Nazarbayev Intellectual Schools
Autonomous Educational Organisation

Educational programme of Nazarbayev Intellectual Schools AEO NIS-Programme

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Content

Introduction

Modern school focuses on the interests of an individual, which is characterized by encouraging students to make conscious choices and independent decisions and responsibly participate in social life. Nazarbayev Intellectual Schools combine the best traditions of national and global education and aim to develop a well-educated and proactive individual with an active civic position, able to compete internationally. This programme is fundamentally designed to reinforce the role of values, develop key competencies, types of literacy, and skills, use active learning methods and principles of assessing academic achievement, as well as to develop effective educational interaction. Together, these elements determine the quality of education and create conditions for the sustainable development of the learner's personality.

One of the priority areas of the country's educational policy is the establishment of Nazarbayev Intellectual Schools (hereinafter – the Intellectual Schools), which focus on the comprehensive development of students' personalities, the realization of their abilities, and the fulfillment of their potential. High school education is aimed at targeted training to prepare students for admission to and successful study at leading national and international higher education institutions, ensuring continuity and a high level of academic knowledge among graduates.

According to the Law of the Republic of Kazakhstan "On the status of Nazarbayev University, Nazarbayev Intellectual Schools and Nazarbayev Fund", the Intellectual schools are an experimental platform carrying out the development, monitoring, research, analysis, piloting, and implementation of advanced models of secondary school curriculum and technology.

Educational programme "Nazarbayev Intellectual Schools" AEO – NIS-Programme, developed in collaboration with Cambridge University (Cambridge University Press & Assessment), the strategic partner of "Nazarbayev Intellectual Schools" AEO (hereinafter referred to as AEO), is focused on the implementation of Science and Mathematics education.

1. Scope

1.1. Educational programme of "Nazarbayev Intellectual Schools" AEO – NIS-Programme (hereinafter referred to as the NIS-Programme) establishes values and long-term objectives, expected learning outcomes, composition, and structure of content of secondary education, as well as assessment model of students' learning achievements in Intellectual Schools (hereinafter referred to as the Intellectual schools). The content of the NIS-Programme covers the content of subjects in accordance with the State Compulsory Educational Standards of the Republic of Kazakhstan and the content compatible to the content of the International GCEAS/A-Level (Great Britain), O-Level (Singapore), International Baccalaureate (IB) etc.

1.2. The NIS-Programme is used in the following institutions:

- The Intellectual schools implement primary, lower and upper secondary programmes aiming at advanced study of Science and Mathematics and the integration of the best national and international educational practices;
- Centre for Educational Programmes develops innovative educational programmes, textbooks, teaching and learning materials and digital learning environment, provides scientific and methodological support in their piloting and implementation, carries out monitoring and research on the development and revision of the educational programme of the Intellectual schools and similar activities related to the dissemination of experience nationwide;
- Centre for Pedagogical Measurements provides research, organisational and information technology support for the student and teacher selection procedures, carries out monitoring of academic achievements, final certification of NIS graduates, quality assurance of educational services, assessment of trainers and teachers' work at CoE professional development courses;
- Centre of Excellence provides continuing professional development and retraining for NIS educators and managers of the Intellectual schools and educational institutions of Kazakhstan.

2. Regulatory references

The NIS Programme contains references to the following regulatory documents:

- - Law of the Republic of Kazakhstan “On Education” dated July 27, 2007, №319-III;
- - Law of the Republic of Kazakhstan “On the Status of Nazarbayev University, Nazarbayev Intellectual Schools, and the Nazarbayev Foundation” dated January 19, 2011, №94-IV;
- - Concept for the Development of Preschool, Secondary, Technical, and Vocational Education in the Republic of Kazakhstan for 2023–2029, approved by Resolution of the Government of the Republic of Kazakhstan №249 dated March 28, 2023;
- - The Development Strategy of the Autonomous Educational Organization “Nazarbayev Intellectual Schools” until 2035, approved by the decision of Board Council of Trustees of the Autonomous Educational Organization “Nazarbayev Intellectual Schools” dated March 30, 2024, Minutes No.15;
- - The concept of holistic development of students of Nazarbayev Intellectual Schools “Adal Azamat”, approved by the decision of the Board of Autonomous Educational Organization “Nazarbayev Intellectual Schools” dated August 19, 2025.

3. Basic notions

The NIS-Programme uses terms and definitions in accordance with the laws of the Republic of Kazakhstan "On education" and "On the Status of Nazarbayev University, Nazarbayev Intellectual Schools and Nazarbayev Fund".

The following terms are used:

NIS stands for "Nazarbayev Intellectual Schools" Autonomous Educational Organisation.

Intellectual Schools are the branches and subsidiaries of "Nazarbayev Intellectual Schools" Autonomous Educational Organisation, the main activity of which is to organise the educational process.

Extracurricular activities are the learning activities of NIS students participating in the educational process aimed at the comprehensive development and implementation of their individual abilities which get approved by the decision of the Board of "Nazarbayev Intellectual Schools" AEO.

Educational Programme of "Nazarbayev Intellectual Schools" AEO – NIS-Programme is

a regulatory conceptual framework defining the overall approaches to the educational process and the content of education in the Intellectual schools focused on the study of science and mathematics. The NIS-Programme encompasses the requirements of the State Compulsory Educational Standard of the Republic of Kazakhstan and takes into account international standards, ensuring their coherence and integration.

Educational activity is a purposeful and well-structured process of interaction between all participants in education, aimed at teaching, developing, and educating the individual.

Well-being of participants of the educational process is a stable life position that includes positive emotions, positive attitudes, flexible thinking, involvement in socially significant activities, aspiration for high achievements and noble goals, emotional competence, and problem-solving skills.

Model course plan a regulatory document governing the list, sequence, and scope (workload) of academic subjects and other types of educational activities for students, developed in accordance with the State Compulsory Education Standard of the Republic of Kazakhstan, as well as in accordance with the Educational Program

Subject programme is an educational and regulatory document which sets goals, objectives, and expected learning outcomes, the composition and structure of the curriculum content; academic load; approaches to teaching and learning; approaches to the assessment of students' achievements.

Course plan is a document designed to organize the educational process for a specific subject during the academic year. It provides methodological recommendations, explains the learning objectives, expected outcomes, the content of units and topics by grade, as well as recommended teaching and learning materials.

Profession-oriented teaching is a process of differentiation and individualization of learning, as well as organisation of the educational process with due account for the interests, aptitudes, and abilities of students.

An educational area is a component of the curriculum that comprises a set of related academic subjects.

Expected learning outcomes is a set of competencies that describe what a student will learn, understand, and be able to demonstrate upon completion of the learning process.

Trilingual education is the development of a multilingual personality and a citizen of Kazakhstan who speaks Kazakh, Russian and English and can successfully communicate on various topics, values the culture of his or her people, understands and respects the culture of other people.

Criteria-based assessment the process of comparing the actual learning outcomes achieved by students with the expected learning outcomes based on established criteria .

Formative assessment is a type of assessment carried out continuously throughout the learning process to provide timely support and adjust students' learning through constructive feedback.

Summative assessment is a type of assessment conducted upon completion of units and/or cross-cutting themes of subject programmes within the NIS Programme, or at the end of a specific academic period (term, academic year, or level of education).

Invariant component is a part of the Model course plan that includes academic load by subjects; it is compulsory for study in the NIS branches.

Variative component is a part of the Model course plan that includes an additional academic load beyond the invariant component of the model course plan; it is compulsory for study in the NIS branches.

Elective courses are compulsory elective courses chosen by students, an organizational form for implementing educational programs based on students' interests, which are an integral part of the variable component of the Standard Curriculum, aimed at implementing the Intellectual School Development Strategy.

Standard level of mastering the content of education is a level that involves students' acquisition of the core content of education necessary to obtain secondary education in high school.

Advanced level of mastering the content of education is a level that involves mastering advanced content of education in certain academic subjects of high school.

4. General provisions

4.1. The NIS-Programme is a regulatory conceptual document defining values and objectives of education in the Intellectual schools, the content of education and overall approaches to the organisation of the educational process.

4.2. The NIS-Programme is aimed at:
- implementing the NIS policy on the integration of Kazakhstani and international curricula in secondary education;
- implementing trilingual education in the Intellectual schools by organizing the educational process in the Kazakh, Russian and English languages;
- improving the quality of education by establishing a system of objectives represented in the form of expected learning outcomes;
- combining academic and practical orientation of Science and Mathematics education, particularly in upper secondary school, which provides for the study of scientific research methods and theories;
- increasing step-by-step subject knowledge and skills to ensure the depth and complexity of subject content, considering the attainment age of students;
- strengthening the role of pastoral work in the educational process through the creation of favourable conditions and friendly atmosphere for personal development;
- ensuring continuity of pre-school, primary, lower, and upper secondary school, and higher education;
- contributing to the economic and social development of the country by improving the quality of national education.

4.3. The NIS-Programme is the basis for the development of:
- subject programmes for primary, lower, and upper secondary school;
- subject course plans;
- textbooks and teaching and learning materials;
- indicators measuring student achievement in subjects;
- professional development programmes for NIS teachers;
- other documents related to the organisation of education in the Intellectual schools.

5. Values and objectives of education in the Intellectual schools

5.1. The NIS-Programme defines a **framework for key competencies** including a **list of values,** knowledge**, types of literacy and skills** which are the fundamental basis for learning. The framework provides the basis for the development of key competencies in students. It is necessary to create conditions for students to acquire fundamental knowledge and develop the skills that will enable them to achieve their potential and become responsible members of society.

5.2. **Key competencies** are a combination of knowledge, types of literacy, skills and values required for an individual to successfully adapt to and live in modern society. They reflect a person's ability to adapt to changing conditions, learn and apply knowledge and skills in real life to solve various tasks related to education, social interaction, personal life, self-development, and future professional activity.

Values refer to a system of beliefs, attitudes, and ideals about what is meaningful and important in a person's life. They determine what people value and what they are guided by in their actions and decisions.

Knowledge is information that is obtained through study, experience, or the transfer of knowledge from others. It is understanding of facts, ideas, concepts, procedures, and principles which can be used to solve problems and achieve goals.

Types of literacy refer to a set of human abilities to analyse, reason and effectively communicate when setting, solving, and interpreting everyday problems in terms of various subject areas.

Skills are abilities and actions acquired through practice and experience which allow to successfully perform certain tasks and solve problems in specific areas of activity.

Key competencies are significant for a successful life and complement each other which increases their effectiveness. They can be applied in various situations and contexts and be important for different areas of life. It is important to realize that competencies are dynamic and can improve with experience and practice and their application depends on the specific situation.

The Framework of Key Competencies is a model that describes, clarifies, and structures knowledge, types of literacy, skills and values that take an important place in the content of subject programmes and course plans.

Key competencies and their elements will develop gradually (progressively) from primary school to upper secondary school. As soon as students master basic values, knowledge, types of literacy and skills at primary level, they will move on to the intermediate and advanced level in lower and upper secondary school respectively. Every next level will build on the current level of competencies and their elements contributing to the gradual enhancement and development of students' competencies. This approach will ensure a smooth and progressive transition to more complex levels of key competencies by preparing students for a successful adaptation in a rapidly changing world and providing better opportunities for their future professional achievements.

5.3. The NIS-Programme establishes **values** defining the importance of education. The main point is that they become a leading factor in developing a successful individual who can fulfill themselves and improve the quality of their life and environment. These values, as life guidelines, allow students to become harmoniously developed intellectual people. There are values and their definitions given below:

— **Respect** is a value that expresses a sense of recognition, admiration and respect for another person and a group of people for their personal qualities, achievements, culture or belonging to a certain social group (senior people, low-income and multi-child families, and disabled people). This value is manifested in a respectful attitude, kindness, sensitivity, tactfulness

— and tolerance towards other people, their opinions, rights, and freedoms. It is one of the core values of interpersonal relationships and contributes to the development of positive relationships between people.
— **Openness** is a value that refers to being willing to communicate, understand and consider different points of view, ideas, and cultural characteristics of other people. This value is associated with the ability to be tolerant, ready to change and adapt to new circumstances and actions in accordance with accepted agreements. Open-minded people are often tolerant, curious, and respectful to other people, their cultural values and life experience.
— **Patriotism and responsibility** are values associated with love and respect for one's country and willingness to take responsibility for it. Patriotism is manifested in the willingness to stand up for the interests and welfare of one's country, and responsibility is the willingness to bear one's own obligations and take care of the future of one's country. These values can promote civic awareness and active participation in social life.
— **Strong work ethic and creativity** are values that express respect for work and the desire for creative self-realization. These values refer to hard work, perseverance, a creative approach to solving problems and finding new ways to achieve them. Work ethic and creativity are important qualities for personal and professional development to help everyone to contribute to society.
— **Integrity** is a quality manifested in his desire to tell the truth and act in accordance with moral principles and norms. In the context of education and science, honesty includes adherence to the principles of academic ethics and integrity when conducting scientific research, respect for intellectual property and recognition of sources of information given in academic works. Academic integrity also refers to the absence of fraud, plagiarism, and other forms of violation of ethical and legal norms in the academic process.
— **Family values and traditions** are values that are passed down from generation to generation within a family. They are fundamental for the development of relationships and lifestyle within a family and have an impact on the relationships with the environment. Family values and traditions include such qualities as respect, trust, responsibility, care, mutual understanding etc. They can reflect certain social, religious, or cultural norms and standards that are accepted in the family. Family values and traditions are especially important in shaping an individual and his or her mindset and strengthening family relations.
— **Health and well-being** are values that refer to the physical and psychological well-being of an individual. They have to do with taking care about one's own physical and psychological health. These values include a healthy lifestyle, proper nutrition, regular physical activity, care about psychological state, i.e. managing emotions, dealing with stress and etc. They include concerns about health and well-being of other people, for example, caring for the family members and supporting public health. Health and well-being are fundamental values that contribute to a full and happy life.
— **Global citizenship** is a value that refers to a conscious participation in the life of a global community and encourages to handle world problems (poverty, hunger, environmental crises etc.) in a responsible way. It means understanding oneself as a part of the world community and striving to improve the lives of people in different countries and regions. Global citizenship includes respect for differences in culture, language and customs and encourages countries and peoples to coexist and cooperate.

5.4. Within the NIS-Programme, **knowledge** includes theoretical concepts and ideas, and practical understanding based on the experience of performing certain tasks. The NIS-Programme distinguishes four types of knowledge:
— **Disciplinary knowledge** is knowledge related to a specific field of science or discipline. It includes theoretical concepts, terms, facts, and research methods related to a specific area

— of knowledge. Disciplinary knowledge helps understand and analyse certain aspects of the surrounding world in accordance with the norms and rules accepted within this discipline.
— **Interdisciplinary knowledge** is knowledge that combines the elements from different disciplines or areas of knowledge to address a specific problem or research a topic. It is a result of interaction between different sciences and their methods and can be applied in various areas. Interdisciplinary knowledge can be important in creating new ideas and concepts and making comprehensive and informed decisions.
— **Epistemological knowledge** is knowledge about how to think and act as a specialist. This knowledge allows students to realize the relevance and objective of learning and to deepen its understanding. Epistemological knowledge helps students become more confident in obtaining and using knowledge and analyzing and evaluating information which will affect their successful self-realization in the future professional activities.
— **Procedural knowledge** is knowledge related to the ability to perform certain actions or procedures. They include specific steps, processes, methods, and strategies needed to accomplish certain tasks. Procedural knowledge is usually the result of practical experience; students have to practice and revise it to acquire and improve. It is often associated with the practical application of disciplinary knowledge and can help students better understand their application in real life.

5.5. In the NIS-Programme, current types of literacy are integrated into the content of education. They contribute to the development of students' abilities to analyse, reason, and effectively communicate when setting, solving, and interpreting everyday problems within various subject areas. The NIS-Programme is aimed at developing the following **types of literacy**:
— **Functional literacy** is the ability to use acquired knowledge and skills in order to fully perform in the modern society, i.e. to solve a wide range of tasks in various areas of human activity, communicate and interact with surrounding people.
— **Financial literacy** is the ability to apply knowledge and skills in managing personal finance through appropriate short-term solutions and long-term financial planning to achieve personal financial well-being considering life events and economic changes.
— **Entrepreneurial literacy** is the ability to use knowledge, opportunities, and ideas and to transform them into values for others, to cooperate in planning and managing projects of a cultural, social, or financial value.
— **Legal literacy** is knowledge and use of one's own rights, duties and legal acts regulating relations between people, social communities, and organisations; the ability to apply legal knowledge in the analysis of conflict situations and to evaluate the actions of social subject from legal perspectives.
— **Environmental literacy** is the ability to understand natural systems, principles of organisation of ecological communities (ecosystems) and use these principles in creating sustainable human communities.
— **Physical literacy** is the ability to apply knowledge and skills to obtain, understand and apply information to make decisions related to health and maintain physical activity throughout life.
— **Literacy for sustainable development** is the ability to apply knowledge and skills to promote sustainable development; the ability to understand how social, economic, and environmental systems interact and support life recognizing and evaluating different perspectives which affect sustainable development; participation in activities contributing to a stable lifestyle.
— **Health literacy** is the ability to understand and make informed decisions about one's own health and the health of others (physical and mental health); the ability to identify factors affecting health and well-being.

— **Media and information literacy** is the ability to apply knowledge and skills to analyse and evaluate information, check its source, distinguish facts from fiction and make informed decisions about one's own life.
— **Digital literacy** is the ability to apply knowledge and skills for safe, responsible, and effective use of digital technologies and Internet resources.
— **Data literacy** is the ability to extract necessary information from data, communicate and create new information based on mathematical understanding and statistical skills.
— **Programming and coding literacy** is the ability to apply knowledge and skills regarding programming languages, patterns, processes, and systems required to effectively use devices such as computers and robots.
— **Artificial intelligence literacy** is a set of knowledge, skills, and attitudes that enable a person to understand, use, evaluate, and responsibly apply artificial intelligence technologies in various areas of life. It includes the technical foundations of how artificial intelligence works, the ability to critically analyze its capabilities and limitations, knowledge of ethical and legal aspects, as well as an awareness of artificial intelligence's impact on society and personal life.
— **Futures literacy** is a person's ability to effectively use knowledge, skills, and values to understand, critically reflect on, and create information in a rapidly changing, technologically rich world.

5.6. Knowledge and values established in the NIS-Programme become the core of students' daily activities and should be manifested in their abilities to demonstrate the following **skills**:

Cognitive and metacognitive

— **Critical thinking** is the ability to analyse information, evaluate its quality, consider it from different perspectives and make informed decisions. Critical thinking includes the ability to think rationally and logically, analyse arguments and evidence, critically evaluate, and interpret information. It helps students learn to see a problem from different perspectives, develops the ability to self-control and self-evaluate, improves communication and collaboration skills.
— **Creative thinking** is the ability to generate new ideas, concepts and problem solutions which differ from traditional ones and represent an original approach to problem solving. This skill allows to see things not only in reality, i.e. in the form they appear, but also in the way they can appear. Creative thinking includes flexibility, the ability to associate different ideas and concepts and to innovate and experiment.
— **Problem solving and decision making** refer to the ability to analyse a difficult situation, identify problems and find effective solutions; the ability to make informed decisions, evaluate possible consequences and risks, and monitor taken measures.
— **Research skills** refer to the skills required to conduct research including the ability to formulate a question, collect and analyse data, interpret results, and draw conclusions. These skills may vary depending on the field of research but usually include the ability to develop hypotheses and research questions, identify data collection methods, analyse, and interpret data, summarize, and present research results.
— **Learning to learn** is the ability to consciously and effectively use various learning strategies and methods to improve one's education and increase the level of academic achievement in school and life. It includes the ability to determine learning objectives, choose appropriate methods and techniques, evaluate one's progress and adjust approaches based on the results obtained; helps become more independent and responsible for one's learning and development.
— **Self-regulation** is the ability to control one's emotions, thoughts, behaviour, and reactions to different situations and strive to achieve goals despite possible obstacles. This skill includes the ability to manage one's time, energy, and attention, regulate one's emotions and stress, take responsibility for one's actions and make effective decisions in difficult situations.

— **Computational thinking** is the ability to analyse and solve decisions using computational tools and technologies. This skill includes understanding basic programming concepts, the ability to work with data and algorithms, use applications to solve problems and critical thinking when working with technologies.
— **Systems thinking** is the ability to analyse complex systems and the interaction between their components, understanding the effect of one element on others and the entire system. This skill includes the ability to see problems in the context of a system and find solutions that take into account many factors and lead to a holistic approach to solving problems.

Social and emotional skills

— **Cooperation** is the ability to work with other people to achieve a common goal or solve a common task. This skill includes the ability to listen and understand other people's point of view, negotiate, and come to a compromise, effectively work in a team, delegate tasks, and participate in a collective decision making.
— **Communication** is the ability to communicate effectively with other people including the ability to express one's thoughts and ideas, listen and understand others, establish a contact, and convince. This skill includes the ability to use various communication channels (oral and written speech, email, social networks) and adapt to different situations and cultural contexts.
— **Social responsibility** is the ability to consciously participate in the life of society and take care of the well-being of surrounding people and nature taking into account social, economic, and environmental consequences of their actions. It includes the manifestation of ethical principles, the ability to make informed decisions and take measures aimed at achieving social goals and eliminating negative consequences for society and the environment.
— **Leadership** is the ability to manage and influence the behaviour of other people in order to achieve a common goal or result. Leadership includes the ability to motivate, lead and coordinate teamwork, manage conflicts, solve problems, and make decisions. A leader should have communication skills, be able to negotiate, convince and inspire other people, be ready for constant self-development and improvement of their skills.
— **Emotional stability** is the ability to manage one's emotions and react to stressful situations without losing control over one's behaviour and decision. This skill includes the ability to assess emotional state and effectively apply various strategies to regulate it. It helps stay calm, make informed decisions and cope with difficult situations.
— **Curiosity** is the ability and interest in obtaining new knowledge, inner openness to people, phenomena and the surrounding world, a sincere desire to satisfy cognitive needs and get new experience or impression.
— **Empathy** is the ability to understand and feel emotions, feelings and needs of other people; the ability to put oneself in their place and respond to an emotional state with empathy and understanding. It is a key skill for effective interpersonal communication and establishing deep connections with other people.
— **Self-awareness** is the ability to recognize one's thoughts, emotions, and behaviour, realize one's strengths and weaknesses, have realistic understanding of oneself and analyse one's actions and reactions to situations. This skill includes understanding of one's values, beliefs and goals which helps make informed decisions and action plans in accordance with personal needs and goals.
— **Perseverance and resilience** are the ability to continue working and remain motivated even when faced with difficulties, failures, or stressful situations. This skill includes the ability to cope with failures, accept a constructive feedback and find the ways to solve problems that may arise while achieving goals. Insistence and perseverance help overcome difficulties and achieve success in various areas of life.

— **Adaptability and flexibility** are the abilities to quickly adapt to changes in the environment and flexibly respond to new circumstances and requirements. This skill includes a willingness to change plans, the ability to quickly switch between tasks and adapt to new processes and technology, the ability to accept constructive feedback and learn from one's mistakes to better cope with the challenges of the future.

Practical and physical skills

— **ICT skills** refer to the ability to use information technology and communication tools to exchange, process, store, and present information, to solve problems and achieve goals in various areas of life. These skills include the ability to operate computers, software, and Internet-resources, actively communicate via an e-mail, social networks, and other means, critically evaluate, and use information obtained from various sources.

— **First aid** is the ability to take urgent basic measures to save a person's life, prevent complications in emergency, reduce threats to health and life of the injured person in a serious condition. These activities are carried out on site by the victim himself (self-help) or another person nearby (mutual assistance) until medical workers arrive.

— **Playing musical instruments/ drama / dancing** is the ability to use one's body, voice, or instrument to create musical sounds, drama roles or dance movements in accordance with a given composition, director's idea, or technique. These skills require a person to think creatively, coordinate movements, be expressive and understand musical, drama or dance forms.

— **Craft** is the ability to make products by hand using certain tools and techniques often associated with manual labour and traditional crafts (weaving, embroidery, ceramics, carpentry and etc.). In the modern world, it may include the use of software and digital technology to create various products and projects. Craft skills can be important for self-expression, relaxation, and creativity to make unique handmade products.

— **Playing sports** is the ability to properly and effectively engage in physical exercises and sports activities to improve physical fitness, health and achieve sports results. This skill includes knowledge of sports rules and techniques, the ability to work in a team, observe discipline and ethics of behaviour in the sports environment.

— **Responsible consumption** is the ability to consciously choose goods and services that do not harm the environment and society considering their origin, quality, packaging, methods of use, needs and opportunities. This skill includes the ability to properly dispose and recycle waste, save resources, and protect the environment.

5.7. Within the framework of key competencies represented by a range of values, knowledge, types of literacy, and skills, the aim of education in the Intellectual schools is to create an educational space favourable for harmonious development of a highly educated and creative personality who has **core competencies** listed below.

— **Cognition** is a competence that reflects a person's ability to learn effectively, acquire new knowledge and skills, apply them in different areas of life, critically reflect on their cognition process and consciously develop their cognitive abilities. This competence includes the ability to analyse information, apply various learning methods and strategies, develop creativity, analytical and critical thinking skills, and the ability to reflect on one's knowledge and experience to improve learning and personal development.

— **Self-regulation** is a competence that reflects the person's ability to control one's emotions, thoughts, and behaviour in various situations. It includes the ability to manage one's emotions, make informed decisions and control one's actions in accordance with one's goals and objectives. Self-regulation includes the ability to manage one's time and resources and the ability to adjust to changing conditions and stressful situations.

— **Digital competence** is a competence that reflects the ability to use information and communication technologies to process, transfer, and store data, solve problems and achieve goals in

various areas of life. It includes the ability to work with electronic documents and databases, use a software to create and process texts, graphics and sound, the ability to work with network technologies and use the Internet to search for information, communicate and collaborate. This competence refers to the ability to evaluate and analyse information obtained through digital technologies and use it in one's activities.

- **Applied competence** is a competence that reflects the ability to apply knowledge, skills and aptitudes in specific practical situations related to work, life, study, and other areas of life. It includes the ability to solve problems, design and create a product, conduct experiments, use tools, methods, and technology in one's activities. This competence refers to the ability
- to evaluate and improve one's work and productivity and the ability to collaborate and work in a team.
- **Eco-self** is a competence that reflects the ability to understand the relationship between a human and the environment, realize his or her responsibility for the conservation of natural resources and biological diversity. It includes knowledge about ecosystems and environmental issues, the ability to make decisions focused on the sustainable use of natural resources and reduction of the environmental impact, the ability to use environmentally friendly technology and approaches in their activities. The key competence ''Eco-self'' involves the ability to act in accordance with the principles of sustainable development and to use opportunities to promote and support environmental initiatives.
- **Agency** is a competence that includes the ability to be initiative, enterprising and ready for action in different areas of life. It includes the ability to be a leader, make decisions and act in a context of uncertainty and changes, to set goals and work to achieve them. Agency refers to the ability to think creatively, be innovative and adaptive, to predict and anticipate possible issues and solve them in advance.
- **Social interaction** is a competence that reflects the ability to communicate effectively, collaborate and work in a team. It includes the ability to listen and understand other people, build partnership, solve conflicts, and find compromises. This competence also refers to the ability to work in an intercultural environment, respect differences between people and strive to create trusting relationships. It involves the ability to work with different groups of people including children, adolescents, adults, and the elderly, and interact with people from different social and economic strata of society.
- **Transformative competence** is a competence that reflects the ability to create new values and ideas, take responsibility for one's actions and decisions, resolve conflicts and solve complex issues. It includes the ability to analyse and evaluate existing processes and systems, identify their problems and shortcomings, propose, and introduce new approaches and solutions to improve them. Transformation involves the ability to work in a team, consider the interests and needs of different parties, resolve conflicts, and reach agreements based on compromise and respect. Within this competence, it is important to make complex decisions based on a holistic approach considering social, environmental, and economic aspects and their consequences for future generations.
- **Global competence** is a competence that reflects the ability to interact in an intercultural and global environment, the ability to understand and evaluate global issues and find solutions that contribute to sustainable development and collective well-being. This competence includes the ability to interact successfully with people from different cultures and countries, understand and respect their cultural traditions, customs, and beliefs, and use intercultural skills to achieve agreements and resolve conflicts. Global competence refers to the ability to act in a global and intercultural environment, understand the relationship and dependence between different regions of the world and take measures to create a sustainable and fair global community.

These competencies will allow graduates of the Intellectual schools to harmoniously combine human and ethno-cultural values and demonstrate **functional literacy and competitiveness** in any life situation.

6. Structure of education in the Intellectual schools

6.1. The Intellectual schools implement the learning process at three levels of education:

— primary education is provided in primary school (Grades 1–5);
— basic secondary education is provided in lower secondary school (Grades 6–10);
— general secondary education is provided in upper secondary education (Grades 11–12).

This structure takes into account the stages when students grow up and move into adulthood, age specific features of their cognitive development, as well as positive international experience in organizing the process of education.

6.2. Primary school (Grades 1–5)

The main objective of primary school is to ensure the development of initial learning skills and propaedeutic knowledge. Primary school enables students to acquire knowledge about human, nature, and society; develop moral values, intellectual skills, and creativity; and acquire necessary learning skills. Those will form the basis for the further study of the environment, awareness of one's place in the world, and the development of one's personality and intellect.

Standard duration of study is 5 years. Recommended age of students is 6(7) – 11 years.

Upon completion of this level, students will have developed the following:

— basic values and socially significant personal qualities;
— initial readiness for self-development, motivation to cognition and learning;
— basic logic and research activities and ability to work with information;
— basic social and emotional, practical, and physical skills;
— specific for each educational and subject area experience of obtaining new knowledge, its transformation and functional application;
— readiness for the transition to the lower secondary school including adaptation to a more complex educational process and extended content of the subject programme.

6.3. Lower secondary school (Grades 6–10)

Lower secondary school aims to create conditions for students to help them complete basic education, choose a focus (profile) within the science and mathematics education, and develop independence through the balanced combination of all activities such as: learning, projects, and research.

Standard duration of study – 5 years (Grades 6–10). Recommended age of students –11(12) – 16 years.

Upon completion of this level, students will have developed the following:

— values and socially significant personal qualities;
— readiness for self-development, independence, initiative, and personal self-determination;
— motivation for cognition, learning and goal-directed activity;
— sufficient (average) level of social and emotional, practical, and physical skills;
— specific for each educational and subject area experience of obtaining new knowledge, its transformation and functional application including academic and social projects;
— readiness for the transition to upper secondary school and development of an individual learning trajectory in accordance with one's interests and abilities.

6.4. Upper secondary school (Grades 11–12)

Upper secondary school aims to deliver profession-oriented education in science and mathematics, and to provide students with academic knowledge necessary to enter higher education institutions. It actively and intentionally develops learning, communication, social and research and problem-solving skills. Students self-determine from social, professional, and civic perspectives.

Standard duration of study – 2 years (Grades 11–12). Recommended age of students is 16–19 years. Upon completion of this level, students will have developed the following:

- values and socially significant personal qualities;
- motivation for life-long educations, self-development, and self-improvement.
- social and emotional, practical, and physical skills implying an advanced level of emotional intelligence, physical activity, creative hobbies, and support for a healthy lifestyle;
- specific for each educational and subject area experience of obtaining new knowledge, its transformation and functional application including academic, research and social projects;
- skills of acquiring knowledge in the Kazakh, Russian and English languages;
- readiness for admission to leading national and international higher educational institutions.

7. Expected learning outcomes by educational areas

7.1. Expected learning outcomes refer to a system of long-term objectives determined for each educational area at all levels of upper secondary education.

7.2. Expected learning outcomes serve as the basis for the development of subject programmes. The subject programmes specify these generalised expected learning outcomes into subject learning objectives by grade and for each unit, forming a tiered system.

7.3. The system of expected learning outcomes creates the opportunity for students to progress step by-step towards long-term educational goals at the end of school. This requires students to achieve the expected learning outcomes planned for the long-term, medium-term, and short-term (lesson specific) learning periods for the subject.

7.4. Students' success in achieving long-term objectives is characterised by their readiness to integrate subject knowledge and skills with their life experiences to make successful decisions in any learning situation in accordance with age-appropriate capabilities.

7.5. The expected learning outcomes are designed considering the peculiar features of each educational area combining several related subjects and taking into account the specifics of each subject.

The content of education in the Intellectual schools includes **6 educational areas** as the foundation of holistic education: ***Language and Literature, Mathematics and Computer Science, Science, Human and Society, Art, Physical Education***.

7.6. Expected learning outcomes of ***Language and Literature*** educational area.

*Students will***:**

- speak oral and written Kazakh, Russian and English, use language skills (listening, speaking, reading, writing) to receive, select, process, and transfer necessary information in accordance with the intended objectives or to solve problems;
- creatively express his/her thoughts and ideas orally and in writing in three languages according to the given context, both in the learning process and in everyday life;
- develop communicative skills to communicate in any life situations to express one's own emotional and value attitude to the surrounding reality;
- understand the value of language as an instrument of cognition of the surrounding reality and as a means of justifying one's position in solving various problems;
- be able to appreciate national and world literature as part of the world cultural heritage and to consider it as a basis for his/her own development and improvement.7.7. Expected learning outcomes of ***Mathematics and Computer Science*** educational area.

Students will:

- know how to use the language of mathematics, laws, patterns, terms, and concepts to comprehend the surrounding reality and engage with it effectively;
- proficiently utilize various forms of representing mathematical information (formulas, diagrams, tables, graphs) to substantiate and make informed decisions in curricular and real-life contexts;
- **know the basic principles of computer operation for system analysis; the purpose and main functions of system and applied software; basics of working with database management systems; basics of web programming;**

— **analyze the problem to determine appropriate methods and approaches for its solution using modeling, algorithm design, programming, and mathematical methods;**
— **be able to assess the reliability of obtained results and logically justify their decisions and conclusions;**
— understand how to apply, analyse, and transform information using information and communication technologies to create models of real objects and processes;
— use information and communication technologies (ICT) and mathematical language for both oral and written communication, including the substantiation of research findings within a specific context;
— systematise essential mathematical data and employs various mathematical procedures (such as measurement, calculation, and interpretation and construction of tables, charts, graphs, etc.) to facilitate decision-making in specific situations;
— be able to represent quantitative relations and spatial forms to solve practical problems across various contexts, determining unknown quantities from known quantities, and making classifications;
— evaluate the possibilities of using applied software to solve problems.

7.8. Expected learning outcomes of ***Science*** educational area

The student:
— has an understanding of the modern scientific worldview and the methods of scientific cognition used in science; is able to use scientific concepts and the laws of the organic world; understands the diversity and complexity of nature, the interconnection of natural phenomena and processes, as well as their causes and consequences in the animate and inanimate nature; recognizes the importance of scientific knowledge for different areas of human activity;
— conducts simple experiments and observations that reveal the nature of processes in the animate and inanimate nature, the interconnections of ecosystem components, and the impact of human activities on the environment;
— knows the full research cycle: problem formulation, hypothesis development, task setting, method selection, data analysis and interpretation presented in various forms; draws well-founded conclusions and publicly presents the results;
— **navigates the information and conceptual framework of science and uses it to expand understanding of the world and to establish logical connections between phenomena;**
— **recognizes the impact of human activity on nature and can identify the causes of environmental changes; justifies the need to preserve nature and is able to make constructive decisions based on the analysis of ecological information;**
— **uses science knowledge to ensure personal safety and health protection; to explain phenomena of the surrounding world; to use technology responsibly and safely; and to protect the environment.**

7.9. Expected learning outcomes of ***Human and Society*** educational area

Students will be able to:
— use the basic concepts and laws of the development of society, data on the nature of historical processes and historical facts to interpret current social events and phenomena;
— select the necessary information and use it to assess a specific social situation, to reveal the nature of the problem and create a reasonable conclusion;
— analyse and critically assess the situations of everyday societal situations to justify one's position, evaluating them against moral norms;

— navigate in current social events, show "patriotism in action", and express an active civic position.

7.10. Expected learning outcomes of **Arts** educational area

Students will be able to:

— recognize art forms, characterize their distinctive features, using special terms and concepts;
— convey their impressions, feelings, and moods in artistic and musical form;
— apply knowledge about arts to express their attitude to modern trends in the field of culture;
— analyse and reveal the value of various artistic and musical works and express their own attitude to them in an accessible form;
— appreciate their national and global artistic and musical culture serving as a foundation for understanding the cultural heritage and peculiarities of each era;
— use applied skills (modeling, drawing, singing, playing instruments, artistic work, design technology);
— recognize the methods and strategies for retaining visual information;
— use art materials and computer graphics to present visual information and design proposals.

7.11. Expected learning outcomes of **Physical Education** educational area

Students will be able to:

— use various types and forms of health and sports exercises as the basics of hygiene and physical education;
— choose and apply wellness techniques to improve their physical fitness;
— systematize the necessary information from various sources on health improvement, objectively analyse and use it to maintain a healthy lifestyle;
— use the rules and methods of interaction in a group (team) when participating in team games.

7.12. Expected learning outcomes of ***Initial Military and Technological Training***

Upon completing upper secondary school, the student will:

— know the fundamentals of military science, including its purpose, organisational structure, standard weapons and equipment; the capabilities of lower-level tactical units; the basics of using orientation tools, robotics and IT technologies; the basics of civil protection procedures in the Republic of Kazakhstan; alerting system and protocols for situations involving modern means of destruction, terrorist threats and natural disasters; characteristics of natural disasters, the procedure for conducting rescue and emergency recovery operations in the affected areas; the purpose, specifics and procedure for using standard weapons, as well as the use of individual and collective protective equipment, and radioactive and chemical control devices; the procedure for organizing and conducting evacuation and deconcentration of the population; procedure and types of first aid; traffic rules;
— understand the basics of military science, robotics, and IT technologies; the specifics of the impact of nuclear, chemical, bacteriological (biological) weapons and other modern means of destruction on people, economic facilities, the environment, and their consequences; the consequences and possible economic and environmental damage in the event of natural or man-made emergencies;
— act as a soldier on the battlefield in various conditions, and serve as an intelligence officer within a radiation and chemical monitoring post; use standard weapons, as well as individual and collective protective measures; provide first aid for wounds, bleeding and burns, open and closed fractures in different parts of the body, frostbite, heatstroke, electric shock, and drowning incidents; apply bandages for various types of injuries on different parts of the body;

use Internet connection; audio and visual technologies; know theoretical foundations of driving automotive vehicles and robotics; use digital photo and video equipment;
- analyse possible emergency situations when using modern means of destruction; possible situations in the event of natural or man-made emergencies;
- evaluate the consequences of the decisions;
- create action plans in case of possible emergency situations, when using modern means of destruction; action plans in case of possible natural or man-made emergencies.

8. Content of education

8.1. The composition and structure of the educational content of the Intellectual schools build on the integration of the core content of secondary education of the Republic of Kazakhstan with international educational programmes.

8.2. The content of education is a means of achieving a system of learning objectives: the objectives of the Intellectual schools, educational areas, and subjects.

8.3. The following guidelines were used to determine the content of education in the Intellectual schools:
- age-appropriateness of the volume and structure of the educational content, and the sequence of studying academic subjects;
- the need to systematically introduce students to scientific methods of cognition and research activities, and involve them in the development of key competencies;
- the expediency of cross-curriculum integration in the content of education.

8.4. The content of education of the Intellectual schools is generally focused on in-depth study of science as the basis for the development of the intellectual potential of an individual. The content of advanced **Mathematics, Physics, Chemistry** and **Biology** is carried out through project and research activities of students.

8.5. The educational content of the Intellectual schools is implemented within the framework of trilingual policy. Trilingual education aims to develop individuals in Kazakhstan into multilingual personalities, allowing them to speak three languages and successfully communicate on various topics. It also encourages an appreciation of their own culture while fostering an understanding and respect for the cultures of others.

Trilingual education is practically implemented as follows:
by offering a level-based approach to assimilating the Kazakh, Russian, and English languages;
through the subjects studied in the Kazakh, Russian and English language;
by implementing language immersion programmes, which are recognized as one of the most effective methods for teaching the target language (Kazakh).

Language immersion is an educational method of creating a learning environment within educational institutions, encouraging children to master the target language and apply it in both communication and educational activities. The Intellectual schools implement a model of early language immersion (full and partial) in the Kazakh language through various types of speech activity: listening, speaking, reading, and writing. The method of language immersion is implemented at the parents' choice.

In full language immersion, the Kazakh language serves as both the learning objective and the means of understanding the surrounding reality. In the first year and a half of primary school, students are completely immersed in the Kazakh language, as Kazakh is the language of instruction. From the second half of the 2nd grade, they start learning Russian, and from grade 3 the students start learning English.

8.6. The content of education in the Intellectual schools includes **6 educational areas** as compulsory components of complete education: **Language and Literature, Mathematics and Computer Science, Science, Human and Society, Art, Physical Education**. The content of education (both subjects and various educational areas) builds on the principles of integration.

Level	Primary school	Lower secondary school	Upper secondary school
Grade	Grades 1–5	Grades 6–10	Grades 11–12
Age	6–11 years old	11–16 years old	16–18 years old
Educational areas	**Subjects**		
Language and literature	Kazakh language and literature (L1) / Russian language and literature (L1), Kazakh language (L2)/ Russian language (L2), English language	Kazakh language and Literature (L1) / Russian language and Literature (L1), Kazakh language and literature (L2) / Russian language and literature (L2), English language	Kazakh language and literature (L1) / Russian language and literature (L1), Kazakh language and literature (L2) / Russian language and literature (L2), English language
Mathematics and Computer science	Mathematics, Information and communication technologies	Mathematics, Computer science	Mathematics (7 hours), Mathematics (10 hours), Computer science (standard level), Computer science (advanced level), Programming
Science	Introduction to Science	Science, Biology, Physics, Chemistry, Geography,	Biology (standard level), Biology (advanced level), Physics (standard level), Physics (advanced level), Chemistry (standard level), Chemistry (advanced level), Geography
Human and Society	World understanding	History of Kazakhstan, World history, Fundamentals of Law	History of Kazakhstan, Economics
Arts	Arts	Arts	Graphics and esign
Physical Education	Physical Education	Physical Education	Physical Education, Initial military and technological training
Beyond the educational area	-	-	Global perspectives and project work

8.7. ***Compulsory subjects, project work, elective courses and extracurricular classes*** are offered at all levels of education in the Intellectual schools. The introduction of compulsory project work will enhance students' research, collaboration, presentation, and critical thinking skills. Upper

secondary school provides students with elective subjects studied at the standard and advanced levels.

8.8. The content of education in primary school

The content of education in **primary school** is designed in alignment with the school's mission, which emphasizes the importance of not only teaching academic subjects but also instilling the foundations of a child's spirituality and socially significant skills. The content of primary school education is aimed at developing functional learning skills (reading, writing, arithmetic, articulating one's thoughts coherently, establishing cause-and-effect relationships), as well as research skills and creative abilities.

The educational area of ***Language and literature*** includes the following subjects: **Kazakh language and literature (L1) / Russian language and literature (L1), Kazakh language (L2) / Russian language (L2), and English language.**

When teaching the first language (either Kazakh or Russian, depending on the language of instruction), the focus is on moving away from the traditional grammar-based approach to prioritize the development of communicative skills. The integration of the Kazakh\Russian language and literature is based on the use of literary texts for the development of four language skills (listening, speaking, writing, reading). After completing primary school, students will gain speaking skills, as well as initial writing and reading skills.

Teaching the second and third languages (either Russian or Kazakh, depending on the language of instruction, and English) emphasizes level-based language learning. The content of these subjects is designed to cultivate students' interest and foster a positive attitude towards language learning through play and cognitive activities. It aims to develop initial communication skills for information exchange, the ability to work with texts, comprehend the meaning of phrases and expressions, and apply them in specific situations.

The educational area of ***Mathematics and Computer Science*** includes the following subjects: **Mathematics** and **Information and Communication Technologies**.

The content of Mathematics in primary school is designed to developing students' knowledge of the basics of mathematical language and spatial thinking. This includes performing arithmetic operations, mastering both oral and written computational algorithms, calculating numerical expressions, solving word problems, developing general problem-solving techniques, and fostering the ability to make logical judgments based on measurement and computational skills.

The main learning objective of Information and communication technologies in primary school is to develop students' skills in using basic tools of information and communication technologies, and to form the ability to search, choose, transmit information, and think logically.

The educational area of ***Science*** is represented by the subject **Introduction to Science**.

Due to the deliberate focus of the Intellectual schools on in-depth study within the natural science, the primary school curriculum includes a new independent subject "Introduction to Science". This is an integrated subject designed to provide fundamental scientific knowledge within the "Human – Nature" system. The content of the subject is designed to cultivate students' curiosity, research skills, scientific understanding, and their perception of the world around them, while also broadening their horizons. Introduction to Science is a propaedeutic course designed to prepare students for academic disciplines such as Biology, Physics, and Chemistry in lower secondary school.

The educational area of ***Human and society*** is represented by subject **World understanding**.

As an integrated subject, "World understanding" is focused on providing propaedeutic knowledge within the "Human – Society" system. This subject covers the basics of the humanities. The content of the subject is aimed at instilling initial ideas about the history of mankind, the impact of the past on the present, the formation of social systems, and the relationships between individuals within families and society. This subject provides a smooth transition to independent academic subjects of the educational area "Human and society" in lower secondary school.

The educational area of ***Arts*** is represented by the subject **Arts**, which involves the integrated study of music, fine arts, and crafts. This subject is based on a holistic approach to the organisation of aesthetic and cultural education.

The course involves the following types of individual and group activities: singing, playing instruments, recording, listening, and arranging natural and artificial sounds, drawing, modelling, decorating, moulding, etc. It implies the close integration of this academic subject with additional extracurricular activities of an artistic and aesthetic nature (dancing, theater, clubs, etc.).

The educational area of ***Physical Education*** is represented by subject "Physical Education", which aims to develop skills for maintaining and strengthening health.

8.9. The content of education in lower secondary school

The content of education in lower secondary school is designed with consideration for the necessity of completing a systematic course of academic subjects across all educational areas. They collectively contribute to the formation of the students' mindset, principles, and behavioral norms, providing them with essential skills as the foundation for interaction in society.

The educational area of ***Language and literature*** includes the following subjects: **Kazakh language and literature (L1) / Russian language and literature (L1), Kazakh language and literature (L2)/ Russian language and literature (L2), and English language**.

The content of education in the Kazakh and Russian languages and literature and subjects instructed in the first language is focused on developing students' communication skills, the ability to engage in various types of speech activities in different situations, as well as on fostering proficient writing abilities and refining academic speech.

The subjects "Kazakh Language and Literature" and "Russian Language and Literature" are studied in an integrated manner based on a text-centered approach. The text serves as a source of information and as the main material for developing all types of language skills: reading and writing, listening and speaking. The integration of language and literature involves the study of literary and non-literary texts of various styles, genres, and forms within the context of a single lexical theme. Reading and analyzing texts united by a common topic or issue contributes to the development of critical thinking, the ability to compare different viewpoints, forms of representation, and authors' purposes. It also leads to an understanding of the universality of certain themes and motifs. The purpose of working with literary texts included in the programme is to develop analytical, interpretative, and evaluative skills, as well as to cultivate a love of reading. Therefore, it is important to shift the focus from merely learning the content of a literary work to detailed analysis of specific episodes. This skill will be applied not only within the classroom but also beyond school—in future professional activities—which corresponds to the lifelong learning objectives.

The content of English language education is aimed at providing students with opportunities to communicate in English through interactive tasks that promote both formal and informal communication using oral and written presentations. Students are expected to understand the general meaning of complex texts on global and academic topics, develop fluent and accurate speech, and learn to express their opinions. Teaching English in lower secondary school should ensure that students achieve a level of English proficiency necessary for further study in upper secondary school and for using the language as a means of acquiring knowledge.

The educational area of ***Mathematics and Computer Science*** in the lower secondary school is represented by the subjects **Mathematics** and **Computer Science**.

The content of Mathematics in primary school is designed to develop students' mathematical thinking as one of the means of communication, as well as the ability to solve problem situations based on mathematical models.

Computer Science focuses on the development and proficient use of not only computer technology application skills but also programming skills. It involves the implementation of both individual and collaborative projects using various software applications to support the study of all subjects.

The educational area of ***Science*** includes the following subjects: **Science, Biology, Physics, Chemistry** and **Geography.**

In grade 6 of lower secondary school, the subject of Science is incorporated into the curriculum. In grade 7, students begin learning independent academic subjects such as Biology, Physics and Chemistry. The curricula in these subjects will enable students to discern their strengths and interests, aiding them in choosing specialized academic subjects in upper secondary school.

The content of Biology is designed to reveal the features of the structure and properties of plants and animals, explore the diversity of living organisms, analyse environmental factors and their effects on living beings, examine the relationship between humans and the surrounding biosphere, and foster an understanding of their role within it.

The content of Physics is designed to broaden students' understanding of the scientific worldview through the exploration of physical laws and patterns. The cognitive capabilities of primary school students are considered in forming a scientific understanding of the nature of matter (including matter and field, the unity of the macro- and microcosm), its interactions, and its manifestations in the natural world. There are various innovative methods offered to students to develop their scientific cognition skills (observation, experiment, measurement, modelling).

The content of Chemistry provides an opportunity to gain enough knowledge and understanding about the variety of substances and their transformations, as well as to understand the nature of chemical processes, the meaning of laws and patterns for their safe application in real-life situations. This subject fosters students' ability to investigate chemical phenomena in nature, followed by a critical assessment of the situation, experimental work, data collection and analysis, and the design of the research findings.

Geography aims to foster geographical knowledge as a means of understanding and interacting with the surrounding world. The content of this subject focuses on exploring the diversity of continents and oceans, understanding Kazakhstan's geographical position in the global community, and developing skills to work with maps and utilize geographic information for educational and practical purposes.

The educational area of ***Human and society*** is represented by the subjects **History of Kazakhstan, World History** and **Fundamentals of Law**.

The courses on the History of Kazakhstan and World History are designed to provide students with a historical perspective of the world and to instill in them a desire to embrace the moral values that have evolved over centuries of human development. These subjects are designed to develop students' historical thinking skills based on understanding and comprehension of the past, analysis, and systematization of educational materials from various sources.

Fundamentals of Law is taught in grade 9. There are two reasons for studying this subject in the grade 9. The first reason is to avoid overloading students in grade 10 and to allocate time for subjects that will be externally assessed. Secondly, "Fundamentals of Law" as a compulsory subject must be completed in lower secondary school. The content of this academic subject aims to develop students' understanding of societal ideals and values (human rights, democracy, civil society, legal state, separation of powers, legality, and the rule of law). Studying this subject enables students to assess their personal attitudes towards events, fostering active citizenship and a sense of patriotism.

The educational area of ***Arts*** in lower secondary school entails an integrated study of music, fine arts, design, and technology, considering the cognitive abilities of students in this age group. The integrated course aims to develop aesthetic taste and artistic culture through practical experience in various art forms and creativity.

The educational area of ***Physical Education*** is implemented by the course "Physical Education", which aims to encourage students to apply healthy lifestyle skills in their daily lives.

8.10. The content of education in upper secondary school

The content of education in upper secondary school is determined considering its main purpose, which is to provide students with pre-university training. In this regard, the content of education places special emphasis on the development of social skills and mobility of students, on ensuring their awareness

of own interests, prospects, and choice of further life path. The functional completeness of the content of upper-secondary education is ensured by inclusion of academic subjects in all six educational areas.

Kazakh Language and Literature (L1) / Russian Language and Literature (L1), Kazakh Language and Literature (L2) / Russian Language and Literature (L2), and English are included in the educational area of ***Language and Literature***.

The content of the subjects "Kazakh language and literature" (L1) and "Russian language and literature" (L1) ensures that students understand oral and written messages, have skills in creating texts of different styles and genres; promotes a conscious choice of language means in accordance with the communicative attitude and norms of oral and written speech; ensures the improvement of skills of deep understanding and interpretation of literary works of various levels of complexity; formation of basic aesthetic and theoretical-literary concepts as conditions for the full perception and interpretation of a literary text. These subjects are aimed at developing the skill of being ready for a dialogue, for understanding others in the process of educational, socially useful, teaching and research, creative and other activities.

Subject programmes for Kazakh Language and Literature (L2) and Russian Language and Literature (L2) are focused on the development of communication skills in oral and written speech; skills of conscious, expressive reading, understanding and awareness of the value of the culture of the Kazakh, Russian and other peoples.

The subject content of "English language" focuses on the development of readiness for further self-education in various subject areas using the knowledge of English; getting the experience in project and research works in English.

The educational area of ***Mathematics and Computer Science*** includes the academic subjects **Mathematics, Computer Science** and **Programming**.

The subject content of Mathematics in upper secondary school is aimed at developing a mathematical style of thinking based on the use of induction and deduction, generalization and concretization, analysis and synthesis, classification and systematization, abstraction and analogy, the ability to formulate, substantiate and prove statements; the use of mathematical concepts, formulas and extended spatial representations in making drawings, figures, and schemes in real life. All the above skills are necessary for successful study at a higher educational institution.

To ensure differentiation and provide upper secondary school students of the Intellectual schools with flexibility and freedom in choosing the level of study of the subject based on the future specialty, Mathematics is implemented in two subject programmes: a 7-hour weekly load and a 10-hour weekly load.

The subject programme for a 7-hour weekly load fully covers the content of subject programmes "Algebra and the beginning of analysis" and "Geometry" designed for the Science and Mathematics strand of SCES RK. The subject programme for a 10-hour weekly load includes a range of additional topics to provide students with conditions for successful further studies in Kazakhstani and international universities in specialties requiring a high level of mathematical competence.

The subject content of "Computer Science" is aimed at gaining experience in project work, working with information objects of various types using modern software tools, building computer models and their collective implementation.

Students can choose to study the subject of "Computer Science" at the standard or advanced levels. The standard level allows students to acquire basic information technology skills and programming skills that are necessary for further study at universities according to the chosen specialty and for future professional activity not related to the subject of "Computer Science".

The study of the subject "Computer Science" at an advanced level is aimed at achieving A-level by students. This level can be chosen by students who associate their further education with computer science.

The subject content of Programming curriculum aims to develop problem solving skills in the process of developing programs using programming languages, to provide students with in-depth

knowledge in the field of information technology application and to explain how software tools are used for scientific, commercial, engineering, and cultural development.

The educational area of ***Science*** includes the subjects of Biology, Physics, Chemistry, Geography.

The subject content of Biology curriculum is aimed at the formation and development of students' scientific worldview and scientific thinking, understanding of the laws and patterns of phenomena and processes of wildlife. This subject aims to create a holistic picture of the organic world based on understanding the evolution of the animal and plant world, understanding the impact of human activity on the environment. By understanding of the relationship and mutual influence of biological processes, the ability to analyse the problems of ecosystem disturbance, students acquire a willingness to apply knowledge of biology in everyday life.

The subject content of Physics curriculum focuses on the development of the ability to apply physical models of phenomena and processes to understand the nature of the surrounding world and interact with it, considering environmental, man-made and informational factors. By studying the subject students get the foundations of a scientific worldview which includes a deep understanding of natural phenomena and develop critical thinking to understand scientific issues in the surrounding world.

The subject content of Chemistry curriculum aims to develop an understanding of the causal relationship of changes in the environment, chemical processes in nature and in human economic activity, the ability to plan experimental research in a given context and propose ways to solve them. The experiment, as the basis for the study of chemistry, contributes to the increase of cognitive activity and the development of analytical abilities of students, the independent search for solutions to problem situations. This subject contributes to the development of students' ability to design, which involves the development of a hypothesis, the choice of methods, conducting an experiment, risk assessment, formulation of conclusions, the assessment of mistakes made.

The content of the subject *"Geography"* is aimed at developing students' ability to use the informational and conceptual framework of geography in order to broaden their understanding of the geographical picture of the world. The curriculum is designed to enable students to achieve the AS-Level standard of proficiency.

Students can choose to study subjects of "Biology", "Physics" and "Chemistry" at standard and advanced levels.

Two out of four subjects (Biology, Computer Science, Physics and Chemistry) are studied at the advanced level in grades 11 and 12. The subject content aims to ensure that students achieve A-level. Students can choose a combination of two subjects to get early profiling and to continue their studies at universities according to the relevant educational programmes.

One of the subjects (Biology, Physics, Chemistry, Geography (one subject of choice)) is studied at the standard level in grade 11 and in the first half of grade 12. Thus, students are given the opportunity to study three science subjects (two at the advanced level and one at the standard level).

The educational area of ***Art*** in upper secondary school is represented by the subject **Graphics and design**.

The academic subject "Graphics and design" is an integrated course combining a range of academic subjects to study their function in the context of modern requirements. The main purpose of this subject is for students to learn the basics of image theory, knowledge of the laws of the projection method and graphic modeling; to promote the development of design and creative activities, the formation of graphic culture and skills to work with traditional and modern means of graphics. This subject develops the creative qualities of a person, provides polytechnic and functional graphic literacy, introduces the basics of design and engineering activities and guides in choosing a future profession.

The educational area of ***Physical Education*** includes the following subjects: **Physical Education**, and **Initial military and technological training**. These academic subjects are aimed at developing the skills to rationally apply health-improving techniques to improve physical fitness, to form basic knowledge and skills for initial military training. The content of academic subject **Physical Education** in upper secondary school promotes team sports, in which the main attention is paid to the development

of team interaction skills along with the physical training of students. The content of the subject **Initial military and technological training** aims to educate students in the spirit of patriotism and readiness to defend the Motherland. The subject will allow students to acquire knowledge of the basics of military science, health and safety in emergency situations and develop the skills of military service.

8.11. The subject of **Global Perspectives and project work** has been introduced in upper secondary school. It focuses on the development of research skills, and not on the content knowledge. It covers a wide range of issues that contribute to the development of a worldview and the formation of a personal point of view. In grade 11, students master such skills as analysis and evaluation of conclusions, arguments, reasoning, and statements; critical analysis and interpretation of context and evidence of arguments; self-reflection; the ability to effectively present research results.

8.12. Implementation of the content of education in upper secondary school provides for a reduction in the number of academic subjects by providing students with a choice. Reducing the number of compulsory academic subjects in upper secondary school contributes to the purposeful preparation of students for further education in higher education institutions.

8.13. Taking into account the individual interests and needs of students, NIS-Programme offers a flexible system of choosing academic subjects at two levels of education. The student independently chooses the subjects necessary for admission to universities to study both at the advanced and at the standard level. At the advanced level, the study of profession-oriented subjects provides for a larger number of hours than at the standard level. Profession-oriented subjects are studied at the standard level. Meanwhile, the study of some selected subjects may be completed in grade 11. Students can choose to study 2 subjects at the advanced level and 1 subject at the standard level:

Status	Subjects	
	INVARIANT COMPONENT	
Compulsory	1	Kazakh language and literature (L1) / Russian language and literature (L1)
	2	Russian language and literature (L2) / Kazakh language and literature (L2)
	3	English language
	4	Mathematics*
	5	Programming
	6	History of Kazakhstan
	7	Global perspectives and project work
	8	Physical Education
	9	Initial military and technological training
Electives at advanced level	10	Physics/Biology/Chemistry/Computer Science
	11	Physics/Biology/Chemistry/Computer Science
Electives at standard level	12	Chemistry/Biology/Physics/Computer Science/Geography/Economics/ Graphics and design
	VARIATIVE COMPONENT	

	13	**Elective courses**
	14	**Club activities**

Note:
*a student who choose a 10-hour Mathematics curriculum shall not choose a subject to study at the standard level.

8.14. According to the Policy of Trilingual education in Nazarbayev Intellectual Schools, approved by the decision of the Board of "Nazarbayev Intellectual Schools" AEO dated 12 August 2013 (Minutes No. 44), subjects are taught in Kazakh, English and Russian in upper secondary school.

The subjects "History of Kazakhstan" and "Geography" are taught in Kazakh. Subjects of integrated language and literature (L1 and L2) are taught in Kazakh and Russian, respectively.

The subjects "Mathematics" and "Graphics and design" are taught in the first language (Kazakh or Russian), depending on the language of instruction.

The subjects "Physics", "Chemistry", "Biology", "Computer Science", "Programming", "Economics", "Global perspectives and project work" are taught in English. Elective subjects ("Physics", "Chemistry", "Biology", "Computer Science") are taught in English at advanced and standard levels.

9. Approaches to assessment

Assessment of students' learning achievements is based on the content of the Educational Programme in accordance with the learning objectives of the subject curriculum and is an integral part of learning and teaching.

For this purpose, criteria-based assessment is used to obtain objective information on student learning outcomes based on assessment criteria and make it available to all stakeholders to further improve the learning process.

Criteria-based assessment in the Intellectual schools includes two types of assessment: formative and summative assessment.

Formative assessment is carried out continuously, and is a current indicator of student performance, provides an operational relationship between teacher and student, allows timely correction and improvement of the learning process on the basis of feedback.

Any task that is completed in class and as homework can be used for formative assessment. At the end of the assessment, the teacher provides comments (feedback) on students' work and answers in writing (in notebooks, paper/electronic diaries, answer sheets, etc.) or orally. Such information should demonstrate where students are at in their learning, where they are aiming and how they can achieve their goal.

Summative assessment is carried out to determine the level of students' learning achievements after the completion of units/cross-curricular topics (summative assessment for a unit/cross-curricular topic) and a given academic period (summative assessment for a quarter, external summative assessment), with grades and scores, and to provide information on students' progress to teachers, parents, and students themselves.

External summative assessment is is conducted upon completion of lower secondary and upper secondary school. The standards of external summative assessment examinations are comparable to the international standards of AS-level and A-level. External summative assessment examinations consist of several components, the examination tasks include closed and open-ended questions requiring short and extended answers.

As a result of external summative assessment, Grade 12 students are awarded a NIS Grade 12 Certificate, which is recognised by leading universities in Kazakhstan and around the world and by international organisations.

10. Organisation of the educational process in the Intellectual schools

10.1. In the educational process of the Intellectual schools the principle of **unity of teaching and upbringing** is realised, which is based on the values and goals of education of the Intellectual schools and is traced in the system of expected results of education and in the multilevel system of expected learning outcomes by educational areas. The expected learning outcomes, as benchmarks, subordinate the daily processes of teaching and upbringing to the general logic of education as a whole and thus reveal the meaning of the question "What is school for?". They determine the content basis of both teaching and upbringing.

10.2. During the study of each academic subject, questions of upbringing are addressed (learning leads to upbringing). All types of pastoral work are aimed at solving the issues of cognition and mastering by pupils of subjectively new knowledge (upbringing leads to learning). The organisation of various forms of extracurricular pastoral work together ensures the implementation of **civic, patriotic, spiritual, moral, cultural, aesthetic** and **labour education.** The whole system of pastoral work of the Intellectual schools (curricular, extracurricular, out-of-school) along with the learning process contributes to the implementation of professional orientation of students, strengthening their health, to the development of intellectual abilities and creative potential; to the formation of confidence in their importance, in the fate of their country and its prosperity. The pastoral system, based on partnerships with family and community, includes all culture-building activities both inside and outside the school.

10.3. In the organisation of the educational process, the priority role is given to learning as the main activity of students. Learning involves the use of **interactive teaching methods**, which are based on the organisation of learning experiences by the student himself/herself by showing initiative to search, to be active in discussing issues and arguing a point of view, to make a constructive decision.

The student's activity, both cognitively and socially, is not manifested in isolation, but in interaction with other students and with the teacher. A variety of interactive methods, both individually and in various combinations, create prerequisites for learning in cooperation of all participants, avoiding authoritarianism in relationships.

10.4. Interactive teaching methods, as special forms of organisation of cognitive activity of students, contribute to the assimilation of educational information in the process of creative search, provide success for all participants in achieving the final results of joint activity. As a result, the cognitive process moves to a higher form of cooperation and collaboration, as everyone contributes to the final result, there is an active exchange of knowledge, ideas, and ways of activity.

10.5. The use of interactive methods makes it possible to turn learning into a model of social communication of students in real creative activities instead of just communication in reproductive learning activities. Interactive methods, conventionally grouped into training, dialogue and reflexive methods, can be creatively used by the teacher taking into account the age characteristics of students and didactic possibilities of the content of a particular teaching material.

10.6. Ensuring consistency in the development of students' **project** and **research activities** is one of the main principles of the organisation of the educational process in the Intellectual schools. Purposefully developed abilities to design and scientific research activate independence, reveal

intellectual potential, motivate students to set their own life goals and build a competent way to achieve these goals that do not contradict moral and ethical norms. Through project and research activities, pupils acquire new knowledge not only within the framework of compulsory subjects, but also when organising their activities outside lessons. This kind of activity develops students' **critical thinking** and ability to navigate in the information space. During projects and research, students independently construct their knowledge, focus the process of scientific cognition on the need to assimilate and understand scientific knowledge and key scientific concepts, and mobilise all their knowledge and skills to solve real scientific problems.

10.7. The project form of activity implies independent organisation of activity aimed at achieving the planned result. Students integrate different subject knowledge, skills, ICT skills and life experience in a meaningful way to realise the project. The process of designing and obtaining its final product involves students using a variety of forms of activity, referring to various sources of information, and making responsible choices. In organisational terms, students' project activities are carried out in the form of individual independent work, work in small groups, group projects, and large social projects. In terms of content, students' project activities can have subject and interdisciplinary nature, be oriented to the use of both curricular and extracurricular material. Projects can be carried out not only in the form of educational project activities, but also in the form of pastoral project activities.

10.8. When studying subjects of the science and mathematics cycle, students' project activities become research-based, which is clearly seen in lower secondary and upper secondary schools. Scientific research, organised according to the age-specific characteristics of students, becomes a crucial factor in the formation of general literacy. Research enables students to reflect and analyse, gather, and process facts, explain, and draw conclusions, understand the ethical dimensions of decisions, and evaluate the significance of findings for people and the environment.

10.9. **Functional literacy** of students, formed on the basis of scientific research by means of science and mathematics disciplines, is projected on any studied educational area and type of activity, manifested in any situation in competent problem solving. Functional literacy enables students to realize the personal significance of the education they receive, to comprehend the positive role of education in their destiny, and to understand the need for lifelong learning.

10.10. The organization of the educational process in the Intellectual Schools provides conditions for fostering and maintaining the well-being of all participants in the educational process. This objective is implemented through the creation of a safe, supportive, and development-oriented environment that promotes positive relationships, emotional well-being, and student engagement in both curricular and extracurricular activitie.

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