OPERATIONS AND ALGEBRAIC THINKING

REPRESENT AND SOLVE PROBLEMS INVOLVING ADDITION AND SUBTRACTION

UNDERSTAND AND APPLY PROPERTIES OF OPERATIONS AND THE RELATIONSHIP BETWEEN ADDITION AND SUBTRACTION

ADD AND SUBTRACT WITHIN 20

WORK WITH ADDITION AND SUBTRACTION EQUATIONS

NUMBER AND OPERATIONS IN BASE TEN

EXTEND THE COUNTING SEQUENCE

UNDERSTAND PLACE VALUE

USE PLACE VALUE UNDERSTANDING AND PROPERTIES OF OPERATIONS TO ADD AND SUBTRACT

MEASUREMENT AND DATA

MEASURE LENGTHS INDIRECTLY AND BY ITERATING LENGTH UNITS

TELL AND WRITE TIME

REPRESENT AND INTERPRET DATA

GEOMETRY

REASON WITH SHAPES AND THEIR ATTRIBUTES

ADDITIONAL RESOURCES

USER LICENSE
OPERATIONS AND ALGEBRAIC THINKING

REPRESENT AND SOLVE PROBLEMS INVOLVING ADDITION AND SUBTRACTION

1.OA.A.1
Use addition and subtraction within 20 to solve word problems involving
Situations of adding to, taking from, putting together, taking apart, and
Comparing, with unknowns in all positions, e.g., by using drawings and
equations with a symbol for the unknown number to represent the problem.

WORD PROBLEMS (WITHIN 20)
ADD TO
RESULT UNKNOWN ................................................................. 006
CHANGE UNKNOWN .......................................................... 011
START UNKNOWN .............................................................. 016
TAKE FROM
RESULT UNKNOWN ................................................................. 021
CHANGE UNKNOWN .......................................................... 026
START UNKNOWN .............................................................. 031
PUT TOGETHER / TAKE APART
TOTAL UNKNOWN ................................................................. 036
BOTH ADDENDS UNKNOWN .................................................. 041
ADDEND UNKNOWN ............................................................. 044
COMPARE
DIFFERENCE UNKNOWN ......................................................... 049
BIGGER UNKNOWN ............................................................. 054
SMALLER UNKNOWN ............................................................. 059
ADDITION AND SUBTRACTION – MIXED .................................. 064
BUNK BED PROBLEM ........................................................... 070
DOUBLE DECKER BUS PROBLEM ........................................... 071
LITERATURE LINK: ONE DUCK STUCK ...................................... 072
LITERATURE LINK: ANNO’S COUNTING HOUSE ............................ 073
LITERATURE LINK: ROOSTER’S OFF TO SEE THE WORLD ............ 074
LITERATURE LINK: THE VERY HUNGRY CATERPILLAR .................. 075
LITERATURE LINK: TWO OF EVERYTHING ................................. 076
LITERATURE LINK: MOUSE COUNT .......................................... 077
LITERATURE LINK: TEN FLASHING FIREFLIES ............................ 080
LITERATURE LINK: BABY GOES TO MARKET ............................. 083
LITERATURE LINK: HANDA’S SURPRISE .................................... 084

1.OA.A.2
Solve word problems that call for addition of three whole numbers whose
sum is less than or equal to 20, e.g. by using objects, drawings, and
equations with a symbol for the unknown number to represent the problem.

THREE ADDENDS WORD PROBLEMS ........................................ 085
THREE ADDENDS UNKNOWN ..................................................... 090
THREE LETTER ADDENDS ......................................................... 094
FIND 3 CARDS ................................................................. 095
1.OA.B.3
Apply properties of operations as strategies to add and subtract.
Examples: If 8+3=11 is known, then 3+8=11 is also known.
(Commutative property of addition). To add 2+6+4=2+10=12.
(Associative property of addition).

TURN AROUND TRAINS ................................................................................. 096
TURN AROUND DOMINOES ............................................................................. 097
DOMINO RELATED FACTS .............................................................................. 098
THREE ADDENDS ............................................................................................. 099

1.OA.B.4
Understand subtraction as an unknown-addend problem. For example,
subtract 10-8 by finding the number that makes 10 when added to 8.

TEN FRAME SUBTRACTION ............................................................................ 100
SUBTRACT FROM TEN....................................................................................... 102
THINK ADDITION FOR SUBTRACTION (V.1-4) .............................................. 104

1.OA.C.5
Relate counting to addition and subtraction
(e.g. by counting on 2 to add 2).

SHOW ONE MORE ............................................................................................ 114
SHOW ONE LESS .............................................................................................. 116
SHOW ONE MORE / ONE LESS ....................................................................... 118

1. OA. C. 6
Add and subtract within 20, demonstrating fluency for addition and
Subtraction within 10. Use strategies such as counting on; making ten
(e.g. 8+6=8+2+4=10+4=14); decomposing a number leading to a ten
(e.g. 13-4=13-3-1=10-1=9); using the relationship between addition and
Subtraction (e.g. knowing that 8+4=12, one knows 12-8=4); and creating
Equivalent but easier or known sums (e.g., adding 6+7 by creating the
known equivalent 6+6+1=12+1=13).

COUNT ON ONE (V. 1 & 2) .............................................................................. 121
COUNT ON TWO (V. 1 & 2) ............................................................................. 127
COUNT ON THREE (V. 1 & 2) ........................................................................ 133
COUNT ON COVER UP (WITHIN 10) ............................................................. 139
DOUBLES CONCENTRATION .......................................................................... 145
DOUBLES COVER UP (V. 1 & 2) .................................................................... 148
DOUBLES PATH ................................................................................................ 153
NEAR DOUBLES PATH .................................................................................... 154
CUISENAIRE DOUBLES .................................................................................. 155
DOUBLES TOWERS .......................................................................................... 156
DOUBLES PLUS ONE TOWERS ....................................................................... 157
DOUBLES PLUS TWO TOWERS ...................................................................... 158
FIND TEN .......................................................................................................... 159
SUMS OF TEN .................................................................................................. 160
MAKE TEN WITH CUISENAIRE RODS ............................................................ 163
MAKE TEN ON THE TEN FRAME ................................................................. 164
MAKE TEN ........................................................................................................ 165
WORK WITH ADDITION AND SUBTRACTION EQUATIONS

1.OA.D.7
Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2

TRUE OR FALSE? ........................................................................................................... 257
EQUAL SUMS .................................................................................................................. 263

1.OA.D.8
Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. E.g., determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = ? – 3, 6 + 6 = ?

FIND THE MISSING NUMBER ........................................................................................ 267
NUMBER AND OPERATIONS IN BASE TEN

EXTEND THE COUNTING SEQUENCE

1. NBT.A.1
Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

MISSING NUMBER GRIDS (1 – 50) ........................................................................................................... 274
TEN FRAME PATH .................................................................................................................................. 294
BASE TEN PATH ......................................................................................................................................... 297
NUMBER PATH ............................................................................................................................................ 300
COUNTING CARDS (SET 3) ..................................................................................................................... 303
ESTIMATE AND COUNT ......................................................................................................................... 310
COUNTING COLLECTIONS (V. 1-2) ......................................................................................................... 312

UNDERSTAND PLACE VALUE

1.NBT.B.2
Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

   A. 10 can be thought of as a bundle of ten ones – called a “ten.”

   B. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.

   C. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

BUILD A TRAIN ......................................................................................................................................... 317
TENS AND ONES WITH SNAP CUBES .................................................................................................... 318
TENS AND ONES GAME ........................................................................................................................... 320
MAKE TEN BUNDLES ............................................................................................................................... 322
REPRESENTING TWO-DIGIT NUMBERS ................................................................................................... 324
BASE TEN CONCENTRATION (2 DIGIT) ................................................................................................... 325
MY DOUBLE TEN FRAME RIDDLE .......................................................................................................... 331

1.NBT.B.3
Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

COMPARING TWO-DIGIT NUMBERS ....................................................................................................... 333
TEN FRAMES COMPARE ......................................................................................................................... 335
GREATER THAN 50 ................................................................................................................................... 340
SCOOP IT! ................................................................................................................................................ 341
WHO HAS THE GREATER SUM? (V. 1 & 2) .......................................................................................... 345
USE PLACE VALUE UNDERSTANDING AND PROPERTIES OF OPERATIONS TO ADD AND SUBTRACT

1.NBT.C.4
Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds ten and tens, ones and ones, and sometimes it is necessary to compose a ten.

ADDITION OF A 2-DIGIT AND A 1-DIGIT NUMBER .......................................................... 349
WHAT NUMBER IS . . . ? .................................................................................................. 350
ADDITION OF TENS TO A 2-DIGIT NUMBER .................................................................. 353
ADD TEN .......................................................................................................................... 355
SUMS OF 90 ...................................................................................................................... 356
LUCKY SIX ......................................................................................................................... 357
ADD TEN ON THE NUMBER LINE ................................................................................... 360
SUBTRACT 10 ON THE NUMBER LINE ............................................................................ 361
ADDING A MULTIPLE OF 10 .......................................................................................... 362
ADDITION SPLIT (2 DIGIT + MULTIPLE OF 10) ............................................................... 367

1.NBT.C.5
Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

10 MORE .......................................................................................................................... 370
RACE AROUND (+10 V.1) ................................................................................................ 372
RACE AROUND (-10 V.1) ................................................................................................. 373

1.NBT.C.6
Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawing and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

SUBTRACT TEN ................................................................................................................. 375
SUBTRACT MULTIPLES OF TEN ...................................................................................... 376
MEASUREMENT AND DATA

MEASURE LENGTHS INDIRECTLY AND BY ITERATING LENGTH UNITS

1.MD.A.1
Order three objects by length; compare the lengths of two objects indirectly by using a third object.

WHICH IS LONGEST? ................................................................. 378
SCOOP AND ORDER ............................................................... 380

1.MD.A.2
Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the numbers of same-size length units that spans it with no gaps or overlaps. Limit to contexts where the object is being measured is spanned by a whole number of length units with no gaps or overlaps.

MEASURING WITH SNAP CUBES .................................................. 382
MEASURING SHOES .................................................................. 384
MEASURING WITH STICKS ......................................................... 386
MEASURING WITH DOMINOES ................................................... 388
ORDERING CUISENAIRES RODS ............................................... 389
WHICH IS LONGER? ................................................................. 391

TELL AND WRITE TIME

1.MD.B.3
Tell and write time in hours and half-hours using analog and digital clocks.

DOMINO CLOCK ......................................................................... 393
TIME BARRIER GAME ................................................................. 394
FAVORITE TIME OF DAY ............................................................ 397
TIME MATCH (V.1) ..................................................................... 398
TIME MATCH (V.2) ..................................................................... 401

REPRESENT AND INTERPRET DATA

1.MD.C.4
Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category; and how many more or less are in one category than another.

WHICH HAS FEWER? (V.1) ............................................................ 404
WHICH HAS FEWER (V.2) ............................................................ 407
SHAPE GRAPH .......................................................................... 410
COLOR GRAPH .......................................................................... 413
DRAW A GRAPH (V.1) ................................................................. 416
DRAW A GRAPH (V.2) ................................................................. 417
DRAW A GRAPH (V.3) ................................................................. 418
LITERATURE LINK: DUCK! RABBIT! ............................................. 419
GEOMETRY

REASON WITH SHAPES AND THEIR ATTRIBUTES

1.G.A.1
Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

MY 2D SHAPES BOOK ................................................................. 422
COMPARING SHAPES (ver. 1) .......................................................... 430
COMPARING SHAPES (ver. 2) .......................................................... 431
GEOBOARD SQUARES .................................................................... 432
LITERATURE LINK: MOUSE SHAPES ............................................. 435

1.G.A.2
Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape and compose new shapes from the composite shape.

PUTTING SHAPES TOGETHER .......................................................... 436
MAKE A HEXAGON ......................................................................... 438
MAKE A TRIANGLE .......................................................................... 439
PATTERN BLOCK NUMBERS ......................................................... 440
TANGRAM SQUARES ...................................................................... 441
TANGRAM TRIANGLES ................................................................. 442
SHAPE PATTERNS ......................................................................... 443
LITERATURE LINK: GRANDFATHER TANG’S STORY ...................... 444
LITERATURE LINK: TANGRAM CAT .............................................. 446

1.G.A.3
Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

EQUAL PARTS OF A SQUARE (V.1) ................................................. 447
EQUAL PARTS OF A SQUARE (V.2) ................................................. 448
COLOR A FRACTION ...................................................................... 449
FRACTION PICTURES .................................................................... 453
ADDITIONAL RESOURCES

Identify and know the value of coins. Find the value of a collection of coins. Compare values of collections of coins.

COIN BUMP (ver. 3) .................................................................................................................. 456
COIN BUMP (ver. 4) .................................................................................................................. 458
COIN SCOOP (ver. 1) ............................................................................................................... 460
COIN SCOOP (ver. 2) ............................................................................................................... 461
COIN SCOOP (ver. 3) ............................................................................................................... 462
COIN SCOOP (ver. 4) ............................................................................................................... 463
WHICH IS GREATER? .............................................................................................................. 464

Identify, continue and label patterns. Create patterns using number, shape, size or color.

PATTERN CARDS .................................................................................................................... 466
GROWING PATTERNS .......................................................................................................... 473
MAKE A PATTERN .................................................................................................................. 477
NUMBER PATTERNS ............................................................................................................. 480