ANNUAL REPORT

NAZARBAYEV INTELLECTUAL SCHOOLS
Autonomous educational organisation 2018

PART 1

NAZARBAYEV INTELLECTUAL SCHOOLS AEO

The publication includes the illustrations of NIS students

Nazarbayev Intellectual Schools NIS

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…We need to speed up the development of our own cutting edge system of education for citizens of all ages. The key priority in curriculum development needs to be developing the ability to constantly adapt to changes and absorb new knowledge…

From President Nursultan Nazarbayev's address to the nation from 10 January, 2018, 'New Development Opportunities Brought by the Fourth Industrial Revolution'.

…The NIS system and relevant learning methodology need to become the sole standard for the mainstream schools. This will be the final stage in the school education reforms.

The assessment system needs to be based on international standards.

It is important to have career guidance performed as early as secondary school so that children could be oriented into jobs that enjoy the highest demand. These measures will provide for individual learning paths and lower workload on both the student and the teacher…

From President Nursultan Nazarbayev's address to the nation from 5 October 2018, 'Growing Welfare of Kazakh Citizens: Increase in Income and Quality of Life'

CONTENTS

INTRODUCTION

2018 was indeed a significant year for Nazarbayev Intellectual Schools Autonomous Educational Organisation: it marked its 10th anniversary.

A special event, Heirs of the Great Steppe students and teachers' forum, was held to celebrate this occasion. Among the guests was the **President Nursultan Nazarbayev**, who highly praised the work done by Nazarbayev Intellectual Schools.

In December 2018, the Supreme Board of Trustees **adopted a new NIS Development Strategy,2030.**

15 NIS schools receiving international accreditation from the Council of International Schools (Netherlands) served as a yet another testament to the high quality of our educational services.

The NIS Grade 12 Certificate received international acclaim: UK NARIC found it comparable to the internationally recognised qualification GCE A-Level, and Nuffic, to the VWO diploma qualification (NLQF 4+/EQF 4), while the Council of Ministers of Culture and Education of the Federal German States recognised it as a document granting direct entry to German universities, and the University of Cambridge and City University of Hong Kong, as one providing enrolment to undergraduate programmes.

Starting from 2018, **NIS graduates are entitled to enter** 3-year undergraduate programmes in ten of Kazakhstan's leading universities.

100% of NIS students enter leading universities within the country and abroad upon graduation.

The NIS experienced is being systematically disseminated to the country's education system.

CIS COUNCIL OF INTERNATIONAL SCHOOLS

UK NARIC

Nazarbayev Intellectual School of Physics and Mathematics in Semey
Askarbek Bota, 14 years
'Winter forest'

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CHAPTER 1. STUDENTS

1.1. NETWORK AND STUDENT POPULATION

As of late 2018, 20 NIS schools provided education to 14,376 students (see table), the International Schools of Astana to 1204 students, Republican Physics and Mathematics School to 1982 students (including 1146 in RPhMS Astana), NIS kindergartens in Taldykorgan and Astana to 166 children.

Table. NIS student population by grade (as of 20 December, 2018)

School	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	TOTAL
Astana PhM							120	156	152	201	136	201	**966**
NIS Astana							169	174	134	174	133	118	**902**
Aktau ChB							100	78	137	109	160	56	**640**
Aktobe PhM							144	79	159	131	87	76	**676**
Almaty PhM							144	140	140	142	88	244	**898**
Almaty ChB							95	91	163	153	319	114	**935**
Atyrau ChB							128	79	162	139	68	68	**644**
Karaganda ChB							135	82	149	145	79	79	**669**
Kokshetau PhM	67	62	62	63	50	46	75	72	123	78	71	95	**864**
Kostanay PhM							94	73	91	138	125	101	**622**
Kyzylorda ChB							120	79	116	102	104	158	**679**
Pavlodar ChB							100	80	114	112	121	118	**645**
Petropavlosk ChB							87	71	136	151	111	87	**643**
Semey PhM							100	81	151	122	64	109	**627**
Taldykorgan PhM	63	58	61	56	52	31	84	77	105	75	71	78	**811**
Taraz PhM							135	74	101	129	112	88	**639**
Uralsk PhM							114	79	130	119	67	71	**580**
Ust-Kamenogrsk ChB							88	74	130	110	100	75	**577**
Shymkent PhM							120	85	153	111	116	85	**670**
Shymkent ChB							120	95	166	102	72	134	**689**
Total	**130**	**120**	**123**	**119**	**102**	**77**	**2272**	**1819**	**2712**	**2543**	**2204**	**2155**	**14376**

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NIS dormitories host **2421** students.

The socioeconomic status of our students (as of 1 October, 2018):

- 2220 (15.4%) children from multi-children and low-income families;
- 2267 (16.3%) children from one-parent families;
- 515 (2%) children whose parents are pensioners;
- 275 (1.1%) children whose parents have disability;
- 40 (0.3%) children with disability;
- 31 (0.2%) children under custody;
- 1 child from an orphanage;
- 2525 (17.5 %) children from rural areas and small towns.

1.2. STUDENT SELECTION PROCESS

1.2.1. Grade 7 Student Selection

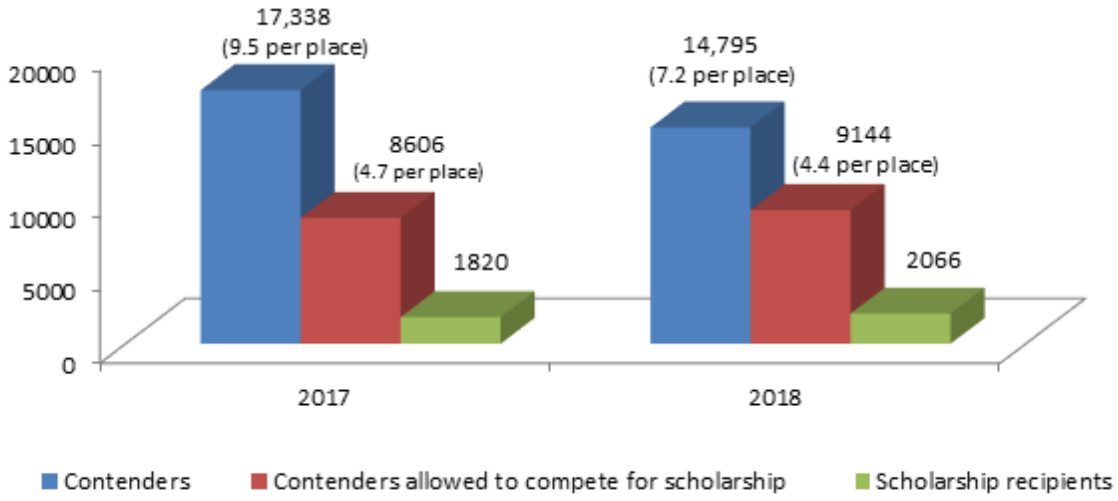
Testing both the subject knowledge and the functional literacy and language competencies of candidates, the NIS selection system allows for effective enrolment to grade 7 of students with aptitude to mathematics and natural sciences.

The selection system's compliance to international standards for procedural quality, integrity, transparency and security is ensured through the joint work of NIS and Cito (educational measurement institute, Netherlands).

In March, 2018, a total of 14,795 grade 6 contenders from comprehensive schools took part in the NIS selection. Of them, 2355 people received the Orken First President Scholarship (the Scholarship).

The selection participants amounted to 5.3% of the total number of the country's grade 6 students, with the largest contributors being Kyzylorda (7.7 %), Astana (7.6 %) and Atyrau (7.3 %) and the smallest ones, Taldykorgan (1.7%), Semey (3.1 %) and Kostanay (3.5 %).

Diagram. Student Selection in 2017 and 2018.



The share of contenders surpassing the threshold score and allowed to compete for scholarship has been growing in 2017–2018, which is evidence of students doing special preparation to enter NIS.

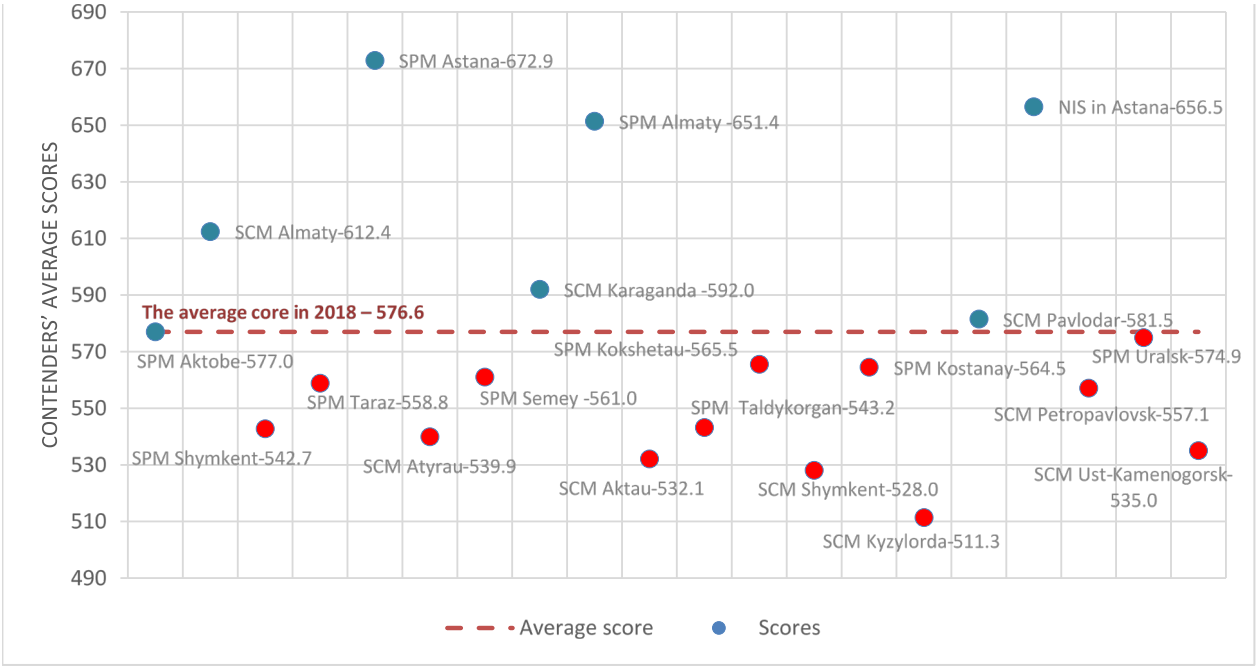
In 2018, the competition was 7.2 persons per place with Kazakh language-based groups having more than 1.5 contenders than Russian language-based ones (8.5 and 5 persons correspondingly). In some regions (Almaty, Aktau, Kyzylorda, Astana, Shymkent) the competition was eight to 13 contenders per place.

Diagram. Contenders' subject test scores by region

School	Highest score	Contenders taking part in the test (2 days)		Contenders allowed to compete further		Scholarship recipients	
		Average score	Lowest score	Average score	Lowest score	Average score	Lowest score
Astana PhM	971	672,9	278	700,9	398	880,4	815
NIS Astana	988	656,5	254	713,7	426	873,6	802
Almaty PhM	974	651,4	255	691,8	317	872,7	802
Almaty ChB	987	612,5	258	670,3	384	864,8	803
Aktau ChB	917	532,1	222	613,3	342	784,4	684

Aktobe PhM	957	577,0	241	642,9	383	780,7	694
Atyrau ChB	927	540,0	191	622,0	336	746,2	672
Kokshetau PhM	929	565,6	273	625,6	345	740,1	574
Karaganda ChB	963	592,1	281	644,1	352	783,5	686
Kostanay PhM	871	564,5	277	623,3	409	726,0	608
Kyzylorda ChB	935	511,4	225	597,0	341	731,1	662
Uralsk PhM	891	575,0	244	633,6	363	751,6	678
Ust-Kamenogorsk ChB	905	535,1	194	624,9	362	761,7	681
Pavlodar ChB	896	581,6	259	643,7	389	729,5	570
Petropavlovsk ChB	879	557,1	308	612,8	365	687,5	521
Semey PhM	929	561,1	295	633,9	371	746,6	591
Taldykorgan PhM	967	543,2	214	629,6	393	764,9	685
Taraz PhM	916	558,9	244	632,8	374	772,6	656
Shymkent PhM	946	542,8	192	613,4	350	767,8	699
Shymkent ChB	905	528,1	255	610,3	354	761,2	677
Total	**988**	**576,6**	**191**	**648,5**	**317**	**780,8**	**521**

Diagram. Contenders' average subject test scores in 2018 by school.



In 2018, the subject test average was at 576.6 (57.66% of the maximum score).

The average score rose by 16.1 compared to 2017 (from 560.5 to 576.6).

The city to score the highest was Astana (672.9 and 656.5), the one to score the lowest, Kyzylorda (511.4). The difference between the highest and lowest average scores was a significant one and amounted to 161.5 (compared to 143 in 2017).

Students to get the maximum score by subject:

– Mathematics (400): 72 contenders from Almaty, Astana, Aktobe, Kokshetau, Karaganda, Shymkent, Kyzylorda, Pavlodar, Semey;

– Kazakh as the First Language (200): 42 contenders from Almaty, Astana, Aktobe, Atyrau, Kyzylorda, Uralsk, Pavlodar, Petropavlovsk, Taldykorgan, Taraz, Shymkent;

– Kazakh as the Second Language (200: 65 contenders from all cities except Kostanay and Petropavlovsk;

– Russian as the First Language (200): 61 contenders from all cities except Petropavlovsk and Shymkent;

– Russian as the Second Language (200): 53 contenders from Astana, Almaty, Aktobe, Aktay, Karaganda, Uralsk, Pavlodar, Semey, Taldykorgan, Taraz, Shymkent (ChB);

– English (200): 259 contenders from all the cities.

Analysis of contenders' answers in the Mathematics test has shown the main difficulty to be word problems (confirmed by TIMSS and PISA international testing results).

Analysis of contenders' answers in the Kazakh, Russian and English language tests has shown the main difficulty to be conclusion-drawing through textual information analysis, finding synonymous words, matching sentences with information in the text, identifying the communicative and structural characteristics of texts, finding detailed information and performing in-depth text analysis.

Diagram. Contenders' ability test scores by region

School	Highest score	Contenders taking part in the test (2 days)		Contenders allowed to compete further		Scholarship recipients	
		Average score	Lowest score	Average score	Lowest score	Average score	Lowest score
Astana PhM	131	86,6	32	91,2	43	110,4	72
Astana IB	130	80,4	17	89,0	44	106,8	66
Almaty PhM	129	80,2	18	86,4	38	105,7	64
Almaty ChB	129	72,9	23	82,5	41	101,7	57
Aktau ChB	120	64,3	23	77,9	39	93,5	55
Aktobe PhM	129	71,4	2	82,8	42	98,9	54
Atyrau ChB	125	64,8	23	77,9	36	91,5	50
Kokshetau PhM	122	71,2	18	82,4	40	95,2	45
Karaganda ChB	124	72,5	11	81,1	38	92,4	53
Kostanay PhM	126	71,4	26	81,7	40	90,9	55
Kyzylorda ChB	128	60,2	17	73,7	38	87,9	54
Uralsk PhM	126	68,4	13	78,3	41	91,6	48
Ust-Kamenogorsk ChB	120	63,6	21	78,1	37	94,9	64
Pavlodar ChB	132	72,9	23	82,9	49	91,9	56
Petropavlovsk ChB	123	72,1	31	80,9	43	89,0	53
Semey PhM	126	66,9	20	80,4	37	94,1	59
Taldykorgan PhM	130	64,7	22	78,4	42	92,5	50
Taraz PhM	123	66,9	21	78,3	43	93,8	50
Shymkent PhM	125	67,3	24	77,9	38	91,7	53
Shymkent ChB	121	62,4	17	75,3	40	90,7	60
Total	**132**	**70,2**	**2**	**81,8**	**36**	**95,7**	**45**

In 2018, the ability test average was at 70.2 (52.3% of the maximum score).

The average score rose by 10.8 compared to 2017 (from 59.4 to 70.2).

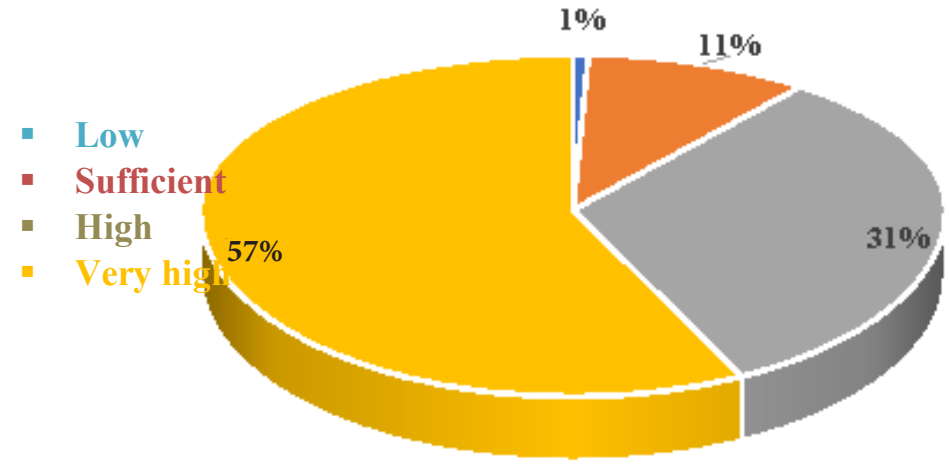
The cities to score the highest were Astana (86.6 and 80.4) and Almaty (80.2 and 72.9), the ones to score the lowest, Kyzylorda (60.2) and Ust-Kamenogorsk (63.6).

Students to get the maximum score by section:

- Qualitative Characteristics (60): seven contenders from Aktobe, Pavlodar, Almaty (PhM), Astana (IB), Atyrau, Shymkent (PhM);

- Spatial Thinking (74): one contender from Astana (PhM).

Diagram. Scholarship recipients grouped by ability level



Based on ability test results, scholarship recipients were differentiated into groups:

• very high: comparable to the top 1% of the best comprehensive school grade 9 students;

• high: comparable to the top 25% of the best comprehensive school grade 9 students;

• medium: comparable to the comprehensive school grade 9 students who failed to make it to the top 25%;

• sufficient: same as the medium level, but showed lower results in spatial thinking.

Distributed by ability levels, 86% of the scholarship recipients had a very high or high level of aptitude for the learning of mathematics and natural sciences, making it possible for them to master the NIS Programme. So long as the learning process is organised in a proper manner, the sufficient ability level students (11%) and low ability levels ones (1%) should be able to excel in education.

The information provided above will be used by NIS schools to implement differentiated learning and provide for students having individual learning trajectories.

In 2018, the grade 7 selection was characterised by the following:

- the strategic partner Cito processing the two-day test results;

- a video-instruction being used for the ability test;

- the successful implementation and operation of an online broadcasting system, which provided for interested parties monitoring the testing process (following the NIS 2020 strategy).

In 2019, the grade 7 selection is expected to have a new format and new content as the grade 6 students to take the test will be ones to have been learning under renewed curricula since grade 5.

Preparing for the new format, NIS cooperated with Cito experts to update a number of test elements: the assessment tool base, test matrix, answer sheets and informative video-instructions.

Besides, Government Decree No. 450 from 23 July, 2018, introduced changes to the Orken First President Scholarship Awarding Regulations, which had been approved by Government Decree No. 317 from March 14, 2009, while Board of Trustees Decision No. 6 from December 13, 2018,

introduced changes to the Orken First President Scholarship Awarding Regulations, which had been approved by Board of Trustees Decision No. 1 from February 29, 2012.

1.2.2. Grade 7 Trial Tests

In January and December of 2018, trial tests in a computer-based format were organised for **8445** students to provide them an opportunity to learn about the format and requirements of the NIS grade 7 selection.

The January test was based on the subject test and comprised Mathematics, Kazakh, Russian and English.

In December, new sample activities were introduced into the trial test. Those were based on the Qualitative Characteristics section.

Table. January trial test participants and March selection participants: the average scores

Average Score:		
Mathematics – 185.4		
Students who took no trial test	Students who took one trial test	Students who took several trial tests
176.1 [-9.3]	**209.0 [+32.9]**	**237.5 [+59.4]**
Qualitative Characteristics – 31.4		
30.2 [-1.2]	34.6 [+4.4]	38.2 [+6]
Languages – 391.1		
381.4 [-9.7]	416.7 [+35.3]	440.1 [+58.7]

Participation in trial tests is observed to have a positive impact on contenders' selection scores (the more trial tests are taken, the higher the actual average selection score is).

NIS uses trial tests as an instrument ensuring equal opportunities for the contenders and the availability and transparency of the selection procedures.

1.2.3. Selection to Primary School in NIS Kokshetau and NIS Taldykorgan

2018 saw a grade 1 NIS student selection taken part in by 458 contenders, of whom 80 were accepted.

Due to groups not having the maximum permitted number of students, an additional selection was held for grades 3 and 4 to be taken part in by 282 contenders, of whom 29 were accepted.

To keep the selection activities database actualised, grades 1–6, 8–9 and 11 assessment tools were updated for 20 NIS schools.

1.2.4. Additional Selection to Paid-basis Learning in NIS

In the reporting period, an additional selection was held for paid-basis learning in grades 3, 4, 8, 9 and 11 in Astana (IB), Aktobe, Taldykorgan, Uralsk, Aktau, Semey, Karaganda, Kyzylorda, Ust-Kamenogorsk and Shymkent (ChB).

A total of 41 students took part in the selection, of whom 20 were accepted.

1.3. VIRTUAL AND VACATION SCHOOLS

In 2018, NIS continued to run the Virtual School and Vacation School projects.

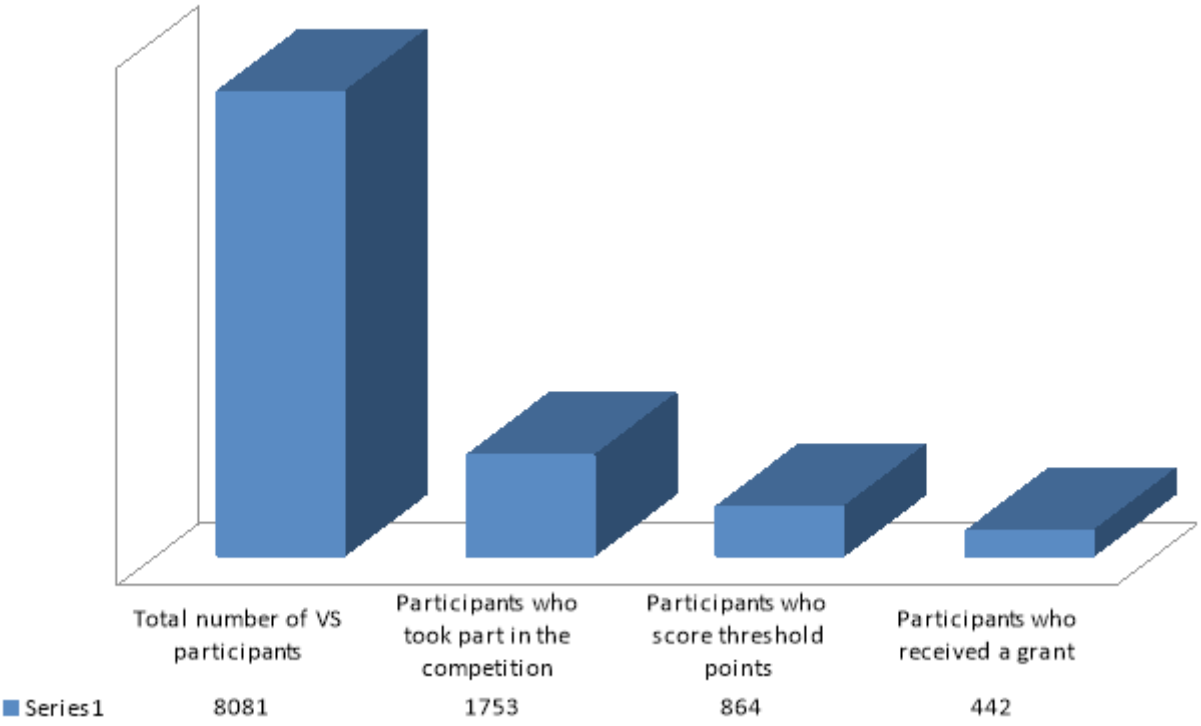
The registration of comprehensive school grade 5 students for the Virtual School was performed in March, 2018, and grade 6 ones in September. A total of 4867 students took part in the Virtual School.

Having successfully done the Virtual School activities, students are invited to the regional NIS school for traditional learning in the Vacation School with the subjects covered comprising Mathematics, Kazakh, Russian and English.

68.8 % of the grade 5 Virtual Schools participants, and 67% of grade the 6 ones, took part in the Vacation School

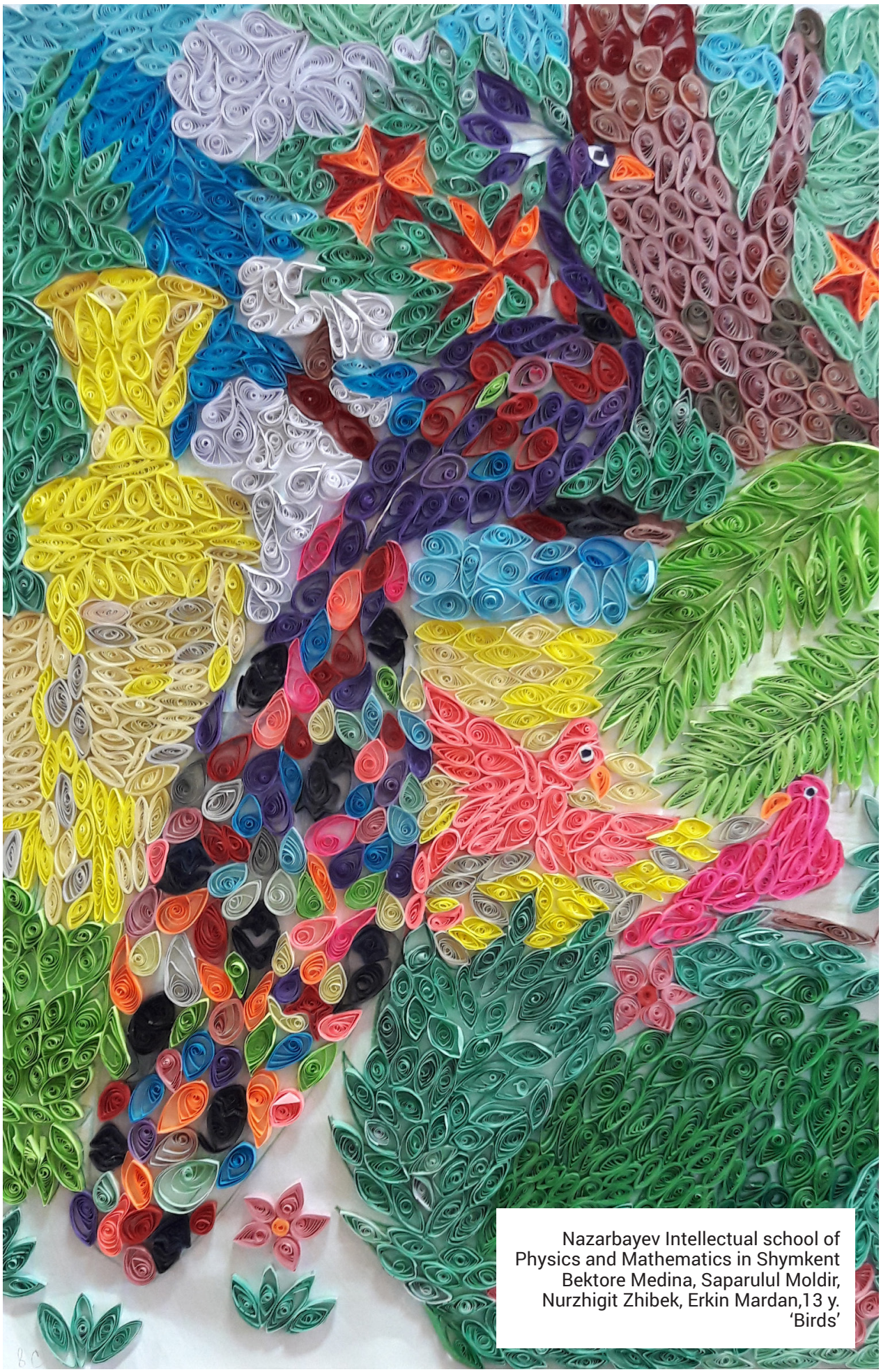
A total of 1313 grade 5 students and 2002 grade 6 students from comprehensive school took part in the Vacation School.

Diagram. Virtual School participants' results



The work performed by NIS resulted in 1753 (11.8%) Virtual School participants taking part in the Orken scholarship competition, of whom 864 (49.3%) students scored above the threshold level and 442 (25.2%) received a scholarship.

NIS will continue providing assistance to comprehensive school students in preparation for the NIS student selection.



Nazarbayev Intellectual school of Physics and Mathematics in Shymkent
Bektore Medina, Saparulul Moldir, Nurzhigit Zhibek, Erkin Mardan,13 y.
'Birds'

Nazarbayev Intellectual School of Physics and Mathematics in Uralsk
Zarina Abdulliyeva, 16 years
'Bond'

2

UNIT 2. TEACHERS

As at 1 January, 2019, 2884 teachers are employed at Nazarbayev Intellectual schools, where 2704 are Kazakhstani teachers and 180 are international teachers.

2.1. TEACHER SELECTION PROCESS

Teacher selection process is organized according to the criteria for selection of teachers.

The selection process has covered all the regions in the country to increase the number of **Kazakh teachers.** As a result, there are **2920 participants** including:

- **375 persons** were recommended for employment at Nazarbayev Intellectual schools;
- **170 teachers** are included in the reserve list to fill vacancies;
- **2375 persons** were not selected.

It should be noted that teachers who completed advanced training courses within level programmes related to the methods and technology of teaching according to new Secondary Education Standards and the assessment system, show the best results, as they appeal to their own professional experience that has changed after passing the courses.

We continue to work with higher educational institutions across the country that train teachers of core subjects in English as a language of instruction.

We have entered into cooperation agreements with **36** higher educational institutes including: Al-Farabi Kazakh National University, L.N. Gumilyov Eurasian National University, Karaganda State University named after E.A. Buketov, Karaganda State Technical University, K. Zhubanov Aktobe Regional State University, Abai Kazakh National Pedagogical University, Kazakh National Women's Teacher Training University, Almaty Technological University.

We invite most able students for NIS internship with prospective employment.

In 2018, there were 49 students who started their professional activity in Nazarbayev Intellectual schools after internship.

There are 225 test activities developed and reviewed across a range of subjects in order to improve the quality of teacher selection process. In 2019, it is planned to improve the format of test activities, assessment tools of creative activities, and update a database of test activities across all subjects.

International teachers

We continue recruiting international teachers in cooperation with strategic recruitment partners such as Teach Away Inc. (Canada), Teachanywhere – Randstad Education ltd. (United Kingdom), Search Associates (United Kingdom) and Teacher International Consultancy Ltd. (United Kingdom).

To maintain direct contact with applicants and for direct hire of international teachers (independently from partners), there is English version of NIS corporate website where the search for international applicants is organised through LinkedIn social network.

There are qualification requirements that apply to applicants and their work experience. Personal documents, letters of reference from previous positions, qualifications and certificates of no criminal record, medical certification for employment of each international teacher are subject to inspection and verification.

During the accounting period, Intellectual schools have recruited 87 international teachers. Employment relationships were prolonged with 93 international teachers. The majority of the international teachers are from United Kingdom, USA, Republic of South Africa, etc.

In 2018, instruction of the second foreign language has been introduced[2] in schools at the students' choice: German, French, Chinese, Korean and Japanese. For that reason, **12 more teachers were recruited to teach the second foreign language:** French, Chinese and German.

A partnership has been established with the Embassies of French Republic and Republic of Korea in the Republic of Kazakhstan on teaching the second foreign language through native speakers. As a result of the works carried out by NIS, 3 French teachers and 2 Korean teachers were employed. All the teachers are native speakers with experience in teaching language as the second foreign language. Next year, the work on this project will be continued.

International teachers work closely with local teachers and help them to teach subjects in English language through joint planning and lessons. Teachers engaged in team teaching hold weekly meetings for planning and reflecting on lessons.

This implies that international teachers work in NIS in several areas, besides teaching subjects in foreign languages:

- provide training courses for local teachers within

[2]Paragraph 2.2.2. The monitoring of compliance with instructions of the President of the Republic of Kazakhstan, N.Nazarbayev, given at the meeting of the Supreme Board of Trustees of Nazarbayev University, Nazarbayev Intellectual schools, Nazarbayev Fund Autonomous Educational organisations approved by A.Smailov, the head of the secretariat of NIS Supreme Board of Trustees, Assistant to the President of the Republic of Kazakhstan.

own schools, NIS schools and comprehensive schools;

- provide assistance in implementing the projects integrated according to international best practices; take participation in professional communities of subject teachers, and work in social projects;
- prepare students for IELTS, TOEFL, SAT, SET examinations to enrol at Nazarbayev University and international universities;
- conduct extracurricular and methodological works;
- take participation in developing textbooks and assessment tools;

In 2018, international teachers have provided over 400 training courses, master classes, open lessons for NIS and comprehensive schools teachers, and educators.

There is a positive dynamics in IELTS and SAT results achieved through the planned and systematic approach in preparing students for international examinations, and through close work of local and international teachers.

In 2017-2018, the average IELTS score (5.9 in 2016-2017) had increased to 6.2.

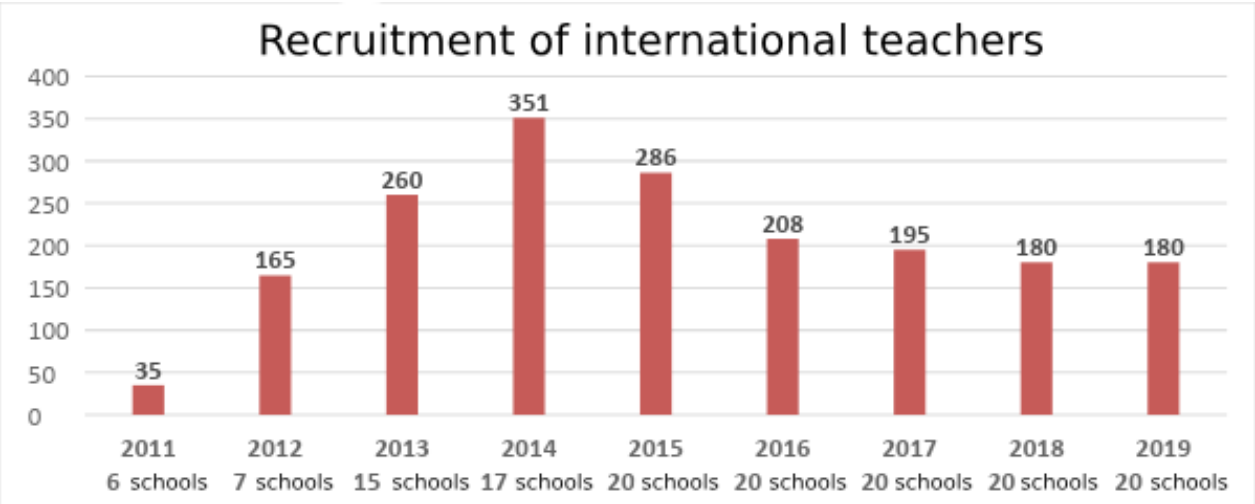
In 2018, 844 NIS students passed SAT1 with an average score of 1337.

For reference: *Minimum requirements for participation in competitive entrance examination for Bachelor's degree at Nazarbayev University is* ***1240****. 634 out of 844 students have reached more than 1240 points.*

In addition to professional activities, international teachers take participation in social projects and visit boarding schools, children's homes and rehabilitation facilities. In 2018, they purchased clothes, candies, school supplies, books, wheelchairs for children with cerebral palsy at own expense. They also provide English speaking clubs and English lessons for low-income family children and children from children's homes, and organise charity events in support of rehabilitation facilities.

According to NIS Development Strategy and substitution policy relating to international teachers, the number of international teachers is decreasing gradually by 2% of total number of teachers. **Targeted training of teachers** is organised for implementing the substitution policy of international teachers.

There were 195 international teachers in 2017, 180 in 2018 and 180 are scheduled for 2019.



Targeted training of teachers

For the purpose of professional development, acquisition of pedagogical skills and establishment of a reserve pool, NIS employees are sent to study in Nazarbayev University through Master's degree programme and in foreign schools through pedagogical internship programmes on annual basis.

Studying in Nazarbayev University

For the purpose of enhancing academic knowledge and professional development, there are 60 NIS teachers studying in Nazarbayev University through Master's and PhD programmes.

There are 93 NU graduates in total working in NIS: 1 of whom was trained through PhD programme, 66 - Master's degree programme and 26 - Bachelor's degree programme.

The extension of professional competencies in leadership and management of the teachers trained through Master's and PhD programmes in Nazarbayev University contribute significantly to the quality of learning process and development of research culture in NIS schools.

Internship

Within the framework of wider partnership with leading educational organisations, NIS organise internship for teachers in foreign schools on annual basis. This cooperation helps teachers to develop professional culture and leadership skills in order to implement innovations, conduct a reflexive practice and research in class and schools.

54 NIS teachers from Aktobe, Astana, Karaganda, Pavlodar, Semey, Uralsk and Shymkent who have served internship during the reporting period.

CLIL Practicum (United Kingdom, London) has been organised since 2018 for the purpose of studying CLIL principles and practical application. As a part of the training, 30 NIS teachers observed the best teaching practice in schools of London, and developed their skills of using English as a language of instruction and creating learning resources.

One of the main objectives of internship is to prepare own CLIL trainers for active dissemination of this strategy in NIS schools.

24 NIS teachers have served internship in English schools cooperating with Faculty of Education, University of Cambridge (United Kingdom, Cambridge) for the purpose of development of professional competencies in STEAM (Science, Technology, Engineering, Arts and Math) subjects.

Collaborative work **allowed teachers to gain British teaching experience, improve research potential in NIS schools and** continue the established dialogue with partner schools in United Kingdom.

2.2. QUALITATIVE COMPOSITION

Local teachers

The number of teachers with academic degree is increasing annually.

The number of teachers with academic degree has increased by 2% comparing to 2017. Almost every third teacher has an academic degree.

Table. Academic degree of NIS teaching employees across the years 2017-2018.

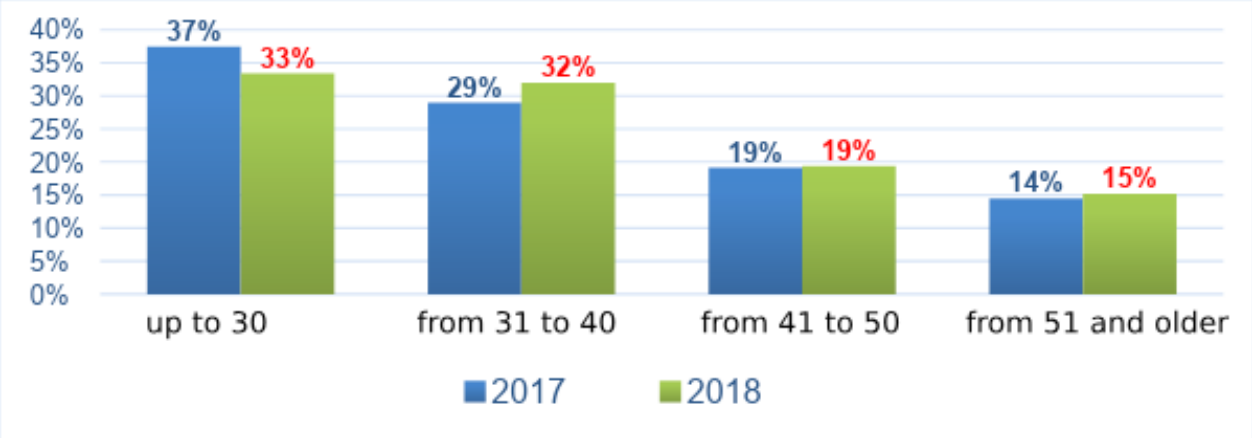
Academic degree	2017 год	2018 год
PhD	4	5
Candidate of sciences	22	18
Master	719	779
TOTAL	745/28 %	802/30 %

Age composition of the teachers

Age composition analysis of the teachers showed the increased number of teachers from 31 to 40 years (88 persons) that is a good trend in attraction of young and experienced teachers to NIS schools. Along with this, there is a decrease in number of teachers up to 30 years by 4% comparing to the previous year, and an increase of teachers from 31 to 41 years by 3% that is a natural process of transferring the main group of teachers from one age category to another.

The share of teachers up to 40 years is 60%, over 40 years - 40% (that is an optimal balance) - are experienced professionals and perspective young teachers.

Diagram. Age composition of the teachers

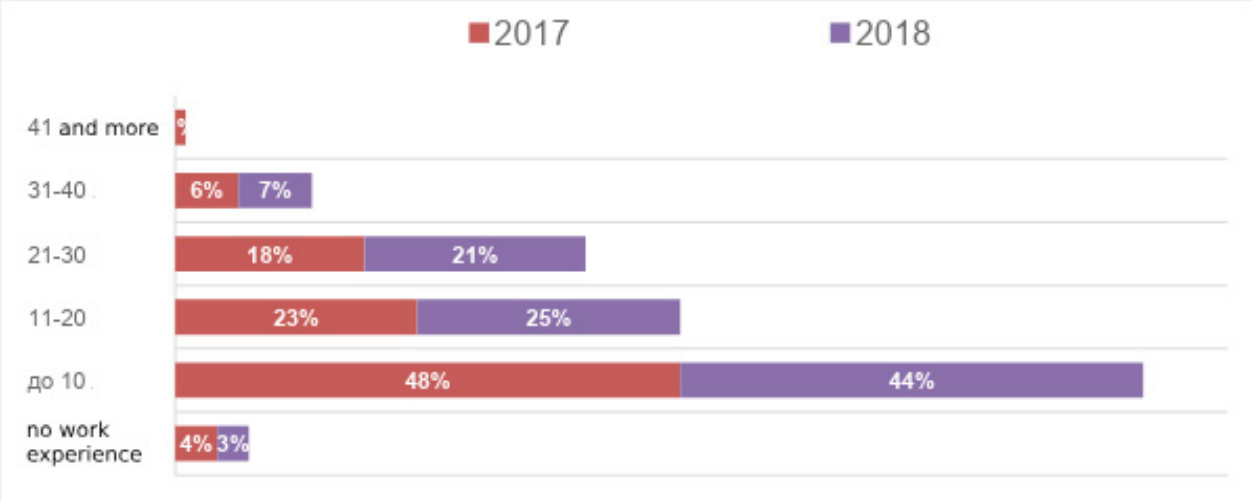


The indicators for the teacher's work experience remained at the same level as the indicators of the previous reporting period with minor changes.

The share of teachers 'up to 10 years of work experience' decreased by 4% due to transition of the main composition of teachers to the next category 'up to 20 years of work experience' that is also of relevance for the following categories, that is a natural process of transferring the main group of teachers from one category to another.

In general, there are 50% of teachers with up to 10 years of work experience, and 50% - over 10 years, which attests to a balanced composition of teachers having a positive effect on succession and professional peer learning.

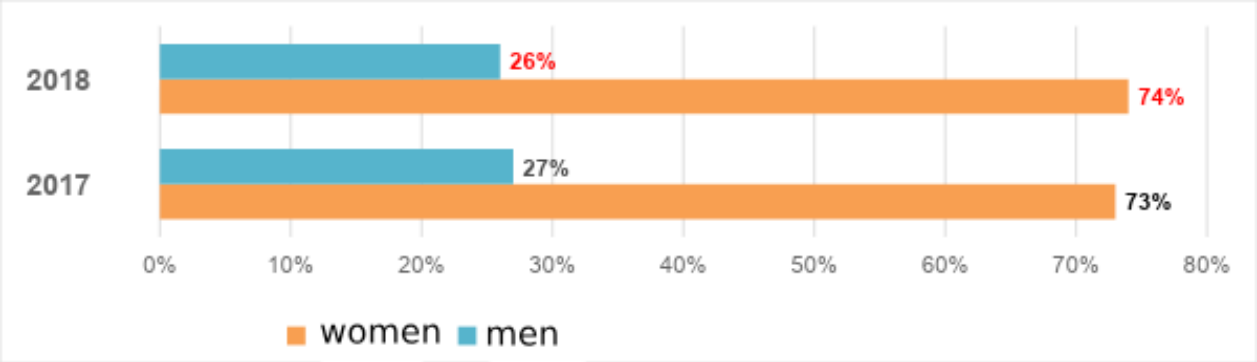
Diagram. Work experience of teachers across categories



The **gender-based** ratio between men and women has changed by 1% with a decreasing number of men and increasing number of women respectively.

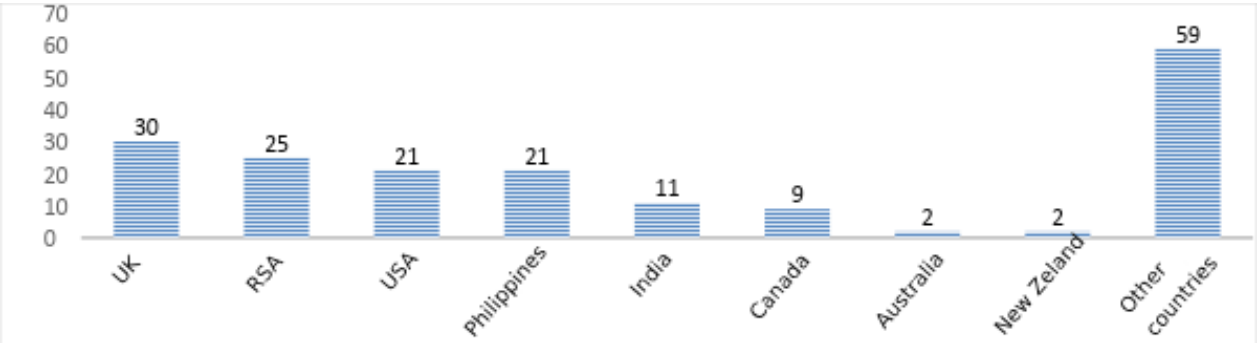
It should be noted that for the period 2012-2018, the gender ratio has changed by 5-6% with an increasing number of men and decreasing number of women respectively, which in turn has a positive effect on pedagogic and educational process.

Diagram. Gender ratio



International teachers

Diagram. The number of international teachers across countries in 2018



The number of international teachers working in NIS schools for four years and more is the same as in previous year.

- more than 4 years of work - 59 teachers;
- more than 3 years of work - 35 teachers;
- about 1-2 years of work - 98 teachers.

There are 5 international teachers with PhD, 169 with Master's degree, 73 have International Teacher Certificates (IBDP, TESOL, ESL, TEFL, examinators of IELTS, CELTA, DELTA).

Pedagogical work experience of international teachers:

- up to 10 years - 64 (35%),
- from 11 to 20 years - 81 (45%),
- from 21 to 30 years - 29 (16.7%),
- from 31 and more - 6 (3.3%).

2.3. TEACHER LANGUAGE COMPETENCIES MONITORING

A task is set before the teachers of NIS schools to speak three languages in order to implement the Integrated educational programme and trilingual policy.

In order to enhance motivation of employees to learn languages, it was proposed to pay a premium in amount of 10% of salary for teaching in English as a language of instruction since 1 January, 2019 (for teachers of Physics, Math, ICT, Chemistry, Biology, Economics and Global Perspectives and Project Work), if their level of English is higher than IELTS/APTIS/TOEFL qualification requirements.

Beside the motivation aspects, NIS schools operates the system of intraschool courses and allows 25% of teachers to learn Kazakh language and about 40% - to learn English language on annual basis. The courses are organised on a non-reimbursable basis by the following teachers: Bolashak graduates, Nazarbayev University graduates, as well as internal certified trainers of peer-to-peer method.

1862 persons in total who were trained within intraschool language courses in 2018, including: Kazakh language - 694 persons, English language - 1168 persons.

KAZAKH LEVEL

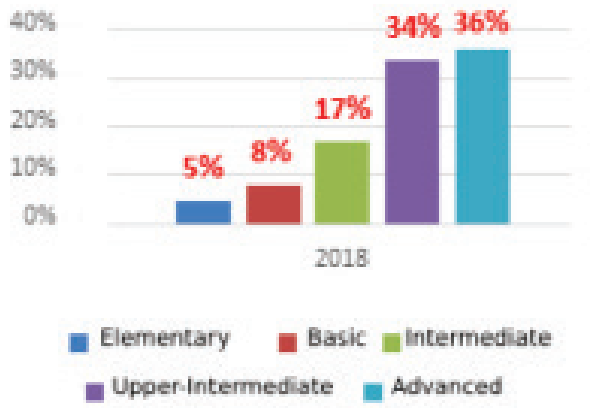
Determination of Kazakh language level is carried out through KAZTEST system.

Statistical data of teachers who passed KAZTEST is generated on annual basis for management decision-making and monitoring of improved dynamics in learning Kazakh language.

The main group of teachers shows a stable result according to statistics despite the staff movements and changes.

It is planned to continue taking a set of measures to achieve the best results and increase the number of teachers speaking Kazakh language at upper-intermediate level and above according to trilingual policy.

Diagram. A share of Kazakh speaking teachers across the categories out of the total number of teachers with KAZTEST certificates



ENGLISH LEVEL

Along with intraschool courses as an additional tool for language competencies development, over the past few years, teachers also choose distance learning and courses abroad for creation of a pool of local trainers in order to implement the cascade training by certified trainers.

Our partners carrying out the activities on training teachers and developing their language competencies are well-known organisations at international market, such as:

- British Study Centres (United Kingdom);
- Docetis International Ltd (CELTA, DELTA, CLIL Practicum).

Statistical data of teachers who passed and received APTIS, IELTS and TOEFL certificates is generated on annual basis for management decision-making and monitoring of improved dynamics in learning English language. For ease of analysis, the test results are equated with IELTS grading scale according to the International correlation system of APTIS and TOEFL language levels.

The number of teachers with IELTS score 5.0 and above is increased (by 2%) comparing to 2017. Almost every third NIS teacher speaks English at the level of IELTS score 5.0 and above so far.

These results make it possible to continue the substitution of international teachers with local employees.

Table. Number of teachers with IELTS score 5.0 and above

Year	Total number of teachers	IELTS 5.0 and above	%
2017	2684	748	28 %
2018	2704	798	30 %

2.4. PROFESSIONAL DEVELOPMENT SYSTEM

During the reporting period, the work on professional development system of NIS employees has been continued and aimed at development of professional skills and abilities, ability to generate new ideas and initiate self-development among students and colleagues.

8106 pedagogical employees were trained in 2018.

Table. Number of professional development training courses.

Number of trained persons	2017	2018
Intraschool courses	4467	5918
Courses within the country	4386	2167
Courses abroad	29	21

NIS courses

Effective school education is the foundation for qualitative changes in educational sector. NIS shows a sustainable tendency in training and teaching by certified trainers in different areas and teachers of high level of pedagogical excellence.

In 2018, 5918 persons were trained, including the following modules:

Kazakh language - 694 persons;
English language - 1168 persons;
ICT - 707 persons;
Pedagogical knowledge - 3349 persons.

The subject matter of Pedagogical knowledge module is determined based on the diagnostics of professional challenges and needs of teachers, and helps to build a development trajectory of each teacher. For instance: 'Theory of the resolution of invention-related tasks', 'Concept learning', 'Contemporary lesson in the context of 21-st century skills', 'Psychology and pedagogy support of educational process'.

Courses within the country

2167 persons have been trained during the reporting period in the following areas and units:

Development of subject knowledge and competencies, improvement of teaching practice - 826 persons;

Psychology and pedagogy support of educational process - 138 persons;

Development of gifted children - 42 persons;

Development of language competencies - 124 persons;

Information and Communication Technologies in educational process - 107 persons;

External summative assessment courses (checking examination papers, setting assessment criteria, marking) - 297 persons;

Courses for NIS employees (medical personnel, lawyers, etc.) - 633 persons.

49 pedagogical employees of NIS schools and Centre of Pedagogical Measurements (CPM) has been trained by CPM within the framework of Development Programme for Gifted Children. CPM has carried out the monitoring of the programme implementation.

The comparison analysis of the monitoring conducted in 2017 and 2018 shows:
- improved quality of differentiated course plans;
- increased number of creative teachers investigating the issues of development of gifted children and their education;
- increased number of schools that use the individual trajectory of developing gifted children worked out jointly by teachers, mentors and school psychologists;
- study of practice on the issues of children's gift (9% to 12% of pedagogical employees take participation in studies across all schools).

The positive aspects of the programme include the creation of databases for each student by NIS psychologists (based on the results of surveys, questionnaires, psychological diagnostics, medical records) that allow subject teachers and mentors to plan lessons and individual works with regard for teaching style and mental capacity.

It is important to note that training workshops and master classes held by trainers within the Development Programme for Gifted Children are aimed at school colleagues, pilot school teachers and trainees of professional development courses held by the regional Centres of Excellence.

Pedagogical employees disseminate their experience through the participation in regional, republican and international research to practice conferences, and work on writing the articles, developing differentiated plans and methodological recommendations.

Courses abroad

21 persons who have been trained within 9 professional development courses abroad.

7 persons has been trained within CELTA (United Kingdom, Edinburgh) English courses, and received an internationally recognised qualification of a teacher of English as a foreign language.

In total, there are 33 CELTA certificate holders working in NIS schools.

2 ICT teachers have been trained within Yandex. Liceum programming courses (Russia, Moscow) to use modern methods of solving applied tasks and create applications with graphical interface.

A set of courses abroad has been organised to Astana NIS teachers relating to the issues of implementing curricula, integration of teaching approaches according to standards and requirements of the International Baccalaureate.

Physics (UAE, Dubai) - 2 pers.
Mathematics HL (UAE, Dubai) - 1 pers.
Math SL (UAE, Dubai) - 1 pers.
Economics (UAE, Dubai) - 1 pers.
Language B (UAE, Dubai) - 2 pers.
PTC courses for Principals (USA, Miami) - 4 pers.
Administrators DP (Spain, Barcelona) - 1 pers.

Certification of trainers

We continue the work on development of the main internal resource - **a pool of certified trainers among NIS teachers.**

The aim of trainers is to support their colleagues through learning and mentorship based on the principles of lifelong learning, professional dialogue and cooperation.

In 2018, the number of trainers has increased by **47 persons:**

- Development of gifted children - 28 persons;
- CELTA - 7 persons;

- NXplorers Programme - 12 persons.

NXplorers Programme has been developed by Shell experts jointly with British experts from ShapingLearning Educational Centre, and is a part of a pilot project 'Solar energy for schools' implemented by Shell Kazakhstan under the memorandum of understanding signed in May, 2018 by NIS, Ministry of Energy, akimat of Astana and Shell Kazakhstan.

NXplorers Programme aims to promote new idea technology for young people by using NXthinking, a designated methodology of complex and creative thinking to solve global challenges. The methodology provides an opportunity to find innovative solutions to the problems, based on cooperation and with use of innovative and interdisciplinary approaches. NXplorers Approach allows to influence pupils, develop STEAM thinking and provides necessary tools for implementation of scientific projects.

Skilled trainers are provided with an access to the platform of educational materials. This platform can be used by students to share their results with other schools in 12 countries that also participate in NXplorers Programme.

By the end of 2018, there are 724 trainers working in NIS.

№	Trainers	Actual number	Including 2018
1	Trainers of Development Programme for Gifted Children	75	28
2	Trainers responsible for assessment of Development Programme for Gifted Children	9	
3	Trainers of Level programmes (Centre of Excellence)	52	
4	Trainers responsible for assessment of Level programmes (Centre of Excellence)	14	
5	Trainers of Robotics Programme	4	
6	Trainers of Critical Thinking Course	25	
7	Trainers of Teaching Knowledge Test (TKT)	7	
8	Trainers of Distributed Leadership Programme	2	
9	Trainers responsible for development of test activities	84	
10	Trainers of PISA preparation	23	
11	Microsoft trainers	11	
12	Trainers of Language Competence Development	14	
13	Trainers of Robotics Programme (Nazarbayev University)	12	
14	Trainers of Robotics Programme (Centre of Excellence)	59	
15	CELTA trainers (Certificate in English Language Teaching to Adults).	33	7
16	DELTA trainers (Certificate in English Language Teaching to Adults)	6	
17	CLIL trainers (Content and language integrated learning)	84	
18	Trainers of Professional Development Programmes for Pedagogic Employees within the framework of updating the secondary education in the Republic of Kazakhstan	39	
19	Trainers of IB Programme	16	
20	CELTYL trainers (Certificate in English Language Teaching to Young Students).	1	
21	Trainers supporting professional development of pedagogical employees	116	
22	Trainers of the theory of probability	15	
23	Triple Science trainers	15	
24	Nxplorers trainers	8	8
TOTAL		**724**	**47**

Methodological support of NIS teachers by the Centre of Excellence

In 2018, employees of the Centre of Excellence (CE) has conducted studies of the needs of NIS teachers in methodological support to improve teaching and learning practice.

As a result of the studies (within the

methodological support of NIS teachers), CPM trainers identified the main areas of methodological support. In order to develop scientific and methodological competencies, the following activities has been carried out:

- consulting, professional conservations;
- training workshops, trainings on the issues of implementing scientific and methodological studies, including action research and lesson studies;
- informational support of teachers on the issues of participation in various events on methodology (conferences, master classes, competitions) to summarise and disseminate best practice.

256 NIS teachers have attended professional development courses in CE through the following programmes:

– Effective Teaching and Learning (177 persons);
– Teacher Leadership in School (63 persons);
– Teacher Leadership in Pedagogical Community (16 persons).

The following professional development workshops have been held:

- Implementation of approaches and methods for differentiated learning and work with gifted children (12 persons);
- Development of pedagogical skills and reflection in research of teacher practice (20 persons);
- Development of self-regulating and individualised training skills (20 persons);
- Personal and professional development of teachers (20 persons);
- Development of teacher methodological skills to build the functional literacy of students according to PISA (14 persons).

The observations were made relating to practice, analysis and advice on the issues of implementing short-term and long-term planning, goal-setting, formative assessment supported by feedback, use of different approaches, strategies and styles of teaching students with different abilities.

In 2018, Centre of Excellence has developed a programme, and conducted professional development courses for 20 Deputy Directors of scientific and methodological work, and a webinar 'Classroom observation to improve teaching and learning' for Deputy Directors of teaching and educational work.

In order to improve pedagogical skills and professional competencies, 781 persons among Deputy Directors of teaching and educational work, teachers-organisers, tutors and supplementary education teachers have been trained through a set of workshops as follows:

- Time management;
- Classroom observation;
- Differentiated learning;
- Development of leadership skills of students;
- Effective teaching and learning;
- Criteria-based assessment of students' performance.

Professional networking cooperation is carried out based on a united professional community of NIS teachers 'Learn and share' and educational website www.cpm.kz.

The information and methodological platform 'Electronic methodological box' is in operation on CPM website and includes about 200 materials.

Table. Number of events held by Centre of Excellence for NIS teachers in 2018

№	Branch Centre of Excellence	Total of trainings	Classroom observation	Workshops	Master class	Coaching, training	Round tables
1	Astana	56		24		32	
2	Almaty	51	5	13		33	
3	Aktobe	114	75	8	23	6	2
4	Aktau	63	32	8	10	10	3
5	Atyrau	30		12	16		2
6	Karaganda	13	2	8		3	
7	Kokshetau	218	119	17	53	28	1
8	Kostanay	34		8	22	4	
9	Kyzylorda	16		8	4	4	

10	Pavlodar	27		8	16	2	1
11	Petropavlovsk	21	3	13	2	3	
12	Taraz	42	10	16	16		
13	Taldykorgan	16		12		4	
14	Uralsk	13		8	1	1	3
15	Ust-Kamenogorsk	60	18	12	20	9	1
16	Shymkent	120	18	42	24	26	10
Total		**894**	**282**	**217**	**207**	**165**	**23**

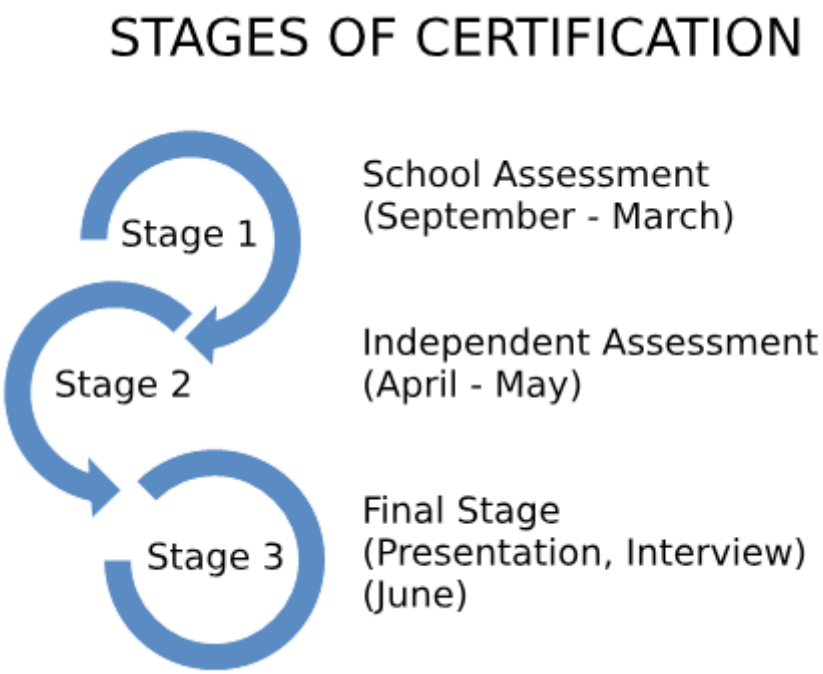
In 2018, Centre of Excellence has conducted a set of works on developing professional potential of NIS teachers. **As a result, Centre of Excellence has developed research and information review that includes detailed observations and recommendations** on professional development of NIS teachers.

2.5. PEDAGOGICAL EMPLOYEES PERFORMANCE APPRAISAL

635 persons have been attested, including 509 teachers, 126 persons equated with pedagogical employees during the reporting period.

During the certification, the teacher professional practice has been analysed, and professional knowledge, skills and their leadership skills have been assessed.

Certification process was divided in three stages.



School Assessment Stage has been conducted in school. Assessment is carried out by School Administration and head staff of methodological associations.

The outcomes of Stage 1 showed that 568 persons (89.5%) correspond to the applied level of pedagogical excellence, 21 persons (3.3%) do not correspond and 46 persons (7.2%) didn't take participation by different reasons.

At the stage of independent assessment, teachers made reflexive report of the lesson, including:

- analysis of planning, teaching, assessing academic achievements of students based on pedagogical experience;
- assessment of lesson's efficiency;
- forecasting of changes in teacher's activity based on the outcomes.

The assessment is carried out by CPM. The reflexive reports have been downloaded on CPM website by **441 teachers.** For the purpose of confidentiality, the materials were coded, checked for plagiarism via CodEx and eTXT and assessed by independent experts.

The outcomes of Stage 1 showed that 285 persons (60.1%) correspond to the applied level of pedagogical excellence, 156 persons (33%) do not correspond and 33 persons (6.9%) didn't submit reflexive reports.

At the last stage, the attested employees presented the results of professional activity for the reporting period. The assessment has been carried out by Certification Committees of NIS and schools.

In the outcomes of three stages

469 persons correspond to the applied level, including:

expert teacher - 50 persons;
teacher-moderator - 255 persons;
teacher - 61 persons.
first level - 52 persons;
basic level - 51 persons.

69 persons do not correspond to the applied level, including:

teacher-researcher - 7 persons;
expert teacher - 12 persons;
teacher-moderator - 40 persons;
teacher - 5 persons.
first level - 2 persons;
basic level - 3 persons.

1 person is referred for re-certification (teacher-moderator);

64 persons didn't participate by different reasons.

The issues on **32 teachers** who do not correspond to qualification requirements in language competence, were introduced within NIS Board of NIS Executive Board.

NIS Executive Board confirmed the applied level of 27 teachers-moderators and 5 expert-teachers by decision dated 26 July, 2018 (Minutes No.43).

Comparison table below shows the number of pedagogical employees and persons equated with them at the level of pedagogical excellence in 2017 and 2018:

Year	Total persons.	Levels of pedagogical excellence					
		master	researcher	expert	moderator	teacher	trainee
2017	3005	-	6 (0,2%)	243 (8,1%)	892 (29,7%)	1342 (44,6%)	522 (17,4%)
2018	3039	-	6 (0,2%)	287 (9,4%)	1088 (36%)	1177 (38,6%)	481 (15,8%)

2.6. TEACHERS' ACHIEVEMENTS

In 2018, two NIS teachers became winners of the republican competition 'The best teacher - 2018'.

Askhat Zhumabekov, expert-teacher of Physics, Semey PhM.

Askhat Zhumabekov is a holder of the title 'The best teacher - 2018' awarded by the Ministry of Education and Science of the Republic of Kazakhstan.

He won the first place in the competition 'The best teacher of 2018' among 20 NIS Branches. Currently, he is a doctoral candidate in the field of education in the Finland University.

Askhat Sovetkhanovich - a finalist of '100 New Faces of Kazakhstan' republican project in 2018.

Askhat Sovetkhanovich is a holder of anniversary lapel badge awarded by the National Nuclear Centre of the Ministry of Energy of the Republic of Kazakhstan 'For Building a Nuclear Weapon Free World' to the twentieth anniversary of closing the Semipalatinsk nuclear test site.

He is an author of 3 books and more than 40 academic works and articles published in journals with impact factors, sourcebooks of conferences, academic periodicals, newspapers of Kazakhstan, Russia, Finland, United Kingdom and Ukraine.

He is also one of science mentors for young scientists in Scinet, the Republic of Kazakhstan (with the support of the Fund of the First President of the Republic of Kazakhstan - the Leader of the Nation).

Darikha Absamatovna Munarbayevna, expert-teacher of Biology at Kyzylorda ChB.

Darikha Munarbayevna is a holder of the title 'The best teacher - 2018' awarded by the Ministry of Education and Science of the Republic of Kazakhstan.

She is an author of guidance manuals of Biology, Lesson Study Team leader.

An author of an elective course 'Anatomy and morphology of plants' in Biology. A certified trainer of standardising assessment procedures within certification of NIS pedagogical employees and persons equated with them.

A participant in 5 international conferences and 3 regional and republican forums.
She won a city contest 'The best teacher-2011', and a regional Olympiad among Biology teachers in 2012.

During the report period, NIS employees have received the following awards and titles:

- Lapel badge 'Ybyrai Altynsarin' - 18 persons;
- Lapel badge 'Honorary Educator of the Republic of Kazakhstan' - 6 persons;
- Certificate of Merit from the Ministry of Education and Science - 69 persons;
- Letters of appreciation from the Ministry of Education and Science - 54 persons;
- Awards to the tenth anniversary of Nazarbayev Intellectual schools - 2260 persons.

Nazarbayev Intellectual School
of Physics and Mathematics in Semey
Muratova Aruzhan, 13 years
'Rainy autumn'

3

UNIT 3. CONTENT OF EDUCATION

3.1. CURRICULA

The educational process at the NIS schools follows two programmes: NIS-Program and International Baccalaureate Program.

3.1.1. NIS-Programme is in operation in all grades of 19 NIS schools since 2018-2019 academic year.

During the reporting period, the implementation of the NIS-Program included:

- development / review of subject programmes, medium-term plans and elective courses;
- monitoring the implementation of subject programmes and medium-term plans and result-based review;
- teacher methodological support.

DEVELOPMENT OF SUBJECT PROGRAMMES, MEDIUM-TERM PLANS AND ELECTIVE COURSES

The content of Secondary Education should be consistent with the global rapid pace of technological change and contemporary challenges. In this regard, an ongoing analysis of the educational model and curriculum content takes place alongside comparative work with global educational policies.

The model of upper-secondary school was reviewed in 2017 and a phased development and introduction of new subject programmes and plans began. The renewed model allows upper-secondary school students to choose between standard and advanced levels of core subjects, depending on the specialisation they choose for future. Thus, students have an opportunity to choose between 7-hour programme and 10-hour programme for Mathematics. ***School leavers, therefore, have a greater chance for successful learning experience receiving majors requiring high level of mathematical training at national and international universities.***

During the reporting period:

- eight **grade 12** medium-term plans have been developed for renewed model of upper-secondary school: Mathematics (10-hour programme), Chemistry (standard level), Biology (standard level), Physics (standard level), Computer science (standard level), Kazakh language and literature (L1), Russian language and literature (L1) and Graphics and design;
- subject programme and medium-term plan for grade six Science, which lays the foundation for the integrated study of natural science phenomena and processes.

Learning outcomes for the NIS-Program receive international recognition.

United Kingdom National Academic Recognition Information Centre confirmed the compatibility of NIS-Program with the GCE A-Level (UK), which receive recognition of many higher education institutions in Australia, New Zealand, China, Hong Kong, Japan, the European Union, Canada, and the USA.

Upon NIS-Program completion, students can be admitted to:

- *Nazarbayev University for undergraduate degree programmes, bypassing Foundation programme, depending on the results of the exam;*
- *three-year undergraduate degree programme at ten leading universities in Kazakhstan;*
- *German universities (to study mathematics, technical subjects, natural sciences, medicine, languages and sports) and the University of Cambridge (starting from 2019).*

NIS-Program intend to improve the educational process through extracurricular activities and supplementary education. Students have the opportunity to attend elective courses, depending on their preferences for future profession. The elective courses are aimed at deepening and extending subject knowledge and skills. The development of elective courses that promote the inculcation of spiritual and moral values and the development of physical well-being of students is in process.

During the reporting year, the following elective courses were developed:

1. Ethics and Psychology of Relationships aims to develop emotional intelligence and resilience in students living in a modern dynamic world;
2. Health and Wellness aims to develop knowledge and skills that ensure safe life, creation of a comfortable living environment, formation of healthy and safe lifestyle values, understanding the rules of personal and collective safe behavior in everyday life, transport and public and understanding the rules of conduct in emergency situations;
3. The Role of Alash Movement and Alashorda Government in Kazakh Statehood aims to enhance leanres' understanding of the heritage left by Kazakh intelligentsia of the first half of the twentieth century, contributing to the upbringing of educated and intellectual youth sharing values of the historical and cultural heritage.

MONITORING AND REVIEW OF SUBJECT PROGRAMMES AND MEDIUM-TERM PLANS

Implementation of NIS-Program at NIS schools is accompanied by annual monitoring, which is an important and effective tool for identifying areas for further curriculum improvement.

In 2017-2018 academic year, NIS monitored the implementation of **14 subject** programmes of lower-secondary and upper-secondary schools and **seven subjects** of primary school.

Specialists visited 16 NIS schools and observed **315 lessons** as part of the monitoring.

The monitoring results became the rationale for appropriate adjustment to the subject programmes and medium-term plans, resource update, subdivision of complex units and clarification of certain learning objectives.

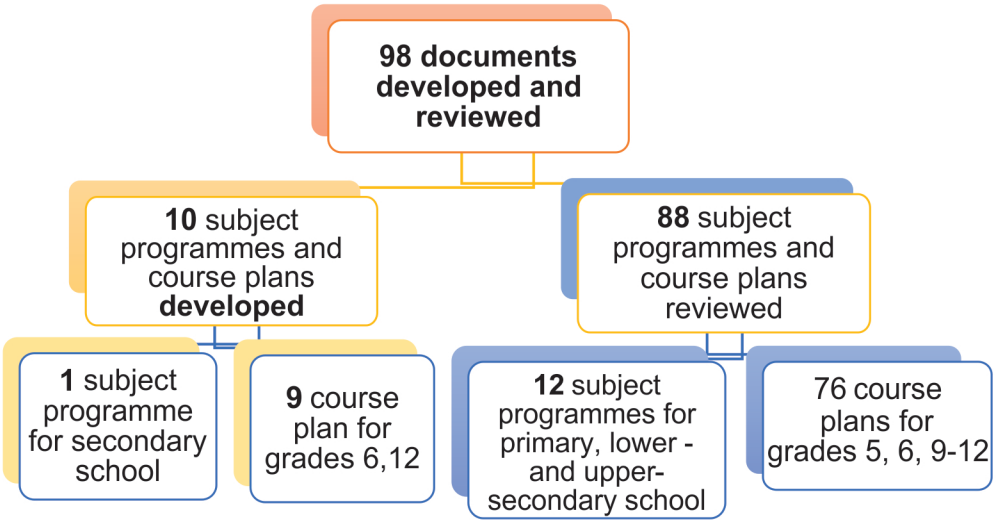
Rapid development of the IT industry is the reason for ongoing review of subject programme for Computer Science.

*In the reporting year, **new programming languages and project work were included to the programmes for lower- and upper-secondary schools.** The total number of hours for developing programming skills increased to 46%.*

This will allow students to acquire and develop the skills to create software products (training and specialized programmes, websites, games).

A total of **88 documents** were revised in 2018 (**12** subject programmes for primary, lower- and upper-secondary schools, **76** curse plans for grades 5, 6, 9–12).

Table. Number of developed / reviewed subject programmes and medium-term plans for 2018



NIS-Program is implemented on all levels of NIS school in the 2018-2019 academic year (primary, lower- and upper-secondary schools).

Thus, the implementation of the NIS-Program has reached 100% coverage, which allows to examine the continuity within the educational programme throughout the grades from 1 to 12, to identify the difference between the desired and achieved curriculum .

In the 2018-2019 academic year, NIS is monitoring the programme implementation of **19 subjects** for lower- and upper-secondary schools and **two subjects** for primary school. Monitoring procedures cover 14 **NIS schools.**

TEACHER METHODOLOGICAL SUPPORT FOR NIS-PROGRAMME IMPLEMENTATION

The results of curriculum[3] implementation monitoring, results of external and internal summative assessment determine the trends for teacher methodological support during the year.

All challenging units of the subject programme were discussed during summer subject workshops.

*In 2018, CEP subject specialists together with practical teachers delivered **29** workshops for **540 teachers** on 21 subjects:*

[3]Australian Research Alliance for Children and Youth (ARACY) for the Family-School and Community Partnerships Bureau: Canberra. Ono, Y. (n.d.). Bridging the Gap between Intended and Implemented Curriculum: Japanese Experience of Education Development, Naruto University of Education, Tokushima, Japan, 1 – 14

- **5 training workshops** for grade 1–5 teachers of Mathematics, Introduction to science, World understanding, Kazakh language and literature (L1), Russian language and literature (L1);
- **3 training workshops** for grade 6–10 teachers of History of Kazakhstan, World History and Art;
- **2 training workshops** for grade 6–12 teachers of Physical Education teaching in Kazakh and Russian;
- **19 training workshops** for grades 11–12 teachers of Mathematics, Computer Science, Chemistry, Physics, Biology, Geography, Kazakh language and literature (L2), Russian language and literature (L1), Russian language and literature (L2), English language, Global perspectives and project work, Economics, History of Kazakhstan (Kazakhstan in the modern world) and Graphics and design.

The training workshops on *natural sciences and mathematical subjects* aims at explaining pedagogical approaches to teaching new[4] topics.

Peculiarities of text analysis for various genres and mixed type texts have been clarified for *language* teachers. The main focus was on activities that develop students' skills to formulate their thoughts and on the ability to argue own opinion. The concepts embedded in the upper-secondary school curriculum have been clarified to English teachers. Teachers discussed the effective methods for organising educational process based on these concepts.

Humanities and complex-aesthetic subjects focuses on strategies for the historical thinking development, differentiated teaching, recommendations on project creative activity. Master classes on specifics of listening and music analysis, on investigative activities arts have been delivered.

Along with the above-mentioned teacher development, **NIS considered approaches to the development of subject-specific skills organized brainstorming on collecting resources with the Kazakhstan context, discussed the issue of creating a creative working environment in the classroom.**

Trilingual policy

NIS trilingual education is implemented through:

- level study of Kazakh, Russian and English as separate language subjects;
- of non-language subjects in Kazakh, Russian and English;
- extracurricular activities in three languages.

Constant monitoring of the implementation of trilingual education is aimed at identifying the areas of educator professional development, the current areas of methodological support, which ultimately contributes to the model's sustainable development.

The 2018 study on "Development of language skills (Kazakh language) among students with Kazakh medium of instruction" investigated the influence of the trilingual teaching model on the development of language competencies in the Kazakh language.

The study took place in several stages:

– online survey (4,369 respondents);

– focus group interviews (20 upper-secondary students, 10 language teachers and 10 subject teachers teaching in Kazakh as the first (L1);

– analysis of written assignments (38 upper-secondary students);

– lesson observation of language and non-language subjects on L1 (30 lessons).

The online survey showed that, despite the relatively high level of Kazakh language among the respondents, they use the Russian in most cases (in everyday life situations).

Regarding the students' perception towards the development of their own language skills, the majority of respondents believe that studying at NIS helped them to acquire and master listening, speaking and writing.

Respondents note that learning specific words and terms in English has expanded their vocabulary, influenced cognitive skills and critical thinking positively.

[4] The topics that have not been part of the school programme

The results of the assignment analysis confirm the fact that the majority of students are able to express their thoughts competently, support them with arguments and present counter-arguments.

Based on the results of monitoring, recommendations for schools and teachers were developed. The recommendations were discussed in detail at the Annual NIS Conference.

TEACHER TRAINING FOR THE IMPLEMENTATION OF TRILINGUAL EDUCATION

Monitoring the implementation of trilingual education revealed the necessity for certain areas of teacher professional development:

- communicative approach application;
- subject-language integrated learning; (CLIL),
- academic language development;
- form and meaning of lexical units.

Peter Mehisto, the author of books on multilingual learning and CLIL, a lecturer at the Institute of Education, University College London (2018) notes that the introduction of theoretical principles and new knowledge into everyday teaching practice requires some time as these conceptual approaches are new for teachers of our country.

107 NIS teachers and employees underwent training courses within the reporting period:

- Workshop on Communicative Approach in Learning Second and Third Languages: How to Teach Students to Understand and Speak (19 teachers);
- 3 workshops on the application of CLIL (70 teachers);
- Workshop on Implementation of Trilingual Education Policy» (18 participants).

The workshops helped teachers to improve CLIL skills, acquire skills of using modern applications and websites in English to facilitate the CLIL teaching practice.

METHODOLOGICAL SUPPORT FOR TRILINGUAL EDUCATION

Along with teacher professional development, NIS provides methodological support in the form of teaching aids.

Thus NIS developed two lexico-grammatical minima (LGM) within the reporting period and shared them with schools, contributing to the expansion of active vocabulary:

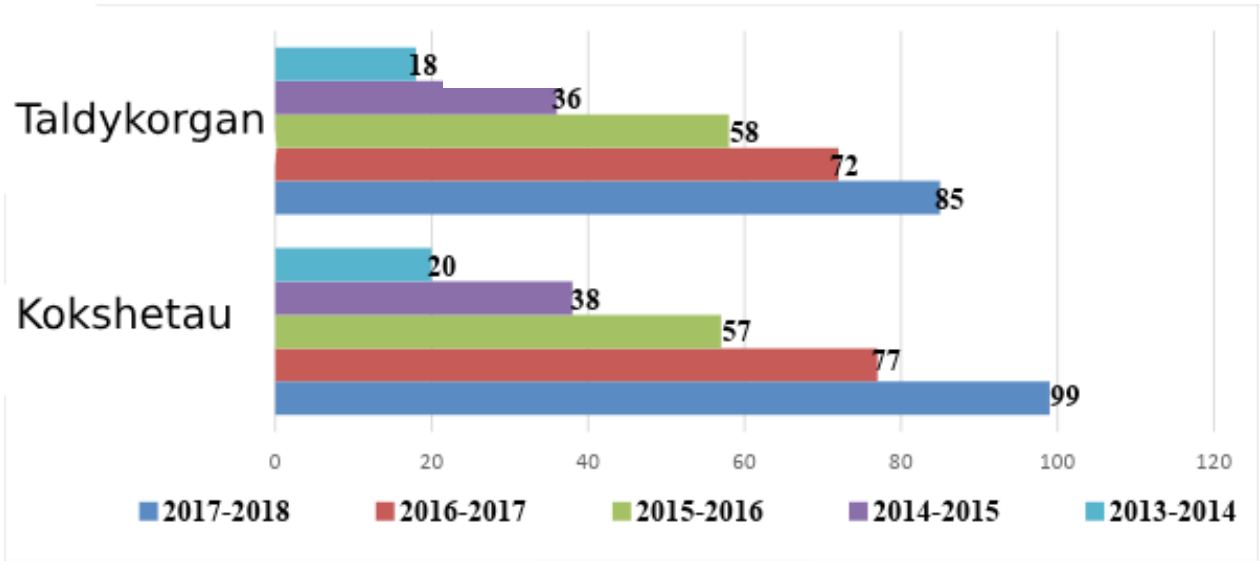
1) NIS lexico-grammatical minimum for Kazakh L2 for Grades 6-11 (for pre-school students and Grade 1-11 students);

2) Lexico-grammatical minimum for the Russian language for Grades 6-11.

Implementation of the Kazakh Language Immersion Project

During the reporting period, NIS continued its work on the implementation of the language immersion project at NIS pre-school and primary school of Taldykorgan (85 people) and Kokshetau (99 people).

Chart. Dynamics of immersion groups



The number of students in the immersion groups at NIS pre-school of Taldykorgan in the reporting period estimated 40 people.

Table. Data on the number of students of immersion groups

Academic years	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Number of immersion groups	3	3	3	3	3	2
Number of children	58	60	60	60	60	40

There has been a positive dynamics for the development of speaking skills in immersion groups. According to the results of the annual assessment remain consistently high.

The table below shows the assessment results for the whole term of the experiment according to five criteria: listening and understanding of a text, pronunciation, vocabulary, grammar, coherent speech on a given topic.

Table. Comparative indicator for Kazakh speaking skills in immersion groups of NIS Taldykorgan and Kokshetau

2012-2013	2013-2014		2014-2015		2015-2016		2016-2017		2017-2018	
Senior group Taldykorgan	Grade 1		Grade 2		Grade 3		Grade 4		Grade 5	
79,7%	Taldy-korgan	Kokshe-tau	Taldy-korgan	Kokshe-tau	Taldy-korgan	Kokshe-tau	Taldy-korgan	Kokshe-tau	Taldy-korgan	Kokshe-tau
	81%	83%	83%	83%	88%	84%	87%	84%	93,7%	80,6%
Middle group of Taldykorgan	Senior group Taldykorgan		Grade 1		Grade 2		Grade 3		Grade 4	
59,3%	71,9%		75%	78%	84%	84%	86%	83%	92,6%	93,7%
Junior group Taldykorgan	Middle group of Taldykorgan		Senior group Taldykorgan		Grade 1		Grade 2		Grade 3	
56,6%	75,2%		76%		78%	80%	80%	81%	85,2%	83,3%
	Junior group Taldykorgan		Middle group of Taldykorgan		Senior group Taldykorgan		Grade 1		Grade 2	
	63,8%		65%		66,2%		83%	77%	93,1%	82,6%
			Junior group Taldykorgan		Middle group of Taldykorgan		Senior group Taldykorgan		Grade 1	
			49%		54%		75%		89,4%	76,8%
							Junior group Taldykorgan		Middle group of Taldykorgan	
							42%		80%	

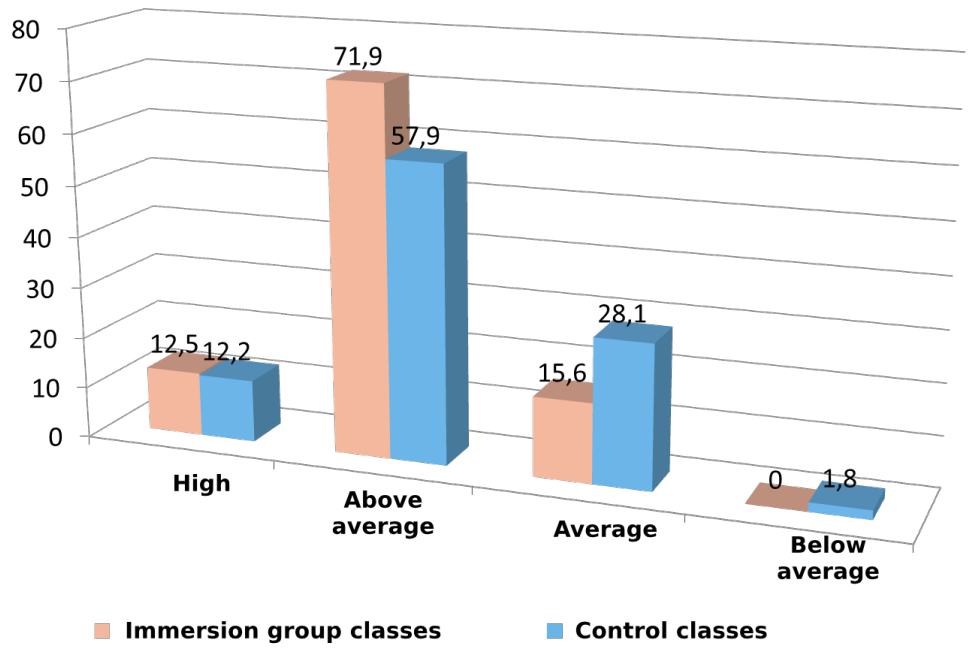
The implementation of the Project that develops fluency in Kazakh also includes mastering subject knowledge in the given language and developing cognitive skills.

Monitoring of the intellectual and cognitive abilities in pre-school immersion groups of NIS Taldykorgan shows the positive dynamics of mental operation development. According to the assessment results (98.2%) students demonstrate school readiness.

The first graduation of primary school students from Kazakh immersion groups took place in in the 2017-2018 academic year.

In this regard, NIS conducted a mini-study on Development of Cognitive Skills in Language Immersion Groups aimed at determining the level of the intellectual development in Grade 5. According to the study, students of language immersion groups showed higher development of cognitive skills in comparison with their peer from control classes.

Chart. Level of cognitive skills of five-graders



Immersion group students have high and above average indicators which is 84.4% compared to 70.2% in control groups.

Multilingual education development

To execute the order of the Head of State on learning a second foreign language in NIS schools (optional[5]) NIS developed and approved the Concept of Teaching a Second Foreign Language following the advanced national and international practice (by the decision of NIS Executive Board № 43 of 26.07.2018).

In accordance with the Concept, NIS introduces level programmes for a second foreign language (German, French, Chinese and Korean), that have been developed by expert partners specialize in subject programme and textbook development: Alliance Française, Alliance Française Astana (France), ZfA Kasachstan (Germany), Confucius Institute (PRC) at Gumilyov Eurasian University and Education Center at the Embassy of the Republic of Korea.

Subject programmes for a second foreign language reflect the approaches to language teaching, implemented in the NIS schools: the programmes are based on level, communicative, differentiated approaches, interdisciplinary integration based on cross-curricular topics.

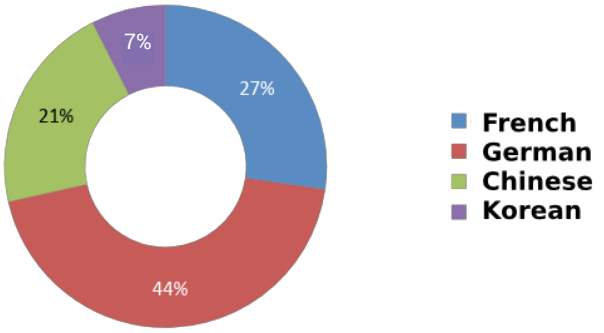
[5] Meeting of NIS Supreme Board of Trustees (27.05.2017)

Table. Subject programmes for a second foreign language

Language	Level programmes		
	A1	A2	B1
French	✓	✓	Under development
German	✓	✓	✓
Chinese	✓	✓✓	✓
Korean	✓		✓

In the 2018-2019 academic year, NIS started a three-year pilot project on compulsory learning of a second foreign language at NIS schools.

The number of Grade 10 NIS students learning a second foreign language (2018-2019 academic year)



NIS schools continue to operate elective courses for Grades 7-9 and 11-12 students, summer and vacation language schools to motivate them for achieving a high level of mastery in a second foreign language.

3.1.2. INTERNATIONAL BACCALAUREATE PROGRAMME

During the reporting period, NIS Astana held a number of activities within the International Baccalaureate Programme (IB).

NIS organized the work on Action-Based Public Service and Interdisciplinary Education in all Grades. IB launched Social Project in Grade 8 and Personal Project in Grade 10.

Action-Based Public Service

The implementation of Action-Based Public Service attracted 29 academic leaders and 659 students in the 2017-2018 academic year and 30 academic leaders and 654 students in the 2018-2019 academic year.

The number of service units amounted to 41 in the 2017-2018 academic year and 52 in the 2018-2019 academic year.

Interdisciplinary **Education**

NIS implemented 12 interdisciplinary units by the end of the 2017-2018 academic year and planned 10 interdisciplinary units for the 2018-19 academic year. By the NIS decision of November 2018 the number of interdisciplinary units we reduced to one per year, which meets the IB minimum. Thus, one semester contained five Interdisciplinary units.

Social Project in Grade 8

January 2018 ended the cycle of social projects by Grade 8 students for the 2017-2018 academic year. Students presented 46 projects in Russian and Kazakh.

Personal Project in Grade 10

April 2018 ended the cycle of personal projects by Grade 10 students for the 2017-2018 academic year. Students presented 156 projects in Russian, Kazakh and English. The jury chooses 6 best personal projects (Tulepbaev Alikhan, Laura Muratova, Jamasheva of Bahtagan, Dashain Tomiris, Daulbaeva Anel, Gorbunova Ekaterina), which then was presented to the members and guests of the school community. Students registered 174 personal projects for the 2018-2019 academic year by the end of 2018.

Teaching and skills development, followed by the construction of horizontal and vertical skill maps and learning strategies

NIS continued to build horizontal and vertical skill maps Approaches to Learning, that involved 58 leaders of horizontal planning.

NIS specialists developed 76 learning strategies on the development of self-organization skills in Grades 7-10 students. Similar work on communication and social skills is planned for the 2018-2019 academic year.

Improving subject programmes in all subjects in terms of the Global context, Key and Subject concepts, Ideas and research issues

Every IB teacher must conduct reflection at all stages of planning and teaching unit plans. The reflection serves the base for further improvement of educational programmes.

IB received 18 unit plans for moderation within Building a Quality Curriculum strand. 16 of them were dedicated to Drama, Arts, Design, Physical Education, Social Sciences, History of Kazakhstan, Kazakh Language, English Language, Kazakh Language and Literature, Russian Language and Literature, Mathematics, Chemistry, Biology. 2 interdisciplinary unit-plan were dedicated to Fundamentals of Social Sciences + Kazakh Language and Literature and Design + Mathematics.

Teachers and heads of departments received and analysed the feedback and reviewed the curricula. Updated curricula were presented within each department. The updates mainly touched upon the Global context, Key and Subject concepts, Ideas and research issues.

Improving teaching and learning among teachers

In order to receive high-quality and full feedback from students, the school conducted two surveys students asking students on teaching and learning subjects, components of the secondary school programme. Teachers, heads of departments, coordinators and school administration analysed the results of the survey, which resulted in plans and appropriate measures.

The school conducted induction for new teachers on school policies and rules, components and philosophy of the Middle Years Programme (MYP) in August 2018, October interactive sessions of professional development on MYP components for young professionals, curators and teachers involved in the planning and teaching of interdisciplinary units, project supervision and leadership in service.

Preparation for external electronic exams for Grade 10

In April-May 2018, the school conducted the MYP-eAssessment (for 156 Grade 10 students), which met international quality standards and was approved by IB.

Thus, students' electronic portfolio for Arts (39 students), Design (39 students), English Language (38 students), Physical and Health-Saving Education (40 students) was completed in April 2018.

The coordinator entered the assessment results into IBIS-International Baccalaureate Information system. The system selects and sends students' portfolios to IB for external moderation, along with personal projects selected in the same way.

These students had electronic exams in May 2018 in the following subjects English Language and Literature, World History, Mathematics, Chemistry, Biology, Physics, and Interdisciplinary Education (on average, 21-23 students for each of these subjects). They received certificates in October 2018.

Based on the results of external evaluation, compared with the previous reporting period, we observe positive dynamics of the average score in all subjects.

The results are not reflected in their reports and do not affect their progress in the Diploma program (DP). MYP eAssessment at school is aimed at preparing students for external assessment in the DP and comparing the quality of education in the primary school Programme with the global average results. Based on this comparison and analysis teachers adjust the planning and teaching process.

Students prepare for these electronic exams during the lessons by using the available examination packages of previous years, drawing up similar tasks and exercises for forming and ascertaining works.

2018 saw the following results of NIS Astana students:

- *a gold medal in the Republican Olympiad in biology;*
- *a gold medal In the International Programming Olympiad;*
- *a silver medal in the Republican Olympiad on Law;*
- *2nd place in Roboland International Robotics Competition;*
- *the school's robotics team has been shortlisted as one of the best WRO teams in the world (TOP 7);*
- *8 prizes in the NIS network on scientific projects.*

At the end of the 2017-2018 academic year, the quality of academic knowledge was 83% (87% for lower-secondary school, 75% for upper-secondary).

3.2. EDUCATIONAL RESOURCES

3.2.1. TEXTBOOKS DEVELOPMENT FOR NIS PROGRAMME

In 2018 NIS continued developing textbooks and teaching aids for NIS to ensure successful implementation of NIS-Programme, improving the quality of teaching and reduce teacher load.

The following projects have been developed within the mentioned strand:

- Grade 7 textbooks revision following the piloting results;
- Grade 8 textbook development and piloting;
- Grade 9 textbook development.

The content of textbooks is presented in various forms, which develops the ability to work with illustrations, tables, diagrams, charts. The balanced spread composition in terms of illustrations, main texts and tasks allows students to achieve lesson objectives effectively. Illustrations provide additional information, enriching and revealing the content of the main and additional texts. Each lesson uses stimulating and visual material aimed at consolidating the content of the lesson. Textbook activities aim to develop functional literacy and take into account age appropriateness.

The following Grade 7 textbooks were piloted in 19 NIS schools in the 2017-2018 academic year: Mathematics, Physics, Chemistry, Biology, Art, Computer Science, Geography, History of Kazakhstan, World History in Kazakh and Russian.

The textbooks have been reviewed according to the results of the piloting. The extent of changes varied from 10 to 50%. The textbooks content is enriched with a number of differentiated activities, activities creative thinking (creative projects), and tasks that allow for formative assessment and self-assessment. Illustrations, including images of maps, various schemes and info graphics, have been refined and improved.

Teachers gave positive feedback on the content, structure, and the extent of educational material. Students noted that the textbook provides an opportunity for self-study of new material or revision of previous one. They also liked the design and the rich palette of textbooks.

Grade 7 textbooks were introduced into the educational process and used in NIS schools in the 2018-2019 academic year.

NIS received 21 copyright certificates of state registration confirming the exclusive NIS property rights to Grade 7 textbooks. The content of Grade 8 textbook was developed in cooperation with strategic partner University College London (UCL) in 2016.

In the 2018-2019 academic year, NIS launched the Grade 8 textbook **piloting, for 9 subjects by NIS-Programme:** Mathematics, Physics, Chemistry, Biology, Art, Informatics, Geography, History of Kazakhstan, World History in Kazakh and Russian. The piloting takes place in 19 NIS schools, involving 494 teachers, 1682 students.

Digital versions of textbooks are available on the website sk.nis.edu.kz

Monitoring of Grades 7-8 textbook piloting shows that:
- spread features contribute to the systematic development of critical thinking;
- the clearly structured information and the functional use of visual material helps to increase the focus on key aspects of the content;
- mind maps on the closing pages allow students to develop the skill of reflecting on acquired knowledge;
- diagrams, charts, and infographics teaches students how to work with non-verbal information;
- links to digital educational resources allow students to expand the traditional format of the textbook, making it modern and interactive;
- activities on formative assessment allow students to make the learning process manageable and coordinated by both the teacher and the student.

Grade 9 textbook development for Biology, Physics, Chemistry, Geography, Informatics, Art, History of Kazakhstan and World History started in March 2018. Subject specialists with editors developed writing templates, author and editor briefs and designed a spread layout. NIS conducted **five training workshops for authors** creating textbook manuscripts in 2018.

Grade 9 textbooks for Mathematics and Sciences contain worksheets for practical and laboratory assignments. The distinctive feature of the textbooks for humanities is the leading concepts of the content, where students do research and work with primary and secondary sources.

3.2.2. DIGITAL EDUCATIONAL RESOURCES

In 2018, NIS continued developing digital educational resources (hereinafter – DER) for primary and secondary schools in order to provide resource support to teachers.

DER plays an important role in the modern educational process. DER along with paperback textbooks, allows teachers to change the content, methods and forms of education. In addition, DER engages students and uses modern information and communication technologies in combination.

DER objectives:
- delivering material;
- primary consolidation of the acquired knowledge and skills development;
- comprehension check.

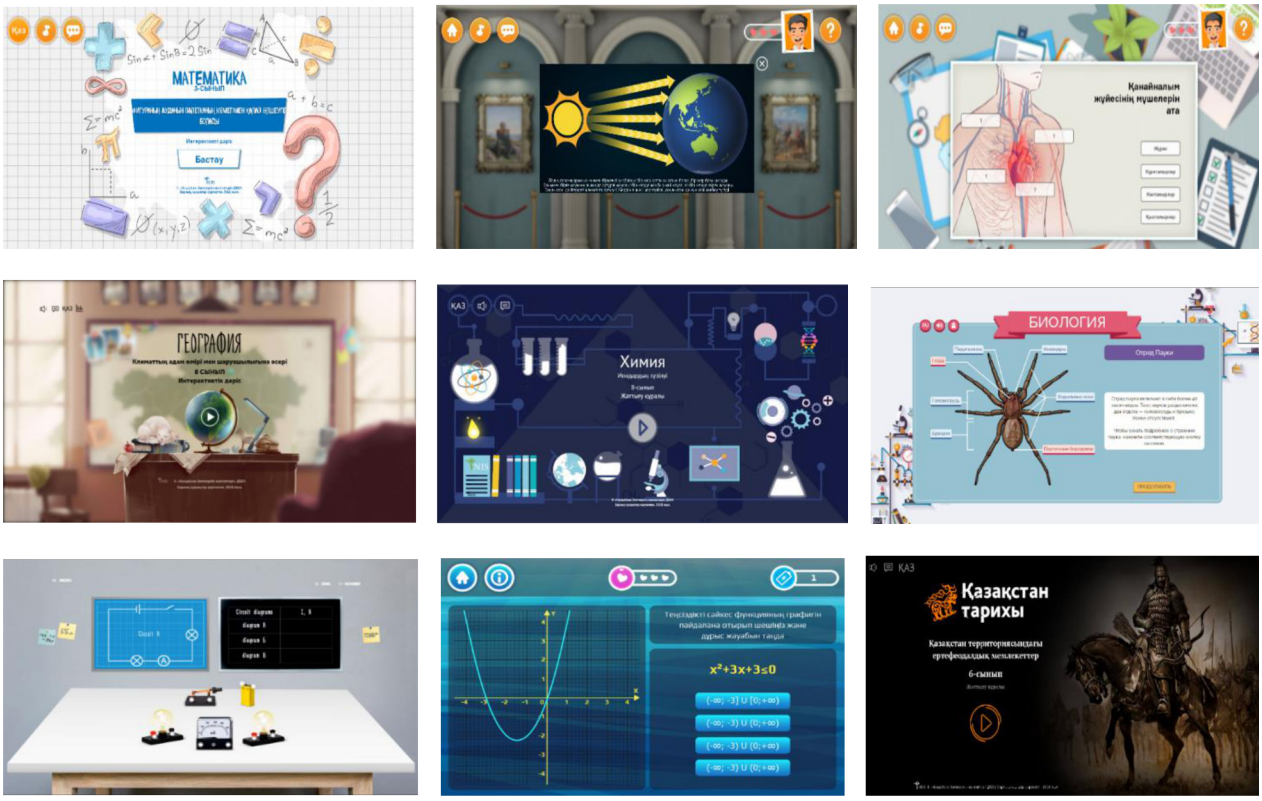
The list of developed materials in 2018:

Title	Grade	Subjects	Number
DER for the primary school	3	Science, Mathematics, World Understanding	30
DER for lower-secondary school	6,8	Biology, Geography, Computer Science, History of Kazakhstan, Mathematics, Physics, Chemistry	120
QazLingua application	3,4	Kazakh language (L2)	2

The DER for primary and lower-secondary schools are used in the educational process as an additional learning resource.

The monitoring revealed that the practical application of DER:
- provide highly interactive learning and increased academic independence of students;
- provide the possibility of level differentiation and individualized of teaching and learning;
- take into account the psychological and age characteristics and differences in the cultural experience of students;
- contain materials focused on working with information presented in various forms (graphics, tables, composite and original texts of various genres, video clips, etc.);
- contain tasks focused on non-standard solving methods, which allows you to gain experience in solving life problems using knowledge and skills within the subject.

Examples of e-learning materials for primary and lower-secondary schools (screenshots)



DER for primary and secondary schools are placed on Educational Resource Portal – ERP (http://smk.edu.kz/) and the website NISPlay (http://play.nis.edu.kz/). NIS schools and mainstream schools can use them in their educational process.

3.2.3. NIS LIBRARIES

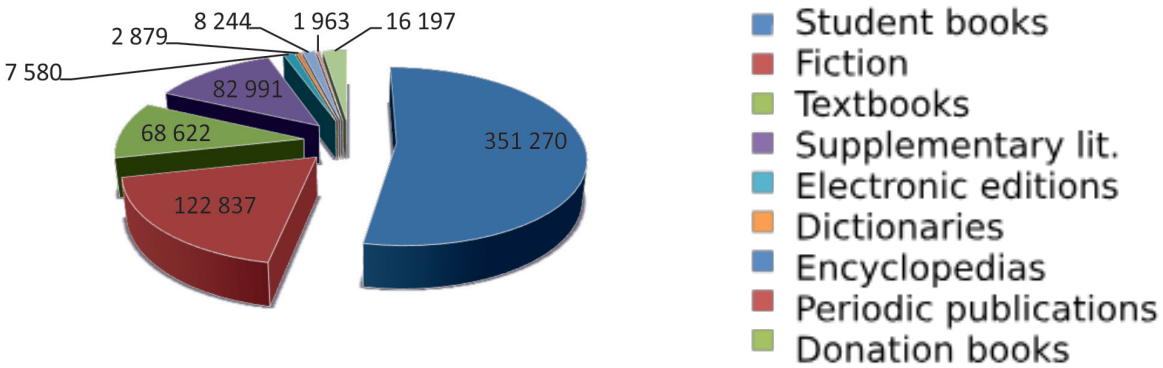
Library fund

The educational fund of NIS libraries complies with NIS-Programme, requests, needs, interests of teachers and students, results of the analysis of the domestic and international book market.

NIS libraries work with the following publishers to ensure the quality of the educational process by selecting modern teaching and scientific publications: Kazakparat, Aruna, Foliant, Kazakh Universiteti, Atamura, Alpha-kniga, Ast, Eksmo, Feniks, ROSMEN - Press, Binom, Penguin random house, Egmont publishing, Henry Holt and Company, Orion Publishing Group, Simon&Schuster, Cengage Learning, MMPublications, etc.

The total book fund for December 2018 is 664 081 copies of educational, methodical, artistic, scientific and educational literature.

Chart. The total fund of NIS libraries



The development of a culture of reading and developing reading literacy

The modernization of school libraries involves the formation of reading and functional literacy through the various forms and methods of mass work: «Literary Jam», «Question to Character», «Find books!», «Fictionary», «My favorite page», «SciKu», «Darkened Poetry», «Blind Book Date», «Book Surprise», «LibraryX», «Reading Time», «1,2,3,», «Memoro», «100 Books for NIS Students», «Book Start», «READx», «Write your story», «Book Battle», «I am Speaking poems», «Reading in a Circle», «World Cafe». «Decorative Lighting with Poems», «Poetry of Book Roots», «The Biggest, the Smallest...», «Hook on books», «Library Bingo», «Reader Manifesto», etc.

In 2018, NIS organized reader's online conferences for NIS and international students: Kokshetau and Wharton High School, Florida, USA, Shymkent (Ch.B.) and Briarhill middle school, Texas, USA, Pavlodar and Warinchamrab School, Thailand.

In the framework of the International month of school libraries for the Skype Project, organized by IASL, NIS Kyzylorda held a Skype conference with students from SMPN 8 KOTA SELATAN TANHERANG, Indonesia and Santa Maria de Lamas, Portugal.

The NIS library fund was replenished with 5,014 books in Kazakh, Russian, English, French and German during the traditional «Bookcrossing» event on the Day of the First President,

Professional development of NIS library staff

In 2018, Deputy Directors for Education, teacher-librarians, teacher-organizer-tutors attended professional developments training (delivered by international experts in the field of librarianship) «Integration of reading culture development methods - the creation of a unified educational component training» and «Library of the future and educational activities for reading».

Teacher-librarians participated in the IASL-2018, 47th Annual Conference by International Association of school librarianship and 22 International Forum on «Information, innovation and the impact of school libraries» in Istanbul, where they presented «Interactive methods of reading promotion» of NIS library network.

The NIS librarians successfully implemented acquired knowledge in the NIS libraries and disseminated their experience to mainstream schools libraries.

Information literacy development and research skills development

In order to improve students' research, analysis, information processing, critical reading skills NIS libraries organized sessions on information literacy using different techniques: «Reasoned Analysis of Materials», «Visual literacy», «Newspapers in Developing Information Literacy», using analytical questionnaires like, «Graphic Organizer», strategies like, «Bloom's Daisy», «6 Hats of Thinking», «Brain Storming», «World Cafe», «Battle of Minds», quest game like «Journey through the Book ocean», etc.

This helps children to navigate in the information space and learn on their own.

During the academic year, NIS organized training sessions on international information databases EBSCO, educational resources Twig-bilim, Bilimland for NIS students and teachers. Ongoing work with students and teachers is carried out to provide access to resources and to teach data-use skills.

During the year, the NIS library staff work closely with the school community, conducting workshops and trainings.

Teachers of methodical associations, tutors, educators received a series of practical pieces of training on the effective use of free digital resources and tools WEB 2.0 Plickers, Canva, Pictohcart, the use of interactive modules, compliance with the rules of academic integrity, copyright, plagiarism.

In 2018, NIS libraries began to work with GiggleIT Project so that students could have the opportunity to practice writing skills.

Family Reading Clubs unites students, parents, and teacher-librarians for collective reading sessions, discussions and watching film adaptations.

Reading clubs are platforms for promotion of «100 books for NIS students» project.

3.3. PASTORAL WORK

In order to preserve and enhance cultural heritage, spiritual development and strengthen patriotism among NIS students, NIS continued the work on the implementation of social projects and practices, programs and initiatives.

One of the highlights of the year became the Forum «The Great Steppe Descendants» (the Forum) which was dedicated to the NIS 10th anniversary and organized on the Day of the First President. President Nursultan Nazarbayev himself visited the event.

More than 1,600 people attended the Forum, among them, were more than 1,000 students, their parents, NIS teachers, NIS employees, more than 150 NIS graduates and 250 guests from among the representatives of different levels.

The President of Kazakhstan visited the exhibition of scientific projects presented by NIS students, got acquainted with the 2030 NIS Development Strategy, presented by Shamshidinova K. N. Chairperson, NIS Executive Board.

NIS students presented their scientific projects that received prestigious international awards to the Head of State: «Chimney Sweep Robot», «Polargraph Robot Window Cleaner», «Road of the Future», «Safe and Sound».

The stand «Our contribution to Digital Kazakhstan» is presented by textbooks with augmented reality, virtual scientific laboratories, mobile applications, Educational Resource Portal for teachers, NIS students' applications («Kazakh – Latin Converter», «Physics Helper»).

Representatives of NIS strategic partners – Jane Larsson, Executive Director for School Support and Assessment, Council of International Schools (CIS), Susan Robertson, Professor, Dean of the Faculty of Education, Cambridge University, Jacqueline Visser, Director of the Institute of Pedagogical Measurements, Cito met the Head of state.

NIS presented «Solar Energy to Schools» project implemented in NIS in cooperation with the Ministry of Energy of the Republic of Kazakhstan, Akimat of Astana and Shell company.

The Forum launched the activities of NIS Association of Graduates. Adel Kamaldinova, NIS Pavlodar students, presented Nazarbayev N. A. the badge of honor of the NIS Association of Graduates.

The President signed a Message to future NIS graduates in a time capsule, which will be opened in 50 years.

http://www.akorda.kz/ru/events/astana_kazakhstan/participation_in_events/uchastie-v-forume-uly-dala-muragerleri-posvyashchennom-prazdnovaniyu-10-letiya-aoo-nazarbaev-intellektualnye-shkoly

«The Great Steppe Descendants» concert programme became the final cord of the Forum.

https://youtu.be/19FjwKTqWxU

The best NIS teams performed on the stage: shadow theater from Atyrau with "My Kazakhstan!", dombra orchestra of NIS Astana Ph.M with Kurmangazy's "Saryarka", dance group NIS Astana with Choreographic composition "Ruhani Zhangyru", «La La land», «Night in the library NIS», «Home Land», musical piece "Into the School World", Taldykorgan school choir with popular songs «Zhayau Musa», «Sing, Sing», «Mother Land», NIS anthem «President's school».

To celebrate the anniversary of «Ruhani Zhangyru» NIS organized the annual local history research expedition «A Bow to my Homeland», involving 240 students 20 NIS schools.

The route of the expedition included sacred and historical places, architectural monuments, objects of the industry of the country.

NIS Taraz students visited Naurzum state nature reserve, located in Naurzum and Auliekol districts of Kostanay region, NIS Kyzylorda students visited the ancient settlement of Botay, where they studied horse breeding and equestrian culture.

NIS Ust-Kamenogorsk students visited industrial facilities and research institutes, where they reviewed the main stages of DNA production.

NIS Taldykorgan and Shymkent students visited Bogatyr-Komir LLP, where they learned about the the plant, the process of coal mining, and visited the coal basin.

Participation in expeditions forms students' spiritual and moral values, focuses on the choice of future profession, broadens horizons.

The implementation of **«Two Weeks in the Village»** project covering about 12 thousand NIS students was continued.

One of the most important projects to increase students' interest in work and preserve family values is «10 days in at parent's workplace», covering 7236 NIS Grade 9-11 students.

As part of the development of the volunteer movement in the country, 9000 NIS students are involved in «Service to society» project: patronage of orphanages, nursing homes, teaching it skills to children with health problems. In 2018, NIS launched a new «Answering the Call of the Heart» project, where students teach English to children with hearing impairment.

In addition, one of the innovations of the 2018-2019 academic year was the introduction of the pilot project «Active Hour» at two NIS schools. Karaganda and Shymkent (Chemistry and Biology) - http://krg.nis.edu.kz/chas-dvigatelnoj-aktivnosti/.

The project was well received by both students and their parents. According to the teachers, the students increased interest in sports, became more fit and cheerful. School health workers have noted that the number of visits to school health centres decreased. Parents show their own initiative for their personal participation in the «Active Hour».

In general, the system of educational work is realized through social projects and practices of the expedition, aimed at the formation of values and the achievement of the expected outcomes of the NIS-Programme.

3.4. SUPPLEMENTARY EDUCATION

The supplementary education system is an important condition for the student development, that takes into account individual abilities, attitudes and interests. NIS organizes elective courses, clubs, sports clubs, projects «Summer school» and «Partner schools».

3.4.1. SCHOOL ELECTIVE COURSES

In order to promote research and educational activities NIS runs 914 elective courses within schools in three areas:

- Deepening academic knowledge and research skills;
- Language skills development, international exam preparation, foreign language teaching;
- IT skills development.

The elective courses cover 100% of students.

In the reporting year, students had the opportunity to choose elective courses that promote in-depth study of school subjects and stimulate research interest in various fields of science in three languages.

• *Design Thinking*	• *Business mathematics*	• *Basics of plane geometry*
• *Industrial Chemistry*	• *Bionics*	• *Pedology*
• *Advanced Biology*	• *Biotechnology and Microbiology*	• *Applied problem-solving in mathematics*
• *IAM (Instrumental analytical methods)*	• *Biophysics in medicine*	• *Experimental problem-solving in physics and chemistry*
• *Theory of Inventive Problem Solving (TIPS)*	• *Genetics and selection*	• *Nanoworld secrets*
• *Pasco and GLX research of physical laws using devices*	• *Thinking through science, подготовка к предметным олимпиадам*	• *Законы и теории, лежащие в основе химических и интегрированных расчетных и экспериментальных задач*
• *Startuping*	• *Learning history through sources*	• *Environment-friendly energy-saving technologies and alternative energy*
• *Anatomy and physiology*	• *Culturology*	• *STEM*
• *Astrophysics and cosmology*	• *Laboratory workshop in biology, physics and chemistry*	

For language skills development and preparation for IELTS, SAT and NUFYP, etc. NIS organized a number of elective courses.

• *Academic English*	• *Model United Nations*	• *Essay writing*
• *Интерпретация текста: основы грамотного чтения*	• *Text analysis: integration of linguistic and literary approach*	• *PISA Preparation: mathematical literacy*
• *Creative writing*	• *Documentary journalism*	• *A-level exam preparation*
• *Debating, Getting Good at Grammar (GGG),*	• *Entertaining grammar*	• *NUFYP Preparation*
• *IELTS Preparation*	• *How to become a creative writer?*	• *Pen test*
• *Literature club "The Art of Literature"*	• *Communicative grammar*	• *Rhetoric*
• *SAT and NUFYP Preparation*	• *Creative writing*	• *Spelling challenges*
• *Second foreign language*		

For IT skills development and computer literacy students have the opportunity to choose elective courses in computer science and programming.

• *Informationandcommunications technology (ICT)*	• *Java programming*	• *Application development for mobile devices*
• *IT – Essentials, Sport Programming*	• *JavaScript, PHP, HTML, CSS, and SQL programming*	• *Implementation of project activities through the dynamic web-page development.*
• *Web application development using PHP*	• *Olympiad programming*	• *Solving logical problems*
• *Basics of HTML CSS JavaScript*	• *Solving problems with C++*	• *Introduction to programming*
• *Computer graphics*	• *Elements of applied mathematics*	• *Solving trigonometric problems with the help of educational Internet resources*
• *Applied mathematics*	• *Scientific process programming*	• *Website creation technology*
• *Programming*	• *Prototyping (computer science)*	• *Computer science - CIE preparation*
• *Robotics*	• *Wunder programming course*	

Following the elective courses, students conduct research, develop research projects, pass IELTS, SAT, NUFYP, develop mobile applications (educational games, applications for school subjects, puzzles for cognitive abilities development), which are publicly available in the Google Play Store.

Students were particularly interested in «MISTI Global Teaching Labs» Massachusetts Institute of technology. MIT students delivered training for students of there NIS schools: Karaganda (83 students), Petropavlovsk (232 students) and Semey (120 students) on Mathematics, Physics, Biology + Chemistry and Robotics to deepen scientific, technical and engineering knowledge.

1. Programme for Mathematics

The course was delivered by Jonah Borns-Will an MIT PhD student majoring in Mathematics, a member of the Board of Directors of the DynaMIT – science program in mathematics for MIT students, as well as an advisor at the MIT Math Learning Center.

! *«The purpose of the program is to complete SAT task using a conceptual approach in Mathematics, the development of applied skills of mathematical knowledge with a focus on a holistic understanding of environmental phenomena.»*

Following-up the course students received in-depth SAT preparation and successfully passed it.

2. Physics course

The course was delivered by Ignacio Perez Bedoya, the MIT undergraduate majoring in Physics, winner of international Olympiads in physics.

! *«The purpose of the program is the integration of research and project activities in the educational process, the development of engineering and design skills, spatial thinking, mathematical, physical and logical abilities.»*

Each topic of this course is aimed at practical experimental tasks with engineering elements (for example, oscillatory systems, problems of vibration damping and resonance accounting in engineering, mechanics and electromagnetism), as well as solving Olympiad problems.

3. Biology + Chemistry course

The course was delivered by Bailey Lily Sierra, a 4th year MIT student majoring in Biology. Chemistry.

! *The aim of the programme is to study advanced technology in Biology, and conduct experiments with use of Biology and Chemistry basic topics: DNA and RNA, Biochemistry, Cellular metabolism, Enzyme activity, Biotechnology, Genetic engineering, Diseases and mutations, Science outside of drugs, Protein biology with the focus to cutting edge research in the field of cancer treatment».*

The result of this course was student research projects on protein modeling.

4. Robotics

The course has been taught by Justin Gong, MIT student of Aerospace engineering, MIT teaching assistant of Physics, MIT Math Department advisor, Chairman of the conference 'United Nations Organisation Model' to MIT.

! *The aim of the programme is to develop electronic circuits using LEDs, Arduino programming with downloading software to a platform with use of theory of Physics in practice. The course represents a composition of Physics, Robotics and STEAM.*

Students studied Python programming language and designing of engineering systems within the framework of the course.

The programme includes three units:

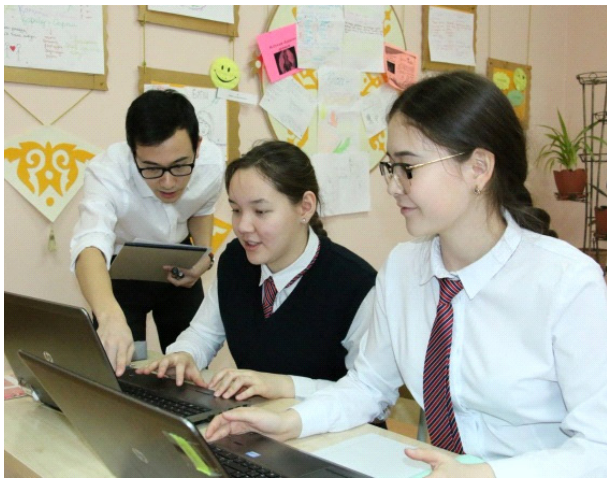
- Programming in Python (topics include: variables, core logic, conditional statements, cycles and functions);
- Designing of complex engineering systems (modular and system approach to solve engineering problems using an example of satellite use);
- Designing and creation of software systems.

The course results were development of own software systems by students.

According to the survey, students highly appreciated the work of MIT students, course content and teaching methods.

MIT doctoral candidates, master's students and students noted the high level of academic knowledge of NIS students in Science, as well as their curiosity and creative thinking.

MISTI project in NIS schools (video):
http://petropavltv.kz/ru/news/society/inostrannyi-opyt
https://www.youtube.com/watch?v=IXSoAkYx4Uc



Elective courses supported by Stanford University

Stanford University professors have organised courses in NIS Astana and NIS Aktau for 40 students on the following topics: Artificial Intelligence, Mathematical logic and problem-solving, Bioscience and biotechnology, Business and Entrepreneurship.

The aim of the course is to develop mathematical creativity, programming and artificial intelligence followed by creation of computer games.

Students had a unique possibility to study the tools and methods of problem-solving in theory of sets, theory of numbers and combinatorics,

issues in biomedical optics, molecular biology, genetics, biomedicine and human pathology.

Nazarbayev University elective courses

Nazarbayev University graduates (first graduates of NIS schools) have organised training courses 'Nazarbayev University Foundation Year Program Entrance Test' in **School of Physics and Mathematics in Astana** to enrol in Nazarbayev University. Courses were organised for 20 students and included three strands:

- Mathematics + Physics;
- Mathematics + Chemistry/Biology;
- Mathematics + Critical thinking.
-

The aim of the course is to develop critical and analytical thinking skills, formation of fundamental knowledge of Physics, Mathematics, Chemistry and Biology, preparation for international exams.

200 NIS students of grades 10 and 11 have been trained on research studies in English in **4 Nazarbayev University schools:** School of medicine, School of engineering, School of science and technology, School of Mining & Geosciences.

The courses have been taught by foreign and local young scientists having internationally recognised achievements in the field of studies.

Students conducted experiments in advanced laboratories provided by the university, studied DNA and human anatomy, types of wings of aircraft and ships, programming, created a model of aerodynamic wings, conducted research works and laboratory experiments in Physics, Biology, Chemistry and Robotics, developed their skills of determining fossil minerals and their deposits.

3.4.2. ELECTIVE COURSES ABROAD

The courses abroad have been organised for 159 NIS students in 6 leading higher education institutions.

MIT Electrive Courses

MIT (USA) is one of high ranking universities in the world, and holds No.1 position in QS World University Ranking 2018.

Research Science Institute under MIT accepts 80 the best students worldwide annually for training in summer school within the framework of STEAM learning. Summer school lecturers are the distinguished scientists, MIT professors and Nobel laureates.

Aqnazar Qashymurat, Almaty NIS student, winner of many international Olympiads, student-scientist has been selected among 9,000 best students worldwide to participate in MIT summer courses through Research Science Institute (RSI) programme.

The tasks included solving complex mathematical problems. Aqnazar conducted a study on solving topology problems in Mathematics, and proved that Lefschetz fibration over the disk can be obtained by removing a special layer and section from rational elliptic surfaces.

The result was the classification of Lefschetz fibration with two I_1 layers.

This course contributed to scholarship offered to Aqnazar in Harvard University.

Elective courses in Columbia University

Columbia University in the City of New York selects and accepts the best students from over the world to advanced courses on actual areas of science and social development in summer. The University is a part of the Ivy League including elite American Universities, and holds the top position of the best universities worldwide.

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In 2018, 20 NIS students are referred to Columbia University courses in advanced laboratories of Physics, Chemistry, Biotechnology, Nanotechnology, Engineering and Medicine.

Students had certain problems and challenges to be solved individually or in group. The courses were taught by Columbia University professors, entrepreneurs, experts from different areas of science and Silicon Valley business.

Students were taught through the following courses:

- Biomedical engineering: physical effects on cells;
- Computer programming: Java coding;
- Modern Mathematics;
- Introduction to physical sciences;
- Investigation in theoretic and experimental physics;
- Introduction to architectural design;
- New York Experienced: Urban Case Study;
- Sustainable urbanism: projects on the cities of future;
- Entrepreneurship and innovation: Changing the world through venture business;
- Entrepreneurship and innovation: development of new products;
- Communication with consumers: principles of marketing, advertising and public relations;
- Reading and writing approaches;
- Introduction to psychology.

By the end of courses, students created websites, own Smart-up projects on social entrepreneurship, studied the most recent programming languages, learned how to write algorithms in Wolfram Mathematics software, studied cloning technology of stem cells to create the implants of muscular, bone and fat tissues.

Elective courses in Stanford University

! *Stanford University is one of the most authoritative and top-ranked universities in USA and in the world; holds the 2-nd position in QS World University Ranking 2018. The University is located in Silicon Valley. Its graduates has founded leading global companies, such as Google, Yahoo!, Hewlett-Packard, Cisco Systems, etc.*

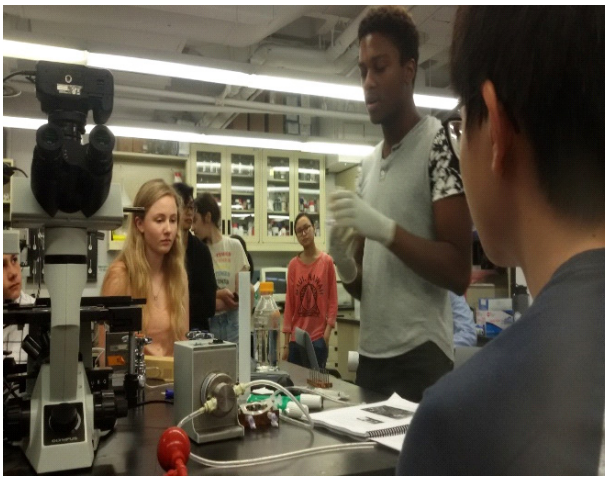
40 students has been trained through the courses of XXI century skills development in Stanford University.

The training has been held in the form of group work of an international group through Solving Global Challenges Project.

The course plan included five elements of the curriculum:

1. Program engineering;
2. Science and Humanities;
3. Creative writing;
4. Principles of entrepreneurship;
5. Arts.

By the end of the course, students have learned the virtual reality and 3D modelling of human anatomy, main approaches to creation of Startup projects (from formulating business-plans to its final placing on market).



Elective courses in Johns Hopkins Center for Talented Youth

! *Johns Hopkins University is one of the most cited Research Institute in the world from which 36 Nobel laureates were graduated. The University holds the leading positions in national and global ranking of universities.*

20 NIS students have taken participation in the courses for talented students in the Johns Hopkins Center for Talented Youth.

Students have been trained through the courses in the format of lectures and laboratory and practical works in the following strands:

- Electric engineering;
- Mathematical logic;
- Advanced Chemistry course;

- Advanced Physics course;
- Advanced Biology course;
- Probability and game theory;
- Cryptology.

During the courses, students studied engineering science with use of matrix, Nash equilibrium and Pareto efficiency, learned how to solder a circuit for computer board assembly, learned methods of decoding the most sophisticated encryption in human history.

Elective courses in Centre International de Valbonne

Summer elective courses have been organised for 20 NIS students learning French language in Centre International de Valbonne (France) with support of the French Embassy. Students were trained through the following programmes:

- Chemistry;
- Physics;
- Robotics;
- Computer science;
- Astronomy.

The practical part of the courses of Chemistry and Physics has been conducted at the places of French enterprises manufacturing glass products and perfumes.

Students observed a night sky at the place of the largest French observatory to study space bodies.

The course programme included visiting historical and clutural facilities in France.

Centre International de Valbonne noted motivation, multilingual space, diversity and curiosity of NIS students.

The Advanced Educational Scientific Center courses of Mathematics

The course at the Advanced Educational Scientific Center (faculty) – Kolmogorov's boarding school of Moscow State University is organised for 58 NIS students (hereinafter - AESC MSU – Kolmogorov's boarding school). AESC MSU – Kolmogorov's boarding school teachers held classes on solving Mathematical Olympiad problems.

Participants of this course won the Network Mathematical Olympiad across the country.

By the end of elective courses, NIS students have reached the following achievements:

- *62 of them have been admitted to top-ranked universities: Harvard Univesity, Massachusetts Institute of Technology, Stanford University, Princeton University, Columbia University, University College London, Imperial College London, Nanyang Technological University, London School of Economics and Political Sciences, Shanghai Jiao Tong University, Ludwig-Maximilians-Universität München, Universität Heidelberg, University of Leeds, etc.;*
- *16 of them got 7 and more IELTS scores;*
- *9 of them are winners of republican and international science competitions.*

3.4.3. SUMMER SCHOOL

Summer schools for students from Intellectual and comprehensive schools were organised for development of abilities to conduct project and research activities, and preparation for the best foreign and local universities during the reporting period.

By the end of academic year, the courses on advanced studying of separate subjects have been organised for NIS students for 2 weeks within the framework of Orken - grant of the First President of the Republic of Kazakhstan - the Leader of the Nation.

Summer school is also organised for 202 students of comprehensive schools from socially vulnerable families who were trained on robotics, STEAM, and who studied subjects of the relevant grade on a non-reimbursable basis.

Summer school is organised on a reimbursable basis and accepted **467** students (**49** NIS students, **418** students from educational organisations) through the following programmes:

- Mathematics;
- Projecting: Mathematical city;
- Science;
- Physics around us;

- Biotechnology and bioengineering;
- Chemical substances at the service of human beings;
- Engineering;
- Basics of Bioinformatics;
- Development of mobile applications;
- Robotics (STEAM Robotics);
- Arduino;
- English language;
- IELTS program;
- Design thinking;
- Beautiful functions and their graphs.

634 students were trained through intensive language immersion courses within summer school (Kazakh language - 180 students, Russian language - 40 students, English language - 414 students).

Summer school is a good platform for development of research activity, critical thinking skills and Improved academic knowledge.

For detailed information, see web-site www.summerschool.nis.edu.kz.

3. 4. 4. PARTNER SCHOOLS

Partner Schools Project is implemented by three strands:

1. Student training through the comprehensive programme of a partner school;
2. The implementation of research and development projects with partner schools (with the publication of results in international scientific publications);
3. Immersion in culture, history and arts of the country of residence.

Student training through the comprehensive programme of a partner school

The meeting between teachers and students of Werner-Heisenberg-Gymnasium Riesa[6] and School of Chemistry and Biology In Ust-Kamenogorsk was held in the territory of Kazakhstan through the first strand.

Along with NIS-Programme training, students were involved in STEM projects and social practices.

22 students from NIS Pavlodar and NIS Almaty (ChB) have been trained through the subjects of Science in AESC MSU – Kolmogorov's boarding school[7].

In addition to advanced study of learning materials, students have been trained for international Olympiads of Mathematics, Computer Science, Physics and Chemistry.

Implementation of joint research and development projects with partner schools

8 students from School of Physics and Mathematics in Astana were trained through **PERMATApintar**[8] (Malaysia).

[6] *Werner-Heisenberg-Gymnasium Riesa was founded in 1908, a multidisciplinary school with science, arts and social strands. MINT-EC member.

[7] * The Advanced Educational Scientific Center – Kolmogorov's boarding school of Moscow State University implements the secondary education programmes for gifted children with in-depth study of Mathematics, Physics, CHemistry, Biology, Computer Science with use of advanced educational technology.

[8]* Pusat PERMATApintar Nigara – Centre for gifted children in the National University of Malaysia for advanced study of Science, Technology, Engineering and Mathematics, as well as support in research activity of students.

Students took participation in experiments relating to immersion to foreign language speaking environment, and exchanged experience with a student council. In Mathematics, NIS students studied through the advanced programme Calculus.

In Chemistry, students studied organic chemistry topics, including the compulsory research and development component.

Since 2018, the cooperation with **Ernst Abbe Gymnasium** has been maintained[9] (Oberkochen, Germany). 8 students from Ernst Abbe Gymnasium visited School of Chemistry and Biology In Almaty for the purpose of completing the research and development project (launched in

2017) on the topic of 'Domestic manufacturer of products in Germany and Kazakhstan'.

Within the framework of subproject 'Products made in Kazakhstan', German students have visited the industrial facilities of the national cuisine (camel and horse farms 'Sydyq', confectionery shop 'Nazik'), Huns village and were introduced to the process of making following national dishes: qymyz, shubat, qurt, irimshik, qazy and qarta. This experience was an amazing event for German children. A scientific publication was prepared for the German international journal by the end of this work.

Immersion in culture, history and arts of the country of residence

The exchange of students of International School Hannover Region and School of Physics and Mathematics in Astana has been organised in October, 2018[10] (Hannover, Germany).

8 students from International School Hannover Region were trained in the School of Physics and Mathematics in Astana and visited Astana attractions.

A return visit of 8 NIS students (School of Physics and Mathematics in Astana) has been organised to a German school. Students were trained through the interest programme (according to individual schedule), and took participation in the lectures of Project Based Learning and UN Model.

As the extracurricular activity, students visited such historical and cultural facilities as Museum August Kestner, Leibniz University Hannover, Hannover City Hall, Herrenhausen Gardens, etc.

15 NIS students (Pavlodar) who studied German language and became winners of the competitions within the youth exchange programme organised by Goethe-Institut, visited Goethe Schule Wetzlar school .

Each Intellectual school cooperates with 5-8 partner schools (see Appendix 'Partner schools') that allow students to engrain the skills of intercultural communication, global thinking and tolerance.

3.5. MEDICAL AND PSYCHOLOGICAL SERVICES

3.5.1. MEDICAL SERVICE

In 2018, in connection with the commissioning of new NIS school buildings in Semey and Ust-Kamenogorsk NIS licensed medical services of these schools and received applications to the General license for the provision of outpatient care in Pediatrics and Dental care (for children).

During the reporting period, medical services carried out treatment and prevention activities in schools.

The incidence of NIS students

The analysis of incidence of NIS students has shown that the main groups of diseases are ones of the respiratory system (acute respiratory infections, tonsillitis, pharyngitis, sinusitis, rhinitis, etc.), digestive system, eye and adnexa, ear, nervous system, bruises, wounds and other diseases.

[9] Ernst-Abbe-Gymnasium is a German gymnasium that has 120-year history. The school is recognised by the Government of Germany as the Centre for Studies in Molecular Biology. In 2008, the Biotechnology Laboratory has been built according to the highest safety standards. From 2015 to 2016 academic year, the school became a member of the Excellence-Schulnetzwerk MINT-EC National Community. The gymnasium actively cooperates with Italian, USA, French and Kazakhstan schools.

[10] International School Hannover Region is committed to ensure quality international education in creative environment, and create the conditions for free expressions, values, customs and cultures.

[11] Goethe Schule Wetzlar (Germany) is a comprehensive gymnasium founded in 1970. The school works in three strands: Science, Culture and society, Sports and health with in-depth study of foreign languages 'English, Russian, Latin, Spanish and French).

Preventive medical examination

Every year health organizations conduct preventive medical examinations of target groups of children to improve their health, identify diseases in the early stages, prevent the development of diseases, risk factors.

Thus, more than 94% of NIS students are covered by preventive medical examinations, more than 5% of children have not been examined due to absence and lack of assignment to medical organizations.

The results of preventive examinations showed that on average, more than 42.1 % of children belong to the first group (healthy children), 49.4 % – to the second group (healthy children with functional abnormalities, as well as reduced resistance to acute and chronic diseases, with the presence of risk factors), 8.3% – to the third group (children with chronic diseases in a state of compensation, with fully functioning system), and 0.1 % – to the fourth and fifth (children with chronic diseases, in a state of subcompensation and decompensation).

More than 95% of NIS students have undergone dental preventive examination. Lists of students who did not pass the examination are included in the inspection plans for next year. More than 34.5% of examined students needed sanitization (treatment).

Immunization

In accordance with the National Immunization calendar students of different age groups are targeted for vaccination against diphtheria, pertussis and tetanus, tuberculosis, measles and rubella, influenza, viral hepatitis A.

In 2018, the majority of children to be vaccinated against tuberculosis (Kokshetau, Taldykorgan, Astana), viral hepatitis «A» (Karaganda, Kyzylorda, Shymkent), passed preventive vaccination. Influenza, diphtheria, tetanus and pertussis vaccination was the lowest number of vaccinations. The main reasons for refusal to vaccinate are informed refusal of legal representatives of students, medical withdrawal from vaccination.

Health education

In order to prevent diseases and promote a healthy lifestyle during the academic year, NIS medical service carries out various activities within the framework of health education.

These activities cover the prevention of infectious and non-communicable diseases, the impact of nutrition and physical activity on human health and other topics.

During the reporting period NIS Kokshetau, Shymkent (ChB), Karaganda, Almaty school and dormitory staff received training on helping with injuries, anaphylactic shock and other urgent conditions. Similar training was conducted with Biology teachers of NIS Aktobe, Shymkent (ChB). NIS Karaganda developed an algorithm for medical and teaching staff in case of emergency situations and first aid.

One of the most important activities of health education in schools is devoted to psychoactive substances. For example, NIS Aktau organized a meeting with the specialists of the regional centre for a healthy lifestyle, the juvenile police. Within the meeting, NIS students and employees were briefed on the signs of using psychoactive substances, the impact on human health, as well as legal and other aspects of the use and spread of psychotropic substances.

In the first half of 2018 (due to the epidemiological increase of meningococcal infection, fatal cases in the country), NIS medical service delivered lectures on disease dissemination factors, symptoms and signs, prevention methods, prepared memos and brochures, the rationale for urgent treatment in health care organizations in case of illness.

In addition, NIS take measures to prevent the incidence of acute respiratory diseases and influenza in anticipation of the seasonal increase in incidence.

3.5.2. PSYCHOLOGICAL SERVICE

During the reporting period, the work of psychological service is aimed at solving the following tasks:

- Standardization of the process of psychological and pedagogical support and support for Grades 7-12 students with academic, social, emotional, behavioural difficulties;
- Introduction of new approaches and practices of prevention and crisis assistance to students and their families in difficult situations;
- Changing the approaches of psychodiagnostic work with the use of express methods, self-diagnosis of students and teachers;
- Expanding the skills of psychological counselling when working with the requests of the participants of the educational process;
- Expansion of opportunities for professional support of teacher-psychologists, development of standards for professional activity of NIS teacher-psychologists.

NIS introduced the programmes **«Strong family 10-14»** and **«Prevention of auto-destructive behaviour among minors»** to ensure better understanding among employees parents/ guardians of signs, causes, consequences of educational, social, emotional and behavioural difficulties in students.

«Strong family 10-14»,[12] developed by American experts, adapted by the school of health and social welfare of the University of Oxford Brooks (UK), is aimed at reducing family factors that cause negative behaviour of adolescents, to establish good, trusting relationships between children and parents.

Within the framework of this programme, 46 NIS employees from among teacher-psychologists, teacher-organizer-curators received training. They conducted 113 training workshops in NIS schools for: teacher-organizer-curators and mentors in dormitory.

Small psycho-pedagogical councils are organised for the prevention of academic challenges, emotional and behavioural negative situations, provision of assistance and support, with the participation of medical staff, curators, subject teachers and psychologists.

For the purpose of improving the psychological climate in schools, prevention of burnouts, increase of psychological culture of participants, teachers-psychologists have organised **33** intraschool events (Positive morning, Post service of kindness, Eyes are the windows to the soul, Secret friend, My family, Give a smile, Rainbow of mood, Psychological fence, Change your negative to positive'), **4 520** consultations with students, **782** – with parents, **985** – with teachers).

[12] Created by American experts and adapted by Health and Social Care at Oxford Brookes (United Kingdom).

Nazarbayev Intellectual School
of Physics and Mathematics
in Taldykorgan
Lee Victoria
«Flowers»

Nazarbayev Intellectual School of Chemical and Biological Sciences in Pavlodar
Tuyakpaev Altair, 16 years
'Summer'

4

UNIT 4. RESEARCH

NIS builds its own research capacity in the following strands:

- Potential development;
- Research and curriculum evaluation (including cooperation with external researchers and external projects);
- Teachers' studies (Action research and lesson study);
- Exchange of accumulated knowledge (including research digest, international conferences).

Research and curriculum evaluation

Research activities of Nazarbayev Intellectual Schools are coordinated by the Scientific Consulting Council (SCC).

In 2018, **17 studies of category 1 were completed and 6 research projects are still in progress.**

Table. List of NIS research

№	Research theme	Project coordinator	Period	Status
1	Employee satisfaction in NIS (2014-2015)	NIS	2014-2015	completed
2	Study of how trilingual education policy is realized in Nazarbayev Intellectual Schools	NIS	2016-2017	completed
3	The impact of studying in NIS on students' further study and career according to the opinion of 2010-2016 graduates	NIS	2015-2017	completed
4	Advantages and barriers to the implementation of the 'Action Research' and 'Lesson study' projects in NIS	NIS	2015-2017	completed
5	Study of children's well-being in Kazakhstan	Nazarbayev University, Cambridge University	2015-2017	completed
6	Assessment procedures as a part of the attestation of NIS educators and equated persons	NIS	2015-2018	completed
7	The results of NIS graduates' survey on their satisfaction with the quality of education in Kazakhstan's universities	NIS	2015	completed
8	Validation study of reading literacy 'Valid assessment of NIS students' reading literacy in the context of trilingual education'	NIS, Centre for Pedagogical Measurements Cito	2015	completed
9	Assessment of CE level and leadership programs' efficiency	NIS, Cambridge University, NIS	2016	completed
10	Introduction of the updated content of education and assessment in primary schools (Grade 1) of Kazakhstan	Nazarbayev University, Cambridge University, NIS	2016	completed
11	Overview of primary school curriculum for Kazakhstan (Netherlands Institute for Curriculum Development, Nazarbayev Intellectual Schools)	NIS	2016	completed
12	Validation study of the efficiency and predicted validity of the students' competitive selection (Cito, Nazarbayev Intellectual Schools)	Centre for Pedagogical Measurements Cito, NIS	2016	completed

13	Valid assessment of NIS students' reading literacy in the context of trilingual education (Cito, Nazarbayev Intellectual Schools)	NIS, Centre for Pedagogical Measurements Cito	2016	completed
14	Study of NIS students' health status	Nazarbayev University	2016	completed
15	NIS students' academic load	NIS	2017	completed
16	NIS employees' satisfaction (2017-2018)	NIS	2017-2018	completed
17	Validation study of test assignments designed for the monitoring of NIS student performance in Math	NIS, Centre for Pedagogical Measurements Cito	2017	completed
18	Diagnostic testing of pilot schools' students	NIS	2015-2019	in progress
19	Implementation of the NIS integrated criteria-based assessment model (Evaluation of the NIS assessment efficiency)	NIS	2015-2019	in progress
20	Monitoring of the integrated curriculum implementation	NIS	2013-2018	2017-2018 phase is completed, 2018-2019 Phase is in progress
21	Introduction of a new model of the NIS teachers' attestation	NIS	2017-2018	in progress
22	Transmission and continuity of learning innovations in secondary education of Kazakhstan	Nazarbayev University, Cambridge University, NIS	2018-2020	in progress
23	Validation study of the ability scale within the monitoring of NIS student performance	NIS, Centre for Pedagogical Measurements Cito	2018	in progress

The research results are presented on research-to-practice conferences and forums throughout Kazakhstan as well as abroad: in Great Britain (London, Oxford), the Russian Federation (Moscow, St. Petersburg, Krasnoyarsk, Barnaul) and China (Beijing).

A traditionally significant platform for presenting and discussing a range of research performed by NIS is an annual International conference.

Category 2 is a range of research performed by NIS employees within their master and doctoral programs. In total, 2 requests for research were received and one of them was approved.

Category 3 represents a range of research performed by external researchers. Three researches out of four requested were approved.

A three-year research project **'Transmission and continuity of learning innovations in secondary education of Kazakhstan'** was launched in 2018. The research group includes scholars from the Faculty of Education at the University of Cambridge, the Graduate School of Education at Nazarbayev University and Nazarbayev Intellectual Schools.

The research examines key aspects of the secondary education reform in Kazakhstan (to explore views of school teachers, principals and other stakeholders on the implementation of the updated content of education in comprehensive schools), a reform model, its strengths and weaknesses and effect on different levels of the education system.

The project addresses four principal directions:

1) The reform and professional development of teachers;
2) Multilingual education;
3) Inclusion and equity;
4) Pedagogy and assessment.

Following the results of 2018, a research methodology was developed and its tools were approved.

Intermediate project results were presented at the European Conference on Educational Research (ECER-2018, Bolzano, Italy), X International Research-to-Practice Conference held by NIS, and 'Sustainable changes in Education' symposium.

Teachers' research

More than 60% of NIS educators (about 1 700 teachers) are actively involved in 'Action research' and 'Lesson study'.

In 2018 research results were presented within a session of the X International Research-to-Practice Conference 'Next Generation Schools' (see NIS Annual Report 2018, Part 2)

Information on NIS research and conferences can be found at http://conferences.nis.edu.kz and http:///research.nis.edu.kz and in the NIS Annual Report 2018, Part 2.

The websites contain all information about the NIS conferences: speakers' biographies and abstracts, speeches, presentations and archived materials from previous conferences. Every year NIS publishes a **Research Digest** outlining the latest studies in education.

Nazarbayev Intellectual School of Chemistry Byology in Shymkent, Abdikhanova Balzhan, 14 years, 'The white young horse'

Nazarbayev Intellectual school of Physics and mathematics in Taraz
Fayzrahman Camilla, 14 years
'Still life'

5

CHAPTER 5. QUALITY OF EDUCATION

NIS continued to assess the quality of education by carrying out student performance monitoring, criteria-based assessment and external summative assessment, and having its schools undergo international accreditation.

5.1. STUDENT PERFORMANCE MONITORING

The NIS student performance monitoring system was developed and implemented by Nazarbayev Intellectual Schools in cooperation with international experts from the Cito educational measurement institute, Netherlands (the Cito experts). Student performance monitoring, along with other types of school assessment, is a special component in the complex system of assessment implemented in NIS due to the system allowing for the timely identification of knowledge and skills in students and providing tailored pedagogical support.

Monitoring results: mathematics

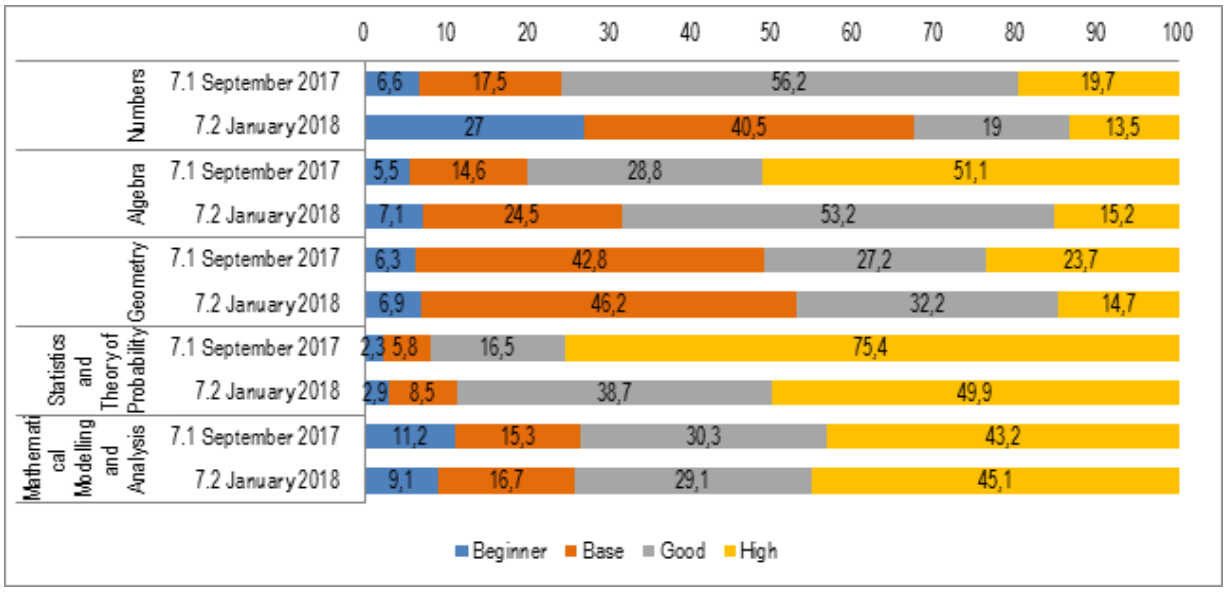
In 2018 the NIS activity bank was updated: NIS developed **200 test activities,** conducted **two monitorings, two workshops** for discussing monitoring output, setting assessment standards and describing achievement levels, **one workshop** for discussing expertise results and refining test activities with support provided by the international Cito experts and participation from NIS mathematics teachers.

The monitorings were conducted in January 2018 (for grade 7-11 students in 19 NIS schools) and September 2018 (for grade 7-12 students in 20 NIS schools).

The January monitoring covered **11,074 students.**

Comparative analysis of grade 7, 8, 9, 10, 11 students' results demonstrated in two monitorings conducted in the academic year 2017-2018 (September 2017 and January 2018) showed an upward trend in performance.

For instance, if we compare grade 7 results from January 2018 and September 2017, we will see an increase in the share of students with basic (+9.9 %) and good (+24.4 %) levels in the Algebra section, basic (+3.4%) and good (+5%) levels in the Geometry section, basic (+2.7%) and good (+22.2%) levels in the Statistics and Theory of Probability section, and high (+1.9%) and basic (+1.4%) levels in the Mathematical Modelling and Analysis section.

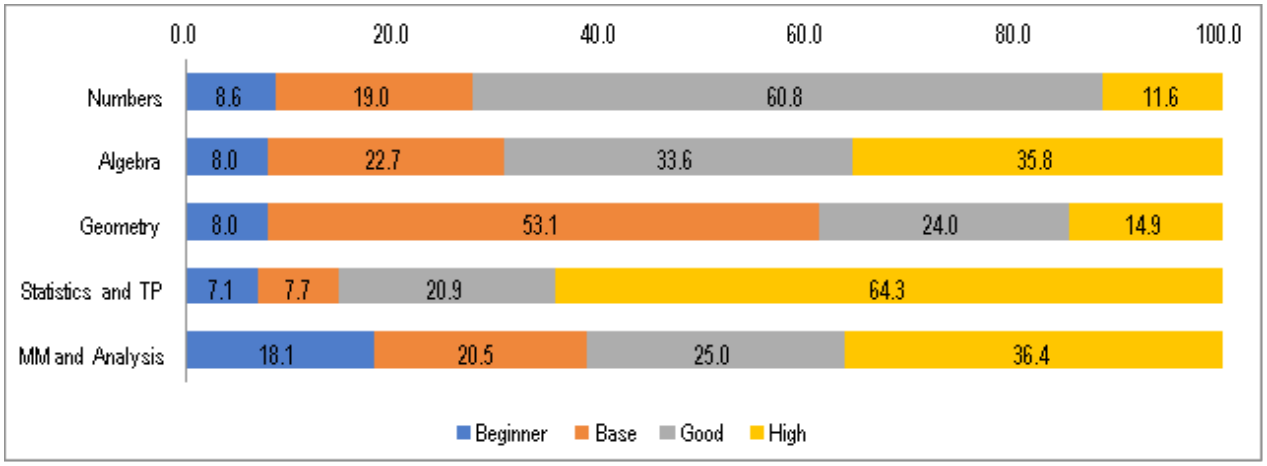


This positive trend in performance is being observed for all grades.

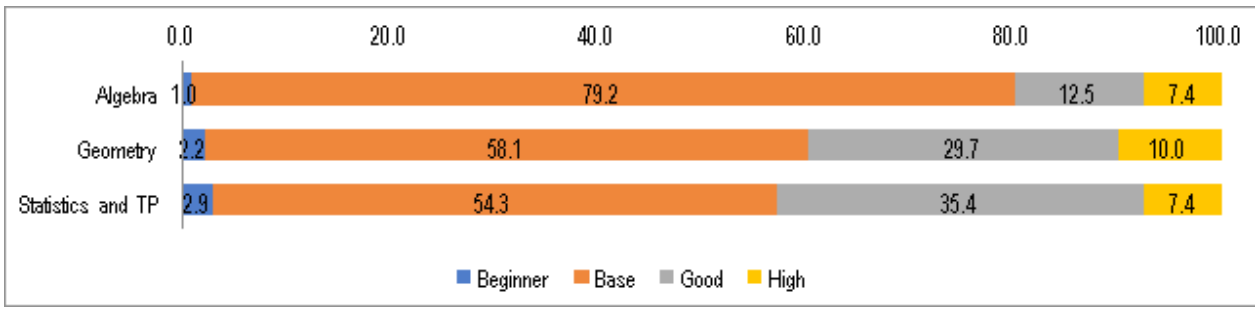
The monitoring resulted in **93,563** reports prepared and delivered to NIS schools (individual detailed reports with information on performance for each activity, and dynamics in education with the levels of achievement indicated and described; detailed group- and grade-level reports; and, an analytical report).

The September 2018 monitoring covered **12,959 students.**

Most grade 7 students' knowledge is at good and high levels in the section Numbers (72.4%), Algebra (69.4%), Statistics and Theory of Probability (85.2%), and Mathematical Modelling and Analysis (61.4%).



Analysis of grade 10 results showed most students' knowledge to be at basic and good levels in the section Algebra (91.7%), Geometry (87.8%), and Statistics and Theory of Probability (89.7%).



This positive trend in performance is being observed in other grades.

The monitoring resulted in **105,423** reports prepared and delivered to NIS schools (individual detailed reports with information on performance for each activity, and dynamics in education with the levels of achievement indicated and described; detailed group- and grade-level reports; and, an analytical report).

The Individual Detailed Report contains data on the student's performance level for each activity as shown by descriptors, as part of a theme and one of the five section of mathematics, and completion status (right answer, wrong answer, n/a).

"Nazarbayev Intellectual Schools" AEO
"Centre for Pedagogical Measurements"

Student	
IIN	
School	
Grade	
Subject	*Mathematics*
Part	*Algebra*

№	Theme	Assesment criterion	Level according to Bloom's Taxonomy	Status of task
1	Graphic representations of equations and inequalities with two variables	To recognize a geometric interpretation of solutions of simultaneous inequalities with two variables.	Comprehension	Correct answer
2	Trigonometry	To recognize a geometric interpretation of solutions of simultaneous equations with two variables.	Comprehension	Correct answer
3	Equatations and iniquities	To solve inequalities given as |f(x)|>=g(x), |f(x)|<=g(x).	Application	Correct answer
4	Trigonometry	To convert degrees to radians and vice versa.	Application	Correct answer
5	Trigonometry	To know coordinates of a point corresponding to an angle on the unit circle, and vice versa.	Knowledge	Correct answer
6	Trigonometry	To apply the reduction formulae.	Application	Correct answer
7	Trigonometry	To convert degrees to radians and vice versa.	Application	Correct answer
8	Equatations and iniquities	To solve systems of two inequalities, one of which is linear and the other one is of the second degree.	Application	Correct answer
9	Trigonometry	To recognize graphs of the functions y=af(b(x-m))+n, where f(x) is a trigonometric function, and vice versa.	Comprehension	Correct answer
10	Trigonometry	To apply the reduction formulae.	Application	Correct answer
11	Graphic representations of equations and inequalities with two variables	To form simultaneous inequalities with two variables according to the given geometric interpretation.	Analysis	Correct answer
12	Trigonometry	To convert degrees to radians and vice versa.	Application	Correct answer
13	Graphic representations of equations and inequalities with two variables	To recognize a geometric interpretation of solutions of simultaneous inequalities with two variables.	Comprehension	Correct answer
14	Graphic representations of equations and inequalities with two variables	To form simultaneous inequalities with two variables according to the given geometric interpretation.	Analysis	Correct answer
15	Trigonometry	To recognize graphs of the functions y=cosx, y=sinx, y=tgx, y=ctgx.	Comprehension	Incorrect answer
16	Equatations and iniquities	To determine a domain of expressions containing square roots.	Analysis	Answer is not given
17	Trigonometry	To apply identities sin^2α+cos^2α=1, 1+tg^2α=1/(cos^2α) and 1+ctg^2α=1/(sin^2α) for solving problems.	Application	Correct answer
18	Equatations and iniquities	To solve inequalities given as |f(x)|>=g(x), |f(x)|<=g(x).	Application	Correct answer
19	Trigonometry	To apply identities sin^2α+cos^2α=1, 1+tg^2α=1/(cos^2α) and 1+ctg^2α=1/(sin^2α) for solving problems.	Application	Correct answer

Individual Reports are used by the teachers to analyse each student's results and determine or correct their individual learning trajectory. To this end, they prepare individual development plans for students, monitor their implementation, build their lesson plans around the fact that some students require additional support in the mastering of certain themes, skills and components to be tested.

They select activities for students to reinforce the themes/learning objectives that they didn't master fully, using a variety of learning methods such as differentiation and scaffolding, and differentiating homework based on monitoring results.

The Group- and Grade-level Detailed Report contains percentage-based data on the performance for each activity demonstrated by students from all the groups of the grade.

AEO "Nazarbayev Intellectual Schools" branch "Centre for Pedagogical Measurements"

Theme	Square roots and surds	Square roots and surds	Square roots and surds	Square roots and surds	The power of a number	Square roots and surds	Square roots and surds	Square roots and surds	The power of a number	Square roots and surds
Assessment criterion	Remove a factor from the radical sign	Add a factor to the radical sign	Compare real numbers	Carry out an action with surds	Perform a given number to the power with integral index	Calculate the expression of numerical expression containing square roots	Carry out an action with surds	Estimate square roots	Evaluate an expression containing power with integral index	Carry out an action with surds
Level according to Bloom's Taxanomy	Application	Application	Application	Application	Application	Application	Application	Analisys	Application	Application
Percentage of accomplishment	53,03	79,10	43,84	83,78	53,13	20,00	56,76	50,00	58,00	13,70

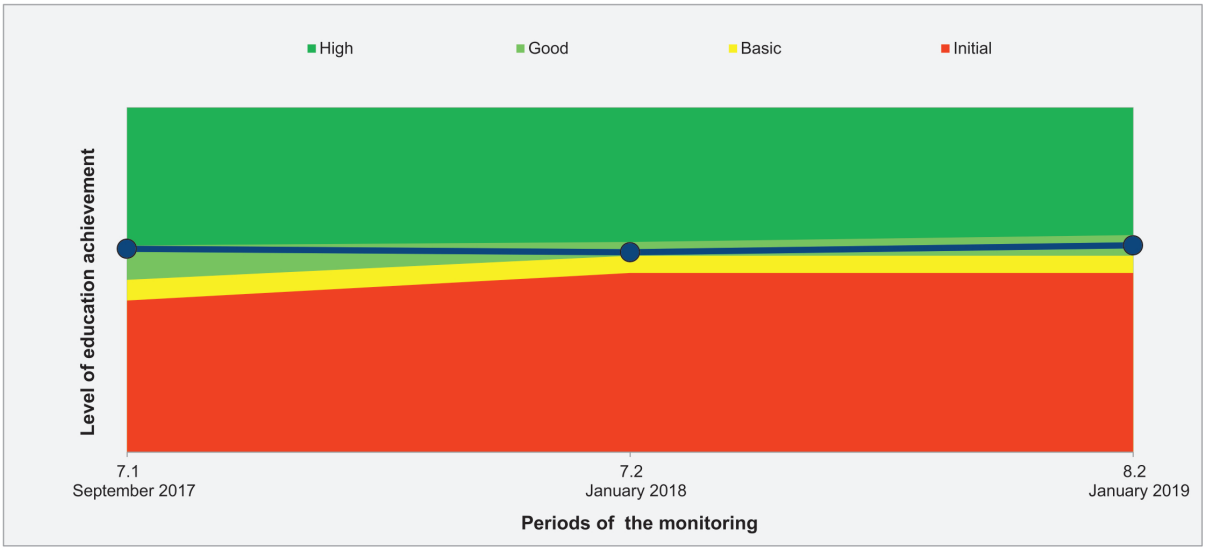
Students' IIN	Students' surname	Students' name	Grade	Alphabet	Nationality	Language	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
			8			kazakh	1	1	0	1	0	1	1	0	1	0
			8			kazakh	1	1	1	1	1	1	1	1	1	1
			8			kazakh	1	1	1	1	1	1	1	1	1	1
			8			kazakh	1	1	1	1	1	1	1	#	1	1
			8			kazakh	1	1	1	1	#	1	1	1	1	1
			8			kazakh	1	1	1	1	1	1	1	0	1	1
			8			kazakh	1	1	1	1	1	0	1	1	1	1
			8			kazakh	1	1	1	1	1	1	1	1	1	1
			8			kazakh	1	1	1	0	1	1	1	1	1	1
			8			kazakh	1	1	1	1	1	1	1	1	1	1

In the methodology groups, teachers analyse this report to consider general trends in the mastering of educational content by students in a group/two groups/a grade to scrutinise and reflect on the educational process as a whole. At methodology groups meetings and meetings with school management, teachers discuss the components and theme descriptors for sections / skills for which performance level is below 40%.

The Individual Progress Report contains descriptions of the four performance levels (initial, basic, good, high).

"Nazarbayev Intellectual Schools" AEO
"Centre for Pedagogical Measurements"

Name of a student			
IIN		Grade	
School	**School of Physics and Mathematics in Astana**		
Mathematics	**Numbers**	Level of educational achievemnets	**Good**
Number of tasks in the test	**35**	Number of not answered tasks*	**2**
Number of students took part in the monitoring	**24**	Status in a grade	**4**
Number of students from parallel grades took in the monitoring	**152**	Status in the parallel	**15**
Number of students from Intellectual Schools	**1633**	Status among Intellectual school students	**57**



This report is used by the teachers and students jointly with the parents and traces the educational path of each student during the whole period of studying in NIS. This report is supported with descriptions of the performance levels to allow for easier understanding of the information provided.

The Analytical Report is used by the school management to plan or adjust the system of in-school control, providing support to the teachers whose groups have been showing the lowest results, and developing a list of teacher training courses based on the least advanced topics in their teaching arsenal.

As proven by monitoring results, the students' knowledge and skills increased during the year. Reports provide an opportunity to render timely methodological support to the schools, allow for a significant differentiation in the learning process, increase the motivation to learn, and promote cognitive activity in students.

MONITORING RESULTS: LANGUAGES

The languages monitoring covers the four types of speaking activity and is used to identify NIS students' proficiency in the second and third languages as indicated in the NIS Programme and CEFR. Identifying the levels of language proficiency is an important aspect of the trilingual education policy.

In April 2018, a monitoring cycle that started with grade 7 finished with a grade 10 piloting initiative checking the quality of 500 NIS-developed testing activities.

Cito experts provided employees of the Centre for Pedagogical Measurement with advice on the analysis of psychometric and statistical data from the activities piloted.

2018 saw **two monitorings:**

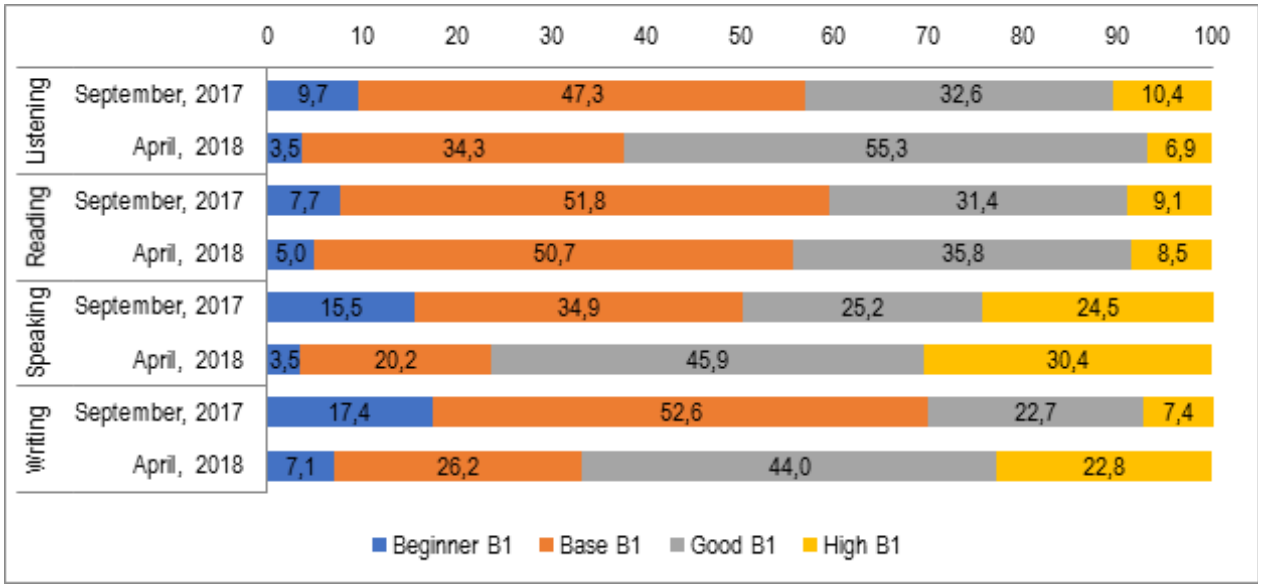
- the one conducted in April of the academic year 2017-2018 was covered **9040** grade 7-10 students from 19 NIS schools;
- the one conducted in September of the academic year 2018-2019 covered **2222** grade 7 students from 20 NIS schools.

Grade 7 (April)

The NIS Programme expects students to have the following language proficiency levels upon completion of grade 7: good / high B1 for Kazakh/ Russian as the second language and good / high A2 for English.

Comparative analysis of the results that grade 7, 8, 9, 10 students demonstrated during the two monitoring events conducted in the academic year (September 2017 and April 2018) showed an upward trend in performance.

For instance, there was an increase in performance across the four skills for grade 7 Kazakh as the Second Language: writing (high B1 (+15.4%), good B1 (+21.3%)), speaking (high B1 (+5.9 %), good B1 (+20.7%)), reading (good B1 (+4.4%)) and listening (good B1 (+22.7 %)).

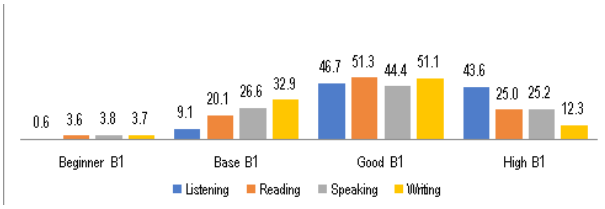


Positive trends are also observed for the other languages (like Kazakh, across all the grades).

Grade 7 (September)

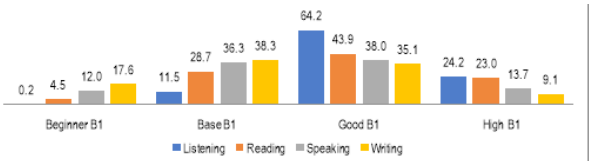
The NIS Programme expects students to have the following language proficiency levels upon completion of grade 6: **good B1** for Kazakh/ Russian as the second language and good A2 for English.

Students' skills across the four types of speaking activity are relatively high.



For instance, in the case of **Russian as the Second Language** an overwhelming majority of students reached **good B1 or a higher level** (90.3% in listening, 76.3% reading, 69.6% in speaking, and 63.4% in writing).

In the case of **English**, a majority of students reached **good A2 or a higher level:** 88.4% in listening, 66.9% in reading, 51.7 % in speaking, and 44.1% in writing.



As a whole, the September monitoring showed an upward trend in performance. However, in the case of Kazakh as the Second Language, the recently enrolled grade 7 students demonstrated low results in speaking and writing.

The **April** monitoring resulted in **88,792** reports prepared and delivered to NIS schools (individual detailed reports with information on performance for each activity, and dynamics in education with the levels of achievement indicated and described; detailed group- and grade-level reports; and, an analytical report).

The **September** monitoring resulted in **28,563** reports prepared and delivered to NIS schools.

The Languages Individual Detailed Report contains data on the performance demonstrated by students for each activity across the four types of speaking activity (reading, listening, speaking and writing), position of the activity in the sheet, theme, component being tested, and activity status (right answer, wrong answer, n/a). Such report is presented to each teacher, student and their parents.

"Nazarbayev Intellectual schools" AEO
"Center for Pedagogical Measurements"

Student's name	
Student's IIN	
School	
Grade	
Monitoring	**7.1 (September)**
Subject	**English**
Skill	**Listening**

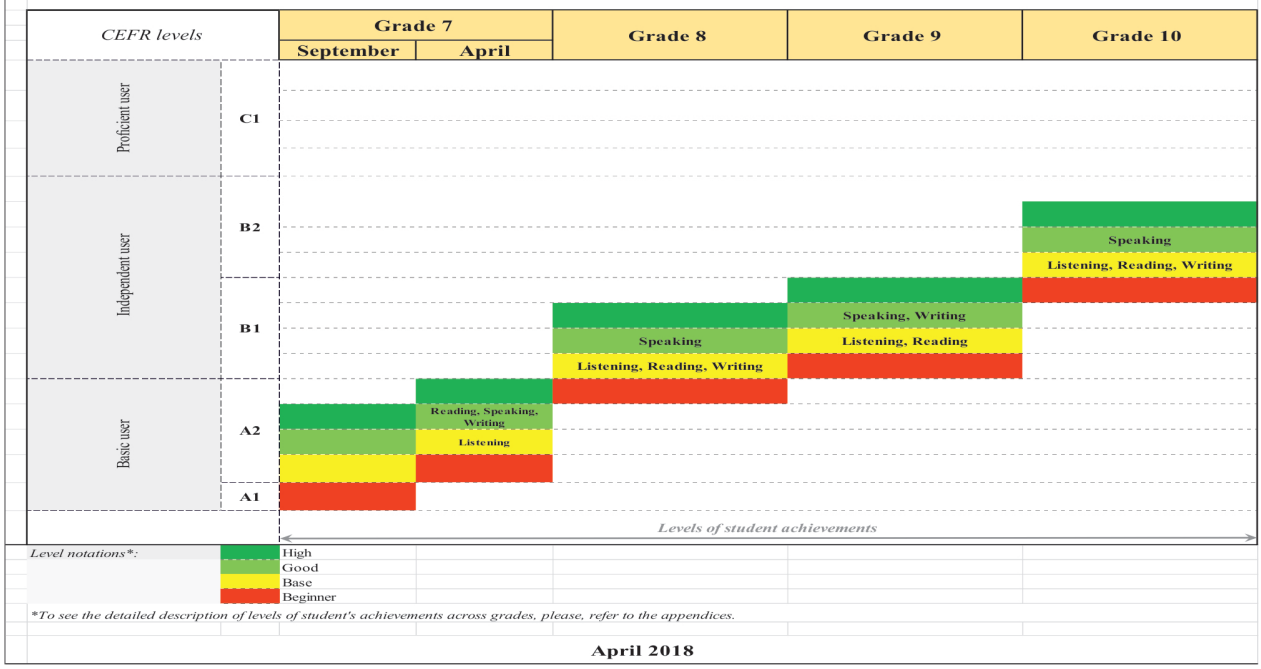
No	Topic	Learning objectives	Status
1	School life	Understand the main points of extended talk	Correct answer
2	How to introduce people	Draw the conclusions from the context in a short/extended talk	Correct answer
3	Talkng to someone on the bus	Draw the conclusions from the context in a short/extended talk	Correct answer
4	Typical teenager hobbies	Recognize the opinion, feeling of the speaker in a short/extended talk	Correct answer
5	Weather	Understand the main points of extended talk	No answer
6	School rules	Draw the conclusions from the context in a short/extended talk	Correct answer
7	How to sleep in an airport	Draw the conclusions from the context in a short/extended talk	Correct answer
8	Tao Tao and Cao Cao moved to final training stage	Understand the main points of extended talk	Correct answer
9	How do you motivate yourself to wake up early?	Draw the conclusions from the context in a short/extended talk	Incorrect answer
10	Buying food	Draw the conclusions from the context in a short/extended talk	Correct answer
11	The effect of sports on teenagers	Understand the main points of extended talk	Correct answer
12	What do people love about travelling?	Understand the main points of extended talk	Correct answer

The Individual Progress Reports contains data on the achievement by students of a certain CEFR level in the context of the four types of speaking activity (reading, listening, speaking, writing) with sub-levels indicated (initial, basic, good, high).

Branch "Center for Pedagogical Measurements"
AEO "Nazarbayev Intellectual Schools"

Student's name		Student's IIN	
School		Grade	
Subject	English		

Skills	Reading	Listening	Writing	Speaking
Number of the items	37	40	4	3
Number of the missed items	2	0	-	-
Number of the students in the class that participated in the monitoring	17	17	18	17
Position within the class	12	13	15	9
Number of the students in the parallel that participated in the monitoring	86	86	89	84
Position within the parallel	35	54	71	44
Number of the students at Intellectual schools that participated in the monitoring	2142	2169	2129	2115
Position among the students of Intellectual schools	931	1496	1527	917



By monitoring performance progress in the languages, NIS is able to assess the efficiency of the trilingual policy.

The Group- and Grade-level Detailed Report contains percentage-based data on the performance demonstrated by students from all the groups of the grade for each activity in the context of the four types of speaking activity.

By discussing students' performance, NIS teachers are able to identify possible reasons behind the low performance, adjust their teaching, and re-allocate their working hours in order to provide more time for the lagging themes. Based on this report, language teachers and teachers who teach in the second language draw up a joint plan aiming to improve performance in certain themes/units and skills.

The languages monitoring results we received prove the currently implemented trilingual education process to be efficient.

"Center for Pedagogical measurements" of AEO "Nazarbayev Intellectual Schools"

Monitoring 7.1 (September) Reading

Topic																		
						It's your birthday, make a wish	Family relationship	Clothes	Entertainment in Astana	School	Sport	Internet	Technology	Birthday	Art	Sport	Sport	Sport	A book to read	Signs
Learning objectives						Draw conclusions based on arguments in texts	Understand the main points in a growing range of short, simple texts on familiar topics (comprehension)	Identify specific and detailed information on familiar topics (comprehension)	Identify specific and detailed information on familiar topics (comprehension)	Recognize the attitude or opinion of the writer on familiar topics	Draw the conclusions from the context on familiar topics (recognize typical features at word, sentence and text levels) (analysis)	Draw the conclusions from the context on familiar topics (recognize typical features at word, sentence and text levels) (analysis)	Identify specific and detailed information on familiar topics (comprehension)	Identify specific and detailed information on familiar topics (comprehension)	Draw the conclusions from the context on familiar topics (recognize typical features at word, sentence and text levels) (analysis)	Identify specific and detailed information on familiar topics (comprehension)	Draw the conclusions from the context on familiar topics (recognize typical features at word, sentence and text levels) (analysis)	Draw the conclusions from the context on familiar topics (recognize typical features at word, sentence and text levels) (analysis)	Identify specific and detailed information on familiar topics (comprehension)	Understand the main points in a growing range of short, simple texts on familiar topics (comprehension)
Percentage completion						89,71	83,94	78,83	69,17	69,34	69,12	69,63	75,74	76,47	44,53	77,21	57,66	71,53	73,53	83,09
Student's IIN	Student's name	Student's surname	Grade	Letter	School	Language	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
						Kazakh	1	1	1	1	1	0	1	1	1	1	0	0	1	1	1
						Kazakh	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1
						Kazakh	0	1	1	1	1	1	1	0	1	1	1	1	0	1	1
						Kazakh	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1
						Kazakh	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
						Kazakh	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
						Kazakh	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
						Kazakh	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
						Kazakh	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
						Kazakh	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
						Kazakh	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1
						Kazakh	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1

5.2. CRITERIA-BASED ASSESSMENT

The NIS criteria-based assessment system is a balanced combination of formative and summative assessment.

To provide for a successful and complex operation of the assessment system, NIS held in 2018 a number of events aiming to provide guidance and methodological support in the area of assessment.

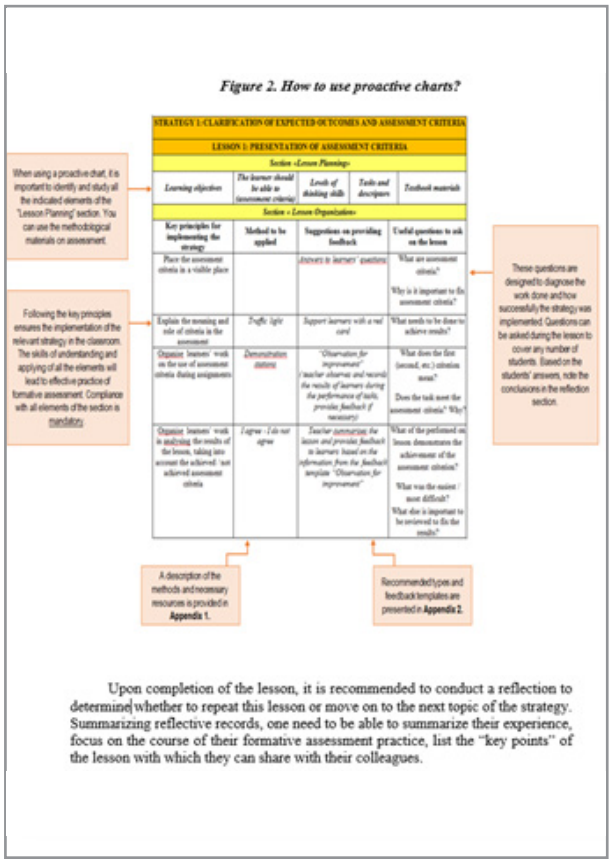
Methodological Support

In 2018, to provide methodological support, NIS teachers developed the following:

- 38 methodological recommendations on summative assessment for grades 6 and 10;
- 56 summative assessment specification for grades 6, 10 and 12; and,
- three methodological recommendations on summative assessment and 30 summative assessment specification for individual subjects for grades 1-4, 9 and 11, to respond to changes to the curricula.

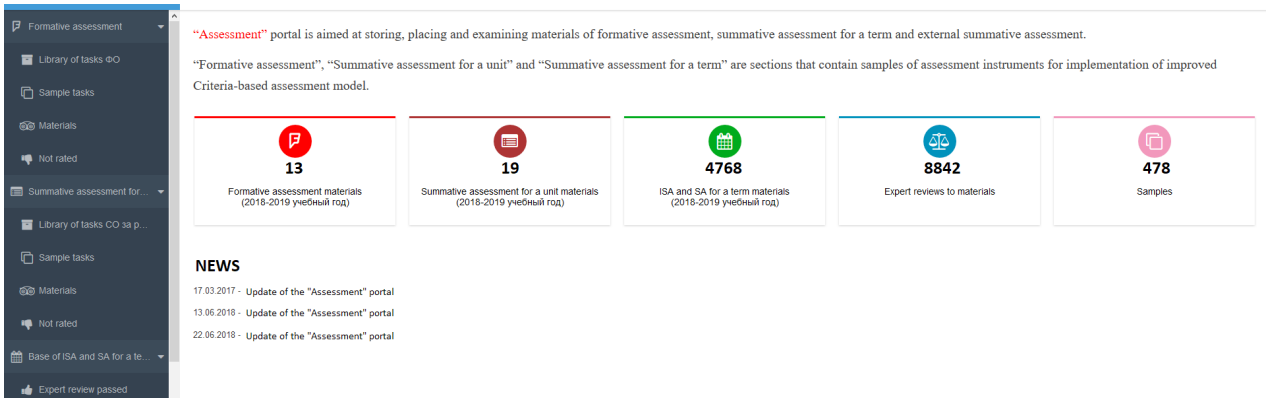
The Centre for Pedagogical Measurement, jointly with NIS Almaty PhM and NIS Taraz, conducted a research in the area of formative assessment, which was intended to promote this practice. The research resulted in a methodological guide, Agency in Formative Assessment, centred on the use of 24 agency-encouraging cards.

The research was presented to the teacher community as part of the X NIS Research-to-Practice Conference.



Guidance in Assessment

2018 saw a further development of the Assessment information system, namely the streamlining of the summative assessment online expertise mechanisms and the establishment of the Student Achievements Central Archive.



Analysis of the online expertise of summative assessment results for the academic year 2017-2018 allowed NIS to identify what events were required to streamline the expertise mechanisms, and carry out such events (higher confidentiality, automatic distribution, scheduling, etc.).

In the reporting period, NIS teachers and CPM employees performed an external online expertise of 8417 summative assessment works.

Intended to collect, store and present samples of students' works that have undergone assessment, the Central Archive provides for a standardisation of formative and summative assessment, experience dissemination, and encouraging teacher training in decision making in the context of assessing the expected outcomes.

5.3. EXTERNAL SUMMATIVE ASSESSMENT IN GRADES 5 AND 10–12

The external summative assessment examinations carried out by NIS assess the integrated combination of the knowledge, abilities and skills developed in students during primary, lower secondary and upper secondary school.

The assessment of NIS students' performance is carried out in compliance with international standards: Cambridge Primary upon completion of primary school in grade 5, IGCSE upon completion of lower secondary school in grade 10, and AS-level or A-level upon completion of upper secondary in grades 11 and 12.

For external assessment to be effective and streamline it, NIS developed test specification for grades 5 and 10–12: seven subjects for grade 5, 11 subjects for grade 10, two subjects for grade 11, and nine subjects for grade 12.

The CPM developed examination materials for grades 5, 10 and 11, and collaborated with CAIE to develop ones for grade 12.

Workshops and webinars on preparing and performing external summative assessment were conducted for vice principals of NIS schools.

Following the regulations, 474 NIS teachers, jointly with 11 CPM experts, checked 65,742 examination papers by students from grades 5, 10, 11 and 12.

Examination Reports

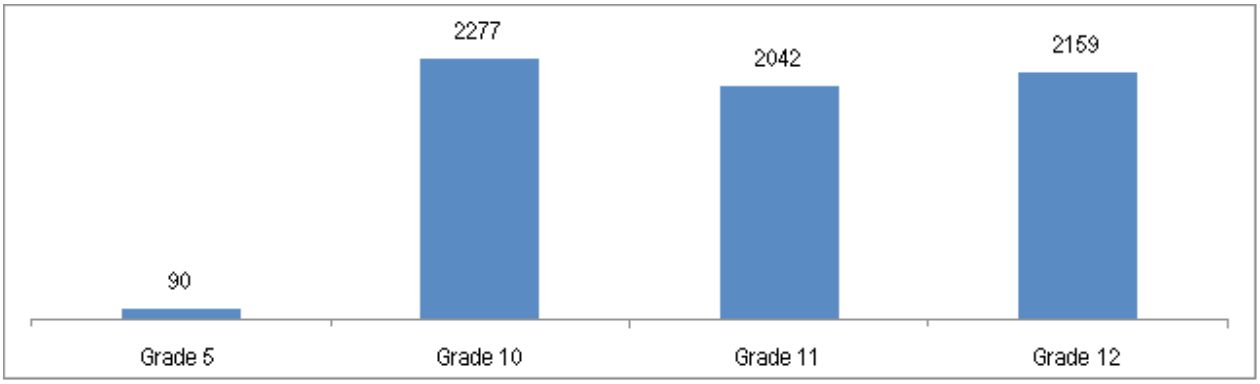
Based on examination results and to organise the in-school management and scheduling of education and organise individual work with the students, the following reports were delivered:

- three analytical reports (grades 5 and10-12);
- one comparative report based on external summative assessment results from 2015, 2016 and 2018;
- an analysis of the excellence of the teachers who had taught the grade 12 external summative assessment subjects, and the average scores of the 2018 graduates;
- individual reports for each student: 450 for grade 5, 13,368 for grade 10, and 2042 for grade 11; and,
- group-level reports: 12 for grade 5, 208 for grade 10, and 38 for grade 11.

Student Population

The total number of students from grades 5 and 10–12 who took part in the 2018 external summative assessment amounted to 6568.

Diagram. Students Who Took Part in Summative Assessment in the academic year 2017–2018, by grade.



*2018 saw the **first-time** implementation of summative assessment in grade 5. The examinations proved grade 5 students to have high qualitative and quantitative scores in Mathematics, Science, Kazakh/Russian Language and Literature (as the first language), Kazakh/Russian Language and Literature (as the second language) and English.*

In Mathematics, the students demonstrated developed skills in writing multi-digit numbers and fractions, calculating percentage, solving equations, comparing fractions, using the calculator, and finding the velocity of a moving object based on a motion graph.

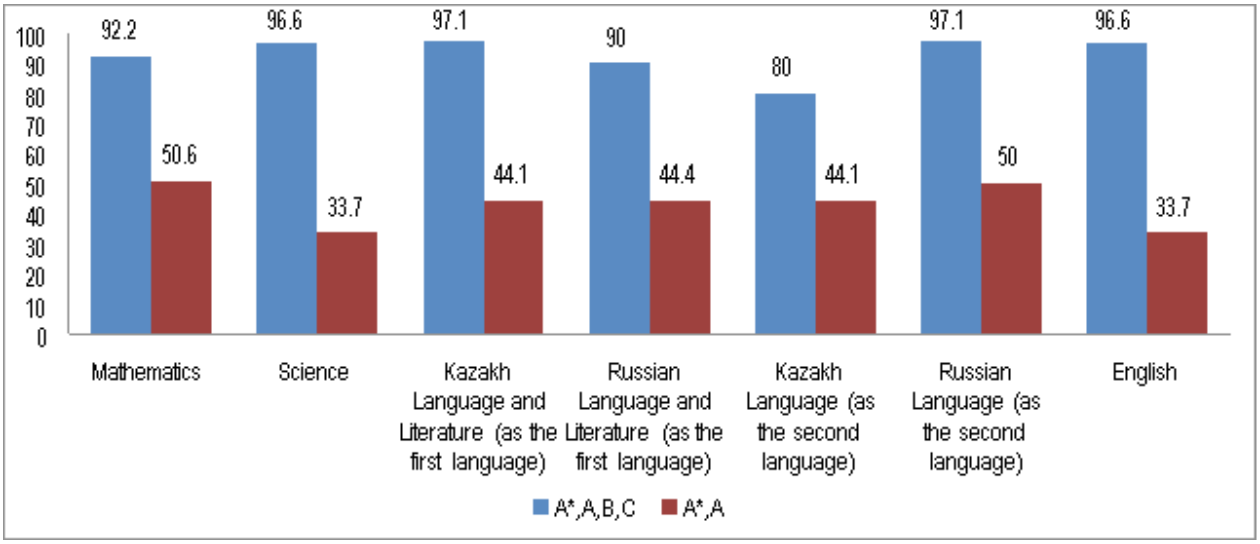
In **Science**, the students demonstrated an understanding of scientific terminology and ability to correctly identify in what order processes occur.

The **Kazakh/Russian Language and Literature (as the first language)** examination assessed the ability to understand literary text and fact-based text, and individual sentences and words. The students demonstrated an ability to write texts in all genres.

In **Kazakh/Russian Language and Literature (as the second language),** the students demonstrated developed skills in defining text genre and meaning of statements, and finding necessary information. In their written works, they effectively used both simple and complex grammatical structures in a coherent manner.

In **English**, the students demonstrated developed skills in finding concealed information in text. A majority of the students demonstrated a relatively high level of knowledge and application of lexical material.

Diagram. The grade 5 students who received A, A, B, or C, and the share of those who received A* or A.*



*Analysis of **grade 10** students' examination results from 2018 showed an upward trend in qualitative and quantitative indicators in the History of Kazakhstan, Kazakh Language (as the first language), Kazakh Language and Literature (as the second language), Biology, and Computer Science.*

In **Mathematics**, the students demonstrated skills in working with arithmetic and geometric progressions; converting expressions with square roots; calculating the area of figures; and, working with vectors. A significant progress was observed compared to the previous years in themes **Solving Combination Problems, The Composite Function, and Solving Exponential Problems.**

In **The History of Kazakhstan,** the students demonstrated relatively developed skills in working with historical sources and documents, conducting critical analysis of historical events, ability to provide concrete arguments and convincing facts, and provide rationale for their conclusions.

The **Kazakh/Russian (as the first language)** examination identified an ability to define the characteristic features of texts, correctly develop an answer, comment on the goal, target audience, genre, artistic devices, word order and structure of sentences and content. The students demonstrated an ability to write creative works, following the norms of narrative or descriptive writing, and an ability to write texts in a variety of genres, taking into account the goal and target audience and providing convincing arguments in a coherent manner.

In **Kazakh/Russian Language and Literature (as the second language)**, the students demonstrated skills in matching expressions to statements. They presented arguments and ideas in a coherent manner, and expressed personal impressions and observations, commenting on ideas and their own point of view.

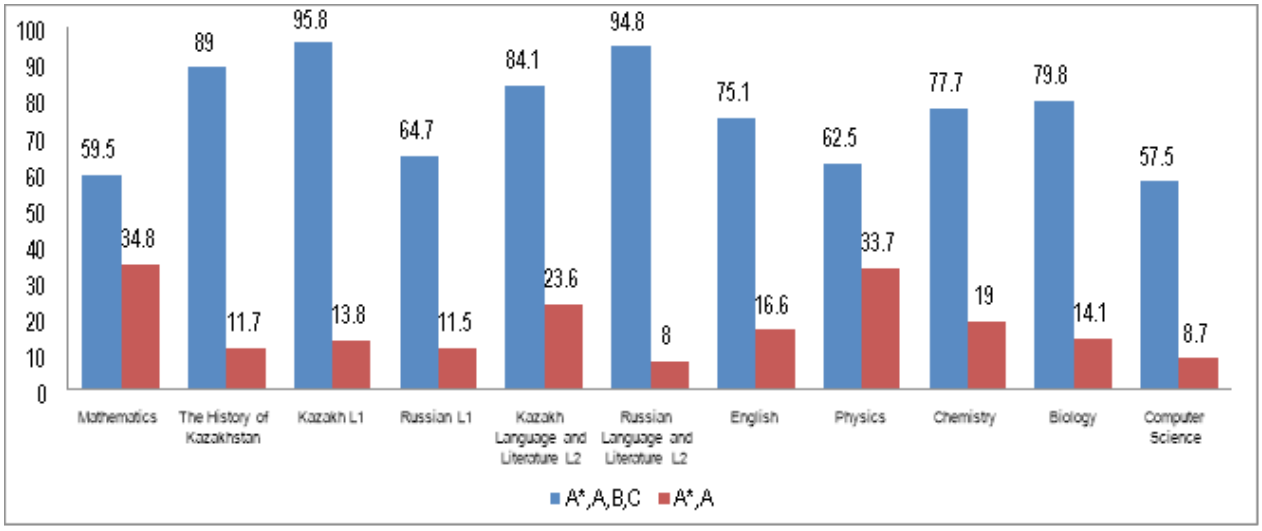
The **English** examination assessed skills in three types of speaking activity: reading, writing and listening. A majority of the students were able to demonstrate an understanding of the content of texts they had read or heard, find main and in-detail information, and present their thoughts in logically correct manner, using the required vocabulary and grammar.

In **Physics, Chemistry and Biology,** the students demonstrated an understanding of scientific terms, facts and laws. A noticeable improvement was observed in understanding the means of calculating units of measurement, and using information when defining models and samples.

They demonstrated an ability to work with equipment and materials, and perform observations and measurements. When planning and conducting an experiment, they had difficulty interpreting and commenting on data from observations and experiments, and propose better ways to conduct the experiment.

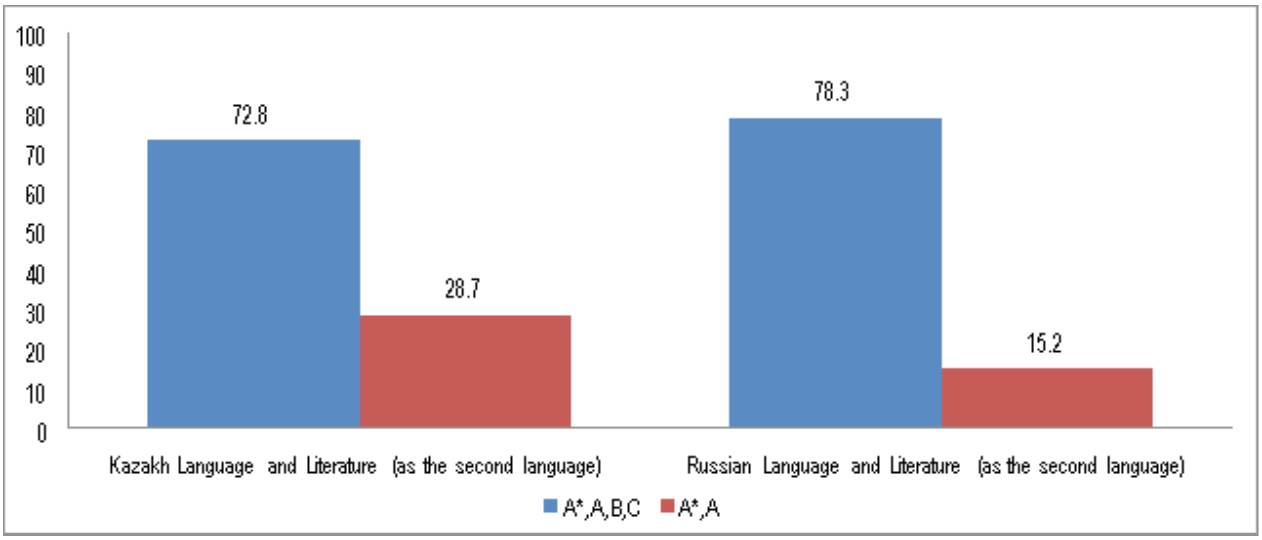
In **Computer Science**, the students demonstrated an understanding of methods and properties in developing software solutions, type and structure of data for using in software development, and demonstrated skills in developing algorithms and presenting them in a variety of ways (writing a piece of code or developing a flow chart to solve a problem in a specifically identified manner).

Diagram. The grade 10 students who received A, A, B, or C, and the share of those who received A* or A.*



*Analysis of **grade 11** students' examination results from 2018, compared to 2017, showed an insignificant change in qualitative and quantitative indicators in Kazakh Language and Literature (as the second language) and Russian Language and Literature (as the second language).*

*In **Kazakh/Russian Language and Literature (as the second language)**, the students demonstrated an understanding of the lexical meaning of words, while making common mistakes in reading for specific information. They demonstrated an ability to express their own opinion, using complex sentences and rhetoric questions to get the reader's attention.*



Analysis of **grade 12** students' examination results from 2018 showed an upward trend in qualitative and quantitative indicators in Mathematics, Kazakhstan in the Modern World, Chemistry, Computer Science, and Geography.

In **Mathematics**, a positive trend was observed, compared to results from the previous years, in the mastering of themes Differential Equations, Binomial Decomposition, Gaussian Distribution (Normal Distribution), Poisson Distribution.

In Kazakhstan in the Modern World, the students demonstrated high performance in units The Economy of Kazakhstan and Kazakhstani Society. They demonstrated a good knowledge of Kazakhstan's transitioning to market economy, and applied a variety of evidence on Kazakhstani economy changing as part of the global economy.

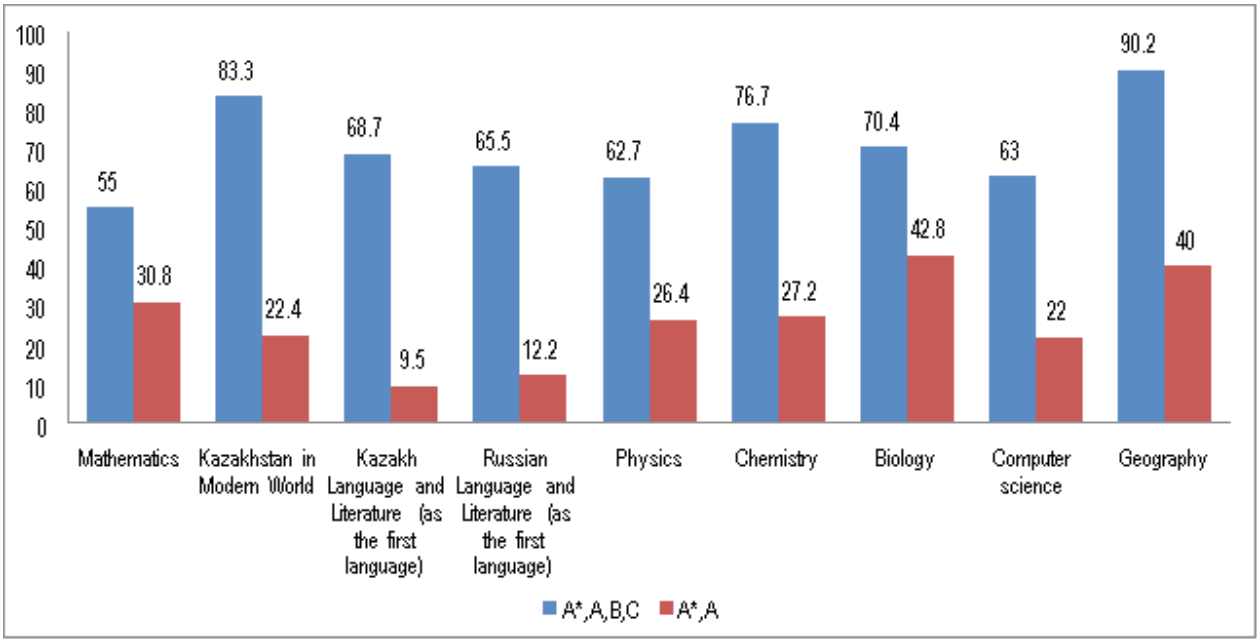
In **Kazakh/Russian Language and Literature (as the first language)**, the students demonstrated a good understanding of the main features the genre, goal, target audience, content, style and language of texts for analysis. They demonstrated an ability to do creative works, write convincing texts in a variety of genres, skilfully use language means and devices, and demonstrate an in-depth knowledge of texts.

In **Physics, Chemistry and Biology**, the students demonstrated a knowledge of scientific laws, notions and phenomena, ability to calculate units of measurement, define the characteristics of substances, interpret physical, chemical and biological processes, and perform calculations and measurements. In doing the examination section assessing practical skills and skills in conducting experiments, the students demonstrated an improvement in measurement and observation skills when using equipment.

In **Computer Science**, the students demonstrated an understanding of presenting data both in computer systems and databases; skills in using CSS in web-development, conducting information analysis in the context of real world, developing application design and writing code, evaluating decisions; and, practical skills in the implementation of ready-made solutions.

In **Geography**, the students demonstrated skills in working with a variety of geographical sources; ability to calculate absolute natural population growth, define reasons behind migration; skills in identifying meteorological instruments and their features by photo; and, ability to analyse migration processes in Kazakhstan.

Diagram. The grade 12 students who received A, A, B, or C, and the share of those who received A* or A.*



Analysis of the examination results demonstrated an upward trend in qualitative and quantitative indicators.

By analysing external summative assessment results on an annual basis, NIS is able to evaluate the development of skills against the expected outcomes provided in the curricula for each unit, theme and learning objective.

This analysis results in a theme list for NIS teacher development courses and is used for the organisation of in-school control.

5.4. NIS SCHOOLS ACCREDITATION

Following the Head of State Nursultan Nazarbayev's instruction provided at the Supreme Board of Trustees meeting from 27 May, 2017, NIS schools continued to undergo the CIS accreditation (Council of International Schools, Netherlands).

In 2018, a total of 40 international accreditation experts from a variety of schools across the globe (Germany, UK, Switzerland, Russia, Netherlands, etc.) paid visits to NIS schools in Uralsk, Taldykorgan, Pavlodar, Taraz and Karaganda.

The experts performed lesson observations, interviews with the participants of the educational process, and put to scrutiny the documents regulation the educational activity.

The visits resulted in a decision to award 5 NIS schools with the CIS international accreditation. As of now, a total of 15 NIS schools have international accreditation.

Table. International Accreditation

Status	2015r.	2016r.	2017r.	2018r.
Accreditation candidate	5 schools	10 schools	5 schools	-
Accredited school	-	2 schools	8 schools	5 schools

During the project, a total of 150 experts visited 20 NIS schools to note that the schools:

- have a clear mission and vision;
- provide quality education and ensure the wellbeing of their students;
- educate citizens who both have patriotism towards Kazakhstan and are active citizens of the world with sustainable universal human values and readiness to work in a community; and,
- effectively implement a curriculum aiming to develop innovative educational practice, and promoting personal development in students and the trilingual policy.

Five NIS schools in Almaty (2), Aktau,

Petropavlosk and Kostanay will carry out events as part of getting the CIS international accreditation in 2019.

To provide for the professional development of teachers in the accredited schools, CIS holds annual symposiums for the discussion of matters related to intercultural learning, research results, and successful examples of the implementation and promotion of global citizenship. In 2018, symposiums were held in Hong Kong (China) and Lisbon (Portugal), participated by four NIS employees from the schools in Aktau, Petropavlosk, Semey and Kostanay.

5.5. NIS PROGRAMME AND NIS CERTIFICATE RECOGNITION

In 2016, NIS started to put effort in ensuring the recognition of NIS graduates by national and foreign universities.

In 2018, agreements were drawn up with a number of national and state universities, for the enrolment of NIS graduates to 3-year undergraduate programmes and recognising NIS certificate results as university credits for general education disciplines.

Table. Kazakhstani Universities Recognising the Grade 12 NIS Certificate

Universities Enrolling NIS graduates to 3-year Programmes	
1	Kazakh-British Technical University
2	Satpayev Kazakh National Research Technical University
3	Al-Farabi Kazakh National University
4	International IT University
5	Almaty University of Power Engineering and Telecommunications
6	Zhubanov Aktobe Regional State University
7	KIMEP
8	Almaty Management University
9	Narxoz University (Bachelor of Business Administration)
10	Toraygyrov Pavlodar State University
Universities Recognising Graduation Scores as Academic Credits for Several Disciplines	
1	Astana Medical University
2	Karaganda State Medical University
3	Buketov Karaganda State University
4	Asfendiyarov Kazakh National Medical University
5	Amanzholov East Kazakhstan State University
6	Serikbayev East Kazakhstan State University
7	Ospanov West Kazakhstan Medical University
8	Almaty Technological University

In 2018, the NIS Programme and the NIS Grade 12 Certificate received recognition from a number of international organisations:

- **UK NARIC** National Recognition Information Centre, as comparable to General Certificate of Education A-Level.
- **The Foreign Education Central Office Council,** the Standing Conference of the Ministers of Education and Cultural Affairs, Germany.
- **Nuffic, the Dutch Organisation for Internationalisation in Education**, as comparable to the VWO diploma (NLQF 4+/EQF 4).
- The NIS Programme and the NIS Grade 12 Certificate made it to **the Universities and Colleges Admissions Service list**, along with the most widespread qualifications (GCE A- Level, IB Diploma, etc.).

Besides, NIS entered into agreements on the recognition of NIS graduates, with some of the world's leading universities: **the University of Cambridge, (UK), Hong Kong Polytechnic University, City University of Hong Kong (China), and Pusan National University (South Korea).**

Nazarbayev Intellectual School
of Physics and Mathematics
in Taldykorgan,
Lee Victoria Evgenevna
'Flowers'

Nazarbayev Intellectual school of
Physics and mathematics
in Kyzylorda
Zhanayeva Aydana 17 year
'Father and sun'

6

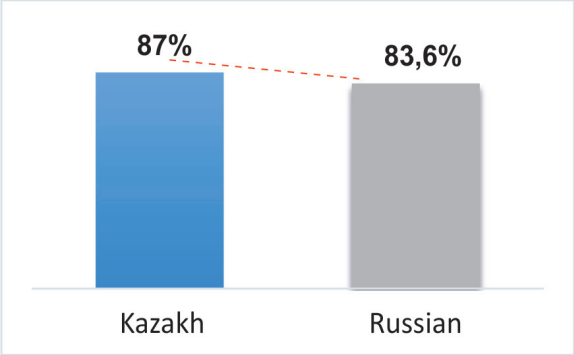
UNIT 6. STUDENTS' ACHIEVEMENTS

6.1. PERFORMANCE AND QUALITY OF KNOWLEDGE

At the end of the 2017-2018 academic year, **14772** students were enrolled in NIS: **9177** (62.2%) of them studied in the Kazakh language and 5595 (37.8%) studied in the Russian language.

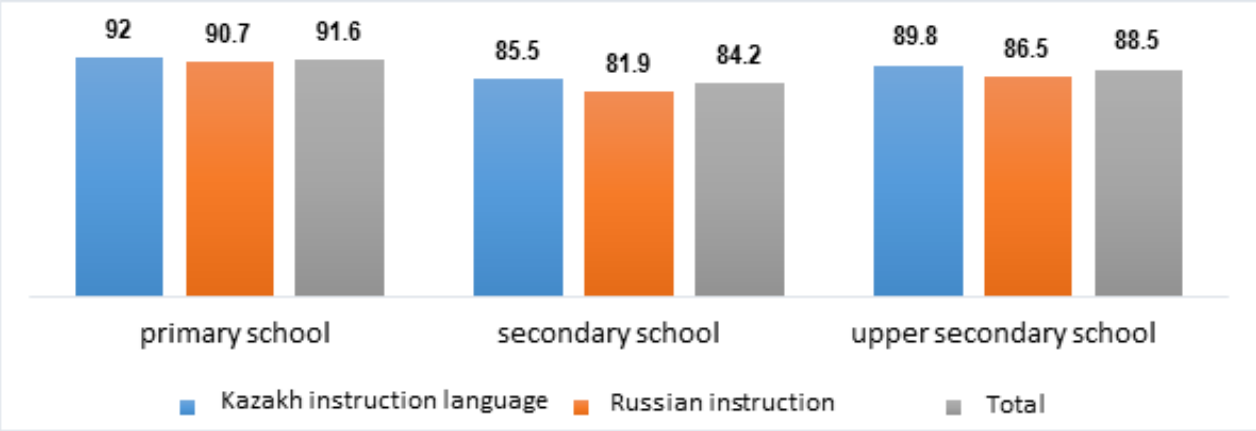
*Students' performance in 2017-2018 made up **99.9%** and knowledge quality – **85.7%.***

Diagram. The quality of NIS students' knowledge in terms of the instruction language, %



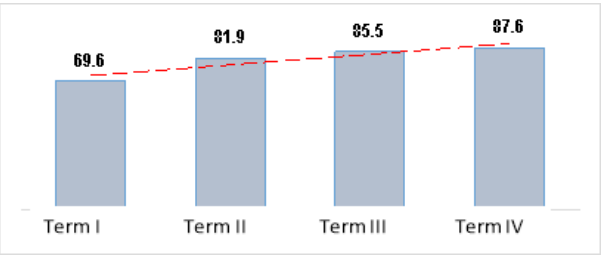
In terms of education levels, the quality of students' knowledge with the Kazakh and Russian instruction languages in primary, secondary and upper secondary schools corresponds to specified strategic indicators (90%, 70% and 80% correspondingly).

Diagram. The quality of NIS students' knowledge in 2017-2018, %



A comparative analysis of data on four terms indicates a positive 16.1% growth in the quality of NIS students' knowledge by the end of the academic year.

Diagram. The quality of NIS students' knowledge in the context of four terms of the 2017-2018 academic year, %



A significant indicator of the learning efficiency is an increase in a number of students with a final score '5' by 5.1% (from 1028 to 2005 people) and a decrease in a number of students with a final score '3' by 15.1% (from 4137 to 2098 people).

In the 2017-2018 academic year 280 (58.6 %) Grade 10 students confirmed their secondary school diplomas.

A number of Grade 12 candidates for upper secondary school diploma with honours was 333 and 179 (53.8%) of them confirmed their diplomas.

68 (73.1%) candidates confirmed the Altyn Belgi award.

To sum up, in the 2017-2018 academic year indicators of NIS students' performance and knowledge remained high.

6.2. INTERNATIONAL AND NATIONAL OLYMPIADS, CONTESTS, CONFERENCES AND RESEARCH

6.2.1. NATIONAL AND INTERNATIONAL SUBJECT OLYMPIADS, CONTESTS AND RESEARCH COMPETITIONS

One of the quality indicators in education is a student's competitiveness, his or her competence in different fields of knowledge that students demonstrate when participating in contests, Olympiads and competitions.

Deepening theoretical knowledge and practical skills of students and stimulating interest in science made it possible to establish an Olympic reserve and achieve high results.

Table. A number of winners of republican and international subject Olympiads and research project competitions in the 2017-2018 academic year

Olympiads		Science competitions		Innovative Idea Competitions		Online Olympiads		Total		
RK	International	RK	International	RK	International	RK	International	RK	International	Total
114	38	581	175	1078	323	160	50	1933	586	2519

Republican Olympiads, competitions and contests

A number of winners of republican Olympiads, competitions and contests increased by **159** (9%) as compared to the reporting period last year.

The NIS team won the 1st place in the team event of the Republican Science and Humanities Olympiad.

NIS students won 62 medals that is 11% of the total number of republican Olympiad winners and 65.2% of the total number of NIS participants.

NIS Almaty PhM, NIS Pavlodar, and NIS Astana PhM take a leading position among 50 schools of Kazakhstan based on the results of Republican Science Olympiad and NIS Almaty PhM and NIS Kokshetau PhM are in the top of 100 schools of Kazakhstan.

Table. School ranking based on the results of the Republican Science Olympiad 2018[13]

Ranking	School name	Medal
1.	NIS Almaty PhM	Gold -6, silver -1
11.	NIS Pavlodar ChB	Gold -2, silver-2, bronze-4
19.	NIS Astana PhM	Gold-1, silver-2
26.	NIS Shymkent PhM	Gold-1
40.	NIS Taldykorgan PhM	Silver-2, bronze-2
43.	NIS Shymkent ChB	Silver-2
46.	NIS Ust-Kamenogorsk ChB	Silver-1, bronze-1
47.	NIS Aktau ChB	Silver-1
50.	NIS Almaty ChB	Bronze-2

[13] According to the data of the Republican Scientific and Practical Centre 'Daryn'

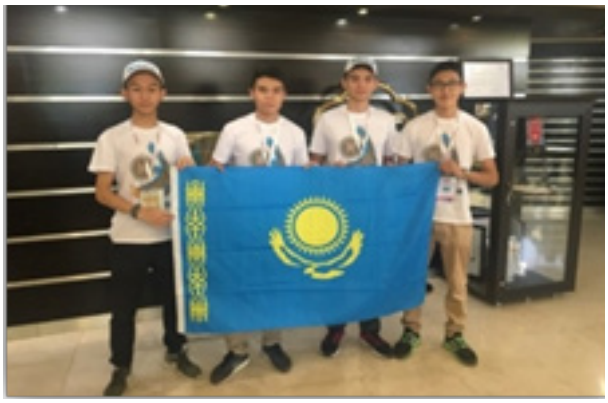
International Olympiads, competitions and contests

Students successfully performed at prestigious international subject Olympiads, competitions and contests:

- The 22nd Junior Balkan Mathematical Olympiad (Rhodes, Greece);
- International Biology Olympiad (IBO) (Teheran, Iran);
- International Physics Olympiad (IPhO) (Lisbon, Portugal);
- CASTIC-201 (The 33 China adolescents science & technology innovation contest) (Chongqing, China);
- International Scientific Contest 'Mathematics and Design' (Moscow, Russia);
- Russian Research Project Olympiad for children and young people on the environment issues 'Human – Earth - Space' (Korolev, Russia);
- International Intellectual Games 2018 (Yakutsk, Russia);
- International Zhautykov Olympiad in Mathematics, Physics and Computer Science (Almaty, Kazakhstan);
- International Mathematical Olympiad 'Silkway city' (Almaty, Kazakhstan);
- International Asian Pacific Mathematics Olympiad (Almaty, Kazakhstan) and etc.

Compared to the reporting period last year, a number of international Olympiad and research project competition winners

Compared to the reporting period last year, a number of international Olympiad and research project competition winners increased by 112 (by 23.6%)



The annual positive dynamics of a number of winners indicates a qualitative study within the NIS-Programme.

6.2.2. RESEARCH AND INNOVATIVE ACTIVITIES OF NIS STUDENTS

Research projects of NIS students meet the priority areas for the national development[14] of science and technology and world trends:

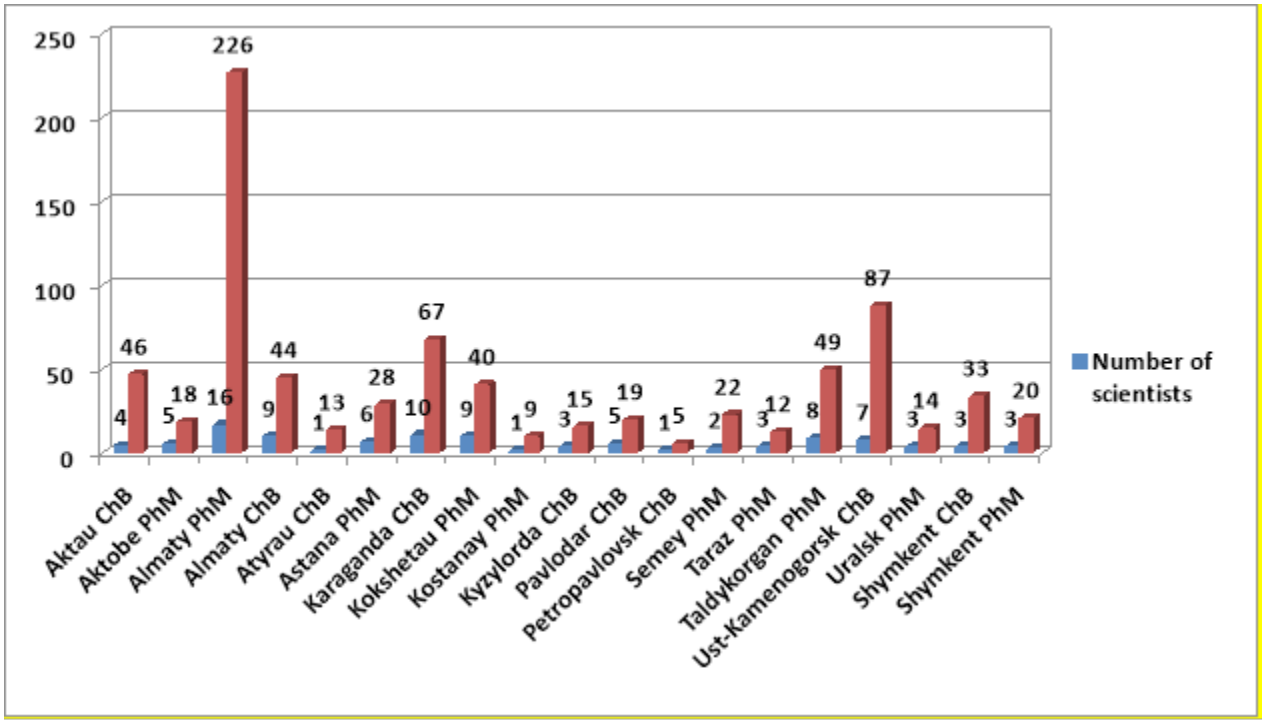
- Energy and engineering;
- Alternative energy sources;
- Environment protection, sustainable development of natural resources including water, geology, recycling, new materials and technology, safe products and constructions;
- Information, telecommunication and space technologies;
- Scientific research in bio- and nanotechnologies;
- Sustainable development of the agricultural sector and safety of agricultural products;
- Genetic engineering and life science.

In 2018, 93.3% of Grade 7-12 students were engaged in research activities under supervision of scientists or in collaboration with Kazakhstani and international scientists in Nazarbayev Intellectual Schools, leading laboratories of research institutes and at the departments of Kazakhstani and foreign higher education institutes.

99 scholars from Kazakhstan and 8 scholars from abroad were involved in the collaborative exploration of interdisciplinary projects in different areas.

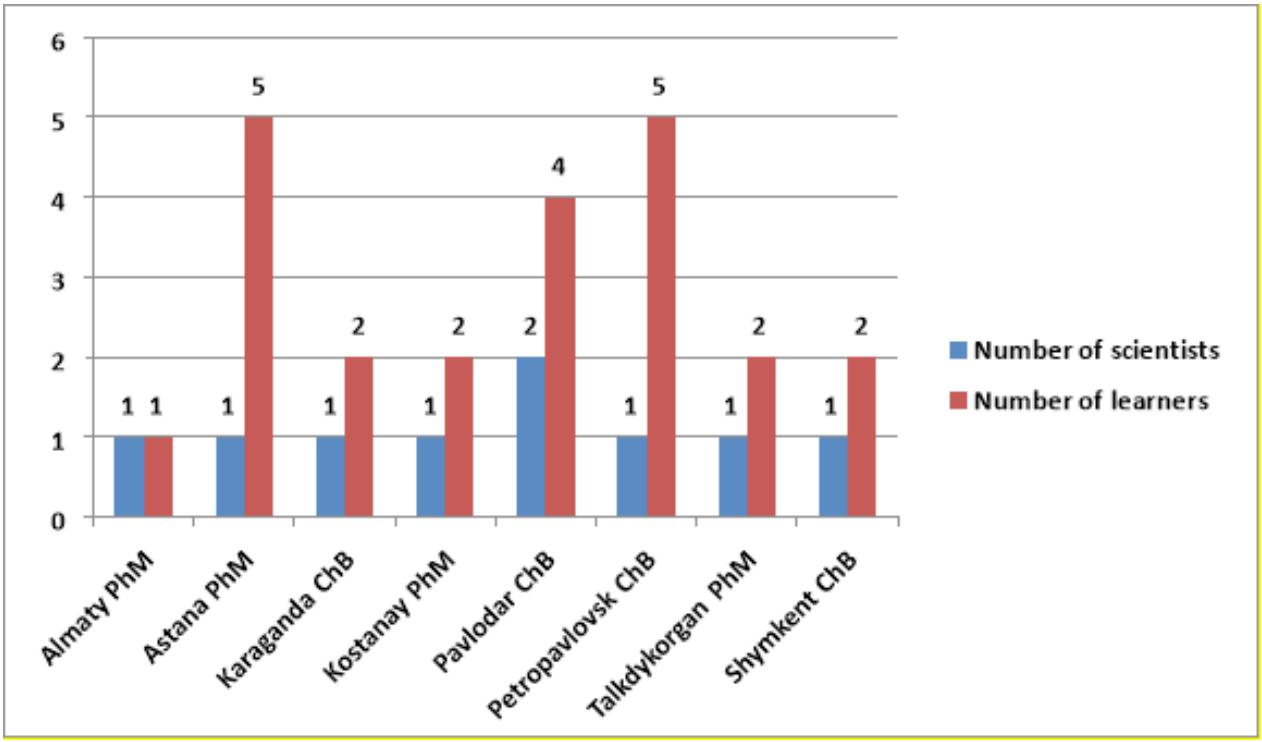
767 students carried out a research in cooperation with domestic scholars and **22** students – with scholars from abroad.

Table. Recruiting Kazakhstani scholars for the development of learning individual trajectory and advising of NIS students on their research in 2018



[14] The areas are approved by the Higher Science and Technology Commission affiliated with the Government of the Republic of Kazakhstan for the development of science in Kazakhstan until 2019

Table. Recruiting international scholars for the development of learning individual trajectory and advising of NIS students on their research in 2018



Productivity and significance of NIS research activities is determined through the following indicators:

1) patent activities;
2) achievements at international research project competitions;
3) innovative grants in priority areas of science and technology development;
4) publication activities and participation in research conferences;
5) implementation of innovative grants.

I. Patent activities

One of the most significant indicators of research productivity and development is patent activity.

In 2018 7 **NIS students** passed the national registration of intellectual property following their research.

Table. List of copyrighted intellectual property items

Name	Property name	Copyright №
Kairzhanova Aina (Grade 11), NIS Astana (PhM)	"Mathematical modelling of urbanization projections using the example of the Republic of Kazakhstan"	Copyright № 0858 dated 02 April, 2018
Jenalinova Diyara, Kuldeyeva Dinara (Grade 11), NIS Astana (PhM)	"Probability model for the weather forecast success rate".	Copyright № 0982 dated 09 April, 2018
Abdimazhit Asmir (2018 graduate), NIS Taldykorgan	"Method and device for producing mechanical energy".	Copyright (utility model patent) № 2698 dated 12 March, 2018
Shaimuran Alisher, Medeu Zhandos (Grade 10), Zhangazy Galymzhan (Grade 8), NIS Pavlodar	Method for producing biofuel	Utility model patent № 3366 dated 09 November, 2018

At the end of 2018, 22 students were registered as authors of recognized innovations, 10 of them had their inventions in Mathematics, ICT and Programming copyrighted, and 12 obtained patents in Chemistry, Nanotechnologies and Biology.

II. Achievements at international research project competitions

In 2018 **498** students showed high performance: 175 of them became winners of international research competitions and 323 of them became winners of international innovative idea competitions.

III. Innovative grants in priority areas of science and technology development

Competing in the innovative project competitions, NIS students take top places and become winners of grants for the further implementation of their research.

Within the reporting period **23** students won grants of **5 382 640** KZT for the implementation of their research.

In total, **57** students have won innovative grants of more than **26** million KZT since 2013. **33** students of them implemented start-up projects:

- Physics and engineering – 8
- Mathematics and Design – 1
- Computer science and robotics - 20
- Computer science and programming - 10
- Computer science and modelling - 3
- Alternative energy sources - 2
- Chemistry and ecology, recycling - 3
- Biology and ecology, health protection - 4
- History of Kazakhstan, law, Modern Kazakhstan - 4
- Art - 2
-

Table. Grants for NIS students in 2013-2018

Year	Number of students	Grant sum, KZT
2013	2	120 000
2014	1	120 000
2015	8	1 185 660
2016	5	442 149
2017	18	19 152 600
2018	23	5 382 640
Total	**57**	**26 403 049**

The best students' achievements:

1. **Taumergen Nurdaulet,** Grade 10, NIS Aktobe. **Scholarship money winner amounting USD 5 000** for the winner at the International Science Games in Yakutiya, Grove-Speaker project.

Nurdaulet created a glove that helps to communicate dumb people through embedded electron device that translates sign language into the language required: Kazakh, Russian or English.

2. **Kuanysh Maden**, Grade 11, NIS Shymkent (PhM). **Scholarship money winner amounting KZT 1 000 000** for the victory in the project based competition '3. 2. 1. Start!' for the social entrepreneurship development with the support of the Eurasia Foundation and Coca-Cola company, for the 'Chimney sweep robot' project, Astana.

3. **Dudchenko Lyubov,** Grade 10, NIS Almaty (PhM). **Scholarship money winner amounting KZT 1 000 000.** She won at the National Youth Competition of innovative projects NURINTECH-2018 in the 'The youth innovation project' nomination in Astana. Lyubov created a mobile application JoARney to develop tourism in Kazakhstan.

4. **Suranov Zhangir,** Grade 10, NIS Almaty (PhM). **Scholarship money winner amounting KZT 500 000.** He won at the National Youth Competition of innovative projects NURINTECH-2018 in the 'The youth innovation project' nomination in Astana. The mobile application 'Safe and Sound' automatically reduces the volume in the headphones of pedestrian when vehicle approaches that provides for great security for pedestrians.

5. **Kamalova Dilnaz, Yerlanova Dana,** Grades 10 and 11, NIS Almaty (PhM). **Scholarship money winner amounting KZT 600 000** for the victory at the International hackathon Youth4Health on the topic 'Digitalization of primary health care' organized by the Ministry of Healthcare and UNICEF. Students developed the 'Smart pill' application that connects patients with their relatives from any place in the world. It provides constant monitoring of patients and their treatment as well as taking prescribed medication.

IV. Academic publications and participation in scientific conferences

33 students presented their reports at scientific conferences in different scientific areas, 37 academic papers were published in Kazakhstan and foreign scientific and research journals.

V. Innovative projects implementation

In order to encourage students' scientific activity NIS implement projects in which NIS and mainstream schools student participate.

In 2018, the 2 National projects were introduced: Solar energy for schools and Nauryz meetings.

The 'Solar energy for schools' project

On May 7, 2018 within the Astana Economic Forum (AEF) there was a ceremony of singing memorandum between NIS, Ministry of Energy of the Republic of Kazakhstan, Astana Akimat and Shell company.

> *'The purpose of the memorandum is to implement the pilot project Solar energy to Schools' under which Shell installs solar photovoltaic system (PV system) in five NIS schools from 2018 to 2020 on a non-repayable basis (Astana, Almaty, Aktau, Atyrau and Uralsk).*

The Solar Energy to Schools project is important for NIS schools that are actively promote the approaches of STEM-education that support the main priorities of sustainable development including the use of renewable energy source as well as forming a careful attitude of students to natural resources and environmental responsibility.

Head of the Executive Office of the President, Asset Issekeshev pointed out that this project serves as a good example of efficient use of renewable energy sources and may be inflated in other regions of the country.

As the Minister of Energy Kanat Bozumbayev noted, the implementation of this project in NIS schools will become a kind of platform for further widespread use of installations with the use of renewable energy source (RES) of small capacity in different regions of our country.

Since December 1, 2018, two NIS schools of Astana have been fully provided with green energy.

The panels also serves as the objects od students project and research work aimed at the development of renewable energy source in Kazakhstan and the study of science, technology, engineering and mathematics.

In order to use the project in educational process Shell Company together with the specialists of the British educational centre, ShapingLearning has developed a programme for NXplorers teachers that develop STEM-thinking to meet the global challenges.

The programme is built on the correlation of the problems of water, energy, and food; it is intended to form deep understanding of sustainable development in children. The programme is for students and teachers from 12 countries of the world.

12 leading coaches and 100 NIS teachers were fully trained. They implement the main approaches of NXplorers programme in the content of elective courses and students' project activities.

Nauryz meetings

In the jubilee year of the 20-th anniversary of the Kazakhstan capital city and the 10-th anniversary of NIS traditional Nauryz meetings were held on the following topic: 'Astana is a city of the future: architecture of the capital city. 20 years.' supported by the Research and Project Institute AstanaGenPlan, BI Group Company, Mabetex group, National geographic.

112 NIS students and 92 mainstream school students from all the regions of the country participated in the event.

At the opening ceremony, students were presented the film 'Astana is the city of the future' by National geographic channel. The Italian architect Sergio Ferrandi (designer of Sergio Ferrandi Bureau) delivered an interactive lecture 'Astana is a smart city'.

Famous Kazakhstani architects and urban planners who were at the forefront of building Tselinograd, Akmola and Astana, told about the capital city history and conceptual architectural ideas:

Toskin Vasily Phillipovich is an honoured architect of Kazakh SSR, professor of the International Academy of architecture, creator of architectural complex of Tselinograd and Astana;

Dzhambulatov Sagyndyk Smailovich is a lead designer of Department of Architecture and urban planning of Astana, an honoured architect of Kazakhstan, project author of Magilik El, Hazrat Sultan Mosque and etc.;

Kuspangaliyev Bolat Uralkhanovich is a director of Institute of Architecture and Constraction in Kazakh Technical National Research University named after K. I. Satbayev, Honourary Architecht of Kazakhstan;

Bukebayev Samatbek Tazhenovich is an honourary architect of Kazakhstan, author of Bayterek monument and Astana Zhuldyzy stele and etc.;

Narynov Saken Zhomartovich is an architect, a

futurist, an inventor, a professor in Kazakh Leading Academy of Architecture and Civil Engineering, author of sculptures and installations, author of the 'Mathematics in Arts'.

Practical classes were held at 10 stations for students. They created models of architectural structures under the supervision of architects and engineers:

- Akorda (Deukchang Lee, associated professor at Nazarbayev University, Department of Construction Engineering 'Construction of tall building');
- The Library of the First President of the Republic of Kazakhstan (Solovyev Denis, architect in 'Akmola- project' 'BIM-technologies and semantics of lines);
- Astana – Bayterek (Zhubanova Ainura Kalybekovna, assistant to the professor at Architecture faculty, Kazakh Leading Academy of Architecture and Civil Engineering;
- Palace of peace and reconciliation (Atagulova Raushan Amangeldiyevna, vice-dean of Architecture faculty at Kazakh Leading Academy of Architecture and Civil Engineering);
- Astana-Expo (Taubaldiyeva Aksaule Sagattulayevna, candidate of technical science, associated professor at Kazakh Leading Academy of Architecture and Civil Engineering);
- Hazrat Sultan Mosque (Shamshinurova Zhanat, architect of Astana-Expo;
- The Triumphal Arc Mangilik El (Sergio Ferrandi, professor, chief architect, designer at Sergio Ferrandi Bureau);
- Astana Opera, opera and ballet theatre (Ruzhdi Chata, chief architect, Mabetex group);
- Kazakhstan Central Concert Hall (Dichuan Zhang, associated professor at Nazarbayev University, Department of Construction Engineering 'Construction of tall building');
- Khan Shatyr shopping and entertaining centre (Nurkusheva Lyazzaat Tuleovna, Dr. of architecture, academy professor at the faculty of Design, Kazakh Leading Academy of Architecture and Civil Engineering).

The event also included the competition of research project of NIS students (more than 90 projects) as follows:

- High Tech city Astana»;
- Clean city Astana;
- Smart city Astana;
- Kidland city Astana;
- Green city Astana;
- Inclusive city Astana;
- Futuristic city Astana.

All NIS students who took the 1st place in these areas were awarded the certificates for scholarship by the provost of Kazakh Leading Academy of Architecture and Civil Engineering Besimbayev E. T. to study at Architecture? Construction and Design.

Under the cultural programme the participants had an opportunity to get introduced with the architectural sites of the capital: Astana-Bayterek monument, Palace of Peace and reconciliation, the Library of the First President of the Republic of Kazakhstan, AstanaGenPlan Scientific Research Project Institute, Nur Alem Astana – Expo pavilion, 'Astana Opera' theatre of opera and ballet, Kazmedia centre, Nazarbayev University, Kazakh national academy of choreography; Chaplin cinema, Mega Silk way shopping and entertaining centre, where the documentary President dream was presented.

6.2.3. BREAKTHROUGH OF THE YEAR. Debut in science.

Kazhymurat Aknazar, student of NIS Almaty PhM of Grade 12 set an exclusive record in all key indicators of academic and research activities: winner of International Subject Olympiads, an author of scientific papers in high-prestige publications, grant winner in the most world prestigious university – Harvard University.

The student presented his research work to the President of the Republic of Kazakhstan, Nursultan Nazarbayev on the forum 'Uly dala murageleri' dedicated to 10th anniversary of NIS.

The head of State highly appreciated scientific research of students' and expressed confidence during his speech at Harvard University.

Aknazar has a rare talent in almost all types of science.

One of his brightest victories was in the most difficult competition S.-T. Yau High School Science Awards, held in Beijing proved his phenomenal skills in mathematics. The Kazakhstan child prodigy won the International Physics Olympiad in Indonesia, a gold medal at the 19-th Asian Physics Olympiad APhO-2018, became the winner of the IESO-2018 International Earth Science Olympiad in Thailand.

Scientific research

Aknazar conducted the scientific research on 'Lower bounds for the energy functional for the family of Hamiltonian minimal langrangian tors in CP^2 managed by Mironov A. Y (corresponding member of the Russian Academy of Science, leading researcher at the Laboratory of dynamic system of the Sobolev Institute of mathematics, assistant professor at Laboratory of Geometric methods of mathematical physics named after Bogolyubov N. N. under Lomonosov Moscow State University).

The purpose of the study is to test the hypothesis for a family of Hamiltonian minimal langrangian tors.

In research conducted it was proved that the purpose of functional energy on certain family of Hamiltonian minimal langrangian tori in CP^2 is strictly greater than the energy of the Clifford torus.

The research results were published in academic publications:

- Topological uniqueness results for Lefschetz fibrations over the Disc, Mathematics > Geometric Topology, 2018. Archive in the library at Cornell University, US;
- On a lower bound for the energy functional on a family of Hamiltonian minimal lagrangian tori in CP2, Mathematics-Differential Geometry, 2017. Archive in the library at Cornell University, US;
- Bernstein-Sato polynomials in algebraic geometry, VII European Congress of Mathematics, 2016, Berlin, Germany;
- On the lower bound of the energy functional for langrangian tori in CP2, 55th International Scientific Student Conference, sourcebook, p.37, Novosibirsk State University, Siberian Branch of the Russian Academy of Science, 2017, Novosibirsk city, Russian Federation, Volume 59 (2018), Number 4, p. 814-822.

Unprecedented achievement

Aknazar set a record by getting maximum points at ACT and SAT Subject Tests - 36 out of 36 and 2400 out of 2400.

'ACT (American College Testing) exam is taken by most US students to be admitted to higher educational institutions. The most prestigious universities accept applicants with a total ACT score of 30-36. Only 0.1% of the US students pass ACT and get 36 points.

SAT Subject Test – is a standardized exam the results of which are required for admission to the prestigious American educational institutions. The test is used to measure academic knowledge of five subjects and some specific areas within each of the subjects. Aknazar took mathematics, physics and biology exams and gained the maximum 800 points.

Apart from maximum points in science, the student has a high score in IELTS - 8.0.

SAT

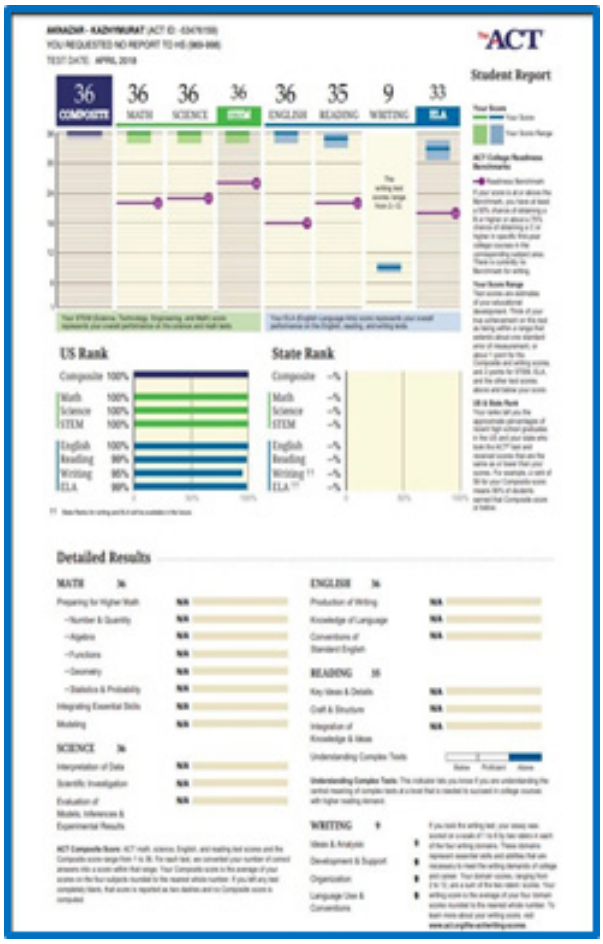
SAT Subject Tests
Score Report

Physics
800
87th Percentile

Biology-E
800
97th Percentile

Math Level 2
800
79th Percentile

Get your full report online at sat.org/scorereport



ACT

Student Report

36 36 36 36 36 35 9 33

US Rank

State Rank

Detailed Results

Harvard University scholarship

Harvard University accepted Aknazar to the university and gave him a scholarship for the entire period of study for the achievements in Olympiads and research activities as well as unique results of the ACT, and SAT exams.

Aknazar will continue research on topology at the world level. After completing Postgraduate Programme he plans to promote science in Kazakhstan.

Harvard University is one of the most famous universities in the United States and around the world, the oldest university in the United States located in Cambridge, Massachusetts.

Harvard University ranks the first in the country in terms of the number of billionaires among graduates. Its library is the largest in the United States and the third largest in the country.

Harvard University is one of the elite American Universities included Ivy League.

6.3 INTERNATIONAL EXAMINATIONS

International English Language Testing System (IELTS)

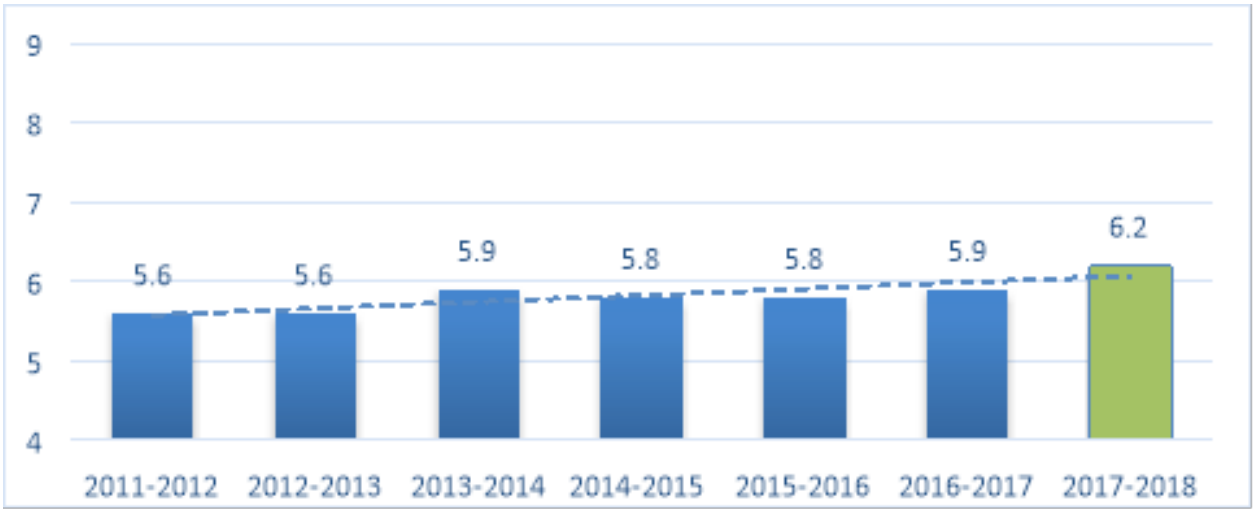
In order to determine the level of proficiency in English in 2017-2018 academic year 2273 students of Grade 12 at 17 NIS schools in Astana, Almaty, Ust-Kamenogorsk, Taldykorgan, Semey, Aktobe, Atyrau, Uralsk, Kokshetau, Pavlodar, Karaganda, Kyzylorda, Shymkent, Taraz, Kostanay went through the external assessment on the subject of English, IELTS exam.

The average score is 6.2 what is a great progress compared with the 2016-2017 academic year (5.9 points) and the points of all the previous years.

The average score of NIS students is higher than the world rate of students who took the exam with the points of 6.0[15].

[15] Source: https://www.ielts.org/teaching-and-research/test-taker-performance

Diagram. Average score of IELTS for academic year

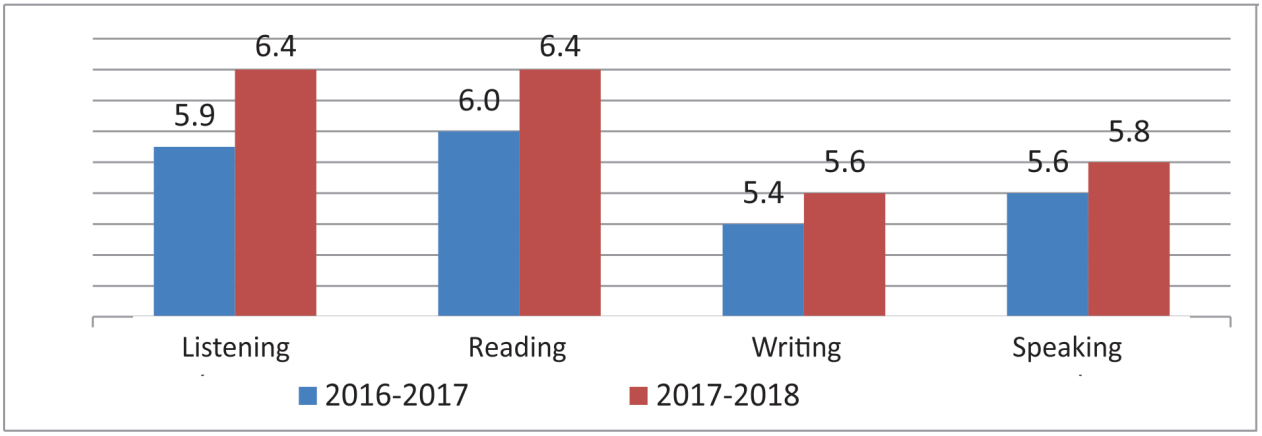


The exam results showed that 522 students or every fifth student has a certificate with the score of 7 or more.

The number of students with the score of 5 points and above – 2236 people. (99%), 4.5 and below – 31 people (1 %).

It should be noted that for these seven years the average score of NIS students' exam results improved in all four types of language skills.

Diagram. The average score of language skills



Kristina Vitalyevna Shelemba, a student of NIS Almaty (PhM), scored 9 out of 9 (Listening, Reading and Speaking – 9.0 points for each and writing – 8.0).

SAT International Examination

During the reporting academic year 517 students of Grade 12 out of the total students number took the SAT Reasoning Test (Mathematics, Critical Reading, Writing).

The average score in 17 schools is 1272.4 out of 1600.

NIS students showed the same results as students around the world[16] (88%).

SAT Subject Test was taken by 337 NIS students in mathematics, chemistry, physics, biology and the following results were the following:

- Mathematics (level 1) average score– 675.2;
- Mathematics (level 2) average score – 685.2;
- Biology average score – 632.7;
- Chemistry average score – 651.1;
- Physics average score– 665.5.

The maximum score in the SAT subject test is 800 points.

16 Source: https://collegereadiness.collegeboard.org/pdf/understanding-sat-scores.pdf

2 students of NIS Karaganda Medetova Alima and NIS Almaty (PhM) Axmetzaki Yerkebulan showed the highest results scoring 800 points in three subjects: Mathematics (level 2), Physics and Chemistry.

15 students showed the bets results scoring 800 points in Mathematics and Physics.

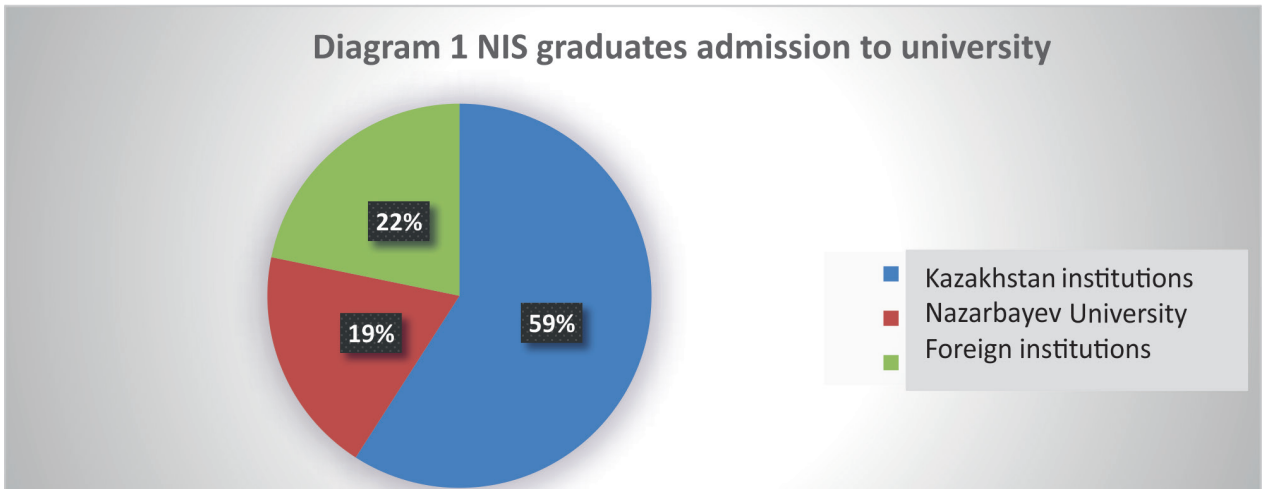
Thus, NIS student demonstrated a high level of knowledge in mathematics and science and the English language subjects.

6.4 UNIVERSITY ADMISSION

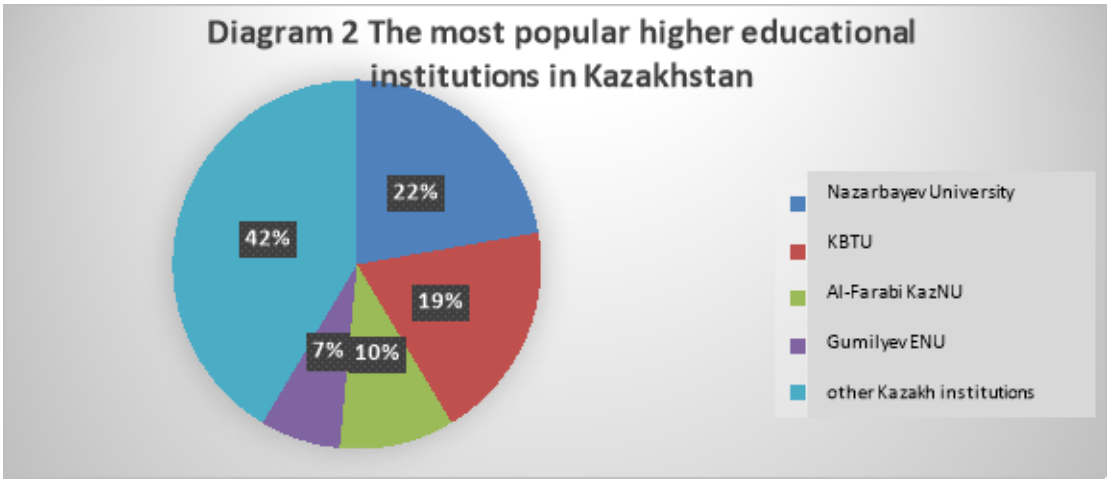
In 2018, 2273 students graduated from 17 NIS schools. Among them 435 graduates entered Nazarbayev University, 1343 – other higher education institutions in Kazakhstan and 495 – to foreign institutions. 2001 NIS graduates study on full scholarship, among them 1611 students in Kazakhstan 390 – in foreign countries.

Table. NIS students enrolment

Year	Total graduates, pers.	Nazarbayev university, pers.		Other Kazakhstan institutions, pers.		Foreign institutions, pers.		Total		Proportion %	
		Full cholarship	Fee based programme	Full cholarship	Fee based programme	Full cholarship	Fee based programme	Full cholarship	Fee based programme	Full cholarship	Fee based programme
2018	2273	434	1	1177	166	390	105	2001	272	88	12

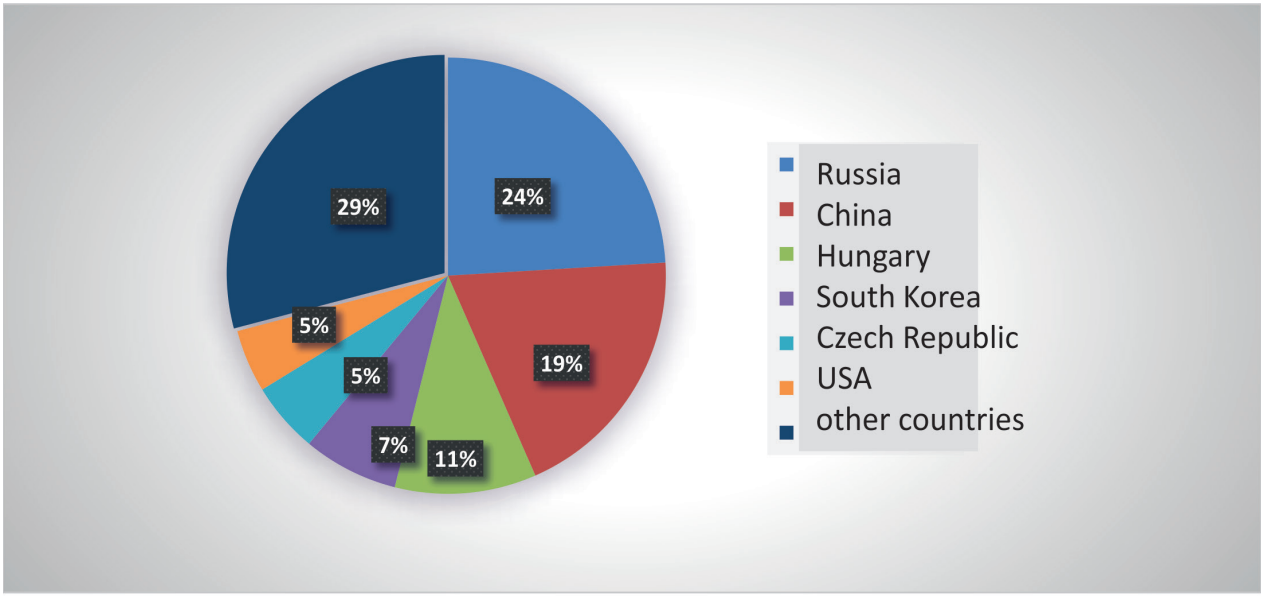


Among the higher educational institutions of Kazakhstan, the most popular are Nazarbayev University, Kazakh-British Technical University (375 graduates), Al-Farabi Kazakh National University (198 graduates) and Gumilyev Eurasian National University (138 graduates).



The largest number of graduates entered the universities of the Russian Federation (119 graduates), China (96 graduates), Hungary (52 graduates), South Korea (35 graduates), the Czech Republic (26 graduates), USA (23 graduates).

Diagram. Admission to foreign universities



It is worth mentioning that among 495 NIS graduates 35 students entered the Top-50 universities (according to World University Ranking QS-2018), 89 students entered Top-100 world universities.

APPENDICES

LIST OF PARTNER SCHOOLS

№	NIS schools	Partner school	Country	Since
1	NIS Astana PhM	1. Kyzyluyum secondary multigrade school 2. Kazgorodok secondary school 3. International School Hannover Region, Hannover 4. Birchwood High School, Bishop's Stortford 5.National centre for gifted children PERMATApintar 6. Samuel Whitbread Academy	Kazakhstan Kazakhstan Germany Great Britain Malaysia Great Britain	2013 2013 2014 2015 2016 2017
2	NIS Astana	1. Moscow economic school 2. Children recreational centre 'Sosnovy Bor' 3. United World College of South East Asia an international IB school in Singapore 4. School Bazel 5. N76 lyceum school 6. N68 secondary school 7. Koktal secondary school 8. Alabuga International School 9. Erudite International school 10. Dartford Grammar School	Russia Yakutia Singapore Switzerland Kazakhstan Kazakhstan Kazakhstan Tatarstan Uzbekistan Great Britain	2013 2014 2015 2016 2017 2017 2017 2018 2018 2018
3	NIS Almaty PhM	1. Ilyas Yessenberlin secondary school N25 2. Haileybury Astana 3. N15 gymnasium 4. N54 gymnasium school 5. RFMSH 6. Zhas Ulan Republican School 7. Paul Phalish gymnasium 8. Ernst Abbe Gymnasium	Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Germany Germany	2016 2016 2016 2016 2016 2017 2017 2017
4	NIS Almaty ChB	1. N79 gymnasium 2. N159 secondary school 3. N165 lyceum school 4. N48 lyceum school 5. AESC MSU Kolmogorov school 6. King's College Saint Michaels 7. Ernst Abbe Gymnasium 8. Saint-Denis International School	Kazakhstan Kazakhstan Kazakhstan Kazakhstan Russia Great Britain Germany France	2016 2016 2016 2016 2016 2017 2017 2017
5	NIS Aktau ChB	1. Lyceum School in Kyzyl tobe 2. Baimyrzayev School in Kyzylozen village 3. Mynbayev School in Bautino village 4. Lyceum in Shetpe, Mangystau region 5. Andikalykov School in Tupkaragan 6. School N3 in Zhetibay reginal centre 7. School N 7 in Munailin region 8. Nueva school 9. Sejong science high school, Korean school in Seul	Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan USA South Korea	2016 2016 2016 2016 2016 2016 2016 2016 2018

6	NIS Aktobe PhM	1 .Novaya school (Novy village) 2 .School N9 (Aktobe) 3 .School N5 (Chromtau) 4 .Baiganin secondary school (Baiganin) 5 .Rodnikovskaya secondary school (Rodnikovka village) 6. Lavrentev Physics and mathematics s chool 7 .AESC MSU Kolmogorov School 8 .Seaford School 9 .Lycee International de Londres Winston Churchill	Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Russia Russia USA USA	2013 2013 2015 2017 2017 2018 2016 2016 2018
7	NIS Atyrau ChB	1. Dzhangeldin Secondary school in Atyrau 2. Comprehensive school in Zhylyoski region 3. Comprehensive school in Makhambet region 4. Comprehensive school in Kurmangazy region 5. Comprehensive school in Inder region 6. Bilim-Innovation lyceum 7. Sharipov boarding school (Dossor village) 8. QSI International School 9. Nexus International School	Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Singapore	2016 2016 2017 2017 2017 2017 2017 2018 2018
8	NIS Karaganda ChB	1. Secondary School N13 of education department in Karaganda 2. Zhambyl specialized boarding school N7 3. MPI Comprehensive school N17» 4. Nurmakov Specialized boarding school N2 5. Seifullin gymnasium 6. Gymnasium N39 7. Gymnasium N8 8. Zhautykov Secondary school N1 9. Gymnasium N9 10 .Gymnasium school N10 11 .Lyceum school N101 12 .Gymnasium N9 13 .Gymnasium N38	Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan	2013 2014 2014 2014 2015 2015 2017 2017 2017 2017 2017 2017 2017
9	NIS Kokshetau PhM	1. Nikolskaya multigrade school (Yeltay station) 2. Multidisciplinary lyceum school N5, Stepnogorsk 3. Yeltai secondary school 4. Kokshetau secondary school N1 5. Kokshetau secondary school N2 6. Kokshetau secondary school N3 7. Kokshetau secondary school N4 8. Kokshetau secondary school N5 9. Kokshetau secondary school N6 10. Kokshetau secondary school N8 11. Kokshetau secondary school N10 12. Secondary school N1 in Krasny Yar 13. Secondary school N2 in Krasny Yar 14.Secondary school N3 in Krasny Yar 15.Sawston Village College 16. Secondary School Agrupamento de Escolas Dr. Júlio Martins	Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Great Britain Portugal	2013 2013 2013 2013 2014 2014 2015 2015 2015 2015 2016 2016 2016 2016 2017 2017
10	NIS Kyzylorda ChB	1. Reginal specialized boarding school for gifted children Murager 2. Daryn specialized lyceum 3. NIS Shymkent PhM 4. Marshall Public School 5. Lyon International School	Kazakhstan Kazakhstan Kazakhstan USA France	2016 2016 2016 2017 2018

11	NIS Kostanay PhM	1. Secondary school N10 2. MPI Sverdlovsk secondary school of education department in Altynsarin region 3. Somerset College 4. International school of Western Australia 5. International school of Baton Rouge, Louisiana 6. British International School, Shanghai 7. International school, Kazan	Kazakhstan Kazakhstan South Africa Australia USA Great Britain Russia	2015 2015 2015 2016 2016 2017 2017
12	NIS Pavlodar ChB	1. Zhas Daryn 2. Lyceum N8 3. Secondary gymnasium school N39 4. Secondary school N1, Maikayin 5. Secondary school N 2, Maikayin 6. Lebyazhinskaya Secondary school 7. School N34 (Ekibastuz) 8. Lyceum named after Abay N10 9. AESC MSU Kolmogorov School	Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Russia	2014 2015 2015 2015 2015 2015 2015 2015 2017
13	NIS Petropavlovsk ChB	1. Lower secondary school N16 2. Sartomar secondary school 3. Lower secondary school N15, Petropavlosk 4. Secondary school N42, Petropavlovsk 5. Kazakh gymnasium school N1 6. Bishkul secondary gymnasium school 7. Comprehensive school N130, Omsk 8. Hilmi Shaafi junior high school	Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Russia Malaysia	2016 2016 2016 2016 2016 2016 2017 2018
14	NIS Semey PhM	1. Secondary school N5 2. Secondary school N6 3. Secondary school N37 4.Secondary school N4 5. Boarding school for children with hearing impairments 6. International school JBCN (International baccalaureate) 7. Hanburg International school 8. FURR high school, Texas 9. The Prince of Wales school 10 .Moscow economic school 11 .Doerre comprehensive school 12 .Ratton comprehensive school	Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan India Germany USA Indonesia Russia USA Great Britain	2013 2013 2013 2013 2014 2014 2015 2015 2017 2017 2017 2018
15	NIS Taldykorgan PhM	1. Valikhanov gymnasium school N10 2. Khamrayev general school (Zharkent) 3. Mametova Development Centre 4. Secondary school N2, Taldykorgan 5. Secondary school N29, Taldykorgan 6. Balykbi secondary school 7. Language Immersion Centre, Fondation Innove by Ministry of education and research 8. Botisham Village College	Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Estonia Great Britain	2012 2012 2012 2013 2013 2014 2015 2018
16	NIS Taraz PhM	1. Sarykemer secondary school 2. Secondary school N25 3. Kazakh Turkish high school 4. Lyceum school N1in Kulan village, Ryskul, Zhambyl region 5. Pushkin gymnasium school N41 6. York Mills Collegiate Institute	Kazakhstan Kazakhstan Kazakhstan Kazakhstan Kazakhstan Canada	2015 2015 2016 2016 2017 2017

17	NIS Uralsk PhM	1. Saken Seifullin Regional Kazakh boarding school N11 for gifted children	Kazakhstan	2014
		2. BILIM-INNOVATION West Kazakhstan regional specialized boarding school for gifted children	Kazakhstan	2014
		3. Regional specialized boarding school for mentally retarded children	Kazakhstan	2015
		4. Reginal specialized school N8 for gifted children	Kazakhstan	2015
		5. Forest hill collegiate institute	Canada	2018
18	NIS Ust-Kamenogorsk ChB	1. Secondary school N39	Kazakhstan	2013
		2. Kazankov Secondary school (Kokpektin)	Kazakhstan	2013
		3. Secondary school N 23	Kazakhstan	2014
		4. Shanyrak school (Ridder)	Kazakhstan	2015
		5. School N44	Kazakhstan	2015
		6. Rykov secondary school, Katon-karagai region	Kazakhstan	2015
		7. Kaissenov school in Molodezhnyi village, Ulan region	Kazakhstan	2016
		8. Markakol secondary school N1, Terekty village, Kurchumski region	Kazakhstan	2017
		9. Biddenham International School and Sports College	Great Britain	2017
	NIS Shymkent PhM	1. Secondary school N89, Shymkent	Kazakhstan	2015
		2. Secondary school N65 Shymkent	Kazakhstan	2015
		3. Karazhan School, Ordabasy region	Kazakhstan	2015
		4. Kapparov school, Kazygurt region	Kazakhstan	2015
		5. Secondary school N21, Turkestan	Kazakhstan	2015
		6. Gymnasium school N8 Shymkent	Kazakhstan	2015
		7. Specialized gymnasium boarding school N1 Shymkent	Kazakhstan	2015
		8. William Farr Catholic College	Great Britain	2015
		9. Saratov Physics and Technology lyceum	Russia	2015
	NIS Shymkent ChB	1. Buncombe County Early College Irmo Middle School	USA	2013
		2. Briarhill middle school	USA	2014
		3. Suzhou industrial park foreign languages school,	China	2015
		4. Reynolds school	USA	2016
		5. Städtische Realschule Sundern	Germany	2016

INTERNATIONAL AWARD AND OLYMPIAD WINNERS 2018

Kazhymurat Aknazar (NIS Almaty PhM) was awarded a gold medal at the 19th Asian Physics Olympiad on the May 5-13 in 2018 in Hanoi (Vietnam); a gold medal at the XIV International Zhautykov Olympiad in Mathematics, Physics and Computer Science for students of specialized school on January 10-16 in 2018 in Almaty (Kazakhstan), a silver medal at the XII International Earth Science Olympiad (IESO-2018), August 8-17 in 2018 at Mahidol University in Kanchanburi (Thailand).

Amangeldi Islam (NIS Almaty PhM) was awarded a gold medal at the International Tuymaada Olympiad on Mathematics, Physics, Chemistry and Informatics, July 8-15, 2018 in Yakutsk (Yakutia, Russia), a bronze medal in physics at the XIV International Zhautykov Olympiad in Mathematics, Physics and Computer Science for students of specialized school on January 10-16, 2018 in Almaty (Kazakhstan).

Abdimazhit Asmir (NIS Taldykorgan PhM) was awarded a gold medal at the VI International Computer-based Project Competition INFOMATRIX–ASIA-2018 on April 13-15, 2018 in Almaty (Kazakhstan), was awarded a scholarship at Suleyman Demirel University in Almaty, patent inventor of utility model in alternative energy sources based on solar energy.

Bissen Aidana (NIS Aktau ChB) was awarded a gold medal at the XIX Sozvezdiye International Olympiad Human-Earth-Space Russian Academic Research Project on Environmental Problems for Children and Youth, April 23-28, 2018 in Korolev (Russia).

Bekzhan Dinmukhammad (NIS Almaty PhM) was awarded a gold medal for the project 'Application of Monte-Carlo methods in the theory of mass service' in the nomination 'Mathematical model of real process in the wild and society' at the XII International Competition 'Mathematics and Design', April 29- May 3 2018 in Moscow (Russia), a KBTU scholarship holder.

Zhunissova Anel (NIS Karaganda ChB) was awarded a gold medal for the project 'Monotonous sequences in solving olympiad problems' in the nomination 'Mathematical model of real processes in the wild and society' at the XII International Competition 'Mathematics and Design', April 29-May 3 2018 in Moscow (Russia).

Zhaparov Nurlan (NIS Almaty PhM) was awarded a gold medal for the project 'Modelling the air-defense interceptor movement' at the International Science Competition on Space Research 'Open the world of science', April 4-8, 2018 in Baikonur (Kazakhstan), a bronze medal in nomination 'Mathematical model of real processes' at the XII International competition 'Mathematics and Design' in Academy of public administration, April 29- May 3 2018 in Moscow (Russia).

Kazhen Kamila (NIS Astana PhM) was awarded two gold medals at Earth System Project (ESP) and International Team Field Investigation (ITFI) XII International Earth Science Olympiad (IESO-2018), August 8-17 in 2018 at Mahidol University in Kanchanburi (Thailand).

Kabdykairov Yerzhan (NIS Almaty PhM) was awarded a gold medal at the competition for the team development of software applications IT-Hackathon under the International Intellectual Science Games -2018, July 8-15, 2018 in Yakutsk (Yakutia, Russia).

Krepak Ivan (NIS Almaty PhM) is an author of Zharys, bLock, Domovyonok, VoiceKomek, SmartBus, Qiianat Etpe projects, mobile application developer, specialist in computer security, robotics, '100 new faces of Kazakhstan' in the 'Young scientist' nomination.

Maukei Zulfhar (NIS Astana PhM) won an innovation grant in the competition of startup digital technologies projects 'Startup Weekend' (November, 2018) in Astana (Kazakhstan).

Maksut Zhansaya (NIS Karaganda ChB) was awarded a gold medal for the project 'Monotonous sequences in solving olympiad problems' in the nomination 'Mathematical model of real processes in the wild and society' at the XII International Competition 'Mathematics and Design', April 29-May 3 2018 in Moscow (Russia).

Mustafin Batyrkhan (NIS Astana PhM) was awarded a gold medal at the XVI the International Science Competition on Space Research 'Open the world of science', April 4-8, 2018 in Baikonur (Kazakhstan).

Orazalin Alibek (NIS Almaty PhM) was awarded a gold medal in mathematics at the International Tuymaada Olympiad on Mathematics, Physics, Chemistry and Informatics on July 8-15, 2018 in Yakutsk (Yakutia, Russia); a silver medal in Mathematics at the XIV International Zhautykov Olympiad in Mathematics, Physics and Computer

science for students of specialized schools, January 10-16, 2018 in Almaty (Kazakhstan), a silver medal in mathematics at the China Western Mathematical Olympiad, August 14-18, 2018 in Haikou (China), a silver medal at the XXIX International Remote Asia-Pacific Mathematics Olympiad, March 12-13, 2018 in Almaty (Kazakhstan), a bronze medal at the XVI Silk Way International Mathematics Olympiad , March 12-13, 2018 in Almaty (Kazakhstan).

Pak Arthur (NIS Taldykorgan PhM) was awarded a gold medal at the XVI Silk Way International Mathematics Olympiad, March 12-13, 2018 in Almaty (Kazakhstan), a bronze medal in Mathematics at the XIV International Zhautykov Olympiad in Mathematics, Physics and Computer science for students of specialized schools, January 10-16, 2018 in Almaty (Kazakhstan).

Smagulov Ansar (NIS Almaty PhM) was awarded a gold medal at the competition for the team development of software applications IT-Hackathon under the International Intellectual Science Games -2018, July 8-15, 2018 in Yakutsk (Yakutia, Russia).

Sabyrov Aslan (NIS Astana PhM) was awarded a gold medal at the XVI the International Science Competition on Space Research 'Open the world of science', April 4-8, 2018 in Baikonur (Kazakhstan), a letter of appreciation at the exhibition 'Up in the air' on the territory of National Space Centre (April 2018) in Astana (Kazakhstan).

Tulenov Diyar (NIS Pavlodar ChB) was awarded a gold medal in Physics at the XIV International Zhautykov Olympiad in Mathematics, Physics and Computer science for students of specialized schools, January 10-16, 2018 in Almaty (Kazakhstan).

Taumergenov Nurdaulet (NIS Aktobe PhM) was awarded a gold medal and Grand prix of USD 5 000 for the 'Glove Speaker' International Intellectual Science Games 2018, July 8-15, 2018 in Yakutsk (Yakutiya, Russia).

Turarov Yerasyl (NIS Karaganda ChB) was awarded a gold medal at the International Intellectual Science Games 2018, July 8-15, 2018 in Yakutsk (Yakutiya, Russia).

Talipbayev Alikhan (NIS Astana) was awarded a gold medal at the competition for the team development of software applications IT-Hackathon under the International Intellectual Science Games -2018, July 8-15, 2018 in Yakutsk (Yakutia, Russia).

Torebai Nyrdaulet (NIS Aktau ChB) was awarded a gold medal at the XIX Sozvezdiye International Olympiad Human-Earth-Space Russian Academic Research Project on Environmental Problems for Children and Youth, April 23-28, 2018 in Korolev (Russia).

Amnageldy Amina (NIS Ust-Kamenogorsk ChB) was awarded a silver medal at the International Competition of research projects in mathematics and mechanics named after Dzholdasbekov U., March 1-3, 2018 in Almaty (Kazakhstan).

Bilal Kaisar (NIS Astana PhM) was awarded a silver medal at the International Competition of research projects in mathematics and mechanics named after Dzholdasbekov U., March 1-3, 2018 in Almaty (Kazakhstan).

Boltaov Arman (NIS Taldykorgan PhM) was awarded a silver medal in mathematics at the XIV International Zhautykov Olympiad in Mathematics, Physics and Computer science for students of specialized schools, January 10-16, 2018 in Almaty (Kazakhstan); a bronze medal at the XVI Silk Way International Mathematics Olympiad, March 12-13, 2018 in Almaty (Kazakhstan).

Zharkeshov Nurtas (NIS Astana PhM) was awarded a silver medal at the International Competition of research projects in mathematics and mechanics named after Dzholdasbekov U., March 1-3, 2018 in Almaty (Kazakhstan).

Zharaspai Mazhit (NIS Aktobe PhM) was awarded a silver medal at the VI International Computer Project Competition INFOMATRIX–ASIA-2018, April 13-15, 2018 in Almaty (Kazakhstan).

Kairbek Khaidar (NIS Pavlodar ChB) was awarded a silver medal in chemistry at the International Tuymaada Olympiad on Mathematics, Physics, Chemistry and Informatics, July 8-15, 2018 in Yakutsk (Yakutia, Russia).

Moldogali Shyngys (NIS Astana PhM) was awarded a silver medal at the XVI the International Science Competition on Space Research 'Open the world of science', April 4-8, 2018 in Baikonur (Kazakhstan).

Nurgazy Tomiris (NIS Almaty ChB) was awarded a silver medal at the International Competition of research projects in mathematics and mechanics named after Dzholdasbekov U., March 1-3, 2018 in Almaty (Kazakhstan).

Olzhabayev Assylbek (NIS Almaty PhM) was awarded a silver medal in mathematics at the XXII Junior Balkan Mathemarical Olympiad (JBMO), June 19-24, 2018, the Island of Rhodes (Greece).

Turlanov Aidar (NIS Aktobe PhM) was awarded

a silver medal at the VI International Computer Project Competition INFOMATRIX–ASIA-2018, April 13-15, 2018 in Almaty (Kazakhstan).

Askaruly Tarlan (NIS Astana PhM) was awarded a silver medal at the VI International Computer Project Competition INFOMATRIX–ASIA-2018, April 13-15, 2018 in Almaty (Kazakhstan).

Dzhakibayeva Akmaral (NIS Almaty PhM) was awarded a bronze medal in mathematics at the XIV International Zhautykov Olympiad in Mathematics, Physics and Computer science for students of specialized schools, January 10-16, 2018 in Almaty (Kazakhstan), an honorary certificate at the IV European Girls' Mathematical Olympiad (EGMO-2018), April 9-15, 2018 in Florence (Italy).

Zhetpisbekov Zhomart (NIS Astana PhM) was awarded a bronze medal at the VI International Computer Project Competition INFOMATRIX–ASIA-2018, April 13-15, 2018 in Almaty (Kazakhstan); won an innovation grant in the competition of startup digital technologies projects 'Startup Weekend' (November, 2018) in Astana (Kazakhstan).

Ibrayev Tengiz (NIS Semey PhM) was awarded a bronze medal in physics at the XIV International Zhautykov Olympiad in Mathematics, Physics and Computer science for students of specialized schools, January 10-16, 2018 in Almaty (Kazakhstan).

Kenzhebek Daryn (NIS Astana PhM) was awarded a bronze medal at the VI International Computer Project Competition INFOMATRIX–ASIA-2018, April 13-15, 2018 in Almaty (Kazakhstan); won an innovation grant in the competition of startup digital technologies projects 'Startup Weekend' (November, 2018) in Astana (Kazakhstan).

Muratov Adilkhan (NIS Astana PhM) was awarded a bronze medal in informatics at the International Tuymaada Olympiad on Mathematics, Physics, Chemistry and Informatics, July 8-15, 2018 in Yakutsk (Yakutia, Russia).

Nurligenov Temirlan (NIS Karaganda ChB) was awarded a bronze medal in mathematics at the XIV International Zhautykov Olympiad in Mathematics, Physics and Computer science for students of specialized schools, January 10-16, 2018 in Almaty (Kazakhstan).

Umurzak Assylbek (NIS Astana PhM) was awarded a bronze medal at the XII International Earth Science Olympiad (IESO-2018), August 8-17, 2018, Mahidol University, Kanchanaburi (Thailand).

Chalyshkan Selimkhan (NIS Almaty PhM) was awarded a bronze medal at the XXIX International Biology Olympiad, IBO-2018 among 270 students form 70 countries around the world, scholarship money winner amounting KZT 1 million in the nomination 'Socially significant innovations' at the National Youth Competition NURINTECH-2017.

Shayakhment Yeldar (NIS Astana PhM) was awarded a bronze medal at the VI VI International Computer Project Competition INFOMATRIX–ASIA-2018, April 13-15, 2018 in Almaty (Kazakhstan).

Yussupov Temirzhan (NIS Semey PhM) was awarded a bronze medal in informatics at the XIV International Zhautykov Olympiad in Mathematics, Physics and Computer science for students of specialized schools, January 10-16, 2018 in Almaty (Kazakhstan)..

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