APPROVED BY
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Curriculum
developed under O.Ya. Savchenko's guidance

Grade 3
Computer Science (Informatics)
Software used: Graphic editor (offline and online versions), text editor

Expected learning outcomes of students	Training Content
Information. Actions with information	
Student: *explains* the significance of information for human life, gives examples from his/her own experience; *distinguishes between* types of information by the method of presentation; *is able* to convert one form of presentation of information into another: (text – into graphic, numerical – into text, etc.); *creates* a folder and documents in it; *explains* the concept of 'computer network'; *understands* the purpose of the browser application; *is able* to use hyperlinks; *uses* social media to obtain information and communicate; *makes* assumptions about the authenticity of information obtained from digital and other sources; *observes* the rules for the use of own and other people's works; *shows* respect for the authorship of others	The role of information in human life. Converting information from one species to another. Message submission methods, message carriers, symbols, encoding and decoding. Structuring of information. The concept of the Internet, browser application, web page, website, hyperlink. Copyright. Working safely online
Computer devices for handling information	
Student: *tells* the story of the emergence of devices for working with information; *names* the media; *distinguishes between* technical means for transmitting, storing information; *uses* devices to transmit information; *gives examples of* devices for input and output of information; *expresses* assumptions about the reliability of the information; *explains the health consequences* of excessive use of digital devices;	History of the occurrence of devices for working with information. Source of information. Media. Information input and output devices. Enter text data. Rules for entering and editing text data

Object. Object Properties	
Student: *describes the* text and graphic objects; *compares* the properties of text and graphic objects by common and distinctive features; *defines* the objects that correspond to the specified properties; *can* change the values of the properties of text and graphic objects; *explores* objects with the help of created models	Types of objects: text, graphic. **Information object**. Object properties. Creating an object model based on the specified properties. Change object property values (text colour, font, outline)

Computer programs. Menus and Tools	
Student: *distinguishes between* modern devices for working with information; *can* turn on and off the computer and other devices (if they are used); *uses* the necessary icons on the Desktop to start and work in applications; navigates *the* environments for viewing images, reading texts, listening to music, and finishes working with them; *creates* images of educational objects	Text editors. Environments for reading texts. Bookmarks in the text, quotes, etc. Virtual libraries, reference books, encyclopaedias, dictionaries. Basic editing commands: cut, copy, paste, delete. Enter characters using the keyboard. Complementing texts with images

Creation of information models. Changing finished products. Use	
Student: *creates* information products, combining text, images, sound, etc. to present ideas and/or results of activities; *creates* and *modifies* simple images; *processes* and *uses* information from various sources; *can* fill in the table of features for items from the same group (class); *develops* the presentation in a logical sequence; *supplements the* presentation with text, images, diagrams; *edits* and *formats* the presentation depending on its purpose changes the background of the slide; *applies* slideshow display mode	Stages of creating an information model in different software environments. Creating textual information models, including tabular ones. Computer slideshows, editing of slideshows. Creating a new slide, text box/field. Complementing the presentation with text, image, diagram. Slideshow formatting. Slideshow display mode

Linear algorithms	
Student: *determines the* algorithmic structures; *performs*, *creates* and *records* algorithms; *can* act on instructions; *organizes* objects according to certain features; *explains* the consequences of violation of the plan, the algorithm of the sequence of actions in the close environment, ready-made programs, games; *distinguishes between* true and false utterances	Commands and performers, algorithms, and ways of presenting the algorithm. Writing linear algorithms. Creating images using your algorithms. Finding and correcting errors in algorithms. Logical statements

Grade 4
Computer Science (Informatics)

The software used is the programming environment.	
Expected learning outcomes of students	**Training Content**
Information Actions with information	
Student: *can* search for information on the Internet; *knows* the addresses of some websites, including electronic libraries, websites with educational content; assumes *the* reliability of information obtained from a variety of sources; *distinguishes between* facts and judgments; *finds* appropriate means to communicate with others, in particular with people with special needs, directly and via the Internet. *explains* the consequences of the use of information technologies, responsibility for its activities on the Internet; *follows* the rules of using his own and others' works.	Search for information on the Internet. Information interaction. Critical evaluation of information
Computer devices for handling information	
Student: *provides* examples of modern types of computer devices; *stores* data on digital media; *explains* how to work with data on any digital device; *has an idea* of the process of creating robots; *controls the* time of use of digital devices	Modern media. Organization of digital device operation (data input, saving, processing, saving or output). Saving information. Memory Overview of the computer (internal and external) Overview of the robotics designers
Object. Object Properties	
Student: *classifies* objects by their properties; *compares the* features of models of the real and digital world; *analyses the* impact of events on the properties of the object; *explores* objects with the help of created models; *can* create a simple animation	Objects for creating models. Formatting and editing objects. Adding animated effects to objects
Computer programs. Menus and Tools	
Student: *can* open and complete work in familiar programming environments (offline and online); *names* the tools of the environment and explains their purpose; *describes* the procedure for creating projects; *can* open ready-made and save created projects	Programming environment. Teams and tools. Projects
Creation of information models. Changing finished products. Use	
Student: *names* the components of the object; lists *the* actions that can be performed on the object,	Components of objects. Object Actions. Mathematical models. Problem-solving using mathematical

and the actions that can be performed by the object; *provides examples of* the need for modelling to solve specific problems; *names* the stages of creating an information model; *creates* mathematical models; *predicts* and *formulates the* expected result; *comments on* successful and unsuccessful steps in the work process	modelling

Linear algorithms	
Student: *determines the* algorithmic structures; *creates* branching algorithms in the environment programming; *develops* algorithms (in particular, for own or group activities) for consistent actions, conditions, repetitions; *analyses* and organizes sequences; *finds* errors in algorithms and corrects them; *can* develop a joint project with classmates under teacher's guidance; *gives examples of* games and winning strategies; *evaluates the* results of his/her learning achievements and the results of his/her classmates	Algorithm runtime. Algorithms with branching, compilation algorithms with repetition. Creating programmable projects, including animated stories. Games and Victory Strategies