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CURRICULUM
developed under O.Ya. Savchenko's guidance

Grade 1
Mathematics

Expected learning outcomes of students	Training Content
Numbers, actions with numbers. Quantities	
<p>Student: <i>reproduces</i> a sequence of numbers within a hundred; <i>reads</i> and <i>writes</i> numbers, <i>forms</i> numbers in a variety of ways; <i>defines</i> tens and units as part of a two-digit number; <i>compares</i> numbers in different ways; <i>performs</i> addition and subtraction based on the numbering numbers; <i>understands</i> the essence of arithmetic operations of addition and subtraction; <i>predicts</i> the result of addition and subtraction; <i>has</i> skills in adding and subtracting single-digit numbers within 10; <i>uses</i> in the speech the names of the components and results of arithmetic actions of addition and subtraction;</p>	<p>Numbers 1-10. Number 0. A dozen. Numbers: 11 to 100.</p> <hr/> <p>Arithmetic operations of addition and subtraction. Addition and subtraction of numbers within 10.</p>
<p><i>comments on</i> the execution of calculations; <i>finds</i> a number that is several units larger (less) than a given number; <i>understands</i> the essence of difference comparison of numbers;</p>	<p>Names of components and results of addition and subtraction.</p> <hr/> <p>Increase (decrease) the</p>

<p><i>finds how</i> many times one number is greater or less than other; <i>enjoys</i> in computing a permutable addition law; <i>establishes</i> the relationship between the addition and subtraction actions and <i>uses</i> them during calculations;</p> <p><i>defines</i> an unknown component of the add action; and <i>finds</i> its result; <i>measures</i> and <i>compares</i> the values: length, mass, capacity;</p> <p><i>uses</i> short designations of quantities (centimetre – cm, decimeter – dm, meter – m); mass (kilogram – kg); capacity (litre – l); time (hour – h, day, week);</p> <p><i>adds and subtracts</i> named numbers submitted in some in units of magnitude; <i>uses</i> tools and auxiliary tools for measurement of quantities; <i>uses</i> a clock (within hours) and calendar to track events in his/her life, observations in nature, etc.; <i>operates</i> money in the imaginary (gameplay) process of buying-sale and <i>uses</i> their short designations (hryvnia – UAH, kopeck – kop.)</p>	<p>number by several units. Differential Comparison.</p> <p>Permutable addition law. Relationship between adding and subtracting. Finding an unknown addend.</p> <p>Values: length, mass, capacity, time.</p> <p>Money</p>
Expressions of equality, equality, inequality	
<p>Student: <i>reads</i> and <i>writes</i> mathematical expressions: sum and reminder;</p> <p><i>calculates</i> the value of expressions for 1-2 actions;</p> <p><i>establishes</i> the relationship of equality and inequality between numbers and numerical expressions</p>	<p>Sum. Remainder.</p> <p>Expressions on 1-2 actions. Numerical equality and inequality.</p>
Geometric Shapes	
<p>Student: <i>focuses</i> on the plane and in space, describes or schematically depicts the placement, direction and movement of objects; <i>recognizes</i> geometric figures by essential features; <i>correlates</i> real objects with models and images of</p>	<p>Triangle, quadrilateral, square, circle. Point, straight line, beam, section, polyline. Cube, ball, cylinder, cone, pyramid.</p>

<p>geometric figures; <i>simulates</i> geometric shapes; <i>measures the</i> length of the segment; <i>draws</i> sections of a given length</p>	
Mathematical problems and studies	
<p>Student: <i>solves</i> simple story problems, which are models of real situations; <i>creates</i> an auxiliary model of the task in various ways;</p>	<p>Simple storyline problems, including competence-oriented problems.</p>
<p><i>assesses</i> with the help of the teacher the correctness of solving the problem; <i>draws up</i> simple story problems; <i>performs</i> elementary studies of mathematical patterns with the help of a teacher</p>	<p>Educational studies</p>
Data handling	
<p>Student: <i>reads</i> the data contained in the schematic figure in the table; <i>enters</i> data into the schemes; <i>uses</i> the data when solving practically oriented problems and in practical situations.</p>	<p>Selection and sorting of data by a certain feature.</p>
<p>Additional topics: Signs and properties of objects. Common and distinctive signs, essential signs. Combining objects into a group according to a common feature (generalization). Breakdown of a group of objects into subgroups according to a common feature (classification). Addition and subtraction of two-digit numbers without passing through the discharge. Replacing larger units of magnitude with smaller ones. Replacing smaller units of magnitude with larger ones. Uses the ratio between units of magnitude when performing mathematical and practical tasks. True and false (correct and incorrect) statements. Symmetry in geometric figures. Circle. Modelling the content of tasks using figures, graphs, tables. Simple problems to find the unknown denominator, the subtractor. Tasks to find the sum of three addends. Tasks with a logical load. Line charts, tables.</p>	

**Grade 2
Mathematics**

Expected learning outcomes of students	Training Content
Numbers, actions with numbers. Quantities	
<p>Student: <i>reproduces</i> a sequence of numbers within a hundred; <i>reads</i> and <i>writes</i> numbers, forms numbers in different ways;</p> <p><i>compares</i> numbers in different ways; <i>determines the</i> bit composition of the two-digit number; <i>presents</i> numbers in the form of the sum of discharging addends;</p> <p><i>performs</i> addition and subtraction based on numbers numbering</p> <p><i>has</i> skills in adding and subtracting single-digit numbers within 100; <i>calculates</i> verbally in a way convenient for himself/herself; <i>predicts</i> the result of addition and subtraction; <i>checks</i> the correctness of calculations; <i>identifies</i> an unknown subtraction action component and <i>finds</i> its result; <i>comments on</i> the execution of calculations; <i>understands</i> the essence of the actions of multiplication and division; <i>uses</i> in speech the names of components and results of multiplication and division actions; <i>uses</i> in computation the relationship between multiplication and division</p>	<p>Numbering of the first hundred numbers</p> <p>Adding and subtracting numbers within 100.</p> <p>Finding an unknown subtraction action component</p>
	Arithmetic actions of

<p><i>uses</i> the permutational law of multiplication in computation, relationship between multiplication and division, rules of multiplication and division with numbers 1 and 0, division of equal numbers;</p>	<p>multiplication and division. Component and Result Names Multiplying and Dividing The relationship between multiplication and division. Permutable addition law. Special cases of multiplication and division. Tabular multiplication and division.</p>
<p><i>understands</i> the impossibility of dividing by zero; <i>applies</i> the knowledge of the multiplication tables of numbers 2 and 3 and the corresponding division cases in the calculations; <i>calculates</i> the values of expressions containing other tabular cases of multiplication and division, based on tables;</p>	
<p><i>predicts</i> the result of multiplication and division, <i>checks the correctness</i> of calculations; <i>finds</i> a number that is several times greater (less) than a given number;</p> <p><i>understands</i> the essence of multiple comparison of numbers; <i>calculates the result</i> of the multiple comparison of numbers; <i>identifies</i> an unknown component of the multiplication and division actions, <i>calculates</i> its value; <i>comments on</i> the actions performed; <i>measures and compares</i> the values: length, mass, capacity, time, <i>uses</i> their short designations (millimetre – mm, – cm, decimeter – dm, meter – m); mass (kilogram – kg, centner – c); capacity (litre – l); time (minute – min, hour – h, day, week); <i>uses</i> tools to measure quantities;</p> <p><i>uses</i> the clock and calendar to determine the time and planning of his/her activities, observations of natural phenomena, etc.;</p> <p>manages money in the imaginary process of purchase and sale and in practical activities, <i>uses their short designations</i></p>	<p>Increase or decrease the number several times. Multiple comparison ratio. Finding an unknown action multiplier component and division.</p>
	<p>Magnitudes: length, mass, capacity, time.</p> <p>Money</p>

Expressions of equality, equality, inequality	
<p>Student: <i>records</i> mathematical statements submitted in text form using mathematical symbols; <i>sets</i> the ratio of equality and inequality between numbers and numerical expressions; <i>finds</i> the value of a numeric expression and a letter expression with the specified letter value; <i>establishes</i> the dependencies between the components and the result of the arithmetically determined action; <i>applies</i> the rule of the order of execution of actions in expressions without parentheses and with parentheses</p>	<p>Numerical expressions. Letters and expressions. Numerical equations. Numerical inequalities</p>
Geometric Shapes	
<p><i>focuses</i> on the plane and in space, describes or depicts schematically the location, direction and movement of objects; <i>recognizes geometric</i> figures by essential features; <i>correlates</i> real objects with models and images of geometric figures; <i>names</i> elements of geometric shapes; <i>simulates</i> geometric shapes; <i>draws</i> sections of a given length; <i>builds</i> a rectangle (square) on a sheet into a cell; <i>distinguishes</i> between a circular disk and a circle; <i>measures</i> the sides of geometric shapes;</p>	<p>The geometric figures are voluminous and flat. Rectangle. Square. A circular disk. Circle.</p>
<p>Student: <i>calculates the</i> length of the polyline, the perimeter of the polygon</p>	
Mathematical problems and studies	
<p>Student: <i>solves</i> simple and composite story problems, including problems with geometric content; <i>creates</i> an auxiliary model of the task in various ways; <i>selects</i> the numerical data necessary and sufficient to answer the question; <i>plans</i> the solution of a story problem; <i>creates</i> a mathematical model of the problem; <i>evaluates</i>, with the help of the teacher, the correctness of solving the problem;] <i>searches for</i> different ways of solving (solving the problem); <i>draws up</i> story problems for one and two actions;</p>	<p>Simple and composite story problems, including geometric, competence-oriented.</p> <p>Educational studies</p>

<i>performs</i> elementary studies of mathematical patterns and dependencies with the help of a teacher	
Data handling	
<p>Student: <i>highlights</i> data contained in tables, graphs, diagrams, line diagrams; <i>enters</i> data into tables; <i>determines whether</i> there is sufficient data to solve the problem situation; <i>uses</i> data when solving practically oriented problems, in other life situations.</p>	<p>Selecting and organizing data according to a specific feature</p>
<p>Additional topics: Rational ways of adding and subtracting (adding a few numbers individually, rounding up a few appendices, etc.). Table of Pythagoras. Double numerical inequalities. Equation with one unknown. Non-standard problems that are solved by the method of reasoning without performing arithmetic actions; the method of selection; procedural problems; problems of processing data obtained in the process of observations of events in the world around us (in the life of society, schools, natural phenomena). "Magical Shapes". Mathematical rebuses. Modelling the situation described in the problem using graphs or tables</p>	