NAZARBAEV INTELLECTUAL SCHOOLS
Autonomous educational organisation

2021
ANNUAL REPORT

WORK OF THE AEO "NAZARBAEV INTELLECTUAL SCHOOLS"

PART 1

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2021

Dear readers!

We are glad to present the results of the work of Nazarbayev Intellectual Schools AEO, the achievements of students and our professional pedagogical community.

In 2021, our country celebrated the 30th anniversary of Independence. During the years of independence, a national model of the education system has been formed, which has ambitious plans and actively develops.

In line with their Mission, Intellectual schools keep the path of sustainable development, contributing to the intellectual capacity of the country.

The main theme of the events of Intellectual Schools in 2021 were the results of the 30 years of Independence – recognition of achievements and successes, promotion of national patriotic ideas, personal involvement, civic values of identity and unity, strengthening the sense of pride in their country.

Intellectual schools like all state schools have passed the test of the pandemic. All the resources of the schools were used to maintain distance teaching and learning.

Distance learning provided useful practical experience and suggested new values. The distance learning format showed a transformation of thinking and consciousness, the concept of space, a new attitude to the organisation of the educational process and the allocation of time. The main results in distance education include building the culture of online lessons, increasing the level of ICT competencies of students, teachers and parents, gaining experience in creating a resource bank of learning materials, improving teacher networking and teamwork, etc. The main losses are the lack of emotional contacts and live human communication.

During this period, our important task was to prevent a decrease in the quality of the organisation of the educational process, and we succeeded. The success of the organisation of the distance educational process is confirmed by academic achievements and international examinations results of our students.

NIS graduates go to the best Kazakh and international universities: 6 have entered Ivy League universities, 677 (29%) – Nazarbayev University, 78 (3.3%) – QS WUR top universities, 560 (24%) – other foreign universities.

In 2021, the average score of students on the SAT1 exam was 1281. Only 11% of students tested worldwide achieved such a result.

The average IELTS band score has increased from 6.5 to 6.7. Every second student scored 7.0 or higher; 70.2% of graduates scored 6.5 or higher.

301 students received prizes at national and international Olympiads and scientific competitions, which is 11% higher than last year. The team of Nazarbayev Intellectual schools became the best Olympic team of the country according to the results of the Republican Olympiad and was ranked the 1st for the largest number of gold medals at the Republican competition of scientific projects. For the first time in the history of independent Kazakhstan, students of Intellectual schools were awarded gold and silver medals at the prestigious International Geography Olympiad (iGeo).

Calendar of key events 2021

Opening of the Nazarbayev Intellectual School of Chemistry and Biology in Turkestan.

November

Nazarbayev Intellectual Schools organised “Independence Lessons”, “Time of Creation” attended by 50 thousand high school students from all regions of the country and foreign partner schools.

September

NIS team took the first place in “Best Olympiad team 2021” nomination in Republican Olympiad on general education subjects.

April

Chemistry teacher Askhat Zhumabekov entered the finals of the global international award "Global Teacher Prize" and entered the list of the top 50 best teachers in the world.

On the Teacher's Day eve, 3 NIS teachers became winners of the republican professional competition: Gulzia Beyssenbekova, a chemistry teacher of Nazarbayev Intellectual School in Atyrau, and two expert teachers from Taraz – Lyubov Issatayeva, a history teacher, and Elmira Moldabek, a teacher of Kazakh Language and Literature

September

On 27th September, there was a meeting at which the First President of the Republic of Kazakhstan, Yelbassy, Nursultan Nazarbayev received the Chairman of the NIS Board, Kulyash Shamshidinova. During the meeting Yelbassy was reported about NIS current work and further development plans

September

From 9 to 17 August as a part of August teachers conference on "Methodological support for teachers' practice" there were breakout sessions on all the major subjects for all the teachers. Overall, 84 webinars, masterclasses and presentations were delivered by NIS teachers.

September

The book "Armanga kanat bitirgen" (Inspired by dreams) with NIS alumni and NIS teachers' stories about their life, education achievements, creative development, professional and personal growth was published. The book also includes parents' feedback about the importance of NIS in their children life.

November

The XII International Research-to-Practice Conference on the theme "Family, school and community: thinking and acting for a child" was held on 11-12 November 2021. For the first time in 12 years, the conference was held online and gathered over 8000 participants in the virtual space.

November

hundrED

For the first time, the project of NIS Centre for Pedagogical Measurements "Being a proactive teacher in formative assessment" was included in the list of innovative ideas of the international project HundrED, Finland.

December

STUDENT POPULATION

1.1 Network and student population

1.2 Competitive student selection

1.3 Virtual and vacation schools

1.1. Network and student population

As of the end of 2021, 15 638 students are enrolled in 21 Intellectual schools, 1 316 students are enrolled in the International School of Nur-Sultan, including 154 pupils in kindergarten, 2 712 students are enrolled in the Republican School of Physics and Mathematics, including 1 401 in its branch of Nur-Sultan.

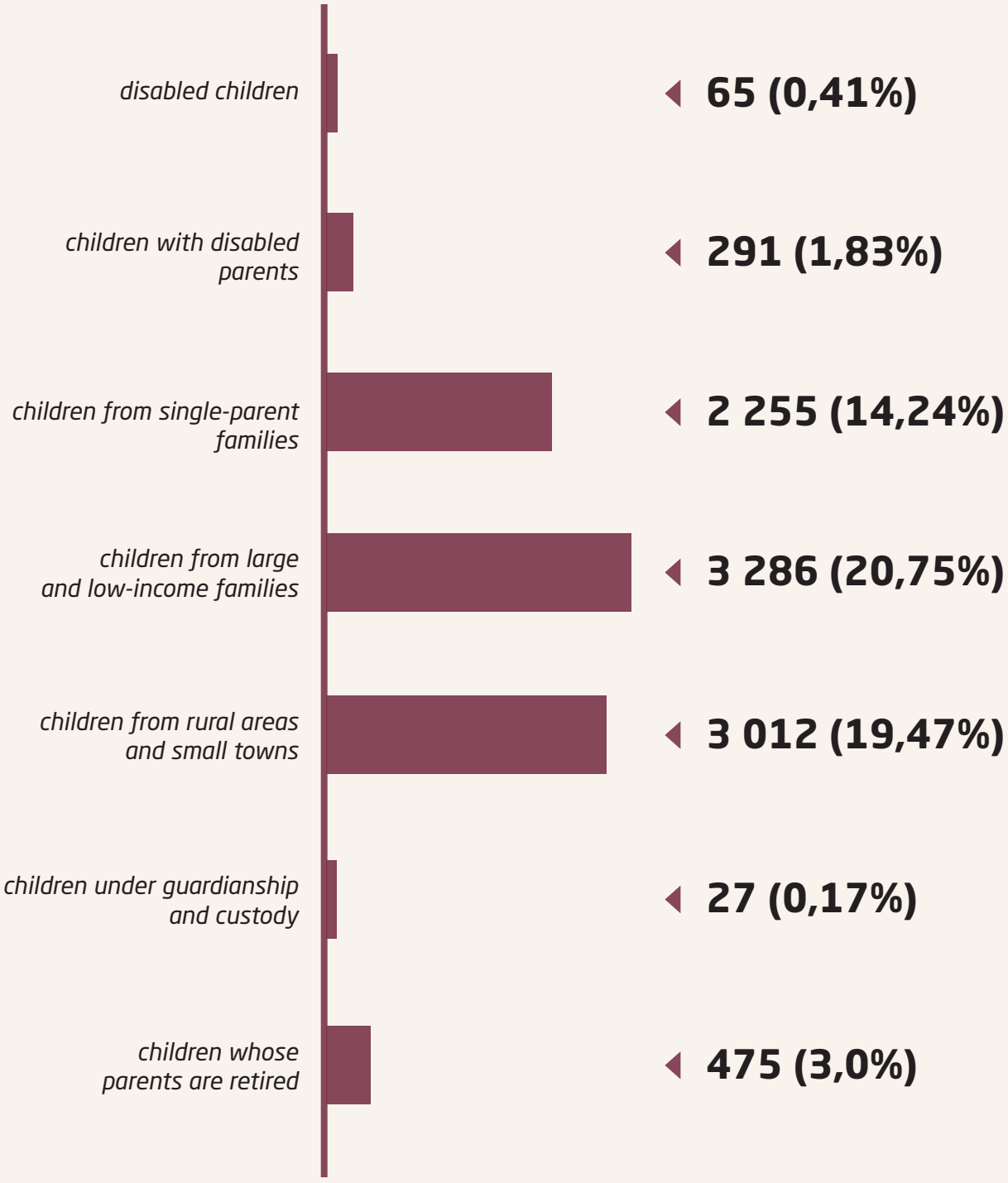
Number of Intellectual schools students by grades (as of 10 December, 2021)

School	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	TOTAL STUDENTS
Nur-Sultan PhM					213	172	249	117	148	144	1 043
IB Nur-Sultan					168	162	141	174	170	127	942
Aktau ChB					142	142	138	93	64	122	701
Aktobe PhM					141	119	165	135	75	158	793
Almaty PhM					140	192	215	144	163	139	993
Almaty ChB					188	264	148	111	73	155	939
Atyrau ChB					99	135	129	113	66	138	680
Karaganda ChB					143	142	136	134	75	131	761
Kokshetau PhM	56	55	49	49	118	140	99	70	60	108	804
Kostanay PhM					117	111	113	87	69	83	580
Kyzylorda ChB					115	144	160	116	75	108	718
Pavlodar ChB					119	143	151	94	64	104	675
Petropavlovsk ChB					119	137	132	72	59	121	640
Semey PhM					120	141	130	91	66	129	677
Taldykorgan PhM	55	55	50	53	116	141	117	84	71	99	841
Taraz PhM					115	120	188	126	61	87	697
NIS ChB Turkestan					161	71	94				326
Uralsk PhM					120	120	165	111	73	118	707
Ust-Kamenogorsk ChB					120	119	135	86	51	98	609
Shymkent PhM					164	146	140	107	76	139	772
Shymkent ChB					140	120	143	117	80	140	740
Total	**111**	**110**	**99**	**102**	**2 878**	**2 981**	**3 088**	**2 182**	**1 639**	**2 448**	**15 638**

*Source: UIEE section on Student Enrollment

Socio-economic status of school children

(as of 1 September 2021, 15 829 students):



1.2. Competitive student selection

To ensure student enrollment to existing Intellectual schools in the 2021-2022 academic year, in the period 2 December 2020 to 23 January 2021, candidates submitted documents for participation in the competitive selection.

Due to the epidemiological situation in the country, the competitive selection of students to study at 20 Nazarbayev Intellectual schools was postponed from 11-12 March to 27-28 May 2021.

17 664 students took part in the competitive selection, including 11 970 students with the Kazakh language of instruction, and 5 694 students with the Russian language of instruction.

In the reporting year, the candidates scored 680.8 on average, which is 83 points lower than in 2020 (763.8).

In terms of the average score, candidates and grant holders in Nur-Sultan PhM and Nur-Sultan IB (790.1 and 773.6, respectively) as well as Almaty PhM and Almaty ChB (774.8 and 710.5 respectively) took the lead. The lowest average scores are shown by candidates at Kyzylorda ChB (580), while the lowest test results are observed among grant holders at Petropavlovsk ChB (818.9). The difference between the highest and the lowest average scores of candidates is 209.7, and for grant holders it is 351.8.

Results of candidates in comprehensive testing by schools

Intellectual School	Highest score	Scores of all candidates		Scores of candidates admitted to consideration at the Committee meeting		Scores of grant holders	
		Average score	Lowest score	Average score	Lowest score	Average score	Lowest score
Nur-Sultan PhM	1 264	790,1	238	904,7	451	1 127,0	1 022
IB Nur-Sultan	1 275	773,6	272	907,5	529	1 143,7	1 067
Almaty PhM	1 255	774,8	250	892,5	425	1 170,7	1 103
Almaty ChB	1 237	710,5	179	877,3	453	1 088,8	983
Aktau ChB	1 254	607,0	75	823,3	475	967,5	813
Aktobe PhM	1 242	646,4	281	821,4	489	964,5	818
Atyrau ChB	1 160	624,7	50	787,3	418	964,3	855
Kokshetau PhM	1 214	710,0	299	843,8	525	946,5	778
Karaganda ChB	1 185	657,6	279	813,8	520	947,2	795
Kostanay PhM	1 206	648,3	234	802,7	492	874,1	682
Kyzylorda ChB	1 215	580,4	218	780,7	437	925,0	788
Uralsk PhM	1 253	657,2	288	830,3	414	982,6	862
Ust-Kamenogorsk ChB	1 179	641,6	257	810,0	480	906,2	740
Pavlodar ChB	1 206	673,3	218	826,6	416	954,9	805
Petropavlovsk ChB	1 125	610,9	315	760,3	410	818,9	634

Semey PhM	1 206	648,6	276	828,3	526	895,0	726
Taldykorgan PhM	1 211	704,5	319	868,7	529	1 016,6	790
Taraz PhM	1 225	625,7	269	816,3	457	1 010,3	870
Shymkent PhM	1 258	662,1	219	842,7	432	1 055,6	919
Shymkent ChB	1 217	641,9	265	832,6	448	1 033,8	901
Total	**1 275**	**680,8**	**50**	**852,6**	**410**	**1 001,9**	**634**

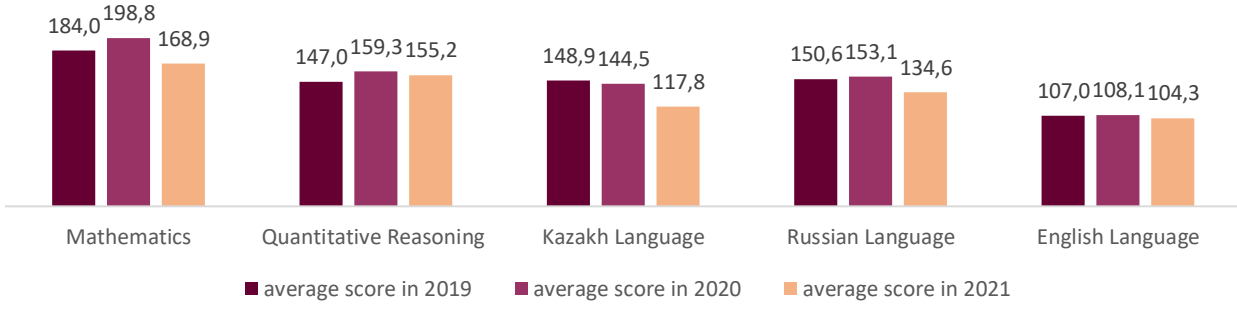
Note: The maximum score for complex testing is 1300 points.

The maximum scores by subjects:

- Mathematics (400) – 31 candidates from Nur-Sultan, Almaty, Aktobe, Pavlodar, Shymkent (in 2020 – 115, in 2019 – 46);
- Quantitative Reasoning (300) – 2 candidates from Shymkent PhM (in 2020 – 3, in 2019 – 0);
- Kazakh as L1 (200) – 44 candidates in all cities except Pavlodar, Petropavlovsk, Taldykorgan (in 2020 – 117, in 2019 - 45);
- Kazakh as L2 (200) – 36 candidates in Nur-Sultan, Almaty, Aktau, Aktobe, Kokshetau, Karaganda, Kyzylorda, Uralsk, Taraz, Shymkent (in 2020 – 113, in 2019 – 121);
- Russian as L1 (200) – 330 candidates in all cities (in 2020 – 40, in 2019 – 15);
- Russian as L2 (200) – 31 candidates in Nur-Sultan, Almaty, Aktau, Aktobe, Karaganda, Ust-Kamenogorsk, Pavlodar, Taldykorgan, Taraz, Shymkent ChB (in 2020 – 88, in 2019 – 24);
- English (200) – 313 candidates with the Kazakh language of instruction in all cities (in 2020 – 85, in 2019 – 45);
- English (200) – 156 candidates with the Russian language of instruction in all cities except Pavlodar (in 2020 – 135, in 2019 – 93).

A comparative analysis of the results of the competition over the past three years showed a decrease in the level of task completion by candidates in all sections of the tests.

Average test scores of candidates for three years, 2019-2021



The decrease in performance is likely to be the implication of distance learning during the academic year on the quality of education of Grade 6 students.

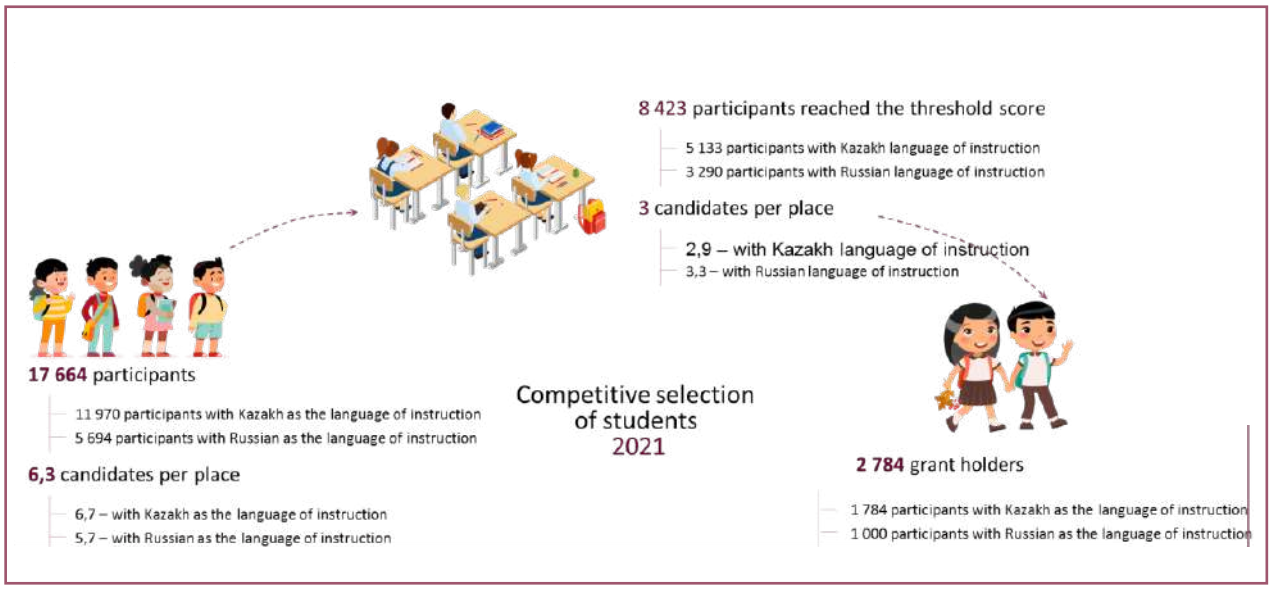
General information on the competitive selection 2021

Intellectual School	Number of candidates			Number per 1 vacant place		
	Total	with the Kazakh language of instruction	with the Russian language of instruction	Total	with the Kazakh language of instruction	with the Russian language of instruction
Nur-Sultan PhM	1 365	789	576	6,3	6,6	6
IB Nur-Sultan	1 338	714	624	8	7,4	8,7
Almaty PhM	1 701	1 005	696	11,8	14	9,7
Almaty ChB	1 455	987	468	7,6	8,2	6,5
Aktau ChB	965	763	202	6,7	7,9	4,2
Aktobe PhM	845	587	258	5,9	6,1	5,4
Atyrau ChB	1 042	582	460	8,7	8,1	9,6
Karaganda ChB	705	456	249	4,9	4,8	5,2
Kokshetau PhM	371	236	135	3,1	3,3	2,8
Kostanay PhM	363	179	184	3	3,7	2,6
Kyzylorda ChB	1 049	846	203	8,7	8,8	8,5
Pavlodar ChB	540	333	207	4,5	4,6	4,3
Petropavlovsk ChB	420	250	170	3,5	3,5	3,5
Semey PhM	441	329	112	3,7	3,4	4,7
Ust-Kamenogorsk ChB	547	431	116	4,6	4,5	4,8
Taldykorgan PhM	552	429	123	4,6	6	2,6
Taraz PhM	1 093	895	198	9,1	9,3	8,3
Uralsk PhM	752	548	204	6,3	6,9	5,1
Shymkent PhM	1 065	833	232	6,3	6,9	4,8
Shymkent ChB	1 055	778	277	7,3	8,1	5,8
Total	**17 664**	**11 970**	**5 694**	**6,3**	**6,7**	**5,7**

Following the results of the competitive selection, on 26 July, 2021, the Republican Committee (hereinafter referred to as the Republican Committee) held a meeting to award "Orken" educational grant of the First President of the Republic of Kazakhstan – Yelbassy (hereinafter referred to as the grant). According to the Committee decision, 2 784 students became grant holders.

Holders of the grant to study in Grades 7 in 20 Nazarbayev Intellectual schools.

Grade	Number of admitted candidates			Number of grant holders		
	total	Kazakh	Russian	total	Kazakh	Russian
Grade 7 of 20 NIS	8 423	5 133	3 290	2 784	1 784	1 000



5.6% of Grade 6 students took place in the competitive selection nationwide.

Most of the candidates were from Almaty (17.9%), Nur-Sultan (15.3%) and Shymkent (12%), and less from Kostanay (2.05%), Kokshetau (2.1%), Semey (2.5%).

In some regions (Nur-Sultan, Almaty, Atyrau, Kyzylorda, Taraz) the competition was 8 to 12 people per place.

Introduction and piloting an additional test section on Science

One of the significant features of the competitive selection in 2021 was piloting the Science test for introduction in the test structure since 2022. However, the results of piloting were not taken into account during the statistical and psychometric analysis of the results of the competitive selection and, accordingly, were not included in the total final score of the candidates. Piloting aimed at the assessment of:

- the quality of items; the level of difficulty was identified (together with other psychometric characteristics);
- adequateness of the test duration;
- equivalence of language versions of items, etc.

103 tasks have been pre-tested. The average percentage of item completion is 44.8%, which corresponds to good discriminative indicators of the test. On average candidates with Kazakh language of instruction scored 86.1 points out of 200, and those with Russian language of instruction - 96.9.

Average scores of candidates in Science section by schools

Intellectual School	Average score (max. score – 200)	
	with the Kazakh language of instruction	with the Russian language of instruction
Nur-Sultan PhM	91,2	102,1
IB Nur-Sultan	89,5	98,6
Almaty PhM	93,1	106,1
Almaty ChB	88,6	99,0
Aktau ChB	80,4	89,0
Aktobe PhM	85,1	96,1
Atyrau ChB	79,4	85,2
Karaganda ChB	87,6	102,3
Kokshetau PhM	82,8	98,3
Kostanay PhM	87,3	97,6
Kyzylorda ChB	82,9	87,8
Pavlodar ChB	82,3	95,5
Petropavlovsk ChB	87,5	103,4
Semey PhM	90,1	104,3
Ust-Kamenogorsk ChB	84,2	88,5
Taldykorgan PhM	88,5	99,4
Taraz PhM	87,0	101,7
Uralsk PhM	84,8	92,7
Shymkent PhM	85,5	89,7
Shymkent ChB	83,6	87,1
Overall average score	**86,1**	**96,9**

Following the piloting results as well as the results of psychometric analysis of the test items' quality, the average scores of candidates and the content analysis of items, correspondence was established between the content and the level of difficulty of test items of the current Science curriculum for Grades 5-6. Piloting determined the validity of test materials and their ability to assess the science literacy of candidates.

Positive results of approbation provide for introducing 'Science' test to the first day of the competitive selection; the section will consist of 20 test items with a fixed maximum score of 200. In this case, the overall maximum score for comprehensive testing will increase from 1 300 to 1 500.

Updated format of competitive selection

Test Day	Test Section	Number of tasks	Number of minutes	Max. score	Threshold score	
A test assessing the ability to study mathematics and sciences						**Awarding a grant** in line with the number of vacant places across schools and languages of instruction, the highest score for comprehensive testing (max. score – **1500**)
1	Mathematics	40	60	400	140 (35%)	
	Quantitative Reasoning	60	30	300	120 (40%)	
	Science	**20**	**30**	**200**	-	
Languages						
2	Kazakh language	20	120	200	-	
	Russian language	20		200	-	
	English language	20		200	-	

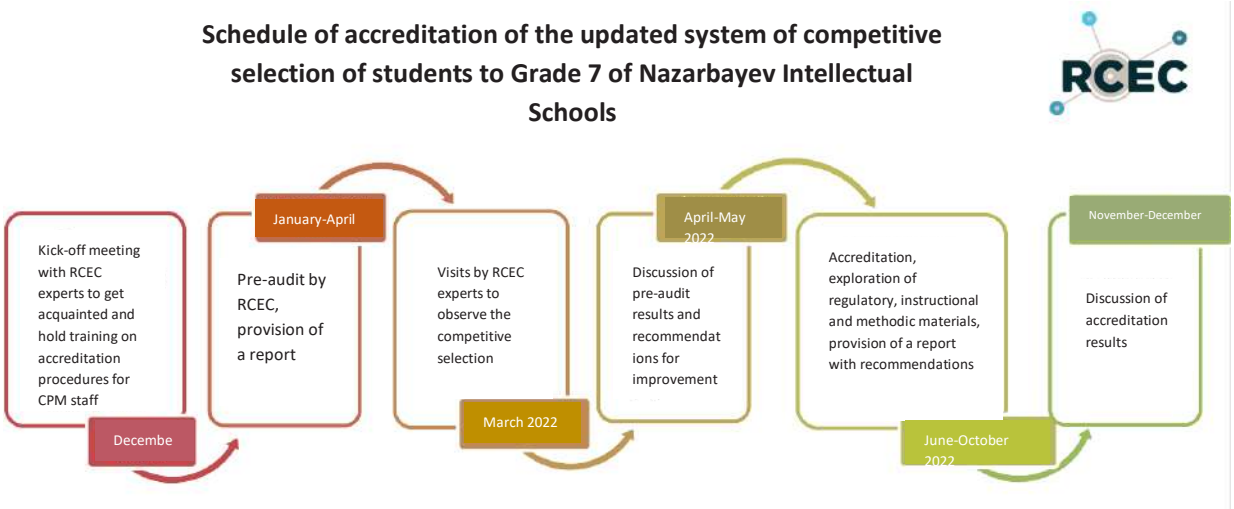
** If the total score of the candidates is equal, the advantage is offered to candidates with a higher score in 1) Mathematics; 2) Quantitative Reasoning; 3) Science; 4) the language of instruction (L1).*

By the Decree of the Government of Kazakhstan dated 13 December 2021 No. 879, the Science section was added to the comprehensive testing of students' competitive selection to Grade 7

Accreditation of the updated competitive selection system

As part of preparation for the accreditation of students' competitive selection system to NIS Grade 7, data collection, processing and analysis were carried out throughout the year in accordance with the criteria of the Research Centre for Examination and Certification (hereinafter referred to as RCEC). In December of this year, a kick-off meeting of RCEC experts was held to provide more detailed information on the audit procedures of students' competitive selection system and to agree on a work plan for preliminary and final accreditation in 2022.

Schedule of accreditation of the updated system of competitive selection of students to Grade 7 of Nazarbayev Intellectual Schools



Accreditation of the updated selection system will allow getting an external independent assessment, confirming its validity, reliability and transparency, and will also ensure the compliance with international standards. The certificate and excellence mark of the international accreditation agency will allow NIS to provide services for organising and conducting competitive selection in the Republic of Kazakhstan, as well as in countries of near and far abroad.

Trial testing within students' competitive selection in Grades 7

Trial testing is an annual procedure held in order to provide candidates with the opportunity to get familiar with the format and conditions of competitive selection to Grade 7. Testing is a computer-based test held in Intellectual Schools.

Trial testing of students' competitive selection to NIS Grade 7 was cancelled in academic year 2020-2021 due to the spread of coronavirus infection in the country.

Trial testing in academic year 2021-2022 is scheduled for December 2021, January and February 2022.

A new Science section has been introduced into the structure of the trial testing and a video instruction on its implementation has been developed.

In December 2021, 3 256 students took part in the trial testing in 20 Intellectual schools.

Online course "How to prepare for admission to Nazarbayev Intellectual school and to assess own capabilities"

To provide an alternative opportunity to prepare students for competitive selection an online course developed jointly with Knowledge Engineering LLP is implemented on the website www.academia.kz. The course contains learning materials and tasks to consolidate the material across the test sections, as well as two options of trial test.

This year, the content of this course has been supplemented with lessons and tasks to consolidate knowledge in Science section of the test.

1.3. Virtual and vacation schools

Virtual and vacation schools function to prepare students of Grades 5 and 6 of secondary educational organisations to take part in competitive selection to study in Grade 7 of Intellectual schools under "Orken" educational grant of the First President of the Republic of Kazakhstan – Yelbassy.

Virtual school provide training in Mathematics, Kazakh language, Russian language and literature and English language in the Kazakh and Russian languages as well as the opportunities to explore learning materials and perform consolidation tasks. Since this year, due to the change in the format of the competitive selection, students have also been studying Science in the Virtual School.

Registration, training and assessment in Virtual and Vacation schools in 2021 was carried out according to the established schedule with following periods:

Schedule of Virtual and Vacation schools

Learning	Grade 5	Grade 6
Registration on the Virtual School website	29 March – 23 May	11 October – 24 December
Attending lessons and completing Virtual School assignments (online)	19 April – 23 May	25 October – 24 December
Virtual School final test (online)	17 May – 23 May	17 December – 24 December
Vacational school (in Intellectual Schools*)	1 – 10 June	December/January (5 days)

In the 2021-2022 academic year, 933 students of Grade 5 of state secondary education organisations registered and participated in the Virtual School (460 students with the Kazakh language of instruction, 432 – with the Russian language of instruction, and 41 students registered for both courses), including 407 students (208 students with the Kazakh language of instruction, and 199 – with the Russian language of instruction) trained in a Vacation school.

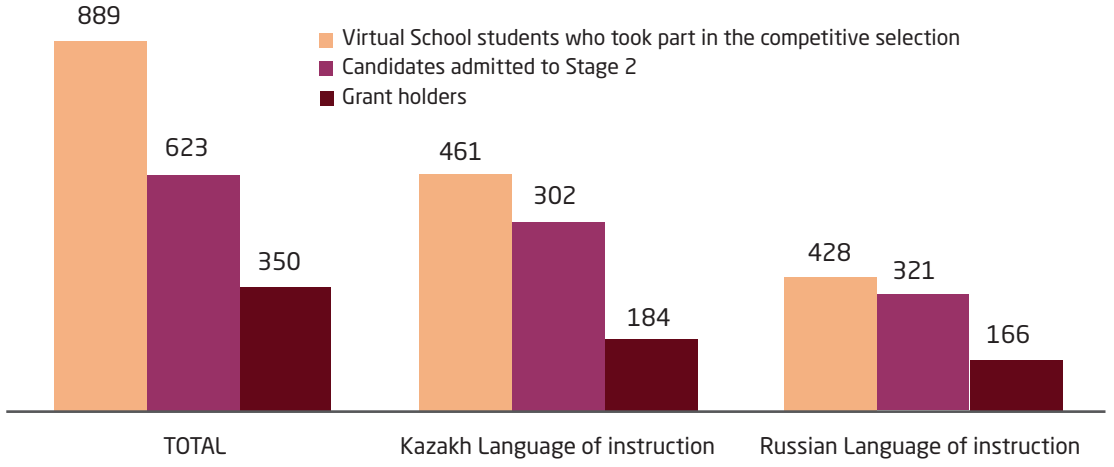
2 321 students of Grade 6 of state secondary schools who studied in the Virtual School in the current academic year, including 825 students with Kazakh language of instruction, 1 442 – with Russian language of instruction, and 54 students registered for both courses.

748 students (422 students with Kazakh language of instruction and 326 with Russian language of instruction) successfully passed the Virtual School final test and were invited to study at the Vacation School.

After studying in a Virtual school, students take the final test. The final test is carried out in the format of computer testing. Students who have scored 50 percent or more of the total score on the final test (20 points or more) are invited to attend Vacation school of Nazarbayev Intellectual schools for classroom lessons and consultations on core subjects of the competitive selection.

Studying in Virtual and Vacation schools helps students to ensure the effectiveness of learning, develop the necessary skills and increase motivation.

Diagram. The number and share of Virtual School students who took part in the competitive selection in 2021



TEACHERS

2.1	2.2	2.3	2.4	2.5
Competitive teacher selection	Qualitative composition of teachers	Professional development system	Pedagogical employees' performance appraisal	Teachers' achievements

2.1. Competitive teacher selection

In order to attract highly qualified specialists in education and university graduates with a high level of academic and language knowledge, the procedures for attracting and recruiting employees are annually aligned with the requirements of external market and optimised based on the analysis of internal recruitment needs.

Recruitment of teaching staff to Intellectual schools is carried out through an open competition for vacant positions and the formation of a candidates' pool of teachers and persons equated to them in the branches of Nazarbayev Intellectual Schools AEO.

The competitive selection consists of two stages: the first stage is a test to assess the candidates' subject knowledge and writing an essay to assess their knowledge of teaching methods and critical thinking skills; the second stage is an interview.

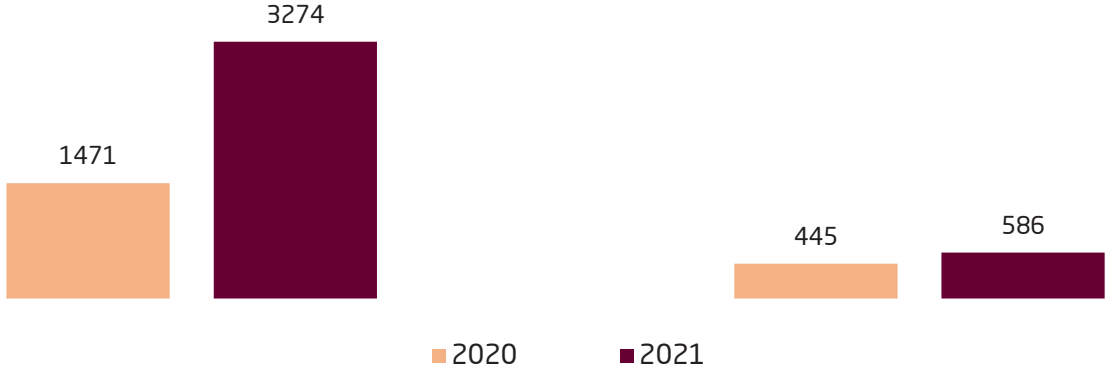
2021 saw five competitive selection procedures for vacant positions; for this purpose, Centre for Pedagogical Measurements updated and approved test specifications for 18 subjects. 2250 test items were developed and reviewed, including 200 contextual resources. Test specifications and sample items are available at the website nis.edu.kz in Careers section.

The process of generating individual reports for candidates based on the results of the first stage of competitive selection has been automated. Having statistically processed the subject test results and the essay evaluation, the system automatically generates individual reports with recommendations for professional development in the subject area and teaching methodology.

The first stage of the competition for vacant positions is held at one time in all Intellectual schools and the International School of Nur-Sultan through the computer-based testing system using online broadcasting.

In 2021, the competitive selection was held in June, August, October and December and attended by 2 919 candidates, which is twice the number of candidates in 2020 (1 471 teachers). 526 candidates of those who took part in the competitive selection (18%) successfully passed the first stage.

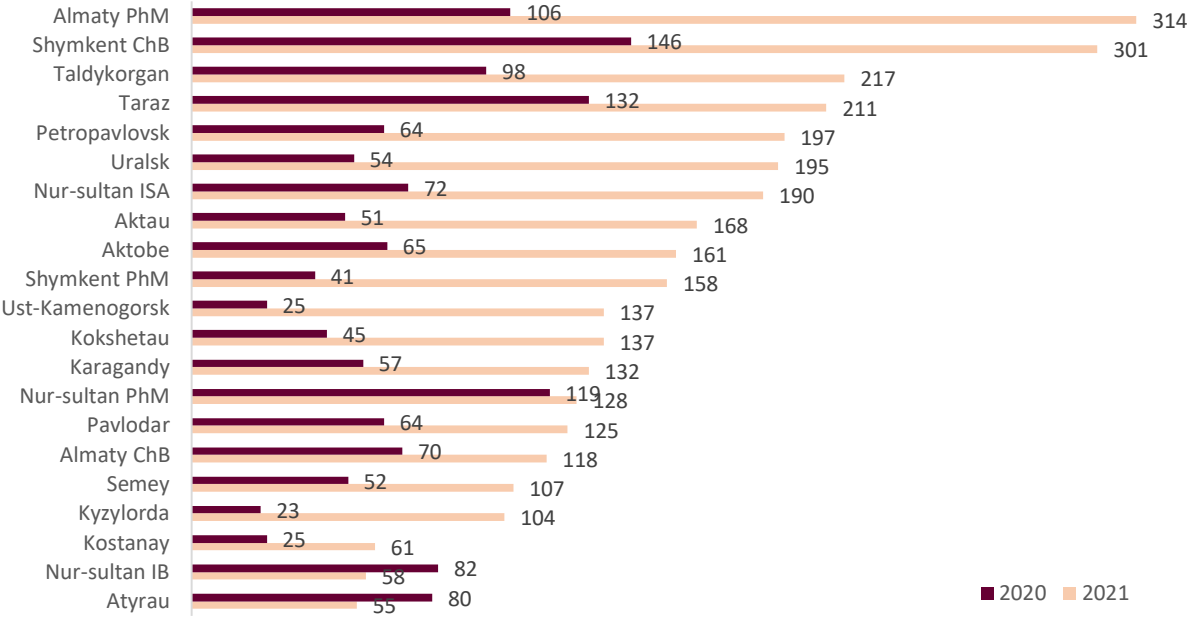
The number of candidates in the competitive selection of teachers 2020-2021.



The largest number of candidates was registered in Intellectual schools of Almaty PhM (295), Shymkent ChB (243), Taldykorgan (208), Taraz (194) and Petropavlovsk (182). The smallest – in Kostanay (57), Nur-Sultan IB (53), Atyrau (52).

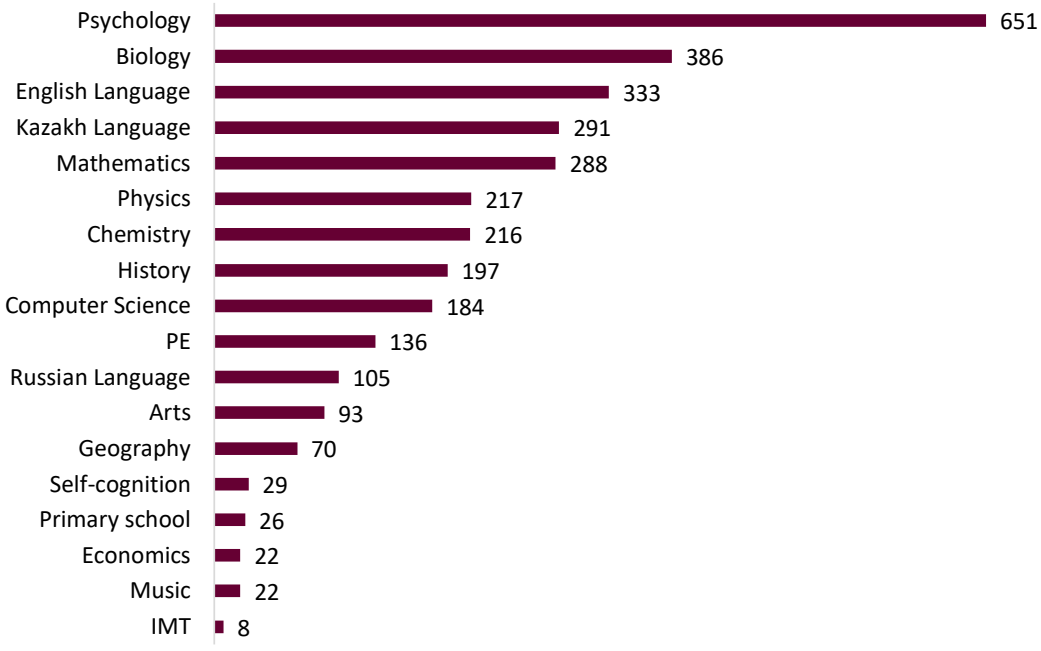
By the end of the first stage the largest number of candidates were recommended in the schools of Nur-Sultan IB (28%), Almaty PhM (27%), Almaty ChB (26%), Nur-Sultan PhM (25%), Kyzylorda and Kostanay (23%), the smallest – in Petropavlovsk and Shymkent PhM (14%), Atyrau and Shymkent ChB (13%), Taldykorgan (8%).

The number and share of Virtual School students who took part in the competitive selection in 2021



The largest number of candidates was registered in the subjects: pedagogical psychology (568), Biology (339), English (308), Kazakh (275) and Mathematics (253) and the smallest number of candidates – in the subjects: Geography (60), Self-cognition (20), Music (20), Primary school (20), Economics (18), Initial military training (7).

Number of candidates by subjects in 2021



The average test completion rate is 18%. The percent of competion above average is observed in such subjects as English (41%), Kazakh language and literature (35%), Geography (33%), below average – in Economics (11%), Self-cognition (10%), PE and Art (9%), Chemistry (7%), pedagogical psychology (5%). The subject test in pedagogical psychology is passed by candidates who take part in the competition for vacant positions of teachers-organisers-curators. In 2021, the total average score of recommended candidates was 341.

The average score of candidates recommended according to the results of Stage 1 in 2021

№	School	English language	Biology	Geography	computer science	Art	History	Kazakh language and literature	Mathematics	Music	Primary school	Initial military training	Psychology	Russian language and literature	Self-cognition	Physics	PE	Chemistry	Economy	overall average score
1	IB Nur-Sultan	346	318	346		365	363	401						386						355
2	Nur-Sultan IS	362	305		303		320	336	307		341		346	336		303		300		342
3	Nur-Sultan PhM	348	319			321	347	352	356				339	307	321		302	388		341
4	Aktau	357	301	319	300	366	387	360	310				357			300		300		335
5	Aktobe	347	300	300	364	381	362		368				326				369			354
6	Almaty PhM	351	329	304	304		353	340	378				339			314	310	305		340
7	Almaty ChB	388	306	300	300	300		339	303				382							343
8	Atyrau	381	356						364					316		381				363
9	Karaganda	358	313		313				311				375	360		352			321	338
10	Kokshetau	348	320		331		427	333			321		330	338		303				334
11	Kostanay	368			353					321			313							354
12	Kyzylorda			338	303		314	336						316						330
13	Pavlodar	380		401	316	358	354	351	315	301			313							343
14	Petropavlovsk	346					310	345	328		301		354	339		356		356		341
15	Semey		326	308	342	313	327	333	305							303	344			327
16	Taldykorgan	313	301	300	300	388	347	348	409					404			310	301	361	346
17	Taraz	355	317	315	349	313		348	318				321	399		303				344
18	Turkestan	357	325	325	325		345	348	339				352	307		321	321	325		341
19	Uralsk	358	301		310		338	350					316	368		300	361	308		336
20	Ust-Kamenogorsk	361			324		306	332	362				313	329		305				333
21	Shymkent PhM	348	319		340		313	400	320	361						329		309		346
22	Shymkent ChB	361	300		359		300	353	311			301	304	325	301	328				337
Overall average score		357	319	321	326	343	344	347	344	326	331	301	338	346	311	323	334	323	341	341

The highest average scores of recommended candidates were registered in Intellectual schools: Atyrau ChB (363), Nur-Sultan IB (355), Aktobe and Kostanay PhM (354), the lowest scores – in Ust-Kamenogorsk PhM (333), Kyzylorda (330), Semey PhM (327). The highest average scores of recommended candidates in English (357), Kazakh language and literature (347), Russian language and literature (346), History and Mathematics (344).

The analysis of the results showed that the candidates perform better in core tasks of secondary and high school programmes. Students struggle with tasks of advanced and high levels of complexity, such as tasks of upper-secondary school curriculum with in-depth study of subject content, Olympiad tasks.

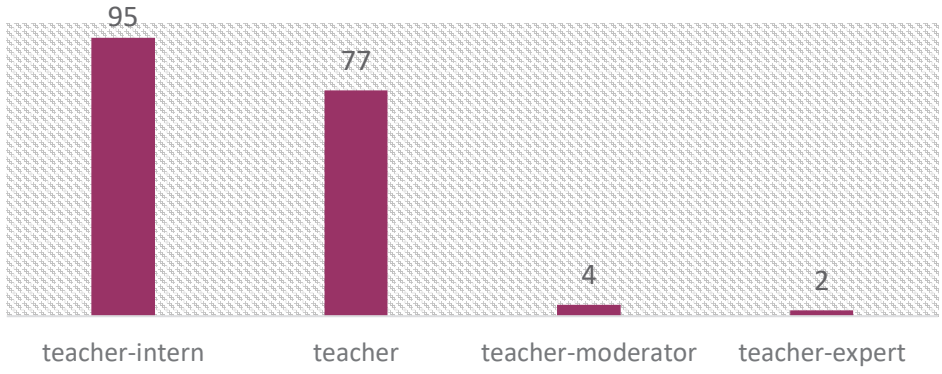
The results of the essay evaluation demonstrate the candidates' ability to ensure the logical line of thought in accordance with the topic, explain the choice of teaching methods and the possibility of using them in the lesson. However, the candidates' works do not demonstrate the focus on subject content, do not explain the effectiveness of the teaching methods used to develop students' research skills, and do not provide examples based on modern research. Plagiarism was detected in the essays of 41 candidates, which is 1.5% of the total number of participants in the selection.

3 274 individual reports were generated on the results of processing the subject test and essay evaluation results. Schools and teachers recruited were provided with recommendations on determining the purpose of professional development, the development of teaching methods, and action research.

According to the results of the second stage - interviews with candidates - 172 (6.1%) teachers were taken on to the staff of Intellectual schools.

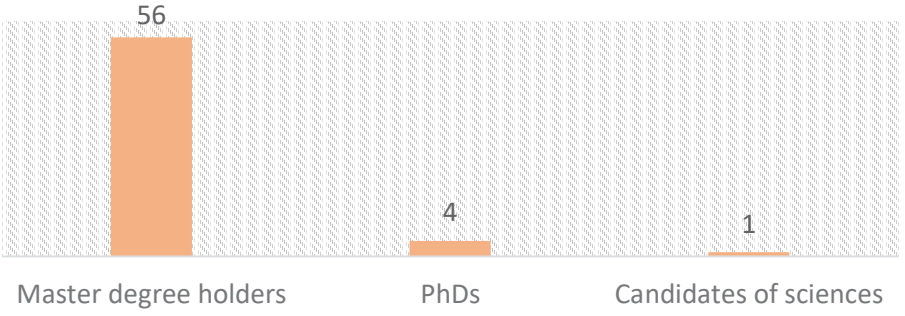
Out of 178 teachers accepted in 2021(including 6 on a non-competitive basis), 95 had the qualification of "teacher-intern", 77 - "teacher", 4 - "teacher-moderator", 2 - "teacher expert".

Level of teachers' qualification accepted in the result of competitive selection in Intellectual schools 2021



56 teachers (32%) have an academic master's degree, 4 have a PhD degree and 1 is a Candidate of sciences. 5 newly recruited employees are graduates of Nazarbayev University. 3 teachers were hired on a non-competitive basis: physics and history "teachers-moderators" and biology "teacher-expert" (see the graph).

The number of teachers with a master's degree, a PhD/candidate's degree accepted as a result of competitive selection in Intellectual schools



International teachers

In 2021, NIS continued working with two recruiting companies in terms of the long-term partnership in attracting international staff (Teacher International Consultancy and Search Associates). 15 teachers were hired with the help of these recruiting companies: Teacher International Consultancy - 6 teachers, Search Associates - 9 teachers. The majority of teachers submitted documents directly via e-mail.

During the reporting period, over 300 international teachers' CVs were reviewed, 99 interviews were conducted, 48 candidates were invited, and 35 teachers were employed. In the analysis of the documents particular attention was paid to the qualification requirements in terms of the level of education (master's and PhD degrees), sufficient teaching experience in international accredited schools delivering IB and A-Level curricula, experience in teaching for international exams, an international trainer or expert certificate, proficiency in academic English and mentoring skills.

Most teachers (78%) are in the age group 30 to 50 years: 30-40 years - 52 teachers and 40-50 years - 45 teachers. The average length of service of international teachers in Intellectual Schools is 3-4 years. Subject teachers make up 71% (92) of the total number of international teachers, including teachers of physics – 22% (29), chemistry – 21% (27), biology – 14% (19), computer science – 13.5% (17).

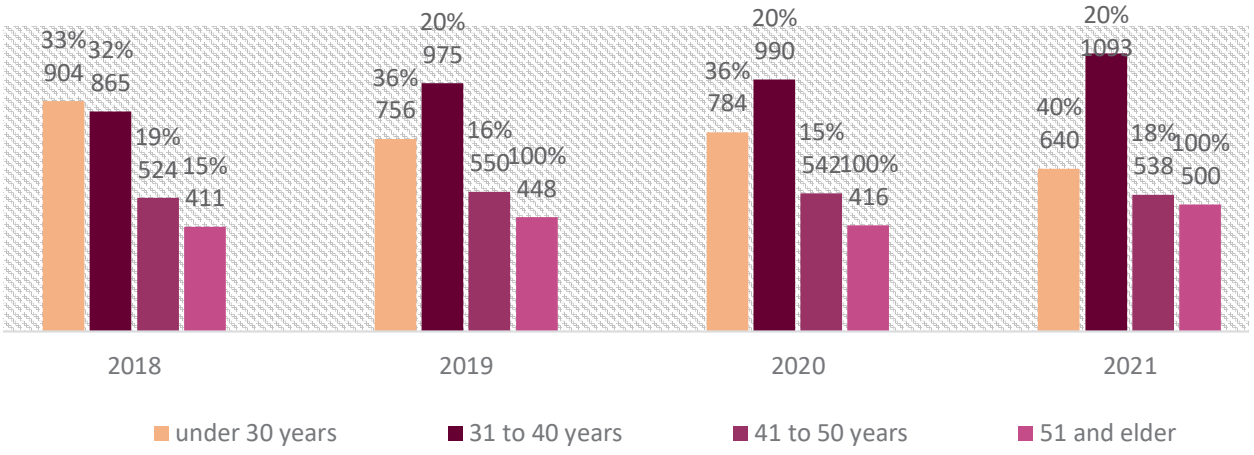
In 2021, the number of PhDs increased from 5 (2020) to 12, including: 3 Physics, 2 Chemistry, 2 Biology, 1 Geography, 1 Computer Science, 1 Economics, 1 English language and 1 Primary school teacher. As compared to 2020, the number of Master degree holders increased form 46 to 57. Of 123 international teachers, 83 have international IBDP, TESOL, TEFL certification and are certified IELTS, CELTA, DELTA exam administrators. The number of native speakers has increased from 30 to 44 teachers.

Due to the pandemic, in 2021, the procedure for entering the country was changed: permission from the Interdepartmental Commission for Countering the Spread of Coronavirus Infection is required to enter Kazakhstan. This requirement is also observed when obtaining visa support from the Migration Service and applying for a visa at the embassies of Kazakhstan abroad. Despite the increased complexity of the procedures, in 2021, the work of international teachers in Intellectual schools was organised and implemented off-line.

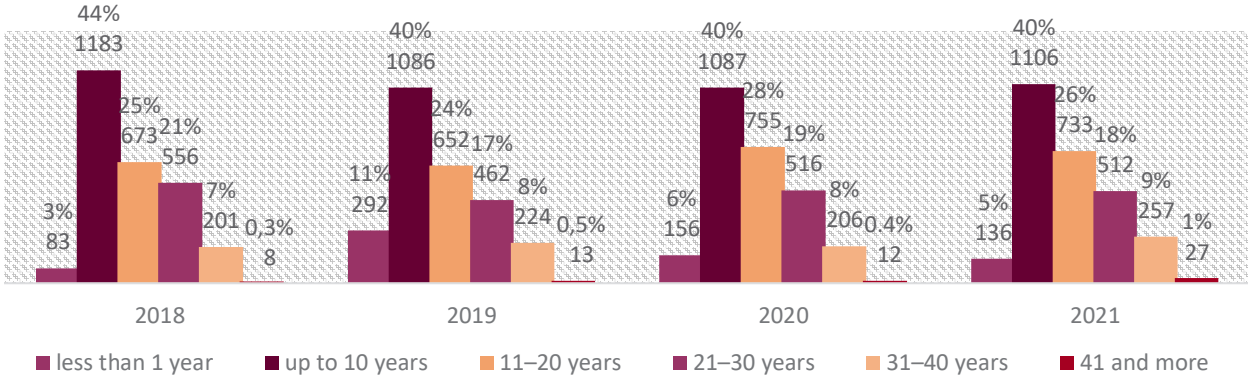
2.2. Qualitative composition of teachers

In 2021, 2 703 teachers, including 123 international teachers, worked in 21 Intellectual schools. 191 teachers work at International School of Nur-Sultan, 17 of them are international teachers.

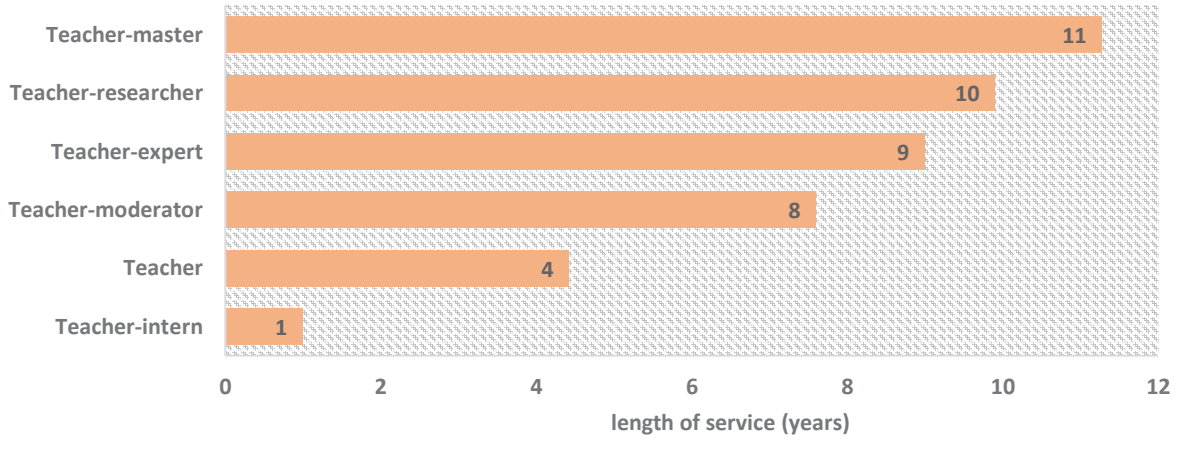
This year, the current 1C: Payroll and HR Management system has been synchronised with other electronic systems used in NIS AEO. Thus, an employee gets access to all electronic resources only after he/she is registered in the personnel accounting system. In terms to the age composition of teachers, similarly to the previous year, in 2021, the share of teachers under 40 prevails and amounts to 62%.



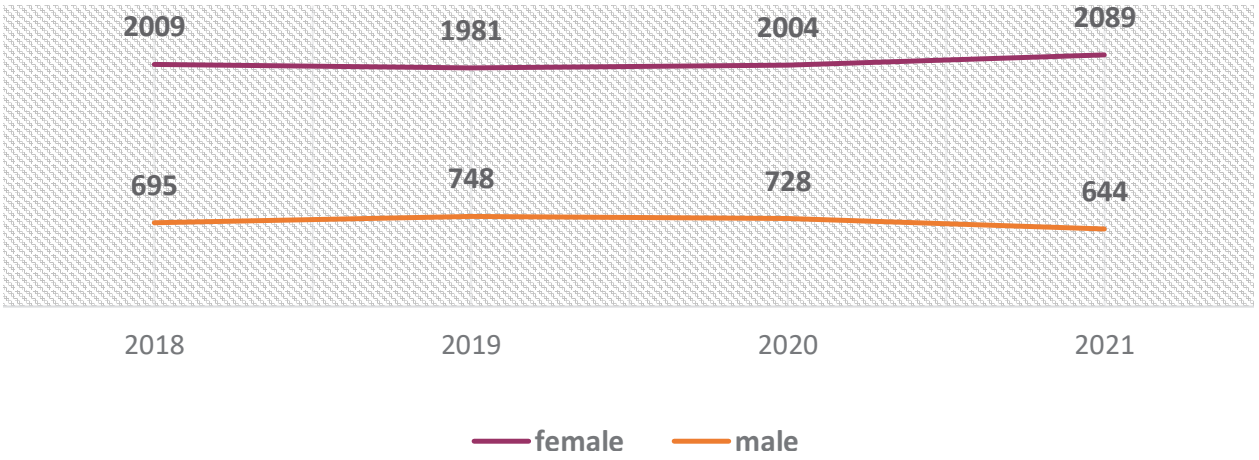
In terms of teaching experience, teachers with up to 20 years of experience prevail, their share is 71% of the teaching staff. The number of employees with more than 40 years of experience has increased compared to 2020.



The average work experience of teachers in an Intellectual school is on par with an increase in qualification level.



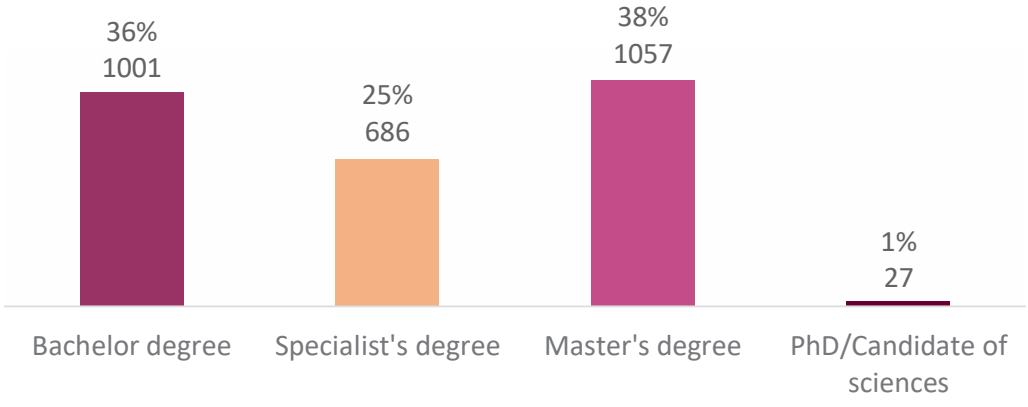
In terms of gender composition, the ratio of female and male teachers has not changed over the past 4 years.



In terms of education, 686 teachers (25%) with a diploma of specialisation, 1001 teachers (36%) with a bachelor's degree, 1057 teachers (38%) with a master's degree work in 21 Intellectual schools and the International School of Nur-Sultan. 51% of master's degree holders are subject teachers (mathematics, physics, chemistry, biology, computer science) and 20% are the English language teachers. 130 and 67 teachers are graduates of Nazarbayev University and the Bolashak programme, respectively. 22 teachers are pursuing Master's degree programme of Nazarbayev University and 5 – under the Bolashak programme.

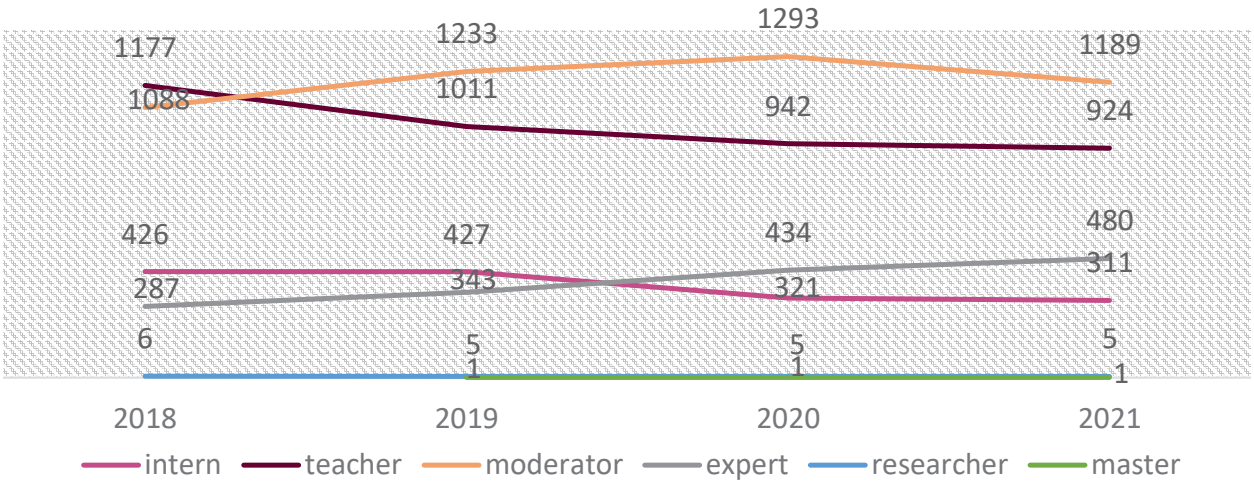
17 candidates of sciences and 10 PhDs have a scientific degree, which is 1% (27) of the total number of teachers.

Number of teachers according to education level and degree



In terms of qualification levels of teaching staff (teachers and administrative and managerial staff involved in teaching), 22 schools have seen an 8%-decrease in the number of "teachers-moderators" and a 10.6%-increase in the number of "teachers-experts". Accordingly, the decrease in the number of "teachers" by 1.9%, and "interns" by 3.1%.

Number of teachers by qualification levels, 2018-2021



Teachers, as certified trainers, disseminate the experience of Intellectual schools into the state secondary education system and train their colleagues at the school and network levels. At the end of 2021, 818 coaches work in Intellectual schools, including:

269 (33%) in teaching English and teaching subject content in English (CELTA, DELTA, TKT, CLIL, CELTYL, IELTS, STEM);

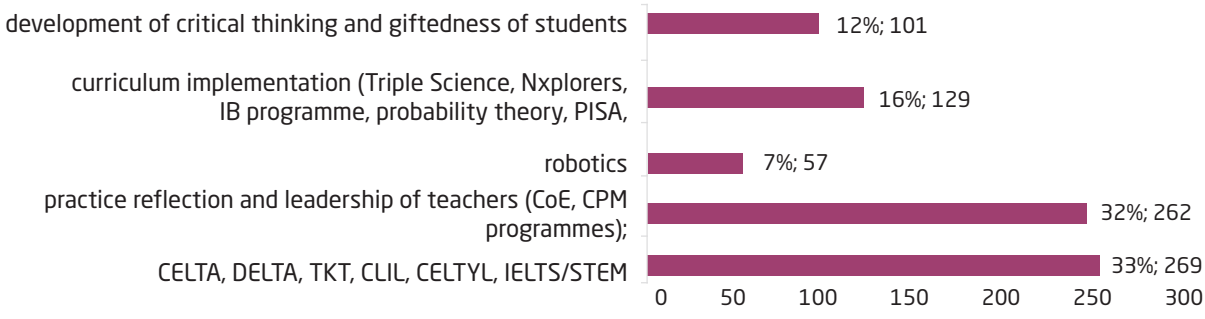
262 (32%) in the development of reflection skills in teacher practice and leadership (CoE and CPM programmes);

57 (7%) in robotics;

129 (16%) in the implementation of subject programmes (Triple Science, Nxplorers, IB programmes, Probability theory, PISA, CITO, renewed content, Microsoft);

101 (12%) - on the development of critical thinking and giftedness of students.

Number of teacher-trainers, 2021



2.3. Professional development system

The strategic goal is to train qualified teachers who provide high quality education in Intellectual schools. This is achieved through professional development system with international certification, network methodological support provided by NIS Centres and professional interaction within the school community.

The content of professional development is aimed at ensuring the safety and development of pedagogical, linguistic and leadership competencies, which implies the safety of the school educational environment. A safe school environment depends on several aspects: environmental, physical, psychological and informational.

In order to ensure anti-terrorist protection and organise staff training events on objects vulnerable to terrorism, a training webinar was organised on 17 November, 2021 on the topic "Techniques for inspecting premises, identifying possible places for laying explosive devices" to improve the skills of 98 employees of "Nazarbayev Intellectual Schools" AEO, its branches and subsidiaries in accordance with the requirements of paragraph 1, subparagraph 3 of Article 10-3 of the Law "On Countering Terrorism" and Chapter 3 of the Decree of the Government of the Republic of Kazakhstan

No. 305 dated 06.05.2021 "On approval of requirements for the organisation of anti-terrorist protection of objects vulnerable to terrorism." As a result, 27 NIS structural divisions received a certificate valid for 1 year, confirming the passage of special training on ensuring the anti-terrorist security of schools.

On 25-27 August 2021, a training course on "Safety and Labour Protection" and "Fire Safety Basics" was organised and conducted distantly for 40 employees of NIS AEO, its branches and subsidiaries. Deputy directors for financial and economic work and engineers for safety and labour protection were trained in Intellectual schools.

During the reporting period, 470 teachers and laboratory assistants in chemistry and biology were trained and certified to ensure safety while implementing chemistry and biology curricula within industrial safety course (turnover, storage and use of precursors) in accordance with the Law of the Republic of Kazakhstan "On Civil Protection" No. 188 dated 11 April, 2014.

To ensure information security during the remote work, an online training on "Security at remote work" was conducted in cooperation with Kaspersky Automated Security Awareness Platform for 1059 employees of NIS and its branches.

123 healthcare professionals work in Intellectual schools, including 21 pediatricians and 102 nurses who provide medical support for the educational process at school. To maintain a high level of healthcare in Intellectual schools, 27 employees completed training courses: "Medical rehabilitation: physiotherapy" for pediatricians and a training course on first aid.

To ensure effective financial support, NIS organised advanced training courses on "Effective accounting management" (attended by 29 accountants of Intellectual schools), and "Changes in the tax legislation of the Republic of Kazakhstan in 2021 and since 2022 on" (attended by 30 accountants). In a remote format, 25 school accountants completed the course on "Accompanying delivery notes and Virtual warehouse in 1C". On 21 – 23 December, 2021, to ensure effective interaction and cooperation in the processes of budgeting and financial and economic support, 64 economists, deputy directors of Intellectual schools for financial and economic work and NIS employees attended a capacity building course on "Effective time management".

To improve the skills of procurement specialists, training courses on "Electronic procurement on the Eurasian electronic portal" were organised and attended by 18 participants. A professional development course "Emotional intelligence for lawyers" was organised in Almaty with an aim to improve the competencies of 15 lawyers working in "Nazarbayev Intellectual Schools" AEO, its branches and subsidiaries.

On 18 – 20 November, 2021, a training course on the topic: "Modern recruiting. Effective technologies in the field of education" was held for HR officers of 21 Intellectual schools.

To ensure effective support of a favourable environment for students' development, NIS provides courses to develop psychological services of schools. Professional development of school psychologists was carried out as part of cooperation between Intellectual schools and UNICEF Kazakhstan. In the period from March 29 to April 16, 2021, online training courses on "Developing the counseling skills of school psychologists" were conducted in Zoom and attended by 54 school psychologists. Other teacher training courses include: "Gambling addiction in adolescence: diagnosis, prevention, correction" attended by 57 school psychologists and "Mental health and modern interventions of evidence-based practice of working with adolescents" attended by 51 school psychologists. The courses were delivered by Lyudmila Kim, an expert trainer of the Columbia University School of Social Work, a UNICEF consultant.

The course programmes included studying the basics of diagnostics using the international ICD and DSM-5 systems, learning to use screening tools to identify mental disorders, raising awareness of modern evidence-based interventions on mental health, which helped to increase the competence of psychologists in working with children and parents.

Teacher training

• To develop teachers' subject and methodological knowledge, an online training course on "Modern approaches to teaching mathematics" was held from 25 August to 19 November 2021 and attended by 189 mathematics teachers and 9 experts of NIS Centres. The course was practice-oriented, teachers gained extensive experience in solving and analysing problems to the level of international subject Olympiads from leading mathematicians.

• In the period 10 April – 30 June 2021, to develop methodological competencies of teachers in teaching functional literacy, NIS organised and conducted online courses on "Reading literacy. Basic approaches to formation and assessment" and "PISA-2021 Assessment of creative thinking in science and mathematics lessons" attended by 500 subject teachers: mathematics, physics, computer science, chemistry and biology. The training was conducted on a real-time basis. Experts experienced in the development of tasks in the format of international PISA assessment took part the training. Teachers were trained to design training sessions based on the bank of tasks in creative thinking and mathematics.

• The course "Development and assessment of creative thinking skills according to PISA standards" was held online in the period 6 – 15 December 2021 and attended by 1075 teachers of Intellectual schools. Trainers of the course, Igal Rosen - PhD, Director of the development of the OECD International Programme for the Assessment of Student Educational Achievements (PISA 2022) in the field of creative thinking and Oksana Petrova - Coaching Agile Transitions (ICP-CAT) international trainer, Coach design thinking C1, eduScrum helped teachers improve their competencies in developing students' ability to extrapolate the knowledge gained at school, apply them creatively in new situations and think beyond the boundaries of subject disciplines. The training was conducted in the form of workshops, research cases, solving and analysing tasks on the simulator for the development of functional literacy.

• In order to provide methodological support to teachers in preparing students to participate in PISA 2022, the experts of the Centre of Excellence conducted courses in "Development of natural science and reading literacy, creative thinking of schoolchildren" for teachers of physics, chemistry, biology, geography and in "Development of mathematical and reading literacy, creative thinking of schoolchildren" for teachers of mathematics. 257 teachers took part in the course. The courses were held online from 22 November to 3 December 2021 on electronic educational platforms - SDT CoE (https://sdo.cpm.kz/). Feedback from participants at the end of the course showed its relevance and necessity. Teachers had the opportunity to write and discuss tasks in NIS-Programme in the format of international competence testing.

• In the framework of Jana Talap project, 12 subject teachers of Intellectual schools have successfully completed the 7-months international certification programme of the Regional Centre for STEM Education SEAMEO STEM-ED (Organisation of Extensive Education of Southeast Asia). The training was provided online (synchronously and asynchronously) in the format of STEM trainer training. The training was delivered by the faculty members of Michigan State University (USA). The participants were equiped with practical tools to implement the values of STEAM education, fundamental knowledge in teaching science, learned about the successful programmes of the project partners from Thailand, the USA and the UK, as well as developed own science and mathematics curricula.

During the year, NIS Centre for educational programmes, Centre for Pedagogical Measurements, Centre of Excellence and Centre for Information Technology and Service implemented consistent methodological support for Intellectual Schools in relevant areas.

With guidance of the Centre for Educational Programmes, teachers have gained valuable experience of participating in Global Teaching InSights project to study the experience of teachers around the world in organising education in the context of the global COVID-19 pandemic, conducted by the OECD jointly with UNESCO and the International Task Force on Teachers for Education 2030. One of the main goals of this initiative is to establish global dialogue between different countries.

9 videos of teachers were selected of those recommended by the Centre for Educational Programmes and published on the official website of the project:

- Akzat Kauyssova, NIS PhM Aktobe,
- Aybarsha Amaniyazova, NIS ChB Atyrau,
- Nurbolat Mukhamedzhan, NIS ChB Karaganda,
- Altyngul Khasenova, NIS ChB Karaganda,
- Aigerim Mussina, NIS PhM Nur-Sultan,
- Aliya Andakayeva, NIS PhM Semey,
- Nurgul Zhanabayeva, NIS PhM Taraz,
- Altynai Assilbekova, NIS PhM Shymkent,
- Patrick Muteivana, NIS ChB Aktau.

• The Centre for Pedagogical Measurements has developed online tools and conducted trainings to provide methodological support to teachers. Course programmes for trainers "Teaching gifted children at school", "Teacher professional development coach" were updated.

Distance teacher training was further provided on the platform https://courses.cpi-nis.kz/:

1. **214** teachers were trained in the course "Differentiation and individualisation of classroom learning", 31 of them were recommended for further training as trainers under the programme "Teaching gifted children at school". According to survey, more than 93% of the course participants reported that the course material was relevant and could be used in teaching practice, and that the tasks had practical significance.

2. **216** teachers were trained in the distance learning course "Managing the development of their own practice", **26** of them were recommended for further training as trainers for the professional development of teachers. According to the survey results, 98% of teachers reported that training contributed to the development of skills in formulating professional development goals (PDGs), lesson analysis, providing feedback on the lesson observation, determining the research question in accordance with the professional development goal.

The practice of **238** trainers on teacher professional development was observed, group consultations were held to identify the needs of trainers, plans/videos of events, lesson observations were studied, individual feedback with recommendations were provided.

The following is available on the website of Centre for Pedagogical Measurements (http://cpi-nis.kz):

– an online tool "Constructor for setting the teacher professional development goal", which supports the teacher in formulating the professional development goals based on the identified difficulties in professional activity, considering the subject focus and levels of teaching excellence;

– video materials with recommendations for writing a reflexive report on the lesson in accordance with the requirements and evaluation criteria, taking into account the levels of teaching excellence.

• Centre of Excellence also conducted master classes for teachers of Intellectual schools on topics determined by Centre for Pedagogical Measurements based on the results of external summative assessment in grades 10 and 12, the study conducted by

Centre of Excellence and the review done by Centre for Educational Programmes.

• Due to experimental implementation of active-adaptive approach to teaching in Intellectual schools, teachers of physics, chemistry and biology in grades 11 and managers were trained to design lesson templates and set up courses of active-adaptive approach to teaching chemistry in grade 11 using McGraw Hill ALEKS system and teaching physics and biology in grade 11 using CogBooks system within an Agreement between NIS AEO and the University of Arizona, USA.

For the successful implementation of the educational programme in accordance with the requirements of the International Baccalaureate in the period 30 October - 2 November 2021, 24 teachers of the Intellectual School (IB) of Nur-Sultan completed courses on diploma programmes in Literature and Language and Literature.

15 teachers of the Intellectual School (IB) of Nur-Sultan took courses on diploma programmes:
1. The role of the supervisor in extended essay, Cat 3;
2. Language A: Language and Literature, DP, Cat 2;
3. Language B (English B) DP, Cat 2;
4. Theory of knowledge, Cat 2;
5. Mathematics: Application and interpretation (Cat 2);
6. English A: Language and Literature (Cat 2);
7. MYP Coordinator's workshop Cat 3;
8. MYP Interdisciplinary workshop Cat 2;
9. MYP Building self-directed learners through approaches to learning Cat.3;
10. MYP Personal Project Cat 2.

On 18 to 22 October 2021, 15 teachers of the Intellectual School (IB) of Nur-Sultan took part in the virtual conference of the International Baccalaureate "Unlocking the next paradigm in education."

On 3 - 31 March, 2021, and on 7 April - 5 May, 2021, in accordance with the requirements of the International Baccalaureate, 15 teachers of Nur-Sultan IB School completed distance DP courses in following subjects (category 2): history, anthropology, geography, chemistry, mathematics: analysis and approaches, biology, language B, theory of cognition, the role of a supervisor in a scientific essay, economics. One teacher was trained according to Middle Years Programme "School administration – adding a programme, category 2".

During the international conference of IB schools "Learning from Experience" (Baku), Sabyrzhan Saduakassov, the Director of NIS Nur-Sultan, signed a Memorandum according to which the school joined the Caucasus and Central Asia Association of IB World Schools.

• The development of teachers' language competencies is one of the main areas of professional development. 896 teachers of physics, computer science, chemistry and biology working in Intellectual schools, attend courses to learn the English language.

In October 2021, NIS started an online advanced training course with the participation of Denis's School (Russia) to prepare 80 subject teachers with a level below IELTS 5.0 for teaching in English in high school. The training is conducted in an interactive mode, using the Jet Class online learning environment resource and helps to improve academic skills, develop the listening comprehension skills in English. At the end of the course (April 2022), participants will have to pass the final exam to confirm an increase in the language proficiency level by 1 score point according to CEFR.

23% of subject teachers (with IELTS band score 5 and above) teach the subject content in English. They were provided the opportunity to take internships under Bolashak programme. In the period from May to September 2021, 5 teachers of physics and biology of NIS PhM in Nur-Sultan; Pavlodar, Kostanay; Aktobe and the International School of Nur-Sultan completed a 16-week internship in the UK. Comprehensive internship programme covered the principles and methods of teaching subjects in English in high school. It was held at three educational organisations: British Study Centres and National STEM Learning Centre in York, where

teachers developed their research skills, improved their subject knowledge and language skills, and St. Mary Magdalene Academy school in London, where the participants developed their teaching skills, learned the features of the UK educational system.

The internship programme linked the theoretical concepts of subject-language integrated learning (CLIL) with practical, "real" learning environment.

In addition, participants were given the opportunity to compare and contrast key studies, learning theories and approaches that influence modern education. The teachers chose a range of relevant topics for research, then they presented the findings to the network professional community at the XII International Conference of Intellectual Schools. The internship of other groups of teachers is scheduled for the next year (in stages).

Two English teachers of Nazarbayev Intellectual school in Aktau were awarded Master of Arts degree from Webster University, USA, based on the successful results of the completion of TESL programme (Teaching English as a Second Language). Apart from the degree diploma, they were awarded TEFL certificates. The programme covered the disciplines essential for an English teacher, including English for Academic Purposes, Second Language Acquisition, ESOL Methods, Curriculum Development in Language Classrooms, Principles and Practices of Language Testing, and others, 11 disciplines for the total of 66 ECTS credits. It should be noted that TESL programme has been adapted for the educational system of the Republic of Kazakhstan, entered the National Register of Kazakhstan and approved by the US Higher Education Committee.

• 27 teachers are involved in in-service teacher training at Nazarbayev University, under full-time and part-time master's degree programme "Education Management", within the memorandum between NIS AEO and NU.

• In the period 10 September - 31 October 2021, online training course "IT-Essentials: PC Hardware and Software" was organised by Cisco to develop ICT competence and deepen teachers' knowledge of computer hardware and software, as well as skills in working with operating systems, to ensure knowledge of networking principles, mobile devices, IT security and troubleshooting and effective implementation of Computer Science curriculum. 211 Computer Science teachers were certified. The course was delivered by B.T. Zelenov, Cisco instructor, expert teacher of Nazarbayev Intellectual School of Physics and Mathematics in Uralsk.

• In order to develop practical skills of data analysis and visualisation in Microsoft Power BI from scratch to the level of a confident user, in the period 16 October to 19 November, 2021, a professional development course "Data analysis and visualisation in Power BI" was organised and conducted for 12 employees of Nazarbayev Intellectual Schools AEO, its branches and subsidiaries.

• To provide schools with highly professional, modern and effective managers who are ready to work for results, work in a team, "Situational management: practical skills of managerial efficiency" course on the development of leadership competencies was organised and conducted on 20-21 August 2021. The course was delivered by A. Tolopilo, an expert from Moscow Business School.

21 directors of Intellectual schools were trained offline. During the training, they considered the strategies and scenarios of an effective leader building on real cases of educational organisations. The course programme focussed on the study of factors affecting the effectiveness of team interaction, criteria for high-quality goal setting, task setting algorithm and practical use of management tools to motivate subordinates to achieve better results in their work.

In November-December, 127 members of administrative and managerial staff of Intellectual schools took part in the course "Strategic planning in an educational organisation and implementation of data-based development programmes. Professional retraining programme for management teams". The course was delivered by the heads of educational organisations and experts of Higher School of Economics National Research University and the Institute for the Development of Modern Education EdCrunch Academy (Russian Federation) I. Frumin, A. Kasprzhak, A. Pakhchanyan, K. Medvedev, D. Fishbein, and others.

The managers were trained to design a strategic development plan for a school based on the data obtained through monitoring the educational process; to create a model for managing teacher professional growth through professional learning communities and social partnership building on school culture and educational innovations. The course contributed to the acquisition of systemic knowledge to perform a new type of professional activities in the field of managing educational organisation with focus on improving managerial and leadership competencies. To complete the course the school team had to develop and defend a draft programme aimed to develop the organisation and build a change management team.

• In September, 4 heads of Intellectual schools took part in the course "Innovative Management in School" conducted by Centre of Excellence. The programme aimed at improving the skills of quality assurance and evaluation of the educational process through in-school control, monitoring and evaluation, developing personal and professional development skills through reflection, leadership and self-management. The course helped participants to identify areas of personal and professional development for successful school management.

2.4. Pedagogical employees' performance appraisal

Appraisal of teaching staff and persons equated to them aims to determine the compliance of teaching staff and persons equated to them with qualification characteristics based on the evaluation of their professional competence, by identifying their professional achievements and prospects to ensure continuity of professional development.

The appraisal was carried out in the period January to June 2021 in accordance with the orders of the Chairperson of NIS Board dated 26 August, 2020, No. 185/OD "On the organisation and conduct of appraisal of teaching staff and persons equated to them at Nazarbayev Intellectual schools and the International School of Nur-Sultan in the 2020-2021 academic year".

Due to the pandemic and its consequences, distance learning, postponement of professional events (exams, competitions, conferences, etc.), termination of the work on conducting language exams, certification procedures were optimised. The measures included increasing the inter-certification period, providing the possibility to postpone the mandatory appraisal by one year, postponing the deadline for submitting applications to take part in appraisal procedures from September 2020 to January 2021. More than a third of teaching staff have used the right to take part in mandatory teacher appraisal.

In the 2020-2021 academic year, 245 pedagogic workers (teachers) and 27 persons equated to them submitted applications to participate in the appraisal. 165 (67%) teachers passed mandatory appraisal, 80 (33%) - early certification. 234 (96%) of the participants applied for a higher level of qualification, 11 (4%) - to confirm the current level.

Teachers' appraisal was organised in three stages: Stage I (school evaluation) was organised and conducted by Intellectual schools in the period 5 January to 5 April, 2021. Stage II (independent evaluation) was organised and conducted by the Centre for Pedagogical Measurements in the period 12 April to 28 May, 2021. And the final Stage III was organised and conducted by the Department of Human Resources Management in the period 27 May to 11 June, 2021, in accordance with the order "On conducting the final stage of appraisal of teachers and persons equated to them at Nazarbayev Intellectual schools and the International School of Nur-Sultan" No. 125/OD dated 18 May, 2021.

To carry out Stage I procedures, schools created working groups, which included members of school administration, heads of methodological associations, trainers to support professional development. The main

task of the working group was to carry out mentoring activities through observing the teacher's practice to provide feedback on achieving the professional development goal defined for the current academic year. To embrace such focuses as lesson planning, teaching, assessment of students' academic achievements and a comprehensive lesson analysis, the lessons were observed with the provision of constructive feedback. Consistent observation of the lessons of certified teachers, recording the results of observation in School Evaluation Sheets, monitoring the teacher's progress in the use of strategies and techniques in the classroom informed the decision at the first stage of appraisal. The decision on the results of School Evaluation is made by the School Certification Committee on the recommendations of the School Methodological Council and Methodological Associations.

Independent assessment of reflexive reports of **245** teachers (Stage 2) showed that 124 reached the threshold score for the claimed qualification level (51% of the total number). The share of those who reached the threshold score is 2.6% higher as compared to 2020.

170 (69.4%) reflexive reports (RR) out of 245 submitted for evaluation were compiled based on a distance lesson.

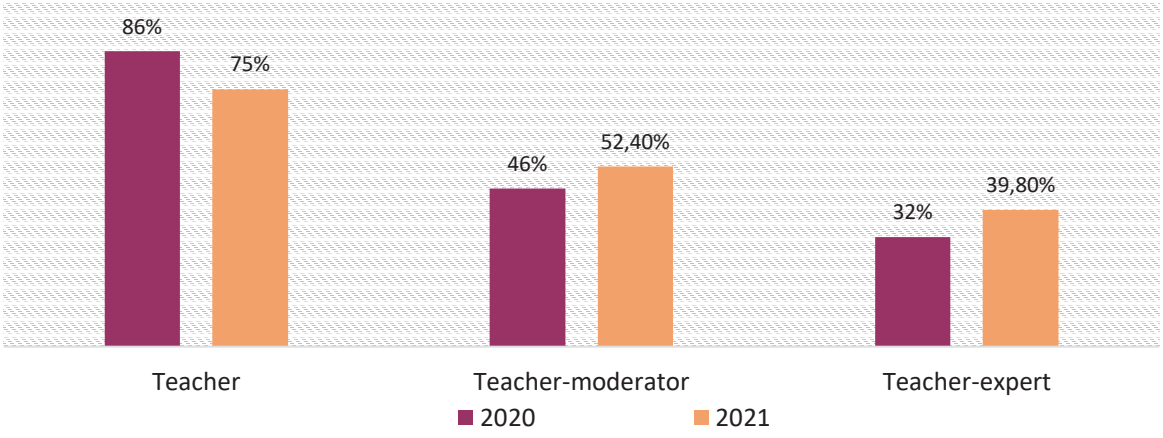
Data on the lesson formats by levels

Level of teaching excellence	Lesson format		total
	distance	classroom	
Teacher	29	11	40
Teacher-moderator	73	32	105
Teacher-expert	67	31	98
Teacher-researcher	1	1	2
Total	**170**	**75**	**245**

The share of teachers who provided RR based on distance lessons and reached a threshold score is 17% higher than that for classroom lessons. This is possibly since teachers analysed their practice and could use video recordings of distance lessons for more detailed consideration of all stages.

Compared to 2020, there is an 11% decrease in the proportion of those who reached a threshold score for the "Teacher" level, with a 6.4% and 7.8% increase in the "Teacher-moderator" and "Teacher-expert" levels respectively. Two teachers who applied for the "Teacher-Researcher" level did not reach the threshold score.

Comparative data on teachers who reached the threshold score according to the results of RR evaluation for 2020 and 2021



Based on the RR evaluation results, teachers were provided with individual evaluation sheets with recommendations for the development of reflexive practice, in particular:

– to explore the needs and individual characteristics of students in order to determine the initial level of knowledge, the degree of understanding the learning material, the links to prior knowledge, determine the students' expectations, their interests and difficulties they experience (entrance testing, classroom observation, diagnostics, questionnaires, students and parents surveys, etc.);

– to adjust lesson plans (developed as part of team planning) to the levels of knowledge and the needs of the class (additionally include active and interactive teaching methods as well as techniques for providing feedback);

– to choose teaching methods based on the students' needs (taking into account the learning objectives, complexity of learning material, peculiarities of interaction, and the level of independent work skills), resources (presentations, videos, scientific articles, collections, devices and reagents, electronic textbooks, virtual laboratories, route sheets);

– to choose assessment strategies and tools (taking into account the skills that require development, the level of students' motivation, their age peculiarities, forms of classroom work) in line with the aims and expected outcomes of the lesson;

– to determine the effectiveness of student learning, to assess the level of achievement of learning objectives and the development of students' skills based on monitoring with clearly defined indicators;

– to plan specific actions for the development of own practice, considering the results of the conducted lesson study and provide recommendations to colleagues.

Centre for Pedagogical Measurements conducted a survey using the following questionnaires "Teacher through the eyes of students", "Teacher through the eyes of parents", "Teacher through the eyes of colleagues".

The meetings of the final stage were held online in TEAMS and required teachers to download electronic portfolios. The interview was video recorded on the written consent of the employee. All employees submitted presentations on the quality of students' knowledge, student achievements, interaction with colleagues in the professional community and managing their own professional development, including experience dissemination, and a portfolio with evidence of practice. NIS Certification Committee provided recommendations on the results of Stage III and made the final decision about the compliance with the claimed level following the decision-making procedure.

Quantitative indicators of teacher appraisal results

Stages	Result	Number of certified teachers		by the level of qualification:			
				teacher	moderator	expert	researcher
		245	100%	40	105	98	2
Stage 1	Recommended	241	98%	40	105	95	1
	Not recommended	4	2%	0	0	3	1
Stage 2	Recommended	124	51%	30	55	39	0
	Not recommended	121	49%	10	50	59	2
Stage 3	Recommended	201	82%	32	89	80	0
	Not recommended	44	18%	8	16	18	2
Total	**Correspond**	**206**	**84%**	**32**	**92**	**82**	**0**
	Do not correspond	39	16%	8	13	16	**2**

According to the results of appraisal, 84% of teachers have successfully confirmed the claimed level of qualification.

In 2021, 27 persons equated to teaching staff took part in the appraisal, 7 of them applied for the basic level and 20 – for the advanced level. For persons equated to teaching staff, appraisal was carried out in two stages. According to the results, 25 (96%) employees have successfully passed the appraisal.

To ensure the successful completion of the appraisal, teachers are provided with consistent methodological support in the period between and during the appraisal procedures.

2.5. Teachers' achievements

NIS teachers annually participate in the International Open Creative Competition of teachers and trainers of the Olympic Reserve in Mathematics, Physics and Computer Science – IMPACT Olympiad held at the Republican School of Physics and Mathematics in Almaty with the support of the Ministry of Education and Science. The Competition aims to find talented, creative teachers and trainers who demonstrate high level of professional competencies, to support and encourage them. The competition was held online on 7 – 13 January 2021 and attended by 1 148 teachers and trainers from leading schools in Russia, Georgia, Uzbekistan, Kyrgyzstan, Mongolia, Kazakhstan, and 16 teachers of NIS PhM in Taraz and Shymkent. NIS PhM of Taraz took the 2nd prize in team competition. In individual competition, 11 teachers out of 16 won prizes. Akniyet Sarsenbek, a computer science teacher of NIS PhM Taraz, was awarded the 1st place. Republican professional development workshop in mathematics, physics and computer science was held during the Olympiad.

Since 2019, the Foundation for the Development of Socially Significant Initiatives has held the National Teacher Prize Kazakhstan competition approved by the Varke Foundation to identify teachers who have made an outstanding contribution to teaching profession. For the last 3 years, 2 NIS teachers have entered the finals of the competition. Last year Dinara Beysembayeva, chemistry teacher of NIS Nur-Sultan and Dina Kudabayeva won the National Teacher Prize Kazakhstan 2020.

The shortlist of 10 winners of the National Award "Teacher of Kazakhstan 2021" included Arman Imansharipova, an expert physics teacher of IB School, and Mirat Ospanov, a physics teacher of Intellectual school in Aktobe. They were selected through the competition of the 64 best teachers of the country.

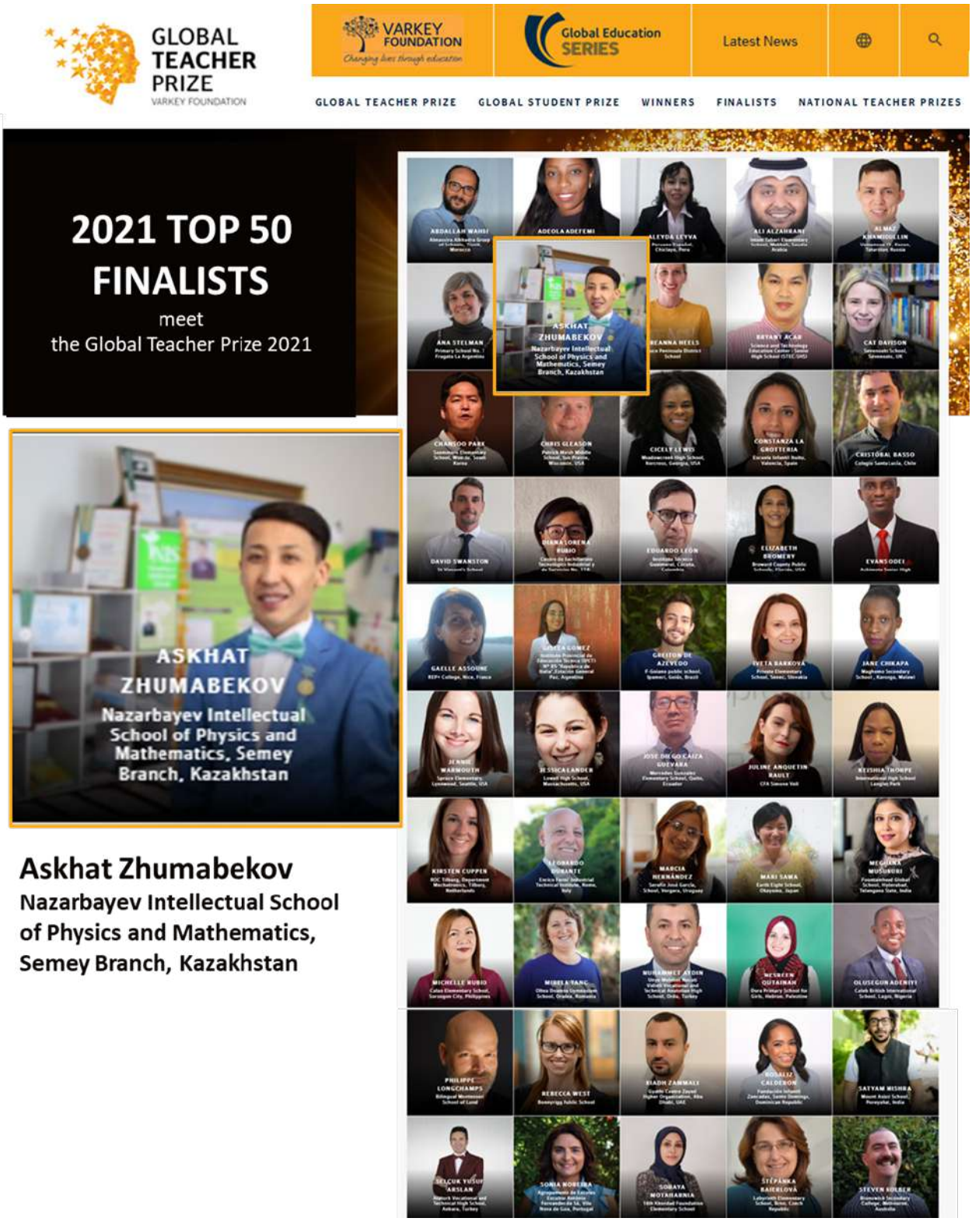
In the framework of the National award, the results of the republican project "Student Award Kazakhstan-2021" were summed up. Gavkharbek Makhmudov, a teacher-moderator of the English language of the NIS ChB Shymkent, won in the nomination "Best Mentor" for "Teacher of the Future" project, having acted as a mentor of students in the South Kazakhstan State University for 5 months.

In the reporting year, Askhat Zhumabekov, an expert physics teacher at NIS PhM Semey entered the Top 50 of the "Global Teacher Prize" international award. Askhat Zhumabekov is the winner of the Republican "Best Teacher" contest in 2018, a finalist of the National Teacher Prize Kazakhstan 2019 award and the first teacher to represent Kazakhstan in prestigious international competition. The best teachers shortlisted for the Global Teacher Prize 2021 were selected out of more than 8000 nominations and applications from 121 countries worldwide.

For 3 years, Askhat has been into the development of inclusive education in Kazakhstan and engages his students in this work. He conducts training workshops, coaching and master classes in cooperation with Russian and Finnish experts. As the result of this work, a collective monograph "Approaches to inclusive education in Russia, Kazakhstan and Finland: nature, experience, prospects" was published in the Book Chamber of the National Library of Germany.

Askhat Zhumabekov is a 2016 graduate of Bolashak programme (Finland), is the author of three books, five copyrights and more than 50 published scientific papers. His students are prize-winners of national and international Olympiads and competitions, his graduates are holders of grants from the world leading universities.

Askhat Zhumabekov on the cover page of the republican information and analytical journal "Modern Education" with a six-page interview with him.



Askhat Zhumabekov
Nazarbayev Intellectual School of Physics and Mathematics, Semey Branch, Kazakhstan

3 teachers of Intellectual schools were among the 50 winners of professional competition "The Best teacher 2021" held by the Ministry of Education and Science of the Republic of Kazakhstan. Gulzia Beysenbekova, a chemistry teacher at NIS ChB Atyrau, develops methodological recommendations for teachers of Intellectual schools, as well as lesson plans for "Online Mektep" project. Teachers of NIS PhM of Taraz Lyubov Issatayeva, an expert teacher of history, author of programmes and manuals, whose students win in republican contests of scientific projects every year, and Elmira Moldabek, an expert teacher of the Kazakh language and literature, winner of the network competition "Best Teacher 2020", a certified trainer for "Development of gifted children" programme.



In the reporting period, 13 NIS employees were awarded state awards and badges of the Ministry of Education and Science for their high achievements, 585 teachers were awarded with Certificates of Honour and Letters of Appreciation by the Ministry of Education and Science, Akim of Nur-Sultan and NIS AEO.

For a significant contribution to building the statehood, strengthening the sovereignty and socio-economic development of Kazakhstan, Kulyash Shamshidinova, Chairperson of the Board of "Nazarbayev Intellectual Schools" AEO; Ravil Yakupov, Director of NIS ChB Karaganda; Balkan Kassimov, Director of NIS ChB Turkestan; Bagdan Kayyrzhanov, Director of NIS PhM Semey, were awarded the Jubilee medal "30 years of Independence of the Republic of Kazakhstan".



For merits in the development of education and active social activities, Svetlana Ispussinova, Deputy Chairperson of the NIS Board, was awarded the state award, the Order of Kurmet, Aidana Shilibekova, Director of Centre for Pedagogical Measurements, was awarded the Halyk Algysy medal, and Sergey Polyanskikh, the first master teacher of mathematics at NIS PhM Taldykorgan, was awarded the Eren Enbegi Ushin medal.

In 2021, Kazakhstan established the state award "Kazakstannyn enbek sinirgen ustazy" ("Honoured Teacher of Kazakhstan") for outstanding achievements and special merits to the Republic of Kazakhstan. According to the decree of the President, more than 20 honoured teachers from all regions of the country were awarded the state award. One of them – Gulnara Apeyeva, a teacher-researcher of mathematics at NIS PhM Nur-Sultan.

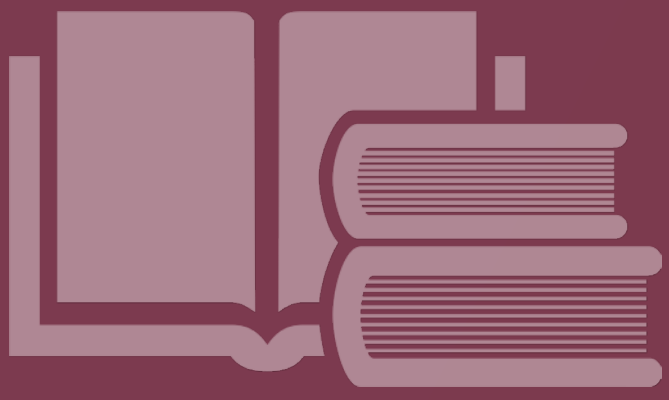
The badge "Kazakhstan Republikasynyn Bilim beru isinin kurmetti kyzmetkeri" for merits and achievements in education was awarded to: Gulnara Alibayeva, a teacher-moderator of history of NIS ChB Petropavlovsk, Anastasia Barmina, a teacher-moderator of the Russian language and literature of NIS PhM Kostanay, Mukhamet Tokbayev, Head of Analysis and Monitoring Department, Centre of Excellence.

For a significant contribution to the development of educational programmes and the system of criteria-based assessment of educational achievements in Intellectual schools and successful translation into the state secondary education system, mathematics teachers Toybek Aubakirov, Candidate of Physical and Mathematical Sciences, Senior Manager of Science and Mathematics Department of Centre for Educational Programmes, and Baimurat Akhmetov, an expert of Monitoring and External Summative Assessment Department of Centre for Pedagogical Measurements, were awarded the badge of Y.Altynsarin.

Measures to support teachers

To stimulate a careful attitude to health, maintain and strengthen the physical and mental health, teachers of Intellectual schools were provided with health resort treatment in accordance with the Rules for providing vouchers for health resort treatment (health improvement and rehabilitation) to teaching staff of Nazarbayev Intellectual Schools AEO, approved by the NIS Board (Protocol No. 36 dated 22 July, 2021). Based on the results of an open competition, taking into account the teacher's health condition, commitment to teaching, professional achievements and social activity, 196 teachers received vouchers to medical and preventive institutions of their choice: Almaty ("Kazakhstan", "Koktem", "Almaty Resort"), Turkestan region ("Saryagash", "Mankent", "Aktilek", "Sairam thermal resort", "Aray deluxe",), Zhambyl region ("Merke"), Akmola region ("Okzhetpes") Kostanay region ("Sosnovy Bor"), Karaganda region ("Balkhash").

For the second year, NIS AEO has been implementing the joint Corporate programme with "Otbasy Bank" Housing Construction Savings Bank" JSC to help teachers purchase real estate. The selection of candidates is carried out in accordance with the Rules for the selection of candidates for participation in the Corporate programme, approved by the decision of the NIS Board dated 30 October, 2020 (Protocol No. 49). 8 teachers of Nazarbayev Intellectual school of Chemistry and Biology in Aktau purchased housing in 2020, and in 2021 - 5 teachers of Nazarbayev Intellectual school of the Physics and Mathematics in Almaty.



EDUCATION CONTENT

3.1	3.2	3.3	3.4	3.5	3.6
Educational programmes	Educational resources	Pastoral work	Supplementary education	Student well-being	Career guidance counseling

3.1. Educational programmes

Intellectual schools implement two educational programmes: NIS-Programme and International Baccalaureate Programme.

1. The educational programme of Nazarbayev Intellectual Schools AEO – NIS-Programme (hereinafter – NIS-Programme) determines the content and organisation of the educational process in 21 Intellectual schools. NIS-Programme aims to build fundamental academic knowledge, develop critical thinking and functional literacy through in-depth study of sciences and mathematics.

The effective implementation of NIS-Programme in 2021 included the following types of work:

– methodological and resource support of NIS-Programme implementation;
– improving NIS-Programme;
– developing elective course programmes;
– implementing NIS-Programme in general educational schools of Kazakhstan.

Methodological and resource support for the implementation of NIS-Programme

The new norm, widely argued by various experts, has become very obvious this year and required multi-modal solutions. We had both distance and traditional forms of learning implemented in one year: it was mainly distance at the beginning of the year, and by the middle of the year, schools returned to the traditional form of training. Each of them requires a different approach and focus in providing methodological and resource support. In the first case, it was important to create an effective communication and methodological platform to support teachers in online learning; and in the second – to provide teachers with methodological tools and resources for the implementation of blended learning, and to identify and reduce the gaps in students' knowledge during the post-covid period.

Centre for Educational Programmes provides systemic methodological and resource support to teachers through:

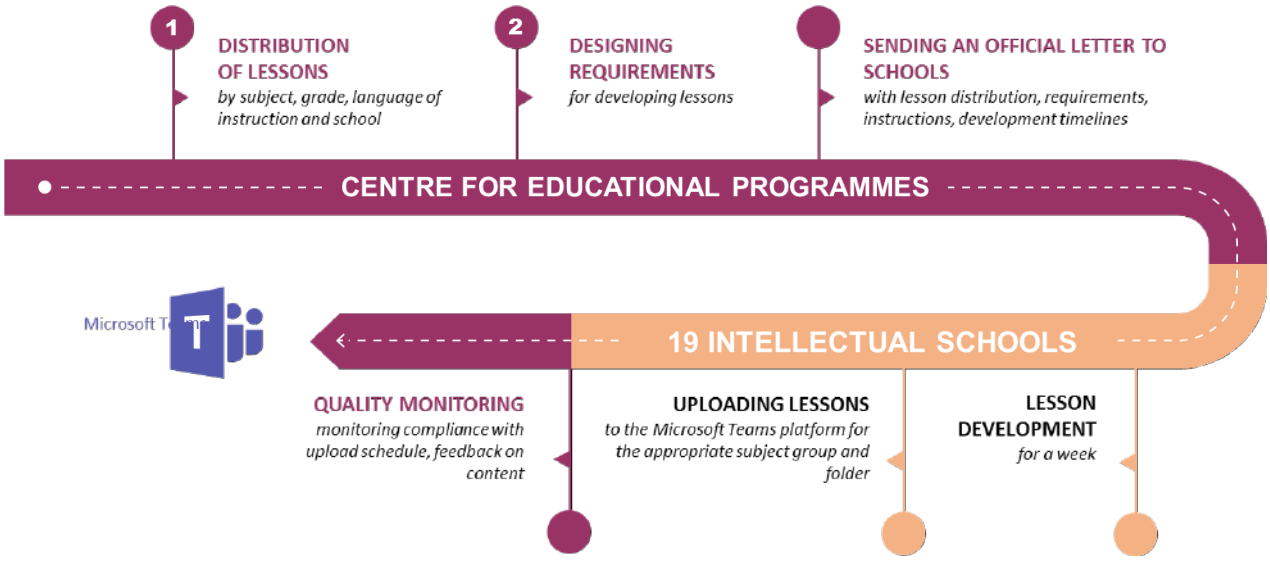
– *coordination of the work of the Resource Bank;*
– *development of methodological manuals;*
– *conducting training sessions for teachers of Intellectual schools on the NIS-Programme implementation;*
– *correspondence school to deepen academic knowledge of teachers;*
– *development of Methodological Guide (letter).*

• *Coordinating the work of the Resource Bank*

In 2021, CEP continued to coordinate the Bank of Educational Materials for Online Lessons (hereinafter referred to as the Resource Bank) developed by teachers of Intellectual schools.

The Resource Bank supports teachers with framework materials for distance lessons, as well as provides intra-network cooperation, exchange of experience, and support for newly arrived teachers. Gathering the resources developed by teachers allows ensuring the quality of learning and monitoring the educational process, both at the lesson planning stage and afterwards.

Organisation of the Resource Bank



CEP subject specialists have created and coordinate 16 subject groups in TEAMS. All teachers of Intellectual schools have access to their subject groups and receive a batch of learning materials for each lesson. The minimum set of learning materials includes:

1) a lesson plan with step-by-step instructions;

2) a presentation;

3) a video of practical/laboratory/experimental work or a link to a virtual laboratory/simulation for sciences; audio/video recordings for languages;

4) a task to reinforce and practice skills.

22 122 lessons for grades 2-12 have been developed and uploaded to the Resource Bank.

The availability of ready-made resources does not excuse teachers from planning the lessons, instead, it serves as additional resource support to share materials.

CEP specialists working with Microsoft TEAMS subject groups developed and posted methodological recommendations on the organisation and implementation of laboratory and practical work in Chemistry, Biology and Physics in grades 7-12 in the context of distance learning.

Also, Intellectual schools were provided with a list of free resources (websites, youtube channels) for the organisation of distance learning.

• *Development of methodological manuals*

The main task of developing methodological manuals is to provide practical assistance to teachers of Intellectual schools. In 2021, two methodological manuals were developed:

1) CEP developed a methodological guide in the Kazakh and Russian languages to deepen the environmental education of 7-12 graders;

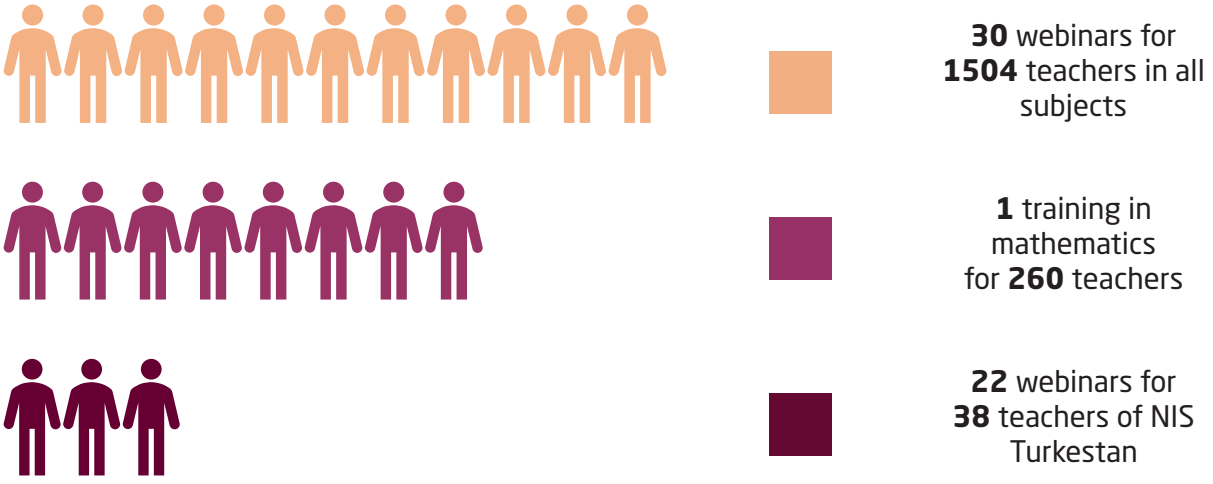
2) to support teachers in the process of introducing elements of digital citizenship in computer science lessons CEP developed methodological manual on Digital Citizenship in the Russian language.

The developed methodological manuals are available online at https://forum.cep.nis.edu.kz/

• *Teacher training*

Barber and Murshed (2008), reviewing the experience of 25 countries of the world, consider teacher training to be the key factor for ensuring high-quality education, along with the selection of people suitable for the profession and the creation of appropriate conditions. With the aim to improve the effectiveness of teaching, CEP conducts training seminars and workshops on the implementation of NIS-Programme.

In 2021, CEP conducted **53** training workshops to train **1 802** teachers of Intellectual schools on various aspects of NIS-Programme implementation.



Number of training seminars held in 2021

Traditional subject trainings (30 webinars attended by 1504 teachers) for teachers of Intellectual schools were held online as part of the August conference of teachers "Modern School: Collaboration, Self-learning and Caring".

Subject trainings in all subjects of primary, secondary and high school were focused on the post-secondary support of teachers and the use of flipped classroom technology as a type of blended learning. Participants were provided with practical recommendations on the use of flipped classroom methodology, the key points of this technology and the use of methods such as vodcast, podcast to create and manage the content of learning materials.

In addition, trainings in sciences, mathematics and languages, focused on the formation of students' functional literacy and creative thinking through the subject content.

• *Correspondence school to deepen academic knowledge of teachers;*

Correspondence school was established with an aim to provide methodological support to Mathematics, Physics, Chemistry, Biology and Economics teachers of Intellectual schools.

Correspondence school functions during the holidays and requires the participation of all NIS teachers of the above subjects.

Correspondence school is a form of training that includes independent work and good opportunities to extend and extend teachers' knowledge.

This form of education serves as a powerful tool to align the levels of teachers, irrespective of city, and contributes to learning rational methods and techniques of solving standard and non-standard problems by teachers. It is also an excellent opportunity to create a bank of tasks that can be further applied in the educational process and in preparation for subject Olympiads.

In the reporting period, experienced teachers of Intellectual schools developed tasks of advanced and Olympiad level to develop functional literacy. The content of the tasks revealed strategies for the development of students' functional literacy.

Also, CEP subject specialists and the head of the methodical association of mathematics teachers of NIS PhM Almaty conducted a training for teachers of grades 10-12 on "Random variables and the main tasks of mathematical statistics". The training aimed to improve the skills of mathematics teachers and prepare for teaching a new section of grade 12 curriculum "Main tasks of mathematical statistics".

The training aimed at deepening teachers' subject knowledge on topics being introduced

in the curriculum for the first time, it also focussed at exploring methodological aspects of teaching these topics and preparing students for external summative assessment. The participants solved problems on plotting point and interval estimates of the distribution parameters of random variables, problems on testing statistical hypotheses.

The analysis of the results of the correspondence school showed that teachers are actively working in collaboration and have an appropriate level of subject knowledge. Further work in this field is scheduled for 2022.

• *Development of methodical guidelines for organisation of educational process in Intellectual schools*

Methodical guidelines for organisation of educational process are one of the main tools for methodological support of teachers in Intellectual schools, focused at informing them on the latest trends in education. Methodical guidelines for organisation of educational process for the 2021-2022 academic year includes recommendations for teachers on the formation of students' functional literacy, on ensuring a high-quality learning environment, organising a high-quality educational process and teaching, organising differentiated learning.

Since the educational process in Intellectual schools, as well as everywhere across the world, has changed due to the transition to distance learning, the Methodical guidelines provides information about the technology of blended learning. Moreover, the teachers are advised to use the technology of flipped learning as one of the effective strategies for rational use of instructional time in blended learning. This technology is relevant not only for online lessons, it is also effective for off-line lessons, as it ensures rational use of classroom time to practice and reinforce students' skills.

To provide methodological support to teachers in reducing the gaps in students' knowledge and skills, CEP has developed examples of flipped lessons for all subjects of primary, secondary and high school. The examples are designed in such a way that teachers can adapt the proposed lesson plans considering the capabilities and interests of their students.

	Created by student	Created by student
Synchronous Synchronous (in classroom)	**1. Demonstration and application** → → → Creative, personalised projects and presentations	**2. Engagement through experience** → Games, simulations → Discussions → Activities → Case analysis → Experiments
Asynchronous (outside the classroom)	**3. Creating meaning** → Blogs → Photo essay → Tests → Reflective videos → Audiovisual reflection → Reflective podcasts, webcasts	**4. Study of theory** → Video Lectures → Online Chat → Audio Lectures → Long read → Websites with content → Electronic Courses

4 → 3 → 2 → 3 → 1

Flipped Learning Scheme (Source: SberUniversity)

The COVID-19 pandemic and distance learning have revealed the relevance of developing digital data skills of students in light of excessive information and deceptive misinformation. COVID-19 showed the benefits of digital literacy, such as the ability to assess the validity of digital sources of information, including graphs, charts, tables and videos. Methodical guidelines introduce teachers to the Digital Intelligence Framework developed by the Digital Intelligence Institute (DQ Institute). It defines 24 digital intelligence competencies by levels and areas. Methodical guidelines also provide recommendations to teachers on how to teach students to perform effectively in digital environment and use technology responsibly.

«We're just fighting a pandemic, we're fighting an infodemic».
Tedros Adhanom Ghebreyesus, WHO's Director-General

Also, the guidelines list elective course programmes developed by CEP. Teachers are advised to focus on the organisation of elective courses considering the needs and interests of students.

Improving NIS-Programme

Considering that the curriculum is a dynamic system of interrelated elements, including content, needs analysis, expected outcomes, aims and objectives, implementation and evaluation (Richards, 2001), it constantly improves. Moreover, ongoing revision is considered a tool for necessary and positive changes (Serdyukov, 2017), as well as a meaningful process designed to meet the needs of all students (Jackson, 2005).

The improvement of NIS-Programme started in 2020 focuses on the formation of key competencies and suggests curriculum changes that contribute to comprehensive development of a highly educated, creative personality with particular competencies.

Centre for Educational Programmes builds on the capacity of local authors, developers, it utilises data collected through the long-term monitoring and participation in international projects to consolidate and deepen what has been achieved, and to identify new areas of development in the curriculum.

NIS-Programme Key Competencies Framework (hereinafter referred to as the Framework) was approved after discussing with the project team of active teachers, school administrators, and the voice of students.

The Framework includes values, knowledge, skills and literacies to develop competencies that reflect demands of the society regarding the social, cultural and personal qualities of a school graduate.

NIS-Programme Core Competence Framework Visualisation Project

To ensure a better balance between the existing achievements and the expected changes, the Centre initiated and carried out the analysis of subject programmes in terms of reflecting all the components of the new Framework. The analysis of subject programmes was preceded by a series of training workshops for subject coordinators and representatives of the working groups on implementating the analysis.

The analysis of subject programmes involved three areas for exploring the content of NIS-Programme.

01	02	03
To analyze the system of curricula`s learning objectives in terms of **key competencies`** representation (skills, types of literacy and values)	To determine the ratio of **cognitive, affective and psychomotor levels** of learning objectives in curricula (according to Bloom`s taxonomy)	To review the range of learning objectives by grade/quarter in terms of the **content and quantity overload**

Main focuses of curriculum analysis in the framework of improving NIS-Programme

Additional focuses of curriculum analysis and transformation include issues related to cross-curricular integration, developing universal learning goals, academic integrity, defining expected outcomes across subjects and learning areas, personalisation of learning, etc.

The new cycle of improving NIS-Programme focused on the formation of key competencies was built on the methodology of the OECD's Curriculum Content Mapping exercise with the use of heat maps. Heat maps were used to illustrate the breadth and depth of the presented elements of key competencies in subject programmes.

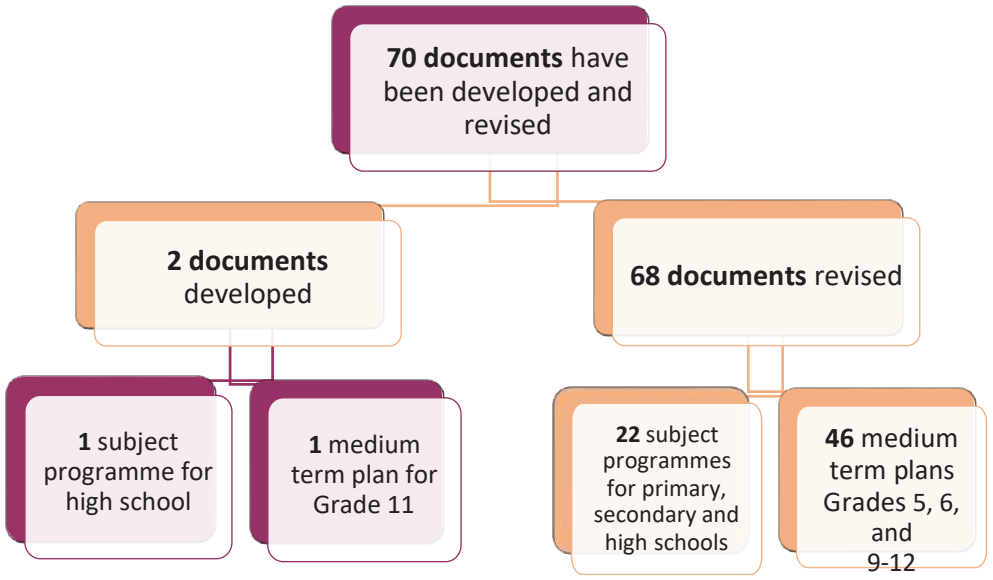
Thus, the reporting period saw the improvement of NIS-Programme across 19 subjects in secondary schools.

- Summer and autumn saw two workshops during which the working groups revised the subject programmes in terms of the main and additional focuses.

The workshops involve the experts from Centre of Excellence and Centre of Pedagogical Measurements on a regular basis. This approach is designed to provide an understanding of the revision process in order to maintain consistency between the content, pedagogy and assessment, since the revision of subject programmes will be the starting point for improving the teacher development programmes and approaches to the assessment process.

- The improvement of NIS-Programme resulted in the development and revision of **70** documents (subject programmes) involving the creation and development of key competencies, updating the content of subject programmes according to the results of the research by international organisations (OECD, UNICEF, World Bank, etc.), and making amendments to meet the requirements of the continuously changing labour market.

The number of developed and revised subject programmes and medium-term plans in 2021



Revision of subject programmes and course plans

The reporting period saw the revision of 68 documents including 22 subject programmes for primary, secondary and high schools, and 46 medium term plans.

The subject programmes and course plans were revised in order to find the balance between the preservation of the fundamental nature of academic knowledge, the development of key competencies, the possibility to provide teachers with academic freedom and personalised learning.

The learning objectives were analysed through the hierarchy of cognitive skills, affective and psychomotor levels based on different taxonomies, and then strengthened, combined or removed in order to reduce the learning overload, use the acquired skills, etc.

• *Computer Science and Programming*

The current realities show that the rapid development of digital technologies and their integration into most areas of human activity led to the high demand for IT specialists, programmers, engineers, high-tech specialists, etc. in the higher education and labour market. The results of scientific research show that programming is a part of computational thinking and the most effective way of its development. Programming and computational thinking are becoming a mandatory requirement for any specialist. The course plans designed for the first-year students of almost all specialties contain the disciplines that require them to acquire basic programming skills before entering the university. Every year the ability to read and understand computer code is becoming more and more in demand. This is the reason why programming becomes a universal literacy rather than a specialised knowledge implying that all the school students should have such skills after their graduation. According to the feedback from NIS students who are studying now at the universities, less able students in programming face a number of challenges during their courses.

Nowadays, the trend towards mandatory acquisition of programming skills is the international practice. For example, it is expected that the competencies related to algorithmization and programming will be considered for inclusion in the Programme for International Student Assessment (PISA) in 2024 in sciences that evaluates the functional literacy of school students in different countries of the world and the ability to apply knowledge in practice.

Based on the above, the NIS Board has adopted the following comprehensive measures for the development of IT and digital competencies of students:

– introducing a new compulsory subject of Programming in senior-secondary school curriculum;

– revising the subject content of Computer Science;

– developing the elective course programme.

As a result, the reporting period saw the development of 1 subject programme and 1 medium-term plan in Programming; revision of 1 subject programme and 2 medium-term plans in Computer Science; development of 1 elective course programme of IT-Essentials.

From 2021-2022 academic year, NIS introduced a new subject of Programming with a load of 2 hours per week. The subject is compulsory for all high school students.

The Python programming language was chosen for study as it is listed as one of the most popular programming languages among employers (according to the Hackerrank annual report, 2018).

The new subject of Programming was introduced due to reducing the weekly load of English language from 5 to 3 hours in grade 11, thus the overall academic load remained the same. English Medium Instruction of the new subject of Programming will allow students to maintain their language skills and achieve the expected level of English language (C1 - CEFR) upon completion of high school.

Computer Science subject programme for grades 6-10 has been revised to include the core course of Cisco IT Essentials within the Safe Kids Laboratory course (Kaspersky Lab). The revision of Computer Science subject programme and course plans was followed by visualising the elements of Digital Citizenship.

It was recommended to teach the part of the content of Computer Science within other subjects in secondary schools in order to strengthen the role of studying digital literacy.

The IT-Essentials elective course programme is designed to deepen and expand the computer science knowledge in order to train IT specialists. This course is designed for grade 10 students and involves more advanced topics from the Cisco IT Essentials course, laboratory works and exams with a Cisco CompTIA A+ certificates. This elective course will provide grade 11-12 students with an opportunity to choose one of the in-depth industrial Cisco courses such as 'Network Technology Specialist', 'Security Specialist' with a CCNA certificate.

Therefore, studying Computer Science and Programming in secondary and high schools along with electrive courses will contribute to the further effective education at the university, and allow students to be more competitive in the labour market.

Developing Elective Course Programmes

To deepen, expand and supplement the content of basic education within the NIS-Programme, CEP is working on the development of elective courses. The elective courses focus on building individual educational trajectory and learning profiles.

The reporting period saw 11 elective course programmes as follows: 9 - environmental education in Kazakh and Russian languages; 1 - information technology in Russian language; 1 - the basics of entrepreneurship in Kazakh and Russian languages.

My Ecological Footprint - grades 7-8;
Mysterious Plastics Codes - grades 9-10;
Global Warming: Science and Simulation of Climate Change - grade 11;
The Invisible World Around Us - grades 11-12;
Secrets of Everyday Science - grades 7-8;
Atmospheric Chemistry - grades 7-8;
The Invisible World of Gadgets - grades 7-8;
The Effects of Climate Change on Human Health - grades 9-10;
Scarcity and Conflicts in the Natural Environment - grade 11;
The Basics of Entrepreneurship - grades 11-12;
11) IT Essentials - grade 10.

• Environmental education. The elective course programmes on environmental education have been designed to fulfill the instructions of the NIS Chairperson resulting from the meeting on Environmental Education in Nazarbayev Intellectual schools dated 11.09.2020. The aims of these programmes are to develop ecological culture, awareness and behaviour, careful attitude to the environment including various types of activities to solve practical and crucial problems.

«We need to address environmental as they are becoming more relevant from a public point of view.... We need to introduce the Environmental Education for schoolchildren»

K.Tokaev, President of the Republic of Kazakhstan

• *Basics of Entrepreneurship* The elective course programme of the Basics of Entrepreneurship is designed to provide students with necessary knowledge of the basics of economics and entrepreneurship, creating a theoretical and practical basis for future independent activity in modern market conditions and awareness of the social significance of business in the national economy.

• *Health and Safety.* In the era of advanced technology, urbanization and globalization of society, the formation of values of a healthy and safe lifestyle, learning the rules of personal and collective safe behaviour in various situations become relevant.

Mortality and traumatism of the younger generation, psychosocial adolescent situations are urgent problems of modern society. According to the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, 792 deaths from external causes among children under the age of 14 were registered in 2019. The main causes of tragic cases are as follows: death due to all types of transport accidents (48%), death by drowning (27%), fire accidents (7%), death by poisoning (6%), suicide (10%).

In 2021, Centre for Educational Programmes started developing the in-depth elective course on health and safety for grade 7-12 students that is aimed at preparing students for life in a real environment: natural, human-made and social environments.

The content of the course involves the practical classes in the following areas: safety while staying in various environments (indoors, outdoors, outside, public places, public events, everyday interaction with people, cultural environment risks), healthy lifestyle, first-aid treatment, legal security, emotional stability, environmental safety, financial well-being, integrated population security.

The course development was preceded with the investigation of the international pedagogical best practices by the example of the USA (Guide for Developing High-Quality School Emergency Operations Plans), UK (Healthy Schools), Europe (Schools for Health in Europe) and Russia (Health and Safety Curricula).

Along with NIS teachers, medical workers and psychologists, this course has been developed together with the representatives of the Committee for Civil Defense and Military Units of the Ministry for Emergency Situations of the Republic of Kazakhstan, the Committee for the Children Rights Protection of the Ministry of Education and Science of the Republic of Kazakhstan, the Unified Children's and Youth Organization "Zhas Ulan" Republican Public Association, the Ministry of Information and Social Development of the Republic of Kazakhstan, Scouts of the Great Steppe Public Association.

The development of the elective course programme on Health and Safety will continue in 2022. A set of practice-oriented classes and activities aimed at comprehensive preparation of students for safe living in the environment will be developed as part of the planned activities.

Implementation of trilingual education

Trilingual education in Intellectual schools is implemented through the study of language and non-language subjects in Kazakh, Russian and English languages disregarding the language of instruction, as well as through the extra-curricular activities held in three languages.

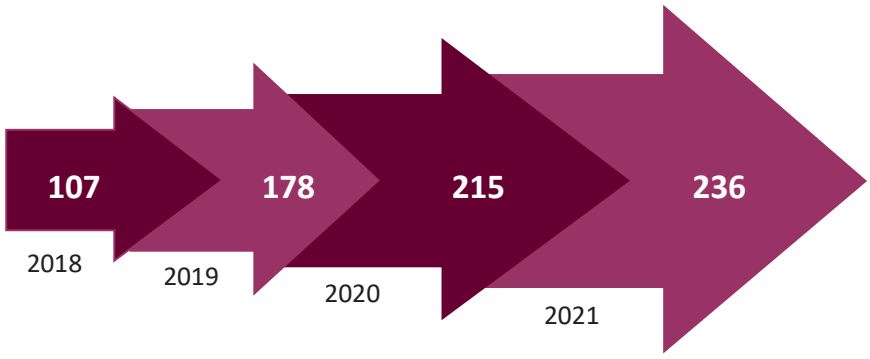
• *Professional development of teachers in the implementation of trilingual education*

Much attention in the professional development of teachers for the implementation of trilingual education is paid to the Content and Language Integrated Learning (CLIL) approach when subjects are taught in the second/third language. This approach teaches subject content and language and prepares students for real life (Dale, Es, Tanner, 2011).

In the reporting period, CEP organised professional development courses for 236 NIS teachers on the following aspects of CLIL:

- CLIL: Activities for the development of students' literacy (136 teachers);

- CLIL: Preparing CLIL lessons (100 teachers).



Number of teachers trained to use CLIL from 2018 to 2021

Online workshops were designed to improve teachers' skills in order to develop students' reading literacy and provide the teachers with methodological support for the implementation of Content and Language Integrated Learning approach.

As a result of online workshops, the participants learned how to apply the effective activities; use and compare methodological approaches in order to develop students' reading literacy; plan CLIL lessons and reflect on their pedagogical practice.

The online workshops have been held in Kazakh language for the teachers of the History of Kazakhstan, History of Kazakhstan (Kazakhstan in Modern World), Geography and Basics of Law as in Intellectual schools these subjects are taught in Kazakh language according to the trilingual education policy. This approach allowed teachers to better understand how to implement Content and Language Integrated Learning in their classes. The participants also performed practical activities and applied other approaches in their classes.

The online workshops have been held in English language for the teachers of Chemistry, Biology, Physics, Computer Science and Global Perspectives and Project Work. Teaching non-language subjects in the second/third language requires teachers to have a high level of language proficiency. Therefore, the teachers were recommended to improve their language competencies, and pay special attention to the development of their students' language skills through the integration of subject content. When performing practical activities, the teachers learned how to plan their lessons by integrating language and non-language objectives, and organise their teaching process to develop listening, speaking, reading and writing skills.

Together with Content and Language Integrated Learning approach, the teachers were introduced to the CLIL strategies for the development of students' literacy and scaffolding. The master classes of Planning and Conducting a CLIL lesson and Flipped Classroom and CLIL were conducted.

• *Kazakh Language Immersion Project*

Since 2013 Nazarbayev Intellectual schools have been implementing the Kazakh Language Immersion Project to explore alternative and innovative methods of developing the national language. The project has been implemented jointly with the Innove Foundation (Estonia). The founder of the language immersion model for Kazakh language is Doctor of Pedagogical Sciences, Professor M. Zh. Dzhadrina.

The Kazakh Language Immersion Project is implemented in Kokshetau and Taldykorgan Intellectual schools.

The 2020-2021 academic year saw the fourth graduation of primary school students who studied under the Kazakh language immersion project. The NIS students from grades 3 - 5 continue to study under the language immersion project.

Due to pandemic COVID-19, the study of cognitive skills was conducted online among the students of grades 3 - 5. The platform https://www.menti.com / has a function of automated data processing and was chosen for the study. The little study was focused on the

development of verbal and non-verbal thinking of the students.

The results of the study showed that the students from the immersion classes keep up with the students of control classes in the development of cognitive skills.

The results of the study also identified the scope of methodological support that is needed to the teachers to implement the Kazakh Language Immersion Project.

OECD The Future of Education and Skills: Education 2030

In 2021, NIS continued to work as a national coordinator from Kazakhstan in the OECD's Education 2030: The Future of Education and Skills Project (hereinafter – Project).

OECD Education 2030 aims to build a common platform and dialogue for the countries to individually or jointly study the issues on curriculum renewal and implementation. As part of this process, the project defines the competencies (knowledge, skills, attitudes and values) that today's students need to succeed and shape their world for a better future in 2030 and beyond.

The project aims to help countries make evidence-based decisions and promote system approach to curriculum development and revision.

The project is moving into the 2nd phase, in which NIS takes part in discussing the components of the OECD Learning Compass, finalising OECD reports based on data and analysis conducted in the first phase of the project and disseminating project ideas. The COVID-19 pandemic has adjusted the plans for further implementation of the Project. All the events and meetings scheduled for 2021 took place in online format. The reporting period saw the activities held in the following areas:

1. Discussing the components of the OECD Learning Compass and Conceptual Descriptions;
2. International reports based on data from CCM (Curriculum Content Mapping) and PQC (Questionnaire on Curriculum Redesign);
3. Mathematics Curriculum Document Analysis (MCDA);
4. Questionnaire on coherence between pedagogy and assessment, and changes in the curriculum;
5. Online meetings of informal working groups;
6. Preparing videos;
7. Disseminating project ideas by preparing videos, translating project materials and publishing information brochures.

The NIS representatives took part in the workshops on Mathematics Curriculum Document Analysis (MCDA) organised for the Math subject specialists and provided their feedback on the OECD MCDA report.

The NIS representatives also took part in two meetings of the informal working group within a virtual OECD Global Forum.

On 13-14 March 2021, NIS student and representatives took part in an online workshop organised by Fukushima University with the support of the OECD. Kabidenov Dzhafar, grade 11 student of NIS PhM in Almaty, is a permanent member of the Student Advisory Group under the OECD project for 2021-2022.

During the workshop, Japanese schoolchildren and students presented various ideas for the possible renovation of education and the improvement of society through education. The members of OECD Student Advisory Group spoke together with Japanese schoolchildren and students. Kabidenov Dzhafar spoke together with a Japanese school student, Miki Nananshima.

The students shared their ideas of creating an online platform to bring together the representatives of various fields, especially from governments, private companies, educational authorities and the student community itself to discuss new projects proposed by students and aimed at solving global or local issues.

Online workshop participants.

On 10-12 May 2021, the NIS representatives took part in the third virtual OECD Global Forum (hereinafter - Forum). The main theme of the forum is Preparing for Post-Covid Education: Personalised and Digital Curriculum. The forum was attended by the grade 11 students of NIS Taldykorgan - Basharova Anel, Kim Valeriya and Zheksembay Zhomart; one grade 11 student of NIS PhM Almaty - Kabidenov Dzhafar, and more than 300 representatives from around the world.

During the three-day work, special attention was paid to the opinion and experience of students from all over the world. Our students were assigned to different focus groups, and they were able to work with representatives of Indonesia, Japan, Estonia, Portugal, India and other countries.

The groups held the discussions about the assessment systems, teaching methods for vulnerable groups of students, the importance of a comfortable learning environment, the relationship between teachers and students, as well as the competencies that modern teachers should have. Basharova Anel noted the importance of supporting vulnerable students from parents and society to make them feel important in this world. Kim Valeria noted the importance of establishing a trusting relationship between students and teachers in order to involve the students in the educational process. Zheksenbay Zhomart shared his experience of school self-government in Intellectual schools, and his vision of ideal conditions at school for students and teachers.

NIS students who took part in the forum

• Teacher Voice. In 2021, the OECD together with UNESCO and the International Task Force Teachers for Education - 2030 launched the Global Teaching InSights initiative to study the experience of training teachers around the world in the context of the COVID-19 pandemic. One of the main goals of this initiative is to establish global dialogue between different countries.

The Centre for Educational Programmes provided the NIS teachers with a possibility to participate in this global initiative. As a result, the OECD Secretary selected and published 9 videos recorded in Kazakhstan on the official website of this initiative.

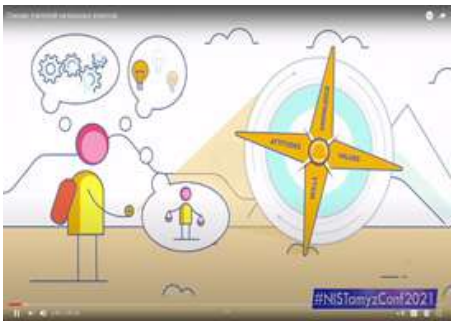
The authors of the videos: Kauyssova Akzat, NIS PhM Aktobe; Amaniyazova Aybarsha NIS ChB Atyrau; Mukhamedzhan Nurbolat NIS ChB Karagandy; Khassenova Altyngul NIS ChB Karagandy; Mussina Aygerim NIS PhM Nur-Sultan; Andakayeva Aliya NIS PhM Semey; Zhanabayeva Nurgul NIS PhM Taraz; Assilbekova Altynay NIS PhM Shymkent; Muteivana Patrick NIS ChB Aktau.

The video of NIS teachers who took part in the OECD and UNESCO Teacher Voice initiative

• *Student Voice.* The OECD launched the campaign of Student Voice in Curriculum Development within the framework of Education 2030 project. This campaign is aimed at examining issues and achievements of the curriculum of various countries from the students' point of view. Therefore, the OECD's Education 2030 project will help to know what is happening in modern schools, what is a priority and key for children, and what solutions students offer.

Students of Intellectual schools took an active part in this initiative and sent 15 videos to the OECD secretariat. The publication of videos is expected in the first quarter of 2022 on the OECD website and social media pages.

• *Dissemination of project ideas.*
The CEP disseminates the ideas of the OECD's Education 2030 project through the publication of the OECD Learning Compass video and the translation of OECD documents. The video of the OECD Learning Compass was shown within the framework of the republican August conference of teachers held from 9 to 17 August 2021. The video was shown in two studios in Kazakh and Russian languages across all subjects, including primary school (video recording and link to the channel are available via the QR code below). This video introduced the majority of Kazakhstani teachers to the key ideas of the Education 2030 project and the components of the OECD Learning Compass.



A collage of the OECD Learning Compass demonstrated at the republican August conference; QR code to the studio channel page; and a collection of the OECD Learning Compass.

• The CEP translated and published the OECD's Conceptual Learning Framework in Kazakh and Russian languages. This framework combines a series of descriptions of key concepts promoted within the Education 2030 project. The collection contains descriptions, characteristics, elements and experience of various countries in terms of the following key concepts: the Learning Compass and the core foundations of the OECD - 2030, student agency, transformative competencies, knowledge, skills, attitudes and values, the Anticipation-Action-Reflection cycle, etc.

The OECD The Future of Education and Skills: Education 2030 provides NIS with a possibility to be aware of the main trends in curriculum development and renewal of the educational content and discuss the strategies and issues of revising and implementing the curricula at the international level. This project makes it possible to compare the reforms of the Kazakhstani educational programme with similar reforms in the countries with the best education systems.

3.2. Educational resources

Development of textbooks and teaching materials according to the NIS-Programme

In order to implement the strategic objectives until 2030, the NIS is working on the development and revision of textbooks and teaching materials (hereinafter - Textbooks) according to the NIS-Programme.

• *Revision of textbooks and teaching materials for grade 2*

The reporting period saw the revision of textbooks in Introduction to Science, ICT, World Understanding, Music, Art for grade 2 students in Kazakh and Russian languages according to the NIS-Programme. The adjustments were made to the content of the textbooks, and the final versions of the textbooks were approved.

• *Development of textbooks and teaching materials for grade 12 students*

Development of textbooks for grade 12 students involved the following five subjects: Mathematics, History of Kazakhstan (Kazakhstan in Modern World), Geography, Kazakh Language and Literature, Russian Language and Literature. The process of textbook development is carried out by the authors with extensive experience in this area. The textbooks are based on such methods and activities as analytical essay and SWOT-PEST-GAP analyses contributing to the development of the skills of analysis, planning and assessment. The development of the textbooks in language subjects continues. In language subjects, the language and literature were integrated into one academic discipline. The student books include common approaches to teaching language and literature that allow students to develop their reading (fiction, non-fiction), listening, speaking and writing skills, and improve their grammar. Differentiated tasks and a list of literature are also provided in order to better understanding the given topic.

• *Approbation of the textbooks for grades 10 and 11 in Mathematics*

The 2021-2022 academic year saw the approbation process of the textbooks through NIS-Programme in Nazarbayev Intellectual schools for grade 10 in Kazakh and Russian languages in Mathematics, Physics, Chemistry, Biology, Art, Computer Science, Geography, History of Kazakhstan, World History; for grade 11 in Kazakh and Russian languages in Mathematics, parts 1 and 2.

In order to save the budget, it was approved to provide Intellectual schools with printed versions of the grade 10 textbooks.

Approbation for grade 10 (NIS-Programme)						
Language of instruction	казахский			русский		
Grade	A	B	C	D	E	**F**
Qty/1 subject	12	12	12	12	12	12
Subject	-	Chemistry	Physics	Physics	-	Chemistry
	Geography	-	Geography	-	Computer Science	-
	History of Kazakhstan	Biology	-	World History	Биология	Art
Subject	**24**	**24**	**24**	**24**	**24**	**24**

Finalisation of textbooks and teaching materials for grade 11

By the end of the piloting, up to 20% of changes were made to the textbooks to improve the quality of content, presentation of materials, design, and supplement the textbooks with tasks for the development of critical and logical thinking.

The content of the textbooks in Geography covers the units of physical and economic geography and is aimed at their deeper investigation. Teaching materials are supplemented with various graphics in order to make the information accessible and easy to perceive. The tasks in the textbooks were designed according to different levels of thinking skills in order to develop research skills, map skills and the skills of using information and communication technologies.

The content of History of Kazakhstan (Kazakhstan in Modern World) has undergone minor changes. Some illustrations were processed; some maps were presented via QR codes to increase the image resolution. A number of illustrations were replaced with authentic photos taken from Kazakhstani and international photo banks.

The textbooks in Kazakh Language and Literature and Russian Language and Literature for grade 11 contribute to the comprehensive development of the skills of communication, analysis and critical thinking. The textbook involves integrated learning of the Russian language and literature: students work with both fiction and non-fiction texts, perform listening and speaking tasks, learn to write texts of various styles and genres. After the approbation of the textbooks, the authors and editors improved their practical knowledge, suggested to replace some illustrations with high-quality photos from photo banks, added materials designed to expand the horizons of the students and corrected some technical errors.

Grade 11 textbook covers

• *Development of materials for Virtual and Vacation schools.*

CEP continues the development of materials for online supplementary education: Virtual and Vacation schools. These schools were designed for grade 5 and 6 students of mainstream schools who want to enroll in Intellectual schools or increase their own level of knowledge.

The development of materials for the Virtual school involved the creation of the project groups in Mathematics, Science, Kazakh Language (L1), Russian Language and Literature (L2), Russian Language (L1), Kazakh Language and Literature (L2) and English Language. The learning materials for each lesson consist of 3 components such as a video, didactic material and methodological recommendations.

The moderation of 156 developed lessons for grades 5 and 6 was carried out together with the developers - NIS teachers (60 lessons for grade 5, 96 lessons for grade 6). The developed materials were uploaded on time and delivered to the Centre for Pedagogical Measurements.

From 2022, it is planned to include an additional section of the Science test in the structure of tests for the competitive selection of students in grade 7 of Intellectual schools.

Digitalization of learning environment

The NIS Centre of Information Technologies and Services private entity develops and maintains information systems that are responsible for the automation of various NIS administrative and educational processes, its branches and subsidiaries. Centre has been working according to the approved list for the development and maintenance of information systems for 2021 under the Service Agreement No.37 dated 29 Match 2021.

The Centre also held trainings for the employees of NIS structural subdivisions and branches on working with the systems and showed their functionality.

The following activities on the development of information systems were carried out in 2021:

• The Educational Process Management (hereinafter - EPM) information system that is at the core of the information systems and modules responsible for automation of educational and

administrative business products has been improved within the development of the Unified Information and Educational Environment system.

The service for viewing the results of the competitive selection (http://res.nis.edu.kz /) has been developed as part of the EPM development for applicants and their legal representatives to get acquainted with the general and individual results of the competitive selection online.

Further work was undertaken for the EPM development process: implementing the ability to view public files with results in PDF format; the ability to view lists with results; encrypting personal data; sending a pass with an individual code of a test taker (ICT) to the candidate's email; importing the results from an Excel file; developing the module for the publication of the results; assigning grants and forming the reserve list; automating the publication of lists of the students who awarded grants and those who are in the reserve list; finalizing the reports on ICT for subsequent data unloading.

The implementation of the above mentioned activities was followed by putting the updated EPM information system and the service for viewing the results of the competitive selection (http://res.nis.edu.kz/) into commercial operation. This year, they were successfully employed during the competitive selections.

• The Library Management system has been improved as part of the implementation of the Unified Information and Educational Environment system and the transition from the outdated Kazakh Automated Library and Information System (KALIS). The business process of replacing and retiring publications has been automated; statistical reporting forms have been developed; and a tool for data migration from KALIS software has been created. Along with this, a reader's personal account and a library card have been created; a constructor of publication descriptions has been developed; the business process of providing readers with publications has been finalized; and the printed barcodes and the write off certificate have been implemented.

During one of the last demonstrations, it was proposed to start data migration from KALIS in Kokshetau Intellectual school of Physics and Mathematics as this school has primary school classes, a large number of publications and takes an active part in the system development. By the end of data migration process in the Kokshetau Intellectual school and building up the main database, it is expected to continue migration in other schools. Such a division will ensure that the reference books are filled correctly and simplify the work for the librarians in other Intellectual schools. This initiative was supported by the responsible NIS employees working in this area and by the librarians of the Kokshetau school. At the moment, the system has entered into trial operation and the data migration process has begun; users are provided with technical support.

The service for submitting applications for transfer, as well as for checking the status and viewing the sequence number of the application submitted for transfer has been integrated with the Unified Information-Educational Environment school management system and implemented within the Contingent system. These services allow a legal representative to submit an online application in order to transfer a child from one Intellectual school to another, and then monitor changes in the status of the application. Along with this, the automated cancellation of the transfer application has been implemented; the generator of response letters for transfer applications have been created for automatic mailing upon approval for the transfer, the forms of the documents for leaving and entering a school through the transfer have been finalized; the automatic generation of an agreement for studying on a paid basis has been implemented; the notification templates for automatic mailing have been finalized upon changes in the status of the transfer application; the document forms have been optimized.

During the launch of the updated UIEE Contingent system for transferring students within the Nazarbayev Intellectual schools network, the notification templates for parents and users of the system were developed in two languages; the instructions for NIS secretaries and administrators were prepared; the NIS secretaries were trained to work with the system; the employees of the structural NIS subdivision were provided with consultancy support in terms of transferring applications to the new system; the access rights were configured for users.

• As part of the Unified Information and Educational Environment system, the NIS School mobile application was designed

to ensure accessibility to information about the educational process from mobile devices based on the intertwined modules functioning. In particular, the following functions were developed: data provision service, integration with the UIEE systems, the functions for authorization, viewing the main screen, school diary, class schedule, homework, school report, class ranking, as well as the notifications on the mobile device screen. As of the end of the reporting period, the system is in test operation. It is expected to launch and gradually improve the functions based on user feedback.

As part of the maintenance of information systems, 2021 saw the provision of technical support services for 15 NIS information systems and portals, including 12 subsystems of the Unified Information and Educational Environment. 2021 saw addressing about 4 thousand registered user requests; conducting 30 trainings on working with current systems; and preparing the technical documentation.

3.3. Pastoral work

NIS implements a holistic educational process including pastoral work based on the Mangilik El values and Rukhani Zhangyru spiritual modernization programme.

The key values of the educational process in schools are respect, cooperation, responsibility, academic integrity, literacy and lifelong learning.

The values are formed at all stages of school life through the implementation of the following network projects: Shanyrak student community, Tugan Elge Tagzym (A Bow to the Motherland) Regional Research Expedition, TED*NIS club (in the format of Ideas Worth Spreading), Wikipedia Club, Smart Thursday, Kazak Andery (Kazakh Songs), Zhuz Kyuidyn Tarikhy (History of a Hundred Kyuis), Uly Dala Akyndary (Poets of the Great Steppe), Zamandastar Zhyrlary (Songs of Contemporaries), Urpaktar Sabaktastygy (Continuity of Generations), Menin Omirimde Koldanatyn Makal-Matelder (Proverbs I Use in my Life), 100 books recommended for NIS students, student self-governance, social projects to serve society and compulsory summer practices such as Take a Child to Work, 10 Days at Parent's Workplace, Two Weeks in the Village.

The participation of students in networking projects promotes their agency, reveals their individual abilities that is not always possible to consider during the classes.

Throughout the academic year, it saw the purposeful, systematic and planned activities to involve the students in all networking projects.

As the main form of student community organisation, Shanyraks are involved in all school events such as social events, creative contests, festivals, sports competitions, open school days, tours, hikes and charity fairs.

The key aspect of Shanyraks' success is based on the '1 + 1' mentoring formula, so all grades 7-8 Shanyrak students receive support from their high school peers. There is a healthy competition between the Shanyraks for the Orken cup. The Shanyrak who has scored the maximum number of points at the end of the academic year will receive tickets to the Tugan Elge Tagzym Regional Research Expedition.

- Tugan Elge Tagzym Regional Research Expedition.

In 2012, Nazarbayev Intellectual schools launched their own patriotic project Tugan Elge Tagzym Regional Research Expedition. The project was developed by the Nazarbayev Intellectual schools Autonomous Educational Organization in order to develop students' interest in their native country and strengthen their sense of patriotism. Every year, the winners of the "Best Shanyrak of the Year" contest selected from each Intellectual school for academic, creative, sports and other achievements take a part in these expeditions.

In 2021, the networking competition of projects and creative works within the framework of the Tugan Elge Tagzym project was organised in a distance format from 27-30 September, for which the total of 331 works were submitted. The competition saw the best individual and team projects, and creative works submitted by the participants of the Tugan Elge Tagzym Regional Research Expedition.

The competition was held in the following 9 areas:

The best project on the historical legacy of the region - Uly Dala Orkeniyety (Great Steppe Civilization) (35 projects);

The best project for nature lovers of the region - Tugan Olkem - Zhumak Meken! (East or West, Home is Best)(26 projects);

The best project of cultural heritage of the region - Ult Rukhaniyaty - Babalar Amanaty

(Moral Values as the National Heritage) (30 projects);

The best project for the innovation and industrial enterprise of the region - Ondiristik Innovaciya Kepili - Ziyatkerlik Aleuyet (Intellectual Potential as a Key to Industrial Innovation) (32 projects);

The best project in the Green Planet category (42 projects);

The best project in the category Aleumettik Kasipkerlik Zhane Zhana Ideyalardyn Kushi (Social Entrepreneurship and the Power of New Ideas) (32 projects);

The best project in the category Bizdin Kushimiz Birlikte! (Our Strength is Our Unity) (32 projects);

The nomination of Project Inspiration, Selt Etkizer, Eren Oi (A Brilliant Idea) (36 projects);

The nomination for the best essay for the Tugan Zher – Tugyrym (My Homeland is My Strength) project (59 essays).

The winning schools according to the results of the Tugan Elge Tagzym - 2021 online competition

Category	1st place	2nd place	3rd place
Uly Dala Orkeniyety	Kokshetau NIS PhM	Uralsk NIS PhM	Karaganda NIS ChB
Tugan Olkem - Zhumak Meken! (East or West, Home is Best)	Kostanay NIS PhM	Almaty NIS ChB	Karaganda NIS ChB
Ondiristik Innovaciya Kepili - Ziyatkerlik Aleuyet (Intellectual Potential as a Key to Industrial Innovation)	Nur-Sultan IS	Taraz NIS PhM	Almaty NIS ChB
Ult Rukhaniyaty - Babalar Amanaty (Moral Values as the National Heritage)	Aktau NIS ChB	Taraz NIS PhM	Karaganda NIS ChB
Green Planet	Almaty NIS ChB	Petropavlovsk NIS ChB	Nur-Sultan NIS PhM
Aleumettik Kasipkerlik Zhane Zhana Ideyalardyn kushi	Nur-Sultan NIS PhM	Nur-Sultan IS	Semey NIS PhM
Bizdin Kushimiz Birlikte!	Taraz NIS PhM	Taldykorgan NIS PhM	Taldykorgan NIS PhM
The nomination of Project Inspiration, Selt Etkizer, Eren Oi	Nur-Sultan IS	Nur-Sultan IS	Karaganda NIS ChB
The nomination for the best essay for the Tugan Zher – Tugyrym project	Semey NIS PhM	Karaganda NIS ChB	Ust-Kamenogorsk NIS ChB

A dormitory is a new micro-environment that determines promising areas of moral and spiritual development of NIS students. Dormitories meet all the conditions for living, studying, communicating and self-improving. It is here that students adapt to new social conditions.

The dormitory educators competently integrate the projects with such educational projects as Urpaktar Sabaktastygy, Smart Thursday, and school library through the Bookcrossing campaign, book exchange among students and parents, meetings with teaching associations, Cooking Club and other clubs.

• Smart Thursday Project

2021 saw **386** meetings showing the active development of the project during distance learning, an increase of participants due to the online format, possibility to hold educational exhibitions and attract speakers from various cities and countries.

Theme	Number of meetings
Career guidance/educational exhibitions	146
Science	97
Art/Literature	46
Sport	26
Entrepreneurship	26
Health	25
History	23
Total	**386**

The benefits of holding online meetings are the possibility to invite famous figures of science, culture and sports, have an open broadcast and attract students, their parents and teachers from all schools. Each event was attended by more than a thousand participants. The speakers were famous doctors, scientists, athletes, cultural figures, rectors of higher educational institutions of Kazakhstan.

These meetings contributed to the acquisition of new knowledge, experience, useful tips to achieve the goals, increase interest in science, research and discoveries.

Nazarbayev Intellectual schools AEO and Qazaq Kuresi Association have signed a memorandum of cooperation on educating the younger generation and increasing interest in the Kazakh national sports. As part of the memorandum of cooperation, the meetings were held with teachers of physical education, heads of sports clubs and students of Petropavlovsk, Semey and Taraz Intellectual schools.The online

meetings were attended by Kazakh wrestlers, world and Asian champions in Kazakh Kuresi, three-time winner of the Kazakhstan Barysy tournament, Mukhit Tursynov, Beybit Ystybayev and Aybek Nugymarov.

• Social practices

What profession should I choose? is an important question for every person... Summer social practices such as Take a Child to Work and 10 Days at Parent's Workplace will help answer this question. These projects help students to solve an important issue in their lives through immersion in the world of occupations in order to make a choice of their future specialty. An early self-determination is a guarantee of success in the future when entering the university.

NIS students under compulsory summer practices on an annual basis. Summer social practices **Take a Child to Work** and 10 Days at Parent's Workplace saw 5,377 students of grades 7-8.

Students also investigate the atlas of professions that help them to get a lot of information about different professions. This stage involves a meaningful dialogue with parents and requires a joint thought process of parents and children.

In grade 8, the practice is changed as follows: the students take interviews, talk with parents' colleagues and draw their conclusions. At this stage the students need to listen to their peers.

The social practice of 10 Days at Parent's Workplace saw 3,210 students of grades 9-10.

The students can use individual comprehensive career guidance support. As a result of summer social practices, the school forum was organised to present the best reports from all classes (chosen by the students themselves). Students' essays demonstrate the dynamics of their thought process, the change in their views and ideas about professions, attitudes towards parents and adults and society

The social practice of Two Weeks in the Village saw 9,844 participants.

This practice allows NIS students to develop their social competences and skills, individual social behaviour patterns, gain experience of social action and interaction, comprehension and appropriation of theoretical knowledge gained during the courses.

• A flash mob of dombrists

On 1 December, the Day of the First President of the Republic of Kazakhstan, the NIS students organised a flash mob - Uly Dala Muragerleri (Heirs of the Great Steppe) This traditional event gives a strong positive charge and introduces people to the Kazakh culture.

Young dombrists performed kyuis of the famomus composers such as Saryarka, Balbyrauyn, Aday by Kurmangazy, Alkissa by Tilendiyeva N., Erke Sylkym by Zheldibayeva A., Kerogly by Dauletkerey, Narkesken by Aubakirova M. and such folk kyuis as Tepen Kok, Nar Agashy and Kenes at different venues in all regions of Kazakhstan. In total, 1,100 dombrists took part in this event.

This flash mob allows people to feel the festive mood on the eve of the Day of the First President, and experience a sense of pride in the national heritage of the country. The creativity of our ancestors is our heritage, our history and culture, and our students are worthy successors of the works of our parents and grandparents.

• 30th anniversary of Independence of the Republic of Kazakhstan

The celebration of the 30th anniversary of Independence in Nazarbayev Intellectual schools strengthened the unity of the entire community and its consolidation around the values of Mangilik El. The objectives of the celebration were to demonstrate the achievements of the Republic of Kazakhstan over 30 years of Independence, to promote the national patriotic idea of Mangilik El and its values lying at the core of the consolidation of Kazakh society for the further successful development, strengthening of identity, unity and pride in our country.

C:\Users\Tulepbergenova_a.ptr\Downloads\WhatsApp Image 2021-12-14 at 12.14.49 (2).jpegC:\Users\Tulepbergenova_a.ptr\Downloads\WhatsApp Image 2021-12-14 at 12.14.49 (1).jpegThe central themes of December were the celebration of the Day of the First President and the 30th anniversary of Independence, during which "every citizen of Kazakhstan should understand the historical significance of the political activity of the First

President of the Republic of Kazakhstan – Elbasy, Nazarbayev N. A., feel personal involvement in what is happening in our country, and be imbued with the idea of Independence as the highest civic value".

As part of the celebration, the following events were held across all the Intellectual schools such as Peers of Independence, Leadership Lessons, Elbasy and Independence, Lessons of Independence for mainstream schools and partner schools (GeniusPintar National Gifted Centre (Malaysia, Bangi), Wolfert van Borselen Tweetalig (Netherlands, Rotterdam), meetings with famous people who have contributed to the national development.

- Forum of Leaders

On 9-10 December 2021, the Forum of Leaders dedicated to the 30th anniversary of Independence was held in Nazarbayev Intellectual school in Almaty under the slogan of "My responsibility is our future" that confirms one of the main principles of 22 NIS leaders – "Leader in a team, leader in school, leader in life".

Within two days, the forum was joined by well-known professionals from different fields and graduates. Victoria Shimanskaya, Doctor of Psychology, founder of SKILLFOLIO educational platform was among the invited guests.

The phenomenon of the independence generation, attitude to different cultural trends, priority occupations of the 21st century, free niches in global and Kazakh business, successful and failed startups, Japanese philosophy and other topics were analyzed at the session of the Forum of Leaders by Marketing Director of KPMG Central Asia, a guest Professor at George Washington University, Kosnazarov Daniyar.

There was an interesting conversation with Kim Kwangbum, Kim Dae-Young, top managers of Kazakhstani-Korean Medical Partners Korea Clinic, and Galymzhan Togizbayev, Doctor of Sciences in Medical Sciences about modern trends in world medicine. The Forum's special session provided NIS leaders with the opportunity to get useful guidance in choosing their future career.

• Parent University

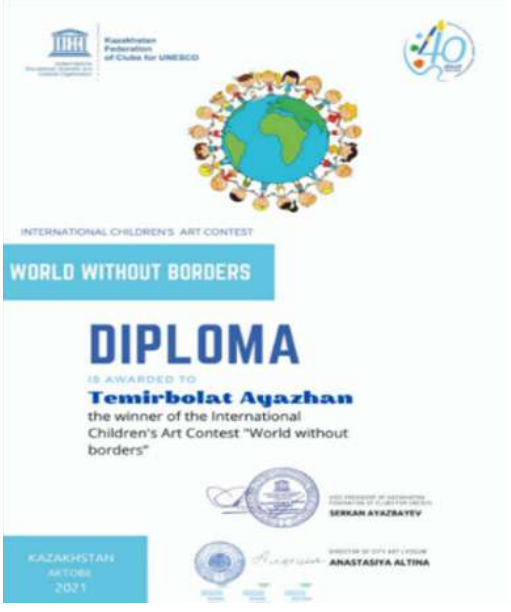
Working with parents is an integral part of the pastoral work in Intellectual schools. The main objectives of this work are to develop basic strategies and tactics for the interaction between the school and the family in the education of the student's personality; assist parents in resolving the contradictions of family education; improve the educational impact of the social environment; establish the connection between pedagogy and psychology. Teachers, curators, educators, psychologists, teachers of extended education of Intellectual schools are direct representatives of the educational process provided by the school.

The Parent University activity is a new direction in the work with parents for the second year. The practice of the Parent University shows favourable dynamics and many positive feedbacks from parents who participated in all online webinars with high involvement. Parents made a particular reference to the practices of the Skilfllio Junior training course by Victoria Shimanskaya. The application of these practices in everyday life has shown high efficiency in improving mutual understanding between parents and children, self-knowledge as a person, and the definition of goals.

As part of the Parent University project, in April 2021, a 30-day **online marathon** Happy Family - Successful Country was launched across the Nazarbayev Intellectual schools in order to promote the strengthening of cooperative relations in the family, expand students' ideas about family values by performing various joint tasks.

This event became one of the large-scale events within the celebration of the 30th anniversary of Independence of the Republic of Kazakhstan. The event was attended by 9th grade students of Nazarbayev Intellectual schools.

The award ceremony was held in conjunction with the International Family Day on 15 May 2021.



3.4. Supplementary education

Summer School 2021

During the period from 31 May to 11 June, Summer Schools and Schools of Thematic Consultations were held online and offline (depending on the regional epidemiological situation) across all the Intellectual schools for all interested NIS students.

Summer Schools are organised annually by Intellectual schools. They create the conditions that combine recreation and learning that fit the students' interests in academic, sports and creative activities. Summer School is a successful platform that allows students to develop their research skills and critical thinking and deepen their academic knowledge.

Students attend the Summer School on a voluntary basis. The content of the courses are formed upon the requests of the students and based on the workforce capacity of each

Intellectual school. The course programmes and activities are developed by the teachers (Kazakhstani and foreign teachers).

Summer School 2021 was held on a paid and unpaid basis for 20 Intellectual schools, International School of Nur-Sultan and mainstream schools across the country. More than 8,760 NIS students (58% of the total number of grades 1-11 students) and 889 mainstream school students attended Summer School on an unpaid basis. 39 students took a part in the Summer School on a paid basis.

Summer School courses:

– Olympiad preparation in general subjects;
– Programming, web design, robotics;
– STEM, 3D modeling, design thinking, entrepreneurship;
– In-depth study of Kazakh, English, Russian languages and literature;
– In-depth study of science and mathematics;
– Studying humanity subjects;
– Preparation for international exams and admission to universities;
– and many others.

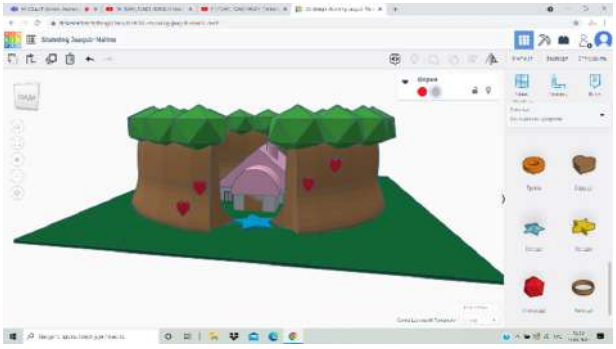
Examples of educational programmes of the Summer School-2021:

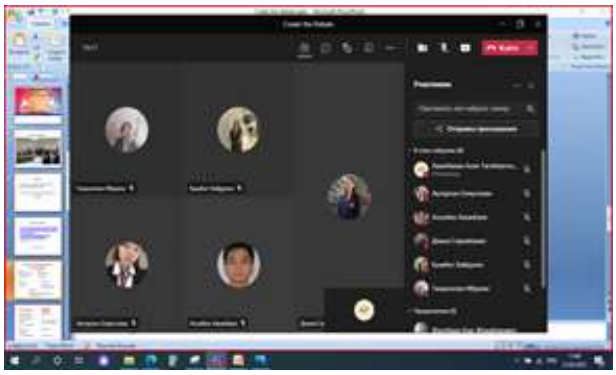
– Fundamentals of cosmonautics and rocket technology;
– Robotics;
– English language;
– Aesthetics of appearance;
– STEM;
– Architectural design;
– Web design and development;
– Fundamentals of medicine.

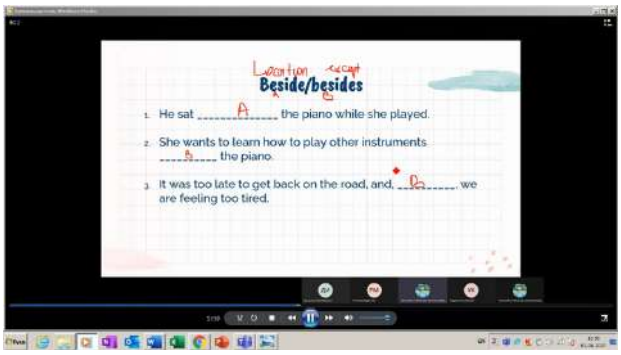
• The aim of the School of Thematic Consultations (hereinafter - STC) is as follows:

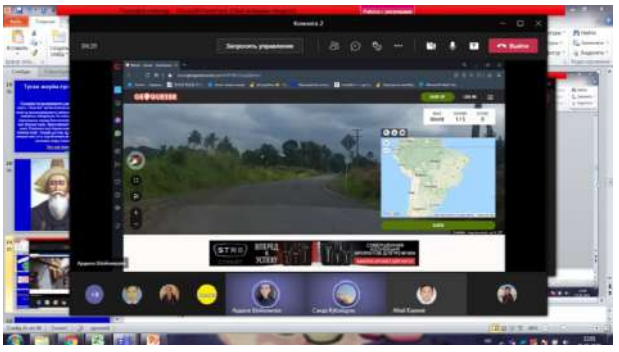
– to eliminate the gaps in the knowledge and skills of students due to distance learning;
– to develop the skills of conducting practical and laboratory works in physics, chemistry and biology (offline);
– to solve mathematical problems;
– to develop speaking skills in language subjects, etc.

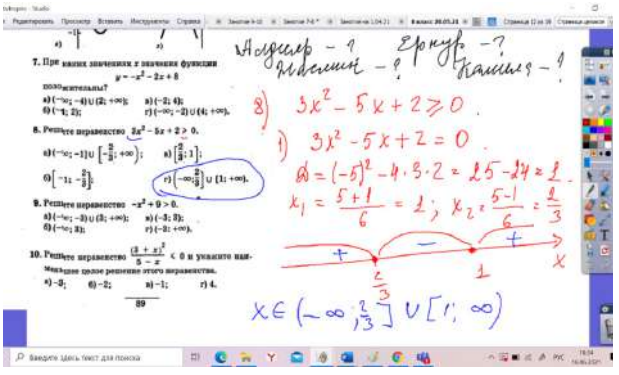
The STC was held across all Intellectual schools (except for NIS IB Nur-Sultan) in parallel with the Summer School attended by 7,245 NIS students.











• External Elective Courses

The external elective courses were designed to extend academic knowledge, develop creative thinking skills, research, communication and language skills of NIS students.

Due to the pandemic, the external elective courses were organised online during the summer holidays of 2020-2021 academic year.

Online external elective courses of Centre of Excellence in Education at the Massachusetts Institute of Technology (Cambridge, Massachusetts, USA)

In the period from 27 June to 7 August 2021, two NIS PhM and ChB students from Almaty took a part in online external electrive courses held by Centre of Excellence in Education at the Massachusetts Institute of Technology (Cambridge, Massachusetts, USA). The participants were selected by the NIS selection committee among the grade 11 students from 20 Intellectual schools with high academic performance in science and mathematics, and achievements in prestigious intellectual competitions: winners of national and international Olympiads and science competitions who take active participation in social and creative projects and are fluent in English.

In the Summer School, Centre provides the most talented high school students with STEM trainings on an annual basis and attracts eminent professors from leading US universities (Harvard University, Massachusetts Institute of Technology and others), and Nobel laureates. The Centre selects about 80 students from 6,000 candidates from all over the world.

Centre gives participants the opportunity to conduct original, cutting-edge research in the field of science, technology, engineering and mathematics (STEM) in state-of-the-art university laboratories, hospitals and corporate research Centres as part of full-time study in the cities of Boston and Cambridge, USA.

These courses give participants the opportunity to enroll in top-ranked universities in the world and the USA, including the Ivy League universities.

Online external elective courses of the Johns Hopkins Centre for Talented Youth (USA, Baltimore) for NIS students

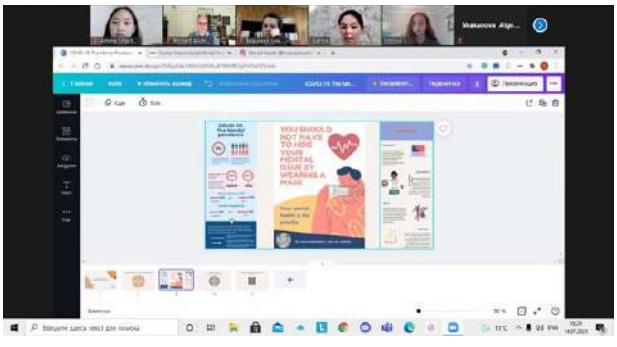
In the period from 21 June to 16 July 2021,

81 grades 9-11 NIS students attended external electric courses held by the Johns Hopkins Centre for Talented Youth (USA, Baltimore) (hereinafter - CTY).

CTY has been a world leader in the field of education for gifted people since 1979, and is a non-profit organisation dedicated to identifying and developing the talents of academically advanced students around the world. There are more than 165,000 CTY graduates worldwide, including the founders of Facebook and Google, Regeneron Science Talent Search winners, Rhodes Scholars and MacArthur Fellows.

Students have chosen and completed training in one of six organised elective CTY courses on the following topics:

1. Development of inclusive algorithms;
2. The occurrence of an emergency situation: health problems in the 21st century and in the future;
3. Disease modelling;
4. Statistical thinking in sports;
5. Psychology of memory;
6. Modern Cryptography;



Online external elective courses for NIS students conducted by the Sirius Lyceum Autonomous Non-Profit Educational Organisation, Russia, Sochi

In the period from 14 to 25 June 2021, 80 grades 7-10 NIS students who are willing to learn science, participate in Olympiads, project activity in the specified subjects and areas, and who are linking their future profession with these areas took a part in online elective courses held by Sirius Lyceum Autonomous Non-Profit Educational Organisation, Russia, Sochi.

Sirius Lyceum is an innovative multidisciplinary educational complex with a unique set of educational programmes. Sirius Lyceum is included in the Sirius Ecosystem with the Sirius Federal Educational Centre, Sirius Park of Arts and Science, the University of Science and Technology and the Innovative Science and Technology Centre that have been operating for several years. Teachers and mentors are educators and researchers of the Talent and Success Foundation in partnership with leading scientists and science popularizers, experts and authorities of scientific and technological universities, educational Centres and leading industry companies.

The elective courses were held on 4 additional educational programmes.

Olympiad programmes:

1. Olympiad Mathematics
2. Olympiad Physics
3. Project programmes:
4. Unity Basics (C#) + development of Augmented Reality (AR) applications
5. Basics of 3D modeling

The Olympiad programmes are designed to prepare grades 7-8 students for Olympiads in mathematics and physics; develop their fundamental skills in sciences; expand their knowledge of physics and mathematics beyond the school curriculum; and improve the outcomes of their participation in the Olympiads in 2021-2022 academic year.

The project programmes are designed to introduce students to the advanced technologies and best practices of modern production based on real-life examples; master practical competencies in the field of design and research activities in the form of engineering and IT projects - engineering prototypes or IT products (1 project for 6-7 students); and successfully take part in engineering projects competitions.

• Partner schools

The NIS Development Strategy 2030 has consolidated an indicator that requires NIS schools to establish partnering relationship with at least 5 schools.

As a member of the international communities of International Baccalaureate, the Council of International Schools (CIS), the World Association of Lesson Studies (WALS), the International Association for Educational Assessment (IAEA) and the European Association for Educational Assessment (AEA-Europe), etc., Nazarbayev Intellectual schools are cooperating with international partner schools.

The main goal of the Partner Schools project is to instill students with the skills of intercultural communication, global thinking and tolerance in three areas:

• Teaching students according to the educational programme of the partner school;

• Implementing joint research projects with the following publication of results in international scientific journals;

• Immersion in the culture, history and art of the host country.

As part of the exchange programme at partner schools, students increase their level of academic readiness, share their experience with other students, develop research and analytical skills, conduct experiments in modern laboratories, get acquainted with new approaches in self-study and self-discipline and immerse themselves in the language of instruction of the host school.

Due to the global pandemic in 2021, the events and cooperation were conducted in a distance format. 15 Intellectual schools held the classes for 15 Partner Schools from the USA, Great Britain, Malaysia, China, Armenia, Germany, South Korea, Uzbekistan, Russia, Tatarstan (Russian Federation), Turkey, Singapore dedicated to the 30th anniversary of Independence of the Republic of Kazakhstan. These events were attended by 450 NIS students and 225 foreign students.

The Lessons of Independence covered the following topics:

• The closure of the Semipalatinsk nuclear test site;

• The initiative on convening the

• Conference on Interaction and Confidence Building Measures in Asia (CICA);

- The establishment of the Eurasian Economic Union;
- The Law of the Republic of Kazakhstan On Peacekeeping Activities;
- Congress of Leaders of World and Traditional Religions;
- The Concept of the Foreign Policy of the Republic of Kazakhstan for 2020-2030 by the Decree of the President of the Republic of Kazakhstan, Tokayev K. K. dated 09.03.2020.

3.5. Student well-being

Psychology services

The reporting period saw the following activities and events held by the Department of Student Welfare and Psychological Services of Intellectual schools.

The following regulatory documents on protection and welfare of students have been developed, revised and approved in accordance with international standards and the national legislation of the Republic of Kazakhstan:

"Policy for protecting students of branches of "Nazarbayev Intellectual Schools" Autonomous Educational Organisation" (Minutes of the NIS Board No. 15 dated 16 April 2021);

"Policies for protecting from sexual exploitation, sexual abuse and discrimination on any grounds in "Nazarbayev Intellectual Schools" Autonomous Educational Organisation, its branches and subsidiaries" (Minutes of the NIS Board No. 9 dated March 4, 2021).

NIS implements a system for preventing difficulties in social and emotional development, behavioral disorders and learning through psychological programmes for students, parents and teachers.

In order to improve adaptation skills in a new environment, grade 7 students were provided team building trainings and attended the "I'm a Novice" programme. The students watched interactive presentations and received the brochures "Guide to NIS" and "Guide for NIS parents".

NIS grade 8 students who studied distantly for the first year also attended adaptation sessions on the topics "How to make new friends", "How to change habits and overcome learning difficulties", and a psychological Kaleidoscope game. Parents of grade 7 students took part in a distance learning course on strengthening child-parent relations "We are just a family" consisting of 7 sessions, 1901 families attended the course.

In accordance with sanitary requirements, from October to December 2021, Intellectual Schools of Kokshetau, Almaty ChB, Almaty PhM, Kyzylorda, Atyrau, Aktau, Taldykorgan implemented the programme "Strong Family" offline, 227 families participated in the programme. To understand the peculiarities, needs of students and differentiated teaching, teachers of Intellectual schools organised seminars on diagnosis and determination of the dominant learning style.

In accordance with sanitary requirements, from October to December 2021, Intellectual Schools of Kokshetau, Almaty ChB, Almaty PhM, Kyzylorda, Atyrau, Aktau, Taldykorgan implemented the programme "Strong Family" offline, 227 families participated in the programme. To understand the peculiarities, needs of students and differentiated teaching, teachers of Intellectual schools organised seminars on diagnosis and determination of the dominant learning style.

To prevent the destructive behaviour of adolescents, a series of seminars on the topic "Home/school without violence" was held for parents of 7-9 graders, newly accepted teachers, curators and school staff, to inform about the Policy for the protection of NIS students, about the causes, types, consequences, and responsibility for child abuse in families and schools.

Seminars and webinars on positive conflict resolution, discipline violations, challenging behaviour of adolescents, training in response skills and solving situations of bullying, cyberbullying, excessive use of the Internet were held to develop an understanding of teenagers' behaviour, improve communication skills, awareness of the barriers in parents' and teachers' behaviour, develop cooperation skills to overcome challenges. Webinars topics: "How to communicate with a teenager and have fun", "5 languages of love: how to understand a teenager", "Safe behavior on the Internet", "How to recognise bullying and cyberbullying".

A webinar of parental and pedagogical behaviour style on the topic "Stories for adults who did not have childhood" was held to ensure understanding the personal experience of negative childhood, the causes of impulsive aggressive behaviour.

In the framework of Preventing juvenile suicide programme, NIS held seminars for newly accepted teachers, school staff, parents of grades 8-9 students, as well as interactive classes for students on self-aid and peer assistance.

A series of trainings for teachers on the prevention and solution of occupational stress "How to restore interest in work and life" was conducted to reduce exam stress. 4015 students of grades 10 and 12 took part in the "Stay calm" programme (4 classes and a psychological game "Ticket No. 13").

In the reporting period, the number of requests for professional counseling in solving social and psychological difficulties increased. Quantitative data is provided in the table below:

Students	Parents	Teachers	Total consultations for the period
7 507	2 949	3 506	13 962

The requests mainly concerned with anxiety and uncertainty due to the pandemic, fear of getting sick and fear for the beloved, communication disorders due to quarantine measures, negative self-perceptions (something is wrong with me), rejection of others (something is wrong with them), auto-aggression, aggression against the rules during the return to schools, conflicts with parents, teachers, peers, violence at home, etc.

• Training in the framework of methodological support for psychologists of Intellectual schools, strengthening professional skills of psychosocial assessment of development, diagnostic interviews, counseling, team support for students with special educational needs covered the following issues:

Basics of psychological counseling at school;

Case management in education. Group supervision practice and prevention of professional burnout;

Gambling addiction in adolescence: diagnosis, prevention, correction;

Mental health and modern interventions of evidence-based practice of working with adolescents.

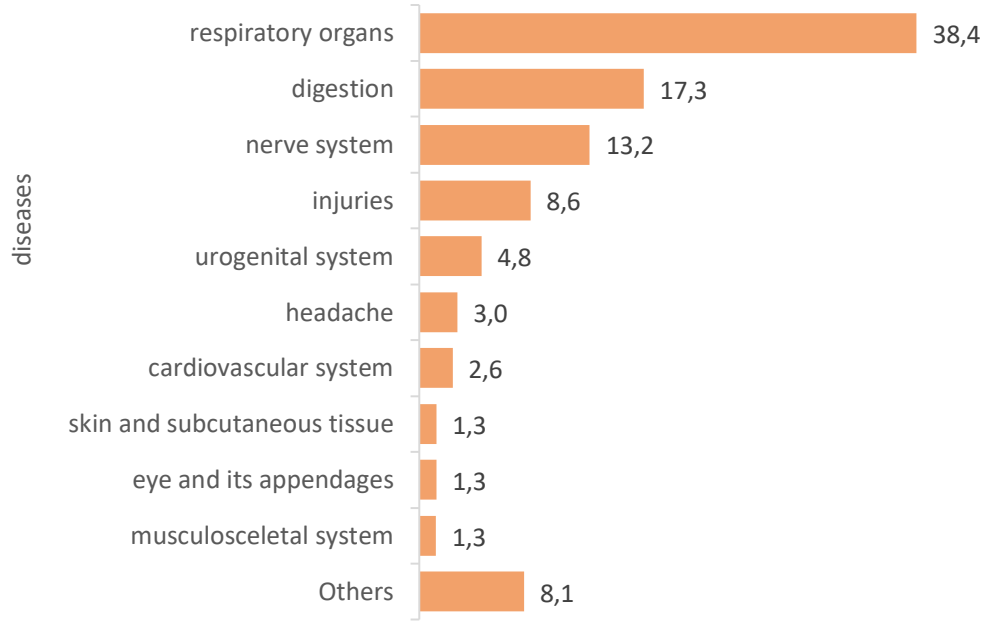
During the courses, psychologists were provided tools, resources, templates of protocols and support plans for adolescents building on the socio-psychological practice in the USA, Russia.

• In cooperation with the United Nations Children's Fund (UNICEF), under the programme "Early prevention system for students' drop out in Kazakhstan" NIS organised training on "Case management in education. Group supervision practice and prevention of professional burnout" (Module 1 - 18-21 October, 2021; Module 2 - 13 November - 2 December, 2021).

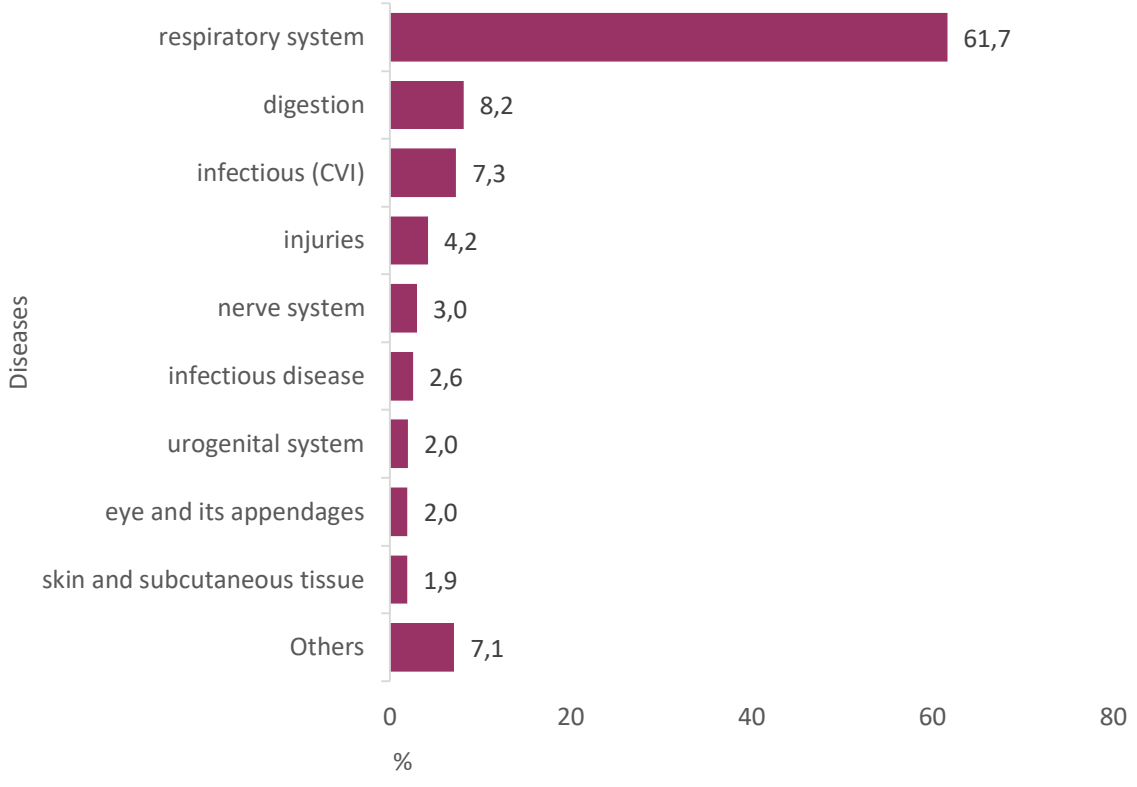
Work of Medical services

Visits to medical Centres of schools and disease rate of students

During 2021, there were more than 23 thousand visits to the medical Centres of Intellectual schools and in the International School of Nur-Sultan. The main reasons were complaints indicating diseases of the respiratory system, digestive system, nervous system, injuries and other complaints.



Visits to medical Centres of schools in the context of the main groups of diseases (2021, as a % of the amount)



Disease rate of school students in the context of the main groups of diseases (2021, as a % of the amount)

The analysis of disease rate on the basis of medical certificates provided by school students during the reporting period showed that the main groups of diseases are respiratory diseases (acute respiratory diseases, tonsillitis, rhinitis and others), digestive diseases, infectious diseases, including registered cases of COVID-19, injuries (bruises, sprains and others), diseases of the nervous system and other diseases.

• Preventive measures: medical examination and preventive vaccinations

During the first half of 2021, due to the quarantine measures to prevent the spread of coronavirus infection and the transition to distance and combined education of school students, 37% of the students underwent preventive medical examination. In the second half of 2021, 81% of age-appropriate students (more than 8.5 thousand students) passed medical examination. The rest of the students are scheduled to undergo a preventive examination in December 2021 and the first quarter of 2022.

In accordance with the National Calendar of Preventive Vaccinations, school students of relevant age are subject to vaccination against diphtheria, pertussis and tetanus and other infectious diseases, as well as tuberculin diagnostics.

Due to the distance and combined learning of students in the first half of 2021, vaccination of students in schools was carried out in the second half of 2021. Vaccination against diphtheria and tetanus covered more than 58% of age-appropriate students, tuberculosis diagnostics covered about 32% of students. It should be noted that one of the reasons for non-vaccination is the informed refusal of legal representatives of students.

• Awareness-building and explanatory work in schools

Health education and promotion of a healthy lifestyle is one of the priorities of medical service in schools. By the beginning of each school year, schools approve plans for health education and awareness-raising work among students, parents and school employees. Events organised in the framework of health education include lectures, conversations, trainings, workshops with healthcare system representatives, preparation and posting video materials, presentations on school monitors, sanitary bulletins.

The medical staff of Intellectual schools conducted activities to prevent respiratory viral diseases, eye diseases, musculoskeletal system disorders, to promote a healthy lifestyle, healthy diet, to inform on the benefits of vitamins, the harm and consequences of using tobacco, electronic cigarettes and vapes, psychoactive substances.

School employees and students were involved in monthly briefings on compliance with sanitary standards and measures to prevent the spread of coronavirus infection, as well as awareness-building work on the vaccines and the importance of immunization. Technical staff of schools is consistently instructed on compliance with the disinfection regime in schools, disinfection of air in school premises and compliance with safety measures.

In addition, school employees and students attended lectures on the prevention of child injuries, on first aid in emergency situations.

3.6. Career guidance

Nazarbayev Intellectual Schools undertake work on career guidance to provide psychological and professional support to students.

Psychological support for career guidance choices of grade 11 and 12 students is

implemented through elective courses "Psychotechnology of success: my plans for 5 years" (6 sessions for grade 11 students) and "Managing the future: how to easily and quickly adapt to changes" (5 sessions for grade 12 students). Parent meetings and webinars on the following topics were held for parents of graduates: "Exams ahead: how parents can help", "Parents' behaviour during the preparation of graduates for exams", "I am a parent of a graduate", "Modern graduate: questions and answers", "What you need to know and how to talk to a school graduate".

NIS, together with its strategic partner Council of International Schools (CIS), organised and held a "University Fair" in September 2021 to provide an opportunity for senior-secondary school students to meet with representatives of international universities, to get information about admission and training, and to learn about grants and scholarships.

The fair was held in an online format. It was virtually attended by the representatives of 66 universities of Great Britain, the USA, the Netherlands, Spain, China, Switzerland, Germany, Austria, Italy, etc. and by about 2000 students. During the fair, representatives of universities held 8 sessions on various topics, such as, "Career planning in an era of uncertainty", "Guidelines for admission to engineering programmes", "Tips for applying and entering universities in the USA", "How to write a motivation letter for universities in the UK", "Professions of the future and 21st century skills" and others.

Also, to provide methodological support and develop professional skills and competencies of career guidance consultants, NIS AEO held an annual seminar with the representatives of Nazarbayev University, JSC "Centre for International Programmes", Study Apply, BTS Education, British Council Kazakhstan and others.

This year, leading national and international universities, including partner universities – Nazarbayev University, KBTU, Almaty Management University, City University of Hong Kong, Hong Kong Polytechnic University, Tokyo International University and others – held career guidance meetings with students of grades 10-12.

Consultants for career guidance of students took part in the international online seminar on "Career Guidance: a model of international trends and innovations" organised by the National Institute of Education of the Ministry of Education of the Republic of Belarus, and in the annual seminar for career guidance at Nazarbayev University and the international online forum "CAREER FORUM-2021" organised by Career Management School (Russia).

Within the framework of the XII International Scientific and Practical Conference Nazarbayev Intellectual Schools AEO held a session on the topic "School and community: supporting students in achieving educational and career goals through career guidance", where speakers from Russia and Kazakhstan (N. Mikhailenko, A. Beisenbenov, A.Smirnov), told how family and school can help a teenager choose a profession, explained the importance of early diagnosis and vocational guidance of students and described the exciting and effective career guidance games.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RESEARCH PROJECTS

According to the NIS 2030 Development Strategy, research is the basis for the sustainable development of Intellectual schools. The main objective of this area is to conduct systematic and long-term applied research to inform management decision-making, development and implementation of innovations. The results of the research are used to improve the educational process, as well as to support general educational schools.

The work on increasing the research potential of the organisation is carried out in the following areas:

- coordination of research conducted in NIS and its branches;
- sharing the experience of Intellectual schools and exchange of lessons learned;
- NIS International Conference
- teachers' researches (see Chapter "Teachers");
- implementation of research in the state secondary education system

Coordination of research conducted in NIS and its branches;

The Research Department consistently monitors the research and surveys conducted in NIS and its branches. NIS initiated negotiations with international research institutes on cooperation in terms of a long-term study of the impact of education in Intellectual schools on the personal and professional success of graduates.

The Research Department also reviews and coordinates applications for conducting research in Intellectual schools. For instance, in 2021, they received 4 applications and approved two applications to conduct research in the field of content and language integrated learning (I. Babich, Deputy Director of Intellectual school of chemistry and biology in Pavlodar; Y. Baizhanov, teacher of Intellectual school of physics and mathematics in Aktobe).

Presenting the experience of Intellectual schools and sharing the lessons learned

- An online conference of Comparative and International Education Society (CIES 2021) was held in the period 25 April to 2 May, 2021. The theme of the conference was "Social Responsibility within Changing Contexts." This 65th Conference brought together researchers in international education from all over the world. The focuses of the conference were organised in two ways: by regions and by themes. The thematic plan included more than 30 areas, such as holistic education, cultural context of education, ecology and sustainable development, globalization and education, teacher education and teaching profession. Regions are represented by groups of Africa, East and South Asia, the Middle East, Latin America and, importantly, Eurasia.

An employee of NIS Research Department presented at this conference on 28 April "Behind the screen: the implementation of distance learning in Nazarbayev Intellectual schools" at the network session "Institutional Responses to COVID-19". He presented the results of studying the organisation and implementation of distance learning in 21 Intellectual schools according to the results of Term 4 of the 2019-2020 academic year.

- In September, NIS employees and teachers of Intellectual schools presented the results of their research at **European Conference of Educational Researchers (ECER 2021)**. The ECER conference on "Education and Society: expectations, prescriptions, reconciliations" was held online and brought together more than 2500 researchers from 75 countries. At the ERC 2021 Conference for emerging researchers and the main ECER 2021 conference, there were 740 sessions with 2300 presentations. 25 teachers of Intellectual schools of Pavlodar, Nur-Sultan (IB), Aktau, Aktobe, Kokshetau, Kyzylorda, Taraz and an employee of NIS Research Department took part in the conference. K.A. Tursunbayeva (NIS Department of Research) presented the survey results of opinions of Intellectual schools teachers, students and their parents about personalised education of gifted children. Teachers presented research projects on various topics to explain the peculiarities of teaching sciences, using the approach of content and language integrated learning, the development of global competencies and functional literacy of students. Teachers also presented their research on issues of teacher leadership, well-being and commitment to the organisation. This showed the practical value of developing

a research culture to improve teaching practice.

• In addition, in the reporting year, 5 CoE employees and 43 teachers of Intellectual schools in Uralsk, Nur-Sultan, Aktau, Aktobe, Shymkent PhM, Taldykorgan, and Taraz, presented the results of their research at the international **WALS (World Association of Lesson Study) Conference.** The theme of the conference was "Revisiting Lesson and Learning Studies: Accessibility, Quality, and Sustainability". The Conference was held online from 29 November to 4 December 2021. During the Conference, teachers presented the results of action research and experience in team planning and team teaching. Researchers-practitioners discussed aspects of teaching, the development of students' abilities through differentiated methods, the use of content and language integrated approach to teaching, the types of interaction of students in the classroom, distance learning, coaching and reflexive skills of the teacher.

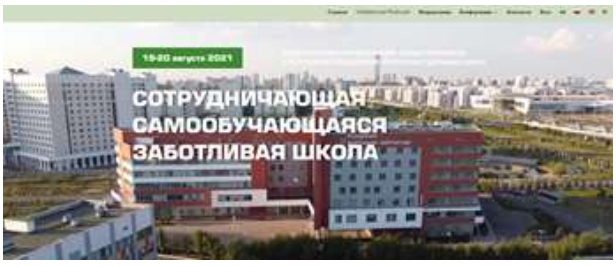
• In 2021, 65 NIS employees took part in a range of international and republican conferences. Thus, employees of Centre for Educational Programmes and Centre of Excellence spoke at forums and conferences organised by such leading universities of Kazakhstan as Sh. Ualikhanov Kokshetau University, K. Zhubanova Aktobe Regional University, L.N. Gumilyov Eurasian National University, etc. Also, NIS representatives held master classes and presented their reports at such international events as the All-Russian Scientific Conference with International Participation "Textbook as a tool for national and cultural self-determination of students", the August meeting of teachers of the Khanty-Mansi Autonomous Okrug (Yugra 2021), the international scientific forum "Nuclear Science and Technologies", the First KIX Conference on educational policy and innovation, the conference on new technologies in education "EdCrunch Glocal - Learning experience design" and many others.

• In August 2021, NIS took an active part in the Republican August Conference of teachers "Education and science are the keys to sustainable development of the country", the August conference for teachers of schools participating in the "Rural school" project, the August conference of teachers of Nazarbayev Intellectual schools "Cooperating, self-learning, caring school".

• In 2021, about 25% of teachers took part in the republican and international professional conferences, forums, competitions and Olympiads. 272 teachers took part in various international conferences, 166 teachers participated in republican conferences. 51 teachers took part in international professional Olympiads and competitions, 104 teachers participated in republican events.

• On 7-8 December, for the first time in Kazakhstan, Almaty hosted EdCrunch Glocal "Learning experience design" Conference, one of the world's largest conferences on new technologies in education. Speakers from local online studios in Moscow, Tel Aviv and Singapore also joined the event. NIS AEO co-organised the conference. The conference was attended by 900 school teachers and 5 directors of Intellectual schools. As speakers of the network session "Director's Laboratory: difficult, but interesting", they discussed the issues of digital transformation of learning environment, access to quality education in rural areas through social partnership, multilevel concept of Student Voice ideas, startup movement in schools.

• In 2021, August Conference of teachers of Nazarbayev Intellectual schools "Cooperating, self-learning, caring school" was for the first time held in a mixed format: offline at Nazarbayev Intellectual school of Physics and Mathematics in Nur-Sultan and online via MS Teams. It brought all teachers of NIS network and more than 3 000 participants and guests together. The conference materials are published on the website conferences.nis.edu.kz.



The report of the Chairperson of the NIS Board K.N. Shamshidinova says that in order to solve problems of the changing world and new challenges, it is crucial to create an environment designed to develop a child's personal qualities, his ability to cooperate, build human relationships, manage own emotions, take responsibility for own words and actions. These are the aims a cooperating, self-learning and caring school serves to.

Directors of NIS Centres reported in detail the changes to NIS-Programme, presented the results of revision the assessment of the development of learning, emphasised the importance of mutual learning and cooperation for the development of teachers, the need to improve the ICT skills of teachers for the organisation of a digital educational space.

Work in thematic groups of the online conference proved to be an effective network training of professional skills. Subject teachers have expanded their knowledge about personalised learning, the development of assessment tools, the formation of a favorable and safe school environment and other relevant topics.

The main feature was organisation of the "Safety Hour", which involved more than 4 000 employees of Intellectual schools.

"Panorama of successful practices" on the topic "New experience: what about the lesson?", was held during the August conference to present cases from the teaching experience of teachers in Intellectual schools.

Distance learning has become the main form of education in the past academic year, therefore the exchange of ideas on digital educational resources, lesson content, methodological support for teachers in online learning was very useful and effective for all participants.

An online vote was held to determine the best cases among the presentations (about 3 thousand people took part), taking into account the novelty of the practice for teachers, its relevance, readiness of the teacher to apply it in the classroom and recommend it to colleagues. The following winners were identified:

in the category "Digital educational resources":

1st place - Boris Zelenov, a computer science teacher, "Using an educational website as a pedagogical tool in the context of blended learning" (Uralsk);

2nd place - Umit Bolatkhan and Talshyn Tursybayeva, biology teachers, "Opportunities of the digital educational platform Mozaik Education" (Taldykorgan);

3rd place - Sagyndyk Amanzhol, a mathematics teacher, "Overview of the capabilities of the interactive and creative lesson designer Teacher Desmos"

(Ust-Kamenogorsk).

in the category "Assessment of students' academic achievements":

1st place - Aynash Zhannatova and Assel Sakhieva, chemistry teachers, Gulzada Kudabaeva, a biology teacher, "Application of Flipped classroom model in the context of distance learning of chemistry and biology" (Uralsk);

2nd place - Gulzhan Zhakupova, a teacher of Russian language and literature, "Project method as a student-Centreed learning technique" (Pavlodar);

3rd place - Nazym Karatayeva and Ainagul Bilyalova, physics teachers, "Development of student-Centreed learning through demand-based learning using Web 2.0 resources" (Pavlodar).

in the category "Equal to equal. Teacher Training":

1st place - Nursultan Zhakupov, a physics teacher, "YouTube channel Teacher Experience: millions of views or how we help teachers from all over the world to learn ICT" (Pavlodar);

2nd place - Valeriya Golovintseva, an English teacher, "Partner schools: the key to the development of global competence of students" (Pavlodar).

3rd place - Nurzhamal Ziyakhmetova, a biology teacher, "Organisation of practical work in biology using Pear Deck" (Uralsk);

In each category, during the voting, additional nominations were determined, who came just after the leaders:

In the nomination "Online organiser" – Meruert Koshkinbayeva, a computer science teacher, "Use of online interactive workbooks in teaching computer science" (NIS PhM Shymkent).

In the nomination "Cloud research" – Nazym Alykpashova, a GPPR teacher, Nurbolat Temirov, a history teacher, "Development of students" research skills in GPPR and KMW classrooms through online learning" (Pavlodar).

In the nomination "Mobile activity" on involving students in the distance learning process – Yulia Gassanova, a physics teacher, "Organisation of a STEM festival in the context of distance learning" (Nur-Sultan).

A special nomination "Mobile support" was awarded to a group of teachers Aidarbek Aitpukeshev, Gulnara Duskaziyeva, Gulzukhra Nurmukhanova, Sholpan Khairullina, Saule Bakytzhanova, Aliya Sergaliyeva for the case "Research culture of the teacher. The concept of teacher support" (Uralsk).

"Demonstrating successful practices" is an electronic hub of new ideas and interesting methods and made it available for teachers of the network. It brought the capacity of all NIS teaching community together.

Publication of scientific articles

NIS consistently work on increasing its recognition in the research environment: employees publish scientific articles based on their research findings. In 2021, nine scientific articles were published in journals with an impact factor. CPM employees published an article "Attitudes of course participants towards evaluation at the training courses of pedagogical staff" in the "Cypriot Journal of Educational Sciences" (Volume 16, Issue 4, August 2021) drawing on the results of studying the implementation of independent assessment in the framework of training courses for state school teachers.

As a result of joint work with professors of Nazarbayev University, CPM employees published an article in the journal "PLoS ONE" on a new application for psychometric analysis of the results of assessment procedures and AUTOPSYCH studies "An R Shiny tool for the reproducible Rasch analysis, differential item functioning, equating, and examination of group effects".

Senior manager of CoE A.S. Tanirbergenova published 2 articles:

1) "Effect of Complex Additive on Exothermic Kinetics and Hydration Stages of Cement Systems" in the journal "International Journal of GEOMATE";

2) "Pedagogical Technology: A Concrete Historical Approach" in the Applied Linguistics Research Journal.

CoE employees have also published their articles in such journals as "International research journal", "Journal for Educators, Teachers and Trainers", "Revista San Gregorio", "Current context of education and psychology in Europe and Asia", "Propósitos y Representaciones", "IOP Conference Series: Materials Science and Engineering."

Employees of NIS AEO and its branches actively published their works in republican and regional journals: "Bulletin of the L.N. Gumilyov Eurasian National University", "Ustaz", "Higher School of Kazakhstan", "Kazakhstan mektebi" (School of Kazakhstan), "Kazakhstannyn gylymy men omiri" (Science and Life of Kazakhstan), etc.

In addition, the website research.nis.edu.kz publish **quarterly digests** on topical issues of education and research. In 2021, digests discussed the following topics:

– Educational ecosystems in practice (history of development, main characteristics, successful world cases);

– Ecosystem leadership in education;

– Trends in preschool education and upbringing in the OECD and Kazakhstan: Implications of the OECD Starting Strong VI report;

– Successful policy in the field of preschool education and upbringing: 5 main directions of development;

– Review of the study of students' social and emotional skills, including the OECD report "Beyond Academic Learning: First Results from the Survey on Social and Emotional Skills";

Review of Volume II of the Teaching and Learning International Survey TALIS-2018 "Teachers and School Leaders as Valued Professionals".

• NIS continues to work on its image promotion and providing *free access to high-quality educational content through the Intellectual schools podcast "Intellectual Podcast".*

Darius Radkevicius, member of the Vilnius City Council, Education and Culture Committee, expert of the European Bank for Reconstruction and Development, shares his views on the role of school and community in a new reality. The speaker illustrates what essential elements of cognition are lost during distance learning: these are live student-teacher contact, communication with peers and many others. To conclude, Darius Radkevicius explains how schools and distance learning can co-exist in synergy in the future.

Another speaker of the podcast was Mr. Alun Williams, the founding principal of the Forsan British School in Alexandria, Egypt and a

fellow of the Royal Society of Arts, the Institute of Chartered Management and the College of Teachers.

In his video, Alun Williams introduces the concept of transability, which he defines as "the transfer of all knowledge and experience along with the passion for the learning" from a teacher to students so that they exceed their teacher in becoming successful. The concept is illustrated through teaching art in its diversity and multifacetedness.

• XII International Research-to-Practice Conference

On November 11-12, 2021, XII International Research-to-Practice Conference "Family, school and community: thinking and acting for a child" was held. This year, for the first time in 12 years, the conference was held online and brought together more than 8,000 participants in a virtual space.

On November 11-12, 2021, XII International Research-to-Practice Conference "Family, school and community: thinking and acting for a child" was held. This year, for the first time in 12 years, the conference was held online and brought together more than 8,000 participants in a virtual space.

Plenary session 1. Real-time transformation of education: Role of school and family.

• School in a changing world. Svetlana Ispussinova, Deputy Chairperson, Nazarbayev Intellectual Schools AEO, Kazakhstan

• What have we learned about school education since the pandemic? Isak Froumin, member of the Academic Council, Head of Higher School of Economics Institute of Education, Russia

• Child well-being and success: Opposites that need to attract. Andy Hargreaves, Professor, University of Ottawa and Boston College, Canada;

• Moving towards student-centric education in Singapore: Schools and society. Pak Tee Ng, professor at the Nanyang Technological University National Institute of Education, Singapore.

Plenary session 2 "Involving family and community in the development of creative skills of students".

• How to create schools of Joy and Light. Mikhail Kazinik, culture expert, musician and writer, Sweden

• Developing students' creativity: Collective efforts of teachers and parents. Yigal Rosen, project director of PISA 2021 Creative Thinking Assessment, postdoctoral fellow at Harvard University, USA

• Parents and teachers united to promote holistic learning and wellbeing of children. Arthur VAN DIESEN, UNICEF Representative in Kazakhstan;

• Utilizing mass-personalization to enable student success. Dale Johnson, director of Digital Innovation, Arizona State University, USA

Plenary session 3 "Innovational-educational culture as a factor of change in modern community".

• Family, education and society. Andreas Schleicher, Director for Education and Skills, OECD;

• Disruptive thinking in our classrooms: Preparing learners for their future. Eric Sheninger, Digital Leadership Expert, International Centre for Leadership in Education, USA

• Transformation, leadership and innovation in education. Kati Tiainen, director of K12 Education EMEA, Microsoft's Worldwide Education organization, Finland

• Working with digital footprint and data-centric practices in education. Andrey Komissarov, Head of «Data-based Development», 20.35 University, Russia

Plenary session 4 "How to raise a successful person? Collective efforts for student well-being".

• Excellence, equity and well-being in secondary school: Working together for student success. Mary Jean Gallagher, founder and CEO, M.J. Gallagher and Associates, Canada Gallagher and Associates, Education Advisor for a number of countries, Canada;

• Children's agency and the curriculum. Dominic Wyse, professor of Early Childhood and Primary Education, University College London Institute of Education, president of the British Educational Research Association, UK

• How the WOJ WAY Philosophy can empower the next generation. Esther Wojcicki, journalist, educator, «Godmother of Silicon Valley», USA

Centre of Excellence demonstrated successful projects that are implemented jointly with mainstream schools within the theme of the International Conference. Teachers from West Kazakhstan, North Kazakhstan, Atyrau, Kyzylorda and Karaganda oblasts joined the live broadcast to discuss topical issues such as creating a safe environment for children and the professional development of teachers.

Traditional sessions were held as a part of the exchange of experience among teacher-practitioners, who presented research on their practice. In 2021, the submission was handled out via the conference website. Applications were selected anonymously after a two-stage review by members of the Academic Committee, which included leading Kazakhstani education experts. As a result of more than 200 abstracts submitted to the Academic Committee, 58 presentations and 26 posters were accepted into the conference program. Thus, 39% of applications were positively reviewed.

Poster session

Due to the entry into virtual space, the approach to the organization of the traditional format of the poster session was revised. Teachers presented the results of their research in the Action Research and Lesson Study and shared their practical experience by recording a "live" presentation. The materials of the poster session can be found here https://conf.nis.edu.kz/postery /

After review of the content of the posters, their design and video support, the winners of the poster contest were chosen:

O. Belozerova (NIS PhM of Taraz). "How can the modeling method improve students' skills of coherent, creative speaking?";

L. Baytokayeva, U. Kadzhayeva, Sh. Samenova, (NIS ChB Aktau) "The results of school mentoring activities for 1 year";

M. Yesseyeva, T. Sultangalieva (NIS PhM Aktobe) "Formation of students' self-regulation skills in an online learning environment";

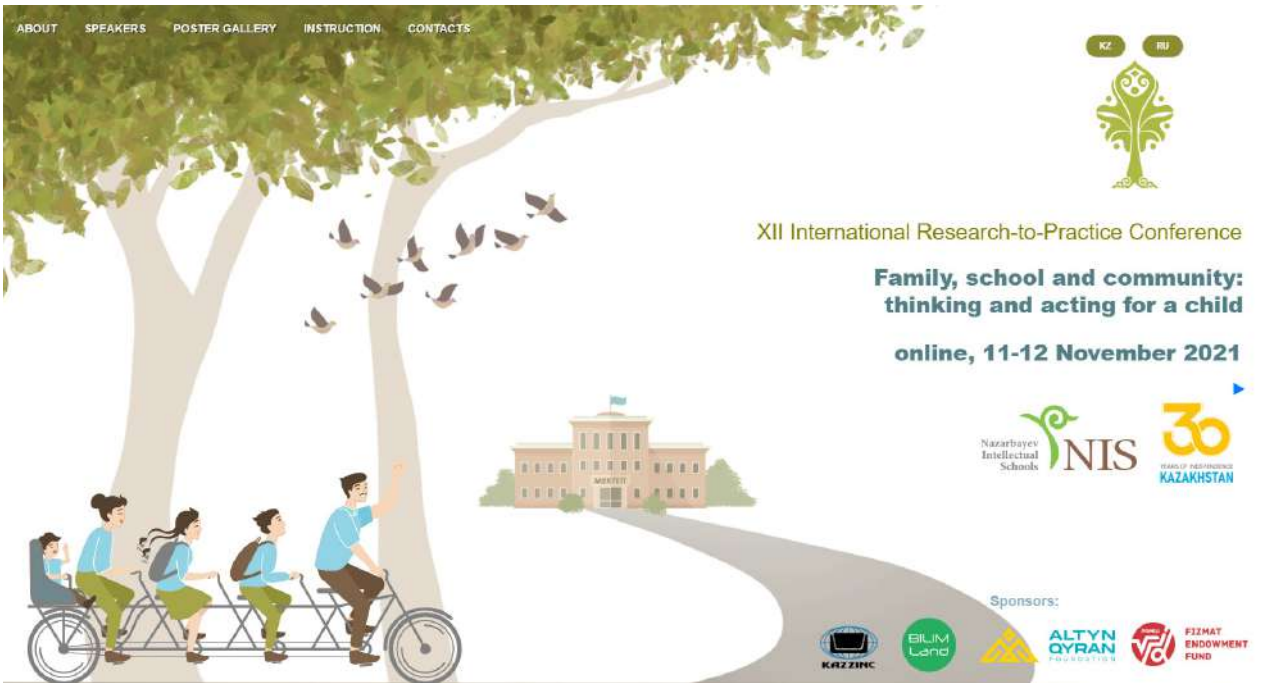
A. Bissengaliyeva, (NIS ChB Atyrau) "The use of the Socratic Method to develop students' critical thinking and language skills";

S. Zykrina (NIS PhM Kokshetau) "Using formative assessment methods and strategies to develop students' self-regulation skills."

The winners were awarded certificates and valuable prizes.

Conference materials and website

All Conference presentations can be found on the official website conf.nis.edu.kz. Conference website is the main information resource through which participants and guests can get acquainted with the application process, information about key speakers and directions of the Conference.



Conference in numbers:

16 countries and 3 international organizations are represented by international experts.
222 speakers made their presentations at the conference.
47 hours of useful content

15 TV studios and more than 50 technical support specialists provided the conference broadcast.

8264 people have logged in to the conference app.
11113 messages, including questions, are written in the chats.

4 plenary sessions,
16 master classes,
10 expert sessions,
9 sessions from practical teachers
3 symposia,
1 thematic platform.

Conference Feedback

97.4% of conference participants who took part in the final survey felt that the conference contributed to the intellectual development of the audience.

98.6% of respondents noted the scale and range of topics covered, as well as the diverse professional experience of the speakers.

97.5% of respondents rated networking opportunities when using the app.

Top 3 popular conference events (by the number of added to favorites and discussed in chats)

- Plenary session 1 "Real-time transformation of education: Role of school and family".
- Plenary session 3 "Innovational-educational culture as a factor of change in modern community".
- Mary Jean Gallagher's master class "Success, learning and well-being: Making it real in our secondary schools?" (master class)

Дина Аубакирова

НЗМ мектептері мемлекетіміздегі білімі ең мықты мектептердің тізгінін ұстап тұр. Мұндай ауқымды халықаралық іс шара - конференцияны жылдан жылға ұйымдастырып жүр екен. Биылғы жылғы конференцияның ерекшелігі- бүкіл ел ауқымындағы білім саласына қатысы бар әр бір азаматтың қатысуына мүмкіндік болды. Конференция әр түрлі маңызды тақырыптарды қамтыды. Қатысушылар саны, спикерлер саны да өте көп. Олардың әр қайсысы осы екі күндік конференцияда өздеріне пайдалы ақпараттар алып, өз білімін көтерді 👏👏

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Айнур Едильбаева

Назарбаев Зияткерлік мектептері ДББҰ ҮЛКЕН РАХМЕТ.Осы конференция аясында үлкен және құнды да озық іс-тәжірибелермен өз қоржынымды толтырып, кәсіби біліктілігімді жетілдіруге мотивация алып,маңызды ақпараттармен сусындадым. БАРЛЫҚ СПИКЕРЛЕРГЕ,ҰЙЫМДАСТЫРУШЫЛ/ ҮЛКЕН АЛҒЫС АЙТАМЫН. ШЕТ ЕЛДЕРДІҢ ТҮРЛІ ТӘЖІРИБЕЛЕРІН ӨЗ ОҚУШЫЛАРЫМЫЗДЫҢ ТҮРЛІ ЖАҒДАЙЫ МЕН ЕРЕКШЕЛІГІНЕ САЙ ҚОЛДАНУҒА МҮМКІНДІК АЛДЫҚ.21ғасыр дағдыларын оқушы бойына сіңіру арқылы бәсекеге қабілетті тұлға даярлауға үлкен көмек бердіңіздер

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Гульнар Оралбаева

Огромная благодарность организаторам конференции.Спикеры способствовали обновлению полученных ранее нами знаний в преподавании и обучении.Ведь многие из нас педагогов немного подзабыли некоторые технологии в условиях пандемии, не выезжая за пределы школы.Конференция была хорошей встряской мозгов и толчком к инновационным действиям.Спасибо! Было очень полезно и интересно!

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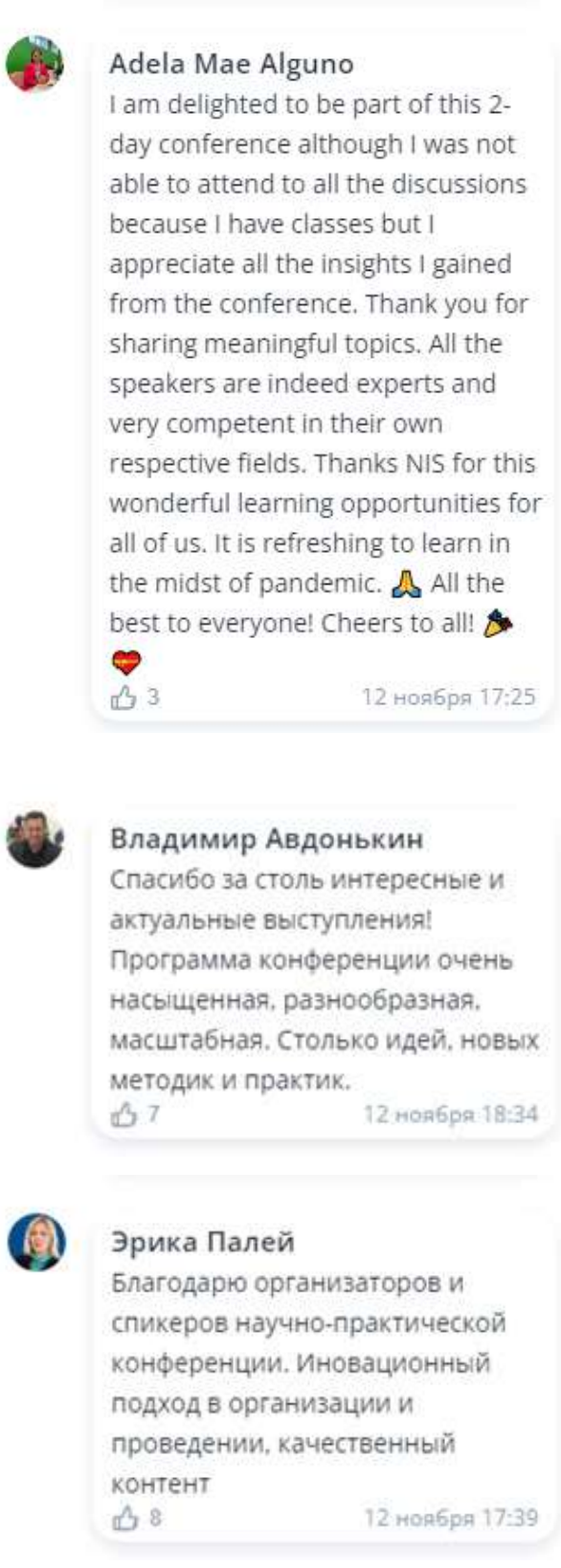


- Teacher research

The research has become a part of the daily practice of NIS teachers. The research approaches Lesson study and Action research as tools to improve pedagogical practice are implemented at the stages of setting professional development goals (PDG), an annual review of the achievement of PDG, included in the work of methodological communities and creative laboratories. The results of research projects are discussed at the school level in the poster sessions format, presented at city and regional educational conferences.

In order to exchange the results of the lesson and practice research in action conducted by teachers of Intellectual Schools, the annual online electronic magazine "Mugalim-zertteushi" (Teacher-researcher) continues to be published. Each year a particular school conducts a feedback analysis, selecting articles to develop the expertise of academic review. The first issue of the magazine was published in 2017 by NIS in Aktobe, 2018 - NIS in Taldykorgan, 2019 – NIS PhM in Shymkent, 2020 - NIS in Kostanay and in 2021 this challenge was taken by NIS in Taraz. This year, it included 40 articles in Kazakh, Russian and English with the results of teachers' research projects. It is important to note the prevalence of lesson studies by teachers of different subjects, as well as joint projects by teachers from different schools. For example:

"Enhancing student cognitive engagement in Biology online-lesson through the application of engagement strategies to the learning process." M. S. Mikhailova, E. I. Pashkova, E. L. Glebova, NIS ChB in Petropavlovsk;

"How to develop predictive and reasoning skills of 7th grade students using information sources and experiential data." S. S. Satieva, Zh. Zh. Zhakenova, M. B. Kozhakhmetov NIS PhM Kokshetau;

"Developing students' analytical skills in Grade 7 through the use of online tools in a distance learning environment" G. A. Arystanova, N. S. Zhumabayeva , G.M. Shamshidin NIS ChB in Almaty;

"Developing students' goal-setting and planning skills through the use of project-based learning in history classes", E.G. Bektassova Z. S. Kaliyeva NIS PhM Kokshetau;

"Developing high-order skills through the use of functional literacy tasks in Mathematics, Physics, and English classes." G.B. Akhmediyeva, V.V. Kan, D. K. Urazbekova, NIS PhM Taraz;

"Developing students' skills referring to the ability to collect and analyze information using Case Study approach", G. K. Yeszhanova, NIS PhM Taraz;

"How to improve students' practical skills competency in advanced level Biology and Physics using basic ideology of 'Process and Skills' Approach?", K. Small, D.Watson-Small, K. Lishanlayeva, D.N. Myrzayev, E. Kaskarbayev, NIS PhM Taraz;

"How does the use of the problem-based learning method affect the development of students' skills to draw conclusions and argue their ideas in biology classes?", Z.T. Shakhmetova, NIS PhM Kokshetau;

"Advantages and disadvantages of teaching world history lessons using WebQuest" G. Kh. Kulikenova, NIS ChB Almaty;

"How will the use of alternative A and AS level practice papers contribute to the data processing skills of Grade 11 "D" students?" K. V. Titova, NIS PhM Taldykorgan.

№1 (2017)
НИШ г.Актобе

№2 (2018)
НИШ
г.Талдыкоргана

№3 (2019)
НИШ ФМН
г.Шымкента

№4 (2020)
НИШ г.Костаная

№5 (2021)
НИШ г.Тараза

• International projects

OECD "The Future of Education and Skills: Education 2030" (CEP)

AEO continues to work on the OECD project "The Future of Education and Skills: Education 2030".

Work on a joint research project "Translation and Continuity of Educational Innovations in the Secondary Education System of Kazakhstan" continues. The research team includes scientists from the Faculty of Education of Cambridge University, Graduate School of Education of Nazarbayev University, as well as researchers of Nazarbayev Intellectual Schools.

The project examines the main aspects of the implementation of secondary education reform in Kazakhstan and is in its final stage. A book by Cambridge University Press is being prepared for publication this year.

• Implementing research into secondary education system of the country.

Nazarbayev Intellectual Schools Autonomous Educational Organisation together with the Akimat of Atyrau region developed a roadmap to assist in the development of secondary education in the region. As part of this project, a survey of 50 schools in the region was planned in order to identify the main problems in education. A survey of principals, teachers, students of Grades 8-11, and their parents was conducted from May 4 to 17, 2021. The response rate by participants was: 100% of principals (50 total), 77% of teachers (3,127 of 4,064), 79% of students in Grades 8-11 (7,966 of 10,060), and 63% of parents (6,370 of 10,060).

The purpose of the survey was to diagnose the strengths and weaknesses of secondary education organizations, as well as to identify their needs for improving the conditions and quality of educational services in the region. The survey included sections on school management, collegiate bodies' activities, organization of the educational process, scientific and methodological activities, implementation of inclusive and distance learning, and school environment. The results of the survey were presented in the 50-school survey report, details of which can be found in Part 2 of this report.


NIS

QUALITY ASSURANCE

5.1	5.2	5.3	5.4	5.5
Student performance monitoring	Criteria-based assessment system	External summative assessment in Grades 5, 10-12	Intellectual Schools accreditation	NIS-Programme and NIS-Certificate recognition

5.1. Student performance monitoring

– In 2021, monitoring NIS students' academic achievements was conducted in three areas:

– monitoring by language subjects;

– monitoring to identify gaps in student knowledge and skills;

– testing functional literacy of 14-year-old students.

Monitoring of language subjects allows to determine the level of NIS students' proficiency in the second (Kazakh, Russian) and third (English) languages; it is implemented in four types of language activities "Reading", "Listening", "Speaking", and "Writing".

According to the monitoring results, student performance in "Kazakh and Literature (L2)" and "Russian and Literature (L2)" is categorised into four levels ("Beginner", "Elementary", "Intermediate", and "Advanced").

Through the standard setting procedure held jointly with the Institute of Pedagogical Measurements Cito (Netherlands), 6 levels of proficiency - from A1 to C1 - have been determined for English in accordance with the CEFR descriptors (Common European Framework of Reference for Languages: learning, teaching, assessment).

Academic achievement levels are set through statistical processing and psychometric analysis using the Classical Test Theory (TIA Plus) and the Item Response Theory (OPLM).

In accordance with the Policy for Assessment of Students' Academic Achievements, in 2021, monitoring was implemented:

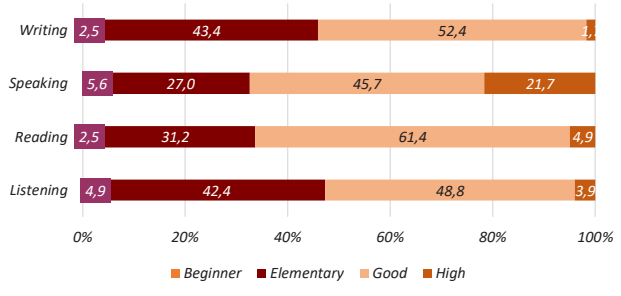
in April, for Grade 10 students of 18 Intellectual Schools, who at the time of the monitoring were studying full-time;

in September for Grade 7 students of 19 Intellectual Schools.

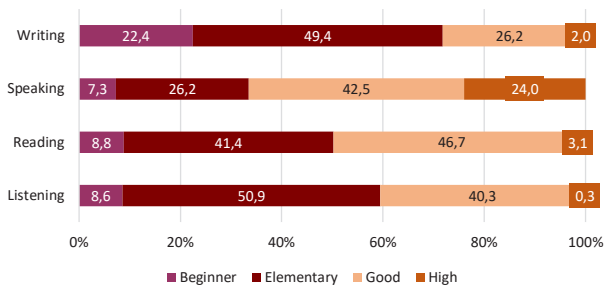
According to the results of the monitoring of 1,236 students of Grade 10, it can be noted that they do better in 'Speaking' and 'Reading' than in 'Writing' and 'Listening'.

Monitoring results of Grade 10 students, April 2021

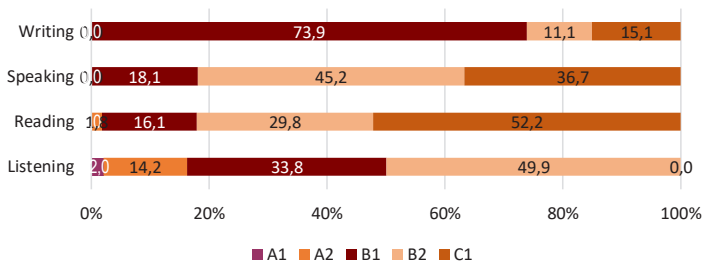
Kazakh language and literature L2



Russian language and literature L2



English

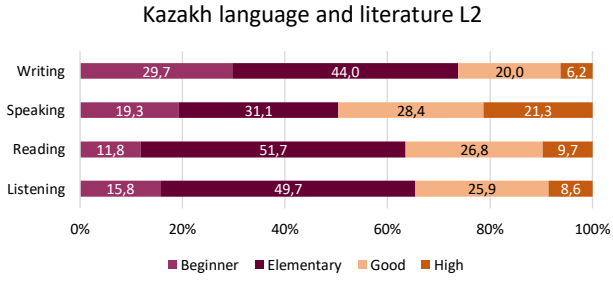


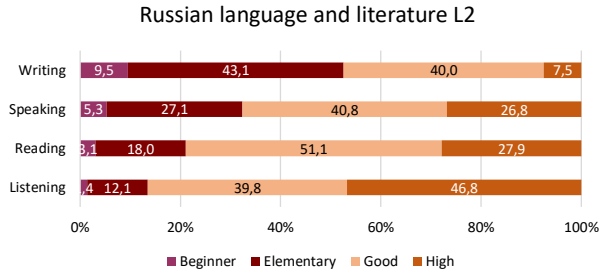
– An analysis of the monitoring results of Grade 7 students revealed good performance for the following skills:

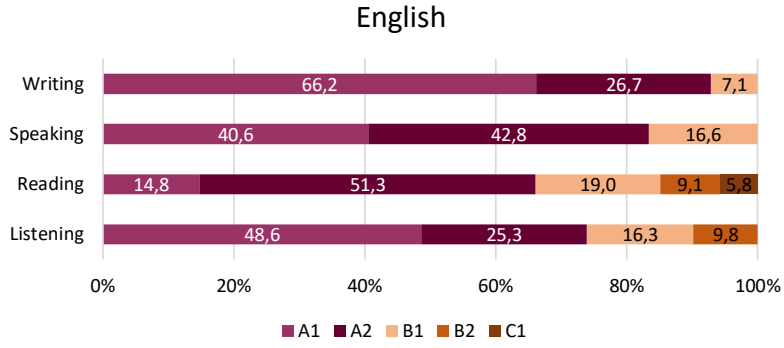
– "Speaking" - "Kazakh and Literature (L2)";

– "Speaking" - "Kazakh and Literature (L2)";

– "Speaking", "Reading" and "Listening" - "Russian and Literature (L2)";







Monitoring results of Grade 7 students, April 2021

To undertake further work, Intellectual Schools were provided with 30,280 detailed individual reports, 7,570 individual dynamic reports, 444 detailed reports by grades and grade levels.

- Monitoring to identify gaps in student knowledge and skills

In order to provide timely methodological support to teachers in the conditions of distance learning, the monitoring has been implemented since 2020 in order to identify gaps in student knowledge and skills.

In accordance with the Policy for the Assessment of Students' Academic Achievements in 2021, the monitoring was implemented in January for students of Grade 10, Grade 10 (PE M1) and Grade 12, and in September for students of Grades 7-12 of 19 Intellectual Schools, who at the time of the monitoring were studying in full-time format.

For the monitoring, 865 tasks on 12 subjects (January) and 1,615 tasks on 13 subjects (September) were prepared.

The monitoring results across subjects and grades (completion percentage), January

№	Subject	Grade 9, 10	Grade 10	Grade 12
1	Mathematics	53	53,1	58
2	Kazakhstan in the modern world	-	-	67
3	History of Kazakhstan	63	63,7	-
4	Kazakh language L1	72	76,3	84
5	Kazakh language and literature L2	76	66,3	-
6	Russian language L1	79	71,4	75
7	Russian language and literature L2	85	74,6	-
8	English	66	55	-
9	Physics	55	41,3	64
10	Biology	81	66	71
11	Chemistry	66	51	56
12	Computer science	60	65	69

The monitoring results across subjects and grades (completion percentage), September

№	Subject	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
1	Mathematics	63,2	47,9	34,3	33,6	43,6	41,5
2	Kazakhstan in the modern world	-	-	-	-	-	77,1
3	History of Kazakhstan	-	45,9	52,5	52,4	-	-
4	Kazakh language L1	-	71,1	65,7	76,2	77,7	52,4
5	Kazakh language and literature L2	-	49,1	49	46,5	46,5	-
6	Russian language L1	-	78,7	79,3	69	73,2	71,7
7	Russian language and literature L2	-	83,7	80,8	84,7	91,7	-
8	English	-	62	57,8	62,6	-	-
9	Physics	-	43,3	40,6	46,8	44,5	47,8
10	Biology	-	47,3	54,1	55,3	54,4	48
11	Chemistry	-	63	50,5	47	49,7	45,2
12	Computer science	-	61,4	46,7	49,8	68	60,3
13	Geography	-	43,3	39,4	45,9	37,9	59

Following the monitoring results, students' responses were statistically processed using the classical test theory (TIA Plus), which resulted in reports to students and all stakeholders: 122,329 detailed individual reports, 1,450 detailed reports by grades and levels.

• Test to assess functional literacy of 14-year-old students

To track and develop functional literacy of students in terms of knowledge and skill extrapolation to everyday life situations, NIS developed a test methodology for 14-year-old students in three areas: Mathematics, Science and Reading.

Testing was conducted twice for the same sample of students (2,747 students in April and 2,578 students in November); this allowed to examine the trends in functionality levels. In general, students' performance is decreasing, which may be the result of long-lasting distance learning.

The students' responses were statistically processed, the results were provided to the students and all stakeholders: 31,588 detailed individual reports, 236 detailed reports by grades and grade levels.

A series of webinars intended for teachers was held to explain the test structure, classification of assessment tools, and their application in teaching and learning; in addition, open access to an online simulator (http://assessment.cpi-nis.kz/) with tasks aimed at assessing functionality as well as the recommendations on their implementation were provided.

5.2. Criteria-based assessment system

Due to distance learning, criteria-based assessment of student performance was focused primarily on the mechanisms and tools for providing feedback to adjust education in a timely manner and maintain its quality. This experience became the basis for updating and revising formative and summative assessment procedures when resuming the full-time learning format, in particular:

– norms regulating assessment procedures within the framework of the Rules for Students' Educational Activity at Autonomous Educational Organisation Nazarbayev Intellectual Schools;

– content of assessment (summative assessment specifications, recommendations on end-of-section summative assessment split by subjects of Grades 2-12) on Assessment IS platform;

– thematic consulting platforms for assessment coordinators on MS Teams platform;

Methodological recommendations on assessment across subjects, classes and languages of instruction, summative assessment specifications for terms by subjects of Grades 5, 8 and 9 (35 documents) have been prepared and updated.

The results of a study on the implementation of distance learning conducted by the AEO in 2020 showed that according to the students, the main difficulty in organising summative assessment is allowing sufficient time to complete tasks. In this regard, to provide methodological assistance to teachers, an online calculator for defining the optimal time to complete summative assessment has been developed and made publicly available on Assessment IS platform.

5.3. External summative assessment in Grades 5, 10-12

Each year NIS graduates take an external summative assessment held by an independent international organization to receive the Certificate of Cambridge Assessment International Education (hereinafter - CAIE).

Examinations are conducted in compulsory and elective subjects in Kazakh, Russian and English, depending on the language of instruction. They are aimed at testing mathematical, scientific, intercultural, global, digital and reading literacy through the implementation of research projects, items of various levels of difficulty (standard and advanced), laboratory and practical work, essays, coursework, etc. by students.

Due to the restrictions associated with the organization and conduct of exams in the conditions of current sanitary and epidemiological standards, exams in Grades 5 and 11 were cancelled. Exams for Grades 10 and 12 of Intellectual Schools, which are the final grades of basic secondary and general

secondary education, were conducted by agreement and with due regard for the sanitary and epidemiological requirements of territorial departments.

AEO jointly with CAIE developed a model of external summative assessment for academic year 2020-2021, which provided approaches to adjusting the format and content of external summative assessment exams in Grades 10 and 12 based on AS and A-Level standards used by CAIE around the world. The practical component was excluded from examination papers on the subjects of Science strand due to the fact that students did not have full access to laboratories to conduct experiments during the academic year The adjustment of the format, content and requirements in Grades 10 and 12 was implemented with due regard for the need to maintain the validity, reliability and comparability of the results of external summative assessment without compromising examination standards. Particular attention was paid to preserving the level of curricula coverage in the content of examination materials as required by CAIE.

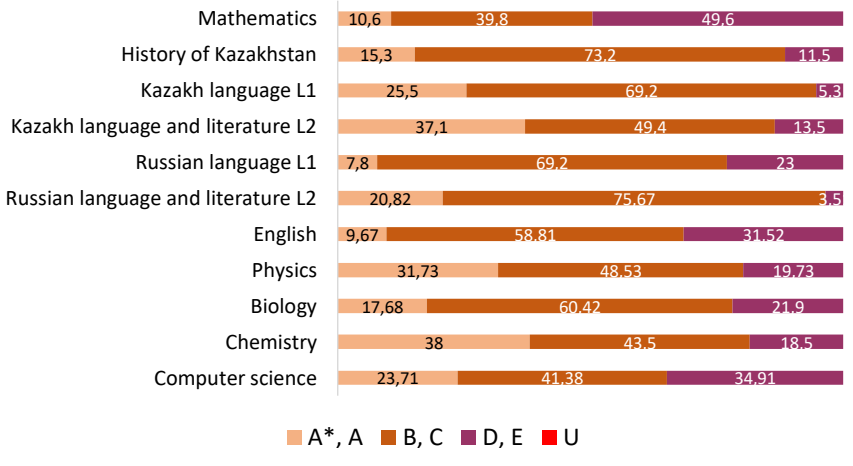
In general, the approach to the adjustment of exams agreed with the CAIE ensured equal rights for graduates in using the Grade 12 Completion Certificate for admission to higher educational institutions in the country and abroad.

In addition, taking into account the unstable epidemiological situation, CAIE developed a grading mechanism for external summative assessment and a further procedure for standardizing the results of students infected with coronavirus before or during the period of external summative assessment, students showing signs of an infectious disease until obtaining the PCR result as well as students isolated due to contact with patients diagnosed with coronavirus infection. It should be noted that all students got grades based on actual performance indicators; the grades met the Cambridge International 2020 AS and A-level Examination Standards for Grade 12 Students and NIS 2019 Standards for Grade 10 students.

The number of Grade 10 students was 1,561 and the number of Grade 12 students was 2,140. Thanks to measures aimed at ensuring compliance with sanitary and epidemiological standards before and during the external summative assessment, 96.7% of students sat exams in the traditional format. The same measures were maintained to ensure the operation of the Examination and Appeal Commissions in Nur-Sultan.

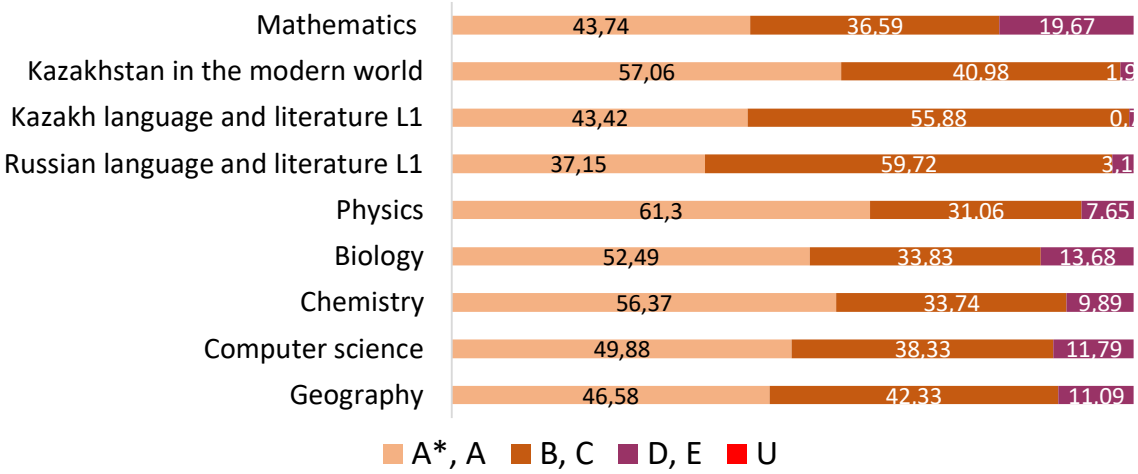
For the first time, the Centre for Pedagogical Measurements developed and tested E-marker, an online platform for checking and marking, which made it possible to check online the examination papers of Grade 10 students in the following subjects: "Mathematics", "Kazakh and Literature L2", "Russian and Literature L2" and "English".

An analysis of the Grade 10 student results of exams in terms of the quantity of grades A * and A revealed that the highest results were demonstrated in the following subjects: "Chemistry", "Kazakh and Literature (L2)" and "Physics".



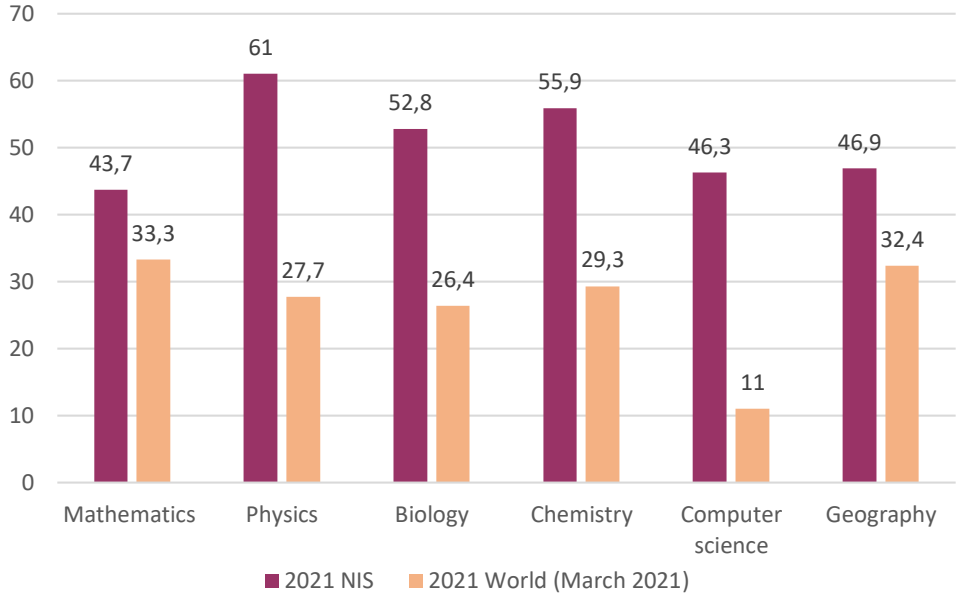
Grade 10 student results across subjects and aggregated grades in letters

An analysis of the results of exams of Grade 12 students in terms of the quantity of grades A * and A revealed that the highest results were demonstrated in the following subjects: "Physics", "Chemistry" and "Kazakhstan in the Modern World".



The results of Grade 12 students in the context of subjects and aggregated grades in letters

A comparative analysis of the results of exams of Grade 12 students in terms of the quantity of grades A* and A in Intellectual Schools and over the world.



Grade 12 student results across subjects and aggregated grades in letters as compared to other Intellectual Schools and schools the world

Following the results of the exams, students were provided with 9,696 detailed individual reports, 219 detailed reports across grades and grade levels, 20 collections of sample student answers, and 2 analytical reports.

5.4. Intellectual Schools Accreditation

In 2021 5 Nazarbayev Intellectual Schools of Almaty (2), Aktau, Petropavlovsk, Kostanay, developed and submitted the First Interim Report on school progress to the Council of International Schools (CIS) after receiving International Accreditation (FRPP) thereby completing this stage. This report is obligatory prior to the next cycle of international accreditation. Intellectual Schools received a positive feedback from CIS experts. Having analysed the evaluation reports, they approved the fact that NIS maintained high international

accreditation standards and continued to improve existing practice

Already from this year, Nazarbayev Intellectual Schools is getting ready for the second stage of international accreditation to confirm the status of an accredited school. The specifics of passing the second cycle of accreditation by the Intellectual Schools is that the external assessment procedures are conducted against updated CIS International Accreditation Protocol.

This CIS International Accreditation evaluation framework provides a structured methodology for reflection, evaluation, and development for a school community to deploy and ensure systematic and continuous school improvement. The framework is underpinned by four drivers, which reflect CIS vision and mission. These four drivers are how effectively a school:

– delivers its own stated purpose and direction;
– provides effective student learning;
– ensures and enhances student well-being; and
– develops global citizenship.

This CIS evaluation framework includes 9 domains, with 53 standards of which 29 are core standards. All core standards must be met or exceeded for a school to be accredited.

2 Nazarbayev Intellectual Schools in Nur-Sultan passed the second cycle of international accreditation to confirm its accredited school status. In April and September, evaluation visits in these schools were held online by CIS staff and independent experts. As a result of the visits, the schools were given the status of "Candidate for Re-Accreditation. Experts praised the schools and noted the following strengths:

Schools have developed a clear vision for high-quality instruction that reflects school practice.

The school's leadership is fully committed to the long-term, sustainable development of the school and to fostering its academic program within a continuous improvement.

The Board of Trustees fulfills one of their important roles in connecting the school to their community and providing opportunities for students, which is evident in the projects they have supported and will support in the future.

Teachers engage students in a learning process that awakens curiosity and supports students in all areas of their progression.

The teacher's activity inspires students to learn and gain new knowledge.

Students' perpective and feedback are encouraged, and self-expression is valued.

The International School of Nur-Sultan is in the process of receiving its initial international accreditation, with an evaluation visit conducted by CIS experts in April 2021. As a result of the visit, the school was granted "Candidate for Accreditation".

In order to build capacity, deepen knowledge of international education, and learn from international experiences, the staff of AEO and Intellectual Schools participated in a number of events organized by CIS:

Online training for international accreditation experts

In April 2021, five school leaders of Nazarbayev Intellectual Schools in Aktau, Taldykorgan, Kyzylorda, Kokshetau and Nur-Sultan MB participated in the training. Thus, today 25 AEO and Intellectual Schools staff are trained experts in international accreditation. 16 of the trained staff take an active participation in CIS team visits in Kazakhstan and abroad.

CIS Global Forum

CIS holds an annual CIS Global Forum on International Admission, which brings together more than 500 of the world's top universities from more than 20 countries. In 2021, the event was held online on a special platform. On November 16-18, 2021, the AEO staff participated as speakers at this Forum to expand recognition of the NIS-Programme and NIS Grade 12 Certificate internationally and gain access to a network of international foreign institutions of higher education. A wide range of participants of the Forum was introduced by the presentation "Nazarbayev Intellectual Schools (NIS): looking back to 2021, plans for next year 2022", which aroused interest among representatives of international universities. The format of the Forum also included presentations by leading educational organizations, schools, universities

and colleges of the world on recognition issues, and interactive virtual platforms to ensure interaction between schools and universities

Online seminar to introduce the updated CIS International Accreditation Protocol

A seminar with the participation of CIS experts Leo Thompson and Christopher Maggio was held in the online format from February 15 to 16, 2021 in order to provide methodological support to schools for international accreditation under the updated CIS Accreditation Protocol. CIS experts worked interactively with principals and staff of Intellectual Schools and International School of Nur-Sultan to discuss updated Accreditation Protocol, peculiarities of preparing a self-assessment report using the updated standards, the importance of data protection and cybersecurity for effective school operations, and much more.

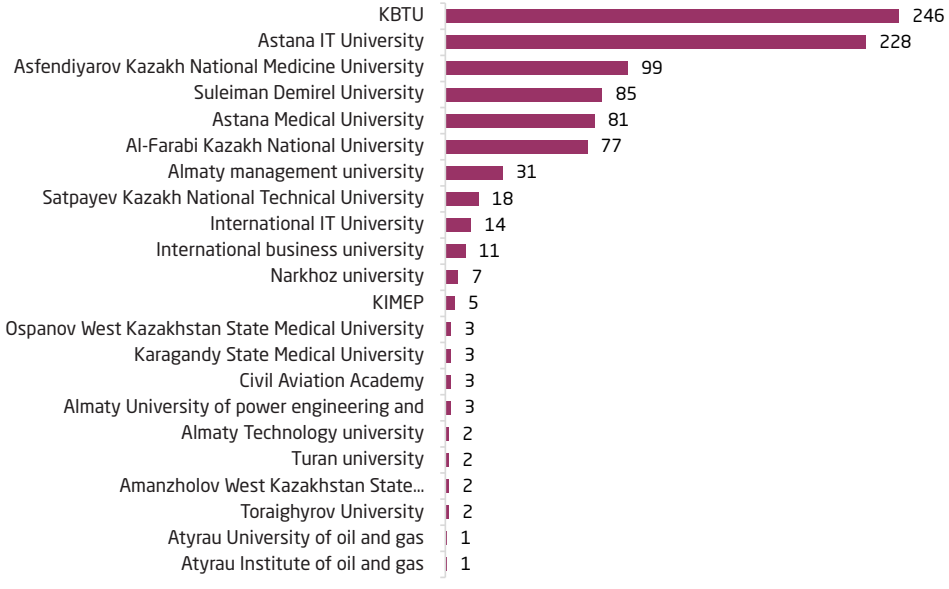
5.5. NIS-Programme and NIS-Certificate recognition

In the reporting year, we continued to work with universities and organizations to expand the recognition of the NIS Grade 12 Certificate and the NIS Programme qualification.

NIS AEO staff made presentations at international conferences of the Association for International Credential Evaluation TAICEP with the theme "NIS Programme recognition is an educational choice for competitive NIS graduates," National Association for College Admission Counseling NACAC with the report "Student transition from school to university: the case of Nazarbayev Intellectual Schools (Kazakhstan)," and the CIS Global Forum on International Admission and Guidance.

According to the results of the events held in 2021, two leading universities of the country Astana IT University and the Academy of Civil Aviation began to recognize the NIS Grade 12 Certificate. Thus, universities will accept NIS graduates to study reduced undergraduate programmes, by transferring credits (ECTS) in general education disciplines after admission to the university. The majority of graduates from the 2020-2021 academic year, as in previous years, enrolled in universities in the country that recognize their academic results.

NIS graduates enrolled in the country's higher education institutions that offer reduced undergraduate programmes and transfer credits, number



Since 2021, NIS Programme and the NIS Graduate Certificate is recognized by 16 more institutions of higher education in the UK, Singapore, the Netherlands and China, including the top QS-rated universities and those in the Russel Group (an elite association of Britain's top universities). Recognition by these universities allows NIS graduates to enroll immediately in the first year of a bachelor's degree, bypassing Foundation programs.

Great Britain

1. University of Edinburgh;
2. University of Manchester;
3. University of Westminster;
4. University College Dublin;
5. Royal Holloway University;
6. University of Exeter;
7. Queen Mary University of London;
8. University of Warwick;

Netherlands

9. University of Amsterdam;
10. Utrecht University College;
11. Erasmus University College;
12. Maastricht University;
13. Rotterdam School of Management, Erasmus University;

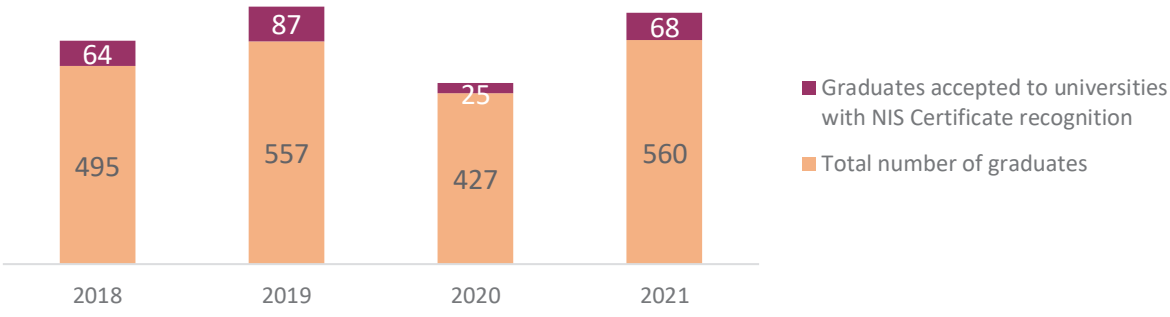
China

14. Lingnan University;
15. The Education University of Hong Kong;

Singapore

16. Nanyang Technological University, Singapore.

Number of NIS graduates enrolled in universities abroad and universities that recognize NIS Grade 12 Certificate, 2018-2021



In addition, under the recognition agreement, Tokyo International University and the Azerbaijan Diplomatic Academy for Intellectual School Graduates provided special full and partial grants to NIS graduates to study from 2022.

NIS Programme and NIS certificate are recognized by:

- ✓ 19 universities of Kazakhstan
- ✓ 26 international universities

STUDENTS' ACADEMIC ACHIEVEMENTS

6.1 Academic performance and quality of knowledge

6.2 International and national Olympiads, contests, conferences and research work

6.3 International examinations results

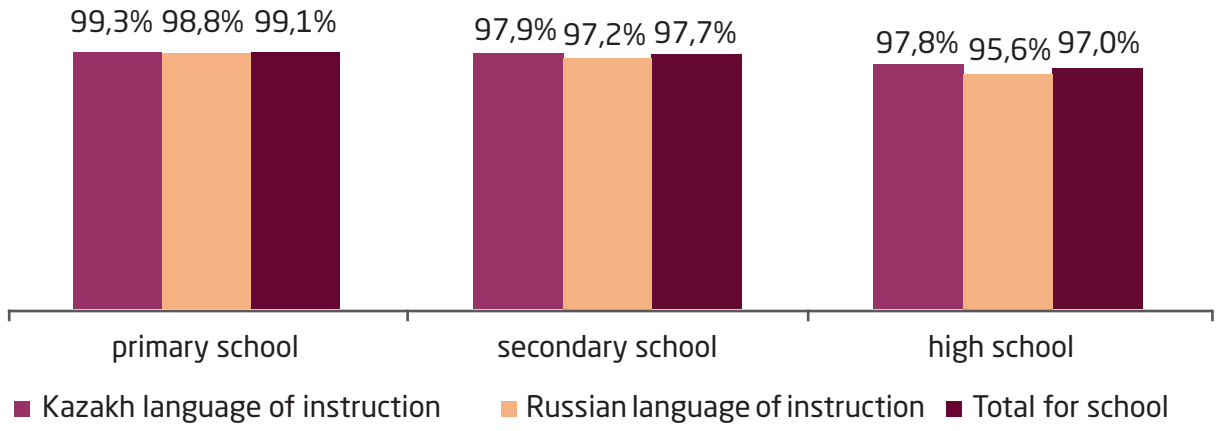
6.4 University admissions

6.1. Academic performance and quality of knowledge

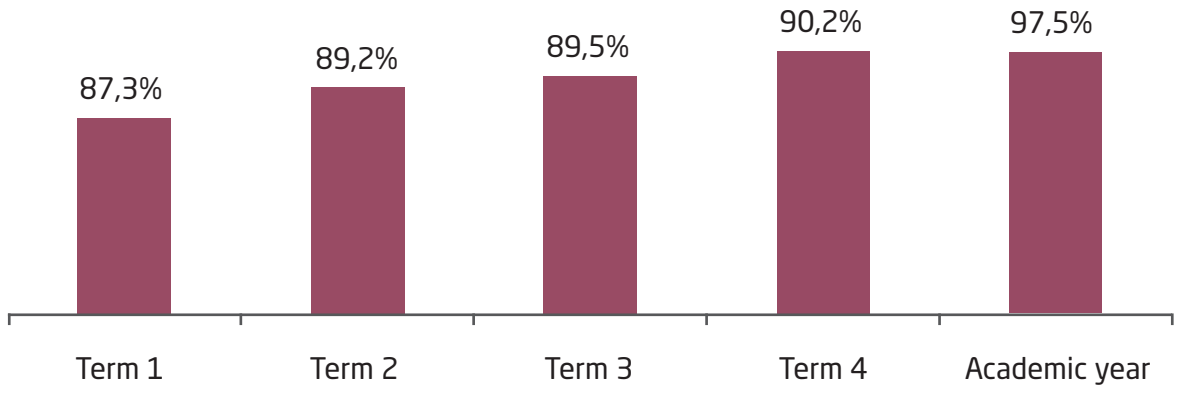
During the 2020-2021 academic year, 15,256 students studied in Intellectual Schools, of which 9,573 (62.7%) with Kazakh as the language of instruction and 5,683 (37.3%) with Russian as the language of instruction.

At the end of the academic year, students' academic performance was 100% and the quality of knowledge was 97.5%. From the perspective of learning stages, the quality of knowledge among students with Kazakh and Russian languages of instruction is consistent to the established strategic indicators (primary school – 99.1%, secondary school – 97.7%, high school – 13%).

The quality of NIS student knowledge across schools in the context of learning stages (2020-2021 academic year), %



In the context of terms, there is a positive dynamic of indicators of the quality of knowledge of students of Intellectual Schools (growth by 2.9%)



The quality of knowledge of students of Intellectual schools in the context of terms (academic year 2020-2021), %

– In academic year 2020-2021:

– 296 out of 390 Grade 10 students (75.9%) were awarded certificates of secondary education with honours;

– 190 out of 192 Grade 12 students (99%) were awarded high school diplomas with honours;

– 85 Grade 12 students were awarded 'Altyn Belgi' certificates.

6.2. International and national Olympiads, contests, conferences and research work

One of the indicators of the quality of education is the competitiveness of the students in Olympiads, contests, and competitions of different levels.

• Organization of network training meetings

Three times a year, Nazarbayev Intellectual Schools holds network training meetings for students of Grades 7-12 to prepare for the Olympiads. Teachers of intellectual schools, NIS graduates, winners of international competitions in different years are involved as coaches. In 2021, online training meetings were held on the MS Teams and Zoom.

The main objectives of the training meetings:

1. develop and deepen student knowledge and skills;
2. conduct educational and psychological preparation of students for intellectual competitions;
3. increase the effectiveness of participation in intellectual competitions;
4. interact with the best national and foreign teachers and scientists invited to the training meeting as coaches;
5. identify high-ability and high potential students;
6. get a student rating, recommendations of trainers for further preparation, taking into account the gaps.

Training meetings were also held for NIS teachers, where teachers were introduced to the methods of preparing students for the Olympiads, as well as psychological and pedagogical activities and algorithms for solving complex problems. In 2021, training meetings were held in the webinar format on the MS Teams for two weeks: the first week webinars were held by NIS teachers and national experts, the second week - by teachers of the Lyceum Sirius, Sochi, Russia. The main requirement for coaches is to have extensive experience in preparing students for subject olympiads of national and international levels.

• Organization of network Olympiads and competitions of Intellectual schools

From February 22 to March 3, 2021, NIS hosted network Olympiad in general education subjects. The network Olympiad is the third stage of the annual Republican Olympiad in general education subjects. 690 students of Grades 9-12 from all of the country's intellectual schools participated in the network Olympiad in 15 subjects.

The authoritative jury of the network Olympiad included NIS teachers, NIS graduates, winners of international Olympiads in different years, students of the top universities in the world and the country, faculty of national universities.

According to the results of the Olympiad 216 students won prizes: 1st place - 40 students, 2nd place - 66 students, 3rd place - 110 students

The Nazarbayev Intellectual School of Physics and Mathematics in Almaty was recognized as the absolute leader of the team competition in the subjects of natural-mathematical and social and humanitarian areas.

From November 1 to 6, 2021 a network competition of scientific projects was organized among NIS students. The network competition is one of the stages of the Republican Scientific Project competition.

The competition was held on the Microsoft Teams. More than 300 students from all the Intellectual schools of the country presented 264 projects in 4 areas of science: "Scientific and technological progress as a key element in the economic growth," "Mathematical modeling of economic and social processes," "Healthy environment is a basis for the implementation of the strategy "Kazakhstan - 2050", "Historical monuments of Kazakhstan and Prospective Tourist Routes. Project-based research activities are a mandatory component of the educational activities of Nazarbayev Intellectual Schools, therefore holding a network competition of research projects has become a tradition, and participation in it a valuable experience for young researchers

According to the results of the competition 108 projects of students won prizes: 1st place - 23 projects, 2nd place - 32 projects, 3rd place - 53 projects.

In the team competition, the Nazarbayev Intellectual School of Physics and Mathematics in Taraz was named the best team.

• Number of prize-winners from the total number of NIS participants in 2021 was 75.6%.

Olympiads		Scientific Competitions and Innovation Contests		Total		
KAZ	INT	KA	INT	KAZ	INT	**Total**
239	350	211	269	450	619	1 069

– Every year the number of NIS students included in the national team of the Republic of Kazakhstan increases. They participate in such prestigious international competitions as:
– International Mathematical Olympiad (IMO),
– Balkan Mathematical Olympiad (BMO),
– International Chemistry Olympiad (ICHO),
– International Geography Olympiad (IGEO),
– International Olympiad of schoolchildren "Tuimaada",
– Junior Balkan Mathematical Olympiad (JBMO),
– Mendeleev Chemistry Olympiad,
– International Olympiad in Informatics (IOI),
– International Biology Olympiad (IBO),
– Asian Physics Olympiad (APhO)
– International Physics Olympiad (IPHO),
– China Western Mathematical Olympiad,
– European Geography Olympiad (EGEO).

• **Highlights of the Olympiad movement in Intellectual Schools in 2021:**

Nazarbayev Intellectual Schools showed the following results in the team competition:

✓ **the best Olympic team** according to the results of the Republican Olympiad in general subjects;

✓ **1st place in the ranking for the largest number of gold medals** at the Republican contest of scientific projects;

✓ **1st place in the ranking for the largest number of prizes** by the results of the republican junior olympiad in subjects of natural-mathematical direction;

✓ **1st place in the ranking for the largest number of prizes** by the results of the Presidential Olympiad in subjects of the natural-mathematical direction.

• Students of Nazarbayev Intellectual Schools of Aktobe and Shymkent (ChB) Rustam Valiyev and Yerkebulan Tazabek were awarded gold and silver medals at the prestigious International Geography Olympiad (iGeo) in 2021 for the first time in the history of independent Kazakhstan.

Assylbek Olzhabayev, a 2021 graduate of the Nazarbayev Intellectual School of Physics and Mathematics in Almaty, multiple prize-winner of international and republican olympiads in Mathematics,

In 2021 Assylbek won the bronze medal of the International Mathematical Olympiad (IMO), St. Petersburg, Russia, 2021.

In 2021, for the first time, Zhautykov Oly mpiad in Mathematics, Physics and Computer Science was held online The NIS was presented by two teams: the team of Intellectual Schools, which included students from four cities - Pavlodar, Taldykorgan, Karaganda and Nur-Sultan, and a team from the Almaty School of Physics and Mathematics. Asylbek became the holder of a gold medal and 1st degree diploma.

• In the nomination "Best Olympic School-2021" by the results of the Republican Olympiad in general subjects received prizes for the following Intellectual Schools:

1st place of NIS PhM Almaty,
2nd place of NIS ChB Pavlodar,
3rd place of the NIS PhM Aktobe,
3rd place of the NIS ChB Karaganda,
3rd place of the NIS ChB Shymkent.

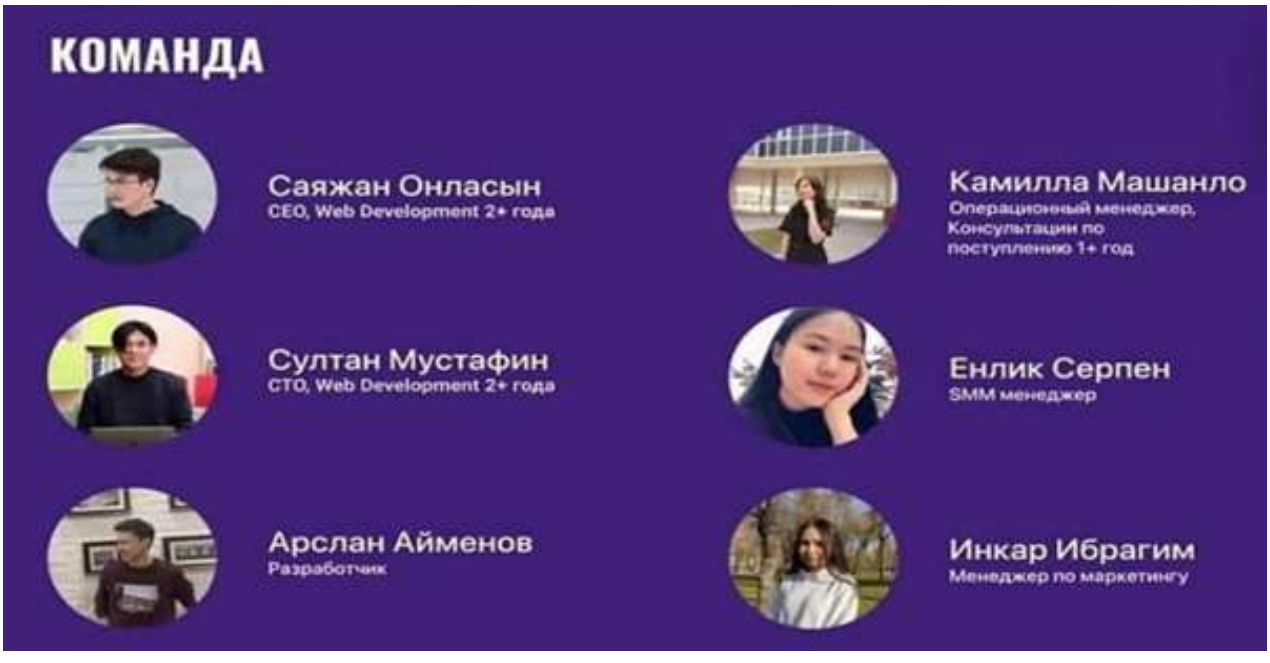
• Elementary school students of the International School of Nur-Sultan and Nazarbayev Intellectual School of Physics and Mathematics in Kokshetau took 2nd and 3rd places in the team event of the national tournament of young mathematicians "Bastau".

• In the nomination "Best Olympic School-2021" by the results of the Presidential Olympiad on the subjects of natural-mathematical direction Nazarbayev Intellectual Schools of Physics and Mathematics in Aktobe and Nur-Sultan took 2nd and 3rd place, respectively.

NIS team success

• The best startup team of Nazarbayev Intellectual School of Physics and Mathematics in Taraz by the results of 2021 year, the owner of the startup grant of 4,736,000 tenge:

A team of NIS in Taraz won $2,500 at the central asian startup competition of Techstars StartUp Weekend , March 2021.



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A team of NIS in Taraz won $2,500 at the central asian startup competition of Techstars StartUp Weekend , March 2021.

3. The NIS Taraz startup team joined the ranks of the winners of the HackNU IT Hackathon, Nazarbayev University, March 2021

NIS PhM Taraz startup team rank among the winners of the traditional HackNU hackathon, organized by Nazarbayev University. Team members Sultan Mustafin, Azat Kazhimukhan and Sayazhan Onlasyn presented their project solution to BTS Digital for their Aitu platform, took third place and received a prize of 100,000 tenge.

HackNU hackathon participants solved business problems of major IT companies: Google, BTS Digital, Facebook and Microsoft. The NIS Taraz startup team spent 36 hours of uninterrupted programming to develop a mobile social application, Cedra, which integrates with the Aitu app and allows users to exchange messages directly within the messenger.

4. Winning the annual Techstars StartUp Weekend, March 12, 2021

NIS Taraz team consisting of Sayazhan Onlasyn, Sultan Mustafin, Inkar Ibrahim, Kamilla Mashanlo, Enlik Serpen, Arslan Aimenov, Daniyar Egeubay, Azat Kazhimukhan, Akbota Keneshan, Anel Aitmuratova, the startup team of the NIS PhM

Taraz became the winners of a $1000 grant for project development. Startup project UnApp Space became the winner of the annual Techstars StartUp Weekend, 12 March 2021. UnApp Space is an automated preparation platform for admission to foreign universities. Winning the contest is another step on our way to forming a major EdTech company in the Kazakhstani market."

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6. Winners of the online Hackathon </ beCoder> 2021, April 2021

Startup team consisting of Sayazhan Onlasyn, Sultan Mustafin, Daniyar Egeubay, Azat Kazhymukhan, NIS PhM Taraz, winners of a grant of 20,000 Russian rubles (120,000 tenge) for the business project in the online hackathon "Hackathon </beCoder>" of St. Petersburg Polytechnic University, April 2021. At the international Hackathon, students received a business case and for 36 hours were programming a model of the case and competing with university students. One of the largest partners of the project, IPONWEB, offered the Front-End direction: "JavaScript and TypeScript: Introduction to Cloud Functions and Reactive Programming in RxJS + Angular".

7. Winners of the Republican School Entrepreneurship Championship ENACTUS KAZAKHSTAN, June 21, 2021.

Startup team consisting of Sayazhan Onlasyn, Sultan Mustafin, Azat Kazhymukhan, NIS PhM Taraz, winners of Grand Prix and a grant of 1 000 000 tenge for the startup project "Crepiks Academy", an interactive platform for teaching programming in three languages, II National championship of school entrepreneurship Enactus Kazakhstan National Expo 2021, founder - KMF, microfinance organization in Kazakhstan, June 21 2021.

8. Republican social problem-solving hackathon supported by Girls Power Foundation and National Alumni, October 2021

Startup team consisting of Kamilla Mashanlo, Inkar Ibrahim, Inju-Marzhan Oralbek, Aruzhan Zhaksylyk, NIS PhM Taraz, winners of grant of 100 000 tenge for startup project team, Republican hackathon on social problems solving with support of Girls Power Foundation and National Alumni, October 2021. At the end of the Design Thinking course on October 9, 2021, the team participated in an offline hackathon on social problem solving. According to the results of the hackathon, the NIS Power AIKI Team took third place and received funding of 100,000 tg to implement their idea.

9. The startup team of the NIS PhM Taraz became second at the national contest of students' digital projects "Live on the Bright Side!" within the framework of the National Enactus Cup, November 2021. For the first time, the NIS Taraz team of Kamilla Mashanlo, Inkar Ibrahim, Akbota Keneshan and Sayazhan Onlasyn were among the winners. The prospective startup "UnApp Space" of the team received a grant of 500,000 tenge to further develop digital startup projects.

"UnApp Space" platform helps graduates prepare for university: the user goes to UnApp, and system selects the best list of universities by determining his profile and goals of study. Next, the user prepares to submit applications by reviewing materials created by students at these universities.

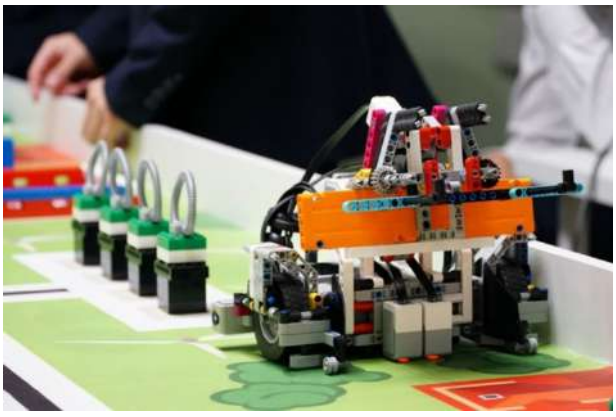
10. Daniyar Egeubay, Sultan Mustafin, Arslan Aymenov, NIS PhM Taraz, holders of a grant of 250 000 tenge for a start-up project at the IT Fest of IITU University. IT Fest is a reboot in the IT community of the annual HackDay festival, which has existed since 2011, as part of the state program "Digital Kazakhstan"

https://inbusiness.kz/ru/last/bolee-2-mln-tenge-sostavlyaet-prizovoj-fond-respublikanskogo-it-hakatona

Organizing the National Championship World Robot Olympiad 2021

• Autonomous Educational Organization "Nazarbayev Intellectual Schools" as the National Coordinator of the World Robot Olympiad in Kazakhstan holds annual regional competitions and the national championship WRO. Olympiads are aimed at the development of creative skills and skills referring to the ability to solve actual engineering and technical problems, promoting the interest in scientific and technical activities, boosting the prestige of professions in the field of information technology.

The main theme of WRO-2021 was "PowerBots": How to build the future green economy, create new sources of renewable energy, and develop environmental responsibility - young roboticists solved specific tasks in the Regular, Open, Future Engineers categories, Creative, and several age groups.



In total, nearly forty teams participated in the national stage of the WRO, each of which successfully performed in the regional qualifying rounds. The online format just promoted the enthusiasm, creativity, excellent preparation and the rush of winning of the young roboticists.

The MagicKris team of Ak-Niet private elementary school in Almaty, consisting of Kristina Kiseleva, Mark Biryukov, Peter Moroz and coach Oleg Kiselev, was named the winner in the main junior category. They came up with the best smart home solution that reduces energy consumption.

The A and B team of the Almaty training Centre "Lessons.kz" won the champion's title in the main middle category. The robots of Aryana Kadyrova and Bernard Berdaliev (trainer Aigerim Erkabaeva) handed out batteries to charge hybrid and electric cars at high speed.

In the main senior category, the teams were tasked with supplying their residences with electricity from renewable sources, with excess energy stored in batteries. Representatives of Nazarbayev Intellectual Schools were traditionally unrivaled in this category. The "Vector" team of Shyngysbek Balgabay and Altair Zhambyl (coach Yasynzhan Shakan) showed the best time and best results. The winner's podium in this category was taken by students of Intellectual schools.

In the main WeDo category, students solved complex problems, as close to reality as possible. Teams created robots that fight forest fires and evacuate people to safe areas and then plant new trees to replace the burned ones. Daniel Talgatov and Yerasyl Khaidar from JAIQ 3 team of "Jaiq school" of robotics and programming school in Uralsk (coach Esengali Kaisar) coped with this task best of all.

In the junior category, Dauzhan Beketov and Kirill Ostrovsky (Coach Tom Noah) from the LegoMozg International Academy of Robotics team developed a smart power plant, including a solar panel and a wind turbine. The project, which aims to increase the efficiency of renewable energy sources, won a convincing victory.

Amina Rakhimbergenova, Aldiyar Pazilov and Daulet Mukhanov (coach Bakhytgul Kazhykenova) from the NG-PHOTOBIO team of the Intellectual School of Physics and Mathematics in Nur-Sutan created a robot that uses principles of artificial intelligence to produce biofuel from an amorphous algae plant. They are recognized as winners in the senior creative category.

All of the top teams in their categories gained the right to participate in the world stage of WRO-2021, which will be held online in November 2021. It is planned that the well-known experts in the world of robotics, who made up the jury, will work remotely in their countries.

Winners of the national robotics championship from Nazarbayev Intellectual Schools, gained the right to represent

Kazakhstan at the World Robot Olympiad 2021. The World Robot Olympiad (WRO) is a competition for students in Grades 6-11 between the ages of 10 and 19.

Scientific, research projects and activities of the Intellectual Schools

• Jubilee X Nauryz Meetings. Saving the planet from plastic

Ten years ago, the first NIS "Mathematics and Physics" Nauryz meetings opened, which began the history of science project competitions.

Traditionally, each year the meetings are devoted to strategic priorities in science that are now on the global agenda for humanity. In 2021, the X Nauryz Meetings are dedicated to the green future of the Earth "Planet and Plastic: Ecoculture in Everyone". The relevance of the main topic was supported by a documentary chronicling one of the speakers, the legendary National Geographic photographer Mandy Barker, known for photo-monitoring of plastic pollution in the world's oceans.

The pandemic made some changes to the program and the organization of the meetings. The young scientists met online at ZOOM and on You tube, instead of the traditional competition there were thematic webinars and trainings, and the main event was the teamwork to create ecorobots under the guidance of PhD, associate professor, researcher of the Institute of Automation and Information Technologies named after A. Burkitbaev, department of Robotics and Engineering Tools of Automation Education of Satpayev University, Azamat Yeshmukhametov.

Most of the speakers represented national environmental organizations that are actually dealing with practical issues of plastic waste and preserving the planet on a daily basis.

One of the main events of the Nauryz meetings was the environmental challenge "The Second Life of Plastic", where volunteers created and implemented successful projects for recycling and disposal of waste. Almost 1,500 kilograms of plastic lids were collected by students of the Nazarbayev Intellectual School in Pavlodar. This is more than 170,000 tenge, which they donated to the treatment of little Artem Shemyakin.

The second life of plastic can give a second life to humans, save animals and preserve nature, according to students of the Intellectual School of Taldykorgan Victor Kakhno and Valeria Kim. In the project "Leave a better world behind!" the young roboticists proposed their own alternative ways to recycle and dispose of plastic. The students invented a robotic terminal for accepting bottles, the main feature of which is to give a portion of food for homeless animals for each container.

The terminal also has a computer with a neural network installed that can recognize a loaded object and do initial waste sorting for further recycling.

• Nazarbayev Intellectual School in Atyrau opens solar power plant

In October 2021, a solar power plant was commissioned at the Nazarbayev Intellectual School of Chemistry and Biology in Atyrau. This is the fourth photovoltaic power system within a joint project "Solar Energy for Schools" between the AEO and Shell. This project is implemented within the framework of the Memorandum of cooperation signed by the Ministry of energy, Akimat of Nur-Sultan city, Autonomous educational organization "Nazarbayev Intellectual schools" and Shell.

Currently, solar photovoltaic systems are installed in Nazarbayev Intellectual Schools in the cities of Nur-Sultan, Aktau and Uralsk. It is also planned to build a solar power plant at Intellectual School in Turkestan.

The total length of the power plant is 73 meters, the supports of the solar panels are divided into 13 blocks, between them there are two-stage stands for the convenience of spectators during sports events. The solar power system will reduce the school's annual energy consumption by up to 30 percent.

"Solar Energy for Schools" is both an environmental and educational project that aims to promote the green economy, introduce renewable energy sources, foster an environmental culture, and develop STEM education. This project can be an example of social responsibility of business and successful cooperation between energy and educational companies.

• Launch of a new project "Eco Jeli", uniting NIS environmental clubs, dedicated to the 30th anniversary of Independence of Kazakhstan, December 9-10, 2021, . The "Eco Jeli" network was initiated by members of the NIS Nur-Sultan eco-club.

– The event's theme reveals the country's environmental problems. The range of environmental problems includes all areas of human activity.

– The "Eco Jeli" project allowed students to more effectively organize activities to address environmental issues through communication and cooperation with students from other schools in the network, systematizing and increasing the effectiveness of the eco-clubs through the exchange of experiences and the joint organization of activities.

– As part of this event, an ecohackathon was launched among the startup teams of the "ECOhack NIS" Intellectual Schools on the theme of "Food. Water. Energy", it was opened by trainings of teachers - coordinators of school eco-clubs and coaches of startup teams. Mentor sessions and master classes of well-known experts in the field of ecology, crowdfunding, implementation of startup projects, development of social design for startup teams of intellectual schools were organized for the participants, where startup teams were able to communicate with mentors and get feedback on their project ideas, determine the vector of their further development and promotion.

– On December 9, 2021, successful eco-activist and business coach Anna Gudarzi, who represents the ECO Network platform, and Aziza Utegenova, the founder of the Kazakhstani crowdfunding platform Start-time.kz, shared their tips on how to promote startups with small budgets and other aspects of environmental entrepreneurship during webinars.

– On December 10, 2021, participants met with well-known speakers:

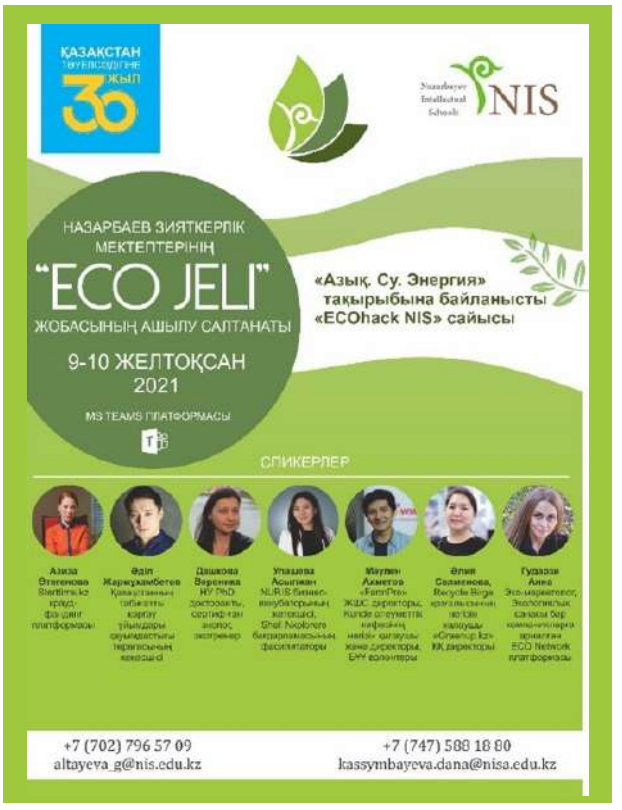
– Adil Zharmukhambetov, Advisor to the Chairman of the Association of Environmental Organizations of Kazakhstan, graduated from the MSc Process Systems University in London, PhD in Environmental Technology. In 2019, he led a team of industry managers on the "El Umiti" project and with five members of his team, volunteered to develop ideas, projects, and expertise for the Department of Water Resources of the Ministry of Ecology for free.

– Aliya Salmenova, a well-known eco-activist, co-founder of the Recycle Birge movement, director of the public fund "Greenup.

kz", joined "Eco Jeli ' from Almaty, the topic of her webinar was "Ecovolunteering. My way."

– meeting with Veronika Dashkova, PhD candidate in ecology, Nazarbayev University, author of international scientific publications, expert of the Eco-Trainers School, Ecologists School, Eco-Consultants School "Green Driver", author of the training course "Conscious Consumption for Beginners" on "Together We Will Save the Beauty of Lakes in Kazakhstan". The participants of the event heard first-hand from the expert about the strong anthropogenic impact and the impact of climate change on the drainless lakes of Kazakhstan, about the latest methods of studying hydrobiological communities, the structure of phytoplankton, the regular monitoring of lakes to analyze changes and forecast.

– Asylzhan Upasheva, head of NURIS business incubator (Nazarbayev University Research and Innovation System), certified startup mentor, certified facilitator of the Shell NXplorers program, who received a BA degree in Communications Systems Engineering from the University of Manchester, UK, as well as an MBA degree from Nazarbayev University, Kazakhstan, revealed the main principles of a successful startup - the idea, creativity and persistence.



• Sanim Zeyngabyl, a 12th grade student at Nazarbayev Intellectual School in Nur-Sultan, became the official Eco-Ambassador of Kazakhstan in 2021.

Eco-Ambassador is an important and integral part of the successful promotion of environmental initiatives and projects. Natural resource users have a special responsibility to promote environmental projects and development of environmental awareness, to comply with environmental principles in everyday life.

Sanim, as the leader of the school environmental club, develops this movement. In 2021, she initiated and led the team of organizers of the International Summer Eco-School "Life in Ecology," which was attended by more than 400 participants from five countries. Sanim did a similar job at the Republican Ecohackathon to celebrate Earth Day, which was a joint effort of the American Cultural Corner and the Eco-Club of Nazarbayev Intellectual School in Nur-Sultan.

6.3. International examinations results

Students of Grade 12 annually take the International English Language Testing System (IELTS) to determine the level of English proficiency.

In the 2021 pandemic, IELTS testing was conducted between October 23 and November 6 in the traditional offline format at all Intellectual Schools, with sanitation and anti-epidemiological measures in place.

In total, 2 455 students of Grades 12 from 20 Intellectual Schools took IELTS exams. The average IELTS score across NIS schools was 6.5.

IELTS results by schools

№	School	Number of students	Average score
1	NIS PhM Nur-Sultan	144	6,7
2	NIS PhM Kokshetau	109	6,7
3	NIS PhM Almaty	139	7,0
4	NIS PhM Uralsk	119	6,7
5	NIS ChB Ust-Kamenogorsk	99	6,5
6	NIS PhM Shymkent	142	6,4
7	NIS ChB Karaganda	132	6,5
8	NIS PhM Kostanay	84	6,4
9	NIS PhM Semey	130	6,4
10	NIS ChB Aktau	122	6,1
11	NIS PhM Aktobe	158	6,3
12	NIS ChB Almaty	155	6,5
13	NIS ChB Shymkent	141	6,3
14	NIS IB Nur-Sultan	128	7,0
15	NIS ChB Pavlodar	104	6,7
16	NIS ChB Petropavlovsk	121	6,1
17	NIS ChB Atyrau	140	6,1
18	NIS ChB Kyzylorda	109	6,2
19	NIS PhM Taldykorgan	99	6,1
20	NIS PhM Taraz	88	6,4
	TOTAL	**2 455**	**6,5**

According to the IELTS results of 2021, 58,3% of NIS students scored 6.5 and above and 35,9% at least 7.0.

5 students of NIS (PhM and IB) in Nur-Sultan, Ust-Kamenogorsk, Semey showed the highest score 8.5

Scholastic Assessment Test (SAT)

NIS graduates take international SAT Test which assess academic ability of students to study at higher educational institutions.

In 2020-2021 academic year, 611 NIS students of Grade 12 took SAT 1 and showed average score 1281 (higher than 89% of students worldwide). Also, 170 NIS students took part in the SAT2 subject test, showing the following results by subjects:

Academic year	Total number of Grade 12 students	Passed SAT 2	Scores (max. 800)				
			Math 1	Math 2	Physics	Chemistry	Biology
2020-2021	2 305	170	712	717	686	701	678

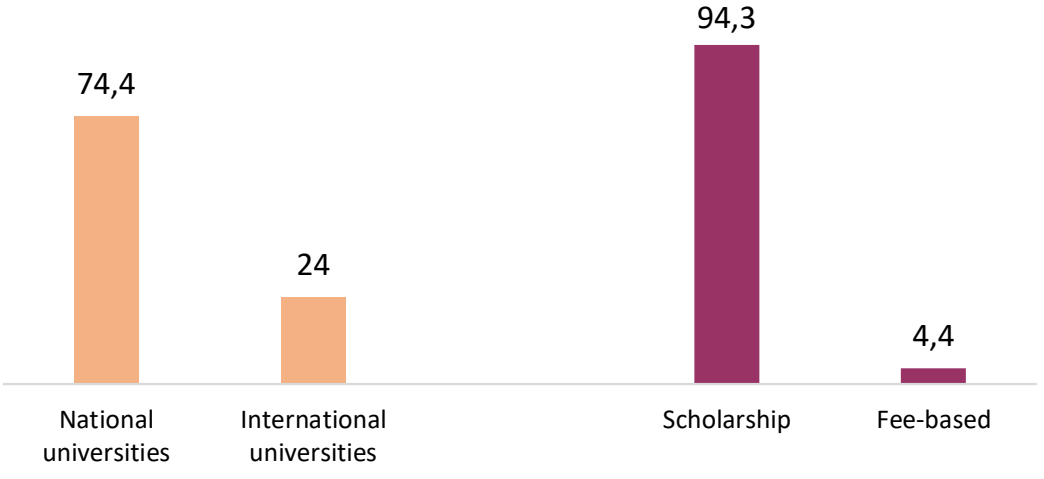
In addition, 25 students of Intellectual Schools scored 1500 or higher on the SAT test (Evidence-based Reading and Writing, Mathematics), and 15 students scored maximum points (800) in the SAT subject test in two or more subjects.

6.4. University admissions

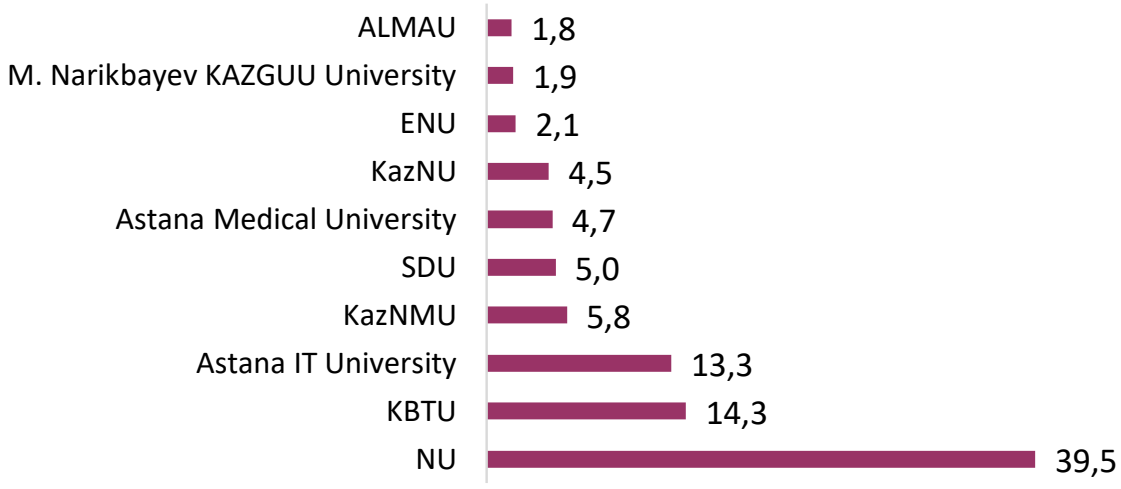
In the 2020-2021 academic year NIS has 2 305 graduates. Most of graduates 74.4% (1716) enrolled in different leading universities of Kazakhstan, 677 (29%) in Nazarbayev University for bachelor's degree and pre-university training Foundation. 560 (24%) of graduates chose top foreign universities to continue their education.

In general, 98.7% enrolled in universities, 94.3% won state, university grants in Kazakhstan and abroad. 1.3% of the total number of graduates did not enroll in universities for various reasons (academic leave, illness, enrolled in language courses, death).

Admission of NIS graduates, 2021, %



TOP-10 or the most popular universities in Kazakhstan among the graduates of Intelligent Schools are listed below. At the same time, it should be noted that the trend of choosing these universities continues every year. More than 90% of the graduates chose the universities represented.



At the end of the 2020-2021 academic year, 6 graduates entered and received tuition-free scholarships to Ivy League universities. This league is the most famous association of universities in the world, which includes eight of the oldest universities in the United States:

– Sezim Yertanatov, a graduate of NIS PhM Taldykorgan enrolled at Harvard University;

– Dina Zhanybekova, a graduate of NIS IB Nur-Sultan and Shyryn Ospanova, a graduate of NIS PHM Nur-Sultan enrolled at University of Pennsylvania;

– Bakhyt Uteuliyeva enrolled at Cornell University;

– Damir Kulzhanov, a graduate of NIS PhM Taraz and Sabira Simbinova, a graduate of NIS ChB Karaganda enrolled at Brown University

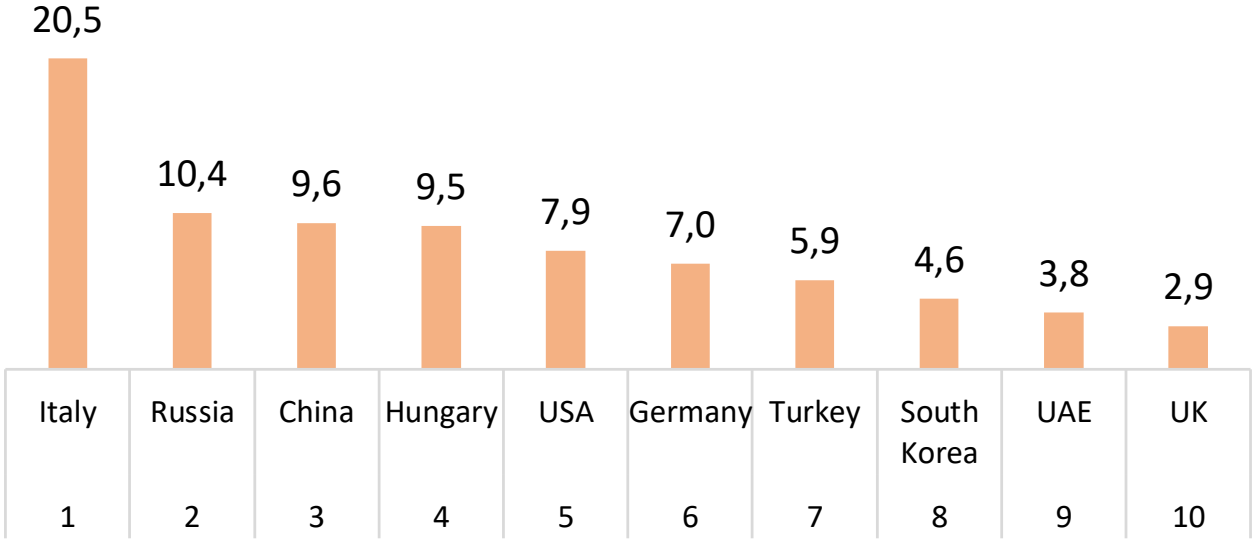
At the same time, Eldar Urkumbayev, a graduate NIS Nur-Sultan received a tuition-free scholarship to the Massachusetts Institute of Technology, Dilnaz Kamalova, a graduate of NIS PhM Almaty entered Stanford University. These universities are ranked first and second respectively in the international QS ranking for 2020 among more than 1,000 universities from 84 countries.

78 graduates entered the top 100 universities according to the international QS.

In total, from 2010 to 2021, 18 graduates entered Ivy League universities, and 432 graduates enrolled at QS top 100 universities.

The most popular countries among the 560 graduates who entered higher education institutions abroad were near and far abroad countries.

The most popular universities among 2020-2021 NIS graduates, share



OPENING OF NAZARBAYEV INTELLECTUAL SCHOOL IN TURKESTAN

On November 26, 2021 on the eve of the 30th anniversary of Kazakhstan's Independence, Nazarbayev Intellectual School of Chemistry and Biology in Turkestan was opened.

Prime Minister of the Republic of Kazakhstan, Askar Mamin, and head of the Uzbekistan government, Abdulla Aripov, attended the opening ceremony of the educational institution. Chairperson of the NIS Board, President of Nazarbayev University Shigeo Katsu congratulated all students and school teachers, noting the importance and role of Nazarbayev Intellectual School the region. Considering that the NIS standards are now validated worldwide by OECD recognition and PISA results.

https://baigenews.kz/news/v_turkestane_otkryli_nazarbaev_intellektualnuyu_shkolu/

School capacity is 720 places, there is a dormitory for 120 places for nonresident students.

The school has a sufficient set of educational and support facilities and information space: 70 classrooms, psychology room and psychological release room, gyms and grounds, medical rooms, a library with a reading room, a room for individual lessons, a choreography room, utility rooms, a greenhouse, an area for biology, etc.

The school also created an Information Centre - a universal open space zone, which will demonstrate digital educational platforms developed for students of Intellectual and general education schools in the country: NIS Online platform, Virtual NIS Lab, teaching materials "Drone Lab", etc.

• *Competitive selection of students to Grade 7*

The competitive selection for Grades 7 was held on June 17 and 18, 2021, according to the current format.

The competitive selection in Grades 7

Day	Test section	Number of tasks	Duration (minutes)	Max. score	Threshold score	
A test assessing the ability to study mathematics and sciences						**Awarding grant** within the number of vacant places by schools and languages of instruction, the highest score for comprehensive testing (max. score – 1300)
June 17	Mathematics	40	60	400	140 (35%)	
	Quantitative Reasoning	60	30	300	120 (40%)	
Languages						
June 18	Kazakh language	20	120	200	-	
	Russian language	20		200	-	
	English language	20		200	-	

In total 1,705 students applied for participation in the competitive selection, of which **1,584** applicants actually took part: 1,181 - with the Kazakh language of instruction, 403 - with the Russian language of instruction.

According to the analysis of the candidates' results, **909 (57%)** applicants scored threshold points and were admitted to consideration of the Republican Commission. Thus, the competition for one vacant position was **4.7** people. At the same time, the competition in classes with the Kazakh language of instruction is higher than in classes with the Russian language of instruction (**5.3** and **3.7** people per position, respectively).

Following the results of the meeting of the Republican Commission in August 23, 2021, **192** students (12.1% of the total number of applicants) were awarded the Grant.

The average score of all applicants for comprehensive testing was 713 (54.8% of the maximum score), as a result, NIS Turkestan is in the top 5 schools.

The maximum scores in subjects were obtained mainly by applicants who participated in the competition for the second time:

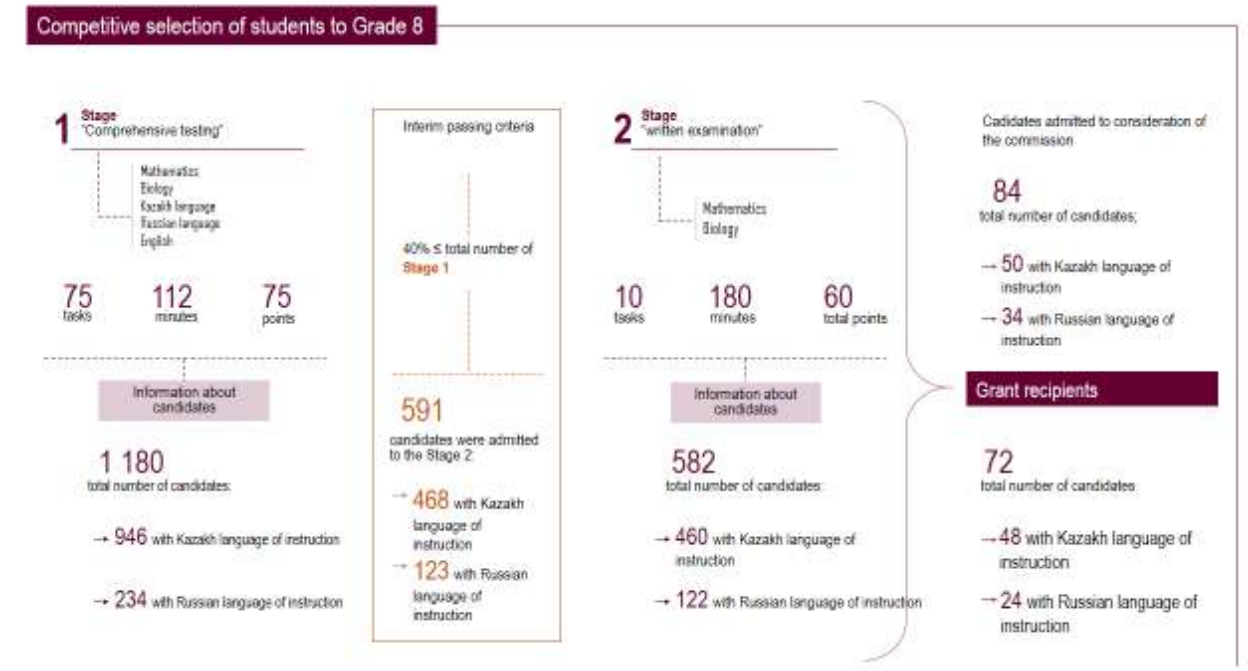
– in Mathematics (400 p.) - 12 candidates;
– by quantitative reasoning (300 p.) - 2 candidates;
– in Kazakh as L1 (200 p.) - 9 candidates;
– in Kazakh as L2 (200 p.) - 23 candidates;
– in Russian as L1 (200 p.) - 1 candidate;
– in Russian as L2 (200 p.) - 5 candidates;
– in English (200 p.) - 3 candidates.

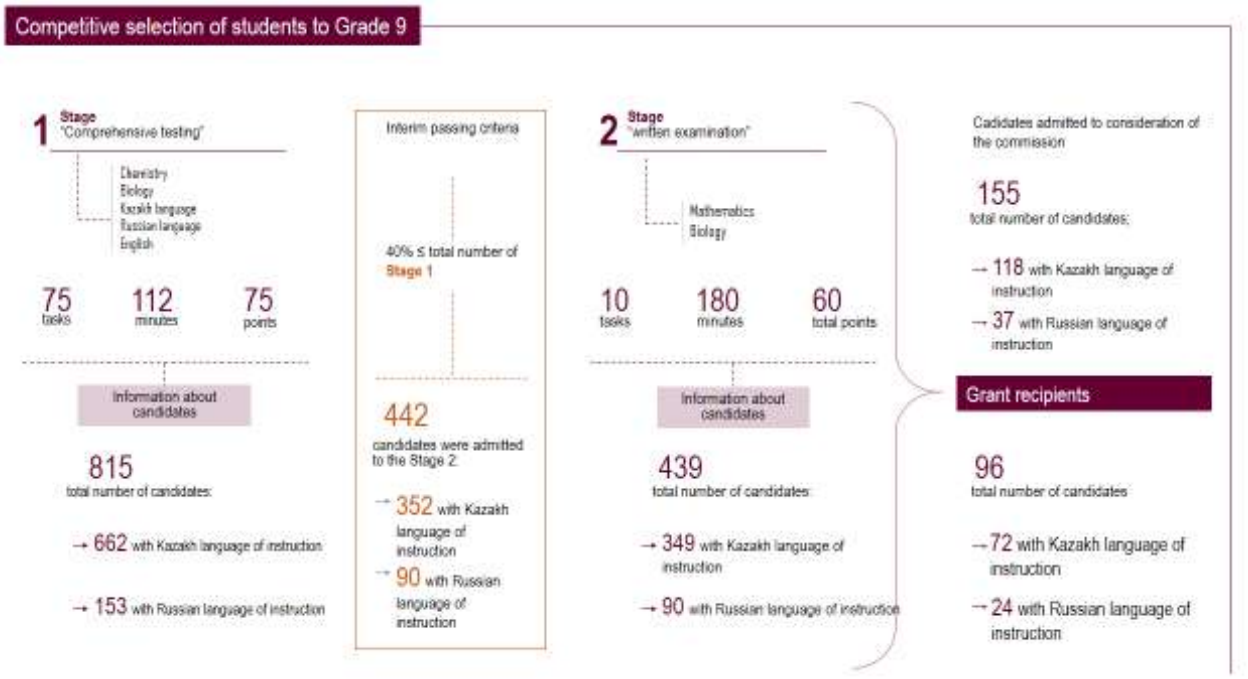
Competitive selection of students to Grade 8, 9

2,086 students applied for the competitive selection for Grades 8 and 9, which was held in two stages (June 22 and June 25, 2021)

1,995 students participated in Stage 1 of testing, of which **1,033** applicants who scored 40 percent or more of the total score in Stage 1 were allowed to participate in Stage 2. In fact, **1,021** students took part in Stage 2 of the competition.

239 applicants who scored 30% or higher in each subject of Stage 2 were eligible for consideration by the Commission, which resulted in **168** became Grant recipients.





The number of applicants for one vacant place was 16.3 people in Grades 8 and 8.4 people in Grades 9, the competition among those admitted was 4.4 (Grade 8) and 11.4 (Grade 9) people per place.

The maximum score of the first stage is 75, the second stage is 60.

The average score of the applicants for the competitive selection was:

– - at Stage 1 in Grade 8 - 30, Grade 9 - 30.5;

– - at Stage 2 in Grade 8 - 12.5, Grade 9 - 17.3.

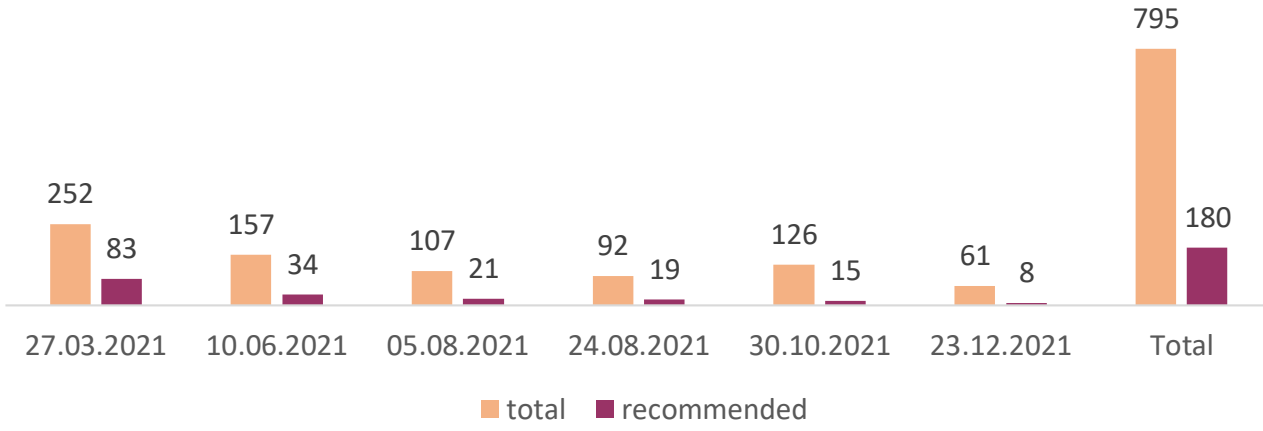
• *Competitive selection of teachers*

In the period from March and October 2021, there were five competitions in which **795** educators participated. The largest number

of candidates was registered in the subjects "Kazakh language and literature" (124), "English" (107), "Mathematics" (95); the smallest number in "Self-cognition" (14), "Economics" (5), "Music" (3), "Basic military training" (1).

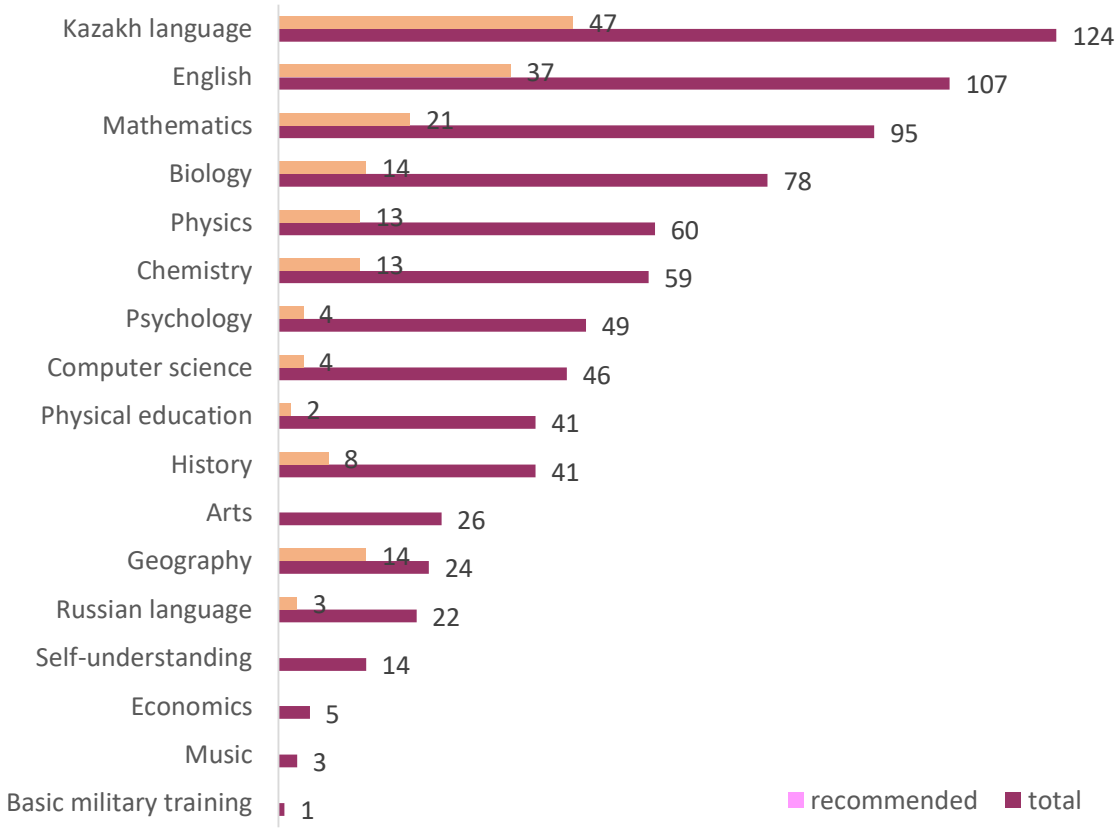
425 test assignments, including **40** contextual resources, were developed and reviewed for Stage 1 of the competition for teacher positions

At the end of Stage 1, **180** (23%) candidates scored threshold score.



Number of candidates who participated in the competitive selection (March - December 2021)

The share of those recommended by the results of the Stage 1 of the competition is significantly higher than the average results for "Geography" (58%), "Kazakh language and Literature" (38%), and "English" (35%). None of the candidates in the subjects "Art", "Music", "Basic military training", "Self-understanding", and "Economics" received a passing grade.



Results of the Stage 1 of the competitive selection across subjects

38 teachers out of 734 applicants were hired in newly opened Intellectual School in Turkestan.

• *Providing methodological support*

In order to provide methodological support to teachers of the opening school, CEP staff held 22 webinars on NIS-Programme of lower secondary school. During the webinars, teachers analyzed the content and structure of programme, learned how to plan lessons, discussed the development of reading, math, and science literacy, and reviewed examples of assignments to implement learning objectives.

In addition, an external training seminar for all teachers of the opened school, as well as six subject trainings for teachers on the subjects "Kazakh language", "Russian language", "English", "Mathematics", "Physics", "Biology" were conducted in NIS Turkestan.

APPENDICES
INTERNATIONAL COMPETITIONS AND OLYMPIADS WINNERS

17th International Zhautyk Olympiad, January 7-12, 2021, Kazakhstan

1

Asylbek Olzhabaev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Mathematics

2

Tair Satubaldin
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Mathematics

3

Tamirlan Bektemisov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Mathematics

4

Nurasyl Abdirazak
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Mathematics

5

Aldinash Seitenov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree in Mathematics

6

Makhmut Omar
(Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a silver medal and second-degree diploma in Mathematic

7

Rakhim Baymurzin
(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a silver medal and second-degree diploma in Mathematics

8

Yersultan Pitebai
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) a holder of a silver medal and second-degree diploma in Physics

9

Mukhammadarif Sakhmoldin
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Computer Science

10

Altair Ashurov
(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a silver medal and second-degree diploma in Computer Science

11

Ernar Sadybekov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a bronze medal and third-degree diploma in Computer Science

12

Temirlan Ismagulov
(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a bronze medal and third-degree diploma in Physics

XXXIII International Asia-Pacific Mathematical Olympiad (APMO), March 9-10, 2021

1

Rakhim Baymurzin
(Nazarbayev Intellectual school of Chemistry and Biology in Karaganda) is a holder of silver medal and second-degree diploma in Mathematics

2

Nurasyl Abdirazak
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree in Mathematics

3

Makhmut Omar
(Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) a holder of a silver medal and second-degree diploma in Mathematics

4

Aldinash Seitenov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Mathematics

5

Asylbek Olzhabayev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of silver medal and second-degree diploma in Mathematics

6

Tamirlan Bektemisov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

7

Arsen Narik
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

8

Tair Satubaldin
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

9

Denis Son
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

XX International Mathematical Olympiad "Silk Road" (MOSR), March 9-10, 2021

1

Asylbek Olzhabayev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Mathematics

2

Makhmut Omar
(Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a silver medal and second-degree diploma in Mathematics

3

Aldinash Seitenov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree in Mathematics

4

Tair Satubaldin
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

5

Rakhim Baymurzin
(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a bronze medal and third-degree diploma in Mathematics

6

Tamirlan Bektemisov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

7

Nurasyl Abdirazak
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

8

Alimzhan Turdaly

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

XXVIII International Tuymaada Olympiad for school students in Mathematics, Physics and Computer Science, July 24 - August 3, 2021, Yakutsk, Sakha Republic

1

Altair Ashurov

(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of gold medal and first-degree diploma in Computer Science

2

Mukhammadarif Sakhmoldin

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of silver medal and second-degree diploma in Computer Science

3

Ernar Sadybekov

(Intellectual School of Physics and Mathematics in Almaty) is a holder of honorary certificate in Computer Science

4

Nurasyl Abdirazak

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of silver medal and second-degree diploma in Mathematics

5

Aldinash Seitenov

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

6

Akerke Nurakhmetova

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

7

Arthur Nikolaenko

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Physics

8

Alisher Yerkebayev

(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe) is a holder of bronze medal and third-degree diploma in Physics

9

Arsen Narik

(Intellectual School of Physics and Mathematics in Almaty) is a holder of honorary certificate in Mathematics

European Geography Olympiad (EGEO), June 19-21, 2021, Belgrade

1

Rustam Valeyev

(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe) is a holder of silver medal and second-degree diploma in Geography

2

Yerkebulan Tazabek

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of bronze medal and third-degree diploma in Geography

17th International Geography Olympiad (IGEO), August 11-16, 2021, Istanbul, Turkey

1

Rustam Valeyev

(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe) is a holder of a gold medal and first-degree diploma in Geography

2

Yerkebulan Tazabek

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) ilver medal and second-degree diploma in Geography

25th Junior Balkan Mathematical Olympiad, June 23-30, 2021, Moldova

1

Damir Nurlanov
(Nazarbayev Intellectual school of Chemistry and Biology in Pavlodar) is a holder of bronze medal and third-degree diploma in Mathematics

33rd International Olympiad in Informatics (IOI), June 19-28, 2021, National University of Singapore

1

Mukhammadarif Sakhmoldin
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Computer Science

2

Mukhammadarif Sakhmoldin
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Computer Science

X European Girls' Mathematical Olympiad (EGMO), April 15-19, 2021, Kutaisi, Georgia

1

Akerke Nurakhmetova
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

55th International Mendeleyev Chemistry Olympiad, April 20, 2021, Russia

1

Khaidar Kairbek
(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a silver medal and second-degree diploma in Chemistry

2

Azamat Zhaksylykov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Chemistry

3

Sanjar Bisenali
(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of bronze medal and third-degree diploma in Chemistry

4

Almir Almukhanov
(Nazarbayev Intellectual school of Chemistry and Biology in Karaganda) ia a holder of bronze medal and third-degree diploma in Chemistry

62nd International Mathematical Olympiad, July 14-24, 2021, Saint Petersburg, Russia

1

Tair Satubaldin
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of silver medal and second-degree diploma in Mathematics

2

Asylbek Olzhabayev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

3

Rakhim Baymurzin
(Nazarbayev Intellectual school of Chemistry and Biology in Karaganda) is a holder of bronze medal and third-degree diploma in Mathematics

32nd International Biology Olympiad (IBO), July 18-23, 2021, Portugal

1

Yerassyl Temirbekov
(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a silver medal and second-degree diploma in Biology

38th Balkan Mathematical Olympiad (BMO), 6-10 September 2021, Cyprus

1

Tair Satubaldin
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of silver medal and second-degree diploma in Mathematics

2

Nurasyl Abdrazak
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of bronze medal and third-degree diploma in Mathematics

3

Rakhim Baimurzin
(Nazarbayev Intellectual school of Chemistry and Biology in Karaganda) is a holder of bronze medal and third-degree diploma in Mathematics

53rd International Chemistry Olympiad (IChO), from 24th July to 2nd August, 2021, Osaka, Japan

1

Haidar Kairbek
(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of silver medal and second-degree diploma in Chemistry

2

Sanjar Bisenali
(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of silver medal and second-degree diploma in Chemistry

51st International Physics Olympiad (IPhO), from July 17-25, 2021, Vilnius, Lithuania

1

Yersultan Pitebay
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of silver medal and second-degree diploma in Physics

XIV Presidential Olympiad, E.A. Buketov Karaganda State University, Karaganda, November 15-18, 2021

Gold medalists

1

Tolegen Malik
(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe

2

Alisher Kabardiadi
(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda)

3

Sunkar Bolat
(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe)

4

Alizhan Ibrayev
(Nazarbayev Intellectual School of Physics and Mathematics in Kostanay)

Silver medalists

1

Akbota Tangirbergenova
(Nazarbayev Intellectual school of Physics and Mathematics in Nur-Sultan)

2

Zhanibek Shapatov
(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk)

3

Artem Herman
(Nazarbayev Intellectual School of Chemistry and Biology in Petropavlovsk)

Bronze medalists

1

Abdrakhman Seitkhan
(Nazarbayev Intellectual School of Physics and Mathematics in Shymkent)

2

Sherzod Muchtarov
(Nazarbayev Intellectual School of Physics and Mathematics in Shymkent)

3

Rakhat Agasultanov
(Nazarbayev Intellectual School of Physics and Mathematics in Kokshetau)

4

Sultan Kani (NIS in Kyzylorda)

5

Shyngys Sariev
(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan)

6

Aidos Nurmerei
(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan)

7

Zhandos Baykarimov
(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar)

XI International Contest of Research Projects in Mathematics and Mechanics named after U. Dzholdasbekov, March 1-3, 2021

1

Alim Bakhtiyarov
(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a gold medal and first-degree diploma for the project in applied Mathematics "Partitioning of natural numbers with use in production and agricultural engineering

2

Maya Kakimova
(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a gold medal and first-degree diploma for the project in applied Mathematics "Partitioning of natural numbers with use in production and agricultural engineering

3

Medet Zhumadildayev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma for the project in Mathematics "Ramanujan congruences for tangent numbers"

4

Alisher Omirzak
(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a gold medal and first-degree diploma for the project in Mathematics "Composition of rotary homotheties"

5

Arilana Nugmanova
(Intellectual school of Physics and Mathematics in Kostanay) is a holder of a gold medal and first-degree diploma for the project in Mathematics "Classification of fractions of the form 1/p, 2/p, ..., (p-1)/p (p - prime numbers)"

6

Akzhibek Khairulla
(Intellectual School of Physics and Mathematics in Aktobe) is a holder of a silver medal and second-degree diploma in Mathematics for the project "Geometrical applications of complex numbers"

7

Bekzhan Bekturgan
(Intellectual School of Chemistry and Biology in Kyzylorda) is a holder of a silver medal and second-degree diploma for the project in Mathematics "Creating optimal vector image using a Bezier curve"

8

Alikhan Kustanov
(Nazarbayev Intellectual school of Physics and Mathematics in Aktobe) is a holder of a bronze medal and third-degree diploma for the project in Mathematics "Statistical analysis in the study of the problems of starvation in the Aktobe region in 1931-1933".

9

Sagidolla Kudaibergenov

(Nazarbayev Intellectual school of Physics and Mathematics in Semey) is a holder of a bronze medal and third-degree diploma for the project in Mathematics "Mathematical modeling of a vertical wind turbine".

10

Nurtileu Yerezhepov

(Nazarbayev Intellectual school of Physics and Mathematics in Semey) is a holder of a bronze medal and third-degree diploma for the project in Mathematics "Mathematical modeling of a vertical wind turbine"

11

Madina Dayardieva

(Nazarbayev Intellectual School of Chemistry and Biology in Atyrau) is a holder of a bronze medal and third-degree diploma for the project in Mathematics "Mathematical model for carbon dioxide emissions".

XVI Republican contest of research projects and creative works "Zerde", from January 26 to 28, 2021

1

Yersaiyn Zharasbayev

(International school of Nur-Sultan) is a holder of a gold medal and first-degree diploma for the project in Medicine, Psychology "Distance learning as the need of the hour: a student's perspective"

2

Amir Bekbolat

(International school of Nur-Sultan) is a holder of a gold medal and first-degree diploma for the project in Medicine, Psychology "Distance learning as the need of the hour: a student's perspective"

3

Asel Kanabek

(Nazarbayev Intellectual school of Physics and Mathematics in Taldykorgan) is a holder of a gold medal and first-degree diploma for the project in history, local study, ethnocultural studies "Contribution of my grandfather Zamanov K.K. to the perpetuation of the memory of I. Dzhansugurov".

4

Ailina Tanirbergen

(International school of Nur-Sultan) is a holder of a gold medal and first-degree diploma for the project in biology "How does milk become cheese?"

5

Alibi Kadyr

(Nazarbayev Intellectual school of Physics and Mathematics in Kokshetau) is a holder of a silver medal and second-degree diploma for the project in Physics "Automatic body temperature measurement device"

6

Aimer Koshmambetov

(Nazarbayev Intellectual School of Physics and Mathematics in Taraz) is a holder of a silver medal and second-degree diploma for the project in Physics "Building air solar collector"

7

Nurbol Momynkul

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a silver medal and second-degree diploma for the project in Medicine, Psychology "Making a protective face mask"

8

Yerasyl Zhusip

(Nazarbayev Intellectual school of Physics and Mathematics in Uralsk) is a holder of a silver medal and second-degree diploma for the project in History, Local study, Ethnocultural studies "Gubaidolla Zhangirov is the first Kazakh general"

9

Arsen Kudaibergen

(Nazarbayev Intellectual school of Physics and Mathematics in Uralsk) is a holder of a silver medal and second-degree diploma for the project in History, Local study, Ethnocultural studies "Gubaidolla Zhangirov is the first Kazakh general"

10

Asel Rysbay

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a silver medal and second-degree diploma for the project in Ecology, Valeology "Biohumus production at home with California worms"

11

Muhammadusuf Amantai

Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a silver medal and second-degree diploma for the project in Ecology, Valeology "Biohumus production at home with California worms"

12

Eva Karapetyants

(Nazarbayev Intellectual school of Physics and Mathematics in Taldykorgan) is a holder of a silver medal and second-degree diplomafor the project in Ecology, Valeology "Homeless animals is the problem of everyone"

13

Daulet Kurmanbai

(International school of Nur-Sultan) is a holder of a silver medal and second-degree diploma for the project in Russian language and Literature "How to love reading books"

14

Alisher Sailaubek

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma for the project in Physics "Portable System for Automating Processes in a Greenhouse"

15

Diana Khamitova

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma for the project in Physics "Portable System for Automating Processes in a Greenhouse"

16

Aisha Tashkenova

(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a bronze medal and third-degree diploma for the project in Mathematics "Construction Mathematics"

17

Ilyas Makhatov

(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a bronze medal and third-degree diploma for the project in Robotics "Smart firefighter suit"

18

Alina Moroz

(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a bronze medal and third-degree diploma for the project in Robotics "Smart firefighter suit"

19

Aikhanym Akhmetkhan

(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a bronze medal and third-degree diploma for the project in Kazakh Language and Literature "Learning Kazakh in distance learning in grades instructed in Russian by using Easel.ly application"

20

Nursaya Karshyga

(Nazarbayev Intellectual School of Chemistry and Biology in Aktau) is a holder of a diploma for the project in English "Learning English words through effective methods"

21

Ademar Aubakirov

(International School of Nur-Sultan) is a holder of a diploma for the project in Computer Science "Advantages and disadvantages of APPLE gadgets"

7

Zhanerke Otegen

(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe) is a holder of a diploma for the project "Kelp is a natural doctor" in Ecology and Valeology

VII International Research Competition "Young scientist", May 2021, Korea

1

Yerassyl Tauekel

(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a gold medal and first-degree diploma for the project in Computer Science "New Vision"

2

Aldiyar Pazilov

(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a gold medal and first-degree diploma for the project in Computer Science "New Vision"

3

Anuar Dyusenbekov

(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a gold medal and first-degree diploma for the project in Physics "Testing a basketball with a composite sensor using wax and graphite to determine impact characteristics"

4

Farkhat Nurlanov

(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a gold medal and first-degree diploma for the project in Physics "Testing a basketball with a composite sensor using wax and graphite to determine impact characteristics"

5

Dilnaz Seilkhanova

(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of gold medal and first-degree diploma for the project in Technology "Recycling polymer waste: making products from secondary raw materials and studying their properties"

39

Kassym Gabdushev

(Nazarbayev Intellectual School of Nur-Sultan) is a holder of a gold medal and first-degree diploma for the project in Economics "Small and medium business as a major factor in the development of the country's economy. Using mathematical models to show the importance and impact of small and medium business on the economy of Kazakhstan, as well as for forecasting"

7

Magzhan Sagynganov

(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a silver medal and second-degree diploma in History of Kazakhstan "White spots in the history of mining in Eastern Kazakhstan: little-known episodes in the life of child miners"

8

Ilyas Umurbekov

(Nazarbayev Intellectual School of Physics and Mathematics in Kokshetau) is a holder of a silver medal and second-degree diploma for the project in Computer Science "Visual sign language translator"

9

Aisha Baimagambetova

(Nazarbayev Intellectual School of Physics and Mathematics in Kokshetau) is a holder of a bronze medal and third-degree diploma for the project inRussian literature "The meaning of the image of hunger in the documentary novel "The Chronicle of the Great Jute" by V.Mikhailov

XV International Competition of Research Projects "Mathematics and Design", May 2021, Russia

1

Elmira Abenova is a holder of a gold medal and first-degree diploma for the project "Prospects of sheep wool production and their impact on the development of Kazakhstan's rural economy" in the section "Mathematical models of real processes"

2

Ayazhan Temirbolat is a holder of a gold medal and first-degree diploma for the project "Prospects of sheep wool production and their impact on the development of Kazakhstan's rural economy" in the section "Mathematical models of real processes"

3

Rinat Yerkinbek is a holder of a gold medal and first-degree diploma for the project "Application of mathematical functions in programming and modeling a biogas plant" in the section "Mathematical models of real processes in nature and society"

4

Aigerim Barinova is a holder of a gold medal and first-degree diploma for the project "Graph modeling in microbiology" in the section "Mathematical models of real processes in nature and society"

5

Nazgul Kabiyeva is a holder of a gold medal and first-degree diploma for the project "Graph modelling in microbiology" in the section "Mathematical models of real processes in nature and society"

6

Aruzhan Manarbekova is a holder of a gold medal and first-degree diploma for the project "Evaluating factors affecting vision by performing mathematical calculations" in the section "Mathematical models of real processes in nature and society"

7

Altair Zhambyl is a holder of a silver medal and second-degree diploma for the project "The effectiveness of squadrons in general cases" in the section "Mathematical models of real processes in nature and society"

8

Azhar Kurmanbek is a holder of a silver medal and second-degree diploma for the project "The effectiveness of squadrons in general cases" in the section "Mathematical models of real processes in nature and society"

INFOMATRIX-ASIA International Project Competition, May 5-7, 2021, Suleyman Demirel University, Kazakhstan

1

Kamila Orazbek
(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a silver medal and second-degree diploma for the project "Using augmented reality in the learning process"

2

Yerasyl Pirzhanov
(Nazarbayev Intellectual School of Physics and Mathematics in Taraz) is a holder of a silver medal and second-degree diploma for the project "Learning Kazakh"

3

Aruzhan Rysayeva
(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a silver medal and second-degree diploma for the project "Trapped by WWW

4

Ayana Myrzakhanova
(Nazarbayev Intellectual School of Physics and Mathematics in Taraz) is a holder of a silver medal and second-degree diploma for the project "Hydroelectric Power Plant"

5

Madina Dayardiyeva
(Nazarbayev Intellectual School of Chemistry and Biology in Atyrau) is a holder of a silver medal and second-degree diploma for the project "Mathematical model for carbon dioxide emissions".

7

Aldiyar Pazylov

(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a gold medal and third-degree diploma for the project "NV-FDOEX"

7

Yerasyl Tauekel

(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a gold medal and third-degree diploma for the project "NV-FDOEX"

8

Aigerim Khalidulliyeva

(Nazarbayev Intellectual School of Chemistry and Biology in Atyrau) is a holder of a bronze medal and third-degree diploma for the project "Mathematical formulas used in meteorology"

Russian Competition of the NTI Circle Movement, May 2021

1

Daniyal Sultanov

(Nazarbayev Intellectual School of Chemistry and Biology in Almaty) is a nominee for Friendship of Peoples for the highest result among international participants.

Republican Olympiad in general education subjects, April 25-30, 2021

1

Balzhan Alikenova

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a gold medal and first-degree diploma in Biology

2

Yerasyl Temirbekova

(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a gold medal and first-degree diploma in Biology

3

Dinmukhamed Urazbayev

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a gold medal and first-degree diploma in Biology

4

Yerasyl Mukhamediyar

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Biology

5

Mukhammadarif Sakhmoldin

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Computer Science

6

Yersultan Pitebay

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Physics

7

Khaidar Kairbek

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a gold medal and first-degree diploma in Chemistry

8

Azamat Zhaksylykov

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Chemistry

9

Nurasyl Abdirazak

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Mathematics

10

Rustam Valeyev

(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe) is a holder of a gold medal and first-degree diploma in Geography

11

Miras Kanatov
(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a gold medal and first-degree diploma in English

12

Alina Madenkyzy
(Nazarbayev Intellectual School of Physics and Mathematics in Shymkent) is a holder of a gold medal and first-degree diploma in Russian

13

Rumaisa Sertay
(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a gold medal and first-degree diploma in Kazakh

14

Kamilla Ilyasova
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Kazakh

15

Alesya Garkusha
(Nazarbayev Intellectual School of Physics and Mathematics in Kostanay) is a holder of a gold medal and first-degree diploma in Russian language and literature

16

Diana Azhigaliyeva
(Nazarbayev Intellectual School of Nur-Sultan) is a holder of a gold medal and first-degree diploma in German

17

Dayana Shalbayeva
(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a silver medal and second-degree diploma in Biology

18

Amir Nuriyev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Computer Science

19

Altair Ashurov
(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a silver medal and second-degree diploma in Computer Science

20

Yernar Sadybekov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Computer Science

21

Alisher Yerkebayev
(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe) is a holder of a silver medal and second-degree diploma in Physics

22

Artur Nikolayenko
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Physics

23

Artur Nikolayenko
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Physics

24

Almira Nurlanova
(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a silver medal and second-degree diploma in Chemistry

25

Dinmukhamed Khamzin
(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a silver medal and second-degree diploma in Chemistry

26

Amir Almukhanov
(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a silver medal and second-degree diploma in Chemistry

27

Beksultan Akilbekov
(Nazarbayev Intellectual School of Chemistry and Biology in Almaty) is a holder of a silver medal and second-degree diploma in Chemistry

28

Alina Komkova
(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a silver medal and second-degree diploma in Chemistry

29

Makhmut Omar
(Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a silver medal and second-degree diploma in Mathematics

30

Aldinash Seitenov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Mathematics

31

Tair Satubaldin
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree in Mathematics

32

Asylbek Olzhabayev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Mathematics

33

Rakhim Baimurzin
(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a silver medal and second-degree diploma in Mathematics

34

Arsen Sydykov
(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a silver medal and second-degree diploma in Geography

35

Islam Zholdasbek
(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a silver medal and second-degree diploma in Geography

36

Erkebulan Tazabek
(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a silver medal and second-degree diploma in Geography

37

Yerlan Ulukpanuly
(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe) is a holder of a silver medal and second-degree diploma in Geography

38

Danial Saden
(Nazarbayev Intellectual School of Physics and Mathematics in Shymkent) is a holder of a silver medal and second-degree diploma in Geography

39

Aida Chinaliyeva
(Nazarbayev Intellectual School of Physics and Mathematics in Taraz) is a holder of a silver medal and second-degree diploma in Geography

40

Aruzhan Shakirkhozha
(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a silver medal and second-degree diploma in Geography

41

Beibarys Orynbasar
(Nazarbayev Intellectual School of Chemistry and Biology in Aktau) is a holder of a silver medal and second-degree diploma in Geography

42

Aruai Kuderova
(Nazarbayev Intellectual School of Chemistry and Biology in Petropavlovsk) is a holder of a silver medal and second-degree diploma in English

43

Nursara Belisbayeva
(Nazarbayev Intellectual School of Chemistry and Biology in Petropavlovsk) is a holder of a silver medal and second-degree diploma in Russian

44

Kamila Bagdat
(Nazarbayev Intellectual School of Physics and Mathematics in Uralsk) is a holder of a silver medal and second-degree diploma in Russian

45

Magzhan Serikbekov
(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a silver medal and second-degree diploma in History of Kazakhstan

46

Rakhat Yergali
(Nazarbayev Intellectual School of Chemistry and Biology in Kyzylorda) is a holder of a silver medal and second-degree diploma in Law Basics

47

Arkadii Tsay
(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a sivler medal and second-degree diploma in Kazakh

48

Yekaterina Bogolyubova
(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a silver medal and second-degree in Russian language and literature

49

Alina Murzagaliyeva
(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe) is a holder of a silver medal and second-degree diploma in Russian language and literature

50

Turan Tursynbek
(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe) is a holder of a bronze medal and third-degree diploma in Biology

51

Ayazhan Rustemova
(Nazarbayev Intellectual School of Physics and Mathematics in Taraz) is a holder of a bronze medal and third-degree diploma in Biology

52

Nursat Kerey
(Nazarbayev Intellectual School of Chemistry and Biology in Petropavlovsk) is a holder of a bronze medal and third-degree diploma in Biology

53

Zhamilya Medetkyzy
(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a bronze medal and third-degree diploma in Biology

54

Medet Zhumadildayev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a bronze medal and third-degree diploma in Computer Science

55

Sanzhar Turganbek

(Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a bronze medal and third-degree diploma in Computer Science

56

Nursultan Yerlanuly

(Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a bronze medal and third-degree diploma in Computer Science

57

Temirlan Ismagulov

(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a bronze medal and third-degree diploma in Physics

58

Syrymkhan Nuriddin

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a bronze medal and third-degree diploma in Physics

59

Akhmet Shaiman

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma in Physics

60

Yernur Kairollayev

(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a bronze medal and third-degree diploma in Physics

61

Amir Kaidarov

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma in Physics

62

Damir Alenov

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a bronze medal and third-degree diploma in Physics

63

Ivan Pagin

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma in Chemistry

64

Anuar Maidan

(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a bronze medal and third-degree diploma in Chemistry

65

Ali Bauyrzhan

(Nazarbayev Intellectual School of Physics and Mathematics in Uralsk) is a holder of a bronze medal and third-degree diploma in Chemistry

66

Timur Dyusenbayev

(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a bronze medal and third-degree diploma in Chemistry

67

Arsen Narik

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a bronze medal and third-degree diploma in Mathematics

68

Damir Nurlanov

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma in Mathematics

69

Denis Son

(Nazarbayev Intellectual School of Physics and Mathematics in Kostanay) is a holder of a bronze medal and third-degree diploma in Mathematics

70

Tamirlan Bektemisov

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a bronze medal and third-degree diploma in Mathematics

71

Zhasulan Kazez

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma in Geography

72

Mazhit Kuanysh

(Nazarbayev Intellectual School of Physics and Mathematics in Kokshetau) is a holder of a bronze medal and third-degree diploma in Geography

73

Diyana Orazayeva

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma in Geography

74

Alisher Kospanov

(Nazarbayev Intellectual School of Chemistry and Biology in Atyrau) is a holder of a bronze medal and third-degree diploma in Geography

75

Guldana Kurmangali

(Nazarbayev Intellectual School of Chemistry and Biology in Petropavlovsk) is a holder of a bronze medal and third-degree diploma in Geography

76

Yerulan Konyrat

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a bronze medal and third-degree diploma in Geography

77

Ayaulym Mukan

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a bronze medal and third-degree diploma in English

78

Alina Nam

(Nazarbayev Intellectual School of Chemistry and Biology in Almaty) is a holder of a bronze medal and third-degree diploma in English

79

Yelikai Atabayeva

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a bronze medal and third-degree diploma in Russian

80

Yelikai Atabayeva

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a bronze medal and third-degree diploma in Russian

81

Tarazy Kadirgalikyzy

(Nazarbayev Intellectual School of Chemistry and Biology in Aktau) is a holder of a bronze medal and third-degree diploma in Kazakh language and literature

82

Symbat Zhuztan

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a bronze medal and third-degree diploma in History of Kazakhstan

83

Saltanat Alisheva
(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a bronze medal and third-degree diploma in Basics of Law

84

Aida Margaryan
(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a bronze medal and third-degree diploma in Kazakh

85

Tamerlan Kudaibergenov
(Nazarbayev Intellectual School of Chemistry and Biology in Almaty) is a holder of a bronze medal and third-degree diploma in German

86

Iskander Saginbek
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a bronze medal and third-degree diploma in German

XIV Republican Mathematics Tournament "Bastau", 15-19 June 2021, Kazakhstan

1

Dana Bolat (Nazarbayev Intellectual School of Physics and Mathematics in Kokshetau) is a holder of a gold medal and first-degree diploma

2

Alikhan Isayev (Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a silver medal and second-degree diploma

3

Aldiyar Omirbek (International School of Nur-Sultan) is a holder of a second-degree diploma

4

Danial Tolep (Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a bronze medal and third-degree diploma

5

Taimas Kozhakhan (International School of Nur-Sultan) is a holder of a bronze medal and third-degree diploma

Republican Olympiad in Mathematics and Science for Juniors, 19 May 2021, held in the lyceum boarding school "Bilim-innovation", Kokshetau

1

Alzhan Nurgaliyev
(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a gold medal and first-degree diploma in Computer Science

2

Olzhas Musalimov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Computer Science

3

Sagyn Dzhumadildayev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Computer Science

4

Sagyn Dzhumadildayev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Computer Science

5

Aiganym Baltashova
(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a gold medal and first-degree diploma in Biology

6

Batyr Yerzhanuly
(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a gold medal and first-degree diploma in Biology

7

Ailina Khodzha-Akhmedova
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a bronze medal and third-degree diploma in Biology

8

Zhanbek Zulkarnay
(Nazarbayev Intellectual School of Physics and Mathematics in Uralsk) is a holder of a gold medal and first-degree diploma in Geography

9

Rustem Orazbay
(Nazarbayev Intellectual School of Chemistry and Biology in Aktau) is a holder of a gold medal and first-degree diploma in Geography

10

Ulnur Nurkhodzhayeva
(Nazarbayev Intellectual School of Physics and Mathematics in Shymkent) is a holder of a silver medal and second-degree diploma in Geography

11

Timur Tsoi
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma in Mathematics

12

Mukhamed Bisenbay
(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a silver medal and second-degree diploma in Mathematics

13

Tamerlan Arkenov
(Nazarbayev Intellectual School of Nur-Sultan) is a holder of a silver medal and second-degree diploma in Mathematics

14

Abay Malik
(Nazarbayev Intellectual School of Physics and Mathematics in Shymkent) is a holder of a gold medal and first-degree diploma in Physics

15

Didar Zhuruntayev
(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe) is a holder of a silver medal and second-degree diploma in Physics

16

Nurbolat Nasir
(Nazarbayev Intellectual School of Physics and Mathematics in Shymkent) is a holder of a silver medal and second-degree diploma in Physics

17

Dinmukhamed Dzhuvashev
(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a bronze medal and third-degree diploma in Physics

18

Altynay Seydilda
(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a gold medal and first-degree diploma in Chemistry

19

Ali Perdekhan
(Nazarbayev Intellectual School of Physics and Mathematics in Shymkent) is a holder of a gold medal and fist-degree diploma in Chemistry

20

Kanat Baymomynov
(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a silver medal and second-degree diploma in Chemistry

21

Aiym Tauekel
(Nazarbayev Intellectual School of Chemistry and Biology in Kyzylorda) is a holder of a bronze medal and third-degree diploma in Chemistry

V Republican Chemistry Olympiad named after Kanysh Satpayev
30 November 2021

1

Kanat Baymomynov
(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a gold medal and first-degree diploma in Chemistry

2

Shyngys Tokanov
(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a gold medal and fist-degree diploma in Chemistry

3

Ali Perdekhan
(Nazarbayev Intellectual School of Physics and Mathematics in Shymkent) is a holder of a bronze medal and third-degree diploma in Chemistry

Eurasian Olympiad in Computer Science
December 2021

1

Medet Zhumadildayev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Computer Science

2

Sagyn Dzhumadildayev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Computer Science

3

Amir Nuriyev
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Computer Science

4

Mukhammadarif Sakhmoldin
(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a silver medal and second-degree diploma in Computer Science

5

Yernar Sadybekov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a silver medal and second-degree diploma in Computer Science

6

Olzhas Musalimov
(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a bronze medal and third-degree diploma in Computer Science

7

Sanzhar Turganbek
(Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a bronze medal and third-degree diploma in Computer Science

8

Nursultan Yerlanuly
(Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a bronze medal and third-degree diploma in Computer Science

9

Altair Ashurov
(Nazarbayev Intellectual School of Physics and Mathematics in Nur-Sultan) is a holder of a bronze medal and third-degree diploma in Computer Science

10

Galymzhan Zhangazy
(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma in Computer Science

I International Physics Olympiad named after Al-Fergani, 2021

1

Alisher Yerkebayev

(Nazarbayev Intellectual School in Aktobe) is a holder of a gold medal and first-degree diploma of the Ist International Physics Olympiad named after Al-Fergani.

IV Republican Intellectual Competition "My small Motherland"

1

Aisha Zheksembiyeva

(Nazarbayev Intellectual School of Physics and Mathematics in Uralsk) is a holder of a second-degree diploma in the nomination "History of my small Motherland"

2

Aisha Zholamanova

(Nazarbayev Intellectual School of Physics and Mathematics in Uralsk) is a holder of a second-degree diploma in the nomination "Symbol of my small Motherland"

3

Zhanar Zhardem

(Nazarbayev Intellectual School of Physics and Mathematics in Uralsk) is a holder of a first-degree diploma in the nomination "My native land" (essay)

4

Arnat Kurmanbay

(Nazarbayev Intellectual School of Chemistry and Biology in Aktau) is a holder of a diploma in the nomination "The Future of my small Motherland"

Republican contest of science projects (science competition) on general education subjects for Grade 8-11 (12) students

1

Ilyas Umurbekov

(Nazarbayev Intellectual School of Physics and Mathematics in Kokshetau) is a holder of a gold medal and first-degree diploma for the project "Visual sign language translator" in Computer Science

2

Aimurat Zhetkizgenov

(Nazarbayev Intellectual School of Chemistry and Biology in Aktau) is a holder of a gold medal and first-degree diploma for the project "AI application detecting skin diseases"

3

Sultan Sarsenbayev

(Nazarbayev Intellectual School of Chemistry and Biology in Aktau) is a holder of a gold medal and first-degree diploma for the project "AI application detecting skin diseases"

4

Medet Zhumadildayev

(Nazarbayev Intellectual School of Physics and Mathematics in Almaty) is a holder of a gold medal and first-degree diploma for the project "Ramanujan congruences for tangent numbers" in Mathematics

5

Alisher Omirzak

(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a gold medal and first-degree diploma for the project "The composition of a rotational homothety" in Mathematics

6

Arilana Nugmanova

(Nazarbayev Intellectual School of Physics and Mathematics in Kostanay) is a holder of a gold medal and first-degree diploma for the project "Classification of 1/p, 2/p, ..., (p-1)/p (prime numbers) fractions" in Mathematics

7

Adilet Muratov

(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a gold medal and first-degree diploma for the project about the Earth and space "Study of the mechanical properties of bronze alloy for the needs of the space industry"

8

Nurtileu Yerezhepov

(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a gold medal and first-degree diploma for the project

"Studying the mechanical properties of bronze alloy for the needs of the space industry" in Applied Mathematics

9

Sagidolla Kudaibergenov

(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a gold medal and first-degree diploma for the project "Studying the mechanical properties of bronze alloy for the needs of the space industry" in Applied Mathematics

10

Dilnaz Seilkhanova

(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a gold medal and first-degree diploma for the project in Technology "Recycling polymer waste: making products from secondary raw materials and studying their properties"

11

Yerlan Turaly

(Nazarbayev Intellectual School of Chemistry and Biology in Aktau) is a holder of a gold medal and first-degree diploma for the project "Hydropanel"

12

Aruzhan Oralkhanova

(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a gold medal and first-degree diploma for the project "Studying the sorption properties of humic acids obtained from brown coal of the Kenderly natural gas deposit"

13

Adil Zulkarnayev

(Nazarbayev Intellectual School of Physics and Mathematics in Kostanay) is a holder of a gold medal and first-degree diploma for the project "Producing a putty from used chewing gum"

14

Darina Telgarina

(Nazarbayev Intellectual School of Physics and Mathematics in Kostanay) is a holder of a gold medal and first-degree diploma for the project "Producing a putty from used chewing gum"

15

Magzhan Sagynganov

(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a gold medal and first-degree diploma in History of Kazakhstan "The history of mining in Eastern Kazakhstan: little-known episodes in the life of child miners"

16

Ainamkoz Rafikhova

(Nazarbayev Intellectual School of Physics and Mathematics in Uralsk) is a holder of a gold medal and first-degree diploma for the project "National board game" in Ethnic and Cultural Studies

17

Nurgul Zhumasheva

(Nazarbayev Intellectual School of Chemistry and Biology in Petropavlovsk) is a holder of a silver medal and second-degree diploma for the project "Studying the mesospheric clouds in the Northern hemisphere from 2007 to 2020"

18

Dias Maratov

(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a silver medal and second-degree diploma for the environmental and human health project "Ozone layer recovery"

19

Magzhan Serikbayev

(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a silver medal and second-degree diploma for the environmental and human health project "Ozone layer recovery"

20

Alina Chernyakova

(Nazarbayev Intellectual School of Chemistry and Biology in Aktau) is a holder of a silver medal and second-degree diploma for the project "Growing common pomegranate in the extra-arid natural and climatic conditions of Mangistau" in Biology

21

Almaz Nurzhanov

(Nazarbayev Intellectual School of Chemistry and Biology in Aktau) is a holder of a silver medal and second-degree diploma for the project "Growing common pomegranate in the extra-arid natural and climatic conditions of Mangistau" in Biology

22

Kamila Orazbek

(Nazarbayev Intellectual School of Chemistry and Biology in Karaganda) is a holder of a silver medal and second-degree diploma "Application of augmented reality in the educational process" in Computer Science

23

Zarina Aisauytova

(Nazarbayev Intellectual School of Chemistry and Biology in Kyzylorda) is a holder of a silver medal and second-degree diploma for the project "Studying the sorption properties of iron cations of calcium silicate processed in a microwave oven at 2450 MHz in Chemistry

24

Aruzhan Zhaksylyk

(Nazarbayev Intellectual School of Physics and Mathematics in Taraz) is a holder of a silver medal and second-degree diploma for the project "Promising tourist route: Botamoynak - ancient settlement Taraz" in local history

25

Balnur Ibrash

(Nazarbayev Intellectual School of Physics and Mathematics in Taraz) is a holder of a silver medal and second-degree diploma for the project "Promising tourist route: Botamoynak - ancient settlement Taraz" in local history

26

Adelya Mamyr

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a silver medal and second-degree diploma for the project "Exotic / eco park of flowers 'Kaori' in the Kaitpas ravine"

27

Askar Gaisin

(Nazarbayev Intellectual School of Physics and Mathematics in Kostanay) is a holder of a silver medal and second-degree diploma for the project "Philanthropy in the works of M.Auezov 'The Path of Abai' and Ch.Dickens 'David Copperfield'" in Linguistics

28

Diana Kuvanbay

(Nazarbayev Intellectual School of Chemistry and Biology in Aktau) is a holder of a silver medal and second-degree diploma for the project "Hydrosprinkler-X automated robot monitoring the plant growth" in Technology

29

Ilya Karplyuk

(Nazarbayev Intellectual School of Physics and Mathematics in Kostanay) is a holder of a bronze medal and third-degree diploma for the project "E-book for the visually impaired" in Computer Science

30

Denis Son

(Nazarbayev Intellectual School of Physics and Mathematics in Kostanay) is a holder of a bronze medal and third-degree diploma for the project "E-book for the visually impaired" in Computer Science

31

Abylaikhan Mukhamedzhanov

(Nazarbayev Intellectual School of Physics and Mathematics in Kokshetau) is a holder of a bronze medal and third-degree diploma for the project "Cubesat nano-satellite monitoring the state of space objects and vehicles" in Technology

32

Ayaulym Berkinbayeva

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a bronze medal and third-degree diploma for the project "Fenix is a bionic prosthetic" in Technology

33

Abylai Sydykov

(Nazarbayev Intellectual School of Physics and Mathematics in Taraz) is a holder of a bronze medal and third-degree diploma for the project "Monitoring system for indicators of COVID-19 clinical symptoms" in Technology

34

Aneliya Abdimalik

(Nazarbayev Intellectual School of Physics and Mathematics in Taraz) is a holder of a bronze medal and third-degree diploma for the project "Monitoring system for indicators of COVID-19 clinical symptoms" in Technology

35

Aziza Tashimova

(Nazarbayev Intellectual School of Physics and Mathematics in Uralsk) is a holder of a bronze medal and third-degree diploma for the project "Alash doctors" in local history

36

Anel Akim

(Nazarbayev Intellectual School of Physics and Mathematics in Uralsk) is a holder of a bronze medal and third-degree diploma for the project "Alash doctors" in local history

37

Victor Kovalchuk

(Nazarbayev Intellectual School of Physics and Mathematics in Kostanay) is a holder of a bronze medal and third-degree diploma for the project "Online handwriting recognition system" in Computer Science

38

Kassym Gabdushev

(Nazarbayev Intellectual School of Nur-Sultan) is a holder of a bronze medal and third-degree diploma for the project in Economics "Small and medium business as a major factor in the development of the country's economy. Using mathematical models to show the importance and impact of small and medium business on the economy of Kazakhstan, as well as for forecasting"

XVI Republican contest of research projects and creative works "Zerde", 26-28 January 2021

1

Yersaiyn Zharasbayev

(International School of Nur-Sultan) is a holder of a gold medal and first-degree diploma for the project "Distance learning as the need of the hour: a student's perspective" in Medicine and Psychology

2

Amir Bekbolat

(International School of Nur-Sultan) is a holder of a gold medal and first-degree diploma for the project "Distance learning as the need of the hour: a student's perspective" in Medicine and Psychology

3

Alibi Kadyr

(Nazarbayev Intellectual School of Physics and Mathematics in Kokshetau) is a holder of a gold medal and first-degree diploma for the project "A device automatically measuring a person's temperature" in Physics

4

Asel Kanabek

(Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a gold medal and first-degree diploma for the project "My grandfather K. Zamanov's contribution to perpetuating the memory of I. Dzhansugurov" in History, Local history and Ethnic and Cultural Studies

5

Ailina Tanirbergen

(International School of Nur-Sultan) is a holder of a gold medal and first-degree diploma for the project "How does milk become cheese?" in Biology

6

Nurbol Momynkul

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a silver medal and second-degree diploma for the project "Making a protective face mask" in Medicine and Psychology

7

Yerasyl Zhusip

(Nazarbayev Intellectual School of Physics and Mathematics in Uralsk) is a holder of a silver medal and second-degree diploma for the project "Kazakhstan's First General Gubaidolla Zhangirov" in History, Local history and Ethnic and Cultural Studies

8

Arsen Kudaibergen

(Nazarbayev Intellectual School of Physics and Mathematics in Uralsk) is a holder of a silver medal and second-degree diploma for the project "Kazakhstan's First General Gubaidolla Zhangirov" in History, Local history and Ethnic and Cultural Studies

9

Asel Rysbay

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a silver medal and second-degree diploma for the project "Biohumus production at home by growing California worms" in Ecology and Valeology

10

Muhammadusuf Amantai

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a silver medal and second-degree diploma for the project "Biohumus production at home by growing California worms" in Ecology and Valeolog

11

Eva Karapetyants

(Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a silver medal and second-degree diploma for the project"Homeless animals is the problem of everyone" in Ecology and Valeology

12

Daulet Kurmanbai

(International School of Nur-Sultan) is a holder of a silver medal and second-degree diploma for the project "How to love reading books" in Russian language and Literature

13

Aimer Koshmambetov

(Nazarbayev Intellectual School of Physics and Mathematics in Taraz) is a holder of a silver medal and second-degree diploma for the project in Physics "Building air solar collector"

14

Aikhanym Akhmetkhan

(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk) is a holder of a bronze medal and third-degree diploma for the project in Kazakh Language and Literature "Learning Kazakh in distance learning in grades instructed in Russian by using Easel.ly application"

15

Alisher Sailaubek

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma for the project in Physics "Portable system for automating processes in a greenhouse"

16

Diana Khamitova

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma for the project in Physics "Portable system for automating processes in a greenhouse"

17

Ilyas Makhatov

(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a bronze medal and third-degree diploma for the project in Robotics "Smart firefighter suit"

18

Alina Moroz

(Nazarbayev Intellectual School of Physics and Mathematics in Semey) is a holder of a bronze medal and third-degree diploma for the project in Robotics "Smart firefighter suit"

19

Aisha Tashkenova

(Nazarbayev Intellectual School of Chemistry and Biology in Ust-Kamenogorsk)

is a holder of a bronze medal and third-degree diploma for the project in Mathematics "Construction Mathematics"

20

Ademar Aubakirov

(International School of Nur-Sultan) is a holder of a diploma for the project "Advantages and disadvantages of APPLE gadgets"

21

Nursaya Karshyga

(Nazarbayev Intellectual School of Chemistry and Biology in Aktau) is a holder of a diploma for the project in English "Learning English words through effective methods"

22

Zhanerke Otegen

(Nazarbayev Intellectual School of Physics and Mathematics in Aktobe) is a holder of a diploma for the project "Kelp is a natural doctor" in Ecology and Valeology

Republican Contest of Environmental Projects "Proeco", 7-9 December 2021

1

Arlan Toktakhmet

(Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a gold medal and first degree diploma in the nomination "Nature of the native land".

2

Adiya Maidan

(Nazarbayev Intellectual School of Physics and Mathematics in Taldykorgan) is a holder of a gold medal and first degree diploma in the nomination "Nature of the native land".

3

Tomiris Mukanova

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma for the project in the nomination "A clean city starts with you"

4

Medet Kaisayev

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma for the project in the nomination "A clean city starts with you"

5

Ali Kaiyr

(Nazarbayev Intellectual School of Chemistry and Biology in Pavlodar) is a holder of a bronze medal and third-degree diploma for the project in the nomination "A clean city starts with you"

6

Irisbek Ulugbekov

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a bronze medal and third-degree diploma for the project in the nomination "Best environmental initiative"

7

Aliya Yedil

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a bronze medal and third-degree diploma for the project in the nomination "Best environmental initiative"

8

Sevinch Asanova

(Nazarbayev Intellectual School of Chemistry and Biology in Shymkent) is a holder of a bronze medal and third-degree diploma for the project in the nomination "Best environmental initiative"

INNOVATION GRANT RECIPIENTS IN 2021

1

Alikhan Kalibayev, NIS of PhM in Kokshetau is a recipient of a full $8,000 grant to attend the Northwestern University Summer Preparatory Programme in Qatar, Northwestern University Admissions Office in Qatar, May 20, 2021.

2

Zhomart Zheksenbay, NIS of PhM in Taldykorgan is a winner of Grand Prix and certificate in the amount of 100 000 KZT of the Regional contest of innovative ideas and projects "ZHETYSU-STARTUP" START-UP ACADEMY held in Zhetysu University named after Ilyas Zhansugurov, 2021.

3

Sayazhan Onlasyn, Sultan Mustafin, Inkar Ibragim, Kamilla Mashanlo, Yenlik Serpen, Arslan Aimenov, Daniyar Yegeubay, Azat Kazhimukhan, Akbota Keneskhan, Anel Aitmuratova, the startup team of the NIS of PhM in Taraz, recipients of a $1,000 grant to develop the project.

13-15

Sultan Mustafin, Azat Kazhymukhan and Sayazhan Onlasyn,NIS in Taraz, winners of a 100,000 tenge grant for winning the Nazarbayev University HackNU hackathon, where they presented their solution to BTS Digital for their Aitu platform, took third place.

16-19

Sayazhan Onlasyn, Sultan Mustafin, Daniyar Yegeubay, Azat Kazhymukhan, NIS of PhM in Taraz, grant holders in the amount of 20 000 RUB for a business project in the online hackathon "Hackathon </beCoder> St. Petersburg Polytechnic University, March 21, 2021.

20-22

Sayazhan Onlasyn, Sultan Mustafin, Azat Kazhymukhan, NIS of PhM in Taraz, winners of the Grand Prix and a grant of 1 million tenge for the startup project "Crepiks Academy", an interactive platform to teach programming in three languages, II National Championship of School Entrepreneurship Enactus Kazakhstan National Expo 2021, Founder - KMF-Microfinance Organization of Kazakhstan, June 21, 2021.

23-28

Sayazhan Onlasyn, Sultan Mustafin, Inkar Ibrahim, Kamilla Mashanlo, Enlik Serpen, and Arslan Aimenov, NIS of PhM in Taraz, winners of a 2500 USD project development grant, second place in the Central Asian Startup Competition, March 2021.

29-30

Azat Kazhymukhan, Sayazhan Onlasyn, NIS of PhM in Taraz, winners of 100,000 Russian rubles for the project on programming, International Hackathon organized by Wallet One international payment service, electronic platform Naimix, the Union of Self-Employed Russia and experts on digital transformation of business, April 21, 2021.

31-33

Daniyar Egeubay, Sultan Mustafin, Arslan Aimenov, NIS of PhM in Taraz, winners of a grant of 250,000 tenge for a startup project, IITU University IT Fest- festival, founder of the Idea Ventures grant.

34-37

Mashanlo Kamilla, Ibrahim Inkar, Oralbek Inju-Marzhan, Zhaksylyk Aruzhan, NIS PhM in Taraz, winners of a grant of 100,000 tenge for a startup project team, Republican hackathon on social problems solving with the support of Girls Power Foundation and National Alumni, October 2021.

38

Anel Sarsenbek, NIS of PhM in Taraz, holder of 50 thousand tenge grant from Girls Power Foundation for her start-up project "Infrared alarm system device", Republican competition on the basics of robotics supported by Girls Power Foundation and National Alumni Network on the part of Arduino, October 2021.

39

Timur Amangeldiyev, NIS of PhM in Taraz, educational grant holder (1,400,000 tenge for 3 years of study) at Astana IT University, Programming Olympiad, May 2021.

40

Assel Oshan, NIS of PhM in Taraz, holder of an educational grant for full training (in the amount of 1,350,000 tenge for 4 years) at Safi Utebayev Atyrau University of Oil and Gas for the startup project "Traffic lights using

renewable energy sources", "Caspian Startup" International Competition, 2021.

41

Borte Kurbanbay, NIS of PhM in Shymkent, grant holder of 150,000 tenge and the prize of a laptop, a competition on the results of training courses in programming "IT camp", the founder is the Youth Resource Centre in Shymkent, 2021

42

Alen Altay, NIS of PhM in Shymkent, grant holder of 100,000 tenge, the competition on the results of training courses in programming "IT camp", the founder is the Youth Resource Centre in Shymkent, 2021.

43

Nariman Issayev, NIS of PhM in Shymkent, grant holder of 50 000 tenge, the competition on the results of training courses in programming "IT camp", the founder is the Youth Resource Centre in Shymkent, 2021.

44

Yessimkhan Sagiyev, NIS of PhM in Shymkent, grant holder of 50,000 tenge, a competition on the results of training courses in programming "IT camp", the founder is the Youth Resource Centre of Shymkent, 2021.

45-49

Borte Kurbanbay, Aida Malikova, Sanzhar Abduraimov, Zhibek Aliakbar, Almira Abdikadyr, NIS of PhM in Shymkent, grant holder of 1 000 000 tenge, Hackaton Ynta «U:projects» festival «U:hack <online> 2021», the founder is the Youth Resource Centre of Shymkent, 2021.

50

Nursat Omirbekov, NIS of PhM in Nur-Sultan, grant holder of 3 000 000 tenge, "Generation of Independance" on Media strand, the founder is Ministry of Information and Social development.

51-52

Saltanat Alisheva, Yasmin Serikbayeva, NIS of PhM in Nur-Sultan, holders of 50,000 tenge grant for the startup project "Development of a device for posture control" at the FAB LAB Bootcamp Competition, Nazarbayev University NURIS Innovation Cluster.

53-56

Arynuly Nurtore, Kayratkyzy Indira, Meirambekov Nursultan, Rakhimzhanov Ualikhan, NIS of PhM in Nur-Sultan, holders of 300,000 tenge grant for their startup project "Umai Modular Hydroponic Farm" in Astana Innovations Challenge Startup Weekend, organized by Nur-Sultan Akimat and Astana Innovations, November 30, 2021.

57

Murat Zhangir, NIS in Nur-Sultan, holder of 300 000 tenge grant in the National Contest of Volunteer Initiatives for online circles with orphanages, founder Akimat of Nur-Sultan, 2021.

58-59

Yekaterina Kim, Arman Rysmakhanov, NIS in Nur-Sultan, holders of 120 000 tenge for start-up "Jazgysh is innovative method of teaching writing to the blind" in the Republican competition of KazRoboProject-2021 projects, the founder is Nursultan Nazarbayev Fund, 2021.

60

Amina Rakhimbayeva, NIS in Nur-Sultan, grant holder $6,500 for the startup project "Life Mobile App!", Startup Incubation from AstanaHub Founders ($5,000), Amazon AWS ($1,500), 2021.

61-64

Kamilla Mashanlo, Inkar Ibragim, Akbota Keneskhan and Sayazhan Onlasyn, a 2021 graduate of NIS of PhM in Taraz, holders of a 500,000 tenge grant to further develop digital startup projects, were among the winners of the traditional contest of student digital projects "Live on the bright side!", awarded second place for the "UnApp Space" start-up, October 2021.

2021 COPYRIGHT CERTIFICATES AND PATENTS HOLDERS

1

Zhazira Koldasbay, NIS of PhM in Shymkent, intellectual property item "Automatic disinfector device", certificate of State registration of rights on intellectual property item dated 08 October 2021, No.109499. Automatic disinfecting pen working like motion detector. Sensors read the proximity of the hand to the pen and turn off the ultraviolet ray streams that disinfect the pen from bacteria and germs.

2

Zhandarbek Nurgaliyev, NIS of PhM in Uralsk, intellectual property item "InErS (Innovative Ergonomic System) - innovative means of preventing scoliosis", certificate about including information into State registration of rights on copyright dated May 20, 2021 No.17736. The item aims at preventing scoliosis and was awarded in the Republican competition of scientific projects in the category of "100 best scientific projects of the year" and was highly appreciated at the International exhibition in Brazil "Mostra Brazileira de Science and Technolgia" (09.11.2020, certificate "INERS" is based on the use of a contact sensor. The main contact sensor, which is located on the seat of the chair, warns the user to take the correct position. The author foresees further application of the project in the working environment of organizations and educational institutions, published an article in Young Scientist, No. 6 (26) for 2019.

3

Issa Abzal, NIS of PhM in Shymkent, intellectual property item "Bioremediation of contaminated soils using cotton and sunflower," Certificate of Record in the State Register of Rights to objects protected by copyright dated April 08, 2021 No.16451. The object is to solve the problem of destruction, modification and detoxification of various chemical and physical substances of the environment through the use of cotton and sunflower. It should be noted that this work was first presented at the competition "Creative Flight", took second place in the national competition organized by the scientific and methodical centre "Algorithm".

4

Aikumis Turlybi, NIS of PhM in Shymkent, intellectual property item "Handbook "Mechanisms of Chemical Reactions in Organic Chemistry," Certificate of Record in the State Register of Rights to Objects Protected by Copyright, January 21, 2021, No. 14574. A short guide about mechanisms in organic chemistry for chemistry teachers and students in English, Kazakh and Russian.

5-6

Asset Zhumatai, Meruert Sarybai, NIS of PhM in Shymkent, intellectual property item "the physics of greenhouse", certificate No. 15369 of February 22, 2021 on entering information into the state register of rights to objects protected by copyright. It aims to automate the greenhouse: when the temperature of the light changes, the spontaneous mechanics turns on, and when darkness falls, the light automatically turns on.

7

Assylbek Saduakhasov, NIS of PhM in Shymkent, intellectual property item "Website for design company AUS" for software, Certificate of Record in the State Register of Rights to objects protected by copyright of April 09, 2021, No. 16511. The website accept online orders and keeps clients' data base and shows portfolios of company architects. The site can register new users, keep database of accounts, and include system administrator login and authorization. Also, you can upload images, write text and set the price in the order form. The user can add a certain number of these or other projects to their shopping cart. They will be identified in the administrator's database. Programming language - JavaScript, PHP, SQL.

8

Khorlan Assylbek, NIS of PhM in Shymkent, intellectual property item "Website for board game rentals", Certificate of Record in the State Register of Rights to objects protected by copyright of April 27, 2021 No.17014.

9

Assem Oryntai, NIS of PhM in Shymkent, intellectual property item "Website for bakery store Elite", Certificate of Record in the State Register of Rights to objects protected by copyright of April 28, 2021 No. 17016.

10

Aliza Momysheva, NIS of PhM in Shymkent, intellectual property, website for Ashley LLP , Certificate of Record in the State Register of Rights to objects protected by copyright of May 05, 2021, No.17209.

11

Symbat Seitkasym, NIS of PhM in Shymkent, intellectual property, Website for medical centre Alma-Medicus, Certificate of Record in the State Register of Rights to objects protected by copyright of April 30, 2021, No.17128.

12

Aidar Bauyrzhanuly, NIS of PhM in Shymkent, intellectual property, Website for psychologists of NIS, Certificate of Record in the State Register of Rights to objects protected by copyright of April 28, 2021, No. 17041.

13-15

Elnur Khalmetov, Zhangore Bissengali, Nabi Kussain, NIS of Ph M in Almaty, intellectual property, Air pollution control device, utility model patent No. 5781 dated February 11, 2021. The useful model is designed to collect and display information about the state of the atmosphere. It can determine the percentage of various substances in the air and send this information to a server, and then display it in a video / table.

16-17

Zhanibek Manabayev, Zhangir Siranov, NIS of PhM in Almaty, "Safe & Sound" intellectual property, Certificate of State Register of Rights to Copyright Protected Objects №14499 dated 19 January 2021. "Nowadays young people often use headphones forgetting about their own safety on the street. As practice shows, pedestrians wearing headphones are disoriented in space, lose coordination, not to mention the fact that they simply do not hear the sound of approaching vehicles. Not hearing the approaching vehicle and not reacting in time, the pedestrian poses a danger not only to himself, but also to the driver. To solve this problem, the Safe&Sound app was created, which lowers the volume on headphones and prevents accidents," the authors of the project said.

18-19

Zhanibek Manabayev, Zhangir Siranov, NIS of PhM in Almaty, intellectual property "Exotic Matter Application", Certificate of State Register of Rights to Copyright Protected Objects № 14612 dated 22 January 2021. People using Exotic Matter get access to community suggestions and are able to change their routine and learn about new activities, movies, cultures and even physical exercises. The application also takes into account experience and advice of astronauts and space agencies – organizations that are ideally adapted to life in isolation. The best posts are collected in a general list of activity suggestions that can be studied and applied by all users. Users can interact with each other through comments, - the authors of the project said.

20

Dilnaz Seilkhanova, NIS of ChB in Ust-Kamenogorsk, patent № 34947 dated 12 March 2021. The project solves the problem of growing apple trees in the harsh climatic conditions of eastern Kazakhstan. The project contains the methodology of Canadian scientists. As a result of research, the fruitfulness of apple trees has noticeably increased. To achieve these results, Dilnaz Seilkhanova has worked on the project for four years in the school's apple orchard.

21

Asylkhan Kali, NIS of PhM in Kokshetau, intellectual property "Anti-theft system identifying car owners", patent № 17480 dated 13 May 2021. The system prevents car theft based on a Raspberry Pi chip and fingerprint recognition scanner. Asylkhan like all his peers is interested in cars. When he learned that in Kazakhstan the number of car thefts increases every year, he had the idea to create a project "Anti-theft system identifying a car owner". According to Asylkhan, it took him a few months

to work on this project. During a year he made some additions and improvements. The project is the best option for securing the car against theft and accidental use of the ignition key by children. Also, the absence of the ignition lock will prevent the thief from picking up the key to steal the car. Starting the engine using the car owner's fingerprints solves the above problems. This system is easily installed on any car with pre-saved fingerprints.

21-23

Aimurat Zhetkizgenov, Sultan Sarsenbayev, NIS of ChB in Aktau, intellectual property "Computer software. Artificial Intelligence based SkinSaver-web application for identifying skin diseases, Certificate of State Register of Rights to Copyright Protected Objects No. 17493 dated May 13, 2021. This web application is hosted and allows you to diagnose skin diseases with high accuracy (75%). In the database of this system, there are more than 1,000 skin diseases that are common in Kazakhstan. This list of diseases was identified on the basis of a survey of dermatologists in the city and independent research. The app can be used to establish diagnoses and train young newly arrived physicians.

24

Dilnaza Karmenova, NIS of ChB in Pavlodar, intellectual property "The method of producing eco-fuel briquettes" No. 5763 dated February 12, 2021. This utility model refers to energy and industry, namely to the production of biobriquettes from sheep excrement, coal crumbs and soaked packaging board which can be used for heating houses and other buildings, as well as to agriculture, namely to the processing of industrial sheep waste and can be used in the disposal of animal waste.

25-27

Dilnaz Abzal, Islam Amergaliyev, Amina Temirzhanova, NIS of ChB in Pavlodar, intellectual property "Application of anaerobic digestion technology for energy production at Kyzylzhar poultry farm", Certificate of State Register of Rights to Copyright Protected Objects No.95336 dated March 16, 2021. The project aims to apply anaerobic fermentation technology for energy production at Kyzylzhar poultry farm.

28-29

Amangeldy Rakhimzhanov, Aidynbek Sayasat, NIS of ChB in Pavlodar, intellectual property "Stereometryx-introducing augmented reality technology to math classes", Certificate of State Register of Rights to Copyright Protected Objects No.15826 dated March 10, 2021. This application is designed for high school students studying Geometry, specifically stereometry, for a complete view of the drawing from all sides.

30-34

Alexander Tyulkov, Nikolay Kazantsev, Turlykhan Toktaganov, Yerkebulan Yelzhan, Azamat Bekbolat, NIS of ChB in Pavlodar, intellectual property "Computer software", Certificate of State Register of Rights to Copyright Protected Objects No.15158 dated February 15.

35

Amira Artykbayeva, NIS of ChB in Pavlodar, intellectual property "The concept image of Kazakhstan through the eyes of tourists", Certificate of State Register of Rights to Copyright Protected Objects No.16907 dated April 23, 2021.

36

Adilkhan Kuantayev, NIS of ChB in Pavlodar, intellectual property "Scientific research project "Liberal translation of Abay's poems by Semeryanov (drawing on the poem "Do not waste your time", Certificate of State Register of Rights to Copyright Protected Objects No.17849 dated May 24, 2021.

37-38

Amina Akhmetova, Nuray Bekmuratova, NIS of ChB in Pavlodar, intellectual property "A method for cleaning the water surface from oil pollution.", Certificate of State Register of Rights to Copyright Protected Objects No.17762 dated May 20, 2021. A method for cleaning the water surface from oil pollution. As an effective way to clean water from oil pollution, we propose an environmentally friendly, efficient and affordable method of mechanical purification using a toroidal extractor made of polyamide fibers and human hair. The proposed method

is one of the most effective, inexpensive and affordable ways to remove oil pollution from the surface of water reservoirs.

39-41

Nazgul Kabiyeva, Aigerim Barinova, Boyaubay Akhmet, NIS of ChB in Pavlodar, intellectual property "Sets on the Euler-Venn diagram and its use in practice, Certificate of State Register of Rights to Copyright Protected Objects No.17987 dated May 26, 2021. Sets can be found in various fields of knowledge: mathematics, physics, biology, chemistry, linguistics, etc. Most set problems can be solved using the Euler-Venn diagram, so this topic is very relevant in mathematics.

42

Akhmet Boyaubay, NIS of ChB in Pavlodar, intellectual property "Development of students' project research skills through a research project on the subject of Kazakhstan in the modern world.", Certificate of State Register of Rights to Copyright Protected Objects No.27060 dated May 20, 2021.

43

Nurzhan Bakenov, NIS of ChB in Pavlodar, intellectual property "National and Cultural Peculiarities of Zoomorphisms in English", Certificate of State Register of Rights to Copyright Protected Objects No. 17975 dated May 25, 2021.

44

Dilnaz Kamalova, NIS of PhM in Almaty, intellectual property "Smart pillbox for pharmacological treatment", Certificate of State Register of Rights to Copyright Protected Objects No.5214 dated May 6, 2021

45-47

Arman Zhalgasbayev, Yernur Zhangaliyev, Tolegen Aiteni, NIS of PhM in Aktobe, intellectual property "AquaPac (Portable generator of atmospheric water) Science product, Certificate of State Register of Rights to Copyright Protected Objects No. 14746 dated January 29, 2021. AquaPAC is a generator of atmospheric water capable to produce water from the air. The project addresses the problem of global water shortage and presents a new way of solving it encouraging to make additions and reflect on the problem. The device receives water by condensation, filtration and UV processing.

48

Arman Zhalgasbayev, NIS of PhM in Aktobe, intellectual property "RUD Smart Mask" (Refreshable Universal Dual Smart Mask), Certificate of State Register of Rights to Copyright Protected Objects No.14943 dated February 8, 2021. RUD Smart Mask project has 2 main objectives: first is to ensure the safety of the lives of people who are often in contact with industrial emissions and second is to help ecologists find the sources of harmful gases in order to prevent air pollution at critical values of the concentration of gases emitted into the environment. Considering that air analyzers are most often used in industry, the RUD Smart Mask will be not only a smart, but also an affordable solution to this problem.

49-50

Aiken Altay, Aidana Kenzhebayeva, NIS of PhM in Aktobe, intellectual property "Automated Savvy window", Certificate of State Register of Rights to Copyright Protected Objects No.14972 dated February 9, 2021. With the advent, development and adoption of smart technology in everyday life, the Savvy window is well suited for any house for the safety of children. Project aim is to create a working prototype of a smart window mechanism to solve the problem of children falling from the windows of multi-storeyed buildings. The principle of the model is simple: in order to open the window, you must enter the password through the matrix keypad. If the password is entered correctly, the board will send a signal to the servo motor, and the latter will mechanically open the window. When you open the window, ultrasonic sensors get activated to close the window when an object approach. Sensors will monitor the ultrasonic background within a radius of 90 cm signaling the presence of any object in this radius and if detected, the board will signal to the servo motor which will immediately slam the window. the board will signal to the servo motor which will immediately slam the window.

51-52

Kamila Zhaksylyk, Leila Zhuruntayeva, NIS of PhM in Aktobe, intellectual property "Mobile application "EcoAlarm", Certificate of State Register of Rights to Copyright Protected Objects No.14972 dated March 1, 2021. The EcoAlarm application is designed to identify environmentally hazardous locations and allows users to add them to the map indicating the type of problem and level of danger. The user can also determine his current location and find objects on the map by name. He can also report environmentally hazardous areas with their description: type, region, comment, and hazard level. The appendix provides information (organization name, head, brief information about the organization, region / BIN, contacts) about Kazakhstani organizations involved in solving various environmental issues. The application is designed for cell phones with the Android operating system.

53-54

Nurshat Zhubanysh, Azamat Kaldashev, NIS of PhM in Aktobe, intellectual property "Flood control", Certificate of State Register of Rights to Copyright Protected Objects No.16154 dated March 29, 2021. The project aims to prevent flooding of the population living near rivers with the Flood Prevention Device and to take preventive measures in a timely manner. The model automatically turns on the notification that the water level is above normal. When the water rises above normal and falls on the sensor, the necessary messages are displayed on the monitor and collected in chronological order. The sensor in the water channel gives information about how high the water level is. This information can be used to inform everyone via SMS.

55

Gaukhar Akhtankyzy, NIS of PhM in Aktobe, intellectual property "Chemical additive that strengthens concrete in the composition of roads", patent No. 35055 dated January 15, 2021. The proposed substance is an alternative to foreign analogues of additives that improve the quality of concrete and asphaltic coatings.

56

Zhadyra Amangeldiyeva, NIS of PhM in Aktobe, intellectual property "Biodegradable tableware made of walnut shells", Certificate of State Register of Rights to Copyright Protected Objects No. 19907 dated August 25, 2021. The proposed biodegradable tableware is an alternative that could replace a million tons of plastic. The study revealed the possibility of using walnut shells as an alternative raw material for the production of disposable tableware. The results obtained: the product from the walnut shells is non-toxic, harmless, inexpensive, environmentally friendly, and biodegradable. The harmlessness of the product for toxicity is confirmed by the National Centre of Expertise of the city of Aktobe, Kazakhstan. The results given in the research report assert the absence of toxic substances in the object.

57

Saya Kurmanalina, NIS of PhM in Aktobe, intellectual property "Mobilization of the product selection process - Telegram mobile application, Certificate of State Register of Rights to Copyright Protected Objects No.20322 dated Septemeber 20, 2021. The project is a mobile application which simplifies the process of scanning and analyzing the composition of products represented on store shelves. This project will solve the problem of people who are allergic to certain kinds of products. There is a special international list of products and ingredients that cause hypersensitivity, that is, an acute reaction. Goods containing these ingredients must be labeled. The main functions of the Telegram mobile application are recognizing barcodes on product packaging, storing data on product contents, and drawing conclusions about product safety.

58

Nurshat Zhubanysh, NIS of PhM in Aktobe, intellectual property Certificate of State Register of Rights to Copyright Protected Objects No.20727 dated October 7, 2021. Aim is to grow plants with automated hydroponics and provide the school cafeteria with eco-greens. As a result of the experiment, the natural thermal regime is hydroponics, but the optimal temperature for wheat growth and survival is 20 - 22 ° C. The use of cheap expanded clay and

sponges made from various artificial materials increases the efficiency of growing wheat in hydroponics.

59-61

Yernur Zhangaliyev, Tolegen Aiteni, Mustafa Abylkhanuly, NIS of PhM in Aktobe, intellectual property "AR Zerthana", Certificate of State Register of Rights to Copyright Protected Objects No. 21231 dated October 28, 2021. The mobile application provides an opportunity to perform laboratory work on the subjects of physics, chemistry, and biology, without having any equipment. Students can also take a test or answer open-ended questions that measure how well and deeply they have understood a particular topic. Test results can be saved to track student progress or sent to the teacher to check answers.

62

Yermek Kenesov, NIS of ChB in Atyrau, intellectual property "Plastic recycling. The use of plastics", Certificate of State Register of Rights to Copyright Protected Objects No. 19432 dated July 22, 2021. This invention in the field of chemical technology offers a method for recycling plastic waste and producing plastic bricks.

63

Dayana Belyalova, NIS of ChB in Petropavlovsk, intellectual property "Abylai Khan Residence Quest", Certificate of State Register of Rights to Copyright Protected Objects No.20742 dated October 8, 2021 kazpatent.kz.

64

Daulet Kaskenov, NIS of ChB in Petropavlovsk, intellectual property "Computer software", Certificate of State Register of Rights to Copyright Protected Objects No.21047 dated October 21, 2021. Scope of use: the application can be used in chemistry classes to study the topic "Hydrogen" to increase the visibility of the theoretical material, to consolidate the topic, as well as for independent study. It is designed for users who are keen on chemistry and alternative fuels.

65

Leila Sidorova, NIS of PhM in Almaty, intellectual property "Smart wristband for health monitoring and pharmaceutical treatment", Certificate of State Register of Rights to Copyright Protected Objects No.6122 dated February 10, 2021. Smart bracelet for health monitoring and pharmaceutical treatment consists of a cover and a body with five holes and is equipped with a microprocessor with access to the mobile application and the Internet network, light sensor, battery and LEDs, a heartbeat and temperature sensor, display for data reading, and stepper motor.

66

Amanmyrza Zhusipkhan, NIS of PhM in Almaty, intellectual property "Ecological packaging for chewing gum", Certificate of State Register of Rights to Copyright Protected Objects No.6177 dated February 5, 2021.

67

Aray Agaralova, NIS of PhM in Almaty, intellectual property "Pedestrian crossing", Certificate of State Register of Rights to Copyright Protected Objects No.5929 dated March 12, 2021.

68

Shyngys Tokumov, NIS of ChB in Pavlodar, intellectual property "Physics AR laboratory", Certificate of State Register of Rights to Copyright Protected Objects No.20625 dated October 1, 2021.

69-70

Maya Kakimova, Alim Bakhtiyarov, NIS of ChB in Pavlodar, intellectual property "Partitioning natural numbers to solve problems applied in production", Certificate of State Register of Rights to Copyright Protected Objects No.18598 dated September 7, 2021. The authors suggest learning how to solve problems on the remainder theorem, to use Euclid's theorem, and to apply the properties of Fibonacci numbers when dividing numbers into equal numbers of subsets.

71-72

Nikolay Kazantsev, Aruzhan Madet, NIS of ChB in Pavlodar, intellectual property "pvlAssistant Website" - interactive electronic assistant", Certificate of State Register of Rights to Copyright Protected Objects No.20718 dated October 7, 2021. The authors offer an interactive electronic assistant for foreign citizens. The website contains information on how you can easily tolerate acclimatization in the climatic conditions of Pavlodar oblast.

73-74

Almaz Nurzhanov, Alina Chernyakova, NIS of ChB in Aktau, intellectual property "Cultivation of common pomegranate in extra-arid climate and environmental conditions of Mangistau", Certificate of State Register of Rights to Copyright Protected Objects No.16365 dated April 6, 2021. The research project was conducted in order to evaluate the conditions and impact of different fertilizers on the growth and development of common pomegranate in the arid area of Mangistau. The relevance of the science project is that the students, as a result of experiments, came to the conclusion that growing pomegranate trees in our region is quite a feasible idea.

75

Yerlan Turaly, NIS in Aktau, intellectual property "Hydropanel", Certificate of State Register of Rights to Copyright Protected Objects No. 20377 dated September 22, 2021. One of the acute problems in the 21st century is the lack of water. More than 1 billion people do not have constant access to drinking water. Hydropanel is an installation that can, at the very least, reduce this problem. The idea of obtaining drinking water from the air is based on such a physical phenomenon as condensation. Reducing the air temperature to the dew point using elements from the installation, we obtain the transition of molecules from gaseous to liquid state. When the water reaches a certain volume, it flows down into the tank. This device is completely self-contained, as it purifies the water obtained with the help of the filter located in the installation itself. The filtered water is stored in a special tank. Electricity to run the hydropanel is generated by solar panels installed above it.

76

Abylaikhan Mukhamedzhanov, NIS of PhM in Kokshetau, intellectual property "Communication with plants using their biopotentials", Certificate of State Register of Rights to Copyright Protected Objects No.19089 dated June 30, 2021. It is a device that can provide information about how the plant perceives its environment, what stress it experiences and how it is adjusts when interacting with a plant by measuring its biopotentials.

77

Yeldar Yernazarov, NIS of PhM in Kokshetau, intellectual property "Prosthetic model", Certificate of State Register of Rights to Copyright Protected Objects No.19727 dated August 12, 2021. The prosthesis is a 3D model of a human hand. Along all the fingers and palm there are thick threads that connect to the motors and are involved in the mechanism for turning the fingers. The servos (motors), wires and board were hidden under a square case made of Camatex. The EMG (Electro Myiography Sensor) reads electromagnetic pulses from the muscles through electrodes placed on the arm.

78

Dilnaz Tulegenova, NIS of PhM in Kokshetau, intellectual property "The new is what has been forgotten (comfortable and harmless insoles)", Certificate of State Register of Rights to Copyright Protected Objects No.20392 dated September 22. Today there are many types of insoles for shoes. However, sometimes consumers do not like the insoles offered, so the requirements for shoe insoles, especially for children's ones, are very high. The project aims to create comfortable insoles for children's shoes taking into account the quality of existing models of insoles.

79

Ailana Omirzak, NIS of PhM in Kokshetau, intellectual property "Monuments in Kokshetau), Certificate of State Register of Rights to Copyright Protected Objects No.20572 dated September 29, 2021. During the research monuments of the city of Kokshetau were grouped by content and history of origin. As a

result, a layout of all monuments was created. The authors studied every monument and published a book "Monuments in Kokshetau". Zhumabayev Library held a presentation of the book. School encouraged the book to be translated into Russian and English and published in the electronic form.

80

Ailana Omirzak, NIS of PhM in Kokshetau, intellectual property "Monuments in Kokshetau", Certificate of State Register of Rights to Copyright Protected Objects No.21639 dated November 11, 2021

81

Arsen Kairetdinov, NIS of PhM in Kokshetau, intellectual property "Computer mouse", Certificate of State Register of Rights to Copyright Protected Objects No.6328 dated August 13, 2021. The author suggested a health-saving computer mouse. The Computer Mouse model consists of inseparable parts, such as the computer mouse body and the wrist gel pad. A distinctive feature of the computer mouse body is the shape that has a hole for sliding the gel pad under the wrist. When using a computer mouse, the gel pad takes the shape of the user's wrist. To connect the computer mouse body and the wrist gel pad, a slide-out guide system is used to help slide the wrist gel pad into the hole and extend it when needed.

82

Amira Artykbayeva, NIS of ChB in Pavlodar, intellectual property "Computer software", Certificate of State Register of Rights to Copyright Protected Objects No.19564 dated July 30, 2021. An electronic self-study textbook "World of Chemistry" was developed. The user can read the theory through text descriptions on specific topics and videos. Knowledge is assessed via puzzles, crosswords, and tests. The result is demonstrated upon their completion. This textbook is a supplementary aid to the study of chemistry.

83-84

Magzhan Yegeubayev, Zhanibek Konyrgazin, NIS of PhM in Semey, intellectual property "Regulated crosswalk", Certificate of State Register of Rights to Copyright Protected Objects No.5929 dated March 12, 2021. The use of video cameras, turnstiles, and informational lighted signs is suggested to ensure pedestrian safety. The novelty of the project is the use of a set of approaches to improve pedestrian safety on the road.

85-86

Dinora Khalidullayeva, Meruyert Malikova, NIS of ChB in Shymkent, intellectual property "Wireless device for simultaneous interpretation" (Hi-tech translator), utility model patent №5733 dated December 31, 2020. The proposed utility model relates to devices for simultaneous interpretation used at international conferences. Tthe proposed utility model is intended to be a cheap analogue of expensive equipment used in international conferences.

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