркулирует через лёгкие. Движение крови по этому кругу начинается с сокращения правого предсердия, после чего кровь поступает в правый желудочек сердца, сокращение которого толкает кровь в лёгочный ствол. Циркуляция крови в этом направлении регулируется предсердно-желудочковой перегородкой и двумя клапанами: трёхстворчатым (между правым предсердием и правым желудочком), предотвращающим возврат крови в предсердие, и клапаном лёгочной артерии, предотвращающим возврат крови из лёгочного ствола в правый желудочек. Лёгочной ствол разветвляется до

сети лёгочных капилляров, где кровь насыщается кислородом за счёт вентиляции лёгких. Затем кровь через лёгочные вены возвращается из лёгких в левое предсердие. Большой круг кровообращения снабжает насыщенной кислородом кровью органы и ткани. Левое предсердие сокращается одновременно с правым и толкает кровь в левый желудочек. Из левого желудочка кровь поступает в аорту. Аорта разветвляется на артерии и артериолы, идущие в различные части организма и заканчивающиеся капиллярной сетью в органах и тканях. Циркуляция крови в этом направлении регулируется предсердно-желудочковой перегородкой, двустворчатым (митральным) клапаном и клапаном аорты. Таким образом, кровь движется по большому кругу кровообращения от левого желудочка до правого предсердия, а затем по малому кругу кровообращения от правого желудочка до левого предсердия.

Unit 9

The Human Blood

Reading

Useful links:

https://www.youtube.com/watch?v=35--8dAcZGw

https://www.youtube.com/watch?v=HQWlcSp9Sls

https://www.youtube.com/watch?v=ZVklPwGALpI

The Human Blood

Physical Properties of the human blood

The blood is a variety of connective tissue, in which the ground substance is

fluid.The colour of blood is bright red or scarlet when it flows in the arteries and dark red or purple when it flows in the veins. It is salt to the taste and has a peculiar faint odor and an alkaline reaction. Its specific gravity is about 1.159 and its temperature is generally about 37°, but it varies slightly in different parts of the blood.

Fundamental blood elements

Blood consists of fluid, plasma, containing various kinds of living cells and cell-like bodies. Three kinds of cells or blood corpuscles float in the plasma, red cells (erythrocytes), white cells (leucocytes) and blood platelets, or thrombocytes.

Erythrocytes In man, the red corpuscles have the shape of biconcave blood disk. The function of the red cells is to carry oxygen from the lungs to the tissues and transport carbon dioxide from the tissues to the lungs. Each corpuscle is stuffed with hemoglobin, a coloring organic substance. Hemoglobin is an oxygen carrier. The amount of erythrocytes in the blood is enormous. In male adults, the number of red cells amounts on an average to 5000000 per cubic millimeter of blood. In women and in the earlier years of life in both sexes the number is somewhat below this. The red cells in the adult arise from mother cells in the red bone marrow.

Leucocytes Unlike the red corpuscles, the white cells are not all of one sort. They differ in size and shape and in the character of their nuclei and so on. These morphological differences must mean a corresponding difference in function. The leucocytes play a very important part in the protection of the body against disease. They can protrude finger-shaped or filamentous

processes of their substance, by which they move and take up granules from the surrounding medium.

They are able to emigrate from the blood capillaries penetrating between the cells, which form their walls and thus finding their way to the extravascular spaces. The total number of leucocytes in the adult blood varies between 1000 to 5000 per cubic millimeter of blood. It changes considerably from hour to hour and from day to day. A few hours after a meal there is a distinct increase of the number of leucocytes. A decrease below normal is called leucopenia fever. White cells are the natural product of two tissues in the body, the red marrow and the adenoid tissue. The bone marrow is the most important seat of blood formation, not only of red cells but also of white ones.

Thrombocytes or blood platelets, are somewhat irregular in outline and smaller than the red cells. The function of the blood platelets is to start the coagulation of blood and to stop the bleeding. They liberate a special ferment, which causes the clotting of blood. The normal number of platelets is from 200000 to 400000 per cubic millimeter of blood. When their number is less than 50000, a small wound will bleed for a long time. When their number is still less below 10000 per cubic millimeter of blood, a severe loss of blood from even very slight wound will occur. The clotting of normal blood begins in 5 minutes and is over in 6 or 7 minutes. In hemophilia, blood coagulates only after a very long interval, the full coagulation of hemophilic blood takes more than an hour.

Vocabulary

alkaline -щелочной

biconcave -двояковогнутый

bleeding -кровотечение

clotting -свертывание

compatible -совместимый

decrease -уменьшение

degeneration -вырождение, дегенерация

disintegration -распад, разложение

faint –слабый

filamentous - волокнистый

to float - плавать, держаться на воде

film - пленка

ground - основа, основной

to liberate - выделять, освобождать

loose - свободный

odour - запах

opaque - непрозрачный

to penetrate - проникать

to protrude - выпячивать, выступать

to stuff - наполнять, набивать

to suspend - взвешивать, подвешивать

viscid - вязкий, липкий

wound - рана

Focus on vocabulary

1.Find the English equivalents.

Основная субстанция; клетко-подобные тела; у человека эритроциты имеют форму двояковогнутых дисков; ткань; переносить двуокись углерода; гемоглобин; красящее органическое вещество; разновидность соединительной ткани; на вкус; лимфатическая ткань; кислородоноситель; окружающая среда; увеличение количества лейкоцитов; лейкопения функция кровяных пластинок,
вызывать свертывание крови.

2.Find the mismatched synonyms and correct them.

ground - scarlet
bright red - fundamental
dark red - smell
peculiar specific
odour - purple
to vary - liquid
minute - fine, tiny, very little
particles - cells, corpuscles
fluid - to differ
various - different
to carry - to fill
to stuff - to transport
to breathe - to respire
the amount - to seize
to arise - to originate
disintegration - break down
to take up - the number, a count

total - the whole

to coagulate - chief

coagulation - clotting

main - to clot

3.Write the synonyms of the underlined words.

1. The function of erythrocytes is to carry oxygen and carbon dioxide.

2. Thrombocytes are tiny particles of the blood.

3. Leuccocytes differ in size and shape.

4. The human blood has a specific odour.

5. The place of disintegration of erythrocytes is blood stream and lymphatic tissue of the spleen.

6. Leucocytes seize the foreign bodies with their processes.

7. The total number of leucocytes per one cubic millimeter of blood is from 5000 to 10000.

8. The main function of thrombocytes is to cause coagulation.

9. Erythrocytes are stuffed with the hemoglobin.

10. The blood is a fluid of bright red color in the arteries, and of dark red color in the veins.

4. Translate into Rssian.

1. Человеческая кровь - разновидность соединительной ткани.

2. Кровь - это сложная субстанция, состоящая из основного вещества – плазмы и мелких частиц - элементов крови.

1. Кровь содержит следующие элементы: эритроциты, лейкоциты тромбоциты.

2. Эритроциты - красные кровяные тельца двояковогнутой формы.

5. Благодаря эритроцитам кровь имеет красный цвет.

6. Артериальная кровь - ярко красная, а венозная кровь - темно красная.

7. Лейкоциты имеют защитную функцию: они разрушают и поглощают инородные частицы и микробы.

8. Место зарождения лейкоцитов - красный костный мозг и лимфатическая ткань.

9. Эритроциты разрушаются в кровяном русле.

10. Лимфатическая ткань селезенки разрушает эритроциты.

11. Функция тромбоцитов - вызывать свертывание.

12. В норме количество тромбоцитов от 200000 до 400000 в одном кубическом миллиметре.

Focus on grammar

Define time and tense of the predicates in the sentences below. Translate into Russian.

1. Blood consists of a fluid, the plasma, containing various kinds of living cells and cell like bodies.

2. In man, the red corpuscles have the shape of biconcave blood discs.

3. Each corpuscle is stuffed with hemoglobin, a colouring organic substance.

4. Hemoglobin is an oxygen carrier.

5. Unlike the red corpuscles, the white cells are not all of one sort.

6. Leucocytes can protrude finger-shaped of filamentous processes of their substance by which they move and take up granules from the surrounding medium.

7. Thrombocytes liberate a special ferment which causes the clotting of blood.

8. In hemophilia blood coagulates only after a very long interval.

9. The full coagulation of hemophilic blood takes more than an hour.

Reading comprehension.

1. What is blood?
2. What is the color of blood in arteries and veins?
3. What does blood consist of?
4. What is the function of erythrocytes?
5. What is carried by hemoglobin?
6. What is the normal number of red cells in male adults and in females?
7. What do the red cells in adults arise from?
8. Why do the red and white cells differ in their outer structure?
9. What is the function of leucocytes?
10. How do leucocytes move?
11. What does the variety of the total number of leucocytes depend on?
12. What disease is caused by a decrease in the number of leucocytes?
13. What disease is caused by an increase in the number of leucocytes?
14. What do the blood platelets liberate?
15. When does a wound bleed?
16. How long does the blood coagulate in hemophilia?

Self-test

Translate the text using a medical dictionary.

Corpuscular elements of blood

The average human body contains about 4 to 5 liters of blood. As a liquid connective tissue, it transports many substances through the body and helps

to maintain homeostasis of nutrients, wastes, and gases. Blood is made up of red blood cells, white blood cells, platelets, and liquid plasma.

Red Blood Cells Red blood cells, also known as erythrocytes, are by far the most common type of blood cell and make up about 45% of blood volume. Erythrocytes are produced inside of red bone marrow from stem cells at the astonishing rate of about 2 million cells every second. The shape of erythrocytes is biconcave—disks with a concave curve on both sides of the disk so that the center of an erythrocyte is its thinnest part. The unique shape of erythrocytes gives these cells a high surface area to volume ratio and allows them to fold to fit into thin capillaries. Immature erythrocytes have a nucleus that is ejected from the cell when it reaches maturity to provide it with its unique shape and flexibility. The lack of a nucleus means that red blood cells contain no DNA and are not able to repair themselves once damaged.

Erythrocytes transport oxygen in the blood through the red pigment hemoglobin. Hemoglobin contains iron and proteins joined to greatly increase the oxygen carrying capacity of erythrocytes. The high surface area to volume ratio of erythrocytes allows oxygen to be easily transferred into the cell in the lungs and out of the cell in the capillaries of the systemic tissues.

White Blood Cells White blood cells, also known as leukocytes, make up a very small percentage of the total number of cells in the bloodstream, but have important functions in the body’s immune system. There are two major classes of white blood cells: granular leukocytes and agranular leukocytes.

Platelets Also known as thrombocytes, platelets are small cell fragments

responsible for the clotting of blood and the formation of scabs. Platelets form in the red bone marrow from large megakaryocyte cells that periodically rupture and release thousands of pieces of membrane that become the platelets. Platelets do not contain a nucleus and only survive in the body for up to a week before macrophages capture and digest them.

Plasma Plasma is the non-cellular or liquid portion of the blood that makes up about 55% of the blood's volume. Plasma is a mixture of water, proteins, and dissolved substances. Around 90% of plasma is made of water, although the exact percentage varies depending upon the hydration levels of the individual. The proteins within plasma include antibodies and albumins. Antibodies are part of the immune system and bind to antigens on the surface of pathogens that infect the body. Albumins help maintain the body's osmotic balance by providing an isotonic solution for the cells of the body. Many different substances can be found dissolved in the plasma, including glucose, oxygen, carbon dioxide, electrolytes, nutrients, and cellular waste products. The plasma functions as a transportation medium for these substances as they move throughout the body.

Speaking

Make a research and create a WebQuest to examine different blood diseases.

Follow the plan:

Causes>symptoms>effects>treatment.

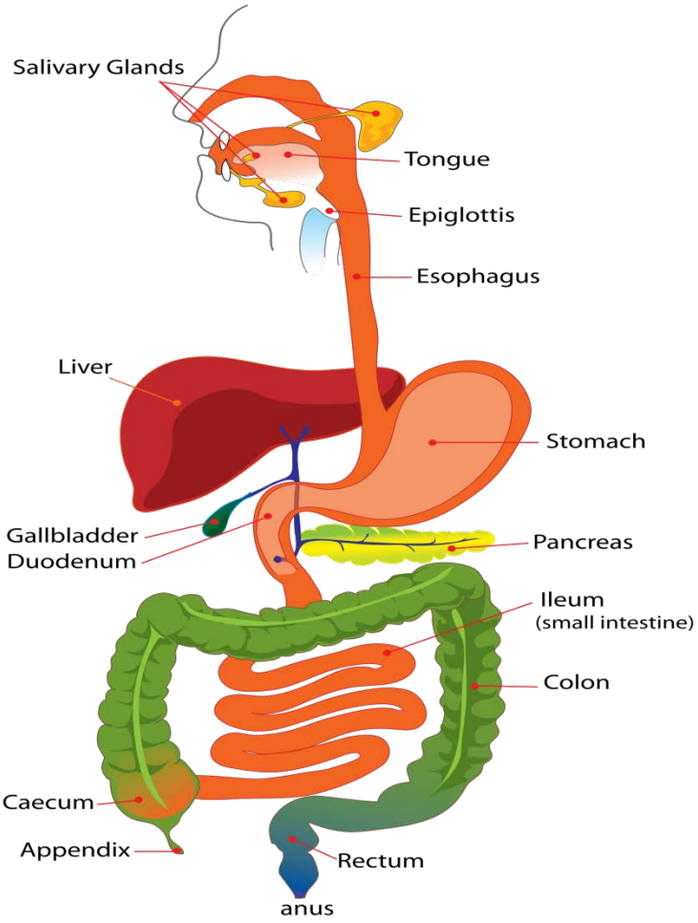
Prepare a classroom report and a presentation. Speak for 3 minutes.

Unit 10

The digestive system

Pre-reading

Study the diagram



Reading

Useful links

https://www.youtube.com/watch?v=lm3oIX6jjn4

https://www.youtube.com/watch?v=P5lyQUtq1KQ

The human digestive system

The digestive system consists of the alimentary canal and related or accessory organs. The alimentary canal is formed by the mouth, pharynx, esophagus, stomach, small intestine, large intestine and rectum. The

accessory structures are the teeth, tongue, salivary glands, hard and soft palates, liver, gallbladder and pancreas. The alimentary tract from esophagus to rectum conforms to a definite structural plan. The layers from within outward are mucous, submucous, muscular and serous. In the esophagus the serous layer is lacking and the outer coat is fibrous in nature. The organs of the digestive system contained in the abdomen are covered with the serous coat, the peritoneum. The peritoneum has two layers, the visceral and parietal. The mouth is the first division of the alimentary tract. Important structures of the mouth are the tongue, which contains the end organ for taste, and the teeth which divide and mix the food. There are two sets of teeth, first the deciduous or milk teeth and later the permanent teeth.

The palatine tonsils are on the lateral walls of the oral pharynx between the palatine arches. The oral and laryngeal portions of the pharynx serve as a channel for the passage of both food and air; food is conducted through it from the mouth to the esophagus and air from the nasal pharynx to the larynx.

The esophagus conveys food from the pharynx to the stomach. The stomach is a dilated portion of the alimentary canal lying in the upper abdomen just under the diaphragm. It is a retaining and mixing reservoir in which the process of digestion begins.

The circular muscle layer is thickened at the pyloric and cardiac orifices to form sphincters. The glands of the fundus and body are most important in the secretion of gastric juice. They are formed mainly of chief and parietal cells.

The small intestine is a thin-walled muscular tube about 7 meters long. Its three portions are: duodenum, jejunum and ileum. The bile and pancreatic

ducts empty into the duodenum. Special structural features of the small intestine are the villi and the circular folds. The intestinal glands secrete the intestinal juice containing the digestive enzymes.

The large intestine is about 1.5 meters long and is divided into caecum, colon and rectum. The large salivary glands consist of the parotid, the submaxillary and the sublingual. Ducts from the three pairs of glands open into the mouth. The liver is the largest gland in the body. It is directly beneath the diaphragm on the right side of the abdomen. The liver cells are arranged in architectural units, called lobules.

The bile capillaries and sinusoids lie between chains of liver cells in the lobule. Branches of the portal vein, bile duct and hepatic arteries encircle the periphery of the lobule.

The liver secretes bile and has many other important functions such as stimulation of red bone marrow, production of fibrinogen, glycogenetic function and urea synthesis.

The gallbladder is a pear-shaped hollow sac attached to the under surface of the liver. It concentrates the bile.

The pancreas is a long slender organ with its head to the right in the loop of the duodenum, its body posterior to the stomach and its tail touching the spleen on the left. The pancreas forms an external secretion important in digestion and an internal secretion, insulin, concerned with carbohydrate metabolism.

Vocabulary

Digestive system= digestive tract= gastro-intestinal tract пищеварительная система

Digestive gland пищеварительная железа

Oral cavity ротовая полость

Pharynx глотка,зев

Oesophagus (uk)=esophagus(us) /ɪˈsɒf.ə.gəs/ пищевод

Stomach /ˈstʌm.ək/ желудок

Small intestine /ɪnˈtes.tɪn/ тонкий кишечник

Large intestine толстый кишечник

Liver /ˈlɪv.ə/печень

Gall bladder /ˈgɔːl ˌblæd.ə/ желчный пузырь

Pancreas /ˈpæŋ.kri.əs/ поджелудочная железа

Spleen /spliːn/ селезенка

Duodenum /ˌdʒuː.əˈdiː.nəm/ двенадцатиперстная кишка

Jejunum /dʒɪˈdʒuː.nəm/ тощая кишка

Ileum /ˈɪl.i.əm/подвздошная кишка (илиум)

Caecum /ˈsiː.kəm/ слепая кишка

Colon /ˈkəʊ.lɒn/ ободочная кишка,толстая кишка

Rectum /ˈrek.təm/ прямая кишка

Coat /kəʊt/ оболочка

Serous /ˈsɪə.rəs/ серозный

Internal внутренний

External внешний

Connective tissue соединительная ткань

Thin layer тонкий слой

Smooth muscle fibres гладкие мышечные волокна

Numerous glands /glændz/ многочисленные железы

Viscous /ˈvɪs.kəs/ вязкий

Facilitate=help помогать,облегчать

Protective function=defensive function защитная функция

mucous coat слизистая оболочка

Damage by solid particles повреждение твердыми частицами

Various chemical substances различные химические вещества

Soft palate мягкое небо

Lymph nodule лимфатический узелок

Striated muscle tissue поперечно-полосатая мышечная ткань

Visceral layer/ˈvɪs.ər.əl/ висцеральный слой

Parietal layer /pəˈraɪ.ə.təl/ пристенный,внешний

Digestive juices пищеварительные соки

Enzyme /ˈen.zaɪm/ фермент

Salivary glands /ˈsæl.ɪ.vər.i glændz/ слюнные железы

Duct проток

Lobe доля

Bile reservoir /ˈrez.ə.vwɑː/ резервуар для желчи

Size and shape размер и форма

Extent of contraction степень сокращения

Filled with food наполненный пищей

Chemical retort химическая реторта

Capacity объем

Undergo further mechanical and chemical changes подвергаться дальнейшим механическим и химическим изменениям

Contents содержимое

Narrow узкий;сужаться

Epithelium /ˌep.ɪˈθiː.li.əm/ эпителий

Peritoneum /ˌper.ɪ.təˈniː.əm/ брюшина

Epigastrium эпигастрий

Pepsin /ˈpep.sɪn/ пепсин

Ulcer язва

Appendicitis/əˌpen.dɪˈsaɪ.tɪs/аппендицит

Colonoscopy/ˌkəʊ.ləˈnɒs.kə.pi/ колоноскопия

Focus on vocabulary

1.Define parts of speech, and translate into Russian.

Digest, digestion, digestive;

Weigh, weigh;

Width, wide ,widen;

Toxin, detoxify, detoxified;

Length, lengthen, long, longitudinal /ˌlɒŋ.gɪˈtʃuː.dɪ.nəl/ /ˌlɒn.dʒɪˈtʃuː.dɪ.nəl/;

Secrete, secretion;

Saliva, salivary;

Line, lining;

Serum, serous;

Protection, protect, protective;

Contraction, contract, contractive;

Ending, end;

Activity, act, active;

Gastric /ˈgæs.trɪk/, gastritis /gæsˈtraɪ.tɪs/;

Part, partial, partially.

2.Translate into English.

- пищеварительная система состоит из;
- сформирован ротовой полостью, глоткой, пищеводом;
- вспомогательные структуры;
- в брюшной полости покрыты;
-первый отдел пищеварительного тракта;
- два ряда зубов;
- на латеральных стенках;
- под диафрагмой;
- тонко-мышечная трубка;
- специальные структурные характеристики;
- самая большая железа;
- концентрирует желчь;
- секреция важная для пищеварения.

3.Complete the sentences.

1. The digestive system consists of the alimentary canal and related or accessory (органы).
2. (пищеварительный канал) is formed by the mouth, pharynx, esophagus, stomach, small intestine, large intestine and rectum.
3. The alimentary tract from esophagus to (прямой кишки) conforms to a definite structural plan.
4. The organs of the digestive system contained in the abdomen are covered with the serous (оболочкой), the peritoneum.
5. (рот) is the first division of the alimentary tract.

6. The esophagus conveys food from the pharynx to the (желудок).

7. The stomach is under the (диафрагма).

8. The bile and pancreatic ducts empty into the (двенадцатиперстную кишку).

4.Translte into Russian.

1. The pelvis, or basin, generally described as a separate cavity, lies below the chest.

2. The principal contents of the abdominal cavity are digestive organs and the associated glands.

3. The stomach and liver, both lying to a large extent under cover of the ribs, occupy the hollow of the diaphragm.

4. The large intestine lies in the flanks on either side in front of the kidneys, crossing below the stomach from right to left.

5. When food is taken into the stomach, the process of digestion begins.

Focus on grammar

1.Use the correct form of the verbs in brackets (The Present Simple in Passive or Active Voice).

1. The digestive system (to consist) of the alimentary canal and a number of associated glands.

2. The liver transplantation (to consider) very important.

3. Kidney disease (cause) high blood pressure.

4. The alimentary tract (to form) by the mouth, pharynx, esophagus, stomach, small and large intestines.

5. The soft and hard palates (to be) in the oral cavity.

6. Teeth (to mix) the food.

7. Food from the pharynx to the stomach (to convey) by the esophagus.

8. The bile and pancreatic ducts (to empty) into the duodenum.

2. Make the sentences interrogative.

1. The accessory structures are the teeth, tongue, salivary glands, hard and soft palates, liver, gallbladder and pancreas.

2. The mouth is the first division of the alimentary tract.

3. The oral and laryngeal portions of the pharynx serve as a channel for the passage of both food and air.

4. The process of digestion begins in the stomach.

5. The stomach is a dilated portion of the alimentary canal.

6. The pancreas is a long slender.

7. The liver secretes bile.

3. Choose the correct form of the Participle.

1. Neutralization of toxic products (generating, generated) by intestinal microflora proceeds in the liver.

2. (depending, depended) on localization of bloodstasis two forms of portal hypertension are distinguished: intrahepatic and extrahepatic.

3. Pathological processes, primarily (developing, developed) in the stomach, result in different disorders.

4. The problem (concerning, concerned) cancer is the most urgent one.

5. Flat muscles (varying, varied) in the amount line the cavity of the stomach.

6. The stomach is a (dilating, dilated) portion of the alimentary canal.

7. The stomach (resembling, resembled) a pear in shape lies in the hollow of the left side of the diaphragm.

Reading comprehension

Look back at the text and answer the questions.

1. What does the digestive system consist of?
2. What is the alimentary canal formed by?
3. What structures are the teeth, tongue, salivary glands, hard and soft palates, liver, gallbladder and pancreas?
4. What are the organs of the digestive system contained in the abdomen covered with?
5. What does the first division of the alimentary tract contain?
6. What is the function of the teeth?
7. What do the oral and laryngeal portions of the pharynx serve as?
8. Where does the process of digestion begin?
9. What are three portions of the small intestine?
10. What is the large intestine divided into?
11. Where do ducts of the large salivary glands open to?
12. Where is the largest gland of the body?
13. What does the liver secrete?
14. What is a pear-shaped hollow sac attached to?
15. What does the pancreas form?

Listening comprehension

The digestive system

Follow the link

https://www.youtube.com/watch?v=P5lyQUtq1KQ

watch the video and answer the questions.

1. What happens to the food you put in your mouth?

2. What is the human digestive system like?
3. Why large molecules of some food have to be broken down into smaller ones?
4. What is digestion?
5. Where does the process of digestion start?
6. What is the function of the teeth?
7. What is saliva? What is its function?
8. What is amylase?
9. What happens to food when you swallow it?
10. Where does the esophagus lead? How does it function?
11. What is peristalsis?
12. In what way is the patient’s esophagus examined?
13. What is a barium meal?
14. How much time does it take a barium meal to reach the stomach?
15. What is the shape of the stomach?
16. Are its muscular walls able to stretch?
17. Why do the stomach muscles contract?
18. What does the interior of the stomach look like?
19. What is gastric juice produced by?
20. What digestive enzyme does gastric juice contain?
21. For how long does the food normally stay inside the stomach?
22. Where is it released after being turned into a liquid?
23. What is it mixed with at this stage of the digestion process?
24. What does the pancreatic juice contain?

25. What does amylase help to digest?
26. What is the function of protease?
27. What are fats digested by?
28. Where do the molecules of the digested materials go?
29. What is the small intestine lined with?
30. What is absorption? Where does it take place?
31. In what way is the surface area of the small intestine increased?
32. What part of food can’t be broken down and absorbed?
33. What parts of the human digestive system have been mentioned in the video?

Notes:

to swallow/ˈswɒl.əʊ/ to cause food, drink, pills, etc.to move from your mouth into your stomach by using the muscles of your throat

mouthful /ˈmaʊθ.fʊl/ an amount of food or drink that fills your mouth, or that you put into your mouth at one time

peristalsis/ˌper.ɪˈstæl.sɪs/ the repeated movements made by the muscle walls in the digestive tract tightening and then relaxing that push food and waste through the body

amylase/ˈæm.ɪ.leɪz/ an enzyme (= a chemical substance made by living cells) in saliva, plants, and in the pancreas that helps change starch into sugar

protease/ˈprəʊ.tiː.eɪz/

an enzyme that causes proteins to break into smaller pieces

lipase /ˈlaɪ.peɪz/ a substance that is produced mainly in the pancreas and that helps the body todigest lipids

villus/ˈvɪl.əs/ plural **villi** /ˈvɪl.aɪ/ one of many very small finger-like parts that are found on the inside surface of the small intestine and help food to be absorbed

to churn to move something, especially a liquid, with great force (If your stomach is churning, you feel ill, usually because you are nervous)

Read the text "Abdomen", find the sentences containing Present и Past Participle, and translate them into Russian.

Abdomen

Abdomen is the lower part of the trunk. Above, and separated from it by the diaphragm or midriff, lies the thorax or chest, and below lies the pelvis, or basin, generally described as a separate cavity though directly continuous with that of the abdomen. Behind lie the spinal column and lower ribs which come within a few inches of the iliac or haunch bones; at the sides the protection afforded to the contained organs by the iliac bones and down sloping ribs is still more effective; but in front the whole extent is protected only by soft tissues. The latter consist of the skin,

a varying amount of fat, three layers of broad, flat muscle, another layer of fat, and finally the smooth thin peritoneum which lines the whole cavity. The absence of rigidity allows of the necessary distension when food is taken into the stomach, and of the various important movements

of the organs associated with digestion. The principal contents of the abdominal cavity are digestive organs, i. e., stomach, intestines, and the associated glands, the liver and pancreas. The position of the stomach is above and to the left, of the liver above and to the right, both lying to a large extent under cover of the ribs, and occupying the hollow of the diaphragm, by which alone they are separated from the lungs and heart.

Against the back wall on either side lie the kidneys, protected also to a great extent by the last two ribs; and from the kidneys run the ureters or urinary ducts down along the back wall to the bladder in the pelvis. The pancreas lies across the spine in front of the kidneys, and upon the upper end of each kidney lies a suprarenal body. High up to the left and partly behind the stomach lies the spleen. The great blood-vessels and nerves, the absorbent vessels and the glands connected with them, lie on the back wall, and the remainder of the space is taken up by the intestines or bowels, the large intestine lying in the flanks on either side in front of the kidneys and crossing below the stomach from right to left, while the small intestine hangs from the back wall in coils which fill up all spaces between the other organs.

True or false?

1. Abdomen is the upper part of the trunk.

2. Above, and separated from it by the diaphragm or midriff, lies the pelvis.

3. The principal contents of the abdominal cavity are digestive organs, i. e., stomach,

intestines, and the associated glands, the liver and pancreas.

4. The position of the stomach is above the lungs.

5. From the kidneys run the ureters or urinary ducts down along the back wall to the

bladder in the pelvis.

6. The pancreas lies across the spine in front of the kidneys.

Self-test

1.Translate into Russian using a medical dictionary.

The stomach

The stomach is a dilated portion of the alimentary canal, which in man has a shape somewhat resembling that of a pear. The larger end, known as the «fundus», lies in the hollow of the left side of the diaphragm. The upper part of the stomach, into which the gullet opens, is known as the cardiac part, while the lower and narrower portion is known as the pyloric part. The two openings into and out of the stomach are known as the cardia and the pylorus. The stomach is slightly flattened from before backwards, and the two edges are known as the lesser curvature, which runs from one opening to the other direct, and the greater curvature, which sweeps round the fundus from the cardia to the pylorus.

The stomach hangs very freely suspended in the upper and left part of the abdomen, so that changes in its position and shape take place readily according to the amount of food it contains.

The stomach possesses four coats similar to those of the intestine, which are, from within outwards, a mucous membrane, sub-mucous layer, muscular coat, and peritoneal coat. Mucous membrane lines the interior of the stomach and is of smooth, soft texture, though raised up into ridges

when the stomach is empty. The surface can be seen with the naked eye to be thickly covered by minute pits into each of which several tube-shaped glands are found, on microscopic section, to open. The surface of the mucous membrane is composed of a single layer of columnar cells, and these also line the pits referred to above. Each gland is composed of large cubical cells so arranged as to form a tube, open at the upper end where it meets the pit, and closed beneath. These cells secrete the gastric juice which exudes from all the minute tubes as digestion is proceeding. Between the tubular glands lies some supporting connective tissue in which run numerous blood-capillaries and lymph-vessels. Submucous coat is a loose connective tissue layer which joins the mucous coat to the muscular coat, and in which the large blood vessels of the stomach run. The loose arrangement of its fibres allows the mucous membrane to glide freely over the muscular coat in the movements and variations in size of the stomach.

Muscular coat is of considerable thickness in the stomach, and is of great importance in varying the size of the organ according to the amount of food it contains, in making the peristaltic movements which mix the food with the digestive juice, and finally in expelling the softened food from the stomach into the small intestine. This coat consists of three layers, an outer one which the fibres run lengthwise, a middle one where they are circular, and an inner layer in which they run obliquely across the stomach. Peritoneal coat is similar to the peritoneum covering the other organs of the abdomen.

The stomach is abundantly supplied with blood from the coeliac axis, a short, wide artery which comes directly from the aorta and likewise gives branches to the liver, pancreas and spleen. There is a large arterial arch round either curvature, and from these two arches smaller branches run into the wall of the stomach and reach the submucous coat, from which minute branches are distributed to the other coats. The blood is collected by veins which ultimately return it to the portal vein. The stomach is very richly supplied with nerves both from the nervus vagus and from nervus sympathicus. The tenth cranial nerve (vagus) of each side has a long course down the side of the gullet, and after giving branches to the larynx, heart, lungs, and other organs, terminates in the stomach. Other branches come from the solar plexus of the nervus sympathicus. These nerves form a plexus in the submucous coat and another in the muscular coat, which undoubtedly exert an influence over the secretions and movements of the organ.

2.Read the text. Find and write out the English equivalents of the following word combinations.

- самая большая железа в организме;
- занимать главным образом правую подреберную и эпигастральную области;
- быть покрытым брюшиной;
- клетки печени организованны в виде архитектурных блоков;
- ответвления воротной вены;
- кровь доставляется в печень двумя путями;
- обеспечение кислородом;

- выработка внутренней секреции;
- полый грушевидный мешок, прикрепленный под нижним краем печени;
- желчный проток.

The liver

The liver is the largest gland of the body, weighing 1.5 kg. in men and somewhat less in women. It is a soft plastic organ. It occupies chiefly the right hypochondriac and epigastric regions directly beneath the diaphragm. There are two principal lobes, the right and the left. The right lobe consists of the right lobe proper and the small
quadrate and the caudate lobes on the inferior surface. The line of demarcation between the right and left lobes is indicated on the superior surface by the falciform ligament which passes from the liver to the diaphragm and the anterior abdominal wall. The ligament is a remnant of the anterior mesentery and conveys on its free border, a fibrous cord, the occluded umbilical vein, now the round ligament. The surface of the liver is covered with peritoneum with the exception of a small area on
its posterior surface which is attached directly to the diaphragm. Beneath the peritoneum is a dense connective tissue layer called the capsule of Glisson, which covers the entire surface of the organ.

Microscopic structure The cells of the liver are arranged in architectural units, called lobules. These are elongated polygonal structures, having five, six or seven sides. Running lengthwise through the center of the lobule is the central or intralobular vein. Encircling the periphery of the lobule are the branches of the portal vein, called interlobular veins,

interlobular bile duds and branches of the hepatic artery. The interlobular veins break up into sinusoids which enter the lobule at the periphery. The liver cells are arranged in cords which radiate from the central vein to the periphery of the lobule. Between the cords lie the liver sinusoids. Each liver cell cord consists of two adjacent rows of hepatic cells between which runs a thin bile capillary which passes to the periphery of the lobule to join the interlobular bile ducts. The sinusoids are irregular blood channels formed by a layer of flat cells and histiocytes. The histiocytes of the liver are called Kupffer's cells. The sinusoids lead in a radial manner toward the middle of the lobule, like the spokes of a wheel to the hub, and empty into the central vein. The smallest branches of the hepatic artery enter the sinusoids at the periphery of the lobule.

Summary of Circulation Blood is brought to the liver from two sources: from the digestive tract and spleen by the portal vein and from the aorta through the hepatic artery.

The portal vein is unique in that it is interposed between two capillary beds: one in the liver, the other in the digestive area. The portal vein on entering the liver divides into branches which come into relation to the circumference of the lobule. These branches in turn give off interlobular veins which run between the lobules. These give rise to the sinusoids which run between the cords of hepatic cells to enter the central

veins. Central veins of several lobules join to form the sublobular veins which in turn unite to form the hepatic veins. The hepatic veins, usually two or three in number, empty into the inferior vena cava.

The hepatic artery is distributed chiefly to the interlobular connective tissue and its contained structures. Its finest branches empty into the sinusoids at the circumference of the lobule. The hepatic artery contributes about one fourth of the total blood supply of the liver. However, the liver is dependent upon this fraction for its oxygen supply.

Functions The most obvious function of the liver is the formation of its external secretion, the bile. The other functions of the liver are numerous and varied. They are listed very briefly here: blood formation in the embryo; stimulation of red bone marrow; production of fibrinogen; storage of iron and copper; phagocytic action of histiocytes (Kupffer cells); detoxication; protein metabolism; carbohydrate metabolism (Glycogenetic function); fat metabolism; heat production.

Gallbladder The gallbladder is a pear-shaped hollow sac attached to the under surface of the liver. It ends in the cystic duct which joins with hepatic duct to form the common bile duct. The bile, which is secreted continuously by the liver, may not immediately enter the intestines but after passing down the hepatic duct it may turn into the cystic duct and enter the gallbladder. During digestion the bile passes down the cystic duct and into the common bile duct which opens into the duodenum about 10 cm. below the pylorus. The common bile duct pierces the duodenal wall and joins with the pancreatic duct to form the ampule of Vater, which opens into the duodenum through a small elevation called the duodenal papilla.

Reading comprehension.

Answer the questions.

1.What is the liver?

2.Where is the liver located?

3.How many principal lobes does the liver have?

4.What is the surface of the liver covered with?

5.What is the microscopic structure of the liver?

6.Where is blood brought to the liver from?

7. What are the functions of the liver?

8.What is a pear-shaped hollow sac attached to the under surface of the liver?

9.Where does the gallbladder end?

10. What is the function of the gallbladder?

Speaking

Make a research and create a WebQuest to examine various diseases of the human digestive system.

Follow the plan:

Causes>symptoms>effects> treatment.

Prepare a classroom report and a presentation. Speak for 3 minutes.

Unit 11

The Nervous System

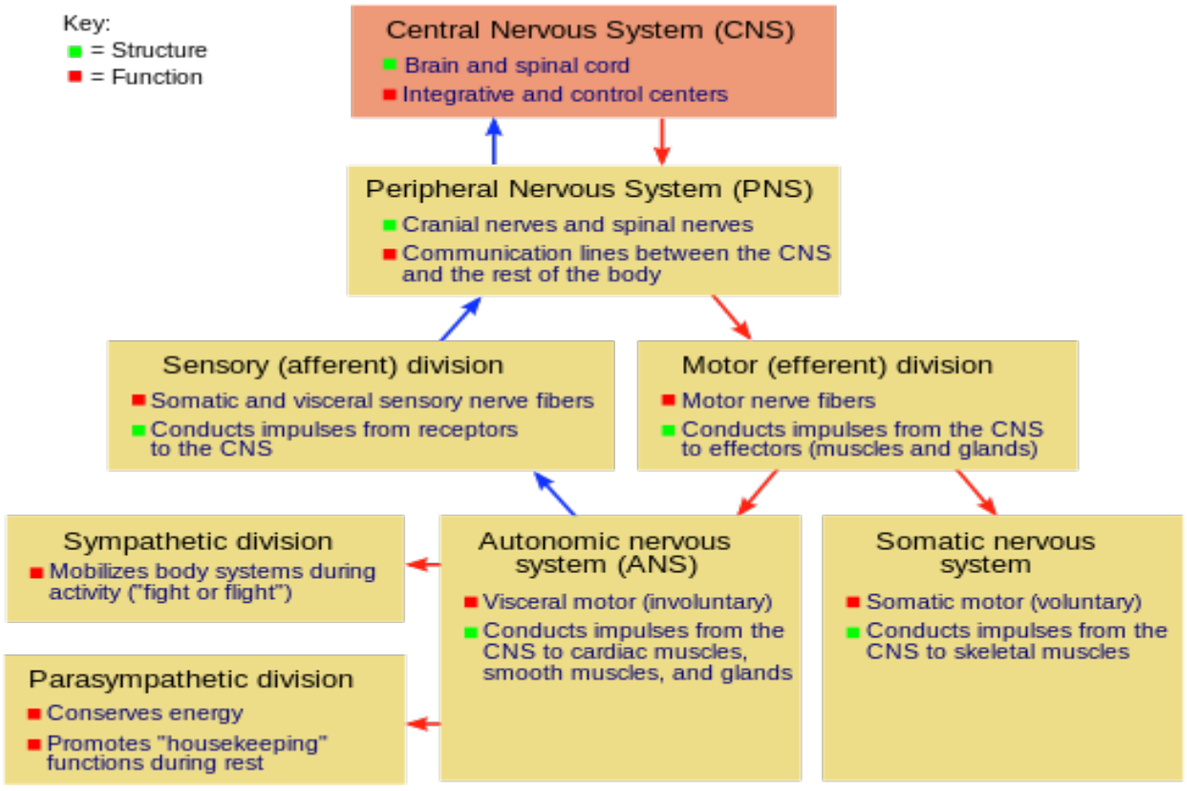
Reading

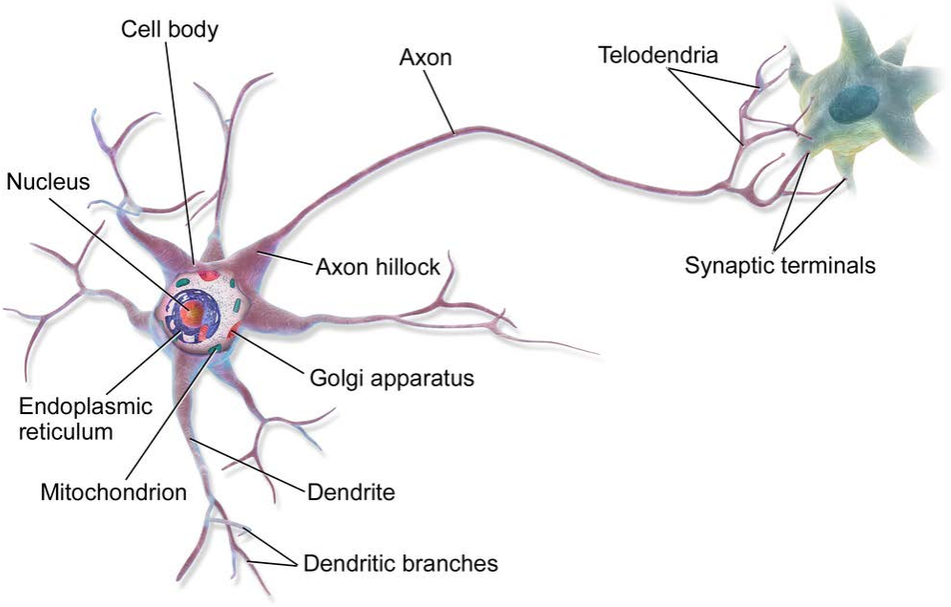
Useful links:

https://www.youtube.com/watch?v=44B0ms3XPKU&t=4s

https://www.youtube.com/watch?v=1jbLgWFLDWw

https://www.youtube.com/watch?v=NsBaPtemAjs





The nervous system consists of the brain, spinal cord, sensory organs, and all of the nerves that connect these organs with the rest of the body. Together, these organs are responsible for the control of the body and communication among its parts. The brain and spinal cord form the control center known as the central nervous system (CNS), where

information is evaluated and decisions made. The sensory nerves and sense organs of the peripheral nervous system (PNS) monitor conditions inside and outside of the body and send this information to the CNS. Efferent nerves in the PNS carry signals from the control center to the muscles, glands, and organs to regulate their functions.

Nervous Tissue The majority of the nervous system is tissue made up of two classes of cells: neurons and neuroglia.

Neurons Neurons, also known as nerve cells, communicate within the body by transmitting electrochemical signals. Neurons look quite different from other cells in the body due to the many long cellular processes that extend from their central cell body. The cell body is the roughly round part of a neuron that contains the nucleus, mitochondria, and most of the cellular organelles. Small tree-like structures called dendrites extend from the cell body to pick up stimuli from the environment, other neurons, or sensory receptor cells. Long transmitting processes called axons extend from the cell body to send signals onward to other neurons or effector cells in the body.

Divisions of the Nervous System

Central Nervous System The brain and spinal cord together form the central nervous system, or CNS. The CNS acts as the control center of the body by providing its processing, memory, and regulation systems. The CNS takes in all of the conscious and subconscious sensory information from the body's sensory receptors to stay aware of the body's internal and external conditions. Using this sensory information, it makes decisions about both conscious and subconscious actions to take to maintain the body's homeostasis and ensure its survival. The CNS is also responsible

for the higher functions of the nervous system such as language, creativity, expression, emotions, and personality. The brain is the seat of consciousness and determines who we are as individuals.

Peripheral Nervous System The peripheral nervous system (PNS) includes all of the parts of the nervous system outside of the brain and spinal cord. These parts include all of the cranial and spinal nerves, ganglia, and sensory receptors.

Somatic Nervous System The somatic nervous system (SNS) is a division of the PNS that includes all of the voluntary efferent neurons. The SNS is the only consciously controlled part of the PNS and is responsible for stimulating skeletal muscles in the body.

Autonomic Nervous System

The autonomic nervous system (ANS) is a division of the PNS that includes all of the involuntary efferent neurons. The ANS controls subconscious effectors such as visceral muscle tissue, cardiac muscle tissue, and glandular tissue.

The brain The brain, a soft, wrinkled organ that weighs about 3 pounds, is located inside the cranial cavity, where the bones of the skull surround and protect it. The approximately 100 billion neurons of the brain form the main control center of the body. The brain and spinal cord together form the central nervous system (CNS), where information is processed and responses originate. The brain, the seat of higher mental functions such as consciousness, memory, planning, and voluntary actions, also controls lower body functions such as the maintenance of respiration, heart rate, blood pressure, and digestion.

Spinal Cord The spinal cord is a long, thin mass of bundled neurons that carries information through the vertebral cavity of the spine beginning at the medulla oblongata of the brain on its superior end and continuing inferiorly to the lumbar region of the spine. The white matter of the spinal cord functions as the main conduit of nerve signals to the body from the brain. The grey matter of the spinal cord integrates reflexes to stimuli.

Nerves Nerves are bundles of axons in the peripheral nervous system (PNS) that act as information highways to carry signals between the brain and spinal cord and the rest of the body. Each axon is wrapped in a connective tissue sheath called the endoneurium. Individual axons of the nerve are bundled into groups of axons called fascicles, wrapped in a sheath of connective tissue called the perineurium. Finally, many fascicles are wrapped together in another layer of connective tissue called the epineurium to form a whole nerve. The wrapping of nerves with connective tissue helps to protect the axons and to increase the speed of their communication within the body.

Sense Organs All of the bodies' many sense organs are components of the nervous system. What are known as the special senses—vision, taste, smell, hearing, and balance—are all detected by specialized organs such as the eyes, taste buds, and olfactory epithelium. Sensory receptors for the general senses like touch, temperature, and pain are found throughout most of the body. All of the sensory receptors of the body are connected to afferent neurons that carry their sensory information to the CNS to be processed and integrated.

Functions of the Nervous System The nervous system has 3 main functions: sensory, integration, and motor.

Sensory The sensory function of the nervous system involves collecting information from sensory receptors that monitor the body's internal and external conditions. These signals are then passed on to the central nervous system (CNS) for further processing by afferent neurons (and nerves).

Integration The process of integration is the processing of the many sensory signals that are passed into the CNS at any given time. These signals are evaluated, compared, used for decision making, discarded or committed to memory as deemed appropriate. Integration takes place in the gray matter of the brain and spinal cord and is performed by interneurons. Many interneurons work together to form complex networks that provide this processing power.

Motor Once the networks of interneurons in the CNS evaluate sensory information and decide on an action, they stimulate efferent neurons. Efferent neurons (also called motor neurons) carry signals from the gray matter of the CNS through the nerves of the peripheral nervous system to effector cells. The effector may be smooth, cardiac, or skeletal muscle tissue or glandular tissue. The effector then releases a hormone or moves a part of the body to respond to the stimulus.

Reflexes Reflexes are fast, involuntary responses to stimuli. The most well-known reflex is the patellar reflex, which is checked when a physician's taps on a patient's knee during a physical examination. Reflexes are integrated in the gray matter of the spinal cord or in the brain stem. Reflexes allow the body to respond to stimuli very quickly by sending responses to effectors before the nerve signals reach the

conscious parts of the brain. This explains why people will often pull their hands away from a hot object before they realize they are in pain.

Vocabulary

Nervous system /ˈnɜː.vəs/ ˈsɪs.təm/ нервная система

(central/ peripheral /pəˈrɪf.ər.əl/ autonomic /ˌɔː.tə.nɒm.ɪk somatic /səˈmæt.ɪk/)

Bodily functions функции организма

Neuron / ˈnjʊə.rɒn/ нейрон

Optic nerve зрительный нерв

Electrical signals электрические сигналы

Movement ability способность двигаться

Sensory neuron /ˌsen.sər.i ˈnjʊə.rɒn/ сенсорный нейрон

Surround the spinal cord окружать спинной мозг

Vertebra /ˈvɜː.tɪ.brə/ позвонок PL. vertebrae

Reflex /ˈriː.fleks/ рефлекс

Involuntary immediate /ɪˈmiː.di.ət/ movement непроизвольное мгновенное движение

In response to a stimulus /ˈstɪm.jə.ləs/ PL. stimuli /ˈstɪm.jʊ.laɪ/ в ответ на раздражение, стимул

Through release of hormones /θruː/ /rɪˈliːs / /ˈhɔː.məʊnz/ посредством выброса гормонов

Activate muscles активировать мышцы

Bundle пучок

Extend downwards from the brain отходят от мозга

Having to do with имеющий отношение к

The five senses of sight, hearing, touch, taste, and smell пять чувств: зрение, слух, осязание, вкус и обоняние

Creates the ability to move дает возможность двигаться

Coordinates the actions of the body координирует действия человеческого тела

Transmits the information передает информацию

Form the core of the nervous system оставляют ядро нервной системы

Electrical and chemical /ˈkem.ɪ.kəl/ signaling электрические и химические сигналы

Form neural networks образуют нейронные сети

Perform specific functions выполняют определенные функции

(be) capable of способный (на)

Massive amounts of information processing обработка огромного количества информации

Serve different purposes служит для различных целей

(be) triggered by some stimuli вызванные некоторыми раздражителями

Protect защищать

Synapse /ˈsaɪ.næps/ си́напс

1.Answer the questions based on the text.

1.What does the nervous system consist of?

2.What is the nervous tissue made up of?

3.What does the human brain look like?

4.How much does it weigh?

5.What are the divisions of the nervous system?

6.What is CNS made up of?

7.What is a spinal cord?

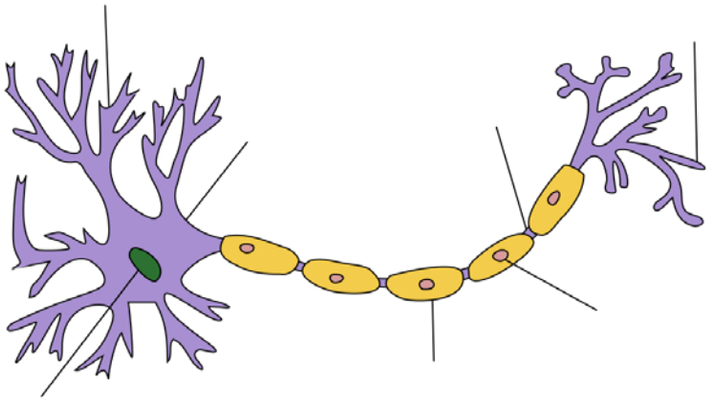
8. What are its functions?

9.What is an axon? What is its structure?

10. What are the functions of the nervous system?

11.What is a reflex?

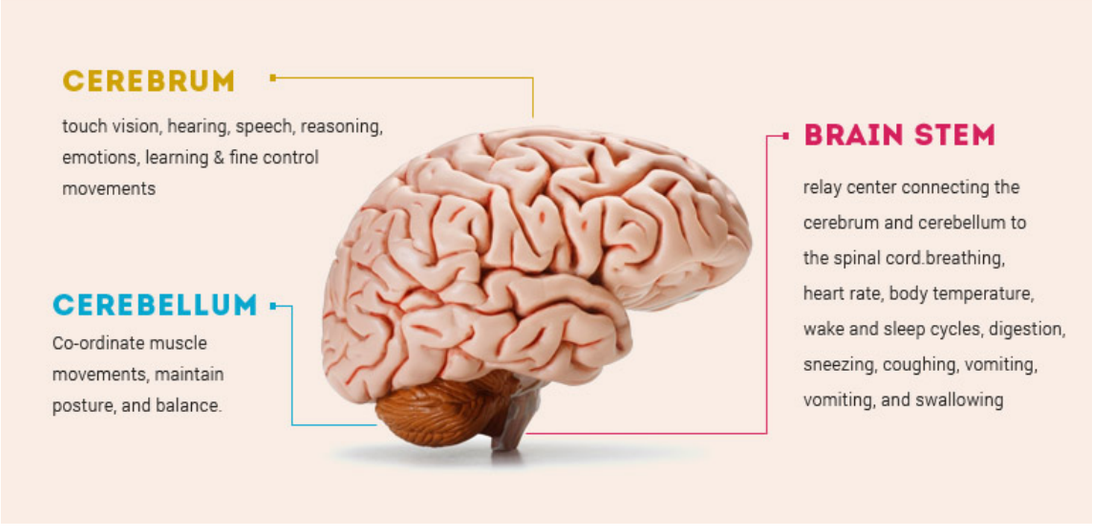
2.Fill in the chart.

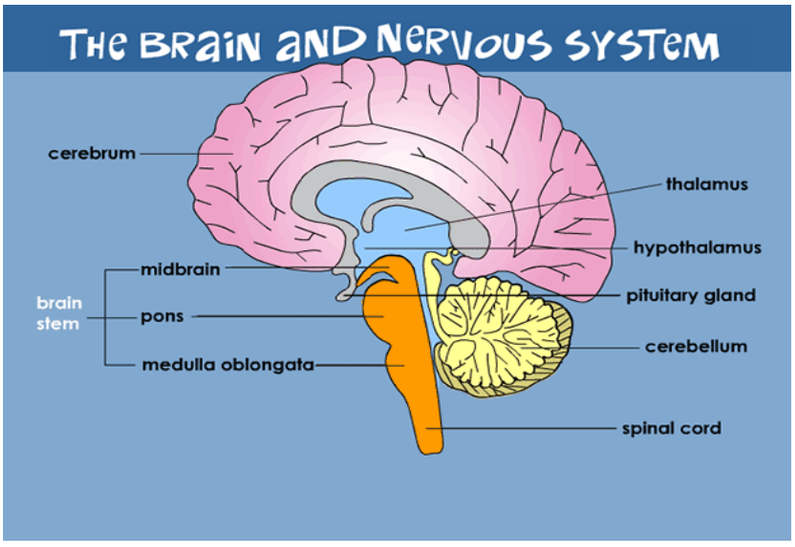


2.Read the text.

Text B

Brain and Meninges





This mass of nerve tissue, contained within the cranial cavity, is a greatly enlarged continuation of the spinal cord, and like the cord is formed by both grey and white matter. The grey matter is found on the outer surface where it forms a rather thin layer, the cortex, and in addition masses of grey matter are found embedded within the brain. The bulk of the brain is, however, formed by white matter which consists of nerve fibers. In man the brain of the adult weighs approximately three pounds. In the lower animals the brain is formed by three distinct masses, easily recognized as the forebrain, the midbrain, and the hindbrain. Because the forebrain is so markedly developed (44 oz.) in man, it folds over the other divisions of the brain in such a fashion that it is difficult to distinguish the separate portion. The forebrain consists mainly of two large cerebral hemispheres which are almost completely separated by a deep median fissure. The two hemispheres are connected, however, by large masses of fibers which carry impulses from each hemisphere to the other. The outer surface, cortex, of the cerebrum is markedly folded into convolutions or gyri, thus serving to increase greatly the total area of cortical grey matter.

The midbrain may be considered as a connection between the other two divisions. The hindbrain is formed by the cerebellum, the medulla oblongata and the pons Varoli. If a transverse section is made through the cerebral hemispheres, the outer cortex, the inner white matter and the embedded grey matter may be observed. In addition some of the cavities within the brain may be seen. These cavities, ventricles, are merely numbered, from before back, and are known as the first, second, third and fourth ventricles. The ventricles are filled with a lymphlike fluid known as the cerebrospinal fluid, it being likewise found within the tiny central canal of the spinal cord. Surrounding the brain and spinal cord are three membranous coverings. The outer one is the heavier, tougher membrane and is called the dura mater. The middle covering is a delicate membrane resembling a spider web, hence its name, arachnoid while the inner membrane, that closely invests the brain and cord and dips into every fissure or sulcus, is the pia mater. The inner membrane, the pia, carries a rich supply of blood vessels which pass to the outer portion of the brain and cord. Inflammation of these coverings (the meninges) is known as meningitis, - hence one suffers from cerebral, spinal or cerebrospinal meningitis.

Vocabulary

cortex - кора головного мозга

bulk - масса, основная часть чего-либо

hemisphere- полушарие

fissure - щель, трещина, борозда

cerebellum - мозжечок

oblongata - продолговатый мозг

ventricle - желудочек

arachnoid - паутинообразный, паутинная оболочка мозга

cerebrospinal fluid – спинномозговая жидкость

dura mater - твердая мозговая оболочка

pia mater - мягкая мозговая оболочка

2.True or false?

1. The mass of nerve fibers, contained within the cranial cavity, is a greatly enlarged continuation of the spinal cord, and, like the cord is formed by both grey and white matter.
2. The grey matter is found on the outer surface.
3. The bulk of the brain is formed by grey matter.
4. In a human being the brain of the adult person weighs approximately 500g.
5. Ventricles are filled with the cerebrospinal fluid.
6. The inner membrane, the pia, carries a rich supply of blood vessels.
7. Inflammation of the meninges is known as meningitis.

3. Translate the text in writing.

4.Retell the text.

Speaking

Make a research and create a WebQuest to examine various ailments of the human nervous system.

Follow the plan:

Causes>symptoms>effects> treatment.

Prepare a classroom report and a presentation. Speak for 3 minutes.

Unit 12

The respiratory system

Reading
Useful links:
http://www.innerbody.com/anatomy/respiratory
https://www.youtube.com/watch?v=hc1YtXc_84A&t=2s
https://www.youtube.com/watch?v=WPjqgaMmOTE
https://www.youtube.com/watch?v=Cy1lfZAIojs&t=4s

The respiratory system

The cells of the human body require a constant stream of oxygen to stay alive. The respiratory system provides oxygen to the body's cells while removing carbon dioxide, a waste product that can be lethal if allowed to accumulate. There are 3 major parts of the respiratory system: the airway, the lungs, and the muscles of respiration. The airway, which includes the nose, mouth, pharynx, larynx, trachea, bronchi, and bronchioles, carries air between the lungs and the body's exterior. The lungs act as the functional units of the respiratory system by passing oxygen into the body and carbon dioxide out of the body. Finally, the muscles of respiration, including the diaphragm and intercostal muscles, work together to act as a pump, pushing air into and out of the lungs during breathing.

Nose and nasal cavity

The nose and nasal cavity form the main external opening for the respiratory system and are the first section of the body's airway—the respiratory tract through which air moves. The nose is a structure of the face made of cartilage, bone, muscle, and skin that supports and protects the anterior portion of the nasal cavity. The nasal cavity is a hollow space within the nose and skull that is lined with hairs and mucus membrane.

The function of the nasal cavity is to warm, moisturize, and filter air entering the body before it reaches the lungs. Hairs and mucus lining the nasal cavity help to trap dust, mold, pollen and other environmental contaminants before they can reach the inner portions of the body. Air exiting the body through the nose returns moisture and heat to the nasal cavity before being exhaled into the environment.

Mouth

The mouth, also known as the oral cavity, is the secondary external opening for the respiratory tract. Most normal breathing takes place through the nasal cavity, but the oral cavity can be used to supplement or replace the nasal cavity's functions when needed. Because the pathway of air entering the body from the mouth is shorter than the pathway for air entering from the nose, the mouth does not warm and moisturize the air entering the lungs as well as the nose performs this function. The mouth also lacks the hairs and sticky mucus that filter air passing through the nasal cavity. The one advantage of breathing through the mouth is that its shorter distance and larger diameter allows more air to quickly enter the body.

Pharynx

The pharynx, also known as the throat, is a muscular funnel that extends from the posterior end of the nasal cavity to the superior end of the esophagus and larynx. The pharynx is divided into 3 regions: the nasopharynx, oropharynx, and laryngopharynx. The nasopharynx is the superior region of the pharynx found in the posterior of the nasal cavity. Inhaled air from the nasal cavity passes into the nasopharynx and

descends through the oropharynx, located in the posterior of the oral cavity. Air inhaled through the oral cavity enters the pharynx at the oropharynx. The inhaled air then descends into the laryngopharynx, where it is diverted into the opening of the larynx by the epiglottis. The epiglottis is a flap of elastic cartilage that acts as a switch between the trachea and the esophagus.

The larynx, also known as the voice box, is a short section of the airway that connects the laryngopharynx and the trachea.

Trachea

The trachea, or windpipe, is a 5-inch long tube made of C-shaped hyaline cartilage rings lined with pseudostratified ciliated columnar epithelium. The trachea connects the larynx to the bronchi and allows air to pass through the neck and into the thorax. The rings of cartilage making up the trachea allow it to remain open to air at all times. The open end of the cartilage rings faces posteriorly toward the esophagus, allowing the esophagus to expand into the space occupied by the trachea to accommodate masses of food moving through the esophagus.

The main function of the trachea is to provide a clear airway for air to enter and exit the lungs. In addition, the epithelium lining the trachea produces mucus that traps dust and other contaminants and prevents it from reaching the lungs. Cilia on the surface of the epithelial cells move the mucus superiorly toward the pharynx where it can be swallowed and digested in the gastrointestinal tract.

Bronchi and Bronchioles

At the inferior end of the trachea, the airway splits into left and right branches known as the primary bronchi. The left and right bronchi run into each lung before branching off into smaller secondary bronchi. The secondary bronchi carry air into the lobes of the lungs—2 in the left lung and 3 in the right lung. The secondary bronchi in turn split into many smaller tertiary bronchi within each lobe. The tertiary bronchi split into many smaller bronchioles that spread throughout the lungs. Each bronchiole further splits into many smaller branches less than a millimeter in diameter called terminal bronchioles. Finally, the millions of tiny terminal bronchioles conduct air to the alveoli of the lungs.

As the airway splits into the tree-like branches of the bronchi and bronchioles, the structure of the walls of the airway begins to change. The main function of the bronchi and bronchioles is to carry air from the trachea into the lungs. The smooth muscle fibers are able to contract during rest to prevent hyperventilation. The bronchi and bronchioles also use the mucus and cilia of their epithelial lining to trap and move dust and other contaminants away from the lungs.

Lungs

The lungs are a pair of large, spongy organs found in the thorax lateral to the heart and superior to the diaphragm. Each lung is surrounded by a pleural membrane that provides the lung with space to expand as well as a negative pressure space relative to the body’s exterior. The negative pressure allows the lungs to passively fill with air as they relax. The left and right lungs are slightly different in size and shape due to the heart pointing to the left side of the body. The left lung is therefore slightly

smaller than the right lung and is made up of 2 lobes while the right lung has 3 lobes.

The interior of the lungs is made up of spongy tissues containing many capillaries and around 30 million tiny sacs known as alveoli. The alveoli are cup-shaped structures found at the end of the terminal bronchioles and surrounded by capillaries. The alveoli are lined with thin simple squamous epithelium that allows air entering the alveoli to exchange its gases with the blood passing through the capillaries.

Physiology of respiration

Pulmonary Ventilation

Pulmonary ventilation is the process of moving air into and out of the lungs to facilitate gas exchange. The respiratory system uses both a negative pressure system and the contraction of muscles to achieve pulmonary ventilation. The negative pressure system of the respiratory system involves the establishment of a negative pressure gradient between the alveoli and the external atmosphere. The pleural membrane seals the lungs and maintains the lungs at a pressure slightly below that of the atmosphere when the lungs are at rest. This results in air following the pressure gradient and passively filling the lungs at rest. As the lungs fill with air, the pressure within the lungs rises until it matches the atmospheric pressure. At this point, more air can be inhaled by the contraction of the diaphragm and the external intercostal muscles, increasing the volume of the thorax and reducing the pressure of the lungs below that of the atmosphere again. To exhale air, the diaphragm and external intercostal muscles relax while the internal intercostal muscles

contract to reduce the volume of the thorax and increase the pressure within the thoracic cavity. The pressure gradient is now reversed, resulting in the exhalation of air until the pressures inside the lungs and outside of the body are equal. At this point, the elastic nature of the lungs causes them to recoil back to their resting volume, restoring the negative pressure gradient present during inhalation.

Transportation of Gases

The two major respiratory gases, oxygen and carbon dioxide, are transported through the body in the blood. Blood plasma has the ability to transport some dissolved oxygen and carbon dioxide, but most of the gases transported in the blood are bonded to transport molecules. Hemoglobin is an important transport molecule found in red blood cells that carries almost 99% of the oxygen in the blood. Hemoglobin can also carry a small amount of carbon dioxide from the tissues back to the lungs.

Vocabulary

Pronounce, translate, and write down the translation.

respiratoty /rɪˈspɪrətəri/ /ˈrespərətɔːri/ /rɪˈspaɪərtəri/

system

process /ˈprəʊ.ses/

oxygen /ˈɒk.sɪ.dʒən/

carbon dioxide /ˌkɑːbəndaɪˈɒksaɪd/

air /eə/

approximately /əˈprɒksɪmətli/

per cent /pəˈsent/

nitrogen /ˈnaɪtrədʒən/

atmosphere /ˈætməsfɪə/

inhale /ɪnˈheɪl/

portion /ˈpɔːʃən/

oral /ˈɔːrəl/

pharynx /ˈfær.ɪŋks/

larynx /ˈlær.ɪŋks/

trachea /trəˈkiː.ə/

bronchus /ˈbrɒŋ.kəs/ (pl.bronchi / ˈbrɒŋkaɪ/)

bronchiole /ˈbrɒŋ.ki.əʊl/

alveolus /ˌæl.viˈəʊ.ləs/ (pl. alveoli ˌ/æl.ˈviəʊ.laɪ/)

mechanism /ˈmekənɪzm/

filter

serve

cilium /ˈsɪl.i.əm/ (pl. cilia / ˈsɪl.i.ə/)

nostril

nasal

secrete /sɪˈkriːt/

secretion /sɪˈkriːʃən/

mucus /ˈmjuːkəs/

mucous /ˈmjuː.kəs/

laryngeal /ləˈrɪn.dʒi.əl/

nasopharynx

adenoids /ˈæd.ən.ɔɪdz/

tonsil /ˈtɒnsəl/

sinus /ˈsaɪnəs/

resonance /ˈrezənəns/

pleura /ˈplʊə.rə/

diaphragm /ˈdaɪəfræm/

vertical /ˈvɜːtɪkəl/

diameter /daɪˈæmɪtə/

produce /prəˈdjuːs/

Focus on vocabulary

1.Define parts of speech, translate into Russian.

Highly, elastic, natural, resting, anterior, texture, enveloped, heavier, everywhere, rose-pink, pulmonary, importance, inrush, finest, irregular, discharge, fibrous, layer, medium-sized, function, moisture, harmless, unknown, truthful, disbelieve.

2. Translate into English.

1. Органы дыхания образованы гортанью, трахеей, легкими, плеврой.

2. Гортань - это орган голоса.

3. Легкие— основные органы дыхания.

4. Оба легких покрыты тонкой серозной мембраной, плеврой.

5. Каждое легкое конической формы.

6. Легкие делятся на доли, которые, в свою очередь, делятся на дольки.

7. В процессе дыхания воздух поступает через нос и проходит через горло, гортань, трахею и достигает легких.

8. Передняя граница перекрывает перикард.

9. Трахея - это продолжение гортани.

10. Стенка бронхиальных трубок насыщена волокнами эластичной ткани.

3.Translate the following collocations into English.

- самая важная жизненная функция;
- воздух проходит через;
- высоко эластичная;
- конической формы;
- верхушка простирается;
- основание довольно плоское;
- вес двух легких;
- каждое легкое заключено;
- воздух в плевральной полости;
- цвет легких;
- сразу же после рождения имеют место некоторые изменения;
- сердце находится в контакте с легкими;
- легочная артерия проходит;
- каждая основная бронхиальная трубка, входящая в легкие;
- по структуре, все трубки состоят из;
- трахея содержит на волокнистом слое большие кусочки хрящей;
- мельчайшие отделы бронхиальных трубок известны как альвеолы;
- другое множество бронхиальных кровеносных сосудов;
- важная система лимфатических сосудов.

4. Read and translate the text.

The lungs

The lungs form a pair of organs situated in the chest, and discharge the most important function of vital activity, viz., respiration. The air, which enters through the nose and passes down the throat, larynx, and windpipe, reaches the lungs by the right and left bronchial tubes, into which the windpipe divides within the chest, at the level of the second rib. Each lung is roughly conical in shape, with an apex projecting into the neck, and a base resting upon the diaphragm. The rounded outer surface of each lung is in contact with the ribs of its own side, while the heart, lying between the lungs, hollows out the inner surface of each to some extent. There is an anterior border, along which the outer and inner surfaces meet, and the borders of the two lungs touch one another for a short distance behind the middle of the breast-bone. The apex, which is blunt, extends 11/2 inches or more into the neck above the line of the collar-bone. The base is deeply hollowed. The right lung is split by two deep fissures into three lobes; the left has two lobes divided by a single fissure. The weight of the two lungs together is about 40 ounces, the right being rather heavier than the left. Each lung is enveloped in a membrane, the pleura or pleural membrane; in such a way that one layer of the membrane is closely adherent to the lung, from which indeed it cannot be separated, while the other layer lines the inner surface of one half of the chest. These two layers form a closed cavity, the pleural cavity, which everywhere surrounds the lung except at the point where the bronchi and vessels enter it. In some circumstances air escapes into the pleural cavity,

and the lung then collapses temporarily upon its root, but air in the pleural cavity is very quickly absorbed and the lung speedily comes to occupy its original volume. In children, the colour of the lungs is rose-pink, but, as life advances, they become more and more of a darker hue.

Connections with Heart

The heart lies in contact with the lungs and is connected by vessels with them. The pulmonary artery passes from the right ventricle and divides into two branches, one of which runs straight outwards to each lung, entering its substance along with the bronchial tube at the hilum or root of the lung. From this point also emerge the pulmonary veins, which carry the blood purified in the lungs back to the left auricle.

Minute Structure

Each main bronchial tube, entering the lung at the root divides into branches, which subdivide again and again till the finest tubes known as bronchioles or capillary bronchi. In structure, all these tubes consist of a mucous membrane surrounded by a fibrous sheet. The windpipe has in the fibrous layer large pieces of cartilage which in the windpipe and largest bronchial tubes form regular hoops, and in the medium-sized tubes are disposed as irregular plates. These pieces of cartilage have the function of preventing the tubes from closing or being compressed, and so obstructing the passage of air. The larger and medium bronchi are richly supplied with glands secreting mucus, which is poured out upon the surface of the membrane. This surface is composed of columnar epithelial cells, which are provided with cilia, credited generally with the

power of moving expectoration upwards towards the throat, but is probably also designed to load the air passing into the lungs with warm moisture before it reaches these organs. The wall of the bronchial tubes is very rich in fibres of elastic tissue, and immediately beneath the mucous membrane is a layer of circularly placed unstriped muscle fibres, which is well developed in the smaller bronchi. To this muscular layer probably is due the removal of expectoration. The smallest divisions of the bronchial tubes open out into a number of dilatations, the infundibula, each measuring about 1/20 inch in width, and these are covered with minute sacs, known as air-vesicles or alveoli. Each air-vesicle consists of a delicate membrane composed of flattened platelike cells, strengthened by a wide network of elastic fibres, to which the great elasticity of the lung is due; and in these thin-walled air-cells the important function of the lungs is carried on. The branches of the pulmonary artery accompany the bronchial tubes to the farthest recesses of the lung, dividing like the latter into finer and finer branches, and ending in a dense network of capillaries, which lies everywhere between the air-vesicles, the capillaries being so closely placed that they occupy a much greater area than the spaces between them. The air in the air-vesicles is separated from the blood only by the delicate membranes, viz., the wall of the air-vesicle and the capillary wall, through which an exchange of gases readily takes place. The blood from the capillaries is collected by the pulmonary veins, which also accompany the bronchi to the root of the lung.

Another and much smaller set of bronchial blood-vessels runs actually upon the walls of the bronchial tubes, and these serve the purpose of nourishing the lung tissue. There is in the lung also an important system of lymph vessels, which commence in spaces situated between the air-vesicles, under the pleural membrane, and in the walls along with the blood-vessel, and are connected with a chain of bronchial nodes lying near the end of the windpipe.

5. Answer the questions based on the text« The lungs».

1) What are the lungs?

2) How does the air reach the lungs?

3) How is each lung shaped?

4) Where is the apex of the lung located?

5) Where is the base of the lung located?

6) What is the weight of the lungs?

7) What is each lung enveloped by?

8) What colour are the infant’s lungs?

9) What can you say about connection of lungs with the heart?

10) What does the minute structure of the lungs looks like?

6. Rewrite the sentences using the passive voice. Translate.

1. A doctor can make an instant diagnosis after examining a patient's chest.

2. The pericardium covers the heart.

3. Some patients may develop tolerance.

4. A doctor must listen to the lungs to be sure of his diagnosis.

5.Cartilages form the larynx.

6. A thin serous membrane covers the lungs.

7. The lungs can change their volume in some circumstances.

8. Each ventricle of the heart must pump the same amount of blood.

9. An infected cell may release an unknown substance.

10. The rise of temperature may follow this reaction.

7. Translate into English.

1. Легкие должны функционировать постоянно, чтобы поддерживать жизненную функцию организма.

2.Легкое может временно сжиматься у своего корня.

3. Описание этого заболевания должно быть включено в статью.

4. В медицинском журнале должны быть опубликованы детальные обзоры новых методов лечения респираторных заболеваний

5. Небольшое количество воды может вырабатываться легкими.

6. Аритмией можно управлять стандартным образом.

7. Специальный реагент коагуляции крови должен быть использован в данном случае.

8. Жизненную емкость легких можно установить во время осмотра.

Watch video presentations and answer the questions below.

https://www.youtube.com/watch?v=hc1YtXc_84A

https://www.youtube.com/watch?v=Cy1lfZAIojs

The respiratory system

1.What is the respiratory system made up of?

2.What is respiration?

3.What is inhalation?

4.What is exhalation?

5.What organs does the system consist of?

6.How many times a day do we breathe?

7.What are the functions of the nose and the nasal cavity?

8.What is the throat(pharynx)?

9.What is the voice box(larynx)?

10.What does the trachea split into?

11.What are bronchi?

12.What are alveoli?

13.What are the most important functions of the respiratory system?

14.What is carbon dioxide?

15.When does inflation of the lungs occur?

16.What is a diaphragm?

17.What happens to oxygen in alveoli?

18.Whaere does carbon dioxide travel?

19. What happens to the air saturated with (насыщенный) carbon dioxide?

20.In what way does the respiratory system provide protection against foreign particles?

21.What are the impacts of mouth breathing?

Supplement 1

English Grammar Review	Краткий обзор английской грамматики
All languages are divided into synthetic and analytic. At the same time, no language is completely synthetic or analytic, both features are present in every language.	Все языки делятся на синтетические и аналитические. В то же время, нет языков полностью синтетических или аналитических, обе черты присутствуют в каждом языке.
Synthetic languages have a lot of different prefixes, suffixes, and endings that are added to words to show relations between words in a sentence, such as gender, person, number, case, comparison, tense, mood, active and passive voice. The main feature of synthetic languages is that suffixes and endings make the meanings of individual words and their interaction with other words in a sentence precise and clear, so that word order in a sentence can be quite free. Russian is a highly synthetic language.	Синтетические языки имеют много разных префиксов, суффиксов и окончаний, которые добавляются к словам, чтобы показать отношения между словами в предложении, такие как род, лицо, число, падеж, сравнение, время, наклонение, активный и пассивный залог. Главная черта синтетических языков то, что суффиксы и окончания делают значения отдельных слов и их взаимодействие с другими словами в предложении точными и ясными, так что порядок слов в предложении может быть весьма свободным. Русский язык весьма синтетический язык.
Analytic languages have few suffixes and endings that show gender, person, number, case, and tense. The main feature of analytic languages is that they rely on word order to show relations between words in a sentence. Word order and context help to identify precise	Аналитические языки имеют мало суффиксов и окончаний, которые показывают род, лицо, число, падеж и время. Главная черта аналитических языков то, что они полагаются на порядок слов для показа отношений между словами в предложении. Порядок слов и контекст помогают выявить

meanings of individual words. English is largely analytic.

точные значения отдельных слов. Английский язык в значительной степени аналитический.

This major difference between English and Russian is the main cause of most difficulties that Russian-speaking students encounter in studying English.

Эта основная разница между английским и русским языками – главная причина большинства трудностей, с которыми сталкиваются студенты, говорящие на русском языке, в изучении английского языка

PERSONAL PRONOUNS

Личные местоимения

Personal pronouns "I, he, she, it, we, you, they" are the only group of words that can show, more or less fully, person, number, gender, and case in their forms. Personal pronouns have two cases: the nominative case and the objective case.

Личные местоимения I, he, she, it, we, you, they – единственная группа слов, которые могут показывать, более или менее полно, лицо, число, род и падеж в своих формах. Личные местоимения имеют два падежа: именительный падеж и косвенный падеж.

I am here.

Я нахожусь здесь.

He (she, it) is here.

Он (она, оно) находится здесь.

We (you, they) are here.

Мы (вы, они) находятся здесь.

Tom sees me. (him, her, it, us, you, them)

Том видит меня. (его, ее, его/это, нас, вас, их)

Tom often comes to me. (to him, to her, to us, to you, to them)

Том часто приходит ко мне. (к нему, к ней, к нам, к вам, к ним)

She often speaks about me. (about him, about her, about it, about us, about you, about them)

Она часто говорит обо мне. (о нем, о ней, об этом, о нас, о вас, о них)

They received a letter from him yesterday. (from me, from her, from us, from you, from them)

Они получили письмо от него вчера. (от меня, от нее, от нас, от вас, от них)

Note: The pronoun "you" can

Примечание: Местоимение you

be singular or plural in meaning but agrees only with the verb in the plural.	(вы) может быть в ед. числе или мн. числе по значению, но согласуется только с глаголом во мн. числе.
Anna, you are late today.	Анна, вы опоздали сегодня.
Mr. Smith, you are late today.	Мистер Смит, вы опоздали сегодня.
Possessive pronouns	**Притяжательные местоимения**
Personal pronouns have two possessive forms: my, mine; his, his; her, hers; its, its; our, ours; your, yours; their, theirs. One form is used as an attribute before a noun (her book), and the other form (absolute form, independent form) is used without a noun (this book is hers).	Личные местоимения имеют две притяжательные формы: my, mine; his, his; her, hers; its, its; our, ours; your, yours; their, theirs. Одна форма употребляется как определение перед существительным (her book), а другая форма (абсолютная форма) употребляется без существительного (this book is hers).
This is my place. This place is mine.	Это мое место. Это место мое.
Tom is his colleague. Tom is a colleague of his.	Том его коллега. Том один из его коллег.
Is this your book? Is this book yours?	Это ваша книга? Эта книга ваша?
This is their company This company is theirs.	Это их компания. Эта компания их.
My pen doesn't write. Can I borrow yours?	Моя ручка не пишет. Могу я одолжить вашу?
This is not my pen. Mine is green.	Это не моя ручка. Моя зеленая.
Reflexive pronouns	**Возвратные местоимения**
Personal pronouns also have reflexive forms. In this case they are called reflexive pronouns.	Личные местоимения также имеют возвратные формы. В этом случае они называются возвратные местоимения.

I see myself.	Я вижу себя.
He sees himself.	Он видит себя.
She sees herself.	Она видит себя.
It sees itself.	Оно видит себя.
We see ourselves.	Мы видим себя.
You see yourself.	Вы видите себя (самого).
You see yourselves.	Вы видите себя (самих).
They see themselves.	Они видят себя.
OTHER PRONOUNS	**Другие местоимения**
Indefinite pronouns	**Неопределенные местоимения**
Indefinite pronouns: some, any, no, every (and their derivatives), each, both, other, either, neither, one, all, most, few, several, much, many. Most of the indefinite pronouns can be used as adjectives or nouns.	Неопределенные местоимения: some, any, no, every (и их производные), each, both, other, either, neither, one, all, most, few, several, much, many. Большинство неопределенных местоимений могут употребляться как прилагательные или существительные.
I wrote some letters yesterday.	Я написал кое-какие письма вчера.
Some of the letters were long.	Некоторые из писем были длинные.
Somebody took my screw-driver.	Кто-то взял мою отвертку.
Many employees came to the canteen.	Много сотрудников пришли в столовую.
Many of them were roughnecks.	Многие из них были подсобными рабочими.
The other books that I bought are on the table.	Другие книги, которые я купил, на столе.
Demonstrative pronouns	**Указательные местоимения**
Demonstrative pronouns "this, that" are used in the singular, and "these, those" in the plural.	Указательные местоимения this, that употребляются в ед. числе, а these, those во мн. числе.
I like this job.	Я люблю эту работу.

I like these jobs.	Мне нравятся эти профессии.
I didn't like that job.	Мне не понравилась та работа.
I liked those people in the rescue and emergency team.	Мне понравились те люди в службе быстрого реагирования.
Relative pronouns	**Относительные местоимения**
Relative pronouns "who, whom, whose, what, which, that" connect certain types of subordinate clauses, which are called relative clauses in English, with the main clause.	Относительные местоимения who, whom, whose, what, which, that соединяют определенные типы придаточных предложений, которые называются relative clauses в английском языке, с главным предложением.
The man who is standing by the window is her chief.	Мужчина, который стоит у окна – ее руководитель.
I know the people who work outside.	Я знаю людей, которые работают на отрытом воздухе.
She returned the manual that I gave her last week.	Она вернула инструкцию , которую я ей дал на прошлой неделе.
The documentary that we saw was very dull.	Документальный фильм, который мы смотрели, был очень скучный.
The book which you gave me is very good.	Книга, которую вы мне дали, очень хорошая.
She didn't answer, which surprised me.	Она не ответила, что меня удивило.
He did what he promised.	Он сделал, что обещал.
I don't know what she wants.	Я не знаю, чего она хочет.
Interrogative words	**Вопросительные слова**
Interrogative words are the pronouns "who, whom, whose, what, which" and the adverbs "where, when, why, how".	Вопросительные слова – это местоимения who, whom, whose, what, which и наречия where, when, why, how.
Who is this man?	Кто этот мужчина?
What is it?	Что это?
Who / whom do you see?	Кого вы видите?
What did you say?	Что вы сказали?

Whose stethoscope is this?	Чей это стетоскоп?
Which protective gear is yours?	Который комплект защитной одежды ваш?
Where do you live?	Где вы живете?
When were you born?	Когда вы родились?
Why did you go there?	Почему вы пошли туда?
How did it happen?	Как это случилось?
NOUNS	**Существительные**
English nouns are divided into proper nouns (John Brown, Europe, October) and common nouns (a worker, a book, an idea, oil, equipment, laziness). Common nouns are divided into countable nouns (a worker, a book, an idea) and uncountable nouns (oil, equipment, laziness). Countable nouns are divided into concrete nouns (a doctor, a book) and abstract nouns (an idea). Uncountable nouns are divided into concrete nouns (ointment, equipment) and abstract nouns (laziness).	Английские существительные делятся на имена собственные (John Brown, Europe, October) и нарицательные существительные (a boy, a book, an idea, oil, equipment,laziness). Нарицательные существительные делятся на исчисляемые (a worker, a book, an idea) и неисчисляемые (lotion, equipment, laziness). Исчисляемые существительные делятся на конкретные (a doctor, a book) и абстрактные (an idea). Неисчисляемые существительные делятся на конкретные (ointment, equipment) и абстрактные (laziness).
Countable nouns have the category of number: one chair – two chairs; a house – three houses; Countable nouns generally form the plural by adding the ending s/es: a ball – balls; a table – tables; a bridge – bridges; a tax – taxes; a knife – knives	Исчисляемые существительные имеют категорию числа: один стул – два стула; дом – три дома; Исчисляемые существительные в основном образуют мн. число прибавлением окончания s/es: мяч – мячи; стол – столы; мост – мосты; налог – налоги; нож – ножи.
A limited number of nouns have irregular plural forms: a	Ограниченное число существительных имеют

man – men; a woman – women; a child – children; a tooth – teeth; a sheep – sheep; a crisis – crises; a formula – formulae; a stimulus – stimuli.

неправильные формы мн. числа: мужчина – мужчины; женщина – женщины; ребенок – дети; зуб – зубы; овца – овцы; кризис – кризисы; формула – формулы; стимул – стимулы.

Uncountable nouns can't be counted: air, water, sugar, gold, chemistry, education, help, progress, energy, economics. They don't have the category of number and don't take the ending s/es.

Неисчисляемые существительные нельзя сосчитать: воздух, вода, сахар, золото, химия, образование, помощь, прогресс, энергия, экономика. Они не имеют категории числа и не принимают окончание s/es.

Animate nouns can show possession and belonging (the so-called possessive case) by adding the apostrophe and "s": Mr. Smith's company, the doctor's house; my friend's car, my friends' car.

Одушевленные существительные могут показывать обладание и принадлежность (так называемый притяжательный падеж), прибавляя апостроф и "s":, компания мистера Смита, дом доктора; машина моего друга, машина моих друзей.

Nouns don't have any case endings. Word order and prepositions show which noun is the subject of the sentence, and which is an object.

Существительные не имеют никаких падежных окончаний. Порядок слов и предлоги показывают, которое из существительных подлежащее в предложении, а которое дополнение.

Doctors use stethoscopes.

Врачи используют стетоскопы.

Many English nouns don't have any suffixes that mark them as nouns; for example, city – noun; pretty – adjective; copy – noun or verb; sparrow – noun; tomorrow – adverb; narrow – adjective; borrow – verb.

Многие существительные не имеют суффиксов, которые помечают их как существительные; например, city – существительное; pretty – прилагательное; copy – существительное или глагол; sparrow – существительное; tomorrow – наречие; narrow –

прилагательное; borrow – глагол.

At the same time, there are many suffixes that signal that the word is a noun. Some noun suffixes are:

В то же время, есть много суффиксов, сообщающих, что слово существительное. Некоторые суффиксы существительных:

-ment: argument, document;
аргумент, документ;

-ness: kindness, happiness;
доброта, счастье;

-ion: station, illusion;
станция, иллюзия;

-er, -or: worker, doctor;
работник, доктор;

-ism: capitalism, idealism;
капитализм, идеализм;

-ist: idealist, psychologist;
идеалист, психолог;

-age: courage, passage;
смелость, проход;

-ty, -ity: safety, clarity;
безопасность, ясность;

-ship: friendship, ownership;
дружба, владение;

-ance, -ence: distance, absence;
расстояние, отсутствие;

-ency: agency, urgency;
агентство, срочность;

-ure: picture, treasure.
картина, сокровище.

Still, the most reliable way to recognize a noun is by the word order and the immediate surroundings in the sentence. For example, the phrases "a book, a new book, his book, the book, the book has, the books have" show that the words "book, books" are nouns.

Все же, наиболее надежный способ узнать существительное – по порядку слов и ближайшему окружению в предложении. Например, фразы a book, a new book, his book, the book, the book has, the books have показывают, что слова book, books являются существительными.

ARTICLES

Артикли

There are two articles in English: the definite article "the" and the indefinite article "a/an". The article shows whether the noun before which it stands is specific

В английском языке два артикля: определенный артикль the и неопределенный артикль a/an. Артикль показывает, определенное ли существительное, перед которым он стоит.

ADJECTIVES	**Прилагательные**
Adjectives don't have any means to show gender, number, or case. Adjectives form two degrees of comparison. One-syllable adjectives (and some two-syllable adjectives) form the comparative and superlative degrees by adding the suffixes "er, est". Adjectives consisting of three or more syllables (and many adjectives of two syllables) form degrees of comparison with the help of "more, most.	Прилагательные не имеют средств для показа рода, числа или падежа. Прилагательные образуют две степени сравнения. Односложные прилагательные (и некоторые двусложные прилагательные) образуют сравнительную и превосходную степени, прибавляя суффиксы "er, est". Прилагательные, состоящие из трех и более слогов (и многие прилагательные из двух слогов), образуют степени сравнения с помощью "more, most.
big – bigger – the biggest;	большой – больше – наибольший;
long – longer – the longest;	длинный – длиннее – самый длинный;
nice – nicer – the nicest;	приятный – приятнее – самый приятный;
happy – happier – the happiest;	счастливый – счастливее – самый счастливый;
curious – more curious – the most curious;	любопытный – любопытнее – самый любопытный;
beautiful – more beautiful – the most beautiful;	красивый – красивее – самый красивый;
important – more important – the most important.	важный – более важный – самый важный.
Adjectives have a number of suffixes that signal that the word is an adjective. Some adjective suffixes are:	Прилагательные имеют ряд суффиксов, сообщающих, что слово прилагательное. Некоторые суффиксы прилагательных:
-ful: useful, beautiful;	полезный, красивый;
-less: careless, priceless;	неосторожный, бесценный;
-ous: curious, dangerous;	любопытный, опасный;
-ish: foolish, greenish;	глупый, зеленоватый;

-able, -ible: valuable, credible;

-al: digital, official;

-ant, -ent: reluctant, different;

-ic: dynamic, fantastic;

-ive: active, sensitive;

-ly: timely, lovely;

-y: empty, sunny.

Note: Some suffixes are found in nouns and adjectives. For example, the words "metal, static, resident" can be nouns or adjectives. The suffix "ate" is found in adjectives (adequate, separate), nouns (advocate, nitrate), and verbs (separate, demonstrate, agitate).

Adjectives have some prefixes that signal that the word is an adjective, for example, the prefixes "un, in, im, ir".

unclear, unfriendly;

inevitable, insincere;

impolite, irregular.

Note: Some of these prefixes are also used with other parts of speech; for example, undo, unsettle – verbs; until – preposition; increase – verb or noun; imply – verb.

The most reliable way to recognize an adjective is by the word order and the immediate surroundings in the sentence.

ценный, правдоподобный;

цифровой, официальный;

неохотный, разный;

динамичный, фантастический;

активный, чувствительный;

своевременный, прекрасный;

пустой, солнечный.

Примечание: Некоторые суффиксы встречаются в существительных и в прилагательных. Например, metal, static, resident могут быть существительными или прилагательными. Суффикс "ate" встречается в прилагательных (adequate, separate), существительных (advocate, nitrate) и глаголах (separate, demonstrate, agitate).

Прилагательные имеют приставки, сообщающие, что слово прилагательное, например, приставки "un, in, im, ir" (не):

неясный, недружелюбный;

неизбежный, неискренний;

невежливый, нестандартный.

Примечание: Некоторые из этих префиксов употребляются и с другими частями речи; например, undo, unsettle – глаголы; until – предлог; increase – глагол или существительное; imply – глагол.

Наиболее надежный способ узнать прилагательное – по порядку слов и ближайшему окружению в предложении. Например, фразы a

For example, the phrases "a tall tree, the tallest tree, my tall trees" show that the word "tall" is an attribute.

tall tree, the tallest tree, my tall trees показывают, что слово tall – определение.

ADVERBS

Наречия

Some adverbs have the suffix "ly" (simply, happily, probably, usually); other adverbs have no suffix (often, never, maybe, here, there).

Некоторые наречия имеют суффикс "ly" (simply, happily, probably, usually); другие наречия не имеют суффикса (often, never, maybe, here, there).

Some adverbs have the same form as adjectives. For example, "fast, far, hard, low, early, daily, weekly" can be adjectives or adverbs. The only way to distinguish such adverbs from adjectives is by their place and function in a sentence. Adjectives describe the noun, while adverbs describe the verb.

Некоторые наречия по форме одинаковы с прилагательными. Например, fast, far, hard, low, early, daily, weekly могут быть прилагательными или наречиями. Единственный способ отличить такие наречия от прилагательных – по их месту и функции в предложении. Прилагательные описывают существительное, а наречия описывают глагол.

It is his daily work. (daily – adjective)

Это его ежедневная работа. (daily – прилагательное)

He studies daily. (daily – adverb)

Он занимается ежедневно. (daily – наречие)

NUMERALS

Числительные

Numerals are divided into cardinal numerals and ordinal numerals.

Числительные делятся на количественные числительные и порядковые числительные.

Cardinal numerals show the number or the size of objects.

Количественные числительные показывают число или величину вещей.

I saw four men in the helicopter.

Я увидел четырех мужчин в вертолете.

There are nine books on the table.

На столе есть девять книг.

John is six feet tall.	Джон шести футов ростом.
The road is twenty miles long.	Эта дорога длиной в двадцать миль.
Ordinal numerals show the position in a series. Generally, ordinal numerals are used with the definite article. Any ordinal numeral except "first, second, third" has the suffix "th". Examples:	Порядковые числительные показывают место в ряду. Обычно, порядковые числительные употребляются с определенным артиклем. Любое порядковое числительное кроме "first, second, third" (первый, второй, третий) имеет суффикс "th". Примеры:
fifth, sixth, eighth, ninth, twelfth, fifteenth, nineteenth, twentieth, twenty-fourth, thirtieth, forty-fifth, hundredth.	пятый, шестой, восьмой, девятый, двенадцатый, пятнадцатый, девятнадцатый, двадцатый, двадцать четвертый, тридцатый, сорок пятый, сотый.
The third part of the manual is very difficult to understand.	Третья часть инструкции по эксплуатации очень сложна.
He met her during his second visit.	Он встретил её во время своего второго визита.
His office is on the twenty-sixth floor.	Его офис на двадцать шестом этаже.
CONJUNCTIONS	**Союзы**
Coordinating conjunctions "and, or, but" connect coordinate elements (parallel elements) of the sentence as well as independent clauses in the compound sentence.	Соединительные союзы and, or, but соединяют однородные члены предложения, а также независимые предложения в сложносочиненном предложении.
He brought hot tea and aspirin.	Он принес горячий чай и аспирин.
I invited her, but she didn't come.	Я пригласил ее, но она не пришла.
Subordinating conjunctions (e.g., after, because, if, since,	Подчинительные союзы (например, after, because, if, since,

that, when) connect the subordinate clause with the main clause in the complex sentence.

that, when) соединяют придаточное предложение с главным предложением в сложноподчиненном предложении.

I will go to my room after I finish checking equipment.

Я пойду в свою комнату после того, как, закончу проверять оборудование.

She didn't go to the canteen because she was busy.

Она не пошла в столовую, потому что была занята.

VERBS

Глаголы

Verbs have few suffixes that identify them as verbs: ize, ise – apologize, organize, advertise; y – deny, imply; fy – intensify, simplify; en – liven, ripen; ate – concentrate, decorate.

Глаголы имеют мало суффиксов, указывающих, что это глаголы: ize, ise – apologize, organize, advertise; y – deny, imply; fy – intensify, simplify; en – liven, ripen; ate – concentrate, decorate.

Verbs have a number of prefixes that signal that the word is a verb, for example, enjoy, become, affirm, confirm, combine, dislike, display, forget, forgive, mistake, prefer, perceive, receive, remember, understand.

Глаголы имеют ряд приставок, сообщающих, что это глагол: enjoy, become, affirm, confirm, combine, dislike, display, forget, forgive, mistake, prefer, perceive, receive, remember, understand.

The most reliable way to recognize a verb is by the word order and the immediate surroundings in the sentence.

Наиболее надежный способ узнать глагол – по порядку слов и ближайшему окружению в предложении.

English verbs can be described from different sides: main verbs, auxiliary verbs, modal verbs; regular and irregular verbs, transitive and intransitive verbs.

Английские глаголы можно описать с разных сторон: основные, вспомогательные и модальные глаголы; правильные и неправильные глаголы, переходные и непереходные глаголы.

Main verbs

Main verbs are notional verbs: work, live, play, study, go, cry, kiss, fix, catch. Main verbs have only one ending that shows person and number: the ending s/es, which is added to the base form of the verb in the third person singular of the Simple Present tense. Compare:

No endings: I/we/you/they work, live, play, go, study,fix, catch;

Ending s/es: he/she/it works, lives, plays, goes, studies, fixes, catches.

Auxiliary verbs

Auxiliary verbs (be, have, will, do) perform different functions: the verb "be" helps to form the Continuous tenses in the Active Voice and all tenses in the Passive Voice and works as a linking verb; the verb "have" helps to form the Perfect tenses; the verb "will" helps to form the Future tenses; the verb "do" helps to form questions and answers in the Simple Present and Simple Past.

She is typing now.

That letter was typed yesterday.

She is a cardiologist.

Основные глаголы

Основные глаголы – это смысловые глаголы: работать, жить, играть, учиться, идти, плакать, целовать, уладить, поймать. Основные глаголы имеют только одно окончание для показа лица и числа: окончание s/es, которое прибавляется к базовой форме глагола в 3 лице ед. числа Простого настоящего времени. Сравните:

Нет окончаний: I/we/you/they work, live, play, go, study, fix, catch;

Окончание s/es: he/she/it works, lives, plays, goes, studies, fixes, catches.

Вспомогательные глаголы

Вспомогательные глаголы (be, have, will, do) выполняют разные функции: глагол be помогает образовывать Продолженные времена в Активном залоге и все времена в Страдательном залоге и работает как глагол-связка; глагол have помогает образовывать Перфектные времена; глагол will помогает образовывать Будущие времена; глагол do помогает образовывать вопросы и ответы в Простом настоящем и Простом прошедшем.

Она сейчас печатает.

То письмо было напечатано вчера.

Она кардиолог.

She has already examined two patients.	Она уже осмотрела двоих пациентов.
She will type a report tomorrow.	Она будет печатать доклад завтра.
Do you know her? – Yes, I do. / No, I don't.	Вы знаете ее? – Да, знаю. / Нет, не знаю.
Did you see her yesterday? – Yes, I did. / No, I didn't.	Вы видели ее вчера? – Да, видел. / Нет, не видел.
The verb "be" is the only English verb that shows, more or less fully, person and number in its forms.	Глагол be – единственный английский глагол, который показывает, более или менее полно, лицо и число в своих формах.
Simple Present: I am; he/she/it is; we/you/they are.	Простое настоящее: Я нахожусь (Я есть); он/она/оно находится; мы/вы/они находятся.
Simple Past: I/he/she/it was; we/you/they were.	Простое прошедшее: я/он/она/оно находился (был); мы/вы/они находились (были).
Modal verbs	**Модальные глаголы**
Modal verbs (can, could, may, might, must, should, will, would) are sometimes called defective verbs, because they can't form the tenses in the regular way and can't be used without a main verb. Modal verbs describe the speaker's attitude to the action expressed by the main verb.	Модальные глаголы (can, could, may, might, must, should, will, would) иногда называют недостаточными глаголами, т.к. они не могут образовывать времена обычным способом и не могут употребляться без основного глагола. Модальные глаголы описывают отношение говорящего к действию, выраженному основным глаголом.
I must help him.	Я должен помочь ему.
We should go there.	Нам следует пойти туда.
He can swim.	Он может плавать.
Could you help me, please?	Вы не могли бы мне помочь, пожалуйста?

He might leave soon.	Он может скоро уехать.
May I come in?	Можно мне войти?
Will you please be quiet?	Потише, пожалуйста.
I would like to go to Mexico.	Я хотел бы поехать в Мексику.

Regular and irregular verbs

Regular verbs form the Simple Past tense and the past participle by adding the ending "ed" to the base form of the verb: work – worked – worked; play – played – played; copy – copied – copied; borrow – borrowed – borrowed.

Irregular verbs form the Simple Past tense and the past participle by changing the root of the word: take – took – taken; go – went – gone; buy – bought – bought; sit – sat – sat; be – was/were – been.

Правильные и неправильные глаголы

Правильные глаголы образуют Простое прошедшее время и причастие прошедшего времени, прибавляя окончание "ed" к базовой форме глагола: work – worked – worked; play – played – played; copy – copied – copied; borrow – borrowed – borrowed.

Неправильные глаголы образуют Простое прошедшее время и причастие прошедшего времени, изменяя корень слова: take – took – taken; go – went – gone; buy – bought – bought; sit – sat – sat; be – was/were – been.

Infinitive, gerund, participle

All verbs, except modal verbs, have four verbal forms: the infinitive, the gerund, the present participle, and the past participle. These verbal forms are called verbals or non-finite forms of the verb.

The infinitive is the base form of the verb plus the particle "to": to read, to go, to jump. The infinitive loses the particle "to" after modal verbs.

Инфинитив, герундий, причастие

Все глаголы, кроме модальных глаголов, имеют четыре отглагольных формы: инфинитив, герундий, причастие настоящего времени и причастие прошедшего времени. Эти отглагольные формы называются неличные формы глагола.

Инфинитив – это базовая форма глагола плюс частица to: читать, идти, прыгать. Инфинитив теряет частицу to после модальных глаголов. Сравните:

Compare:

He likes to read.	Он любит читать.
She can read.	Она может читать.
He wants to go.	Он хочет идти.
He must go.	Он должен идти.
Verbs form gerunds by adding the ending "ing" to the base form of the verb. A gerund has some functions of a noun.	Глаголы образуют герундий добавлением окончания "ing" к базовой форме глагола. Герундий имеет некоторые функции существительного.
He likes reading.	Он любит чтение.
Swimming is good for health.	Плавание полезно для здоровья.
The present participle is formed by adding the ending "ing" to the base form of the verb. The present participle is used in the formation of the continuous tenses and can also function as an attribute.	Причастие настоящего времени образуется добавлением окончания "ing" к базовой форме глагола. Причастие настоящего времени используется в образовании продолженных времен и может также функционировать как определение.
I see a running man.	Я вижу бегущего мужчину.
The past participle is used in the formation of the Perfect tenses and the tenses in the Passive Voice and can also function as an attribute.	Причастие прошедшего времени используется в образовании Перфектных времен и времен в Страдательном залоге и может также функционировать как определение.
The report was sent yesterday.	Доклад был отправлен вчера.
I saw two broken arms.	Я увидел две сломанных руки.
English tenses	**Английские времена**
English verbs have a rather complicated system of tenses. Only two endings can be added	Английские глаголы имеют весьма сложную систему времен. Только два окончания можно

directly to the base form of the verb: the ending s/es for the third person singular in the Simple Present tense and the ending "ed" for all persons in the Simple Past tense (regular verbs only). The Simple Present and the Simple Past in the Active Voice have tense forms consisting of one word. All the other tenses are formed by certain combinations of the auxiliary verbs "be, have, will" with the infinitive (without the particle "to"), with the present participle, or with the past participle of the main verb.	прибавить прямо к базовой форме глагола: окончание s/es для 3 лица ед. числа в Простом настоящем времени и окончание "ed" для всех лиц в Простом прошедшем времени (только правильные глаголы). Простое настоящее и Простое прошедшее в действительном залоге имеют временные формы, состоящие из одного слова. Все остальные времена образуются определенными комбинациями вспомогательных глаголов be, have, will с инфинитивом (без частицы to), с причастием настоящего времени или с причастием прошедшего времени основного глагола.
Note: Russian translation of the tense forms given below is approximate.	Примечание: Русский перевод временных форм, данных ниже, приблизительный.
Active Voice	**Действительный залог**
Simple Present	**Простое настоящее**
I/we/you/they play, speak	я/мы/вы/они играют, говорят (регулярно)
he/she/it plays, speaks	он/она/оно играет, говорит (регулярно)
Present Continuous	**Настоящее продолженное**
I am playing, am speaking	я играю, говорю (в данный момент)
he/she/it is playing, is speaking	он/она/оно играет, говорит (в данный момент)
we/you/they are playing, are speaking	мы/вы/они играют, говорят (в данный момент)
Present Perfect	**Настоящее совершенное**

I/we/you/they have played, have spoken	я/мы/вы/они сыграли, поговорили (уже)
he/she/it has played, has spoken	он/она/оно сыграл, поговорил (уже)
Present Perfect Continuous	**Настоящее совершенное продолженное**
I/we/you/they have been playing, have been speaking	я/мы/вы/они играют, говорят (в течение какого-то времени до сих пор)
he/she/it has been playing, has been speaking	он/она/оно играет, говорит (в течение какого-то времени до сих пор)
Simple Past	**Простое прошедшее**
I/he/she/it/we/you/they played, spoke	я/он/она/оно/мы/вы/они играли, говорили
Past Continuous	**Прошедшее продолженное**
I/he/she/it was playing, was speaking	я/он/она/оно играл, говорил (в тот момент)
we/you/they were playing, were speaking	мы/вы/они играли, говорили (в тот момент)
Past Perfect	**Прошедшее совершенное**
I/he/she/it/we/you/they had played, had spoken	я/он/она/оно/мы/вы/они сыграли, поговорили (до того, как)
Past Perfect Continuous	**Прошедшее совершенное продолженное**
I/he/she/it/we/you/they had been playing, had been speaking	я/он/она/оно/мы/вы/они играли, говорили (в течение какого-то времени до того, как)
Simple Future	**Простое будущее**
I/he/she/it/we/you/they will play, will speak	я/он/она/оно/мы/вы/они будут играть, будут говорить
Future Continuous	**Будущее продолженное**
I/he/she/it/we/you/they will be playing, will be speaking	я/он/она/оно/мы/вы/они будут играть, будут говорить (в тот момент)

Future Perfect	**Будущее совершенное**
I/he/she/it/we/you/they will have played, will have spoken	я/он/она/оно/мы/вы/они сыграют, поговорят (до того, как)
Future Perfect Continuous	**Будущее совершенное продолженное**
I/he/she/it/we/you/they will have been playing, will have been speaking	я/он/она/оно/мы/вы/они поиграют, поговорят (в течение какого-то времени к тому моменту, как)
Passive Voice	**Страдательный залог**
Simple Present	**Простое настоящее**
I am informed, am taught	я информирован, обучен
he/she/it is informed, is taught	он/она/оно информирован, обучен
we/you/they are informed, are taught	мы/вы/они информированы, обучены
Present Continuous	**Настоящее продолженное**
I am being informed, am being taught	меня информируют, обучают (в данный момент)
he/she/it is being informed, is being taught	его/ее/его информируют, обучают (в данный момент)
we/you/they are being informed, are being taught	нас/вас/их информируют, обучают (в данный момент)
Present Perfect	**Настоящее совершенное**
I/we/you/they have been informed, have been taught	меня / нас / вас / их проинформировали, обучили (уже)
he/she/it has been informed, has been taught	его/ее/его проинформировали, обучили (уже)
Simple Past	**Простое прошедшее**
I/he/she/it was informed, was taught	я/он/она/оно был информирован, был обучен
we/you/they were informed, were taught	мы/вы/они были информированы, были обучены
Past Continuous	**Прошедшее продолженное**
I/he/she/it was being informed,	меня/его/ее/его информировали,

was being taught	обучали (в тот момент)
we/you/they were being informed, were being taught	нас/вас/их информировали, обучали (в тот момент)
Past Perfect	**Прошедшее совершенное**
I/he/she/it/we/you/they had been informed, had been taught	я/он/она/оно/мы/вы/они были информированы, были обучены (до того, как)
Simple Future	**Простое будущее**
I/he/she/it/we/you/they will be informed, will be taught	я/он/она/оно/мы/вы/они будут информированы, будут обучены
Future Perfect	**Будущее совершенное**
I/he/she/it/we/you/they will have been informed, will have been taught	я/он/она/оно/мы/вы/они будут проинформированы, будут обучены (к тому моменту, как)
PREPOSITIONS and POSTPOSITIONS	**Предлоги и послелоги**
Prepositions and postpositions are the same in form but different in function.	Предлоги и послелоги одинаковы по форме, но различны по функции.
A preposition is used with a noun (or pronoun) and stands before it, forming a phrase that functions as an indirect object or an adverbial modifier in a sentence. Prepositions are traditionally divided into prepositions of place (in the house, at the airport), prepositions of direction, prepositions of time (at two o'clock, in 1995, for a year, on Monday), prepositions of manner (by train, with a key), and some others.	Предлог употребляется с существительным (или местоимением) и стоит перед ним, образуя фразу, которая работает как косвенное дополнение или обстоятельство в предложении. Предлоги традиционно делятся на предлоги места (в доме, в аэропорту), предлоги направления ,предлоги времени (в два часа, в 1995, в течение года, в понедельник), предлоги образа действия (поездом, ключом) и некоторые другие.

Supplement 2

ТАБЛИЦА НЕСТАНДАРТНЫХ ГЛАГОЛОВ (LIST OF NON-STANDARD VERBS)

Infinitive	Past Simple	Participle II	Значения
be [bi:]	was, were [wɔz, wə:]	been [bi:n]	быть
bear [bɛə]	bore [bɔ:]	born [bɔ:n]	родить; производить
bear [bɛə]	bore [bɔ:]	borne [bɔ:n]	носить, перевозить
beat[bi:t]	beat [bi:t]	beaten [bi:tn]	бить, разбивать
become [bɪ'kʌm]	became [bɪ'keɪm]	become [bɪ'kʌm]	делаться, становиться
begin [bɪ'gɪn]	began [bɪ'gæn]	begun [bɪ'gʌn]	начинать
blow [bləu]	blew [blu:]	blown [bləun]	дуть, раздувать
break [breɪk]	broke [brəuk]	broken ['brəukən]	ломать, нарушать; прекращать
bring [brɪŋ]	brought [brɔ:t]	brought [brɔ:t]	приносить, приводить, привозить
build [bɪld]	built [bɪlt]	built [bɪlt]	строить
burn [bə:n]	burnt [bə:nt]	burnt [bə:nt] burned [bə:nd]	жечь, гореть
burst [bə:st]	burst [bə:st]	burst [bə:st]	взрываться, разразиться
buy [baɪ]	bought [bɔ:t]	bought [bɔ:t]	покупать
catch [kætʃ]	caught [kɔ:t]	caught [kɔ:t]	ловить; схватить
choose [ʧu:z]	chose [ʧəuz]	chosen ['ʧəuzn]	выбирать
come [kʌm]	came [keɪm]	come [kʌm]	приходить, приезжать
cost [kɔst]	cost [kɔst]	cost [kɔst]	стоить
cut [kʌt]	cut [kʌt]	cut [kʌt]	резать, разрубать; стричь
deal [di:l]	dealt [delt]	dealt [delt]	иметь дело; торговать
do [du:]	did [dɪd]	done [dʌn]	делать, исполнять

Infinitive	Past Simple	Participle II	Значения
draw [drɔ:]	drew [dru:]	drawn [drɔ:n]	тянуть, везти; рисовать, чертить
drink [drɪŋk]	drank [dræŋk]	drunk [drʌŋk]	пить
drive [draɪv]	drove [drəuv]	driven ['drɪvn]	вести, приводить в движение; гнать
eat [i:t]	ate [et]	eaten ['i:tn]	есть, питаться
fall [fɔ:l]	fell [fel]	fallen ['fɔ:ln]	падать
feed [fi:d]	fed [fed]	fed [fed]	кормить, питать
feel [fi:l]	felt [felt]	felt [felt]	чувствовать
fight [faɪt]	fought [fɔ:t]	fought [fɔ:t]	сражаться, бороться
find [faɪnd]	found [faund]	found [faund]	находить, обнаруживать
fly [flaɪ]	flew [flu:]	flown [fləun]	летать
forbid [fə'bɪd]	forbade [fə'beɪd]	forbidden [fə'bɪdn]	запрещать
forget [fə'get]	forgot [fə'gɔt]	forgotten [fə'gɔtn]	забывать
freeze [fri:z]	froze [frəuz]	frozen ['frəuzn]	замораживать, мерзнуть, застывать
get [get]	got [gɔt]	got [gɔt]	получать, доставать, становиться, делаться
give [gɪv]	gave [geɪv]	given ['gɪvn]	давать, предоставлять
go [gəu]	went [went]	gone [gɔn]	идти, ехать
grow [grəu]	grew [gru:]	grown [grəun]	расти, выращивать; увеличиваться; делаться
hang [hæŋ]	hung [hʌŋ] hanged [hæŋgd]	hung [hʌŋ] hanged [hæŋgd]	вешать, подвешивать, висеть; казнить через повешение
have [hæv]	had [hæd]	had [hæd]	иметь
hear [hɪə]	heard [hə:d]	heard [hə:d]	слышать
hide [haɪd]	hid [hɪd]	hidden ['hɪdn]	прятать(ся), скрывать(ся)

Infinitive	Past Simple	Participle II	Значения
hit [hɪt]	hit [hɪt]	hit [hɪt]	ударять(ся), задеть
hold [həuld]	held [held]	held [held]	держать
hurt [hə:t]	hurt [hə:t]	hurt [hə:t]	вредить; ранить, причинять боль
keep [ki:p]	kept [kept]	kept [kept]	держать, хранить
know [nəu]	knew [nju:]	known [nəun]	знать
lay [leɪ]	laid [leɪd]	laid [leɪd]	класть, положить; излагать
lead [li:d]	led [led]	led [led]	вести, управлять
learn [lə:n]	learnt [lə:nt] learned [lə:nd]	learnt [lə:nt] learned [lə:nd]	узнавать, учить
leave [li:v]	left [left]	left [left]	оставлять; уходить
let [let]	let [let]	let [let]	позволять, пускать
lie [laɪ]	lay [leɪ]	lain [leɪn]	лежать
light [laɪt]	lit [lɪt]	lit [lɪt]	освещать, зажигать
lose [lu:z]	lost [lɔst]	lost [lɔst]	терять
make [meɪk]	made [meɪd]	made [meɪd]	делать; заставлять
mean [mi:n]	meant [ment]	meant [ment]	означать; подразумевать, иметь в виду
meet [mi:t]	met [met]	met [met]	встречать(ся)
pay [peɪ]	paid [peɪd]	paid [peɪd]	платить
put [put]	put [put]	put [put]	класть; ставить
read [ri:d]	read [red]	read [red]	читать
ride [raɪd]	rode [rəud]	ridden [rɪdn]	ездить (*верхом*)
ring [rɪŋ]	rang [ræŋ]	rung [rʌŋ]	звонить
rise [raɪz]	rose [rəuz]	risen ['rɪzn]	вставать; возникать
run [rʌn]	ran [ræn]	run [rʌn]	бегать; управлять
say [seɪ]	said [sed]	said [sed]	говорить, сказать
see [si:]	saw [sɔ:]	seen [si:n]	видеть

Infinitive	Past Simple	Participle II	Значения
seek [si:k]	sought [sɔ:t]	sought [sɔ:t]	искать; стремиться
sell [sel]	sold [səud]	sold [səud]	продавать
send [send]	sent [sent]	sent [sent]	посылать
set [set]	set [set]	set [set]	ставить, помещать, устанавливать; заходить (*о Солнце*)
shake [ʃeɪk]	shook [ʃuk]	shaken ['ʃeɪkn]	трясти, колебать
shoot [ʃu:t]	shot [ʃɔt]	shot [ʃɔt]	стрелять
show [ʃəu]	showed [ʃəud]	shown [ʃəun]	показывать
shut [ʃʌt]	shut [ʃʌt]	shut [ʃʌt]	закрывать
sing [sɪŋ]	sang [sæŋ]	sung [sʌŋ]	петь
sink [sɪŋk]	sank [sæŋk]	sunk [sʌŋk]	опускаться, погружаться, тонуть
sit [sɪt]	sat [sæt]	sat [sæt]	сидеть
sleep [sli:p]	slept [slept]	slept [slept]	спать
slide [slaɪd]	slid [slɪd]	slid [slɪd]	скользить
speak [spi:k]	spoke [spəuk]	spoken ['spəukn]	говорить, разговаривать
spend [spend]	spent [spent]	spent [spent]	тратить; проводить (*время*)
spoil [spɔɪl]	spoiled [spɔɪld] spoilt [spɔɪlt]	spoiled [spɔɪld] spoilt [spɔɪlt]	портить
spread [spred]	spread [spred]	spread [spred]	растягивать; расправить; распространять(ся)
spring [sprɪŋ]	sprang [spræŋ]	sprung [sprʌŋ]	прыгать; пружинить
stand [stænd]	stood [stud]	stood [stud]	стоять; держаться; поставить
steal [sti:l]	stole [stəul]	stolen ['stəulən]	красть, похищать; красться
strike [straɪk]	struck [strʌk]	stricken ['strɪkn] struck [strʌk]	ударять, поражать

Infinitive	Past Simple	Participle II	Значения
swim [swɪm]	swam [swæm]	swum [swʌm]	плавать
swing [swɪŋ]	swung [swæŋ]	swung [swʌŋ]	качаться, колебаться
take [teɪk]	took [tuk]	taken ['teɪkn]	брать; принимать
teach [ti:ʧ]	taught [tɔ:t]	taught [tɔ:t]	учить; преподавать
tear [tɛə]	tore [tɔ:]	torn [tɔ:n]	разрывать
tell [tel]	told [təuld]	told [təuld]	сказать, сообщать, рассказывать
think [θɪŋk]	thought [θɔ:t]	thought [θɔ:t]	думать, полагать
throw [θrəu]	threw [θru:]	thrown [θrəun]	бросить, кидать
wake [weɪk]	woke [wəuk]	woken ['wəukn] waken ['weɪkn]	просыпаться; будить
wear [wɛə]	wore [wɔ:]	worn [wɔ:n]	носить
weep [wi:p]	wept [wept]	wept [wept]	плакать
win [wɪn]	won [wʌn]	won [wʌn]	выигрывать (*одерживать победу*)
write [raɪt]	wrote [rəut]	written ['rɪtn]	писать; сочинять

Supplement 3

Summary Charts of English Tenses

Chart 1. Tenses in the active voice

Simple present	Present continuous	Present perfect	Present perfect continuous
Meaning 1: Habitual, regular action in the present. **Time expressions:** usually; every day; often; sometimes; rarely; never. **Examples:** I usually work till seven o'clock. I often talk to him on the phone. He visits them sometimes. **Meaning 2:** Stating a fact, general truth, state or condition. **Examples:** He lives in Moscow and works for a petroleum company. The sun rises in the east.	**Meaning 1:** The action is going on right now. **Time expressions:** now; right now; at the moment. **Examples:** You are reading this material now. I'm writing a letter at the moment. Look! Antony is checking the pressure. **Meaning 2:** The action is going on at the present period of time (but not at the moment of speaking). **Time expressions:** now; at present; today; this year. **Examples:** They are working with	**Meaning 1:** The action has just ended. **Time expressions:** already; just; yet. **Examples:** He has already done it. I have just seen him. **Meaning 2:** Reporting how things have developed by now. **Time expressions:** by now; so far; never; ever; several times. **Examples:** So far, they have discovered five oil and gas deposits. He has never been there. **Meaning 3:** The	**Meaning 1:** The action has lasted for some time by now and is still going on. **Time expressions:** for an hour; for a week; for five years; all day; since. **Examples:** He has been sleeping for two hours already. He has been working as rig manager since he graduated from college. How long have you been waiting here? **Meaning 2:** The action has been going on lately. **Examples:** All of them have been working very hard lately. I have been

	the exploration team now. He is studying German this year.	action has lasted for some time by now. **Time expressions:** for a year; since; lately. **Example:** He has lived here since 1995.	thinking about starting my own business.
Note: Simple present can replace the simple future with the meaning "according to schedule, timetable". **Examples:** The ship arrives next week. He works tomorrow. **Note:** Simple present is used instead of the present continuous with stative verbs. **Examples:** I see the the rock structure now. I understand what you mean.	**Note:** Present continuous can replace the simple future with the meaning "preplanned action". **Examples:** I'm going to leave tomorrow. I am leaving tomorrow. **Note:** Stative verbs "know, understand, remember, like, love, hate, want, see, hear, seem, look", etc., are not used in the continuous tenses.	**Note:** Present perfect may replace the present perfect continuous for the action that has lasted for some time by now. **Example:** He has worked in this company for ten years. **Note:** Present perfect is used instead of the present perfect continuous with stative verbs. **Examples:** She has known them for six years. She has worked for this company all her life.	**Note:** Present perfect continuous in Meaning 2 is often used without time expressions. **Example:** It has been raining very hard, and the ground is still wet. **Note:** Stative verbs "know, understand, remember, like, love, hate, want, see, hear, seem, look", etc., are not used in the continuous tenses.

Simple past	Past continuous	Past perfect	Past perfect continuous
Meaning: The action happened (started and ended) in the past. **Time expressions:** yesterday; last week; last year; in 1995; in 2009; two hours ago; four years ago. **Examples:** I saw him an hour ago. He came back last Friday. She flew back home yesterday. They started their exploration business the 2009. **Note:** Use the simple past for completed past actions, including past actions that lasted for some time or happened one after another. **Example:** He sold drilling equipment for	**Meaning:** The action was going on (1) when another past action happened or (2) at some point of time in the past. **Time expressions:** while; when; at five o'clock yesterday. **Examples:** When he came in, I was reading a letter. We were hitting the massive dolomite deposite at three o'clock yesterday. **Note:** Use the simple past instead of the past continuous with stative verbs. **Example:** She looked quite good when I visited her yesterday.	**Meaning:** The action happened before another past action or before some point of time in the past. **Time expressions:** by the time; before; after; by 1998; by yesterday; by last Sunday. **Examples:** By the time he returned, she had already left. The crew had left the rig village by last week. **Note:** Past perfect may replace the past perfect continuous for the action that lasted for some time before another action in the past. **Example:** By the	**Meaning:** The action lasted for some time before another past action or before some point of time in the past. **Time expressions:** by the time; before; after; by yesterday; by 2005; for two hours; for a long time. **Examples:** By the time he returned, I had been working for six hours. By 2016, he had been living there for five years. **Note:** Use the past perfect instead of the past perfect continuous with stative verbs. **Example:** She had known him for five years by the time they set up their joint venture.

two years, and then he quit his job and began to travel.		time he returned, I had worked for six hours.	
Simple future **Meaning:** The action will happen in the future. **Time expressions:** tomorrow; in a few days; next week; in 2025; in the future. **Examples:** I think he will return next week. I will probably see him in a few days. We'll be back after eight.	Future continuous **Meaning:** The action will be going on (1) when another future action happens or (2) at some point of time in the future. **Time expressions:** at three tomorrow; at this time next year; when. **Examples:** He'll be working at two o'clock. When you arrive at the platform, I'll be on a night shift.	Future perfect **Meaning:** The action will happen before another future action or before some point of time in the future. **Time expressions:** by the time; by 2035; by tomorrow; before. **Examples:** By the time I get there, she will have left. By 2050, scientists will have found the alternative energy sources.	Future perfect continuous **Meaning:** The action will last for some time before another future action or before some point of time in the future. **Time expressions:** by the time; by 2030; before; for two hours. **Examples:** By the time he returns, I will have been working for nine hours. By 2025, he will have been living here for fifty years.

Chart 2. Tenses in the passive voice

Simple present	Present continuous	Present perfect	Present perfect continuous
Meaning 1: Habitual, regular	**Meaning:** The action is going on	**Meaning 1:** The	–

action in the present. **Time expressions:** usually; every day; often; sometimes; rarely. **Examples:** Mail is usually delivered at eight o'clock. This blog is updated every day. **Meaning 2:** Stating a fact, general truth, state or condition. **Examples:** English is spoken in many countries. Water is composed of hydrogen and oxygen.	now. **Time expressions:** now; right now; at the moment. **Examples:** He is being examined by the doctor at the moment. The report is being typed right now.	action has just ended. **Time expressions:** already; just; yet. **Examples:** The letter has already been sent. We have just been informed of his arrival. **Meaning 2:** Reporting how things have developed by now. **Time expressions:** by now; so far; never; ever; several times; since; lately. **Examples:** So far, ten workers have been fired. He has never been invited to their office before.	
Simple past **Meaning:** The action happened in the past. **Time expressions:** yesterday; last week; last year; in 1996; in 2010;	Past continuous **Meaning:** The action was going on (1) when another past action happened or (2) at some point of time in the past. **Time expressions:**	Past perfect **Meaning:** The action happened before another past action or before some point of time in the past. **Time expressions:** by the time; before; after; by 1990; by	Past perfect continuous –

two hours ago. **Examples:** This rig was erected a year ago. She was offered a good job last week.	while; when; at five o'clock yesterday. **Examples:** When I came in, Tom was being examined by the doctor.	yesterday; by last week. **Examples:** By the time I returned, the work on the project had been finished. By 2015, all positions in the new oil and gas company had been filled.	
Simple future	Future continuous	Future perfect	Future perfect continuous
Meaning: The action will happen in the future. **Time expressions:** tomorrow; in a few days; next week; in 2025; in the future. **Examples:** The exploration report will be delivered in a month. This work will be done	–	**Meaning:** The action will happen before another future action or before some point of time in the future. **Time expressions:** by the time; by 2035; by tomorrow; before. **Examples:** By the time you return, the report will have been typed.	

Supplement 4

Word-building

I. Prefixes

Prefixes change the meaning of a word because each prefix has a meaning. They do not change the word to a different part of speech. Some words use different prefixes for different parts of speech. Prefixes to express "not" are very common: dis- dishonest,**in-** incorrect, **non-** non-violent, **un-** unlucky. **Another common use is to form words with the opposite meaning or action:anti-** anti-static,**dis-** disconnect, **in-** invisible. **Note: For words beginning with l,m(or p) and r,in- changes to il-** illegal, **im-** immobile,**ir-** irregular, **un-**unveil.

Meaning	Prefix	Examples
afterwards	**After-**	aftertaste; afterthought
against	**Anti-**	anti-war; anti-globalist
opposite	**Anti-**	Anti-clockwise; anti-globalisation; antisocial
by yourself/itself	**Auto-**	autobiography; automatic
two or twice	**Bi-**	Bicycle; bilingual; bimonthly
together	**Co-**	Co-operate; co-autor
reduce	**De-**	Degenerate; defuse; devalue
remove	**De-**	Decode;deforestration;deregulate
not	**Dis-**	Disagree;disbelief;dishonest
oppose	**Dis-**	Disappear;disconnect; disqualify
to a lower level	**Down-**	Downgrade;downhill,downstairs
former	**Ex-**	ex-husband;ex-president
before	**Fore-**	Forecast;foresee
in front	**Fore-**	Foreground;forename
not	**Il-;im-;in-;ir-**	Illegal;illiterate;illogical; immoral;impatient;impossible;inability; inconvenient;incorrect;inefficient;insensitive;intolerant;invisible;irrelevant; irregular;irreliable
between	**Inter-**	International;interact
badly or wrongly	**Mal-**	Malfunction;malpractice

huge	**Mega-**	Megarich;megastar
extremely small	**micro-**	Microchip; microscope;microscopic
small or short	**Mini-**	Minibus;miniskirt
bad/badly or wrong/ wrongly	**Mis-**	Misbehaviour;misplace;misunderstand;mismanagement
one or alone	**Mono-**	Monolingual; monotonous
many	**Multy-**	Multinational; multi-purpose; multi-racial
not	**Non-**	Non-smoker;non-violent;non-profit-making
more/more than	**Out-**	Outgrow; outnumber
outside	**Out-**	Outdoors;outskirts
too much or too long	**Over-**	Over-estimate;overgrown; overpopulated ;oversleep;overwork
above/on top	**Over-**	Overcoat;overhead;overlap
across	**over**	Overland;oversees
after	**Post-**	Post-graduate;post-war; postcript
before	**Pre-**	Pre-historic;pre-school-pre-war
in favour of	**Pro-**	Pro-European; pro-war
not real	**Pseudo-**	Pseudo-intellectual; pseudonym
again	**Re-**	Rebuild;re-examine;re-unite; rewind
in another way	**Re-**	Replace;rearragnge;replant
half	**Semi-**	Semi-active;semi-detached;semi-final
partly	**Semi-**	Semi-active
below	**Sub-**	Submarine;substandard;subway
less or less important	**Sub-**	Subnormal;sub-committee;sub-division
large great or powerful	**Super-**	Supermarket;superstar;superpower
across	**Trans-**	Trans-continental;trans-Atlantic;transport
showing change	**Trans-**	Transform;translation
three	**Tri-**	Triangle,trilogy
not	**Un-**	Uncomfortable;uncommon;uncrowded;unfriendly;unhelpful,unspoilt
opposite action	**Un-**	Undo;undress;unlock;unpack;unzip

not enough	**Under-**	Undercooked;underpaid;underdeveloped
underneath	**Under-**	Underline;underpass; underclothes
too little/too small	**under**	Under-estimate;undersized
to a higher level	**Up-**	Upgrade;uplift;upstairs

II. Suffixes

Most suffixes change a word to a different part of speech. When we add a suffix, we sometimes change the spelling of the original word. The stress or pronunciation often changes as well.

NOUN	VERB	ADJECTIVE	ADVERB
ambi**tion**	-	ambiti**ous**	ambiti**ously**
attrac**tion**	attract	attrac**tive**	attrac**tively**
beauty	-	beau**tiful**	beau**tifully**
breadth	broad**en**	broad	broadly
care	care	Care**ful**, care**less**	Care**fully**, care**lessly**
chat	chat	chat**ty**	chat**tily**
child	-	Child**ish**, child**like**	child**ishly**
communica**tion**	communicate	communic**ative**	communicat**ively**
competi**tion**	compete	compet**itive**	competit**ively**
considera**tion**	consider	consider**ate**	consider**ately**
crea**tion**, creat**ivity**	create	creat**ive**	creat**ively**
critic, critic**ism**	critic**ise**	critic**al**	critic**ally**
danger	-	danger**ous**	danger**ously**
decision	decide	dec**isive**	deci**sively**
depth	deep**en**	deep	deep**ly**
differ**ence**	differ	differ**ent**	differ**ently**
disaster	-	disastr**ous**	disastr**ously**
eleg**ance**	-	eleg**ant**	eleg**antly**
enjoy**ment**	enjoy	enjoy**able**	enjoy**ably**
fame	-	fam**ous**	fam**ously**
fashion	-	fashion**able**	fashion**ably**
glamour	glamor**ise**	glamor**ous**	glamor**ously**
grace	-	grace**ful**	grace**fully**

happ**iness**	-	happ**y**	happ**ily**
help	-	help**ful**, help**less**	help**fully**, help**lessly**
height	heighten	high	high**ly**
hope	hope	hope**ful**	hope**fully**
imagin**ation**	imagine	imagin**ative**	imagin**atively**
importan**ce**	-	import**ant**	important**ly**
impress**ion**	impress	impress**ive**	impress**ively**
interest	interest	interest**ing**,interest**ed**	interest**ingly**, intereted**ly**
introduc**tion**	introduce	introduct**ory**	-
length	length**en**	long, length**y**	length**ily**
logic	-	logi**cal**	logi**cally**
mood	-	mood**y**	mood**ily**
mystery	-	myster**ious**	mister**iously**
nation	-	nation**al**,nationa**listic**	nation**ally**, nationalistic**ally**
nature	-	natur**al**	natur**ally**
obsess**ion**	obsess	obsess**ive**	obsess**ively**
perfection, perfection**ist**	perfect	perfect	perfect**ly**
pleas**ure**	please	pleas**ant**, pleas**ing**	pleas**ingly**
politeness	-	polite	polite**ly**
popular**ity**	-	popular	popular**ly**
poverty	-	poor	poor**ly**
prac**tice**	prac**tise**	practic**al**	practic**ally**
pride	-	proud	proud**ly**
production	produce	produc**tive**	produc**tively**
rar**ity**	-	rare	rare**ly**
real**ity**	real**ize**	real	re**ally**
reliab**ility**	rely	reli**able**	reli**ably**
satisf**action**	satisfy	satisf**actory**, satisf**ied**, satisf**ying**	satisfactor**ily**, satisfyin**gly**
sense	-	sens**ible**	sens**ibly**
silen**ce**	-	sil**ent**	sil**ently**
spectacle, spectator	-	spectacul**ar**	spectacul**arly**

-ous/-ously (glamour>glamorous/glamorously),**-ious/-iously** (industry>industrious/ industriously)

-th/-ieth (sixty>sixth/sixtieth)

-ular/-ularly (spectacle>spectacular/spectacularly)

Forming adjectives and adverbs from verbs:

-able/-ably (fashion>fashionable/fashionably), **-ible/ibly** (flex>flexible/ flexibly)

-ed (worry>worried)

-ing/-ingly (annoy>annoying/annoyingly)

-ive/ively(attract>attractive/attractively)

Forming verbs from adjectives

-ate (active>activate)

-en (sweet>sweeten)

-ify (simple>simplify)

-ise/-ize (legal>legalise/legalize)

Unusual suffixes:

Long(adj.)>length(noun)>lengthy(adj.)>lengthen(verb)

Belief(noun)>believe(verb)>believable(adj.)

Suffixes with meanings

-dom (star>stardom)

-hold (house>household)

-hood (neighbour>neighbourhood)

-ish/-ishly (child>childish/childishly)

-less/-lessly (end>endless/endlessly)

-like (life>lifelike)

-ship (friend>friendship)

Remember: You can add a suffix as well as a prefix:

disagreement;illegally;unacceptable.

Supplement 5

Case presentations

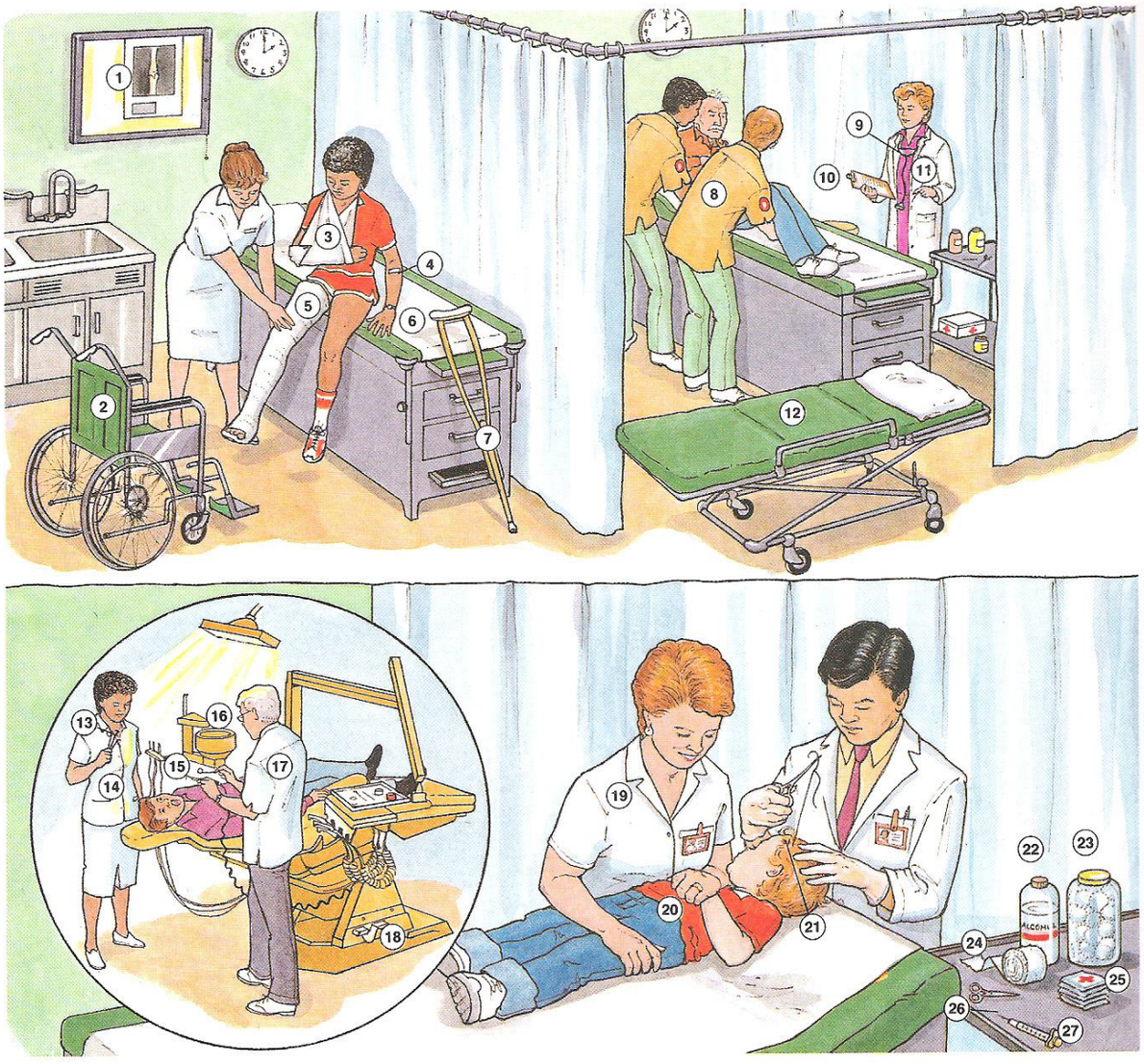
Sections of a case presentation

In a **case presentation**, a doctor presents the details of a patient's case to colleagues at a clinical meeting in a hospital. A typical case presentation is divided into the following sections:

Section	Example language
Introduction	I'd like to **present** Mr Simpson,
Patient's age and occupation	a 34-year-old plumber,
Presenting symptom(s) and duration	who **presented with** a one-month history of breathlessness.
Associated symptoms	He also **complained of** ankle swelling which he'd had for two weeks.
Past medical history	There was no **relevant past history**.
Social history	He was married with one son. He smoked 25 cigarettes a day and drank about 50 units of alcohol per week.
Family history	His father died of myocardial infarction at the age of 42. His mother was **alive and well**.
Findings on examination	**On examination**, he was obese …
Investigation results	We did a chest X-ray which **showed** …
Diagnosis	So we thought he had …
Treatment	We gave him intravenous furosemide and …
Outcome – what happened	He **responded to treatment** and was **discharged home**.

Supplement 6

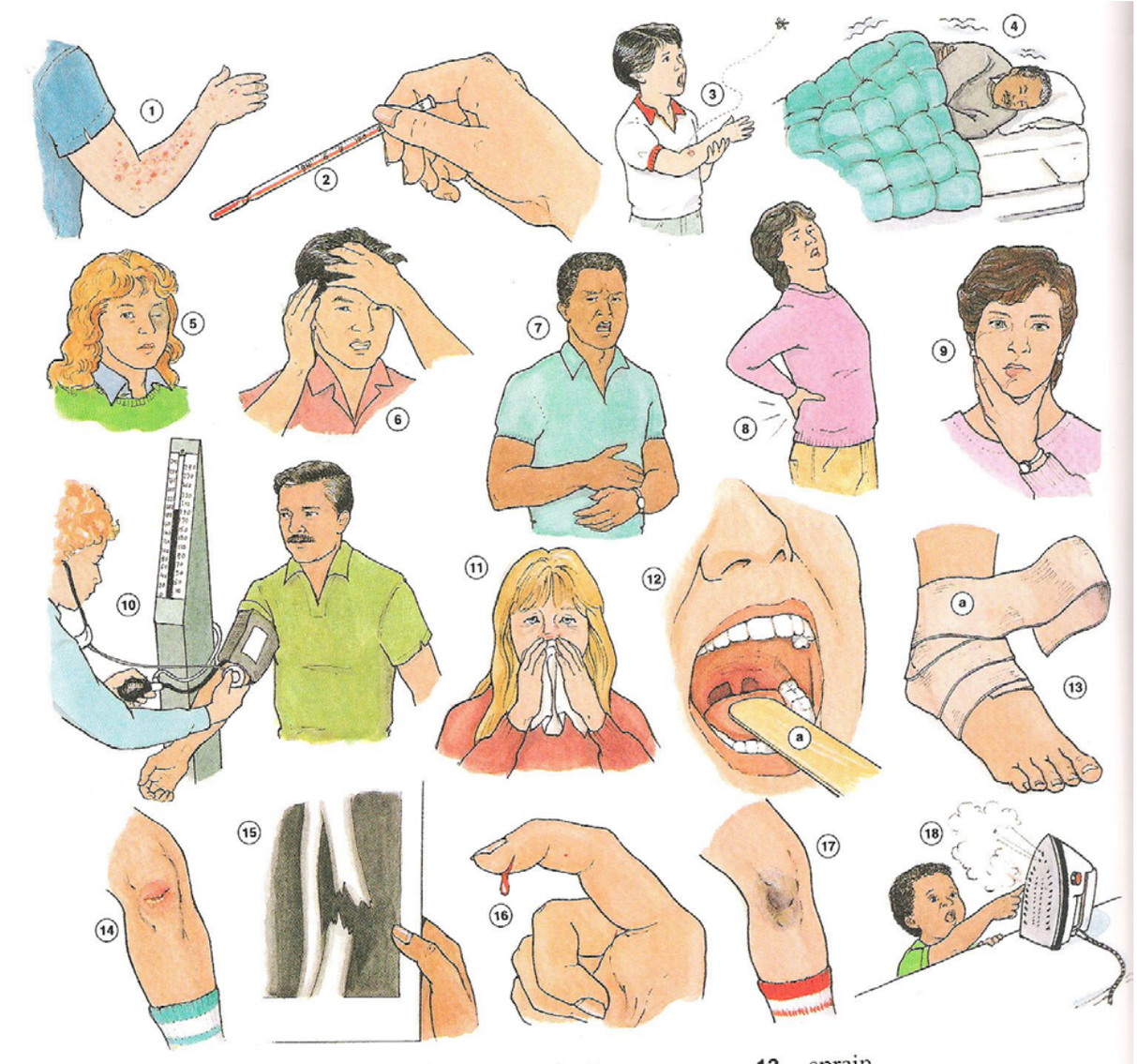
Medical and dental care



1. X ray
2. wheelchair
3. sling
4. Band-Aid
5. cast
6. examining table
7. crutch
8. attendant
9. stethoscope
10. chart
11. doctor
12. stretcher
13. instruments
14. oral hygienist
15. drill
16. basin
17. dentist
18. pedal
19. nurse
20. patient
21. stitches
22. alcohol
23. cotton balls
24. (gauze) bandage
25. gauze pads
26. needle
27. syringe

Supplement 7

Ailments and injuries



1. rash
2. fever
3. insect bite
4. chills
5. black eye
6. headache
7. stomachache
8. backache
9. toothache
10. high blood pressure
11. cold
12. sore throat
    a. tongue depressor
13. sprain
    a. stretch bandage
14. infection
15. broken bone
16. cut
17. bruise
18. burn

Supplement 8

Types of medication

1. bed rest
2. surgery
3. heating pad
4. ice pack

Medicine

5. capsule
6. tablet
7. pill
8. injection
9. ointment
10. eye drops

capsules

injection

ointment

paste

pessary

powder

solution

spray

suppository

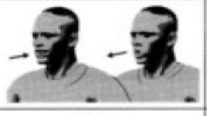
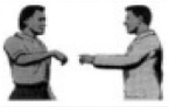
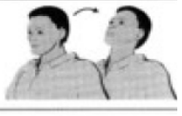
syrup

tablets

inhaler

Supplement 9

Verbs used in instructions

bend down	**put** your head down **put out** your tongue
breathe in **breathe out** 	**raise** your leg
close your eyes	**roll** on to your back/front **roll over** **roll up** your sleeve
curl up	**sit** **sit up**
do this	**slide** your hand down your side
follow my fingertip with your eyes	**slip off** your coat
keep your knee straight	**stand** straight **stand** up
let your wrist go floppy 	**take off** your top things
lie on your side/back **lie** on the bed/couch **lie down**	**tilt** your head back 
look straight ahead **look at** something	**touch** your shoulder with your chin
open your mouth	**turn** your head to the left **turn** on your side
point to the finger that moves	Other instructions: **relax** **show me what movements you can manage** **tell me if it hurts**
pull as hard as you can	
push as hard as you can	

Supplement 10

Symptoms and pain

Feature	Typical question
Main Site	Where does it hurt? Show me where it hurts.
Radiation	Does it go anywhere else?
Character	Can you describe the pain?
Precipitating factors	Does anything bring them on?
Time of onset	When do they start?
Time of resolution	When do they stop?
Frequency	How often do you get them?
Aggravating factors	Does anything make them worse? Is there anything else that affects them?
Relieving factors	Does anything make them better?
Associated features	Do you feel anything else wrong when it's there? Have you any other problems related to the pain?
Duration	How long do they last?
Severity	How bad is it?

Description of pain

Patient's description of pain	Explanation
aching / an ache	a general pain, often in muscles and joints
boring	like a drill
burning	with heat
colicky	an intermittent pain which varies in intensity, comes and goes in waves
crampy/cramp	an involuntary spasmodic muscle contraction
crushing	a feeling of pressure
dull	a background pain, opposite of sharp
gnawing	biting
gripping	a feeling of tightness
scalding	like boiling water
sharp	acute
stabbing	like a knife
stinging	sharp, burning, like an insect sting
throbbing	with a pulse or beat

References

1.Dale D. English Thesaurus-A compact thesaurus: of over 100,000 synonyms / David Dale. – New Lanark, Scotland ML11 9DJ: Geddes &Grosset, 2008.

2.David D. English Dictionary-A dictionary: of over 20,000 clear and accurate definitions / David Dale House. – New Lanark: ScotlandML11 9DJ: Geddes & Grosset, 2008.

3.Murphy R. English grammar in use / Raymond Murphy. – Oxford University press, 2012.

4.http://dictionary.cambridge.org/ru

5.http://dictionary.cambridge.org/dictionary/english/

6.www.miriam-webster.com

7.www. wikipedia.org

8.www.wiktionary.org

9.www. onestopenglish.com

10. http://www.innerbody.com

11. www.youtube.com

12. https://www.britishcouncil.ru/

13. www.teachingenglish.org.uk

14.www. http://usefulenglish.ru/

TABLE OF CONTENTS

My future profession **5**
Healthy life style **26**
Medical practitioners **47**
Talking about symptoms **56**
Parts of the human body **59**
The skeletal system **79**
The muscular system **94**
The cardiovascular (circulatory) system **108**
The human blood **138**
The digestive system **148**
The nervous system **168**
The respiratory system **180**
Supplements **195**
References **239**

English for Medical Professionals
часть 1
учебное пособие

Составители: Л.В. Чистобаева, З.М. Шаджe

Подписано в печать 08.10.2018. Бумага офсетная. Формат бумаги 60x84 1/16. Печать цифровая.
Гарнитура Таймс. Усл. печ. л. 15,0. Тираж 100 экз. Заказ 0163.

Отпечатано с готового оригинала-макета в типографии ИП Магарин О.Г.
385008, г. Майкоп, ул. 12 Марта, 146. Тел. 8-906-438-28-07. E-mail: olemag@yandex.ru