

MATHEMATICS

GRADE ONE

STANDARDS

Nevada Grades K-12 Content Standards

- 1.0 Students will accurately calculate and use estimation techniques, number relationships, operation rules, and algorithms; they will determine the reasonableness of answers and the accuracy of solutions to solve problems, communicate, reason, and make connections within and beyond the field of mathematics.
- 2.0 Students will use various algebraic methods to analyze, illustrate, extend, and create numerous representations (words, numbers, tables, and graphs) of patterns, functions, and algebraic relations as modeled in practical situations to solve problems, communicate, reason, and make connections within and beyond the field of mathematics.
- 3.0 Students will use appropriate tools and techniques of measurement to determine, estimate, record, and verify direct and indirect measurements to solve problems, communicate, reason, and make connections within and beyond the field of mathematics.
- 4.0 Students will identify, represent, verify, and apply spatial relationships and geometric properties to solve problems, communicate, and make connections within and beyond the field of mathematics.
- 5.0 Students will collect, organize, display, interpret, and analyze data to determine statistical relationships and probability projections to solve problems, communicate, reason, and make connections within and beyond the field of mathematics.

Nevada Grades K-12 Process Standards

- A Students will develop their ability to **solve problems** by engaging in developmentally appropriate opportunities where there is a need to use various approaches to investigate and understand mathematical concepts.
- B Students will develop their ability to **communicate mathematically** by solving problems where there is a need to obtain information from the real world through reading, listening, and observing.
- C Students will develop their ability to **reason mathematically** by solving problems where there is a need to investigate mathematical ideas and construct their own learning in all content areas.
- D Students will develop the ability to make **mathematical connections** by solving problems where there is a need to view mathematics as an integrated whole.

ESSENTIAL CONCEPTS, SKILLS, AND EXPERIENCES

NUMBERS, NUMBER SENSE, AND COMPUTATION

It is expected that students will:

- (1)1.1 identify, model, read and write place value positions of 1's and 10's [NS/PS 1.1.1]
- (1)1.2 identify the value of a given digit in the 1's and 10's place [NS 1.1.1]
- (1)1.3 identify and model a whole [NS/PS 1.1.2]
- (1)1.4 identify and model $\frac{1}{2}$ as two equal parts of a whole or set of objects [NS/PS 1.1.2]
- (1)1.5 read, write, compare and order numbers from 0 - 100 [NS/PS 1.1.3]
- (1)1.6 identify ordinal positions first through tenth [NS/PS 1.1.3]
- (1)1.7 read and write number words to 10 [NS/PS 1.1.3]
- (1)1.8 create, compare, and describe sets of objects and numbers from 0 - 100 as greater than, less than, or equal to ($>$, $<$, $=$) [NS 1.1.3]
- (1)1.9 count up to 100 objects to determine quantity
- (1)1.10 count on and count back
- (1)1.11 use number patterns and models to count by 2's, 5's, and 10's to 100 [NS/PS 1.1.4]
- (1)1.12 identify and model basic addition facts (sums to 10) and the corresponding subtraction facts [NS/PS 1.1.5]
- (1)1.13 know basic addition facts (sums to 10) and the corresponding subtraction facts
- (1)1.14 estimate the number of objects in a set to 10 and verify by counting [NS/PS 1.1.6]
- (1)1.15 use number sense, computation, and estimation to solve mathematical and real-world problems
- (1)1.16 demonstrate the joining and separating of sets with 20 or fewer objects [NS/PS 1.1.8]
- (1)1.17 model the meaning of addition and subtraction in a variety of ways including the comparison of sets using objects, pictorial representations, and symbols [NS 1.1.8]
- (1)1.18 use mathematical vocabulary and symbols to describe addition, subtraction, and equality [NS 1.1.8]
- (1)1.19 write number sentences for the basic addition (sums to 10 or less) and corresponding subtraction facts

PATTERNS, FUNCTIONS, AND ALGEBRA

It is expected that students will:

- (1)2.1 sort and categorize objects, shapes, and numbers in a variety of ways
- (1)2.2 recognize, describe, label, extend, and create simple repeating patterns using symbols, objects, and manipulatives [NS/PS 2.1.1]
- (1)2.3 determine possible combinations for a given number, 0 - 10
- (1)2.4 recognize that unknowns in an addition or subtraction equation represent a missing value that will make the statement true [NS 2.1.2]
- (1)2.5 create, compare, and describe sets of objects as greater than, less than, or equal to [NS/PS 2.1.3]

MATHEMATICS GRADE ONE (continued)

MEASUREMENT

It is expected that students will:

- (1)3.1 compare, order, describe, and represent objects by length and weight [NS/PS 3.1.1]
- (1)3.2 compare and measure length and weight using non-standard measurement [NS/PS 3.1.2]
- (1)3.3 identify and sort coins and bills
- (1)3.4 determine the value of any set of pennies, nickels, and dimes [NS/PS 3.1.4]
- (1)3.5 distinguish between day and night
- (1)3.6 recite in order the months of the year [NS/PS 3.1.6]
- (1)3.7 use a calendar to identify days, weeks, months, and a year [NS/PS 3.1.6]
- (1)3.8 read time to the nearest hour [NS/PS 3.1.6]

SPATIAL RELATIONSHIPS, GEOMETRY, AND LOGIC

It is expected that students will:

- (1)4.1 name, sort, and sketch two-dimensional shapes (circles, triangles, rectangles including squares) regardless of orientation [NS/PS 4.1.1]
- (1)4.2 demonstrate an understanding of position words, including down/up, left/right, top/bottom, and between/middle, by describing the relative location of objects [NS/PS 4.1.2]
- (1)4.3 identify and copy two-dimensional designs that contain a line of symmetry [NS/PS 4.1.3]
- (1)4.4 identify and name three-dimensional figures in the environment (sphere, cylinder, rectangular prism, cube, and cone) [NS/PS 4.1.4]
- (1)4.5 sort and classify objects by size or thickness [NS 4.1.9]
- (1)4.6 identify what comes next in a step-by-step story or event sequence [NS 4.1.9]

DATA ANALYSIS

It is expected that students will:

- (1)5.1 collect, organize, and record data in response to questions posed by teacher and/or students [NS/PS 5.1.1]
- (1)5.2 use tally marks to represent data [NS 5.1.1]
- (1)5.3 read and interpret information (data) on graphs made with objects, pictures, or numbers
- (1)5.4 use data to make decisions and solve problems

PROBLEM SOLVING

It is expected that students will:

- (1)A.1 select, modify, develop, and apply strategies to solve a variety of mathematical and practical problems and to investigate and understand mathematical concepts [NS/PS A.K-2]
- (1)A.2 apply previous experience and knowledge to new problem solving situations [NS/PS A.K-2]

MATHEMATICS GRADE ONE (continued)

- (1)A.3 formulate their own problems; use various approaches to investigate and solve problems [NS/PS A.K-2]
- (1)A.4 explain and verify results with respect to the original problem [NS/PS A.K-2]
- (1)A.5 try more than one strategy when the first strategy proves to be unproductive [NS A.K-2]
- (1)A.6 use technology, including calculators, to develop mathematical concepts (e.g., skip counting and pattern exploration) [NS A.K-2]

MATHEMATICAL COMMUNICATION

It is expected that students will:

- (1)B.1 discuss and exchange ideas about mathematics as a part of learning [NS B.K-2]
- (1)B.2 use inquiry techniques (e.g., discussion, questioning, research, data gathering) to solve mathematical problems [NS B.K-2]
- (1)B.3 use physical materials, models, pictures, or writing to represent and communicate mathematical ideas [NS/PS B.K-2]
- (1)B.4 explain and justify thinking about mathematical ideas and solutions
- (1)B.5 use everyday language, both orally and in writing, to explain thinking about strategies and solutions to mathematical problems [NS B.K-2]
- (1)B.6 express mathematical ideas and use them to define, compare, and solve problems orally and in writing
- (1)B.7 use mathematical notation to communicate and explain mathematical situations (e.g., words, phrases, symbols) [NS B.K-2]
- (1)B.8 read a variety of fiction and non-fiction texts to learn about mathematics [NS B.K-2]

MATHEMATICAL REASONING

It is expected that students will:

- (1)C.1 justify and explain the solutions to problems using physical models [NS C.K-2]
- (1)C.2 use patterns and relationships to analyze mathematical situations; draw logical conclusions about mathematical problems [NS/PS C.K-2]
- (1)C.3 ask questions to reflect on, clarify, and extend their thinking [NS C.K-2]
- (1)C.4 determine relevant, irrelevant, and/or sufficient information to solve mathematical problems [NS C.K-2]
- (1)C.5 discuss the steps used to solve a mathematical problem [NS C.K-2]

MATHEMATICAL CONNECTIONS

It is expected that students will:

- (1)D.1 link new concepts to prior knowledge [NS D.K-2]
- (1)D.2 integrate mathematics with other disciplines [NS D.K-2]
- (1)D.3 apply mathematical thinking and modeling to solve problems that arise in other disciplines, such as rhythm in music and motion in science [NS D.K-2]
- (1)D.4 identify, explain, and use mathematics in everyday life [NS/PS D.K-2]