

HIGGS BOSON



Show
issue

7

HIGGS BOSON

January 2020, Show issue 7

4 Parting word

BETT

- 4 Our start - BETT-2013
- 6 High School 1517 visits BETT

SCIENTIFIC STUDENT COMMUNITY

- 8 Volunteering
- 10 Social media: friend or enemy?
- 10 Teen labor market: pros and cons Information
- 12 technologies in education
- 13 Music and character
- 14 McDonald's: to eat or not to eat?
- 15 Tips on time management
- 16 Ocean pollution by plastic. We have no planet B
- 17 «Thinking» music
- 18 Cognition services in medicine
- 19 Why is it important to identify your emotions?
- 20 A life without conflict: at school, at home and anywhere
- 23 Educators in STEM Summer School
- 24 eSports

SCIENCE IS...

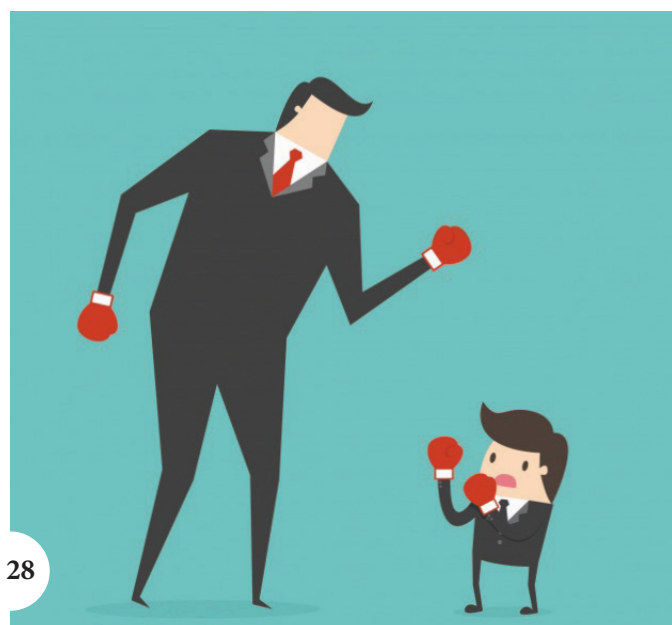
- 26 ETERNAL Radiation: Myth or Reality?
- 27 Mariana Trench
- 28 INTERESTING Radio stations used by spies
- 29 5 most ancient ocean inhabitants
- 30 One day with science
- 32 ACTUAL What professions await us in the future?
- 33 When 7:00 AM came up?
- 33 Utopia and anti-utopia

SIGHTSEEING TOUR

- 34 7 most unusual schools in the world



8

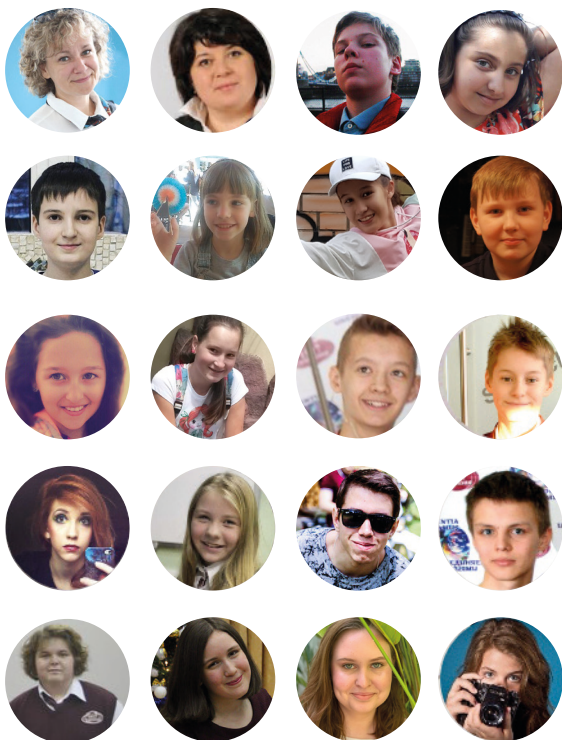


28



32

SHOW ISSUE 7



Created by:

Ekaterina Kozulina Editor-in-chief
Maria Zyuzukova Editorial director
Elena Davydova-Martynova Editorial director

Anna Vakhneeva Consultant
Anna Levina Designer

Alena Aresheva
Alisa Burova
Diana Chestnova
Anastasia Gluschenko
Ekaterina Konoplina
Dmitry Kuibida
Egor Lopatin
Kristina Mkrtchyan
Nikolay Ponomarenko
Pavel Smirnov

Regular reporters:
Kirill Ushakov
Sergey Shatrov
Maxim Solovev
Mikhail Barantsev
Ekaterina Morozova
Georgiy Masterov
Yulia Naumova
Irina Proskuryakova
Grishanina Kristina
Andrey Rudnevskiy

This year, I was again appointed chief editor of the English issue of the Higgs Boson. I already knew exactly which people I would turn to for help. There is no specific issue's theme in the English Boson, so our article writers always have space for inspiration. The Higgs Boson is rapidly gaining momentum. It is becoming more popular and interesting. In each issue, our team of editors, writers, layout designers tries to collect the most amazing and exciting articles. During the time of working in this magazine, I realized that our scientific almanac is a separate world full of diverse knowledge. And for several years we have been sharing this world with our foreign friends and we hope that this chain will never break. This amazing world is created by our students, which I can wish only further success!

Editor-in-chief
Ekaterina Kozulina



Very Rev'd. Dr. Garegin Hambardzumyan



Greetings on the occasion of the publishing of the consecutive issue of the Popular Scientific Journal of the High School Students' Scientific Organisation "Astrum Incongnitum".

I am Very Rev'd Dr. Garegin Hambardzumyan, Dean of the Gevorkian Seminary of Holy Etchmiadzin in Armenia. Throughout my ministry as a priest of the Armenian Church, and especially during my years spent in Oxford, working on my doctoral dissertation, I have been fascinated about the relationship between science and religion. It must be stated that in the modern technologically advanced world a vivid realisation comes forward that science deals with everything visible and tangible, countable and physically as well as mentally achievable realities. Religion, in contrary, deals with everything else! In reality there is no contradiction between science and religion as adherents of some ideologies have tried to prove.

It is gladdening that the students of the current Scientific Organisation are eager to explore new horizons in diverse fields of science and achieve excellence in many of them. I wish so that the current issue of the Popular Scientific Journal may become an encouragement for many students to pursue the path of wisdom, education and science. My congratulation on the publication of such a fabulous volume and best wishes to all those who have worked hard to produce a valuable source of inspiration for all those who will browse through the pages of the journal.

Congratulations and best of luck!

OUR START – BETT 2013

Ponomarenko Nikolai



In our word, In the word of IT-technologies, the concepts of science and business are closely linked. They complete each other and have a lot in common. We all know that without financial support, science simply cannot develop. And at the same time, if science is not developing, business would not be developing too, because it is primarily dependent on how quickly innovations and new technologies can be employed. These technologies of course are created with the help of science.

The correlation of business and science was demonstrated in London at the end of January – beginning of February this year at the BETT exhibition, where the delegation from our school participated. This exhibition was devoted to new technologies in the field of education, rather, making new programs will be useful for training pupils. This exhibition opens door for everybody in the world who's got latest developments in IT-technologies. Dozens of stands presenting new gadgets were placed all over this huge exhibition, Could they be created without financing from the government or private companies? The answer is obvious – of course not. We can say that now business is performing the role of soil for

science to grow on. In their turn, the fruits of science, falling on the ground, make it better and richer. This process is endless and correlative. Walking through the long corridors of the exhibition, you meet teachers and students who are interested primarily why this or that program is useful and if it is interesting for studying. On the other hand, you can see many businessmen who are interested in the commercial value of these projects. It was interesting to watch how these two groups share a lot of new, amazing and useful things. Walking along the pavilions of BETT exhibition, you notice huge fluid-lit signs, displays, advertising products, robots that were created for training purposes. Only here you clearly see how far scientific progress goes. Carried away by absolutely new characteristics of the product, you suddenly catch yourself thinking that you start to forget that behind the creation of all these robots there is a huge amount of money got through business. And it seems completely unimportant because the main issue is that it is technical progress! In fact, the exhibition had several rooms for making deals and, as a rule, they were always full of businessmen. Business insensibly is getting closer and closer to us. It is interesting to note that without good advertising, proper



achievements which had being created for many years, they will simply be not demanded. And advertising business helps to promote new products and increase the demand of them. After visiting this wonderful exhibition, I discovered a new correlation between science and business, better understood commercial side of scientific progress. This exhibition helped me to understand that all aspects of life are closely connected and they cooperate with each other. This is life and this is how its laws work.



HIGH SCHOOL 1517 VISITS BETT

Ekaterina Kozulina

Our school is one of the most modern educational organizations in Moscow! Our school hosts many events, conferences, has its own magazine and newspaper. Of course, our students attend stunning and exciting conferences outside our school.

I asked the participants of the English BETT exhibition from our school about the conference events and the experience got.

Bett Show is an exhibition of educational technologies. There are units more than 35 000 teachers and specialists, here they get acquainted with the latest technologies and innovative solutions in the region of educational to improve the quality of education. The British Educational Training and Technology show was established in 1985 in London and held annually in ExCel exhibition centre in London. Its purpose coverage is huge – helping people to be in touch with new technologies, helping companies to present their products in a smartest way – that is great! Teachers and students get to speak to some of the representatives of famous companies, education, such as Promethean, Microsoft: Education, Google, Intel etc. The BETT exhibition is also a unique opportunity to communicate with like-minded people from other countries, with scientists, with program developers and experts in the fields of science. In addition to the BETT exhibition, wonderful and amazing excursions awaited schoolchildren. The BETT-Arena programme presented a very wide range of interesting speakers with speeches to-point on technology influence on secondary and higher education as well.

Every year a group of students from our school go to this exhibition. The most active people, who often participated in the scientific activities of the school, were recruited into the group for departure. These are students who are actively involved in research and project activities, winners of research and project work competitions, Olympiads of city and Federal levels, the organizers of Scientific-practical Conference «SCIENTIA UNESCAMUS», which is held annually in the Gymnasium № 1517. In addition to the BETT exhibition, wonderful and amazing excursions awaited schoolchildren.

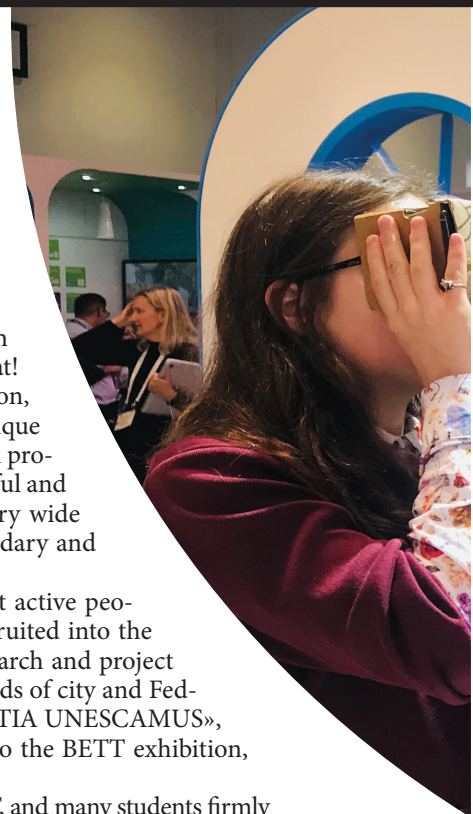
Despite the most varied expectations, people liked visit of BETT, and many students firmly decided to go to this exhibition again in next year! Pupils received a huge amount of positive emotions, ideas, made new friends, brought a lot of prizes and souvenirs.

I offered to continue these suggestions to several students from our school, which went to BETT:

1. The most interesting event was ...
2. Organization of the exhibition was...
3. During the conference, I discovered for myself ...
4. Company stand was...
5. The most modern technology was ...

**Nikolay
Ponomarenko
(BETT 2014)**

1. The most interesting event was a story to representatives of British education about the technologies used in the educational process in our school.
2. The organization of the BETT exhibition was very successful, since each participant could undoubtedly find stands and discussion platforms for his interests.
3. During the conference, I discovered new methods and approaches to the educational process.
4. The Oxford University Press's stand made a deep impression for me, as it presented a rather interesting and extremely extraordinary approach to such a routine occupation as learning new foreign words.
5. The most modern technology that I saw at the exhibition is an application to increase the variety of vocabulary of students in their compositions. I want to note that this invention influenced pretty much a bit my career choice: at the moment I am developing in the field of NLP / NLU (Natural Language Processing / Understanding), applying machine intelligence to similar tasks.





**Anna
Tuchkova
(BETT 2017)**



Then, I have asked new questions
to new people:

1. My main expectation was ...
2. I was not expecting ...
3. The most interesting event was ...
4. Most of all I remember ...



1. My main expectation was that it would be an absolutely ordinary and unremarkable conference, where we would just walk and look at everything, and there would be no interactivity associated with the Company stands.
2. I didn't expect that on the BETT exhibition would be free pens, a fountain with chocolate, sandwiches, a mug and etc.
3. The most interesting event was the presentation of the Kahoot application, after which our school began to use it so actively.
4. Most of all I remember the plasticine from the Chinese developers, which was not sticky and was as plastic as ordinary. (But in fact, I actually liked the chocolate fountain the most)





Volunteering

Volunteering is an extraordinary, interesting, mobile and a very positive life activity. To be honest, the first time I have learned about volunteering was on a school tour of a huge conference, named «Unite with Knowledge». While I was looking around I saw a lot of people in volunteer T-shirts – they were helping absolutely everyone: They answered different questions, helped to put up stands and solved all of the problems. All of a sudden I started wondering: What is this job like? How can you become like them? I became interested in it at school – I asked my friends about volunteers – and I finally got to my first volunteering event. I started to slowly understand all of this and I did not miss a single event in these few years, and, having already become an experienced person in this field of knowledge, I began to study volunteering. As in science, I have learnt a lot of new, entertaining things and activities. Every time, when coming to new events, I got to know new people, I got positive emotions and feelings that brought me emotional benefit. I decided to learn more about the history of the volunteer movement, goals and objectives, features and views. I have also learned from the media that volunteering is much more multifaceted, than we think it is.

Volunteering arose a long time ago – in the distant days of the reign of Yaroslav Mudriy (the Wise), when orphanages for children were created. The orphanages kept

the orphans on the finances that were received from the donations of many nobles. Some antiquity researchers claim, that the history of volunteering began much later – in the 17th century Europe. At that time people who went to war by their own will were named “volunteers”, which evolved from a French word “volontaire”.

To this day everything has severely changed and right now there are several areas of volunteering such as:

1. Social Volunteering;
2. Environmental Volunteering;
3. Cultural Volunteering;
4. Event Volunteering;
5. Volunteering in medicine;
6. Public Safety Volunteering;
7. Patriotic Volunteering;
8. Media Volunteering;
9. Donations;
10. Sports Volunteering;

I have only told you about the most common volunteering areas, but if you dig deeper, you can find even more categories. Personally, I have tried myself in many volunteering areas, but most of my activities are related to event volunteering, where I help organizing and conducting major or more or less significant events at local, regional, federal and international levels (at conferences, conventions, forums, holidays, concerts, etc.)

I have attended many exhibitions and meetings dedicated to volunteering and I have written to famous people asking for instructions to volunteering. And



Svetlana Nikolaevna Brown, Head of Public Relations of the Moscow City Department of Health, replied to me: «Our country needs highly skilled workers. The country needs qualified doctors, trained medical nurses, and, most importantly, our country needs amazing volunteers – young medics as you are, the students of our medical classes in School 1517. We hope that you will develop this volunteering area, hope that you will collaborate with



Author: Mukatov Daniel

Translator: Andrey Rudnevskiy

the all-Russian movement of volunteer medics, hope that you will work and cooperate with our hospital named in honor of Bashlyaeva, hope that you will benefit our medical staff, hope that you will help children, who recover in these hospitals, hope that you will help them emotionally cope with their diseases. We are waiting for you in our team and hope that you will enter the medical university and strongly wish, that you might come back – to work in our children's hospital».

Andrey Tolkachev, head of the Department of Educational Policy of the Russian movement of Students (RDSH) also wrote to me: «Volunteers, activists – you are a perfect role model for others! Volunteers are genuine examples of kindness, humanity and selflessness. Thank you for your kind hearts, for your tremendous work and your selfless help. You will be able to succeed in any socially significant field and you will be able to lead others! Continue to gladden your wise mentors and loving parents with new achievements. Do not be afraid of any upcoming difficult situations – always remember, that you are physically and mentally stronger than them! And then any problem will be a nothing for you! Keep your faith, strength and potential in your heart that is full of kindness and love».

Now all I have to do is to suggest you, my dear readers of this article, to become a volunteer or an activist as it is very cool. I will be happy for everyone who will listen to this and who in future will hopefully become a volunteer!



Social Volunteering



Environmental Volunteering



Cultural Volunteering



Event Volunteering



Volunteering in medicine



Public Safety Volunteering



Patriotic Volunteering



Media Volunteering



Blood donation



Sports Volunteering

Social media: friend or enemy?

Yaroslava Khomyachenko

Reading this magazine, most likely you have immersed in the atmosphere of the bottom of the sea. But now it's worth immersing into the Internet, or rather into the sea of social networks.

So, first we need to define that social networks are an integral part of our lives. Each of us has a different idea about using of social networks. Someone is having fun with them, for example, watching funny videos. Other users gather in clubs of interest, but there are people for whom social networks are news feed. But let's look at the common advantages:

- + People can communicate and exchange information at large and small distances.
- + People find like-minded people in any field.
- + Meet new people.
- + The ability to find information on any topic.

Like many other phenomena, social networks have disadvantages:

- Replacing of real communication.
- Big development of typing than writing.

Teen labor market:

The topic of the teenage labour market has attracted my attention after talking with peers, who want to work but for some reason don't. I decided to conduct a study and to find out why not all teenagers manage to find work and why parents don't always support this idea.

The relevance of this work is that the topic of employment of adolescents is important both for adolescents and their parents, as well as for the country's economy. I believe that adolescents want to work, but do not do it because they have difficulty in finding work and they do not receive the needed parental approval. The purpose of my research is to study the labour market of adolescents and the attitude to the teenage work of parents. I set myself the following tasks: to find out the attitude of adolescents and parents to this issue; find out what difficulties teenagers have in finding employment; find out how the ability to work will affect teens; find out by how much GDP will increase during the mass work of adolescents of working age, using 3 methods of work: social, empirical and theoretical.

Having studied the Labor Code of the Russian Federation and the Federal Law "ON BASIC GUARANTEES OF CHILD RIGHTS IN THE RUSSIAN FEDERATION", I learned the peculiarities of employing minors. The main ones: reduced working hours; conclusion of an employment contract is allowed with persons who have reached the age of 16 years; probationary period

for minors is not established; minors are prohibited from working at: chemical industry enterprises if harmful substances are used there, metallurgical industry enterprises, and also in various entertainment establishments.

I conducted a study in which both adolescents and their parents participated to find out their attitude to the issues of the teenage labor market.

I made a comparative table in which I presented the results of a survey of parents and adolescents.

Based on this analysis, I have learned that between parents and children there is no big barrier to working in adolescence, but there is some fear and misunderstanding, i.e. reached the goal.

In order to find out the attitude of the parents of the working teenagers, I asked my friends to tell about their personal experience in finding jobs. This is what they told me:

"My name is Anya, I'm 15 years old. When I was 14 years old I decided to earn some money – my parents were not against it. I searched the Internet for a very long time, then I found out about the youth employment center and decided to go there. First I went through an interview, then a test for career guidance and for the shortest time I was helped to find a suitable vacancy. Since I really like taking pictures, I was offered a job as a photographer. It so happened that in my case I earn on my own hobby."

"My name is Lena. I'm 15 years old. This

- Avoiding communication with the real world.
- Easy access to harmful information.
- Deterioration of health from constant use of electronic equipment.

Now it's worth to consider the influence of the pros and cons of social networks on people. And most often, teenagers are exposed to this influence. Due to the fact that teenagers communicate through social networks, communication in real life becomes unnecessary and optional for them. Many people, most often shy, like to communicate through social networks, where they can become anyone, choose

any character, appearance and manner of communication. Also, due to the easy circumvention of restrictions, for example, age, anyone can get any information that isn't assigned to his age. Which isn't always safe.

Parents play a huge role in the process of involving a child into social networks. A lot really depends on them. If they won't control all the leisure time, but at least some part of it, then the time spent on social networks will be much less due to the active spending of time in real life. On the other hand, if parents themselves spend a lot of time in social networks or

pros and cons

Aleksandra Afonina

summer I decided to earn some money. For a long time I was looking for a job suitable for me, and then a vacancy. As a result, I focused on activities related to the organization of events. Namely, assistance in the design of various holidays. I ended up in a very friendly team in which everyone helped each other and worked together. It was a very valuable experience for me and I know for sure that I will also work next summer."

My name is Vanya. I am 17 years old. When I was 16 years old, I decided to work as a promoter. The essence of the work was to distribute leaflets and attract customers. However, I realized how difficult it is. You stand for several hours and communicate with people. Sometimes they ignore and pass by, but you still have to smile and work on."

"My name is Sasha. I am 16 years old. In the summer I got a job of a courier in the store. The most difficult thing for me in this work was the conversation with clients. Sometimes there are very aggressive people, sometimes vice versa – too friendly. Before I did not always manage to smoothe out conflict situations but after working for 2 months I became much calmer and more confident in communicating with people."

From my own personal experience I can say that you can understand both children and parents. A couple of years ago, my parents were worried about my desire to work because there was a stereotype that adults should work and children should learn. However, this summer everything changed, and they helped me to realize my dream - to have my own floristic company.

We have come to the conclusion that I am ready not only to learn, but also to work. Half a year has passed and I have no difficulties. I still manage to study well at school and receive additional professional education, engage in social activities, and also work. Therefore, it does not mean at all that working children do not study or do not remain primarily children.

For me work has become a favorite thing. I wanted to do it not just because of the financial need, but because of the desire to bring benefits and do what I like.

In September 2018, I took part in the Moscow World Skills Floristry Championship and entered the top 20. In 2019, I re-participated in this championship and entered the top 10. A year has passed and I continue to work in an area that I like, breaking the stereotype of "adults should work."

From my personal experience and the experience of adolescents, who already have some experience, I was once again convinced that the main problem is employment. Teenagers cannot find a job. I believe that one of the ways to realize this opportunity is to create special centers that will help adolescents in finding employment, possibly on the school basis. Together with the Youth Employment Center, we have already held a career guidance event for high school students in School 1517, and I hope we will continue to work together. On these results I do not close this topic. I will continue my research in the form of a project, in which I will elaborate in depth on the center for teenage employment.

QUESTIONNAIRE AND RESULTS

Adults

1. Do you have children?

86% yes, 14% no

2. Should a teenager work?

53% yes 47% no

3. Work in adolescence ...

71% is good, 29% is bad

4. What do you think is the reason for the work of adolescents?

73% Desire to be independent

47% Self-Affirmation

29% Lack of money

25% Inconvenience of asking for money from parents

5. The massive work of adolescents ...

20% Reduce school performance

10% deprives childhood

15% Lower crime

11% Reduce Addiction

3% Benefits GDP

61% will make them disciplined

59% Takes time that was previously wasted

Teens

1. Age

2. Do you think able-bodied teenagers should work?

60% yes, 40% no

3. Work in adolescence ...

75% is good, 25% is bad

4. At what age can I work?

50% - from 14, 9% - from 15, 9% - from 18

5. What is the reason (s) of the work of adolescents ...

23% Desire to be independent

12% Self-Affirmation

16% Lack of money

19% Inconvenient to ask for money from parents

6. The mass work of adolescents ...

9% Reduce school performance

7% Deprives childhood

5% Lower crime

4% Reduce Addiction

7% Benefits GDP

14% will make them disciplined

28% Takes time that was previously wasted

often occupy a child with a phone, then their children become addicted to the Internet from early childhood.

I want to offer ideas on how to make social networks friendly for myself and you. First, you should try to limit yourself in time using social networks. For example, 30 minutes on social networks and 1 hour for reading a book. It's also worth using social networks more for business but for entertainment. Also put communication in real life above communication on the Internet, and you should always remember that not all information on the Internet is true, and this information must be used carefully. For each person, social networks can be friend and enemy at the same time, it all depends on him. If social networks are used more for quality improvement than for entertainment, then they will be useful. And if more for meaningless actions, then they will harm your health without significant advantages for you.

Information technologies in education

Author: Ostanina Tatiana

Translator: Andrey Rudnevskiy

It is no secret that today information technology plays a huge role and is widely distributed in all areas of our lives. One of the areas in which the use of ICT is the most promising, in my opinion, is the area of development of education. Thanks to the use of information and communication technologies – our learning process has changed a lot. This change is accompanied by both positive and negative sides, which, in turn, arise on the basis of the methods of using ICT in training. At this stage, the use of technologies in education is almost unlimited, and this can sometimes lead to negative consequences.

From one point of view, ICT technologies make it easier and faster to study different types of knowledge. The Internet allows you to quickly find different information resources. In addition, due to the many information sources, that provide information relevant, a kind of «competition» arises. In this case, the user's choice falls on the most convenient form of material supply. Usually the flow of information

using SmartArt prevails (SmartArt is a type of graphic design, that helps to systemize data). Another advantage of using ICT is the availability in online education. Nowadays you can learn a lot without leaving your home, without having to attend various online courses. An example of this can be webinars, having in them not just various video tutorials, but also having informative distance learning courses. Thanks to the use of IT - employees of various enterprises can improve their qualifications while students can study additional material without waiting for the start of various education classes. Keeping in mind the widespread use of ICT in production, their use in training can also be a wonderful experience that will help the trainees to subsequently apply IT technologies in the work process. An example of this is the widespread use of the Internet, as well as the variety of other tech skills that we master, including in preparation for classes.

On the other hand the use of information technology in the learning process has its own drawbacks. It may affect the quality of education received. The amount of information entering the brain is rapidly increasing, but the possibilities of it remain the same. The factor of accessibility of information often leads to a common situation, where a person already remembers not what he read, but where he read it. In addition, the possibility of analytical thinking is deteriorating due to the rapid growth in the volume of information being processed. The so-called «information overload» can also be a consequence of a large amount of hypertext on the Internet.

Information overload occurs to both the physiological characteristics of the human body and the poor development of the information culture in society (and the communication competence of modern specialists). A large number of advertisements, links to «related videos» or «other articles on this topic» lead to the fact that a person is involuntarily distracted and, along with really important knowledge, remembers a lot of non-important information. Another significant drawback of using third-party information resources in the learning process may be the inaccuracy of many of the mentioned sources. When studying from such sources there is a risk of forming an erroneous opinion on some issues. I can also highlight as a drawback a case where, due to the constant flow of a large amount of information into the brain, a situation of the so-called «information dependence» is being developed - this encourages students to look for more and more often unnecessary information on a daily basis.

Overall, there are many advantages and disadvantages to the use of information technology in the learning process. This can be expressed both in the availability of information and in the low level of assimilation caused by the abundance of information. Undoubtedly, for the full use of ICT in the learning process it is necessary to develop methods that will help to reduce the disadvantages of such practices. It may include, among other things, independent visualization of the acquired material, which, in my opinion, will contribute to a better understanding of the material that is being studied.





Music and character

Author: Kharitonova Anna

Translator: Kozulina Ekaterina

Music. It has been followed the person from antiquity and till today, participated in the rituals held by priests, it we hear in mother's lullaby, music creates unique sounding of a church chant and lightens the mood when we hear cheerful motives of street musicians ...

Considering, participation of music in life of each individual is how big, it is possible to assume that music make impact on character of the person.

The 21st century doesn't stop to amaze with thw variety of music genres. Now each passerby, can tell at once, at least, 6 genres. And there are also various directions and styles!

In psychiatry there is even a medical practice when the person is treated by means of certain melodies.

Is it possible to judge about character of the person, knowing the genre of his favourite song?

Many researches were made and their purpose was to confirm or refute the theory about dependence between musical genres to witch the person gives preference, and his character. More than 36000 people from different corners of the world participated in one of the most grandiose experiments which was made by scientific Heriot-Watt University (HWU). Their purpose was to choose from 104 musical genres one favorite or which is pleasant more.

Scientists got such results:

- Admirers of **blues are fibbers**, creative persons, they are garrulous, polite and ambitious, however are a little haughty and arrogant;
- Admirers of **jazz** most often extraordinary, benevolent people with highened self-esteem;
- Amateurs of **classical music** are slightly unsociable and closed, but, despite it, respect themselves and have brilliant creative skills;
- Fans of a **rap** are sociable, independent, slightly egocentric and often arrogant;
- Listeners of the **opera** polite, sincere, constructive persons;
- Adorers **country-and-western** are hardworking and easily find common language with people around;
- Amateurs of a **reggae** have a highened self-esteem, rich imagination; they are friendly, but their diligence and assiduity are definitely not about them;
- Who give preference to **dance music** are restless, active, possess creative skills, but politeness and tranquility are not their case;
- **Indi** fans have low self-esteem, they are not hardworking, are often rough and impolite;
- Adherents of the **Bollywood** music are sociable and friendly;
- Surprisingly, most often, **heavy music** lovers are modest and silent persons having creative potential;
- **Pop music** is listened by confident, sociable, stereotyped and persuasive people.

Many people are skeptical about the statement that, knowing a favourite genre of music, it's possible to define character. However, as statistics shows, when people were told their estimated character, they agreed with surprise in voice... Conclusion is as follows: character, as well as many scientists assumed, depends on preferences in music.

BIOLOGY

McDonald's *to eat or not to eat?*

For today McDonald's is one of the most popular fast food restaurants. My parents tell me that McDonald's food is not so healthy and nourishing as it seems, however, I always see big queues in this restaurant and incessant stream of people there.

If McDonald's food is so unhealthy why there are so many people there? Is there a big necessity to deny oneself the fast food?

As I've went into the question of McDonald's appearance, I realized that it was a really successful business project. Moreover, at first McDonald's hamburgers didn't contain preservatives at all! Sometime later McDonald's restaurants network began expanded and owners decided to add some preservatives in to order to make their products more non-volatile and to gain profit, but that mea-

sures have brought negative influence on people's health and digestive system. I found out that the list of dishes and products offered by McDonald's is not random. Drinks with ice cause hunger. That is why cold drinks, such as Coca-Cola, are cheaper than hot drinks. Although the Coca-Cola drink in stores are more expensive than tea.

I've also learned that in order to prolong life of the ingredients for cheeseburgers and other dishes, they are delivered to the restaurant in frozen form. My experiment proved that vegetables become tasteless after frost, and in McDonald's they are very tasty! How do you think buyers are misled so that they do not feel this? You must agree, whether the food was tasteless - no one would take it. I also ascertained how much salt and sugar is contained in McDonald's products.

My hypothesis is as follows: "Food from McDonald's does not benefit the human body, but on the contrary, harms," proved by means of experiments and a list of products with quantitative containing salt and sugar.

As a result of the study, I figured out why the McDonald's food is harmful and radically changed my attitude towards it.

I realized that quickly - not always healthy, and it is extremely important for a person to consciously approach food intake. In the rhythm of the big city you always want to save your time, which is why McDonald's has become a part of our life. Is it good or bad - everyone should decide by himself, but I would like to tell everyone that refusing from another portion of McDonald's food will help you to save your health!

Gleb Zhuravlev



Tips

on time management:

how to manage your time

Author: Maria Medvedeva

*Translator: Maria Medvedeva and
Ekaterina Kozulina*

In present time all people are too busy. Too many activities, affairs, commitments. I haven't enough time too. And I was interested in time management theme, about how to effectively organize your time. I studied the book by the specialist Gleb Arkhangelsky «Time-Drive: How to have time to live and to work». I chose all the most interesting from it presented in this article.

An ordinary person always wants to finish affairs faster. And you need time to rest for the work to be more effective. 5 minutes of the recreation every hour or 10 minutes once in every hour and a half. It can be either a rhythmic recreation, or creative laziness, or an effective dream.

The rules of creative laziness:

- You shouldn't to think or solve problems during laziness. You need to be lazy at 100%.
- You need to be lazy without remorse or hesitation.
- You shouldn't think about the problem during laziness, but load information about an important creative problem before it.

Almost everyone sometimes should to do some unpleasant affairs, but you don't feel like it. How to motivate yourself? You can use a kind of «anchor». This is some binding that helps to get involved into work. And to get involved into work, you can use the «Swiss cheese method». At first do the most pleasant and simple. Then in this job or «cheese» will be so many holes that it will not be difficult to finish it. Also you can reward yourself with «intermediate joys». For example, eat candy for each completed task in homework.

We have small, but unpleasant affairs you always want to set aside. They are called «frogs». They often turn into problems that take a lot of time. You need to make a rule to eat a «frog» every morning. Then all day will be good, otherwise this little thing all day will poison your life. And the easiest way to motivate yourself is to have a table of regular activities and note what has been done. If at some moment in the graph you'll see too many minuses, this will give you an alarm. Near the table it's useful to write out intermediate joys. For example, for every 10 pluses in the column of some regular affair you can buy yourself something pleasant. And you need to hung the table in a prominent place, so it often catches your eye. Each of us has dreams. And we want them to come true, of course. But thinking about dreams is much easier than execute them. To do this, set purposes.



American time management specialist Stephen Coley highlights two approaches to life, reactive and proactive. The reactive method is «how it happened» and «how did it happen». A proactive method is to build life as you wish. But we have a million arguments and explanations why our dream hasn't yet become a reality. But we didn't even come close to fulfilling a dream.

Imagine yourself as a separate corporation. It has all the same controls.

Successful people may keep or not keep diaries, control tasks on their own or with the help of a secretary, but they all clearly understand their purposes. An interesting story of one person who dedicated his whole life to achieve one big purpose: to develop a periodic system of biological objects, i. e. to do the same thing that Mendeleev did in chemistry, but only in biology. Alexander Lyubischev calculated that he would need 120 years for everything. He had a choice either to abandon the idea or condense his life time and learn to do more. He calculated his time in such way that at 76 he did more than his young colleagues. However, Lyubischev didn't have time to reach his purpose.

There are no right or wrong answers in time management, but a day plan should be, but the plan for the day should be and it should be written down somewhere. Drafting will take only a few minutes, but it will give control and accountability of tasks. Use these advices and you can manage your time!



Ocean pollution by plastic. There is no planet B

Natalia Machinskaya

The Earth is polluted quickly. Every year 8 million tons of rubbish, which make up 3% of the total amount of trash, gets to the Ocean. Rubbish makes up 88% of Ocean's surface now. Plastic is polluting the water by toxic substances, annually destroying 1.5 millions of sea creatures and those, who eat it.

In soil, plastic decomposes 600 years, and in water, the period increases several times. Plastic splits into small particles - polymers. Now a cubic meter of ice in an iceberg contains from 40 to 240 of these granules. Total count of plastic particles in the World Ocean is 5 trillion. Sea creatures confuse particles of plastic with food, but plastic granules are toxic. After that, predator animals, eat them, including humans. Besides, garbage patches form in the Ocean. The biggest of them is Great Pacific garbage patch. Its area varies from 700 thousands to 1.5 million km². This patch is a big accumulation of trash and particles of polymers, but just certain part of it comes to surface, so we can't see its scale. Sunlight penetrates poorly or doesn't penetrate completely through the thickness of the garbage, so many plants and plankton die out.

In different countries, recycling percentage varies greatly:

- Only 10% of waste is utilized in Russia.
- 33% of rubbish is recycled or incinerated in China.

- 40% in Great Britain.
- 46% of garbage is utilized in United States of America.
- 60% of waste is recycled and incinerated in India, but 62 million tons of garbage produce annually there!
- 90% of trash is recycled and incinerated in Japan.
- And 99% of garbage waste is utilized in Sweden!

Many volunteers try to help by creating ocean protection organizations.

The Dutchman Boyan Slat founded the company «The Ocean Cleanup», which is implementing an ocean cleanup project. A floating barrier, that's length is 0.6 km, was sent from the coast of San Francisco, in the United States of America. In fact, the first launch attempt was unsuccessful, and the new model was launched in June 2019. Barrier helps to collect garbage in one place and gradually recycle it. This company is also planning the river cleaning system named "The Interceptor", because rivers bring the largest amount of rubbish into oceans. The system filters water and holds up the trash. It works from solar power and can take out from 50 to 100 tons of garbage every day.

In 2011, Californian Dag Vudring founded the ocean cleaning alliance in the United States and Hong Kong. He organizes events to clean up the sea from garbage. The events can be attended by people whose life

is connected with the ocean: surfers, lovers of swimming, rowing, diving.

One of the leading non-profit organizations is the "Big Blue Ocean Cleanup", which cleans the coast. They have already collected thousand tons of rubbish. Volunteers help keep the oceans clean and protect marine biota.

It is important to take at least small steps to save our planet:

- Collect bottle caps for recycle.
- Recycle waste paper.
- Hand over batteries and gadgets for recycling.
- Buy a thermos or bottle to carry your drink with you, without buying plastic bottles.
- If possible, sort garbage.
- Reduce the use of disposable tableware, including coffee cups and plastic tubes.
- Sometimes buy a little used clothing (for example, from second hand).
- Buy clothes made from natural materials.
- Buy an eco-friendly bag and pouches for fruits and vegetables, without buying plastic packages.

If you will follow some points, you will make a great contribution to the fight against pollution of the planet.

Save the Earth, it is beautiful! We won't have a second chance, we won't have a planet B.

«Thinking» music

Author: Alena Samoylova

*Translator: Alena Samoylova and
Andrey Rudnevskiy*

Did you ever listen to music, while doing your homework? Even if you did not, did you ever think that (maybe) music could help you concentrate and make you more productive?

People cannot live without music. It surrounds us everywhere: in the restaurants or shops, it plays on the background. Even in school students hum different melodies. But all these sounds you hear mainly without thinking about anything. But should you listen to music while trying to concentrate?

Of course, not all genres of the music would help you. For example, I do not think that a lover of the classic music would think faster while listening heavy metal. Therefore, if you need to concentrate on something, you should listen to music that you like. This way, you won't focus on the music that you do not know and your mind will not be able to concentrate with unfamiliar sounds. It would be much better if you listen to new music in your free time.

This «concentrating» music may be called in different ways. Calm music, studying music.

Music can really brighten up your mood, so the work can become way more interesting. I think that is the main reason why you work faster – the time does not stretch out like melted chocolate.

The author of the blog «A life of productivity»¹ Chris Bailey made an experiment. He listened to some instrumental music on the first week. On the second week, he listened to calm tracks. The third week was the week of the pop music. On the fourth week Chris listened to rock music. Chris didn't listen to music at all when the fifth week came. Chris explained, that the third week was much more difficult than others, because pop music was really unfamiliar for him. His brain concentrated on the music more, than on the task. According to Chris Bailey, the hardest week was the fifth week, because he always listened to music, and on that day his daily routine has severely changed all day long.

I don't listen to music very often. Usually I listen to an alternative genre of music, so I can concentrate think well while listening to this kind of music. However, I tried to do my homework while listening to classical music, and I was concentrating on Verdi more, than on the task. It was unfamiliar for me.

I made a conclusion. Music, that helps you to concentrate and focus on the task is the thing that usually depends on the type of person. For example, a lover of the classical music has no chance to think normally, while listening to heavy metal because it is unusual for him. So, while you are choosing the music, which will help you concentrate, pay attention to that the type of music, that you know well and that you like to listen to it.



Cognition services in medicine

How to create cognitive services for recognizing diseased organs. The student of 6 class school #1517 Daria Rashitova shares her experience of working with the module of platform AZURE.



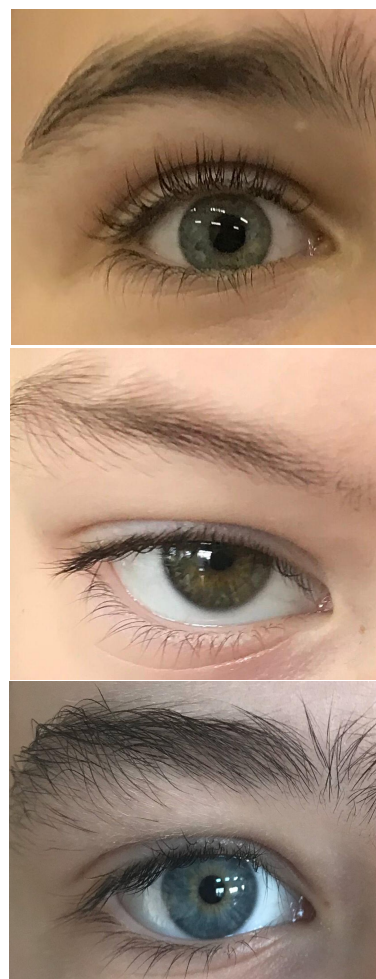
Daria Rashitova

Cognitive services are some kind of artificial intelligence within recognizing programs which can recognize and process different types of information. Cognitive services are used in different activities. Such services are used to sort photos. For example, the program can sort photos by categories in a gallery and block inappropriate contents in the internet.

Also such programs are used in creation of personal passwords in the phone. In this case the service sees and recognises your face and unlocks the screen. There are many programs which can recognize the voice and find required services. For example "ALICA". This service was created by "Yandex". The other kind of voice recognizing services are the programs which can translate human voice into text and backwards. Also cognitive services can be really helpful in medicine. Cognitive services help to identify diagnosis of patients according to the data loaded in the memory of services. They can also analyze the condition of the patient and find optimal personal treatment for him. Cognitive services are used in oncology, ophthalmology, mammogram analyses, radiograph and MRT data. This is a small part of using cognitive ser-

vices in medicine. Unfortunately, the artificial intelligence is not perfect yet to solve difficult tasks and now only takes part in doctor's assistance.

I set myself a goal to create a cognitive service which can recognize a sore eye. I chose the platform Azure and the instrument of customvision.ai. It is a simple and convenient technology for creating resolvers. To create the service I prepared images of sick and healthy eyes, then I uploaded the photos of 20 healthy and 20 sick eyes on the platform and began to train the program. In addition, I divided images of sick eyes into 3 categories: "tired eyes," conjunctivitis, "hordeolum" (barley). I took advantage of the "advanced learning" feature and soon my program could distinguish a sick eye from a healthy one with a high probability of 90%. My service works like this: we photograph the eye of the "patient" and upload it into the recognizer I created. The recognizer, having processed the image, gives the answer – if the eye is sick or healthy." It's a training recognizer, of course. But it helps us understand how similar complex systems work in various fields, including medicine. Nowadays, cognitive services have become very common in many areas and are available to others. And now everyone can create their own recognizer.



IT

Why is it important to identify your emotions?

Aliya Uzdenova

What are emotions? Emotions are a process of reflecting someone's subjective attitude to different situations and events. Your relationships with people depend on emotions and the process of identifying them. However there are some cases when we can identify them without realizing, in most cases subconsciously of course. For example, we always notice when someone is irritated, usually by his/her intonations and facial expressions, so no prior knowledge is needed. But still we cannot identify emotions in every situation without prior knowledge or a basic understanding of psychology.

But why are emotions important? Why is it important to identify them? Emotions are a human feature. Only human beings possess an extensive spectrum. Emotions are a form of adapting to life and existing in society. The better humans are at controlling their emotions and identifying them, the easier it'll be to live in the community. They help us to understand people and especially ourselves.

There are different models for identifying emotions. The first thing you need to know is that there are 2 methods for their identification: discrete and multi-dimensional. The discrete method is established around basic emotions. The American psychologist Paul Ekman considers that there are 7 basic emotions and another psychologist Carroll Izard considers there to be 8 of them. In the multi-dimensional method, in which several emotions are combined, there are no basic emotions. For some time the standard of multi-di-

mensional models was J. Russel's model but soon it was deemed inaccurate.

But how can we learn to "read people"? To identify emotions, at first we need to master the theory of understanding all facial expressions and movements. For each emotion there are certain characteristics and features. Once we've mastered the theory, let's start the practical part. Certainly beginners will be not able to identify live emotions because a micro-expression is held for only a few milliseconds on the face and beginners don't have enough time to identify any emotions, so I recommend to practice using photos. To clarify: we can't spot emotions considering only separate micro-expressions, we need to consider the whole spectrum.

This topic got my interest when I first watched "Lie to me" inspired by "Psychology of lies" by Paul Ekman. This subject is useful and makes our life easier. To negotiate, to hire people, in the police and in authorities, even in our everyday life this theme is totally relevant as it simplifies communication with people, it helps to understand their attitude towards us.

Here's a list of literature and TV shows on psycho-analysis:

Books:

- 1) Paul Ekman "Psychology of Lies", "Psychology of emotions"
- 2) Joe Navarro "What every body is saying"

TV shows:

- 1) "Lie to me"
- 2) "Mentalist"

Now I'm working on creating my bot that will identify emotions. I'm basing it on using Paul Ekman's theory and 7 basic emotions. To develop such a program I've selected the AZURE platform and its tool customvision.ai to create artificial intelligence. I create a database of photos of peoples' emotions so that my program will be able to distinguish them. In order to distinguish them accurately, I need to download photos of both children and adults. The job is complicated but very interesting. I hope I will be able to try out my bot soon.





PSYCHOLOGY

A life without conflict: at school, at home and anywhere

Alexey Khodorych

Nobody likes to be in conflict, but conflicts will happen for good or bad. And it usually occurs contrary to the true tasks and real goals of the parties in conflict. Alexey Khodorych, the editor-in-chief of the children's magazine "Klassny Zhurnal" and the co-author of the books "The Ideal Argument" and "Encodes", tells how and why encodes (expressions that are deliberately significant in the context of communication but that are based on the use of conversational clichés) not only allow us to stop the conflict, but also to negotiate, achieve goals, and be positive always and give joy to others.

The noun "encode" in the context in which my co-author and the well-known psychologist Vadim Petrovsky and I use it, did not exist before, although the method of communication itself has always existed that is based on the use of phrases such as "It seems you are a psychologist, aren't you?", "Sometimes the hunter and

the quarry swap places..." "It is better to wear down than to rust!", "Well, I ain't an angel!". Encodes perplex, stun, and allow us to gain time, break scripts, change the situation, and, ultimately, in spite of the fact that at first they seem to be confusing, in communication they place people in a surge of understanding.

Here we cannot help mentioning the Theory of Multisubjectness that Vadim Petrovsky has been developing for many years. According to this theory, in each person's head there are simultaneously many options of already known personalities. And they do not just live there, but constantly communicate with each other, argue, make peace, and tell each other stories. And they both live with each other and with the person in whose head they live. More precisely, they live with one of the person's versions, and those are also plentiful.

This, of course, is also directly related

to Eric Berne's Theory of Transactional Analysis according to which every person at any age can be in three states, Parent, Adult and Child. In Berne's classical theory two people communicating with each other are in fact six persons, each being a triumvirate of the dissimilar "Is", with their own voices, their own logic, and their own motives for action. This constitutes the main reason for the difficulties in translation that throughout life plague both the most recognized masters of communication and ordinary people who have not heard anything about it.

But putting it simply, we are all different and we communicate not with real interlocutors, but rather with our ideas of them. The knowledge of direct and indirect messages that come from different "Is", switching between the positions of Victim, Persecutor, and Rescuer in a variety of games that people play with others and with themselves, personal communication styles (Empaths, Daydreamers, Charming Manipulators, etc.), all this enables the achievement of more when in contacts with each other. And encodes are the means to help minimize translation difficulties and help us communicate with maximum success.

A similar communication style was previously typical for an environment involving an increased risk factor; it was even spoofed in one of the episodes of Ocean's 12, when the characters of George Clooney (Danny Ocean), Brad Pitt (the amusing Rusty Ryan) and Matt Damon (the crazy Linus Caldwell) have a mysterious conversation with the famous mafia thug Matsui.

The amusing Rusty Ryan: "A doctor, who specializes in skin diseases, will dream he has fallen asleep in front of the television. Later, he will wake up in front of the television, but not remember his dream."

Matsui: "Would you agree?"

Danny Ocean: "If all the animals along the equator were capable of flattery, then Thanksgiving and Halloween... would fall... on the same day."

Matsui: "When I was four years old, I watched my mother kill a spider... with a teacup. Years later, I realized it was not a spider – it was my Uncle Harold."

All this time the crazy Linus Caldwell remains seated without understanding what is happening but when his turn comes, he also tries to say something profound and strange.

The crazy Linus Caldwell: "Oh, let the sun beat down upon my face, stars fill my dreams."

And almost wrecks the negotiations, despite the fact that he is the only one who says a more or less meaningful phrase

when quoting the fragment of Led Zeppelin's Kashmir.

But encodes may be totally beneficial for ordinary people as they enable contact, help make a good impression on others, open up the person you are speaking to and allow you to get much more information and positive emotions than you could imagine.

For example, this feature of encodes is demonstrated well in Christopher Buckley's Thank You for Smoking, where the main character while lobbying for smoking (Nick Naylor), has to be constantly in the firing line, and emerges from any situation honorably. Here are some of the encodes from the book: It'll make you believe in God; It's not the thought that counts. It's the money; We had a hard time with it; Is it a reproach to me personally?; I beg you, do not conceal anything, it will only harm you!; Why did you decide to help me?; You're expecting good news?; I've gone blank. Ginseng depletion; I don't know how to put this, but what could be more important than this?

With good reason Petrovsky and I call encodes the lubricant for communication. After all, they work exactly like lubrication in the engine minimizing friction, increasing efficiency and providing for the maximum out in the current situation. This is not manipulation, nor a magic wand, but just a method to level out the difficulties of translation. That is, if there was the potential to agree on something for mutual benefit, it will be fulfilled to the maximum.

By the way, encodes are good in a conflict situation because they most often cause laughter and contribute to rapprochement. Once a saleswoman in a store shouted at the famous Soviet and Russian psychologist Valery Petukhov. He answered, "Thank you for not hitting me". She laughed and the conflict was settled. It is this encode that my son the eight-grader actively uses in communication with adults, but adults can also actively apply it in a variety of situations. In fact, the encode works in the same way as the phrase "The main thing is to behave with dignity", but it is more witty and unexpected.

And here is a more recent story. Once the producer and director Natalya Urmatskikh and her crew seriously tussled with a client who kept presenting more and more new requirements for the video that they were making for him. It was in contravention of the terms of the contract, but "the client is always right," and how could they put him in his place if he could simply not pay in the end? The situation at the table was heating up. The client was already openly mocking them, and when he actually insulted the chief designer, Natalya told him, "Has it ever crossed your mind ... from your foot?". A deathly silence reigned at the table, but then the client burst out laughing and accepted the job without further criticism.

Sergey Kuzin, an expert on complex negotiations, the author of the book "In the Line of Fire. The art of answering tough questions" published by Eksmo in 2016, had a sheet of paper on the refrigerator for a long time with 10 encodes that he used successfully for solving everyday conflicts and that he also recommended to his daughters to use in complex conversations with their classmates. He also recommends all students to use encodes to counter bullying.

- 1 You are saying it as if you liked me
- 2 It is not necessary to say nasty things in order to show your love!
- 3 All you need to imagine is that there is a living person in front of you
- 4 Big things are done when One becomes Two!
- 5 Only the rain knows when a flower will open...
- 6 The situation is taking hold of you, but you don't even notice.
- 7 "Do you know what is going to destroy you?" – "What?" – "Promiscuity and the inclination for dubious pleasures!"
- 8 You know, you are too good a person for me!
- 9 Do you really think you will get a discount for beauty?
- 10 You look constrained... What is the catch?

30

universal encode phrases to neutralize a manipulator or an aggressor, in the book "The Ideal Argument" (there are a total of 281 encodes against manipulators and 569 encodes to feel protected against verbal aggression)

- 1 Did your mind or your foot think this up?
- 2 But you have failed to learn to lie...
- 3 But you are a dangerous (scary) person...
- 4 What kind of trouble do you prefer?
- 5 Do you really need it?
- 6 But what a cheeky fellow you are!
- 7 Do you believe in this yourself?
- 8 Why are you suddenly so worried?
- 9 What game are you playing?
- 10 All you need to imagine is that there is a living person in front of you
- 11 All the aces are marked in your deck
- 12 It seems you are a psychologist, aren't you?
- 13 Do you believe I will buy it?
- 14 Sometimes the hunter and the quarry swap places...
- 15 It is better to wear down than to rust!
- 16 Do you plan on entering hell riding someone else's coffin?
- 17 If you don't want terrible answers, don't ask me terrible questions...
- 18 Has everyone become a villain?
- 19 Conscience is the barrier that everyone must break through alone.
- 20 You'll have to look for somebody else for your fun, someone more affordable...
- 21 The colonel always said that the main thing in a person is their kind heart
- 22 Hasty decisions are the cause of many a misadventure.
- 23 The product is irrelevant if the advertising is good.
- 24 It's good to see a person who ignores such a little matter as reality.
- 25 We've seen it already.
- 26 Only the innocent have no alibi
- 27 You are saying it as if you liked me
- 28 You cannot remove good makeup with water...
- 29 It can bring misfortune...
- 30 I see that you are as quirky as a toilet duck!

For more information about the book and the excerpts see <http://encody.ru>

Scientific Student Community

Encodes are now used by many trainers to teach negotiation. For example, in Elena Vardanyan's "School of Speech," where employees of banks, insurance and service companies learn how to communicate with customers.

And recently encodes have even become an element of the popular negotiation game "A Stroke of Humor" created by a professional negotiator, two-time Russian champion of management games, Olga Grishchenko. The game uses 55 encodes from our book:

- 1 It's been a long time since I used the word 'super'!
- 2 Charged to win?
- 3 There was no place in hell, that's why I am here!
- 4 Has everyone become a villain?
- 5 Everything passes quickly, though sometimes it drags on
- 6 What game are you playing?
- 7 Such songs are a bad omen
- 8 Money unifies
- 9 Someday I will write a book about this
- 10 Sooner or later, problems begin for everyone and others.

When it comes to training and work-

flow, encodes can be aptly applied both for effective communication, and for the compression of large quantities of data and to figuratively define strategies for behavior, in order to increase the efficiency of the workflow (recently such an application of encodes in managerial disciplines was mentioned by Prof Irina Romashova, Lobachevsky University in Nizhny Novgorod) in her Facebook post <https://www.facebook.com/photo.php?fbid=1186018051585551>

And it is probably worth mentioning that sometimes we hear criticism of encodes from those who, having read the book "The Ideal Argument", failed to comprehend exactly how and why encodes work. And there are even those who define encodes as offensive. These readers can be understood. Encodes appear only in live communication; they differ from rudeness because encodes always contain a second conditional plan: it is a game, and frequently also a joke. It is a joke that helps in family conflicts, at work, and in communication with loved ones. Olga Grishchenko (mentioned above) advises starting negotiations with a joke. The joke

can help in situations of aggression and any misunderstanding.

No wonder that the poet and comedian Vladimir Vishnevsky is a fan of encodes, as he uses such phrases in his training "Optimization and 'debanalization' of daily communication" (his "Book No. 1 No House" on a theme similar to encodes was also recently published by Eksmo). For example, here are his encodes:

- 1 What kind of trouble do you prefer?
- 2 When you are back in your mind again, let me know!
- 3 In due time we will think about this too.
- 4 So you suggest we communicate in this format, do you?
- 5 Well, we should trust in life...
- 6 But I have shut up now not without a reason...

Of course, you need to be able to joke (there is such an encode too). But the use of encodes helps those people who long ago all lost hope of mastering the art of the joke, to learn. Moreover, it is about joking not just for laughs (although encodes are most often used precisely for this purpose), but for drawing real benefits from communication.





CONFERENCE "SCIENTIA UNESCAMUS"

We invite you to take part in the 9th Conference in Moscow on March 20-22, 2020. We invite authors of research and design works at the age of 7-18 years together with supervisors. Participation in the Conference is free. More information: <http://conf.1517.msk.ru/en/>
Ask a question: conf@gym1517.ru



Author:

Alekseev Matvey

6 grade, High school 1517

Scientific Supervisor:

Zyuzukova Maria Olegovna,

IT-teacher, High school 1517

Introduction

Since 2001 a new type of sports – eSports – has appeared. But many people do not recognize it and believe that it is just an excuse for playing games on gadgets and this would lead to addiction and gambling. I'm going to find out and tell you what eSports is, will hold a poll among children and their parents. My goal is to find out if eSport is considered a sport or dependence to gadgets.

Hypothesis:

1. For adults, the word eSports is synonymous with gambling.
2. Children consider eSports a cool occupation

Definitions and history

eSports is a competition in the virtual space, which simulated computer technologies, in particular, video games.

eSports is a form of competition using video games. Most commonly, eSports take the form of organized, multiplayer video game competitions, particularly between professional players. The most common video game genres associated with eSports are real-time strategy, fighting, first-person shooter (FPS), and multiplayer online battle arena (MOBA). Tournaments such as The International, the League of Legends World Championship, the Evolution Championship Series and the Intel Extreme Masters provide live broadcasts of the competition, and prize money to competitors.

Cybersport – an innovative competitive activity and the vivid social phenomenon of the twenty-first century. eSports has enormous practical value, develops the identity of the athlete (strategy, tactics, reaction, special skills, etc.) and is available to everyone. In many countries, recognized as officially "sport". The sixth season of student Championship of Moscow in Moscow Student XXVIII program sports games is a springboard for

education national student competitions in computer sports.

eSports in Russia

Russia became the first country in the world that recognized eSports as an official sport. It happened on July 25, 2001 by order of the then-head of NSC Russia Pavel Alekseevich Rozhkova. However, a few years later he was expelled from the all-eSports registry sports because it did not meet the criteria necessary for inclusion in the roster: development in more than half of the constituent entities of the Russian Federation and the availability of registered in the prescribed manner of all-sports association. However, the sport continues to be present in the computer list of sports recognized by the federal body of executive power in the sphere of physical culture and sports, as well as the list of sports for the introduction of government programs of physical education of the population. Now in Russia, there are even Department of eSports. It is based on the physical education centre in Izmailovo GCOLIFK.

One of the biggest eSports organizations in Russia was the national Professional Gaming League (NPCL), which was

established in the year 2004 and carried out regular competitions for professional gamers. NPCL in Russia for the first time applied the format of show matches, created a cyber one professional eSports Club (now closed) and launched regular Championship organized on the principle of the major sports leagues and associations. Currently, the League ceased to exist.

Rules of conduct

Large competitions are held in special places where the public can watch the players sitting at computers, and duel track on the big screen, where broadcast images from the screens of players. In South Korea, due to a large number of spectators, such competitions are held in the stadiums. Smaller competitions held in computer clubs and Internet cafes. In addition, there are online competitions that are conducted over the Internet.

I visited the Federal Research Center for physical culture and sports of the Ministry of the sport of the Russian Federation and spoke with the President of the Federation of computer sports Russia Dmitry Smith.

I asked him the question: how do you think eSport will evolve in the future and is it possible for eSport to become a school lesson. Here's what he said:

"In some countries, cybersport already entered the school curriculum, but if we are going to talk about how Pro eSports part of the training process, then it is more likely to be part of the intellectual games. As much as it is realistic and close? I think that soon enough it will be possible to implement. Now if there is a class in the school of computer science and technology, there is no suitable teachers. If you have other specialists and teachers, no institutions that would have trained such teachers. So in subsequent years, we need to work together with the Department of education. I think in 5-7 years eSports could evolve."

Survey

In addition, I had a survey among students and teachers of the classes 6-7 High school No. 1517. 18 teachers and 41 students were interviewed. Here are the questions I asked them:

- What do you think ESports is
- Have you ever played eSports
- If not, why not
- When you grow up, would you like to become an eSports athlete
- What do you think, is eSport similar to the classic sport
- Would you like eSports to become a school lesson



Foundings

80%

of students believe that eSports is a gaming competition, 78% of teachers think so as well

88%

of teachers believe that from eSport occurs dependence and 69% of pupils think so as well

96%

of teachers believe that cybersport influences pupils and 93% of them believe that it has negative effect

76%

of students do not want to become esports athletes in the future and believe it is only a distraction

47%

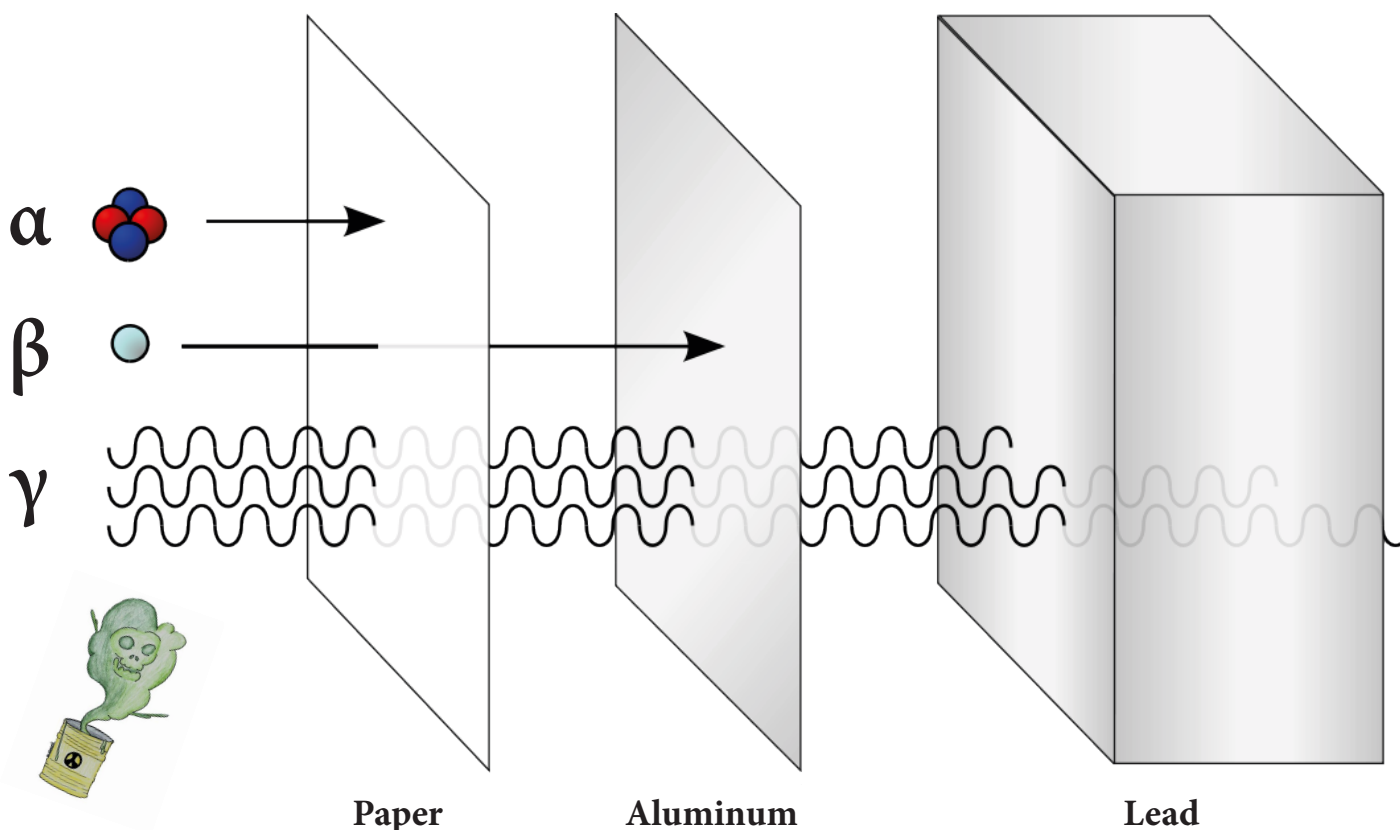
of students do not want eSports to become a lesson

50%

of teachers and 63% of students believe that eSports is very similar to regular sports

In the course of our research, we found out that:
The hypothesis that students consider eSports a great job, is not confirmed.

The hypothesis that for adults „cybersport“ is associated with gambling is confirmed. Most believe that the eSports and "endless games on your computer from morning to night" is one and the same. But this is not the case. The "eSports" concept is being replaced by igromania. I would like to continue my research, popularize the notion of eSports and try to prove to students and teachers that eSports and compulsive gambling is not the same thing.



Radiation: Myth or Reality?

Author: *Fyodor Itsko*

Translator: *Andrey*

Rudnevskiy

Although radiation appeared with our universe, people were able to discover it not so long ago. Just 162 years ago a Frenchman Henri Becquerel officially described the phenomenon of radioactivity. Further research in this area was carried out by Pierre and Marie Curie. The couple based their studies on the work of Becquerel conducted their scientific experiments with radioactive materials. Becquerel observed the phenomena arising from experiments with uranium and compared them with light radiation. The scientist appeared to be right but he could not justify it. The Curies confirmed his guesses with many experiments - they gave this phenomenon the name "radioactivity".

A lot of people do not understand what radiation is. In English there is a word "radiation", and it is not always what we imagine. The meaning of the word "radiation" is very diverse. Radiation is the process of spreading energy in the form of particles and waves. We shall consider a

very popular myth associated with this topic: smartphones, tablets, computers and other similar equipment kill people due to the ionizing radiation emitted by them. It is a lie. The phrase: "Phones emit ionizing radiation" is not true. It is far more correct to say that the phone emits radiation waves.

For example: old TVs had little radiation waves, but this is based on the principle of their work. They work due to the electron-beam tube, which emits electrons, which in turn, while appearing on the back of the TV screen, provoke the glowing of luminous phosphor (a substance capable of converting the energy absorbed by the luminous phosphor into radiation waves), as a result of which the image appears on the screen. The principle of this operation of modern phone screens is radically different from the screens of old TVs. But a lot of people still believe in this myth, not even realizing that the phones simply do not have the contents, that have ionizing radiation.

In general, many people confuse radiation with the ionizing type of radiation, which is the dangerous type of radiation. Ionizing radiation is a stream of particles capable of causing ionization of matter. When ionization occurs, an electron or several electrons are separated from an atom or molecule, which are thus converted into positively charged ions. Electrons separated from atoms or molecules can be joined by other atoms or molecules to form negatively charged ions. The effect

of ionizing radiation is called irradiation. Despite the variety of phenomena that occur in the substance under the influence of ionizing radiation it turned out that the irradiation can be characterized by a single value, called the radiation dose.

What are the dangers of ionizing radiation? To get under the influence of ionizing radiation it isn't always needed to work with radiation, or be in constant contact with it. Ionizing radiation is a stream of radiation energy formed during the decay reactions of radioactive substances. Ionizing radiation is represented by α, β and γ radiation particles. They are dangerous to humans, but they are also very easy to defend against. They penetrate objects like bullets. A sheet of paper will protect against α particles, and β radiation can be stopped by a thin layer of metal. They have very low penetration ability, and they are dangerous only when ingested. γ particles are the most dangerous. They penetrate thin barriers easily and they have the highest penetration ability out of the three listed radiation particles. To protect against it, you will need a material with a sufficiently high density, such as lead or concrete. But even if the radiation gets inside the body it can still be removed with professional medical help.

To sum up radiation is not so terrible and dangerous as we think it is, so do not panic and don't be scared of things associated with it. I hope this article was be useful for you, readers.

The end.

MARIANA TRENCH

Everest
8848 M



Mariana
trench
11022 M



The Mariana Trench is the deepest point on Earth. It is located in the Pacific Ocean, and is named so after the nearby Mariana Islands.

The Mariana Trench is a deep-water trough with a length of 1,500 km and a depth of more than 11 km. This depth allows you to put something with the height of Mount Everest into the Mariana Trench. The level of development of modern equipment doesn't allow to completely explore all the secrets and mysteries that the Mariana Trench holds.

The trough of the Mariana Trench has incredible water pressure. And, it would seem, living organisms cannot exist there, but they are there! In 1958, the Soviet ship Vityaz proved the life exists in the depth. Many evidences had appeared that the Mariana Trench has a lot of number of marine inhabitants, and they feel good there. Besides bacteria, there are huge monsters, unknown to humans! The pressure of the Mariana Trench is approximately 3 tons per 1 square centimeter. This pressure is able to bend iron, but do not hurts the underwater life at all!

Challenger Abyss is the deepest point of the trench. In 1960, explorer Jacques Picard from Switzerland plunged there to a depth of 10,911 meters. A few years later logbook entries were declassified.

About halfway down, the researcher makes a note that a large disc-shaped object is visible in the porthole, which floats with the bathyscaphe and looks at them.

In 1985, the crew of American researchers lowered the "Hedgehog" apparatus to the bottom of the Mariana Trench and carefully studied its bottom. The computer captures strange sounds. The cables holding the device were very tight. Everyone rushed to pick up the device, but they didn't succeed. At depth, something held the apparatus very tightly. After 3 hours, the device was able to raise. Something that held the "Hedgehog" itself let him go. The probe looked as if it had been in the jaws of a monster. It left bite marks and some cables broke. The whole crew was very scared.

A few years later, biologists proposed a version

Facts

1 The water in the Mariana Trench is warm enough for that depth. The temperature here reaches from 1 to 4 degrees Celsius.

2 At a depth of 1.6 km from the surface of the ocean are hydrothermal springs "black smokers". They shoot water and it heats up to 450 degrees Celsius.

3 At the bottom of the Mariana Trench were discovered large toxic amoebas – xenophyophores. The most interesting thing is that this amoeba is one big cell of 10 cm! They also have amazing abilities. Xenophyophores are resistant to many chemical elements that are deadly to humans and animals.

4 The underwater volcano Dai-koku, located in the Mariana Trench, contains a lake of molten sulfur. The only analogue of Dai-koku is located on the satellite of Jupiter Io.

that only the ancient creature megalodon could leave such bites. Megalodon is huge prehistoric shark weighing 50 tons and 22 meters in length. It was believed that they disappeared 1.5 million years ago. Based on this, megalodon didn't die out, but found shelter in the Mariana Trench.

This idea has arisen for a reason. Later in the area, scientists discovered a palm-sized tooth of this shark. The study confirmed it was really a megalodon tooth.

A couple of years later, a Japanese cargo ship passed over the trench. And suddenly, the ship received a strong kick to the side. Moreover, the water was completely calm.

The crew of another ship, passing through the Mariana Trench, saw a huge column of water on its way. You can't even imagine how sailors were scared!

Scientists recently discovered a very strange jellyfish in the Mariana Trench. The body of the jellyfish was with long tentacles, and it shone with red and yellow lights. Scientists filmed it on video. It belongs to the genus of jellyfish crossota.

In 2012, James Cameron, the famous director of the Terminator, Titanic and Avatar, famous for his scientific research, plunged into the Mariana Trench.

They say that the ocean is less studied than space! So, in the future we will have great amount of scientific discoveries!



Radio stations used by spies

Andrey Rudnevskiy

We all know who spies are. They are mysterious and intelligent people with a lot of secrets to hide. Every country has got their own spies. Even countries, that claim to have no spies working on them tend to lie – it is claimed, that every country has got their own secret agents. Everyone is basically spying on everyone. Sometimes allies can spy on allies. There were some occasions, where spies got confused and started spying on themselves! In general spying is an extremely hazardous job.

But what is the prime ability for a brilliant spy organization? Is it being able to hide in any given place? Or is it the ability of having a great sense of logic? To tell you the truth none of these are correct. The main ability for a fantastic spy organization is to be able to communicate in full secrecy. Communications have to be done between the spy and the agent, who gives the spy missions. But did you know that there are secret short-wave radio stations, that are used to transfer information to spies all around the world. They are SW, because only these waves can be transported thousands of kilometers from the transmitter. These secret spy radio stations are called «number stations» (“Cherry Ripe”, “The Gong”, “UVB-76”, “Russian Man”, “The Swedish Rhapsody”, “Yosemite Sam”, “The Beep” and many others). Their highest activity period was during the Cold War in the middle of the XX century, al-

though a lot of them are still active up to this day. It is very hard to tell from which country the signal is being transmitted from, because the range of the SW signal transmitted from a number station is incredibly high. It is impossible to track the country, that is using these stations because sometimes countries use radio transmitters, that are located in other countries – a different language for transmitting messages is also used. I shall explain everything about number stations in the next paragraphs.

Number stations are special radio stations, that are usually owned by the government and that transmit codes made for spies. A structure of a code, transmitted by a SW radio station is very simple. As an example I shall use a SW radio station “The Lincolnshire Poacher” (broadcasted at several frequencies between 5422 and 16084 kHz from 12:00 to 20:00), that is based on a British RAF base on Cyprus and was very active until the end of XX century. The message starts with an announcer – it can be a small song, a tune or a repeated sequence of numbers or letters. In the «Lincolnshire Poacher» it is a part of a folk English song named «The Lincolnshire Poacher». The announcer is made to report the spy, who is receiving the secret message that the code is about to be announced. The small tune is repeated two or three times and then the main part of the transmitted message – the body – is being announced. The radio station transmits numbers, letters or different words, that should be used by the agents as a key to decoding the message (I will talk about that later). In the «Lincolnshire Poacher» the body can look like this: 36015 36015 70982 70982. The body is being repeated clearly two or three times and is always different. Different radio stations have different times when the message is be-

ing played. For example, supposedly a Russian number station UVB-76 (broadcasted at 4625 kHz 24 hours a day) transmitted the message two times a week and the message contents were always different. The voice transmitting the message is changed by different cyphering machines and can sound like kids’ voices or voices of different men and women. And lastly there is the waiting sound, which is usually followed by rapid beeping noises – they are being transmitted when there are no number messages being transmitted. Number stations never stop working, they do not switch off. This is why the waiting sound is being played – it keeps the radio station on. You might have asked a pretty understandable question: “What if some government structure finds out about these codes?”, “Isn’t the spy organization going to be prosecuted?”. The answer is no. The number stations use a pretty basic, but a completely secure form of encryption. It is called “one-time pad encryption”.

This is how it works: a spy (before his assignment) gets a pad with separate lines of completely random numbers. They are truly random and are individual for every message. Then a sequence of numbers gets transmitted to the spy by radio and the agent writes the announced numbers down. After that the spy separates the digits in columns with two numbers in each row. The agent subtracts the announced digits from his numbers on his pad and after that the spy gets a set of numbers. On his pad every letter in the alphabet is being tied with a separate digit – the numbers, that the spy got he checks on his pad. Every digit has to fit a letter on the pad. The message is received. The “One-time pad encryption” is proved to be decodable, as the numbers and letters for every message are always individual. The only thing, that will make these codes deciphered is the already mentioned one-time pad, that is given to the spy before his assignment. To set a message, that will be transmitted to the spy the person responsible for the codes only has to know the numbers and letters on the pad. Without the pad the messages are kept unsolved. This is what makes spies powerful – their secret codes cannot be solved by police, special forces or even the most intelligent mathematicians – without the pad the messages are kept in full secrecy. So, the codes, that are being transmitted to spies are safe to be heard by the public without any fear!

To conclude – if you want to hear a secret mission being addressed to a random spy in the middle of the day – just turn on your SW radio and search for a spy radio wave, that not a lot of people know about. Even though you will not be able to crack this secret code, for some time you will feel like a spy receiving a conspired message. Try doing this – it is great fun!



5 most ancient ocean inhabitants

Author: Dobrovolskaya Anastasia

Translator: Kozulina Ekaterina

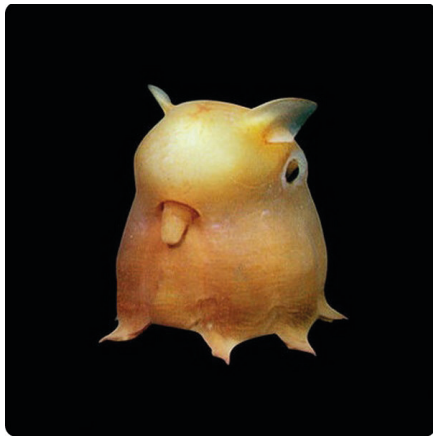
JELLYFISH ATOLL

One of the most beautiful inhabitants of the great sea depths, where sunlight does not fall, is the Atoll jellyfish. During her evolution, she developed skills that help her to survive in harsh environments.

In danger, it begins to glow, attracting large predators in the immediate vicinity. This gives the impression that it isn't suitable for food and makes the surrounding inhabitants potential victims of large predators.

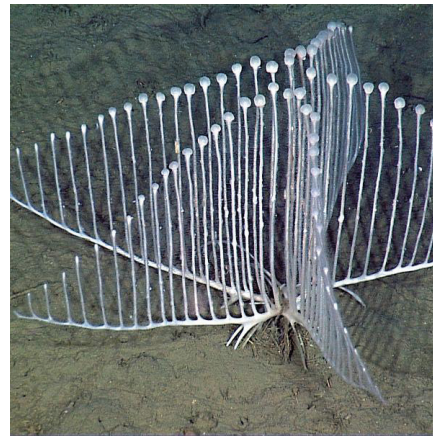
OCTOPUS DUMBO

It got its interesting name due to resemblance to the character of the Disney cartoon elephant calf "Dumbo", because the fins with which it moves are similar to the ears of baby elephant. Another distinguishing feature is the outgrowth on his body, similar to the funnels through which he releases water under pressure. He eats, like most other creatures, shellfish and worms. This octopus lives at the decent depth, so that's all that is known about him.



SPONGE HARP

One of the few predators not studied so far. The few data allowed us to draw number of conclusions. It got its name due to the structure of the body, which resembles the harp. Its inactivity makes it hunt by clinging to the sediment of the seabed, thereby gluing the small inhabitants of the oceans to their Velcro. He adheres to all glued onto a bactericidal film and then digests.



The bright red light emitted from the Atoll helps her to produce the breakdown of protein in the body, so necessary for its existence. Despite the fact that large jellyfish are dangerous, the Atoll does not pose a threat to humans, because its habitat is too deep.

THE BLUE ANGEL

This mollusk is called an angel, because it's very small. Its movement gives the impression that it soars above the surface of the water. This is possible by swallowing air bubbles at short intervals, which allows it to stay at the water's surface. It has masking coloring that allows it to be invisible to enemies. This is expressed in the blue color of his upper body and silver-gray lower. The thick layer of mucus around the mouth is poisonous.



CRAB YETI

The name itself gives out its appearance. The crab resembles bigfoot due to the fact that its claws, on which microorganisms live, are covered with white furry hair. Cold water, where the rays of daylight don't penetrate is its habitat, which made it completely blind.





**One
day
with science**





composed of crystallized yellowish-pink limestone, was dismantled and sent to the Moscow metro for lining the walls. A very rare and expensive stone – rhodonite from the Ural mountains – was used to decorate the columns of the «Pushkinskaya» station. The black davalinsky marble of Armenia attracts attention at the «Kurskaya» station. Moreover, you can admire the pink-purple marble from the Birakansky Deposit in the Far East at the «Belorusskaya» station. The pattern of marble is intricate, and it is not so easy to repeat it even with the help of modern technology. Yet in the nineteenth century, people were able to reproduce these exquisite lines and delicate semitones of beautiful stone on wallpaper. What vegetable was used to do it? You won't believe! A head of cabbage cut across was the stencil!

I have some time to look through the local newspaper. I'm reading an article «Please do not feed the pigeons». Do you know why they are considered sacred birds? According to the legend, Noah sent a dove from the ark to scout, and it returned with a Shrove Tuesday branch.

How interesting... did Noah's ark exist? Was it possible to place all the animals of the world on it? Let's turn to mathematics for help. According to the

Biblical legend, the ark had 3 floors, each 300 cubits long and 50 wide. Knowing the size of one elbow – 0.45 m, you can calculate the total «living space» of Noah's ark (9120 sq. m.). If we consider that there are about 3500 species of mammals on the Earth, then for each pair there would be 2.6 sq. m., and this is taking into account the stock of food for them for 5 months. At the same time, Noah's ark, at its size, would have a displacement of 20,000 tons, which is quite improbable for that time, and people could not build such a huge ship. In short, the Biblical story of the flood is so inconsistent with simple mathematical calculations that it is probably the invention of rich Eastern imagination.

Here's an article about the Maker Faire festival where the latest technology and traditional crafts meet. At the festival of popular science young makers of Moscow and other cities present their inventions. One of the projects is a prototype of a robot car for automated application of road markings. Some parts of the robot are printed on a 3D printer, and control is carried out using the Arduino Mega remote system.

Far beyond the window of the room, on the Rowing canal, powerful volleys of guns at the «Circle of light» festival are heard. There is a little-known fact in the rich biography of D. I. Mendeleev – the invention of smokeless gunpowder for artillery. The Russian government sent Mendeleev first to London and then to Paris, so that he could find out the secret of making smokeless gunpowder. However, neither the British nor the French

shared it. Then Mendeleev had to observe one of the gunpowder factories in Paris. He counted and recorded how much and what raw materials (nitrogen, sulfuric acid, alcohol, etc.) were delivered to the plant by rail, as well as how many finished products (gunpowder) were exported from the plant. Thus, he was able to calculate the proportions of the explosives. Having conducted his experiments in 1890, the scientist invented pyrocollodion, surpassing foreign pyroxylin (gun-cotton). The saddest thing was that the process of its manufacture was not carefully classified. And during the World War I, Russia was forced to buy Mendeleev's smokeless gunpowder from the United States.

It's late, and I have only a few minutes to post fresh photos of Sunday's walk to Instagram. St. Basil's Cathedral is so magnificent against a cloudy sky! What will my post be about? What secrets of history are connected with this amazing piece of architecture? The idea of the construction of the temple belongs to Ivan the Terrible. He wanted the Cathedral of the Holy Trinity to be built in honor of the victory of the Russian army over the Kazan khanate in 1552. According to the Tsar's decree, the Cathedral was to consist of eight separate churches, symbolizing the days of decisive battles for Kazan. The Pokrovsky Cathedral has one interesting mystery. Ivan the Terrible was presented with a hat called Kazan in honor of the capture of Kazan. So this hat, as it became known, is the prototype of St. Basil's Cathedral. There is a chief «dome» in the centre and eight so-called golden pommels (churches) around it. Hence, there was another version that the tsar gave the task to build the cathedral taking the Kazan cap as a basis. Another day with science has come to an end. How many new discoveries it has given to me! I am proud that I live in the XXI century and use the scientific discoveries and inventions of civilization. I can develop my abilities and talents, as well as communicate with my peers and friends, regardless of time and distance. I wish you new scientific discoveries!



What professions await us in the future?

Maxim Solovev

Have you ever been asked “who do you want to be”? Try to answer it now. If you don't have an idea, remember the professions known to you that you can consider as an option of your future profession. A doctor? A teacher? A lawyer? A designer? A translator? Most likely, these professions came to your mind. But have you thought about professions that will be in high demand and well paid in the next decades? This article focuses on the newest, nontrivial, interesting professions that will exist very soon.

If you're close to creativity and you like or want to program, probably your vocation is designer of the virtual environment or the VR (virtual reality) architect. VR-technologies are already very popular

and in demand. It is used not only for entertainments, how we used to think, but also in other much more important purposes for society. VR helps engineers and architects to visualize the future buildings, allows customers and performers to move through the objects to imagine the complete picture of the project before laying the foundation. Virtual reality can be used in different subjects in a new way. VR also is used in medicine, trade and film industry. Designer of education for learning a virtual environment/VR architect is someone who can develop and implement this computer world. But this work is not for every gamer, therefore the profession is in demand and well paid. This profession hasn't been on the official list of professions yet, but it becomes more and more relevant. It will exist after 2020.

If you're predisposed to the Humanities, the profession of the digital linguist is for you. Its task is the simplification of communications between human and computer. Simply put, Siri is invented by digital linguists and the Siri's main task is to perceive the information that the human says and answer the user's questions. Digital linguists teach machines to understand

and translate information. The profession will exist before 2020.

21st century is the era of computer technologies and robotics. Robot already helps human in different spheres of life: in manufacture, medicine and even in space. Perhaps, many people didn't think that robots help doctors to perform the most complicated operations including the heart treatment. Robot can do the work perfectly while human can allow inaccuracies. If biology is your speciality and you are interesting in robotics, consider the profession of an operator of medical robots. A specialist like this makes programs, so he must understand not only biology but also informatics at high level. This profession is in rather high demand and well paid. It will exist after 2020. One of the vivid examples of the advances in medical robotics is the robotic surgical system Da Vinci. In present time, twenty-five Da Vinci systems are installed in Russia.

All in all, these are just the examples of the future professions and there are many more interesting ones which are waiting for your attention! Find a profession that you will love all your life! Maybe, the given examples will be interesting for you.

When 7:00 AM came up?

Author: Maria Kostenko

Translator: Maria Kostenko and Andrey Rudnevskiy

Your life is very short. Just 20000 days. Do something now! For instance, make yourself a cup of tea and read the text below.

The first clock showed time using a shadow of a stick that was jabbed into the ground. The main inconvenience of this method was the shadow absence on cloudy days and at night.

The next clock type was invented on the valleys of the river Nile. About in the 14th century BC the water clock – the “klepsydra” – was invented. It was made of two water vessels and a linking tube.

Europe was the motherland of the next clock type. In the VII century AD a French monk had invented the hourglass. It was made of two sand jars and a hole between them that was made for the falling sand.

The «grandfather» of the modern clock appeared in the beginning of the XI century. Peter Henlein invented this type of clock for personal use in 1503. It was round in shape and was made to be worn as a necklace. In the XVII century its shape has changed and



it became known as a pocket watch. Many gentlemen wore them on a special chain.

Made mainly for ladies, a wristwatch was invented in the XIX century. Until 1879 it was a woman's privilege.

It was that time, when the German Emperor Wilhelm I ordered a watch for his army officers. Girard-Perregaux was the executor of the order.

Only in the beginning of the XX century watches have finally appeared on the market and they finally became a very com-

mon item among many people.

After World War I, shockproof and waterproof watches appeared. In 1969 the quartz watch was invented. It was cheap and was produced in large amounts.

The real breakthrough in the clock was made by Casio – a Japanese company. At the same time a development of electronic watches had began – the project of the electronic watch was made by a Japanese electronics company Seiko – they presented their model with an LCD display in 1973.

Utopia and anti-utopia

Author: Irina Proskuryakova

Translator: Kristina Grishanina

Have you ever heard the words utopia or anti-utopia? If you have not heard - today I will tell you what it is. Utopia is a genre of fiction that describes the ideal world. About utopia rarely write books or make films, because it is boring to write when everything is perfect. If there is an ideal world, then there is also an imperfect one. And, this genre of fiction is called anti-utopia. Anti-utopia is first the thought of a hopeless future, the seizure of power, cruel laws, senseless wars, etc. anti-utopia is a logical development of utopia and formally can also be

attributed to this direction. However, if utopia focuses on the demonstration of the positive features described in the work, the dystopia seeks to reveal its negative features. I love the genre of dystopia, I like the films «Running in the Maze», «Hunger Games», «Divergent», «and Insurgent» and others. I read four books about dystopia (“The Maze Runner” series). These books are an anti-utopia, since Thomas was sent to the labyrinth in the first book, and he had to survive there and look for a way out. I liked these films and these books because everything in the world is imperfect and people try to fix it. They fight for life, passing through various trials. For example, when Cossin from the movie “The Hunger Games”, although wounded, tries to survive and clings to life. I think that these works can be understood from the age of ten. At first, the authors of these works try to slightly exaggerate, to show that everything is bad, so that in the end it would be very good.

7 most unusual schools in the world



A school is not just an institution where people come for knowledge. It is also a certain atmosphere, this is a society that surrounds you for more than one year, this is the place where you spend a lot of time. In some countries, they decided to make the school not a hate subject, but something good in the students' understanding. This is some schools in other countries and their features.



Terraset Elementary School PTA (CWA). During the US energy crisis, it was decided to build an underground school, because the natural earth cover perfectly retains heat. Now the school is working, but also it is a tourist attraction. The school program itself is standard.

Mountain Mahogany Community School (CWA).

The school has not only an amazing student recruitment method, but also an unusual program. You can get to school only by luck, through the lottery. A special application form has posted on the school's official website⁹, when people filled out and sent it, they are waiting for the draw and announcement of the list of lucky ones. The "three whales" of this school are safety, pleasure and emotional development. According to recent neurological research, involvement is a significant fact of good learning. Standard subjects are taught here, but also housekeeping, sewing, cooking, labor and the like. Here children are taught how to cope with certain problems. I believe that this is the right approach, because it is extremely difficult to combine good academic performance with entertainment, so many because of the lessons do not even know how to cook, but here it is included in the school program.



Gymnasium Wrestand in Copenhagen, Denmark. This gymnasium is rapidly gaining momentum, and 1000 people are already studying in it, although not so long ago it was not even on the maps of the country. Everything in this gymnasium promotes education, starting from the cubic form of the building and windows resembling bookshelves, and ending with the unusual architecture, which operates on a psychological level. The problem of sound insulation was solved at the construction stage. The solution included both multilayer walls and black carpets, which also absorb sound. Along with ordinary subjects, they teach "Internet development" and other really needed subjects.

AltSchool in San Francisco, USA. This is a more complete name, because such a unique school first worked in this particular state. Now it can be found in Palo Alto and Brooklyn. There are no ordinary tests and tasks! Children learn to

Nomad school. Our country also cares about education. Today schools have appeared in Yakutia that follow the nomadic peoples. So the children of reindeer herders, like us, do test papers and homework.



Big Picture Learning, CWA. Even the Russian media did not spare this school.² The school feature is that students' opinions and interests above all. Their motto is "Our goal is simple: to provide each graduate with the opportunity to show passion and courage for what interests him, for what he loves." Instead of classes, students unite in councils of 15 people. A teacher is assigned to each team, but even in this sense, the school stood out! The teacher is a mentor and aid, he is acquainted closely with schoolchildren, communicates with them, helps to understand their interests and draw up individual curricula.



Brightworks: an extraordinary school.

This, as they call themselves, is a learning community. Their training system is based on a creative approach, trust, on the development of capable citizens of the world. On their website, they described themselves to the utmost extent understandable, but briefly: "We use real tools, real materials and real problems to encourage students to love learning, we encourage curiosity for the world, the ability to participate, persistence to think big and perseverance in doing amazing things." Therefore, the school itself is located in a giant warehouse.

think flexibly, so there are game moments in the lessons, and students organize the space in the classrooms themselves. Each student has a profile with group and individual tasks. The most important thing by my opinion is that great attention is paid to their social and emotional teaching!



*Ekaterina
Kozulina*



POPULAR SCIENTIFIC JOURNAL OF THE HIGH
SCHOOL STUDENTS' SCIENTIFIC ORGANIZATION
«ASTRUM INCOGNITUM»

HIGGS BOSON

Show issue 7, January 2020

CONTACTS:

11-1 Zhivopisnaya, Moscow

gym1517.ru

vk.com/bozon_higgsa

higgsa@mail.ru

RSPR 77-01745-A-01

