OPENING OF THE CENTRE

INTERVIEW in this issue
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How to get into ‘Sirius’

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TEACHERS
WINNERS OF THE ‘SIRIUS’ TEACHER OF THE YEAR 2015 COMPETITION

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OPENING OF THE CENTRE

SPEECH FROM THE PRESIDENT
of the Russian Federation and Chairman
of the Supervisory Board of the Talent and
Success Foundation, during the ‘Sirius’
opening ceremony on September 1, 2015
in Sochi

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Photos by: Natalia Ukhova, Ivan Mokosin and Valentin Baransky.
On September 1, the President of the Russian Federation and Chairman of the Supervisory Board of the Talent and Success Foundation, Vladimir Putin, took part in the official opening ceremony for the ‘Sirius’ Educational Centre for gifted children which was held in Sochi.

The event started in one of the major facilities of the Olympic Park – the Main Media Centre. Vladimir Putin delivered a speech addressed both to the Centre’s students and to all of the country’s school children on the next generation’s significant role in building a really strong state. Following the speech, the President joined the honoured guests and the Centre’s students in the audience hall to watch a performance staged by young, gifted students from ‘Sirius’.

The festival continued on the Shayba Small Ice Area where the audience enjoyed performances by young figure-skaters and a hockey match between the ‘Sirius’ team and the “Legends of Hockey”.

At the end of the day, the guests became acquainted with the Centre’s unique educational and recreational facilities, and attended the ‘Horizons of Science’ exhibition which showcased the best achievements of the young scientists at ‘Sirius’.

The ‘Sirius’ Educational Centre started operating on a trial basis on June 1, 2015. By December, 2015, the Centre had conducted as many as seven 24-day educational shifts, established its Expert Panel and agreed upon the final selection criteria. The centre provides year-round studies in the following disciplines: musical and performing arts, classical ballet, painting, mathematics, physics, figure skating and hockey.

Between June and December, ‘Sirius’ accepted a total of 3,866 gifted students from 61 regions across the country. Regular studies, masterclasses and creative workshops were held by prominent professors, musicians, choreographers and athletes.

Among them were renowned Russian creatives and sports coaches, Olympic champions and world-famous academics.

Since September 1, ‘Sirius’ has been accepting 600 students and 100 teachers from across Russia every month. The children are selected by the Expert Panel from the Talent and Success Foundation through objective criteria. Travel and studies at the centre are free of charge, meaning each and every gifted child has a chance to get into ‘Sirius’.

VLADIMIR PUTIN
President of the Russian Federation,
Chairman of the Supervisory Board
of the Talent and Success Foundation
VLADIMIR PUTIN’S SPEECH TO THE CENTRE’S STUDENTS AND TO SCHOOL CHILDREN NATIONWIDE

Good afternoon, friends.

I would like to begin by congratulating all of you, all the school and university students of Russia and all the teachers, on the beginning of a new school year.

On September 1, we are here in Sochi, our Olympic dream city, a city of hope and victory.

Sochi’s Olympic legacy is already being used for the benefit of the nation, its development and its future. Apart from modern roads, power stations and hotels, social and, of course, sports facilities, we have created an educational centre for children here. We have named it Sirius – after the brightest star in the sky – because here we have, and will continue receiving, enthusiastic children interested in what they are doing. These are children who demonstrate skills in various fields: in mathematics, physics, chemistry, biology, ice-skating, music, painting or hockey. Their first successes have been made possible by their own talents and the help of their teachers.

We are proud of our national recreation camps: Artek, Orlyonok and Okean. However, Sirius is primarily an educational centre for children here. We have named it Sirius – after the brightest star in the sky – because here we have, and will continue receiving, enthusiastic children interested in what they are doing. These are children who

Sirius is to become a key link in our national system of support for talented, active children. It will serve as a beacon for all the regions and set the standards for schools with an in-depth study of certain subjects; for educational establishments at leading universities, for ballet and art colleges, sports and music schools.

We hope that you will find like-minded people and make friends here. We want you to be proud of each other’s achievements in science, creative endeavours and sport, to expand your horizons by communicating with each other, sharing knowledge, skills, outlooks and opinions.

We expect Sirius alumni to stay in its field of vision for a long time. This applies to your further education and your practical activities, your future work.

I hope that when you return home you will retain the atmosphere of friendship obtained at Sirius and will reaffirm your striving towards your goal, achieving greater success in the name of your chosen field – be it science, sport or art, and in the name of our wonderful Motherland. I am certain that your vigorous searching and your team spirit will attract your peers. I hope you maintain close ties with each other and establish a Sirius community of true patriots and professionals, working for the benefit of this country.

Now I suggest we talk about what today’s school students can do for Russia, to help it move forward with confidence.

Science, education, culture, literature and our great Russian language create a solid foundation on which a truly strong state is built.

Friends, I propose we begin with the most complicated issue – your choice in life. It often takes a lot of effort to understand what you really want, what you are good at. The sooner you make this choice, the better, because you will have more time to achieve things. Any success, be it scientific discoveries, economic, cultural or sports achievements, is directly linked to talent, education, hard work and persistence.

This country has thrived because of those who did not fear to take on responsibility. Many such people were young, daring and independent - such as Peter the Great and his like-minded friends, who set a new vector in Russia’s development. Peter was only 11 when he formed his so-called Toy Army. It seemed to only be a game. Then, at the age of 16, he set up on Pleshcheyevo Lake what we would now call a shipbuilding laboratory. And just a few years later, the Toy Army grew into the victorious Navy. Peter’s young associates became army commanders, administrators and industrialists; they built plants and shipyards, developed science. Peter himself travelled all over Europe, sending talented young men there so they could see the world and return home filled with knowledge and impressions to build a new country, but one that would be their own rather than a copy of some other land.
Russia became stronger through the efforts of those who worked to move it forward and build on their predecessors’ achievements. The development of science always merited special attention. In 1725, the Science Academy and the first university were set up in St Petersburg. Moscow University was founded 30 years later, and accepted all young people regardless of class, as long as they were talented and wanted to learn and to be of use to their country.

Mikhail Lomonosov played an enormous role in the development of education in Russia. He was not only a polymath scholar, poet, historian and artist, he was also a devotee and creator of the foundations and traditions of Russian science.

A lot was done to strengthen our Fatherland during the reign of Catherine II. She brought about many progressive reforms including the creation of the Russian system of school education, the opening of the first public libraries and 17 regional printing shops. Books, magazines and newspapers came to the provinces, playing a great role in the dissemination of knowledge. Historian Nikolai Karamzin wrote that there was hardly any other country in the world where the number of people who loved to read grew as quickly as it did in Russia, even the poorest subscribed, while the illiterate wanted to know what was in the papers.

I am going into such detail about the educational traditions in Russia for a good reason. Science, education, culture, literature and our great Russian language create a solid foundation on which a truly strong state is built.

True, there were also tragic pages in this country’s history. The riots, revolutions and civil wars of the past teach us how destructive any division is for Russia. They prove that only unity of the people and public accord can lead to success and ensure independence, help rebuff any powerful and treacherous enemy.

The entire nation rose up whenever there was a need to defend this country. Wherever did the enormous spiritual strength and readiness to sacrifice come from? It all grew from a sincere love for this country that came from the heart. These patriotic feelings are passed on from generation to generation, and one feels this especially strongly when May the 9th comes, the day of our victory in the Great Patriotic War. We seem to hear the hearts of all beating as one. This is an unprecedented unity of veterans, their children, grandchildren and great-grandchildren. This year, the Immortal Regiment movement also united us: tens of thousands of your peers came out with portraits of their loved ones who defended this country against Nazism.

During the Great Patriotic War, children and teenagers would study, work in factories and fight within partisan groups; they ran off to the frontlines, becoming ‘adopted’ by units; they worked and fought for victory alongside adults. And, despite the terrible hardships, they dreamt of their future. As a youngster, the great Russian singer Galina Vishnevskaya survived the Siege of Leningrad. She recalled how she was swollen from starvation, but her dream of becoming an opera singer kept her alive. Many of you know what great heights this remarkable woman reached.

After the war, the country’s schools of higher learning were filled with people from the frontlines. They wanted to learn, to become experts and build a peaceful life. Among them was future Nobel Prize winner Nikolai Basov, whose name is familiar to those of you who like physics, just like the name of academician Alexander Prokhorov, who had also gone through the war and became one of the founders of quantum electronics and laser physics. Today their discoveries are used in medicine, industry, biology, communication systems – just about everywhere. These were great world-scale achievements of our sciences, and only brave enthusiasts with deep knowledge could achieve such breakthroughs.

The strength and advantage your generation has is that you are open-minded, freethinking and can come up with non-standard solutions.

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Sergei Korolev designed his first airplane when he was 17. Many of you here are 17. Then he became interested in jet propulsion and the ideas of the great Russian scientist Konstantin Tsiolkovsky – the founder of theoretical astronautics. Back then, many found what he was doing to be flippant, unrealistic. He had to make his way past misunderstanding, mockery and skepticism of his aspirations and plans. However, in a matter of years, Korolev became the head of our space programme and put together a unique team of researchers, designers, engineers and workers. Together they turned into reality the dream of all mankind – man’s first flight into space. This was an outstanding event, the whole world rejoiced. My peers and I were only children then, but the joy and pride for our Motherland has remained with us to this day. When they asked Sergey Korolev how he managed to beat the competition from other countries in the space race from other countries, who were also very talented people, he said, “how could I give up my dream?”
Breakthroughs in many areas were made possible by the strengths of our fundamental science. Teams of mathematicians and physicists generated ever new ideas and ran complicated calculations. Something that used to seem removed from reality and of little practical use, would later lead to truly revolutionary technological change and breakthroughs. Incidentally, the success of our rocket and nuclear projects was referred to as the result of achievements by the three K’s – academicians Keldysh, Kurchatov and Korolev. They were not only great scientists, but their outstanding scientific research was eventually linked to the solution of large-scale practical issues. They had scientific foresight and knew how to single out what was most important – often things situated at the junction of different sciences.

Thus, mathematician Mstislav Keldysh saw prospects for a major scientific discovery in semiconductor physics. A team led by the future Nobel Prize winner Zhores Alferov conducted this research. Support from Mr. Keldysh played a decisive role in his life, while Mr. Alferov’s fundamental discoveries formed the basis of present-day mobile telephone communications and telecommunications. Mr. Alferov will correct me if I am wrong, he should be here somewhere. Let us welcome him.

Friends, every generation has its own priority targets. Your parents and the older generation in general were to take on a significant turning point in history – the establishment of a new Russia. I believe today you find it difficult to even imagine the complexity of the challenges and the drama of those times, though it was only a short while ago. The political organisation, social structure as well as economic and public life were all subject to change. These changes had to be accepted, one had to find the will and the strength to become actively involved in building a new life. Your parents and grandparents dealt with this mission honourably. Today many of them are still finding the will and the strength to become actively involved in building a new life. Your parents and grandparents dealt with this mission honourably. Today many of them are still finding the will and the strength to become actively involved in building a new life.

Now you are to achieve new milestones, solve ever more complex tasks and meet major challenges. You have to be ready for this. The strength and advantage your generation has is that you are open-minded, freethinking and can come up with non-standard solutions.

I will only provide one example that gives us reason to be proud of our national defence industry – that is the creation of the latest Iskander missile system. Its most-important control element was designed by young people under 30. They set up their own team, took on the responsibility, said they could handle the job. People believed in them, and they found an original solution that no so-called mature team was able to come up with.

The young are taking on complex jobs nowadays and are making significant progress in various fields: from unique biological research to breakthroughs in medicine. They implement social projects, set up their own businesses and work in production. It is very important that you too try to use your knowledge in practice: you are constructing robots, working on space technologies, creating technologies for the automobile and electronic industries; you conduct complex experiments in chemistry and physics.

It is very good that your generation knows the significance of sport in life. Sport is again popular among young people – this is great. Physical fitness makes your spirit stronger and helps you overcome difficulties. When our athletes at international competitions fight to the end, striving for victory, defending Russia’s honour – this unites the entire country, the people, all of society, and we admire their courage and feel proud of this country. There are many outstanding athletes here today, let us also welcome them. This feeling we have for our Motherland, it is natural, it is warm, it is like a filial affection. It is a concentration of both a deeply personal feeling and the realisation of the enormous significance of certain events and achievements.

We are proud of the great contribution by Russian composers, musicians, writers and artists to the development of world civilisation and culture. There is no need to list their names now – we all know and revere them, and not only in this country, but also people around the world. Their creativity has made Russia famous, has influenced the minds and hearts of people and the formation of the national cultural and value-based environment.

This is very important as only a society with clear moral values and a strong spiritual position and support is capable of creating and developing harmonious society, is capable of harmonious technological progress. Only such a society can use scientific achievements to the benefit of humanity rather than to its detriment.

On many occasions Russia has proved its leading role in science, the arts and sport; primarily because people set themselves ambitious targets, managed the impossible and moved towards victory despite any difficulties.
Friends, I don’t know how often you have frank conversations with your parents and teachers, but I am convinced that such conversations are necessary. We adults also need your support and trust. It is very important to understand each other, including on matters that pertain to the current situation, to the country’s future. It is easier to resolve problems together, including those related to making moral choices. This is something we have to do all the time. Both in society and in friendships, people are judged not by their career, success or wealth, but by their deeds, their cultural level, their decency, their relations with their family, their children, parents and friends. Each of us chooses what to do, how to achieve the goals we set ourselves.

For my generation all this was of great importance, we also had what was called the street, the backyard, the apartment or house we grew up in. We spent a lot of time at these ‘informal’ locations, in today’s terms. True, we had plenty of our own problems there, but this environment taught us friendship, mutual assistance, taught us how to tell good from evil. Treachery and betrayal were the worst, the most-despised things. We argued, discussed the things that were going on at school, as well as films and characters from books.

Now life has changed fundamentally, of course, but true values never change. These are honesty, patriotism, a sense of conscience, love, kindness, courage, honour, generosity, responsibility and a sense of duty. I am certain that they matter for you too, as much as how much benefit to our Fatherland your talent can bring and how well you can use the knowledge obtained.

Numerous achievements of your peers show the opportunities Russia offers to people with education, those who are goal-oriented and out-of-the-ordinary. Thus, a student team from the St Petersburg National Research University of Information Technologies, Mechanics and Optics has, for several years now, been winning world championships in software engineering. Moreover, university stars stay in Russia after graduation and find jobs at Russian high-technology companies, create their own start-ups or teach at their university. This applies not only to those who apply their talents in technology or production, but also people of the arts. There are many gifted, talented young people working in Russian theatres, in the film industry and in literature. They tour the world a lot, but they all have a common homeland – Russia.

Friends, people often ask: what will this country be like in 10–15 years? At least they ask me that all the time. I will say frankly that this primarily depends on you, on how you live your lives during those years. We do not see you as observers who will have everything ready for them. No, we see you as direct participants in building the future, the country you and your children will live in.

The world is changing rapidly, competition is growing. Using a sports metaphor, ever more states are ready to fight for the title of champion. The stakes in this historic marathon are very high: whether we produce our own unique technologies and share our breakthrough knowledge with the world, whether we will be able to make the environment safer and more comfortable to live in, will we be proud of our achievements in national art, of our sports records – or whether we will be jealous of others’ triumphs. Finally, whether we would be able to meet the global challenges of civilisation and ensure the leading role and sovereignty of our nation. Answers to all these questions form your agenda, your action plan.

On many occasions Russia has proved its leading role in science, the arts and sport, primarily because people set themselves ambitious targets, managed the impossible and moved towards victory despite any difficulties. You have to dream, to make ambitious plans, to achieve more and do something nobody has ever done before. This is the most-difficult part, but it is the essence of progress, of development. Behind every victory, there are always doubts, mistakes and failures, which is natural. Here it is important not to step backwards, not to give up. The main success factor is faith in one’s own ability, in oneself. Each of you has to find who you are and what your place in life is. Then you will become a united team, the best in the world. I am certain that this is how it will be. Behind you are your parents, your teachers, mentors and your homeland – Russia. We will be next to you, we will help and admire you, we will work for you and with you for Russia.

I believe in you, in the success of each one of you. You can, you must and you will win.

Source: kremlin.ru.
A performance, staged under the guidance of Yevgeny Pisarev, Art Director at Moscow’s Pushkin Drama Theatre, brought together more than 60 participants – students from ‘Sirius’ and the theatre’s staff.

A star descends to Earth and travels with a group of children through pages of history and gives them a chance to take a look into the future. The young heroes - a hockey-player, a ballet dancer, a violinist and a mathematician - set off on an incredible journey to the past to meet famous people they admire.

The actors’ brilliant performances and remarkable visual effects take the audience back to 1972 to witness one of the legendary Super Series games between the USSR and Canadian hockey teams. Camera flashes, the encouraging roar of the fans, the commentator’s voice – all recreate the authentic atmosphere of a hockey match as the audience celebrates the victory of our national team: “This is the sort of hockey we love!”

Sport is not only about hockey, as demonstrated by the students of the “Nadezhda” children’s and young person’s sports school based in the town of Khimki, Moscow Region. To the strains of solemn and encouraging songs they showed real acrobatic prowess. The ability and skilfulness of the young athletes impressed the audience.

Russian art is unimaginable without ballet - and the ‘Sirius’ Educational Centre is no exception. A visitor from outer space showed curious time travellers how beautiful dance can be. The young, graceful ballet dancers gave a lively performance of an excerpt from Tchaikovsky’s classical ballet.

Music is the only language understood in any part of our boundless universe,’ said Sirius Star to the children. And students Veleriya Abramova from Barnaul and Ivan Lezbny from Kazan proved that those words hold true by offering the audience a wonderful musical experience. Surrounded by theatrical settings, the young musicians played a series of flute and violin compositions.

In the final part of their travels the heroes not only made acquaintance with world-famous scientists and their discoveries, but also presented their own research projects. The young travellers talked about pure renewable energy sources, force fields and ways to slow down ageing. Behind the complexity of these terms and objectives stands the wish to make this world a happier and easier place for all people to live in.

It was a real miracle on stage! Specially-created effects enabled the audience to plunge into the wonderful world of the performance, exploring the city of Sochi, flying to outer space, visiting the legends of the past and then returning to the present day. Special lighting focused everyone’s attention on the circle-shaped stage enhancing the theatrical atmosphere of the performance.

“A STAR CALLED ‘SIRIUS’”
LIFE AT SIRIUS

Oleg Smirnov

“Modelling the ideal gas thermodynamic properties” (molecules): “I wrote an imitation model showing the dependence of compressed gas pressure on its temperature, volume, and pressure as well as the gravity impact on gas, clash of molecules, ratio of speeds of various molecules and other aspects. In addition, the program draws a diagram of all estimated values.”

Alexandr Stolpovsky

“Modelling the ideal gas thermodynamic properties” (molecules): “During my stay in Sirius I designed a physical model of two ideal gases (gases of one type push off each other, while those of different types don’t). The program allows regulating the number of molecules; it shows the gas temperature, pressure of the first and second gases and draws a diagram on the temperature-volume ratio.”

Vladislav Aleynik

“A two-dimensional heat transfer model created on the basis of the Fourier equation”: “After almost 100 hours of programming some 2,500 code lines in ‘Sirius’, I’ve made quite an accurate model of the body warming up and cooling down, using a wire-made violin clef as an example.”

Raffaele Della-Pietra

“A three-dimensional model of light-ray expansion through an inhomogeneous optical medium”: “The project is aimed at modelling the light ray going through an unevenly warmed water column to determine the behaviour pattern of light rays in seas and oceans.”

David Davitadze

“A three-dimensional model of water dynamics based on the Navier-Stokes equation”: “When I came to Sirius, I tried to model the real physical process of wave circulation in a pool, using my programming skills. With the help of this program, one can estimate real processes, like sea waves.”

Fyodor Vylegzhanin

“Modelling aperiodic oscillations”: “In the Sirius Centre, I am doing the spring-type lever model under the guidance of I.R. Dendinsky. As a result of this research, a program was written that allows one to monitor a spring with a suspended load, together with graphs created during such a modelling process.”

THE DAY OF SCIENCE

Scientific quizzes, brain teasers, entertaining contests on logic and reasoning and all sorts of intellectual battles are held in ‘Sirius’ during the traditional Day of Science, which helps show that studying scientific laws through amusing games, quests or panel shows makes it easier and more interesting.

In the autumn, the children were able to not only watch interesting scientific experiments, but also be directly involved in them. The scientific version of the popular TV quiz show Who Wants To Be A Millionaire? attracted lots of contestants. In addition, the Centre held educational party games. But, most of all, the participants liked the Brain Box game with questions and facts in the English language.

‘SIRIUS graduates’ projects

The ‘Horizons’ exhibition held on Sirius’ official opening day featured the centre’s graduates’ work on programming which solved problems related to applied physics, mathematics and chemistry. Some of the young scientists got the opportunity to talk to Vladimir Putin about their research projects.
Head of the Talent and Success Foundation

ELENA SHMELYOVA

On September 1, at the official opening of ‘Sirius’, Elena Shmelyova, Head of the Talent and Success Foundation, talked about the aims and objectives of the Educational Centre, the criteria for selecting students and teachers, as well as the outlook for the future.

— Elena, please tell us how and for whom the ‘Sirius’ Centre was created?
— The Centre is intended for 5th to 11th grade school students who have shown outstanding abilities in sports, arts and natural sciences. The Centre plans to admit a total of 600 such students from various regions each month. In addition, the Centre is willing to accept up to 200 teachers per month, giving them an opportunity to upgrade their professional skills. The educational programs in each division last 24 days. For three months now, we’ve been working on a pilot basis. During this time, we’ve been able to meet leading teachers - our partners from schools and higher-learning institutions. We have adopted selection criteria, set up the Expert Panel and developed our educational programs. Even though we’ve been doing this job on a pilot basis, the time spent has shown the efficiency of this educational model. For instance, in musical disciplines alone we have received applications from 77 regions. During the three summer months, we accepted 1,700 students from 60 Russian regions. Those children were able to undergo advanced courses based on our unique programs in the Centre’s specialized areas - namely in mathematics, physics, academic music, hockey, figure-skating and ballet.

— Who is accepted at the Centre, and how does the selection procedure work?
— Each discipline delivered by the Centre is supervised by a highly-qualified teacher heading the Expert Panel in a particular area. The fact that the Russian President, Vladimir Putin, initiated the creation of the Foundation and became the Head of its Supervisory Board heightened the scale of our project, which now covers all of the country’s regions and interested ministries. The President’s patronage helped unite the efforts of people who had long been engaged in the search for and development of gifted children. The President’s patronage helped unite the efforts of people who had long been engaged in the search for and development of gifted children.

We provided them with an additional platform to use their effective training systems so that they can be further translated to the regions. We have set up a large-scale federal project to last for many years to come, which will serve the interests of all the regions.

— Let’s now talk about infrastructure. How big is the Centre, and why was Sochi selected? Does it use the Olympic Games’ structures?
— A trip to Sochi has always been regarded as a reward. And we are sure that this feeling still holds true, given the city’s high living standards and vast opportunities for recreation and studies which meet the highest international requirements. These advantages enable the children to rise to higher levels in their professional development through the help of skillful tutors who give them guidelines and advice on their future professional activities. The Centre boasts professional ice cover, unique sightseeing tours, lovely nature surroundings, and choreography halls available in the “Iceberg” Sports Palace... The school complex was created inside what was a four-star hotel. Incredible! We’ve been able to keep the same hotel conditions. We still have a self-service buffet; rooms accommodating two to three students. Some of the rooms were re-equipped for educational purposes, so we now have cinemas, small and large concert halls, sports grounds, pools, fitness rooms, a spa complex. The facilities provide excellent conditions for professional work and study according to the highest standards. Significant funds have been invested in the IT-infrastructure, educational and training equipment and musical instruments for our students and teachers. Meanwhile, we have started construction of a comprehensive school building that will be equipped with high-class laboratories and training areas for all our divisions. Our curriculum program attracts many regional teachers who come with their students.

We attach no less importance to cooperation with teachers than to the selection and training of gifted children. The Centre doesn’t choose people at random. Rather, it accepts those who are able to teach these gifted children. Their students are winners in Russian and international competitions, meaning that they are using effective educational methods that will be further applied in preparing children for ‘Sirius’. Our goal is to upgrade their teaching skills and provide them with new opportunities for work. Therefore, we try to ensure all our equipment and infrastructure...
— Our task is to keep track of these children and, consequently, not to miss the future generation of professionals. To that end, we apply another method — masterclasses that are delivered by so-called ‘playing coaches’. These are professionals representing the best musical teams, musical schools, leading universities, famous sports clubs.

At ‘Sirius’, students meet their future teachers and tutors who, in turn, can see the children capable of progressing their professional development. These experts then invite gifted children to the Centre’s education programs. Many of our professors are principals and deans, department heads involved in decision-making on the curriculum content and in selecting potential students. At ‘Sirius’ they usually have informal discussions with students on their future professional development. In fact, our guests who conduct masterclasses may determine the future of our students for several years to come. And this is one of our major objectives.

And we must ensure that, upon returning to their regions, they maintain these contacts. To that end, we are creating a portal that keeps and develops communication links between our students and teachers and tracks their future lives up to their entering university and further on — up to their employment with previous tutors, representatives of Russian businesses, scientific, creative and sports communities.

Interview with the ‘Russia-24’ news channel

IT’S EASY TO APPLY!

FILL OUT THE ONLINE APPLICATION FORM FOR COMPETITIVE SELECTION AT

WWW.SOCHISIRIUS.RU

CALL ‘SIRIUS’ FOR FREE: 8 (800) 100 76 63
INTERVIEW WITH ZHORES ALFEROV

“THE COMBINATION OF SCIENCE, SPORTS AND ART IS A VERY GOOD IDEA”

We met with Zhores Alferov, the Nobel prize winner and academic, at the ‘Sirius’ all-Russian Educational Centre. During the October term, the gifted children and teachers were joined by students and teachers from the Lyceum Physical-Technical School he founded in St. Petersburg. We discussed the role of ‘Sirius’ in promoting Russian science, the state of natural-science school education in Russia, and ways to enhance the prestige of science.

– Zhores Ivanovich, what are your impressions of ‘Sirius’? Can it really help develop physics and mathematics in this country?

– The Sirius Educational Centre is the best way to use the Olympic legacy. In Sochi, a great deal was constructed and these assets need to be rationally applied. Take Krasnaya Polyana, for instance. It is a complete network of towns constructed in the style of Swiss or French alpine resorts. While in winter the area is full, in summer it empties out. And I think it is a good idea to use it to house the ‘Sirius’ centre.

– Why?

– If our businesses set up their residences in Krasnaya Polyana, they will be engaged in promoting the centre’s educational and scientific programs. It is important to ensure that all leading Russian schools are able, along with Moscow ones, to send their children to the centre. And the combination of sports - hockey, figure skating - as well as the arts and science is a good idea. These must come together. I once studied at a remarkable institute – the Leningrad I once studied at the Ulyanov-Lenin Electro-Technical Institute in Leningrad (LETI), which played a significant role in developing low-current electrical technology (as it was called at the time), radio technology, electronics, device engineering.

LETI emerged as a telegraph engineering college. After the war, we jokingly called it a sports and musical school with a bit of an electro-technical specialization. The thing is that, among other students studying at the institute, was the future outstanding composer, Sasha Kolker, as well as several distinguished sportsmen such as future world basketball champions Volodya Fomichov, Oleg Kutuzov and Oleg Mamantov. At the time, our national team was Leningrad’s permanent champion and a bronze medalist at the USSR Championship. But, nevertheless, those guys did not get special treatment.

– That is most important!

– Yes, it is. They took their exams together with others. The combination of science, sports, art - especially music – is a very good thing. So may God endow ‘Sirius’ with every success in its activities. Today, two 10th-grade classes arrived on a shift basis together with teachers from my lyceum – the ‘Physics-technical School’. Also children from the regions came. When I was their age, there were no such opportunities at all.
“THE SCIENCE IS ALL APPLIED, BUT...”

– In your opinion, what is the best way to select gifted children?

– I don’t think there is a need for any complicated system of selecting gifted children. The science should attract young people by being interesting and appealing in itself. In my time, there was huge competition to study electronics and physics at the Moscow Institute of Physics and Technology, the Leningrad Electro-Technical Institute and at the Physics-Mechanical Department of the Polytechnic Institute. The prestige of science, especially post-war, was enormous.

In addition, science was attractive from a practical point of view. After defending their PhD thesis, one would become a Senior Scientific Researcher the next day, with a salary of three-thousand rubles! The same as that of a factory director. Along the way, it was paid back to the state in the form of new technologies, highly-efficient production facilities...

– And, at the end of the day, the satellite launch in 1957.

– Yes. Global civilization evolves on the basis of scientific research – especially fundamental projects. In this respect, I usually refer to a passage from John Bardeen’s Nobel lecture. He was a brilliant theoretical physicist. He won the Nobel prize in 1956 for inventing the transistor. John called his Nobel lecture ‘Research leading to the creation of the point contact transistor’. And this invention impacted greatly on the development of computer technologies, changing the second half of the 20th century. John Bardeen’s lecture showed that all the work leading to the transistor’s invention emerged from fundamental research studies, including Wilson theory (an important work by a British theoretical physicist), work on photo electricity by the Soviet theoretical physicist Yakov Ilyich Frenkel, theoretical works by Boris Iosifovich Daydov.

What I mean is that inventions which create new technologies are always based on fundamental studies. I always try to point out this idea. It was well put by a good friend of mine, Jorge Porter, the President of London’s Royal Society. He said, ‘All science is applied. The only difference is that some of its areas are applied earlier, but some take centuries’. With this phrase he emphasized the role of science as the ‘driving force’ of evolution.
“ALONG WITH CHANGES IN THE HIGH-TECH AREAS OF SCIENCE, THERE IS A CHANGE IN EDUCATION. THIS IS A SINGLE COMPLEX PROCESS THAT DETERMINES THE DEVELOPMENT OF COUNTRIES AND ALL CIVILIZATION.”

According to Zhores Alferov, there is no science without art and another religion? And how can parents introducing a religious history course for 8-9th grades. How can children decide whether to choose Orthodox Christianity? This is equivalent to the earth are 4th-grade children studying the basics of Orthodox Christianity? This is equivalent to the law of God! From the very beginning, I suggested introducing a religious history course for 8-9th grades. How can children decide whether to choose Orthodox Christianity or another religion? And how can parents decide this?

“THE KEY PERSON IN SCHOOL IS THE TEACHER”

– In today’s schools physics is taught for only two hours a week. Is that enough?

– There are no such problems in our Lyceum. We deliver physics as often as we consider necessary. We’ve got good teachers. Our distinguished teacher, Andrey Minarsky, has arrived at ‘Sirius’ with others. He started his professional career as a theoretical physicist under Vitaly Lazarevich Ginsburg. Consequently, he took up teaching and came to our lyceum. The children adore him. Just attend one of our lyceum parties and you’ll see how the children feel about him. By all means, distance education and the Internet are very important. But the key person in school is the teacher. It has always been that way.

“ANOTHER FRIEND OF MINE, STEVEN CHU - THE NOBEL PRIZE WINNER AND U.S. ENERGY SECRETARY FOR PRESIDENT BARACK OBAMA - ONCE QUOTED SAUDI ARABIA’S ENERGY MINISTER: “THE STONE AGE FINISHED NOT BECAUSE OF A STONE DEFICIT, AND THE OIL AGE WILL NOT FINISH BECAUSE OF AN OIL DEFICIT. IT WILL HAPPEN AS A RESULT OF NEW TECHNOLOGIES BASED ON SCIENTIFIC STUDIES.” THEREFORE, TO ENSURE THE ADEQUATE DEVELOPMENT OF RUSSIAN SCIENCE WITH ITS GREAT TRADITIONS RESULTING FROM THE RUSSIAN PEOPLE’S UNUSUAL TALENTS (AND WITH ‘SIRIUS’ AIMED AT TALENT DEVELOPMENT) IT SHOULD BE THE PRODUCTIVE FORCE OF SOCIETY”

I went to study at LETI exactly for this reason. In the post-war years, as I was finishing in the 10th grade in war-torn Minsk, there was only one boy’s comprehensive school in the whole city. Physicist Yakov Borisovich Mitserzon talked so brilliantly about radio detection and ranging and the cathode-ray oscillograph that I felt like working in this area.

“BY ALL MEANS, DISTANCE EDUCATION AND THE INTERNET ARE VERY IMPORTANT. BUT THE KEY PERSON IN SCHOOL IS THE TEACHER. IT HAS ALWAYS BEEN THIS WAY.”

And our lyceum, the Physics–Technical School, has outstanding teachers. The Director, Mikhail Ivanov, is also a physics teacher from School No. 239. We both set up the lyceum. Of all our teachers, about 30% graduated from our school and then finished in institutes. To them, returning to their home school was very important. So, if all other schools become similar to ours, we’ll have excellent schooling. And the teacher must have a decent salary. The very word ‘teacher’ means so much!

– Can an ordinary comprehensive school manage with only two hours of physics a week?

– No, it can’t. I think, if we take a reasonable approach to this issue, everything will change for the better, while currently there is a great deal of nonsense. Why on earth are 4th-grade children studying the basics of Orthodox Christianity? This is equivalent to the Law of God! From the very beginning, I suggested introducing a religious history course for 8-9th grades. How can children decide whether to choose Orthodox Christianity or another religion? And how can parents decide this?

“DANCE CONTEST “SRARTEENAGER””

In accordance with tradition, all teams prepare their homework – the dance of a certain country. Costumes, posters and make-up are all bright and impressive. This contest shows how team-minded and talented the children are and how easily they improvise. The participants’ lively performances included not only folk dances but also popular hits.

“CHORUS BATTLE”

The strongest voices and the most-talented teams participate in the ‘Chorus Battle’ musical contest. Not all participants have the perfect ear for music, but any shortcomings are made up for by their originality, charm and team spirit. Each performance is a musical show, telling of a wonderful land of arts, of a magician who studied poorly at school, of valiant, strong-willed hockey players, of a student going to study to far-off countries and many other stories.

During their free time, the children in ‘Sirius’ also cook and teach others the differences in their national cuisines.
“SIRIUS’ NEEDS A MUSEUM OF SCIENCE”

– What, in your opinion, does the ‘Sirius’ Centre lack?
– Today we discussed the possibility of creating a scientific museum in the Main Media Centre at ‘Sirius’. It is important that ‘Sirius’ tells children about what’s going on in science. The centre can attract outstanding scientists to deliver lectures, and bring in good teachers. But there is another essential thing lacking – namely, a scientific museum that features new devices and applications in a whole range of advanced scientific areas. And it must be established on the most-sophisticated level.

Once, during my work in the U.S., I went to Chicago to see their excellent scientific technical museum. It was the right place to tell children about the latest breakthroughs in science and technology and to demonstrate these in action. And ‘Sirius’ is going to do the same.

Actually, it is very important to educate gifted children. Our St. Petersburg Academic University has a lecture hall called ‘Science and culture of the 21st century’. A special program, once or twice a month on Fridays, sees outstanding scientists, artists and stage directors appear there. In the past, we invited such brilliant people – for instance the composer Andrey Petrov, stage director Aleksandr Sokurov, Mikhail Borisovich Piotrovsky. And there has been a great deal of purely scientific lectures; the program is thoroughly planned. Half the audience is made up of students from our lyceum who usually raise complex questions.

I think that this lecture hall plays an important role in awakening interest in various fields. And there is a need to establish something like this here at ‘Sirius’. In June we celebrate graduation day, we issue university diplomas, master’s degree holders wear graduation caps and cloaks, and we give sashes to the Lyceum’s graduates.

This year, among our esteemed lecturers were the academic Gennady Krasnikov (Director of the “Mikron” Centre in Zelenograd) and Professor Yan Li (Honorary President of the Academy of Science in Taiwan), the Nobel prize winner who now works at Berkeley University. He delivered an impressive lecture on the uneven development of various countries, groups and classes which threaten all humanity. It also touched upon the issues of ecology and material inequality. This is also covered by our program.

Interview by Natalia Ivanova-Gladilshchikova

“IT IS IMPORTANT THAT ‘SIRIUS’ TELLS CHILDREN ABOUT WHAT’S GOING ON IN SCIENCE. THE CENTRE CAN ATTRACT OUTSTANDING SCIENTISTS TO DELIVER LECTURES, AND BRING IN GOOD TEACHERS. BUT THERE IS ANOTHER ESSENTIAL THING LACKING – NAMELY, A SCIENTIFIC MUSEUM THAT FEATURES NEW DEVICES AND APPLICATIONS IN A WHOLE RANGE OF ADVANCED SCIENTIFIC AREAS. AND IT MUST BE ESTABLISHED ON THE MOST-SOPHISTICATED LEVEL.”
THE MUSICAL PROGRAM IS SUPERVISED BY THE ST. PETERSBURG MUSIC HOUSE UNDER THE GUIDANCE OF SERGEY PAVLOVICH ROLDUGIN, THE FOUNDER AND CHAIRMAN OF THE FOUNDATION.

Here they [the musicians] have an opportunity to teach hockey players what E-major is all about, while the hockey players can explain what icing means. When ballet dancers show mathematicians how to do a fouette, the mathematicians give their opinion on certain techniques. I’ve travelled the world and can say for sure that such an exchange is found nowhere else.

SERGEY PAVLOVICH ROLDUGIN
Honoured Artist of Russia, cellist, Art Director at the St. Petersburg Music House, Professor at the Rimsky-Korsakov St. Petersburg State Conservatory, guest conductor at the Mariinsky Theatre.
In September, the ‘Sirius’ Educational Centre welcomed young musicians from 23 Russian regions: pianists, harpists, violinists, and cellists. In October, the Centre conducted studies for young wind instrument players from 16 Russian regions: flautists, saxophonists and trumpeters. While in November, ‘Sirius’ gathered pianists, violinists and percussionists from 24 regions. The December term was focused on mastering the piano and violin. ‘Sirius’ has been accepting successful students from arts schools and children’s music schools and has been inviting professors, leading Russian artists and international prize winners to deliver masterclasses.

MARGARITA KONSTANTINOVA SHAPOSHNIKOVA
Honoured Artist of Russia, Professor at the Gnesins Russian Academy of Music, founder of the Russian Saxophone School.

Among the participants at Margarita Konstantinovna’s masterclasses were gifted saxophone players from six Russian regions. The musicians mastered a variety of musical genres: etude, capriccio, variations, song and waltz. “The saxophone is a unique instrument. While other instruments were invented by our predecessors and have been developing through the centuries, the saxophone’s sound was immediately established so it has not undergone any changes since it was invented,” said Margarita Konstantinova, who is frequently called “the Saxophone Queen”.

OLGA STEPANOVNA CHERNYADYEVA
Honoured Artist of Russia, Professor at the Rimsky-Korsakov St. Petersburg State Conservatory.

Under her guidance, as many as eight young flautists from seven Russian regions mastered their skills, playing pieces from various composers, ranging from Bach and Mozart to Dargomyzhsky, Glazunov and even Piazzolla. At the end of their studies, the young players performed for the ‘Sirius’ audience including pieces from classical concerts, excerpts from ballets and operas as well as pieces based on dance and song.

PAVEL MILYUKOV
Prize winner at the 15th International Tchaikovsky Contest, Principal Performer at the St. Petersburg Music House and Moscow Philharmonic Hall.

Pavel Milyukov held a masterclass for young violinists and put on his own concert at ‘Sirius’. The musician’s visit to Sochi came as part of the St. Petersburg Music House’s ‘Embassy of mastership’ project. It began in 2012 and covers not only Russia’s regions but also other countries. The project involves masterclass sessions by leading musicians and concerts by successful young performers. Since June 2015, the project’s activities have been held for the students at the ‘Sirius’ Educational Centre.

DMITRY MIKHAYLOVICH LUKYANOV
Honoured Artist of Russia and Professor at the Gnesins Russian Academy of Music held tutonials with young percussionists from five Russian regions. He paid particular attention to the melodic pattern of percussion playing. Dmitry Mikhaylovich creates methodological manuals, etude compilations and transcripts of music written for other instruments. The professor attempted to convey to the young ‘Sirius’ musicians his knowledge for accurately understanding the music being performed, as well as his serious and in-depth approach to musical interpretation.

NINA NIKOLAYEVNA SERYOGINA
Honoured Artist of Russia, Professor at the Rimsky-Korsakov St. Petersburg State Conservatory.

Each young musician attended a private lesson by his or her mentor, and then individually mastered musical pieces. “I would like to emphasize that the very idea of creating such a centre is brilliant, and the organization is excellent. The children who attracted special attention in ‘Sirius’ should be kept in sight and be repeatedly invited,” said Leonid Mikhaylovich.

LEONID MIKHAYLOVICH ZAYCHIK
Honoured Artist of Russia, Professor and Dean of the Piano Department of the Rimsky-Korsakov St. Petersburg State Conservatory.

Under his guidance, a total of 12 young piano players held their studies in ‘Sirius’.

“The children who attracted special attention in ‘Sirius’ should be kept in sight and be repeatedly invited.”
Vincent Lucas

“
A gift [for music] is the foundation and a starting point. However, to have an in-depth knowledge of music and to be able to freely speak this language, one has to learn to easily handle and instrument. And that takes years of hard work.

– Mr. Lucas, thank you for the brilliant concert you gave at ‘Sirius’. Is your virtuoso performance a gift or the result of years-long practice and hard work?

– I am very touched by your words. I was stunned by the fact that the audience, aside from the musicians, included representatives from other fields – students and teachers from the sport and science divisions. I was impressed by their understanding and feeling for the music! For instance, the next day a maths teacher came over to me and thanked me for the concert. Such feedback is very important to me.

I will answer your question. I think that a gift [for music] should be the foundation and a starting point. Nevertheless, to have an in-depth knowledge of music and to be able to freely speak this language, one has to learn to easily master the instrument. And that takes years of hard work.

– You’ve got quite a busy schedule; why did you agree to come to Sochi? Did you know anything about ‘Sirius’?

– No, I learnt about this education centre for the first time from my colleagues at the St. Petersburg Music House. However, I had heard a lot about the high-profile 2014 Olympic Games in Sochi. As soon as I received an invitation to come to Sochi, I immediately agreed. I felt like meeting ‘Sirius’ students because teaching is important for any musician. I was very eager to share my experience with the younger generation.

– You gave a masterclass for the flautists at ‘Sirius’. What is your general impression of their skills?

– I must say that I didn’t know what to expect. But the children turned out to be really fantastic and outstanding. They have an excellent level of preparation! Children with such a brilliant background need only a bit of help from teachers in developing their abilities.

– Why did you choose to study the flute?

– Actually it was my parents who made the decision for me. I was the fourth child in a family of musicians. My older brother played the piano, my sisters followed in his footsteps but, from the beginning, one of them was supposed to play the flute. Consequently, it was me who had to learn to play the flute, but I have never regretted it. As soon as I took the instrument, I realized there was nothing else I wanted to play.

– When did you earn recognition from an audience?

– You might find me immodest, but recognition came to me from the outset. My performances have always impressed the audience. I started playing the flute when I was seven years old, and at the age of 14 I entered the [Paris] Conservatory. I remember that my rivals – after learning I was going to take part in musical competitions - refused to participate saying, “oh, anyone but Vincent”. I was only 16 at the time but I was completely self-assured. But as time passes, everyone starts asking themselves more and more questions, and becomes increasingly doubtful about their abilities. At that point it is important to preserve self-confidence. It’s not enough to think that you are the best, you must be sure of it. If young musicians follow that advice, they will achieve success.

– What do you like best – playing in an orchestra or solo?

– Now that I have vast experience I can say with confidence that work with an orchestra is somewhat more complicated than solo performances. However, I don’t think that musicians should confine themselves to one single occupation. That also relates to hobbies. Aside from playing the flute, when I have free time I play sport, and I like cars.

– How often do you give masterclasses in European countries, Japan or Russia? Are there any differences between musical schools in various countries?

– Indeed, each country has its own specific features. By the way, playing a musical instrument is inextricably connected with the culture of speech; therefore, a person representing a certain country plays the way he or she speaks. Flautists at Russian schools should pay special attention to the search for different colours to sound, to the use of pitch modulation and more-flexible phrasing. My observation is based on my experience in collaborating with the St. Petersburg Music House. Here I would like to note that my students from St. Petersburg play increasingly better each time. Therefore, I conclude that the children put my remarks into practice and fill the gaps.

– How often do you stay in Russia and what are your impressions of this country?

– I’ve already made more than a dozen trips to Russia. And each time, I fall more and more in love with your country. I am impressed by your hospitality. When you open your houses you open your hearts. For me, it’s a real pleasure to work with Russians.

Thank you for this interview! Hope to see you again, for instance when you come to Sochi to teach at ‘Sirius’.

– Why not? My mission is focused on helping gifted children. Russian children must establish themselves on a global level. I am convinced that they will win many international contests and acquire international fame.

Interview by Alyona Ternovaya

Students at the October ‘Sirius’ term had the unique opportunity to attend a concert given by Paris Conservatoire professor, Paris Orchestra leader and flautist Vincent Lucas. He was kind enough to give a masterclass for the young musicians and to answer their questions after his performance.
Mikhail Gantvarg

The ‘Sirius’ Educational Centre regularly invites renowned teachers to deliver masterclasses. We talked to the outstanding violinist, Artist of Russia and St. Petersburg State Conservatory professor Mikhail Gantvarg.

— Mikhail Khanonovich, first of all, thank you for visiting the centre! What has impressed you most?

— Thank you. I must say the creation of the ‘Sirius’ centre is an excellent idea. Such a centre is always necessary. Children can come here and communicate with professionals. Even students at the St. Petersburg music school do not have such opportunities.

— You’ve conducted a series of lessons at ‘Sirius’. How would you assess the skills and abilities of our students?

— The centre has a wonderful atmosphere: the children come over, choose a list of items they want to study during their course, and we start working with them. They are all young, being at the beginning of their creative path, therefore, they still have a great deal of problems to work through. And we’ve got ten lessons for that purpose.

Each day, during our lesson, I try to slowly but steadily guide the way they perform. I even went so far as to give certain recommendations to the teachers, because the children themselves would say: “Our teacher asked ‘what is this?’ and ‘how do I do that?’; ‘What would you suggest for the future repertoire?’ and ‘What technical problems am I to work on?’”

Together with my elder colleagues, we recently remembered our youth. Of course, we could not have dreamt of having such interesting masterclasses from the country’s leading professors.

— Returning to your younger days... How did you realize that the violin was your destiny?

— In childhood everyone, in one way or another, aspires to music, shows certain abilities. I must say that if a child does not start to play the violin proficiently by the age of 5, they are unlikely to master the instrument at all.

I even went so far as to give certain recommendations to the teachers, because the children themselves would say: “Our teacher asked ‘what is this?’ and ‘how do I do that?’; ‘What would you suggest for the future repertoire?’ and ‘What technical problems am I to work on?’”

Together with my elder colleagues, we recently remembered our youth. Of course, we could not have dreamt of having such interesting masterclasses from the country’s leading professors.
My parents determined my fate. They sent me to a school at the Conservatory that had a strict selection procedure. Only the ablest children were able to stay to the 11th grade, they were the ones who could enter the Conservatory. It was a well thought-out system for educating gifted children. The Soviet musical school set an example to the whole world. For that reason, our musicians won in all international competitions and festivals.

– Does the system of musical education need reform, or should we carefully preserve the best traditions of the Moscow and St. Petersburg schools?

– In my opinion, we must most carefully maintain what has been created over a long period of history covering almost the entire 20th century. At the time we had absolutely astonishing results.

– Does such a system require reform or should we carefully preserve the best traditions of those schools?

– The majority of them, naturally, go to work in symphony orchestras. In St. Petersburg, we have remarkable orchestras at the Philharmonic Hall and the Mariinsky Theatre. Students from the St. Petersburg Conservatory are in high demand in that respect.

Of course very few become soloists, leading performers in concerts. Such artists are quite rare. To become a soloist, one has to possess a set of qualities to allow them to attain a higher state - of health, nerves, working abilities, time planning. In general, this is really hard and demanding work.

Soloists usually perform in ‘sports mode’. They no longer belong to themselves, because they have given themselves to the profession, to the world and to the audience. Again, such people are seldom to be found and it can’t be any different.

However, ‘Sirius’ has children who have every chance to become the stars of international musical culture. And again I would like to emphasize that ‘Sirius’ is a strong driving force that gives new impetus to developing children’s creative abilities.

– Because they can catch the eye of famous teachers?

– I offer masterclasses. Young soloists from across Russia come there. From my experience, I can say that many children - about 70 or 80% - continue their musical career and enter the St. Petersburg Conservatory to further become well-known performers.

As teachers, we try not to miss gifted children who attract our attention. We strive to establish contact with them and, in that respect, ‘Sirius’ is an excellent platform for communication between teachers and gifted children from across Russia.

Interview by Elena Gordeenkova
ANDREY BORISOVICH DIEV
Soloist at the Moscow State Academic Philharmonia and honoured artist, Andrey Diev shared his thoughts on a series of studies held with the young pianists at ‘Sirius’. “The children are very good. Naturally, they are different. What is most gratifying is that we were able to create a friendly atmosphere in our lessons, and to build confidence between us. When the children first come here they are tense, but then as soon as this barrier is broken we start to communicate openly and professionally. I hope that, along with sharing knowledge, the children also enjoy the personable contact.”

TATIANA MIKHYAYLOVNA ZAGOROVSKAYA
Honoured artist of Russia, Professor at the St. Petersburg Conservatory.
Tatiana Mikhaylovna directed studies for seven young pianists and said she was very pleased with their work. Any shortcomings in their performance technique on their arrival at ‘Sirius’ were eliminated. In the professor’s opinion, some of the children have the potential to achieve success providing they put in a lot of effort and work hard.

– Vladimir Pavlovich, in your opinion, are all children gifted?
– I think all children are born with abilities. But the older a child gets, the more blinkered their gift becomes unless it is developed. And at some point it is as though a lid is closed and grey routine sets in.

The reason for that is probably children’s early maturity, or various temptations causing children to waste their unique abilities on various stuff – the Internet, iPad games. But not all children are like this and that’s how [so-called] ‘white crows’ appear among some children who do not fit into their society. Unfortunately, talented children are often chased down by their contemporaries.

Progress depends on the child’s desire to become successful.

Vladimir Ovchinnikov
Professor at the Moscow Conservatory, Director of the Central musical school and artist of Russia, Vladimir Ovchinnikov is a permanent guest at ‘Sirius’. In December, the young pianists there had a unique chance to attend his masterclasses. During our conversation with the musician, we learnt why the roles of teacher and parent are so important in the lives of young soloists, and also covered motivation in studying the musical arts with regard to the capital’s children and those coming from the regions.
The children do their best to return here. You must agree that not that many children can be proud of playing Yamaha pianos like those they have here in the centre. As a rule, children living in musical boarding schools tend to grow up faster. Such children have a different view towards life. Muscovites - I’m talking about students of Moscow schools - don’t have that motivation, they have everything they need for everyday life, their parents are usually there to take care of them, while children coming from other cities have to fend for themselves more. By the way, Pletnyov and Spivakov lived in a boarding school.

As a teacher, are you concerned about your students?

– Like any other teacher. You can’t by any means be indifferent to children. One should educate children through personal example. When parents take an interest in music or reading, their children will do the same. However, nothing will work if they are forced to play an instrument.

– And what do gifted children have in common?

– First of all, any child wishing to become a good artist must be as soft as clay so that they can be moulded into any form. For their gift to be realized, the child must respond to their teacher’s requirements. But there are other qualities required: self-determination, persistence, self-confidence, the ability to insist on one’s point of view.

– In your opinion, is there any difference between the capital’s children and those from the regions?

– Children from the regions have less distracting temptations and more motivation. I think after visiting ‘Sirius’ they take even greater interest in the subject and the instrument that they play.

– Is it so important to study with the same teacher?

– Of course! To become successful, one must study for a minimum of five-eight years with the same teacher. Otherwise nothing will work out. Every teacher has his or her own style which influences the way a child performs. All studies must be based on a personal attitude to music, towards life. A child must understand what they do and why. Such issues can be addressed only to one’s ‘own’ teacher who, by their own example, will guide the child through the path of study.

– Is it important that parents monitor their children’s studying?

– I believe parents must attend their children’s lessons up to the 5th grade. That way adults are able to control their children’s studies at home. To achieve good results, the child requires their parents to be selfless.

– In what way is it possible to encourage a child’s self-development?

– Progress in any activity depends on the child’s desire to become successful. Here it is most important for the teacher to set up the right program, determine a sequence of musical pieces to be studied and to grab the child’s attention.

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The selection of young ballet performers representing Russia’s choreography schools is based on assessing their performances from recordings by the Foundation’s Expert Panel.

In September, the ‘Sirius’ Educational Centre welcomed students from the Lavrovsky Moscow State Choreography School, the Kazan Choreography School and Rostov College of Arts. In October, the centre’s ‘Classical Ballet’ program accepted students form the Krasnodar and Voronezh Choreography Schools and Perm State Choreography College. In November, ‘Sirius’ was visited by a representative from the Rostov College of Arts and the Moscow State Academy of Choreography; and in December by students from the Samara Choreography School.

Gifted students from the Rostov College of Arts and the Moscow State Academy of Choreography took part in masterclasses from Svetlana Uvarova and Maria Eichwald. Svetlana Uvarova worked with the young artists according to the Russian ballet school system by A. Vaganova, which is known for a variety of methods regulating harmonious movements of the arms, body and head. Maria Eichwald, who has vast experience performing abroad, acquainted the students with some working aspects of Western ballet theatres. Both teachers agreed that their students, although at the very beginning of their professional path, showed great potential.

The choreography program at the ‘Sirius’ Educational Centre is run by Founder and Board Member Svetlana Yuryevna Zakhарова and the Moscow State Academy of Choreography under the guidance of the Expert Panel Member Marina Konstantinovna Leonova.
Anna Antonicheva

The ‘Sirius’ Educational Centre in Sochi selects and develops children from all of Russia. The centre has the most-experienced teachers. In addition, the children attend masterclasses delivered by famous artists and athletes. Here at ‘Sirius’, the first steps in a teaching career were taken by the Bolshoi Theatre prima ballerina and peoples’ artist of Russia, Anna Antonicheva.

The most-gratifying aspect of this job is the outcome. When I see that the children respond to my guidance, I realize that my efforts are not in vain.

— Anna Anatolyevna, did you quickly agree to come to Sochi to share your experience with the next generation?

— In Moscow I received two invitations: one from my native theatre and another from the ‘Sirius’ centre. I decided to start my teaching career here at ‘Sirius’ and only after that to go and work at the theatre. I don’t regret that at all. I really enjoy giving masterclasses, and I would love to come here again.

— In your opinion, are these lessons useful to the children?

— By all means! I’ve been conducting my daily ballet lessons for boys and girls for three weeks now. But I must say right now that ballet requires great effort.

— What helps you get into a role, to feel better about your heroine?

— It’s music that helps. Besides, a choreographer will let you know what they wish to see. It all depends on the role. For instance, the image of Juliet is already established and does not change whichever performance you are involved in. But if you play a new heroine, it is the ballerina who forms the image.

— What are your plans for the future?

— A ballerina is supposed to continuously dance for twenty years and leave the stage after that. That is why I’ve made a decision to start a teaching career. In addition, I’ve been performing in the Mayakovsky Theatre for many years. But, hopefully, I will still have the chance to dance on Bolshoi Theatre stage.

— What is your feeling towards the teaching profession?

— This is my first experience of teaching children and I enjoy doing it. The most-gratifying aspect of this job is the outcome. When I see that the children respond to my guidance, I realize that my efforts are not in vain.

— Your colleagues consider you a hard worker. Do you insist the children keep working hard as well?

— Ballet is impossible without effort. Although I have great experience, I cannot relax. Experience comes with age. A ballerina reaches the upper point of her career at the age of 30 to 35 years. After then, age becomes noticeable. To remain in shape, one must not relax. On the contrary more and more effort should be made. Children must understand this if they want to pursue this profession.

— How did you decide to take up ballet?

— My mother was a ballerina at the Baku Opera and Ballet Theatre and she decided to send me to study ballet. I accompanied her on tour and saw the profession from the inside. At the time, I was enchanted by the way ballerinas did the splits. I tried to do the same.

— How did you end up in the Bolshoi Theatre?

— Again, thanks to Sofia Nikolaevna. She sent me there after graduating from school. At first, I danced in the corps de ballet. During the first year I had to live in the boarding house at the Moscow Academic Choreography school because there were no available rooms in the theatre’s dormitory.

— And now you are the prima ballerina. Do you still get nervous when appearing on stage?

— Of course, a lot has changed, but still I feel a thrill. The ballet stage is a serious challenge and you have to be sure that your body can handle it. I feel especially nervous after vacations or long breaks in my career.

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THE EDUCATIONAL PROGRAM IS SUPERVISED BY THE ACADEMY OF AQUARELLE AND FINE ARTS, DIRECTED BY EXPERT PANEL MEMBER SERGEY NIKOLAEVICH ANDRIYAKA.

THE YOUNG ARTISTS AT ‘SIRIUS’ HAVE MASTERED THE TECHNIQUE OF MULTILAYER AQUARELLE PAINTING

Sergey Andriyaka, together with other teachers from the Academy of Aquarelle and Fine Arts, conducted masterclasses at ‘Sirius’ for students of painting.

Under the guidance of Sergey Andriyaka, the children created a simple nature still life – ‘Melon, pomegranate, persimmon and a bunch of grapes’. This lesson was aimed at perfecting the skills of various shapes in pencil, in colour and in the grisaille technique (tonal gradations of the same colour).

The technique used by Sergey Andriyaka is called multilayer aquarelle painting. It is quite complicated and is done without preliminary pencil sketching. It is performed through combination of one-layer and multi-level painting. This technique is studied in the school of aquarelle and the Academy of Aquarelle and Fine Arts.

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“A GOOD TEACHER SHOULD NOT SHOW HIS MASTERSHIP TO THE STUDENT. THEY MUST DESCEND TO THE STUDENT’S LEVEL AND GROW TOGETHER WITH THEM. OTHERWISE THE STUDIES WILL NOT ACHIEVE SUCCESS.”

Sergey Andriyaka avoids white paint in his work. He regards the paper as a white screen and the first law of multi-level painting stipulates proceeding from light colours to dark. That is why, under his guidance, the children began drawing from the lightest objects to the darkest, allowing them to preserve the brightness and vividness of the colours in their still lifes.

During the lessons, the children mastered drawing small objects, learned methods to convey an object’s local tone and various patterns, and also became acquainted with principles of consequential drawing as well as the rules of nature still-life setting. Sergey Andriyaka did each task along with his students. The students were then only considered to have mastered it if they were able to do the task by themselves.

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In the renowned artist’s opinion, visual expression is the most-efficient way of studying. “A good teacher should not show their mastership to the students. They must descend to the student’s level and grow together with them. Otherwise the studies will not achieve success,” he says. During the lessons the children not only practiced drawing, but also listened to lectures on the works of famous international masters of painting, which allowed them to better learn compositional and technical methods.
People’s artist of Russia, aquarelle painter and professor, Sergey Andriyaka conducted a series of masterclasses for students at the ‘Sirius’ Educational Centre. In an interview he told us how he became an artist and why it is so important to follow the experience of predecessors.

— Sergey Nikolayevich, thank you for visiting our Educational Centre. Please tell us about the Moscow aquarelle school.

— The Moscow aquarelle school is characterized by its orientation and methods. For several years, the children consistently learn the basics of drawing and the multi-layer aquarelle technique. But technical skills are impossible without understanding beauty. These only work in combination. As teachers, we can see beauty and try to make our students see it as well.

— You must have tried different painting styles during your artistic career. Why did you choose aquarelle?

— My life had different creative stages. In one period I did oil painting. For me, it was sort of advanced training courses. But, along with that, I used aquarelle because it can feature everything. It was love at first sight, and there was nothing I could do about it.

— In what way was your career influenced by your father, the honoured Soviet artist Nikolay Ivanovich Andriyaka?

— As a child, I hardly saw my father. Being the director of the Surikov School, he spent most of his time at work. And I could seldom attend his studio. I had the chance to observe my father’s work only shortly before his death.

Nevertheless, my father was always the major authority to me. It was he who determined what was good enough and what failed. Any professional artist requires someone to criticize them.

— Regarding professionalism, what specific elements do you prioritise?

— It’s very simple. Let’s take academic drawing and painting.

We had a piano at home. It never fulfilled its primary function; rather it served as a design element. I would put my works on it, and my father would say which ones were good and which ones required improvement.

— Did you get any special treatment?

— I don’t think so. My father could be rather tough when required. I remember once, when I was a primary school student, my father and I stayed at home because we were both sick and decided to paint a nature still-life. We put flowers and a vase on a coffee table. My father was displeased with my finished work. Although I was very disappointed, it did me good. He sent me a message that I had to accept. My father gave me the mastership and skills that he possessed himself. And I am glad that it happened to me.

— And what message do you now send to your students?

— I must teach them to take the profession seriously. I do realize that children coming to ‘Sirius’ do not always have the necessary preparation level. However, we make every effort so that they can fulfil themselves!

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I THINK THAT IN TODAY’S WORLD, NARROW-PROFILE SPECIALISTS CANNOT ACHIEVE FULFILLMENT AND ESTABLISH THEMSELVES

— What skills are required to become successful?

— I think that in today’s world, narrow-profile specialists cannot achieve fulfilment and establish themselves. Only those who can apply numerous techniques are likely to succeed.

We must train super specialists. Students at ‘Sirius’ have such an opportunity. The Educational Centre is aimed at raising skill levels in the regions. We must encourage the children so that they realize that, in this country, they can get a good education.

— What are your wishes for the next generation of artists?

— One must preserve inner spirituality. This is a big issue nowadays. Children do not understand that gadgets destroy their souls. My wish is for them to serve the light, peace and goodness. However, that requires certain skills.

Finally, one should realize that human life is short and we must manage to do a great deal, giving ourselves and all our abilities away to benefit others.

People’s artist of Russia, aquarelle painter and professor, Sergey Andriyaka conducted a series of masterclasses for students at the ‘Sirius’ Educational Centre. In an interview he told us how he became an artist and why it is so important to follow the experience of predecessors.

Interview by Elena Gordeenkova
SCIENCE
The Expert Panel selects students for the Science Division based on their results from themed Olympiads, tournaments and competitions at regional, national and global levels, as well as in individual or team projects of a scientific, technical or research nature.

In September, the educational program involved students from among Russia’s top 100 mathematics schools, and also students in mathematical circles (7-9th grades) from seven Russian regions. The October program focused on in-depth studying of maths, physics and programming for 9-10th-grade students from schools specializing in physics and mathematics in five Russian regions. From October 31 to November 9, ‘Sirius’ housed the ХIХ Mathematical Tournament, named after А.Н. Kolmogorov, for senior-grade students. From November 11-22, the centre held an Olympiad of experimental physics (IEPhO-2015). In November, we successfully staged the Kolmogorov Cup, which is considered to be the most-reputable maths Olympiad.

The December program included 7-11th grade students from 15 regions in Russia’s Southern and North-Caucasus Federal Districts, and also from the Republic of Crimea and the city of Sevastopol.

‘Sirius’ also staged an Olympiad on experimental physics, which was quite technically complicated. In association with the Central Methodological Commission on Physics, we plan to conduct in April 2016 the finals of the Maxwell Olympiad - a prototype of the all-Russian Olympiad, aimed at 7-8th grade students.

In addition, we would like to start lessons on chemistry and biology, without waiting for laboratories to be constructed. The first results will be achieved in 2016 as soon as the centre completes the selection of students for chemistry and biology as part of the Ural-Siberian program. If this trial project turns out to be successful we will plan a fully-fledged program for biologists - with a compulsory chemistry component - for a total of 200 students in October 2016.

We think that inviting individual teachers will not resolve the problem. Implementing high-profile programs requires the involvement of teaching teams. Therefore, we have started, and will continue to collaborate, with the leading physical-mathematics - and later with chemistry-biology schools - to

"FROM THE VERY BEGINNING, ‘SIRIUS’ HAD TO SET THE HIGHEST STANDARDS”

Mikhail Sluch shared his view on the Science Division at the ‘Sirius’ Educational Centre

The key tasks set during the foundation stage at the ‘Sirius’ Centre included creating and selecting operating systems that would help attract the most-gifted students in both the exact and natural sciences. From the very beginning ‘Sirius’ had to set the highest standards. That is why, as part of the first June program, held on a trial basis, in the Science Division, the centre performed a general selection of national teams in mathematics and, in July, it gathered the strongest physics students from the whole country.

Talented students require excellent teachers. And such teachers - those capable of training winners for national Olympiads - are quite rare. We try to encourage them to come to ‘Sirius’ and hope that, eventually, most of them will take part in the centre’s programs and work with the gifted students from various regions around the country. Incidentally, the best teachers are usually gathered during serious competitions. We attempt to make ‘Sirius’ the platform for holding high-profile Olympiads. In November, we successfully staged the Kolmogorov Cup, which is considered to be the most-reputable maths Olympiad.
invite the strongest top-rated schools to ‘Sirius’. In July we received students from the renowned Moscow school No. 57 and, in August, the centre accepted students from the Second School Lyceum, together with regional students. Even the strongest schools can benefit from their stay at ‘Sirius’. For instance, they have the opportunity to exchange experiences with their colleagues from other schools. With that in mind, the October term included students from Krasnoyarsk, Murmansk, Arkhangelsk, Khanty-Mansiysk, St. Petersburg and Moscow. While lessons were delivered by teachers from two strong schools – the St. Petersburg lyceum Physical-Technical School and the Moscow Physical-Mathematical School No. 2007.

We plan to involve the teachers’ teams from the specialized educational and research centres – Ural and Novosibirsk Universities (February 2016), Moscow State University (August 2016). Of course, together with students from these centres, ‘Sirius’ will train students from various parts of the country. An important aspect is the involvement of high-level academics in working with children. The Fields Medal laureate and Research Manager of the Chebyshev Laboratory at St. Petersburg State University, Stanislav Smirnov, and Andrey Raygorodsky (Head of the Department of Discrete Mathematics at the Moscow Institute of Physics and Technology, Head of Research at Yandex, laureate of the RF Presidential Award for young academics) opened the first term at ‘Sirius’.

The students also attended presentations from the Nobel Prize-winning academic Jores Alphyorov, and the Principal of Moscow State University, the academic Viktor Sadovnichiy. We will continue, in association with our experts, to expand the science program during terms. ‘Sirius’ has started operating, and now we need to provide access to the centre’s programs to promising students in various parts of this country.

To that end, we plan to conduct separate programs orientated towards the Federal Districts (Southern District program, the Ural-Siberian program, the Privolzhskiy Federal District program and the Far-Eastern Federal District program).

We must also support those regions that do not get high results in the all-Russian Olympiad; giving students studying there a new impetus.

In January, the centre will run a program on mathematics which will involve students from the above regions located in the Central and North-Western Federal Districts. Using a similar selection procedure, the centre will hold a program for physics in March 2016.

An important element in supporting regional students is the system of workshops and advanced training courses designed for teachers that the centre started in September 2016. These workshops bring together a wide audience (at one point, the number of participants exceeded 100), and, most importantly, these are teachers from various regions who purposely came to ‘Sirius’ to get acquainted with the best practice in dealing with gifted children.

And finally, another area of our work deals with gradually implementing the project line, organizing project activities within the term’s framework (July 2016) and a contest of projects in natural sciences. These activities began during the trial August term with works from students from the Lyceum Second School’.
VIKTOR SADOVNICHIY
on the dramatic chapters in the history of mathematics

Lomonosov Moscow State University Principal and Russian Academy of Sciences academic Viktor Sadovnichiy delivered a lecture called ‘From hypotheses and errors to the scientific truth from the mathematician’s point of view.’ The head of the country’s largest university told the children about a complicated path in scientific research, where victories are usually followed by failures. Together with the young audience, Viktor Antonovich embarked on a journey covering more than 2,000 years: from Euclid to the outstanding scientists of the 20th century - Tsioikovsky, Keldysh, Perelman, focusing on the most-dramatic pages from the history of mathematics. He talked not only about the essence of scientific discovery, but also about complex relations between members of the scientific communities and issues of leadership.

The audience learned about recent projects by the Moscow State University Principal on various applications of mathematical science. For instance, the specific reaction of the human eye in zero gravity, and about Moscow State University creating one of the most-powerful super-computers.

OLYMPIAD
on experimental physics

From November 12–22, the centre conducted an Olympiad on experimental physics (IEPhO-2015) among 8-11th-grade students. This year, a total of 28 teams from 19 Russian regions took part. More than 200 gifted students came from various parts of the country. The award panel included representatives of Lomonosov Moscow State University, the Moscow Physics and Technical Institute and other leading higher learning institutions, as well as from the Yerevan Institute of Physics and the Belarusian State University. Before the Olympiad opened, as the award panel and organizing committee did their final preparations, the young physicists attended two interesting lectures. Konstantin Parphyonov - a Candidate of Physical and Mathematical Sciences and associate professor of Physics at Moscow State University - explained the arrangement of matter and the micro-world’s fundamental rules. After a break, the program proceeded with a lecture by the winner of the all-Russian ‘Teacher Of The Year 2015,’ Sergey Kocherezhko, on the history of myths in science history and everyday life.

During the closing ceremony of the IEPHO-2015 Olympiad, the winners were presented with awards. In the team event, the Grand Prix was won by Moscow school No. 1329. First place went to the team from the Lyceum Physical-Technical School in St. Petersburg. The silver medal was awarded to the first team from the St. Petersburg Physics and Mathematics Lyceum No. 219. And third place was taken by the same school’s second team.

In the senior school league, the Grand Prix was awarded to the Republic of Mordovia’s second team.

THE XIX ALL-RUSSIAN TOURNAMENT – The Kolmogorov Cup

The November term consisted of two stages: The XIX mathematical tournament for senior grades students, The Kolmogorov Cup, took place in the first fortnight. It included both team and individual mathematical Olympiads and contests. The tournament involved a total of 372 students and 80 teachers, including the Methodological Commission and the jury panel. The 19th Kolmogorov Cup was, for the first time, held at ‘Sirius.’ While the first Cup attracted 12 teams, the XIX tournament involves 80 applicants, of whom no fewer than 66 passed the competitive selection.

The winner and absolute leader in the XIX Kolmogorov Cup was a team from Yaroslavl. The Small Cup went to Moscow team ‘MMMF-9’.

Among those who delivered lessons and lectures this autumn were: Nazar Agakhanov (Candidate of Physical and Mathematical Sciences, Chairman of the Central Methodological Commission on Mathematics, Head of the all-Russian Olympiad of school students and Head of the Russian National Mathematics Team); Aleksand Shtern (Candidate of Physical and Mathematical Sciences, Chairman of the Algebra Department at Dostoyevsky Omsk State University and Chairman of the Regional Methodological Commission of the All-Russian Mathematical Olympiad for School Students); Sergey Lando (Doctor of Physical and Mathematical Sciences, Dean of the Mathematics Department at the Higher School of Economics National Research University and Board Member at the Moscow Mathematical Society); Aleksey Sosinsky (Candidate of Physical and Mathematical Sciences, Professor and Vice-Principal of the Independent University in Moscow and renowned mathematics promoter).
Andrey Raygorodsky

Despite the fact that ‘Sirius’ was officially opened in September, the centre’s first term was launched in early summer. In June, ‘Sirius’ welcomed Andrey Raygorodsky, Head of the Discrete Mathematics Department from the Innovations and High Technologies Faculty at the Moscow Physics and Technical Institute, Head of Theoretical and Applied Research at Yandex, Doctor of Physical and Mathematical Sciences and laureate of the 2011 Presidential Award in science and innovation among young scientists. Andrey Raygorodsky told us about his plans for his stay in the Sochi Centre and explained why it is so important to grow future scientists from school age.

– Why do you – a decorated scientist – want to work with school children?

– Actually, I want to establish an effective scientific team. And this can be achieved if you start working with children during their schooldays. Afterwards, they will grow up and come to study at one of my universities; I work in several institutes. My major occupation is at the Moscow Physics and Technical Institute where I chair the Discrete Mathematics department in the Innovations and High Technologies Faculty, which has already become one of the country’s leading faculties in computer science and mathematics. But I also teach at Moscow State University, which I love, and at the joint Bachelor’s program at the Russian Economic School and the Higher School of Economics. And also in the Master’s degree program at the School of Data Analysis at Yandex.

Does that mean you are willing to search for gifted students and develop them by yourself?

– Actually, I’ve always had projects related to school students. It turns out that I am very good at teaching mathematics to children. And, of course, if there is an additional educational platform - especially one as good as the Sochi Centre to implement my projects - I seize the opportunity. But my global aim is to establish an educational line from school to university, and then up to post-graduate studies. At Yandex I have a department where we conduct research, and I am also Chair of the Moscow Physics and Technical Institute. Through all of that, we can create really interesting science.

– You spent a few days in ‘Sirius’ during the June term, whereas your principal term was in July.

– My global aim is to establish an educational line from school to university, and then up to post-graduate studies. My major occupation is at the Moscow Physics and Technical Institute. Through all of that, we can create really interesting science. My children ‘Sirius’ also held lessons for students from School No. 57, whom we also worked with. I like to show the children the beauty of various mathematical patterns. Not through lectures, as I usually do in the school near Kostroma, I like them to implement scientific projects by themselves. It’s a relative concept, of course. These are problems of an advanced, almost scientific, level that are usually set during Olympiads that students are capable of solving. These problems are a test of complicated tasks that one deals with in university. But, at the same time, they should be within reach for any advanced school student that we select.

– What is your impression of the children there?

– They were 9-11th grade children who had got good results at the advanced mathematics Olympiads, such as the All-Russian Mathematical Olympiad. I like to show the children the beauty of various mathematical patterns. Not through lectures, as I usually do in the school near Kostroma, I like them to implement scientific projects by themselves. It’s a relative concept, of course. These are problems of an advanced, almost scientific, level that are usually set during Olympiads that students are capable of solving. These problems are a test of complicated tasks that one deals with in university. But, at the same time, they should be within reach for any advanced school student that we select.

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– And what about informatics?

– To a lesser extent I have another school that operates twice a year in February and August, near the town of Kostroma. It combines mathematics and informatics, whereas the Sochi Centre is mostly focused on pure mathematics, primarily the discrete form. Naturally, we try to engage the children with combinatorics, but that’s not all. There are other areas.

– In what way do your lessons differ from those conducted by other mathematicians?

– Between June 1-4, I was engaged with the Russian national mathematics team. And later, during the second July shift, with my children ‘Sirius’ also held lessons for students from School No. 57, whom we also worked with. I like to show the children the beauty of various mathematical patterns. Not through lectures, as I usually do in the school near Kostroma, I like them to implement scientific projects by themselves. It’s a relative concept, of course. These are problems of an advanced, almost scientific, level that are usually set during Olympiads that students are capable of solving. These problems are a test of complicated tasks that one deals with in university. But, at the same time, they should be within reach for any advanced school student that we select.

One of the aims was to collect students from the whole of Russia – from Moscow and from the numerous regions, where there are leaders that we communicate with.

– And what are these regions?

– There are many of them: Yaroslavl, Kirov, Maykop, Novosibirsk, Omsk, Ekaterinburg. We are open to everyone. We accept students that meet certain requirements.

The Sochi Centre has received children and teachers from ordinary, not just elite, schools. But there are many children who, for whatever reason, do not get into the All-Russian Olympiad, but still seek to resolve complicated problems.

– If a gifted student doesn’t make it into the All-Russian Olympiad, how can they be discovered?

– I don’t think I can answer that question because I mostly dealt with the Olympiad’s winners. The selection is carried out by assessing problem-solving results that meet certain standards. It’s also necessary to promote good teachers.

There is a need to develop regional centres, supporting initiatives to develop school students. This should be done in association with known regional leaders.

– Could you name some talented teachers in the regions?

– Of course. Aleksandr Shtern from Omsk, Daud Mamiy from Maykop, Vladimir Dolnikov from Yaroslavl, Igor Rubanov from Kirov and many others. But also there are those who are still unknown, they need our support.

I am pleased that the Sochi Centre has established an excellent platform for teachers to meet strong students, showing them interesting problems and encouraging them to join this business. This place is really wonderful!

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Interview by Natalia Ivanova-Gladilshchikova
Sochi welcomed 62 student teams from 28 Russian regions. The competition was held in two age groups: the younger group (up to 9th grade) and the seniors (10-11th grades). This year’s tournament differed from previous years, as we learned from competition co-ordinator Igor Rubanov (Candidate of Physical and Mathematical Sciences, Deputy Director of the Centre of Supplemental Education for Gifted Students in Kirov, Coordinator of the Euler Olympiad - the Ural tournaments for young mathematicians and other events designed for gifted children). The competition was held for the first time in Sochi, at the ‘Sirius’ Educational Centre. In what way does this tournament differ from those held in other places?

- The Kolmogorov tournament has already been held in various cities in Russia: Moscow, St. Petersburg, Omsk, Yaroslavl and many others. Owing to a lack of sponsors, it has always been held on a subscription basis. Last year, participation cost 17,000 rubles but in Sochi it was free of charge. And that, along with excellent accommodation and catering, made it different from tournaments in previous years.

- How was the tournament conducted? The teams arrived and competitions began?

- Not at all. It began three days prior to the Cup starting when members of the Methodological Commission arrived in Sochi. We had to prepare versions of problems for two Olympiads – team and individual – and to start working on versions of mathematical competitions. Later, the children came and we started to play.

- Playing?

- Yes, a maths contest is a game. Soon after the opening on October 31, the children played ‘abaka’ - also known as ‘mathematical poker’. It’s a dynamic and interesting game. The next day there was the team Olympiad. On the basis of those results, the teams are further split into leagues, to divide the children into groups of comparable levels. The strongest go the senior leagues, which are then followed by the first and second ones. Each league involves eight to twelve teams of six students.

- Does a team represent a region?

- Not necessarily. They may be a circle, school, and region. For instance, there is a team from Petrozavodsk, three from the Krasnodar Region and the head of the team is from St. Petersburg. In a word, there may be different configurations. If it were my decision, there would be more teams. But no more than 66 of us could come to ‘Sirius’. The selection, of course, was conducted fairly – the children first took part in the selection Olympiad.

- Who turned out to be the strongest?

- In the senior group, they were the Yaroslavl and Kurgan teams. In terms of problem solving, the best results came from the Moscow team of 11th-grade students, bearing in mind that the majority of the St. Petersburg team members had gone to the “Baltic Way” Olympiad. But in the group tournament the Moscow team lost to Yaroslavl, with nine problems resolved against six, due to tactical errors in the game.

- Is it true that the mathematical tournament is the most important in Russia?

- It’s not for me to say. I think in terms of the level and representation, it is. But, in terms of the leading teams’ strength, it is comparable to the less wide-scale Southern Tournament held in Orlyonok.

- Are you keeping track of the children who succeed in the mathematical tournament?

- Teachers already know this group of children. They become known even earlier: following the Euler Olympiad and after summer schools.

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- Teachers already know this group of children. They become known even earlier: following the Olympiads and summer schools.

- Did the children have an opportunity to get some rest in Sochi?

- Yes, from November 4–7, some of the children went on tour to Krasnaya Polyana, and the rest played football, volleyball, ping-pong... The program also included visiting the Olympic rink. In addition, the children played the ‘What? Where? When?’ game.

At weekends, students could go to lectures in other divisions. Also it is most gratifying that we were able to bring to Sochi students who’d participated in previous Kolmogorov Cup tournaments. They helped us a lot.

- And was the specialized Kolmogorov educational-scientific centre represented?

- Yes, a maths contest is a game. Soon after the opening on October 31, the children played ‘abaka’ - also known as ‘mathematical poker’. It’s a dynamic and interesting game. The next day there was the team Olympiad. On the basis of those results, the teams are further split into leagues, to divide the children into groups of comparable levels. The strongest go the senior leagues, which are then followed by the first and second ones. Each league involves eight to twelve teams of six students.

- Does a team represent a region?

- Not necessarily. They may be a circle, school, and region. For instance, there is a team from Petrozavodsk, three from the Krasnodar Region and the head of the team is from St. Petersburg. In a word, there may be different configurations. If it were my decision, there would be more teams. But no more than 66 of us could come to ‘Sirius’. The selection, of course, was conducted fairly – the children first took part in the selection Olympiad.

- Who turned out to be the strongest?

- In the senior group, they were the Yaroslavl and Kurgan teams. In terms of problem solving, the best results came from the Moscow team of 11th-grade students, bearing in mind that the majority of the St. Petersburg team members had gone to the “Baltic Way” Olympiad. But in the group tournament the Moscow team lost to Yaroslavl, with nine problems resolved against six, due to tactical errors in the game.

- Is it true that the mathematical tournament is the most important in Russia?

- It’s not for me to say. I think in terms of the level and representation, it is. But, in terms of the leading teams’ strength, it is comparable to the less wide-scale Southern Tournament held in Orlyonok.

- Are you keeping track of the children who succeed in the mathematical tournament?

- Teachers already know this group of children. They become known even earlier: following the Euler Olympiad and after summer schools.
On November 17, some 100 participants of the experimental physics Olympiad 'IEPhO-2015' learned lots of new information at a masterclass called 'The Game of Bosons: identification of Z, W and Higgs bosons through the use of experiment data from the Large Hadron Collider'. The day before, the young physicists watched a documentary – 'Particles Passion'. Then, the participants were able to apply the knowledge from that film in practice.

The introductory lecture was delivered by Ivan Belotelov (Candidate of Physical and Mathematical Sciences and Senior Research Associate at the High Energy Physics Laboratory at the United Institute of Nuclear Research in Dubna).

He told the children about the arrangement of collider experiments, about detectors, about the way collisions are performed, and how the search for new particles is done. Ivan Belotelov is one of the team conducting the 'Compact Muon Solenoid' experiment at the Large Hadron Collider at CERN in Geneva.

Following the theoretical introduction, the children proceeded with practical studies. They were given an opportunity to do a physical analysis by using real data obtained from experiments on the Large Hadron Collider. The young physicists learned to classify events, compile and analyze data on types of particles and their masses, and also obtain information on methods used in contemporary elementary particles physics. Finally, their conclusion: discovering a new particle.

The competition involved 200 7-11th-grade students from 15 southern Russian regions. The participants underwent a serious selection procedure, which coincided with the selection for the Southern District term on mathematics. The organizers observed that the Caucasus mathematical Olympiad is likely to give additional impetus to the development of the Olympic movement in Russia's southern regions. The competition is expected to unite gifted students of maths, not only in Russian regions, but also in the CIS countries.

'Sirius' held an intellectual stand-up show called 'Science Slam'. During 10-minute performances, the 'slammers' talked about their scientific research in a simple, clear and interesting way. Today, this is one of the most-progressive means of science dissemination around the world.

In Russia, similar events have already been held in 19 cities. On September 26, 2015, the first all-Russian Science Slam was conducted in Samara. Of the five who made the finals, four came to 'Sirius' to give presentations to the centre's students.

The children became acquainted with the scientific research by Yakov Medvedkov from Samara ('Chemistry is awesome'), Mikhail Yamburov from Tomsk ('Witches' brooms and other forest mutants'), Dmitry Ponomaryov from Ekaterinburg ('3D printers instead of factories') and winner Vitaly Vasyanovich from St. Petersburg ('How to catch a liar').

'Sirius' 'Science Slam' became possible owing to the centre's cooperation with the Festival of Contemporary Scientific Films – a partner in the all-Russian Science Slam Association.
Pavel Chulkov

“OUR AIM IS TO SHOW TEACHERS FROM THE REGIONS WHAT WE CAN DO AND TO LEARN SOMETHING FROM THEM”

Pavel Chulkov (Deputy Director of the Moscow Physics and Mathematical School No. 2007, Associate Professor and Chair of Elementary Mathematics and Methodology of Teaching Mathematics at the Moscow State Pedagogical University) brought his students to the ‘Sirius’ Educational Centre. This school, despite its location in the so-called ‘sleeper’ community of South Butovo, triumphs in many topical Olympiads.

– How many students from your school came to ‘Sirius’?

– We brought 56 children from the 9th, 10th, and 11th grades. And we now hold lessons on mathematics, physics, informatics, and some general subjects.

Besides us, the current term at ‘Sirius’ involves the St. Petersburg Physics and Technical School Lyceum (founded by Nobel prize laureate Zhores Alferov) and some 50 students from a number of regions (Arkhangelsk, Murmansk, Khanty-Mansiysk, Krasnoyarsk), who had achieved sufficient results in the Olympiads.

– Are those the famous regional schools that prepare students for participation in Olympiads?

– Some of them are famous, others – less so. During selection we were mostly focused on children, not on schools. The children must show what they can do.

– Do you cooperate with regional students and teachers?

– Of course we do. Both our teachers and those from St. Petersburg give lessons to regional students and share their experience with teachers from the provinces. The children who come from the regions have different levels of preparation and, therefore, the most difficult task is to create more-or-less homogenous groups. For instance, with informatics, groups were formed on the basis of their acquaintance with programming, usually regardless of that child’s grade.

– What does a stay in ‘Sirius’ mean to you?

– For us, this is an opportunity to deeply involve the children in mathematics, physics and informatics, while enjoying most comfortable conditions.

– Do teachers from the St. Petersburg Lyceum give lessons to your children?

– Yes, of course. We do an exchange: their teachers give lessons to our students on physics, Russian language, literature, and ours study maths with their children. In addition, our students had the opportunity to work with invited maths teachers – Sergey Dvoryaninov (Moscow), Oleg Ivanov and Alexandr Khrabrov (St. Petersburg), and also with the World Art teacher Natalia Solenkova (Moscow).

– Do you cooperate with regional teachers?

– Of course. These are good teachers from strong schools. Some of them give lessons, some attend them. Our aim is to show teachers from the regions what we can do and to learn something from them.

– How were you able to create such a strong school in a ‘sleeper’ community from Moscow?

– This is a regular mathematical school that admits not only ‘brilliant’ students, but also those with abilities. We start accepting children from the 5th grade when their abilities are not yet noticeable. Two to two-and-a-half students compete for one slot, while other mathematical schools could see competition between 10-12 persons for one slot. But, eventually, we show comparable results.

– Is it because you develop your children from the 5th grade?

– Yes, it is. In fact, the majority of children have mathematical abilities. And those abilities have to be developed because they are strategic resources that are even more important than oil and gas. If we fail to do so, this country will have no potential for development.

Also it is important for teachers to work as one team, pursuing their common goal, cooperating rather than competing with each other.

– In what way, in your view, can ‘Sirius’ benefit the children?

– ‘Sirius’ is a very important educational resource. It helps all those who come here. Children find themselves in comfortable conditions and have every opportunity to do their studies without external temptations. For instance, athletes enjoy excellent conditions for training and studying various subjects. They do not have to waste their time travelling as they have everything in one place. I used to work in a sports school where the children had to travel and, for a long time, stay out of school. While here, everything is close and of good quality. Besides, there is plenty of communication with famous scientists, athletes, artists, and the marvellous nature: the sea, mountains, fresh air.

Interview by Natalia Ivanova-Gladilshchikova
In November and December, the ‘Sirius’ Educational Centre provided a platform for the Festival of Contemporary Scientific Films. The mission was to engage a wide audience with science and stimulate interest towards popular scientific lectures and literature.

“Programs shown in both terms depended primarily on specific topics’ objectives, because they gathered children studying the same topic. Besides, we tried to select films that are not only informative and educative but also those that help expand human consciousness and give inspiration. These films should be of interest to a wide audience, not only to science students; they should have authentic aesthetical value and be able to amuse the audience,” said Festival Director Ekaterina Khaustova.

On the choice of films for showing at ‘Sirius’, Festival Program Director Irina Belykh add, “In selecting films, we aimed to show various kinds of scientific movies to the children, should they become interested not only in physics, but also in its popularization; they should learn of the tools to convey their knowledge to a wider audience in a simple and clear format.”

The Festival was purposely scheduled to run in the autumn: at the end of October, Russia’s higher educational institutions launched films about great scientists and their discoveries. The students from ‘Sirius’ supported the all-Russian movement which brought together more than 100 educational institutions. “We are greatly pleased and honoured to be involved in film show for gifted children at ‘Sirius’,” said Ekaterina Khaustova.

The FESTIVAL OF
of contemporary scientific films

In a play format, this popular science film showcases quantum physics. During a break in a hockey match, a group of guests at a recreation centre discuss the arrangement of the atom.


The makers of Particles Passion depict research from six brilliant scientists at the Large Hadron Collider, who tell us about the launch of the most-ambitious and expensive experiment of the planet. As they attempt to resolve the mysteries of the universe, a total of 10,000 scientists and engineers from 100 countries unite their efforts for one common goal: to reconstruct the ‘Big Bang’. Their aim is to find the Higgs boson and to understand what the world is based on. And they raise an even-more complicated question: have we reached the limit of our understanding of human existence?

“PARTICLES PASSION” (DIRECTOR MARK LEVINSON, USA, 2013).

The film takes the audience on a trip around the world with a group of renowned mathematicians, including Cedric Villani (Fields Medal Laureate 2010), describing the way in which mathematics changed the world for the better and - sometimes - for the worse.

“How I Got to Hate Mathematics” (DIRECTED BY OLIVIER PETTON, FRANCE, 2013).
HOCKEY

Among the centre’s first hockey players were young athletes from the best sports teams selected on their results in all-Russian and regional competitions.

Regular studies and masterclasses are delivered by Russian and international hockey stars, players from the Continental Hockey League, the country’s best coaches and representatives from the strongest tournaments.

The centre conducts training and competitions at the Shayba ice arena and the small training ice arena – both Olympic legacy facilities. This gives young athletes access to ice cover of the highest global standards.

The ‘First Ice’ program allows young artists, physicists and mathematicians to learn what it feels like to be real athletes and to master a new skill in ice skating, while improving their confidence on the ice. In performing this complicated task, the children are helped by experienced coaches and get the support from the young hockey players and figure-skaters training at ‘Sirius’, who are already accustomed to the ice.

“I looked forward to visiting the Olympic rink because I like figure-skating and have always dreamt of learning to do what figure-skaters can do. We were given skates and divided into groups. Those who could not skate well were offered helmets. It was an incredible feeling to be in this enormous arena because, only a few days before, we had been there to watch world champions play hockey!”

ANASTASIYA VASILYEVA, 15, science student

“...The kids enjoyed the First Ice program. Those who could not skate learned to do it, or at least had a go. And those who could – for instance our guys from Novosibirsk - were eager to help the first-timers. On the whole, First Ice was great fun and very useful. We would like to take part in such projects in the future."

MARIA RASHIDOVNA ULDASHEVA, Teacher at the Specialized Educational and Scientific Centre at Novosibirsk State University
On September 1, 'Sirius' held a friendly match for the opening of the centre between a team from 'Sirius' and 'Hockey Legends' including national hockey stars led by the Russian president. Together with Vladimir Putin, the team included Vyacheslav Fetisov, Pavel Bure, Velery Kamenisky, Aleksandr Ovechkin, Evgeny Malkin and many other premier players.

The 'Sirius' team was made up of young hockey players from Tatarstan and Yakutia.

The young team had a hard time against the champions, but kept battling fighting victory. It was a memorable game, not only because of its legendary participants, but also thanks to a few practical jokes. During one quarter, Vyacheslav Fetisov lay under the puck which a 'Sirius' team player was trying to hit. And, and in another quarter, Pavel Bure - pretending to be an awkward first-timer - directed the puck towards his own goal. The hockey friendly saw the legends win 9-5. Team captain Vladimir Putin thanked his rivals for the match and congratulated everyone on a brilliant game.
On October 6, the centre’s Shayba small ice arena held a hockey match between ‘Stars of the Night Hockey League’ and ‘Sirius’. The match ended with the ‘Stars of NHL’ winning 7-3.

The ‘Stars’ team consisted of two-time Olympic Champion, five-time World Champion and Canada Cup winner Aleksey Kasatonov; Olympic and three-time World Champion, Goodwill Games winner, Stanley Cup holder and Triple Golden Club member Valery Kamensky; two-time Olympic and eight-time World Champion and USSR Super Series participant Vladimir Lutchenko and many other famous hockey players.

The match was attended by Aleksandr Yakushev - two-time Olympic and eight-time World Champion, USSR Super Series participant and Night Hockey League president. The ‘Sirius’ team was made up of young hockey players born in 2000 and 2001, representing the “Olympia” (Irkutsk Region), “Yeti” (Great Novgorod) and “Rubin” (Tyumen Region) hockey clubs.

The ‘Sirius’ team was supported by young hockey players not included in the centre’s team, together with future ballet dancers, musicians, figure-skaters, physicists and mathematicians. Thanks to the ‘Sirius’ musicians, the audience enjoyed wonderful music during the break, with the traditional ‘ole-ole-ole’ performed with trumpets and saxophones.

‘SUNRISE-2’ TEAM CHOREOGRAPHER: “WE ARE SO HAPPY THAT THIS CENTRE HAS A SPORTS DIVISION. WE ARE STILL IN HIGH SPIRITS; THE GIRLS KEEP REMEMBERING YOU SO WARMLY. ON BOARD THE PLANE THEY SAID: “HOW ABOUT RETURNING?” THANKS TO ‘SIRIUS’ THEY HAD A UNIQUE OPPORTUNITY TO TRAIN IN SUCH EXTRAORDINARY SPORTS ARENAS. THIS INSPIRED THE WHOLE TEAM TO DO A REALLY GOOD PERFORMANCE WITHOUT FEAR. YOU HELPED US TRAIN. FIVE NEW GIRLS WHO HAD HAD NO EXPERIENCE OF WORKING IN THE TEAM”.

WATCHING THE CHAMPIONS SKATING

From September 7–15, the Russian national figure-skating team performed at the centre’s Shayba small ice arena. ‘Sirius’ students watched Yulia Lipnitskaya, Adelina Sotnikova, Yuku Kavagu, Aleksandr Smirnov and many other famous figure-skaters.

HOW ‘SIRIUS’ HELPED ‘SUNRISE-2’

On November 7–8, Moscow held the First Stage of the Cup of Russia for synchronised ice skating. There was a flawless victory for St. Petersburg’s ‘Sunrise-2’ team which trained at the ‘Sirius’ Educational Centre in October. Currently, the children are preparing for the Championship of Russia.

STUDENTS OF ‘SIRIUS’ WATCHED THE ‘CARMEN’ ICE SHOW

In the summer and autumn, ‘Sirius’ hosted Ilya Averbukh’s famous ice show ‘Carmen’, which was watched by all of the centre’s students. Choreographer Aleksey Zakharshenko, who’s also appeared in TV’s Minute of Fame, Dance Everyone and Dance on the First Channel gave a masterclass on contemporary dance styles for the ‘Sirius’ figure-skaters.
The young figure skaters at ‘Sirius’ in the autumn – winners of the all-Russian sports competitions and tournaments, members of regional teams, gifted students of sports schools – had the privilege of receiving training from Olympic champions, Honoured Masters of Sports and the country’s best coaches.

ALEKSANDR GEORGIEVICH GORSHKOV

Olympic Champion, multiple world and European champion, Honoured Master of Sports, President of the Russian Figure Skating Federation.

VIKTOR NIKOLAEVICH KUDRYAVTSEV

Member of the Moscow President of Figure Skating Federation and Member of the Coach Council of the Russian Figure Skating Federation.

Figure skating is like painting figures with skates. Elements become come easier as soon as the figure-skater masters the sliding technique.

In figure skating all turns are done with the head, shoulders, body, hips and the free leg; the skate is the last to participate in the move. All these must be instilled in the athlete during the first stages of training, otherwise you can forget about getting results.

1. Learning a one-turn jump is only possible once the child is able to accurately do arcs and the required three turns. One can teach double jumps only if the child can faultlessly perform a one-fold jump.

2. When turning, it’s very important to teach the child to keep their arms in position, because positions mean balance.

3. When children first start figure skating, it’s best to undertake general physical exercise for all muscle groups to harmonize every part of the body and to ensure good coordination and muscle mass growth.

4. I am sure that many mistakes can be eliminated if coaches pay attention to base sliding and develop the jump technique precisely through arc and turns technique. Coaching success lies in the ability to spot mistakes and knowing how to correct them, and also to train to the child to perform technically complex elements.

5. In December, children from two Novosibirsk schools and a school in the town of Berdsk (Novosibirsk Region) had the chance to train with legendary coach Elena Chaykovskaya, during which the coach paid attention to every mistake and detail. She explained where the hands should be positioned, and demonstrated how to accurately turn the legs and to gracefully raise the head. “Everything done between jumps is what figure skating is all about. Otherwise it’s only jumping on the ice,” remarked Chaykovskaya on the aesthetics of the sport.

ALEKSEY EVGENYEVICh URMANOV

Russia’s Honoured Master of Sports, Olympic Champion, Russian figure-skater and coach.

ALENA ANATOLYEVNA CHAYKOVSKAYA

Master of Sports in figure skating, USSR champion in singles skating, Honoured Coach of the USSR and Russia, Honoured Master of Arts of Russia.

VIKTOR KUDRYAVTSEV’S TOP FIVE COACHING TIPS

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Renewed Soviet hockey player, coach and social activist Vladislav Tretiyak opened his speech by explaining why he decided to become a goaltender. His reason was simple: everyone wanted to be forwards; therefore, the goalie’s gear was easy to find. “We lived under different conditions, the hockey gear was hard to get, and there were no centres like this. This country provides everything for you now,” said Tretiyak.

Vladislav Tretiyak
and Nikolay Valuev

TALKED TO THE ‘SIRIUS’ STUDENTS ABOUT THE SECRET OF SUCCESS
In October, ‘Sirius’ was visited by the hockey legend Vladislav Tretiyak and the heavyweight boxer Nikolay Valuev. The young hockey players and figure skaters were delighted to meet and talk with the sports stars. Among other things, the children discussed their dreams, victories and failures while studying at ‘Sirius’. They asked questions about their future careers, the secret to success and about the lives and careers of their special guests.

The right attitude is most important. Both athletes and musicians have to prepare themselves for a performance. Usually, I stopped talking two hours before a game. I would sit in the changing room, meditating and remembering the best moments.

VLADISLAV TRETIYAK

Nikolay Valuev encouraged the young athletes by telling them, “only the best athletes can get here, and you have already taken a very important step, not through external promotion, but because you turned out to be better than others.”

NIKOLAY VALUEV

Visiting sports giants Vladislav Tretiyak (left) and Nikolay Valuev were highlights at Sirius.

Only the best athletes can get here, and you have already taken a very important step, not through external promotion, but because you turned out to be better than others.

The sportsmen also offered valuable advice and answered the children’s questions. “The right attitude is most important. Both athletes and musicians have to prepare themselves for a performance. Usually, I stopped talking two hours before the game. I would sit in the changing room, meditating and remembering the best moments,” said Tretiyak. They also recounted some amusing stories. Vladislav recalled an incident during the USSR-Canada Super Series when a foreign journalist wrote about the Soviet hockey players having no chance of defeating the Canadians. He promised to literally eat his words if the Russians won even a single game. The next day, the journalist had to make good on his promise – although, the paper was shredded and sprinkled onto his meal. The legendary goalkeeper ended his speech by encouraging the young hockey players, “only through great effort and challenges can you achieve great victories.”
Tatiana Tarasova and Tamara Moskvina
GAVE INVALUABLE ADVICE TO THE ‘SIRIUS’ STUDENTS

‘Sirius’ students met with the eminent figure skating coaches Tatiana Tarasova and Tamara Moskvina. They answered questions not only from the young figure skaters, but also the mathematicians, athletes, musicians, and dancers. They discussed their favourite occupations, talent, perseverance and the other qualities of a champion. Tatiana Tarasova and Tamara Moskvina gave the students invaluable advice.

The coaches suggested that children pursue their ideal careers, so that work can feel more like a hobby and bring them real satisfaction because that can increase their chances of success. Tamara Moskvina believes that, although each victory is a personal athletic achievement, there are many other factors involved: parents, coaches, country leaders.

Tamara Moskvina is convinced that, along with talent and hard work, curiosity plays an important role in professional development. “Never miss those small pieces of information that can help you fulfil your dream. Sometimes good luck can introduce you to the right people who can help or give advice. Don’t waste your time sitting down and just reading books – communicate with people”.

On the qualities required of a champion, Tatiana Tarasova mentioned the significance of innate abilities, hard work, patience, and stamina. Tamara Moskvina added that even someone with less ability but with the strong desire to become the best, can achieve high results. As an example, she mentioned Elena Bechke who performed in doubles skating with Denis Petrov and who won the silver Olympic medal in Albertville in 1992 (as part of the united team) and became an Honoured Master of Sports of the USSR (1992).
TEACHERS
On October 5, the ultimate winner of the 2015 all-Russian ‘Teacher of the Year’ was announced. It was history and social studies teacher Sergey Kocherezhko from Samara. After the event, the country’s 15 best teachers were invited to the ‘Sirius’ Educational Centre for gifted children. They took part in a series of discussions, round tables, open lessons and masterclasses.

On October 8, the centre held a gathering of the competition winners and the Russian president (and Chairman of the Talent and Success Foundation) Vladimir Putin, which covered the issues and problems in the country’s education.

Particular attention was paid to child development regarding the ‘Sirius’ students outside the specialized and general education programs. That’s what makes ‘Sirius’ so unique – bringing together students of various disciplines: sports, arts and science.

I would like to begin by congratulating you on the recent Teacher’s Day and, of course, on your victory in such a prestigious competition as Russia’s Teacher of the Year 2015.

As you may know, we hold these meetings regularly, and I am especially pleased that today we have gathered at the Sirius centre for training gifted children. Of course, we should consider - and are considering, as I hope you can see - the development of the education system. This is reflected primarily in the resources allocated by the state for these purposes.

Compared to 2005, our spending on general education has grown four-fold, amounting to 1.4 trillion rubles in last year’s consolidated budget. That is a significant amount.

The conditions you and your colleagues work in are very important. In 2006, no more than 40% of educational establishments met requirements, whereas now that share is up to 90%.

With regards to teachers’ salaries. You know better than me that, without a proper salary, there is no way we can raise the prestige of being a teacher, of the profession in general, which is undoubtedly the most-important in any society, including ours.

If we look at 2005 again: the average salary was 6,500 rubles, which was 77% of the national average. Now, over the past year we have created conditions where the average salary of a schoolteacher is 8% higher than the national average - amounting to 35,000 rubles.
TEACHERS

2015 Teacher of the Year winner Sergey Kocherezhko, history and social studies teacher at Gymnasium No 1 in Samara

AUTUMN 2015

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You and I know very well that there is a significant difference between the regions — I refer to the average figure but, nevertheless, it exceeds the national average by 8%. I know there is never enough money, that’s very important, but to pass on knowledge, though we often say this now, meaning the objective indicators. Now 98% of all rural schools have the opportunity to use the service. However, there are other positive things in the development of school education.

At the same time, naturally, any large system has its problems and extra things that need to be done: we need to develop the system of education and help our teaching corps.

Let’s consider that, especially now that we have gathered at such a unique educational establishment as this centre to support talented children. We have many of them: very many people who can and want to make great strides in their profession and take part in their country’s affairs. Undoubtedly, you can do a lot to support these kids in their development in these areas.

Source: krem.ru

HOW TO MAKE A RUSSIAN SCHOOL ONE OF THE BEST IN THE WORLD?

WITH MAJOR CHANGES

“Sirius” held a round-table discussion between the winners of the all-Russian “Teacher of the Year” competition.

How can a teacher contribute to development of their students? How can they create favourable conditions for gifted students in the regions? Why are gifted children an “at risk” group? These and many other issues were discussed by the all-Russian “Teacher of the Year” finalists at the “Sirius” Educational Centre in Sochi. The discussion was led by Mikhail Sluch, Head of the Sirius Science Division and 2010 “Teacher of the Year” winner.

All children have abilities...

Mikhail Sluch began the discussion saying, “We believe that all children have abilities, but some have manifested their talent, while others haven’t. Therefore, today, the issue of gifted children is an issue of school efficiency. While previously we used to say that schools lacked equipment, now there is plenty of it, and schools are better financed”.

His introduction was followed with the question: What is key to determining and developing abilities?

The Teacher of the Year finalists of believed that, for a child to manifest his or her abilities, large schools need to have suitable conditions: plenty of platforms, groups, extra-curricular activities. However, that’s still not enough. There is the need for a network of projects that unite the efforts of schools and teachers in the regions across the country. Children also require opportunities to become successful. Only then can they keep pursuing their goals.

In addition, we must remember that a gifted child is different from the norm. Other children usually feel uncomfortable communicating with them and vice versa. There are cases when young people, after successfully graduating from school and winning many Olympiads, find themselves completely unaccustomed to life, unable to communicate with others. These children should receive additional support to boost their communication skills. This should be done alongside developing their intellectual abilities.

CHILDREN REQUIRE OPPORTUNITIES TO BECOME SUCCESSFUL ONLY THEN CAN THEY KEEP PURSUING THEIR GOALS.

There has been a lot of talk about integrating supplementary and compulsory education. A child who’s not particularly successful in maths may take an interest in something else, such as a history re-enactment society, as was the case with Oleg Katrenko, a history teacher from St. Petersburg, who’s established such a program at his school. Oleg runs another project called ‘Visiting the City’. He invites representatives from St. Petersburg’s cultural community to the school. After watching presentations, the children become interested in research and conduct their own projects. And everything starts with such gatherings. It’s also important to organize discussions with successful graduates. One renowned winner of a history Olympiad from St. Petersburg made such a deep impression on one senior-grade student that she went on to win the all-Russian Olympiad the following year.

On integrating supplementary and compulsory education, Mikhail Sluch observed that ‘Sirius’ is different from ordinary schools: “The major share of our education is taken by supplementary disciplines. In fact, children come here to study....
It’s easier to address this problem in capital cities – Moscow and St. Petersburg. Oleg Katrenko said his school invited university teachers to teach supplementary subjects. They are willing to teach at school, and children can benefit a lot from their lessons.

Below is the story of Marina Gorbaneva, a teacher from Kalmykia.

— Although Elista is a capital city, we do not have such stuff, only school teachers are available. I look for information on the Internet to offer something interesting to the children. Last year, I read about St. Petersburg Polytechnic University’s ‘From Ideas to the Factory’ program. And I suggested that the children participate in it. Interestingly, some of the children who agreed to take part were those who were failing in lessons – for being too shy or getting poor results. One boy who wasn’t keeping up in class put forward the idea of a rescue system for a drone aircraft. The Polytechnic University liked it, and the boy was fired up by the project. As time passed, he took the Single State Examination and got into the university. In this case, a school teacher and the Internet were enough.

Olga Korchagina, a teacher from the Perm Region believes that, in today’s world, a teacher is a manager who tries to build links between gifted school students.

However, it’s now clear what the prize was awarded for: neutrino zero mass has been identified. But are there enough teachers who are capable of explaining this? What abilities, qualities and knowledge are required of a teacher to deal with gifted children? The majority of participants agreed that, in dealing with gifted children, the teacher is not enough. However, it’s often the case that no one else can be involved.
One must resist the temptation to tell everyone that it was they who discovered a gifted child. At some point, you have to hand the child over to the right person to continue their development. Each teacher has to overcome that barrier. One idea that was voiced: we work for the child’s sake and they require all necessary conditions.” Also there is a need to abandon formal advanced training courses. And, as a counter to the traditional system, to develop an interactive form of teacher training, to create an environment within which they can communicate. Such network projects already exist.

On the whole, we should let go of formal stuff. A gifted child should create their own educational program, determine what they need and decide where to look for knowledge. Some subjects can be studied in absentia (as per contemporary standards) or as an extern. The child can then have the time to develop their abilities.

Here’s how History and Social Studies teacher Anna Sheliya from Yaroslavl imagines cooperation between schools and educational centres in developing gifted children:

– Like universities, schools should introduce a system of accreditation and academic mobility. How else can a youngster from Yaroslavl make use of a super telescope from the Saransk museum for gifted children? Obviously by going to that particular lyceum. Or, when a child returns from ‘Sirius’ with certain grades, the teacher should not load them with ordinary assignments.

Sergey Kocherezhko concluded by saying, ‘Sirius was a great discovery for me. There is the need to create a unified record with all information on centres working with gifted children, and of various events devoted to such children. A unified database should be set up that will be available to all teachers and students.’
In September, the ‘Sirius’ Educational Centre held a workshop for maths teachers – ‘Preparing students for the Single State Examination on specialized subjects and for mathematical Olympiads: contemporary methods’.

Among the lecturers were representatives from the Federal Commission for the Development of Control Materials on SSE in Mathematics, leading teachers from Russia’s mathematical schools who organise the all-Russian Olympiads and tournaments and who have considerable experience in dealing with students interested in maths: I.V. Yashchenko, I. M. Samoylov, I. R. Vysotsky, V. Z. Sharich, A. V. Shapovalov, O. S. Nechaeva.

The workshop acquainted the audience with modern techniques in specialized mathematical training for the Single State Examination and with specifics in teaching the theory of relativity at school. It also covered the initial training of 5-7th-grade students for mathematical Olympiads. In addition, the workshop dealt with the issue of psychological support for gifted children. In addition, audience members could take part in masterclasses on geometric fibration and on solving combinatorial maths problems.

TEACHERS AT DESKS

CONTEMPORARY METHODS OF PREPARATION FOR THE SINGLE STATE EXAMINATION

At ‘Sirius’, even experienced teachers can learn how to prepare students for Olympiads and the Single State Examination.

The participants discussed how to prepare gifted children for intellectual maths contests and how to plan educating in specialized subjects.

PHYSICS IN THEORY AND IN PRACTICE

The workshop observed the efficient combination of theoretical material and aspects of preparing gifted children for physics Olympiads with masterclasses focused on problem-solving in experimental physics.

THE INTEREST OF STUDENTS IN MATHEMATICS IS BASED ON MOTIVATION

There were many young teachers in the audience, indicating that the teaching profession is again attracting young specialists.

The workshop observed the efficient combination of theoretical material and aspects of preparing gifted children for physics Olympiads with masterclasses focused on problem-solving in experimental physics. More than 80 teachers took part in the ‘Motivating students studying mathematics and techniques to prepare for the final Examination’ workshop.

The lecturers were honoured education campaigners, PhDs, jury members of the all-Russian Maths Olympiad finals: N. N. Andreev, L. A. Emeljanov, D. K. Mamip, S. P. Konovalov, E. A. Shyryaev.

The workshop was primarily focused on how to teach solving geometry and algebra problems in the Single State Examination and Olympiads. The listeners observed the significance of methods for effectively motivating students to study mathematics in lessons and optional courses.

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PHYSICS IN THEORY AND IN PRACTICE

In November, a total of 85 physics teachers took part in a workshop on upgrading their professional skills. It was held as part of the experimental physics Olympiad in association with members of the Methodological Commission and the judging jury. The workshop included teachers from 25 regions of Russia, who came to ‘Sirius’ to expand their teaching skills in specialized subjects and in preparation for the physics Olympiads.


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‘Sirius’ develops contemporary programs for upgrading teaching skills. Regional teachers receive guidelines from the best teachers of Russia, representatives of institutes of higher learning, research institutes, and sector experts.

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ISSUES IN TEACHING GEOMETRY WERE DISCUSSED AT ‘SIRIUS’

‘Sirius’ conducted a workshop titled ‘Topical issues in teaching geometry in schools and separate aspects of in-depth mathematical education.’ They also looked at methods of teaching with non-standard issues and geometry problems in the Single State Examination and learned about new opportunities in using the programs ‘Geometry Expression’, ‘Live Geometry’, ‘Mathematica’ and ‘GeoGebra’.

Among the lecturers were representatives of the physics-mathematical schools of Moscow and St. Petersburg, including the Alferov Foundation grantees and winners of the Korchak awards, mathematics books authors, Honoured teachers of Russia: V. A. Ryzhik, K. M. Stolbou, P. V. Chulkov, O. A. Ivanov, V. B. Nekrasov, A. G. Zarembo, A. M. Kuznetsov, M. A. Dvorkin.

They discussed the teaching of algebra in secondary schools and issues of in-depth mathematical education. They also looked at methods of teaching with non-standard issues and geometry problems in the Single State Examination and learned about new opportunities in using the programs ‘Geometry Expression’, ‘Live Geometry’ and ‘GeoGebra’.
The centre’s educational program runs for 24 days and includes specialized studies and training (in-depth preparation in specific disciplines), as well as recreational activities, masterclasses and creative workshops and, throughout the year, general educational studies covering the school curriculum. The studies are run by leading teachers in sports, physics and maths, chemistry-biology schools and Russian arts representatives in music, classical ballet and visual arts. In addition, lectures and masterclasses are given by prominent athletes, arts experts, academics and professors from leading institutes of higher learning.

**The centre’s educational programs and travel to ‘SIRIUS’ are free of charge**