

Computer Science

Year 8
(35 hrs, 1 hr per week)

Table of contents	
1	<p>Data coding</p> <p>Processing data as an information process Coding and decoding messages Binary code Symbol coding</p>
2	<p>Computer hardware and software</p> <p>Architecture (structure) of a computer and its types. Technical features of a computer Classification and general features of software Data archiving. Creating data, types of data compression</p>
3	<p>Processing text data</p> <p>Text document formats. Creation, editing, and formatting lists, tables, columns, symbols, and formulas in a text document. Creation, editing, and formatting of graphic objects in a text document Document templates Sections. Document structure. Running heads. Links, etc. Work with several documents</p>
4	<p>Processing multimedia objects</p> <p>Audio- and video file formats Multimedia objects processing software. Means of converting audio and video formats Creating audio and video fragments. Audio and video reel construction Setting the time parameters of an audio and video reel. Services for posting audio and video files on the Internet</p>
5	<p>The fundamentals of event- and object-driven programming</p> <p>Getting to know the programming media. Programming language concept. Programming language components Program project and files it consists of. Creation of the simplest project, its compilation, saving, and execution</p>
6	<p>Algorithms of work with objects and values</p> <p>Values (variable and constant), and their features. Simple types of values: numerical, logical, symbolic, and linear Elements for data entering: text field, flag, and drop-down list Correlation of the types of data and elements for data entering, and reading data from the entering elements Display of basic graphic primitives: line, rectangular, sector, polygon, ellipse, style and color settings of primitives using the programming languages</p>
7	<p>Technologies for processing of numerical data in a spreadsheet</p>



	<p>Absolute, relative, and mixes cell references Setting page parameters. Electronic table printing Setting page parameters. Conditional formatting Creation and setting of diagrams of different types, selection of a type of diagram Setting data in tables Automatic and advanced filters</p>
8	Solving competence tasks
9	Solving individual and group projects within Computer Science curriculum
<p>Expected results Pupil can:</p> <ul style="list-style-type: none"> ● code and decode messages adhering to certain rules; ● create archives of different types; adding data to archives, finding data in archives, extract data from archives; and update archives; ● import audio and videofragments from the external sources to a videoclip; synchronize a video reel with audio reel; set time parameters of the audio and video reel, etc. ● opening programming environment; creating new projects, opening, saving, and closing a project ● reading of data of different types using the elements of data entry for their further processing ● making up numerical and text type processing algorithms ● changing the type and formatting of a diagram ● arranging data in tables using the values from one or several fields ● engage in conditional formatting 	