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Integration of Precision Teaching Instructional Materials for Levels K-6 State of Utah Core Curriculum Standards and Objectives in Math: A Directory for Computer Managed Instruction/Decision Making

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INTEGRATION OF PRECISION TEACHING INSTRUCTIONAL MATERIALS FOR LEVELS K-6 STATE OF UTAH CORE CURRICULUM STANDARDS AND OBJECTIVES IN MATH: A DIRECTORY FOR COMPUTER MANAGED INSTRUCTION/DECISION MAKING

by

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A creative component submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF EDUCATION

Approved:

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Major Professor

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Committee Member

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Committee Member

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ABSTRACT

The State of Utah's Department of Education has developed an objective/outcome based education model, K-12 grade levels, based upon effective teaching research. The model components are 1) a core curriculum consisting of the basic elements essential for every student's educational program; 2) curriculum instruction based upon the mastery of educational outcomes at an appropriate level in accuracy and fluency, with a variety of options for learning; and 3) management systems which eliminate redundancy in the educational process. Two technological systems which have been piloted with some implementation through collaborations are the MID--Project developed at Utah State University and the CORVUS--Project being networked between Murray School District, Uintah School District, Edith Bowen Laboratory School at Utah State University, and the Utah State Office of Education.

This creative component for a Master's of Education Degree at Utah State University addresses the need for facilitating the use of technology in educational settings by integrating several precision teaching material banks to the State of Utah Core Curriculum Standards and Objectives, K-6 levels. A Master File of these Materials was organized to represent a developmental sequence of test probes, diagnostic probes, and probes which can be used as slice backs for remediation and/or instructional tools for skill development. The organizational schema for these materials was concerned with balance between and among the components in relation to the whole developmental sequence of the Core Curriculum, K-6. The vertical organization was concerned with sequencing (1) levels of content and (2) stages of processes. Horizontal sequence was concerned with sequencing within (1) a level of content and (2) a stage or process.

An effort was made to ensure the compatability between the learning processes of the curriculum and the test probes and/or the diagnostic probes. This free standing management system of materials can be correlated to a Basal Math Curriculum. Support will be available to the Edith Bowen Laboratory School, as well as other districts, to integrate this Directory of Resource and Assessment Materials with Basal Math Programs (i. e., Edith Bowen Laboratory School -- Open Court, 1986 edition, Math Program). A "Directory" was developed to facilitate this integration process. The "Directory" listed the materials in a developmental sequence with the Core Curriculum Standards and Objectives for Levels K-4. This listing included for each probe a reference code, a 27 character abbreviated probe descriptor, and a probe descriptor which specified the input and output modes for student and responses to the probe items and a description of the skill/task. The reference code and the abbreviated probe descriptor was recorded on each probe in the Master File. State Core Curriculum Standards and Objectives were identified in this "Directory" in bold print. The Core Objectives were assigned a reference code and an abbreviated, 27 character, descriptor. Answer sheets were developed for the probes.

The Master File of integrated precision teaching banks of approximately 700 probes established at Utah State University, in the Special Education Department. Concurrently, a Master File is being replicated in the Media Center at Edith Bowen Laboratory School. Subsets of the Master File are being developed for each classroom for each grade level at Edith Bowen Laboratory School (EBLS). The "Directory" will probably be integrated into the CORVUS system at EBLS. The "Directory" will be shared with Dr. LeRoy Linderman, State of Utah Office of Education and Dr. Bryant Farnsworth, Murray School District, Utah, in response to their interest.

This resource is being implemented in conjunction with the Edith Bowen Laboratory's pilot of the MID-Project, a computer management decision making system. A "Fast Start" Master File of tool skill probes was developed as part of this creative component. This is being used by the Edith Bowen Laboratory Staff and Practicum Students from USU College of Education as they utilize the MID-Project computer management/decision making process. Assistance and support is being provided to facilitate a precision teaching model for outcome based education. As students master the tool skills from the Fast Start File they are being paced into the developmental sequence of probes in their classroom Master File. As student needs for additional instruction in the tool skills are identified, probes from the classroom Master File are being selected which break the skills down. These are being used for instruction and/or additional practice. The Test Probes and Diagnostic Probes are being used to assess skill mastery, to determine instructional levels, and to monitor and validate progress in skill mastery. Anecdotal records are being kept of the implementation process. Probes are being edited. Format adaptations are being studied. The management strategies for implementing outcome based education in math utilizing precision teaching with the MID-computer management/ decision making system and this Master File and "Directory" of instructional resources are being fine-tuned to grade levels at Edith Bowen Laboratory School. Since there are areas of the Core sequence of Standards and Objectives which do not have materials in this Master Resource File, the MID staff, along with the EBLS staff are developing probes for the gaps.

The outcome products of this project include 1) a carefully conceived Master File of curriculum and instructional materials, test probes, and diagnostic probes coded to the State of Utah Core Math Curriculum Standards

and Objectives, K-6; 2) A Fast Start Tool Skill Master File; 3) a "Directory" of the Master File, K-4 Levels; 4) a "Directory of Specifications", and 5) an "Index with teacher questions and answers regarding the use of the "Directory" to the Master File.

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SECTION I

ACKNOWLEDGMENTS

I want to express my gratitude to my committee for their support and encouragement in my program: Dr. Bryce Adkins, Dr. Jay Monson, and Dr. Richard Young. The opportunity to work with the MID staff on this project has been a meaningful enrichment to me personally and professionally. I appreciate each one: Dr. Richard West, Dr. Richard Young, Judy Johnson, Alice Morris, and Chris Macfarlane. Along with appreciating Susan Galderisi for her data processing skills, I appreciate her willingness to provide helpful feedback and assistance regarding format in the "Directory" development. The Director and Staff at Edith Bowen Laboratory School at Utah State University have been innovative and creative in their feedback. This has been very useful. I'm grateful for my husband, my mentor, Ted, who continually supports and encourages me as a professional educator and as his wife. I couldn't have grown as a professional educator as I have without the 100% support of my two sons who, always, say, "Mom, go for it!" My parents have been a super encouragement this year. I praise God for all these rich blessings!

EDITORIAL NOTE

"The challenge of life is to be ready to sacrifice at any moment what we are for what we are to become," is an appropriate analogy to my development of this project. This Creative Component for my graduate program was a response to a need which resulted in this project focus on math curriculum development. I came to the MID-Project as a Curriculum Specialist in Language Arts/Reading. Through this experience I have been able to integrate my knowledge and skills in instructional design and task analysis to the development of math curriculum. It has been stimulating. As a classroom teacher, I taught math through all the grades K-8 and into high school, algebra and trignometry. It was a favorite area and each year my students became excited about math. For the past 15 years, I continued to work in the math area as an Instructional Consultant/Reading and Exceptional Child Specialist. Curriculum development related to reading and study skills in the math content areas, related to remedial math programs, and related to gifted math programs has been one focal areas of my career. My experiences in helping district administrators and staff to develop district curriculum alignment between goals, objectives, assessment, instruction, and materials was helpful in developing this project. I have become more knowledgable in the development of math curriculum. I've enjoyed the growing opportunity.

SECTION II

STEPS IN DEVELOPMENT

I. Set up a file based on the State of Utah Core Curriculum Math Standards and Objectives for Levels K through 6. The objectives for each standard were color coded.

II. Integrate the new version of precision teaching probes developed in the Great Falls, Montana, Precision Teaching Project into the State of Utah Core Curriculum for Math.

A. Develop a coding system.
B. Integrate the probes into the Core Curriculum.
C. Write number codes for each probe.
D. Develop and write an abbreviated, 27-character form for each probe objective and a descriptive objective which states the stimulus and response modes for the student behavior along with the desired outcome behavior.
E. Organize probes into a preliminary developmental sequence related to the core standards and objectives.
F. A sample of core objectives were integrated into and recorded in the Open Court Kindergarten Teacher's Manual to demonstrate how this resource of materials can be integrated into classroom curriculum materials.

NOTE: Step 2 was developed with collaborative feedback and support from the MID Project staff members. Judy Johnson was involved in the development of the coding system and in the preliminary integration of probes into the developmental sequence of the math core curriculum. A collaborative review of this preliminary work followed the typing of the first draft. Dr. Richard West, Dr. Richard Young, Judy Johnson, and Joanne Williams assessed and made recommendations for revisions. This included revisions in format, reference code system, and developmental sequence. Joanne Williams met with Alice Morris, curriculum specialist, who would develop the master files for the Edith Bowen Laboratory School and Lewis Anderson, Edith Bowen faculty member. She reviewed the skill directory development and demonstrated how it could be used in integrating the core curriculum standards and objectives with the new Open Court Math Series. A process for recording in the teacher's manuals was practiced to demonstrate how this resource file can be correlated with classroom instruction and related curricula, i.e., Open Court Math Program. Input from these meetings was integrated into the next step of developing a directory and master file of precision teaching probes coded to the State of Utah Math Core Curriculum.

III. Development of a Fast Start File, which focuses on tool skills: writing numerals, addition facts, subtraction facts, multiplication facts, and division facts. A master file was developed with probes for each area. Separate master files were developed for each teacher in Edith Bowen Laboratory School. Student folders which included acetate and record forms were developed for each

student in each math class at Edith Bowen Lab School. Alice Morris and Joanne Williams developed these resources after collaboration with the MID Project staff and the Edith Bowen Lab School administration and staff. Dr. Richard West and Dr. Richard Young led the staff at Edith Bowen Lab School in four training sessions focusing on precision teaching, recordkeeping, MID computer management/decision making program, and use of the Fast Start File. Dr. Richard West presented a follow-up awareness session with Level III practicum students and the Edith Bowen Lab School staff. Joanne Williams and Alice Morris provide follow-up assistance to Edith Bowen Lab School staff in implementing the Fast Start Program. Chris Macfarlane has provided guidance and feedback in helping the Edith Bowen Lab School staff with the class materials management and data recording processes and strategies. Dr. West and Dr. Young have monitored the progress and Dr. West followed up with a half-day inservice on MID decision making strategies.

IV. Development of a revised directory code of specifications.

V. Integration of precision teaching math materials from three editions of the Great Falls, Montana, probes, the Gems Probes developed in Jordan School District, Utah, and the probes developed by the Utah Learning Resource Center (addressed the SWRL Benchmark Skills). These materials were incorporated into the master file of core curriculum objectives.

VI. A revised rough draft of the directory was developed which included the integration of materials. This involved a careful task analysis of each probe and an analysis of the developmental sequence of subskill development within objectives along with an analysis of the developmental sequence of skills across levels. Probes were arranged in a developmental sequence. Some initial identificaton of test probes and diagnostic probes was made.

VII. Review and revision of probes placements across the total file. This involved additional task analysis of probes and decisions related to skill mastery at various levels. Probes were identified which could be used for second forms of test probes in the file. Answers were developed for probes.

VIII. Developed final revision of probe placement in the developmental sequence and wrote final draft for each level, K-4, for the directory. Supervised typing format.

IX. Development of index with questions and answers.

X. Development of directory code of specifications.

XI. Guide and support in the development of the Edith Bowen Lab School master file and classroom master files.

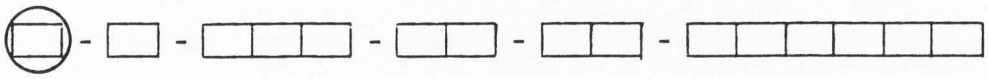
XII. Pretest each math class with two probes at the beginning of the project implementation with Edith Bowen Laboratory School and at subsequent four-week intervals. Maintain a record of this data.

XIII. Maintain an anecdotal file of implementation strategies.

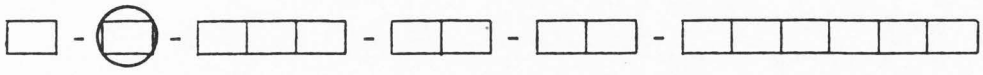
XIV. Continue to review and revise the directory and file.

SECTION III

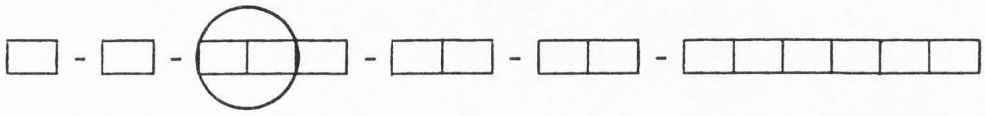
Directory Code Numbers



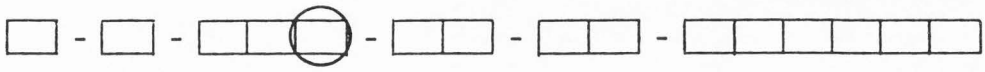
Curriculum: M = Math



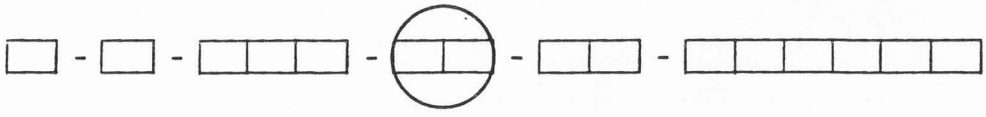
Grade level:
K = Kindergarten
1 = First grade
2 = Second grade
3 = Third grade
4 = Fourth grade
5 = Fifth grade
6 = Sixth grade
7 = Seventh grade
8 = Eighth grade
9 = High school



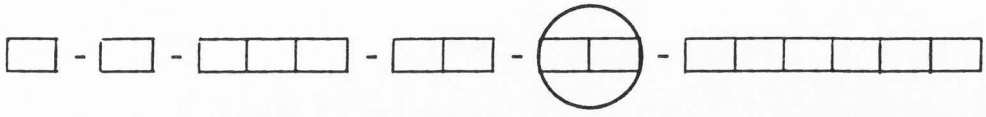
Utah State Standard



Goal not specified in Utah State Standards

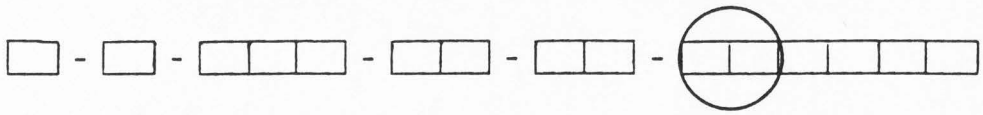


Objective numbers



Objective source:

PT = Precision Teaching, two editions of materials developed at Great Falls, Montana.
U = Utah Learning Resource Center materials developed to address SWRL Benchmark Skills, Utah.
G = Gems materials developed in Jordan District, Utah.

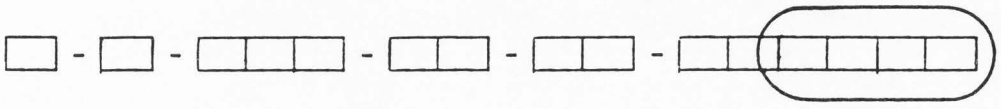


Recommended use of probe in sequence of skill development:

SB = Slice-back probe, a probe which is useful in skill building or which may be used following error analysis for remedial instruction and practice.

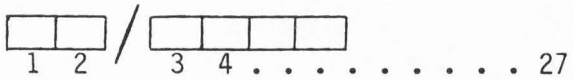
TP = **Criterion** test probe, a probe which may be used to determine mastery of a particular skill or small group of skills.

DP = **Diagnostic** probe, a probe which may be used to assess mastery of a cluster of related skills. A broader spectrum of skills are assessed with a diagnostic probe as compared to a test probe.



Reference numbers or codes used in the original material collection, i.e., (M) 19 indicates a probe taken from the older edition of PT materials; page 19 in that PT materials collection.

Directory abbreviated probe label, 27 spaces:



1, 2 = The expected behavior of the student.

SECTION IV

LEVEL K

DIRECTORY OF OBJECTIVES

LEVEL K

Standard 0.1 **The students will demonstrate an understanding of directional words by mastering the following objectives.**

M-K-00.1-01-U --- HM/RECOG DIRECTIONS

Objective 1. Recognize directions and mark them on grids, between, next to, over, under, left, right, first, last, middle.

M-K-00.1-01-U
- -- **TP** 11 CA SS/OVER, UNDER DIRECTIONS
  (See-to-say directions on a grid for over and under)
- -- **TP** 11 CA SS/BETWEEN, NEXT TO-DIR.
  (See-to-say directions on a grid for between and next to)
- -- **TP** 11 CA/HM/LEFT, RIGHT-DIR.
  (Hear-to-mark directions on a grid for left to right)
- -- **TP** 11 CA SS/1st, LAST, BETWEEN, MIDDL
  (See-to-say directions on a grid for first, last, between, and middle)
- -- **TP** 11 CA SM/1st, LAST, BETWEEN, MIDDL
  (See-to-mark directions on a grid for first, last, between, and middle)

STANDARD 1 **The students will show numerals are symbolic representations of numbers by mastering the following objectives.**

M-K-01.0-01-C --- SM/REC NUM as SYM for NO

Objective 1. Recognize numerals as symbols for numbers.

M-K-01.0-01-PT
- -- **TP** 1 SS/NO. 1-5 (serial)
  (See-to-say numbers one to five in serial order)
- -- SB 00 SW/NUM. 1-5 (serial)
  (See-to-write numerals one to five in serial order)
- -- SB 2 SS/NO. 1-5 (random) LG.PR
  (See-to-say numbers one to five in random order)
- -- **TP** 33 SS/NO. 0-5 (random)
  (See-to-say numbers one to five in random order)
- -- **TP** 33 SW/NUM. 1-5 (random)
  (See-to-write numerals one to five in random order)
- -- SB 4 SS/NO. 6-10 (random)
  (See-to-say numbers six to ten in random order)
- -- SB 5 SS/NO. 1-10 (serial)
  (See-to-say numbers one to ten in serial order)
- -- **TP** 6 SS/NO. 1-10 (random)
  (See-to-say numbers one to ten in random order)

M-K-01.0-02-C --- SM/REC CARD NUM to SET-10

Objective 2. Recognize cardinal numbers (counting numbers to ten) are used to designate the numbers of items within a set (0-10).

M-K-01.0-02-PT -- **TP** (M) 328 SW/SET TO NUMS 1-5
(See-to-write a numeral to represent the number in a set of 1-5)
-- SB (M) 331 SW/SET TO NUM, 6-10
(See-to-write a numeral to represent the number in a set of 6-10)

M-K-01.0-02-U -- **TP** 11 BA SW/SET TO NUM, 1-9
(See-to-write a numeral to represent the number in a set, 1-9)

M-K-01.0-03-C --- SM/REC ZERO-DES EMP SET

Objective 3. Recognize zero is used to designate the number of elements in the empty set.

M-K-01.0-04-C --- SW/READ/WRITE 0-10

Objective 4. Read and write numerals from 0 to 10.

M-K-01.0-04.PT -- SB 00 ST/NUM. "0"
(See-to-trace the numeral "0")
-- SB 12 ST/NUM. "1"
(See-to-trace the numeral "1")
-- SB 13 ST/NUM. "2"
(See-to-trace the numeral "2")
-- SB 14 ST/NUM. "3"
(See-to-trace the numeral "3")
-- SB 15 ST/NUM. "4"
(See-to-trace the numeral "4")
-- SB 16 ST/NUM. "5"
(See-to-trace the numeral "5")
-- SB 21 SW/NUM. "0"
(See-to-write the numeral "0")
-- SB 22 SW/NUM. "1"
(See-to-write the numeral "1")
-- SB 23 SW/NUM. "2"
(See-to-write the numeral "2")
-- SB 24 SW/NUM. "3"
(See-to-write the numeral "3")
-- SB 25 SW/NUM. "4"
(See-to-write the numeral "4")
-- SB 26 SW/NUM. "5"
(See-to-write the numeral "5")
-- SB 31 SW/NUM. 1-5 (serial)
(See-to-write numerals one to five in serial order)

-- SB 00 SS/NUM. 0-5 (serial)
(See-to-say numerals one to five in serial order)
-- SB 00 SW/NUM. 0-5 (serial)
(See-to-write numerals one to five in serial order)
-- SB 7 SS/NUM. 0-9 (serial)
(See-to-say numerals one to nine in serial order)
-- SB 4 SS/NUM. 6-10 (random)
(See-to-say numerals six to ten in random order)
-- SB 8 SS/NUM. 0-9 (random)
(See-to-say numerals zero to nine in random order)
-- SB 17 ST/NUM. 6
(See-to-trace the numeral 6)
-- SB 18 ST/NUM. 7
(See-to-trace the numeral 7)
-- SB 19 ST/NUM. 8)
(See-to-trace the numeral 8)
-- SB 20 ST/NUM. 9
(See-to-trace the numeral 9)
-- SB 27 SW/NUM. 6
(See-to-write the numeral 6)
-- SB 28 SW/NUM. 7
(See-to-write the numeral 7)
-- SB 29 SW/NUM. 8
(See-to-write the numeral 8)
-- SB 30 SW/NUM. 9
(See-to-write the numeral 9)
-- SB 32 SW/NUM. 1-9
(See-to-write the numerals one to nine)
-- SB 021 ST/NUM. 1-10 (random)
(See-to-writethenumeralsone to teninrandom order)
-- SB 00 SW/NUM. 0-9
(See-to-write the numerals zero to nine)

STANDARD 2 **The students will use physical objects to order and compare numbers related to the environment by mastering the following objectives.**

M-K-02.0-01-C --- SM/RELATION/SMALL-LARGE

Objective 1. Determine basic relationships of size (smaller, larger).

M-K-02.0-01-U -- **TP** 11 AB SM/OBJ SAME SIZE, SM-LG
(See-to-mark objects that are the same size, discriminating large from small)

M-K-02.0-02-C --- SW/REC/REP/EXT SIM PATTER

Objective 2. Recognize, reproduce, and extend simple patterns.

M-K-02.0-03-C --- SW/1=1/1≠ EQUIV/NON-EQ SET

Objective 3. Use one-to-one correspondence to illustrate equivalent and/or nonequivalent sets.

M-K-02.0-04-C --- SW/NUM SEQ "1>"

Objective 4. Use the idea of "one more than" in developing number sequence.

M-K-02.0-4-U -- **TP** 11 BI 3 SW/NO. 1 LESS THAN (1-10)
(See-to-write the number that is one less than the number given)
-- **TP** 11 BI 2 SW/NO. 1 MORE THAN (1-10)
(See-to-write the number that is one more than the number given)

M-K-02.0-05-C --- SW/">"/"<"/"=" COMPARE

Objective 5. Compare items in sets to develop the idea of "greater than," "less than," and "equal to."

M-K-02.0-05-U -- **TP** 11 CD SM/SETS WITH SYM (>,<,=)
(See-to-mark sets with symbols for more, less, or equal)
M-K-02.0-05-G -- **TP** 06A SS/SYM TO NAME (>,<,=)
(See-to-say symbol names)
-- SB 06B HW/NAME TO SYM (>,<,=)
(Hear-to-write name to symbol)

M-K-02.0-06-C --- SM/WHOL NUM "0-25"/NUM LIN

Objective 6. Use the number line (0 to 25) to identify the position of whole numbers.

M-K-02.0-06-PT -- SB 6 SS/NUMBERS 10-20 (serial)
(See-to-say numbers 10-20 in serial order)
-- SB 10 SS/NO. 10-20 (random)
(See-to-say numbers 10-20 in random order)
-- SB 36 SW/NUM. 10-20 (random)
(See-to-write numbers 10-20 in random order)

M-K-02.0-07-C --- SM/ORDINAL NO FIR/SEC/TH

Objective 7. Use ordinal numbers to designate positions of objects (first, second, and third).

STANDARD 3 **The students will, through computation, related combinations of numbers to other numbers by mastering the following objectives.**

M-K-03.0-01-C --- SW/REC"+"/"-"

Objective 1. Recognize addition is represented by the symbol "+" and the total of the addends follows the symbol "=".

M-K-03.0-02-C --- SW/REC ADD = UNION OF SET

Objective 2. Recognize addition is illustrated by the union of sets.

M-K-03.0-03-C --- SW/ADD WHOLE NUM SUMS $\leq$ 5

Objective 3. Add whole numbers whose sums are five or less.

M-K-03.0-03-PT -- **TP**(M) 128 SW/SUMS TO 5-EQUATIONS
(See-to-write sums to five in equation problems)
-- SB(M) 131 SW/SUMS (MSN ADDENDS) TO 5
(See-to-write [sums to 5] missing addends in equations)
-- SB 60 SW/SUMS TO 5, LG.PR.-COL
(See-to-write sums to five in single column, large print, single-digit problems)
-- **TP** 62 SW/SUMS TO 5, SM.PR.-COL
(See-to-write sums to five in single column, small print, single-digit problems)
-- SB(M) 162 SW/SUM (MSN.ADDEND) TO 5
(See-to-write [sums to 5] missing addends in column, large print, single-digit problems)

M-K-03.0-04-C --- SM/DIV SET INTO SUBSETS

Objective 4. Recognize a set can be divided into subsets.

M-K-03.0-05-C --- SM/SUB BY SEP SET/SUBSET

Objective 5. Recognize subtraction can be illustrated by the separation of a set into subsets.

STANDARD 4 **The students will use basic geometric shapes by mastering the following objectives.**

M-K-04.0-01-C --- SM/CIR/SQ/TRI/RECT

Objective 1. Recognize circles, squares, triangles, and rectangles by their shapes.

M-K-04.0-01-U -- SB 15 DA SM/TRIANGLES
(See-to-mark triangles)
-- SB 15 DA SM/SQUARES
(See-to-mark squares)
-- SB 15 DA SM/CIRCLES
(See-to-mark circles)
-- SB 15 DA SM/RECTANGLES
(See-to-mark rectangles)
-- DP 11 AB SM/SIZE & SHAPE
(See-to-mark same size and shape: square, rectangle, circle, triangle, and diamond)
-- **TP** 11 AC SM/SAME SHAPE (, __ , __, ____)
(See-to-mark same shape: circle, triangle, square, rectangle)
-- SB 15 DA SW/# SIDES ON SHAPE (__, ____, __)

10104021 --- SM/CIR/SQ/TRI/REC OBJ-ENV

Objective 2. Compare circles, squares, triangles, and rectangles with physical objects in the environment.

STANDARD 5 **The students will show measurement is the comparing of objects with standard units by mastering the following objectives.**

M-K-05.0-01-C --- SM/MSM TIM/MON/LEN/WT

Objective 1. Recognize standard measuring devices as tools for measuring time, money, length, and weight.

M-K-05.0-02-C --- SM/PENNY/NICKEL/DIMES

Objective 2. Recognize pennies, nickels, and dimes.

M-K-05.0-03-C --- TD/MSM-TIM/MON/LEN/WT

Objective 3. Use measurements of time, money, length, and weight.

STANDARD 6 **The students will use problem solving with concrete objects by mastering the following objectives.**

M-K-06.0-01-C --- TD/ADD/COMP/SEPAR SET PB

Objective 1. Use simple objects to solve problems of addition, comparison, separation of sets, etc.

LEVEL 1

STANDARD 1 **The students will recognize that numerals are symbolic representations for identifying numbers by mastering the following objectives.**

M-1-01.0-01-C --- SM/NO. 0-100

Objective 1. Recognize numbers from 0 to 100.

M-1-01.0-01-U -- SB 11 BD SS/NO. 1-10
(See-to-say numbers from one to ten)
-- SB 11 BE RW/WORDS TO NUM. RANDOM (0-9)
(Read-to-write number words to numerals, 6 to 9)
-- SB 11 BG RW/WORD-NUM, RANDOM (1-10)
(Read-to-write number words to numerals, 1 to 10)
M-1-01.0-01-PT -- SB 37 SS/NUM 1-100, SERIAL
(See-to-say numerals to numbers in serial order, 1 to 100)
M-1-01.0-01-U -- **TP** 11 BD SS/NUM, 1-100, RANDOM-A
(See-to-say numerals to numbers in random order [Form A], 1 to 100)
M-1-01.0-01-PT -- **TP** 11 SS/NUM, 1-100, RANDOM-B
(See-to-say numerals to numbers in random order [Form B], 1 to 100)
-- **TP** 472 TW/NUM-SERIAL ORDER
(Think-to-write numerals in serial order)

STANDARD 2 **The students will know numbers can be ordered and compared when related to the environment by mastering the following objectives.**

M-1-02.0-01-C --- SW/ORDER NUM 1-100

Objective 1. Order numbers from 1 to 100.

M-1-02.0-01-U -- SB 11 BC SW/NUMBERS, 0-10, SERIAL
(See-to-write numerals for numbers missing in 0-10 serial order)
-- SB 11 BD SS/NUMBERS, 11-19
(See-to-say numbers from eleven to nineteen)
-- SB 11 BD SS/NUMBERS, 20-29
(See-to-say numbers from 20 to 29)
-- SB 11 BI SW/NUMBERS, 1>GIVEN NO., 0-26
(See-to-write numbers 1 more than given number)
-- SB 11 BD SS/NUMBERS, 30-39, RANDOM
(See-to-say numbers, 30 to 39, in random order)
-- SB 11 BD SS/NUMBERS, 40-49, RANDOM
(See-to-say numbers, 40 to 49, in random order)
-- SB 11 BD SS/NUMBERS, 50-59, RANDOM
(See-to-say numbers, 50 to 59, in random order)

-- SB 11 BD SS/NUMBERS, 60-69, RANDOM
(See-to-say numbers, 60 to 69, in random order)
-- SB 11 BD SS/NUMBERS, 70-79, RANDOM
(See-to-say numbers, 70 to 79, in random order)
-- SB 11 BD SS/NUMBERS, 80-89, RANDOM
(See-to-say numbers, 80 to 89, in random order)
-- SB 11 BD SS/NUMBERS, 90-99, RANDOM
(See-to-say numbers, 90 to 99, in random order)
-- SB 11 BB TS/THINK TO SAY NO., 1-100
(Think-to-say numbers from 1 to 100)

M-1-02.0-01-PT -- SB(M) 025 SW/N 0-100, SERIAL, CUE
(See-to-write numerals from 0 to 100 in serial order with cues)

M-1-02.0-01-U -- **TP** 11 BC SW/MSN NO, 1-99, SERIAL
(See-to-write missing numbers in serial order, 1 to 99)

M-1-02.0-02-C --- TS/1-5-10 to 100/2 to 20

Objective 2. Count numbers by 1's to 100, by 2's to 20, by 5's to 100, and by 10's to 100.

M-1-02.0-02-G -- **TP** 02A TW/2's TO 30
(Think-to-write by 2's to 30)
-- **TP** 02B TW/3's TO 36
(Think-to-write by 3's to 36)

M-1-02.0-02-PT -- SB 44 SM/5's TO 100
(See-to-mark every fifth numeral by counting by 5's to 100)

M-1-02.0-02-G -- **TP** 02D TW/5's TO 100
(Think-to-write by 5's to 100)

M-1-02.0-02-U -- SB 11 BH SM/5's PATTERN
(See-to-mark patterns of numerals which represent 5's sequence)

M-1-02.0-02-PT -- **TP** 54 SM/10's TO 100
(See-to-mark every tenth numeral by counting by 10's to 100)

M-1-02.0-02-U -- SB 11 BI SW/10>, 10< NO. GIVEN
(See-to-write numeral that is 10 greater than the number given; that is 10 less than the number given)

M-1-02.0-03-C --- SM/NUM -10/SUBSET-ODD/EVEN

Objective 3. Separate the set of counting numbers to ten into subsets of odd numbers and even numbers.

M-1-02.0-04-C --- SM/PLACE VALUE-ONES/TENS

Objective 4. Determine the place value of a digit by its position in the numeral (ones and tens).

M-1-02.0-04-U -- **TP** 11 OC SW/NUM FOR SETS
(See-to-write numerals which are represented by sets of dots)

M-1-02.0-05-C --- TD/PLACE VALUE-GPS OF TENS

Objective 5. Use groups of ten to demonstrate place value.

M-1-02.0-06-C --- SM/PLACE VALUE-99 EX NOTA

Objective 6. Identify place value to 99 using expanded notation of numbers.

M-1-02.0-07-C --- SM/">""<" COMP NO to 99

Objective 7. Use the concepts of "less than" and "greater than" to compare numbers to 99.

M-1-02.0-07-PT -- **DP**(M) 342 SS/NAME SYMBOLS, + = < >
(See-to-say the names for symbols for addition, subtraction, equal, less than, greater than)
-- **TP**(M) 341 SM/SET WITH SYMBOL, > < +, A
(See-to-mark sets with appropriate symbol of >, <, or =, Form A)
M-1-02.0-07-U -- **TP** 11 CE SM/SETS WITH SYMBOLS, > < =, B
(See-to-mark sets with appropriate symbol of >, <, or =, Form B)
M-1-02.0-07-G -- **TP** 06D SM/SETS MATCH SYMBOL, > < =
(See-to-mark numbers which make sets to match symbols: >, <, and =)

M-1-02.0-08-C --- SM/ORDINAL NO/FIRST-FIFTH

Objective 8. Use ordinal numbers to designate position first through fifth.

M-1-02.0-08-U -- **TP** 11 BJ SS/ORDINAL FOR NUMERAL, 1-5
(See-to-say ordinal for circled numeral in a sequence of one through five)

M-1-02.0-09-C --- TD/"OBJ 1-8"

Objective 9. Use physical objects to demonstrate a knowledge of objectives one through eight.

STANDARD 3 **The students will know that through computation, combinations of numbers may be related to other numbers and combinations of objects can be examined by mastering the following objectives.**

M-1-03.0-01-C --- SM/"-" and "="

Objective 1. Recognize subtraction is represented by the symbol "-" and equal is represented by the symbol "=".

M-1-03.0-02-C --- SW/ADD & SUB/VERT & HORIZ

Objective 2. Represent addition and subtraction vertically and horizontally.

M-1-03.0-02-PT -- SB(M) 128 SW/ADD FACTS, SUMS TO 5-H
(See-to-write addition facts with sums up to five, in horizontal format)
-- SB(M) 129 SW/ADD FACTS, SUMS TO 5-V
(See-to-write addition facts with sums up to five, vertical format)
-- SB(M) 130 SW/ADD FACTS, SUMS TO 5-H
(See-to-write addition facts with sums up to five, horizontal format)
-- SB(M) 131 SW/ADD-MSN ADDEND, SUM-5, H
(See-to-write addition facts with missing addends for problems with sums up to five in horizontal format)
-- SB(M) 132 SW/ADD-MSN ADDEND, SUM-5, V
(See-to-write addition facts with missing addends for problems with sums up to five in vertical format)
-- SB(M) 135 SW/ADD-MSN ADDEND SUM-6, H
(See-to-write addition facts with missing addends for problems with sums up to six in horizontal format)
-- SB(M) 134 SW/ADD FACTS, SUM-6, V, H
(See-to-write addition facts with missing addends for problems with sums up to six in horizontal and vertical formats)
-- SB(M) 143a SW/ADD FACT, 1's, SUM 1-6, V
(See-to-write addition facts, 1's, sums one to six, vertical format)
-- SB(M) 136 SW/ADD FACTS, SUM-7, V, H
(See-to-write addition facts, sums to 7, vertical and horizontal formats)
-- SB(M) 137 SW/ADDEND MSN, -7, H
(See-to-write addition facts, sums to 7, with addends missing, horizontal format)
-- SB(M) 82 SW/ADD FACTS, 1's, SUMS 1-10, C
(See-to-write addition facts with 1's, sums one to ten with cues)
-- SB(M) 144 SW/ADD FACTS, 1's, SUMS 6-10
(See-to-write addition facts with 1's, sums six to ten)
-- SB(M) 145b SW/ADD FACTS, 1's, SUMS 1-10
(See-to-write addition facts with 1's, sums one to ten)

-- **TP** 6a SW/ADD FACTS, 0-10, H
(See-to-write addition facts, 0-10, in horizontal format)
-- **TP**(M) 097a SW/ADD FACTS, 0-10, V
(See-to-write addition facts, 0-10, in vertical format)
-- SB(M) 177 SW/SUB 1's, CUES (0-9)
(See-to-write subtraction facts, subtracting 1 with 0-9 as answer, vertical format, with cues)
-- SB(M) 178 SW/SUB 2's, CUES (0-9)
(See-to-write subtraction facts, subtracting 1 with 0-9 as answer, vertical format, with cues)
-- **TP**(M) 188a SW/SUB FACTS, 0-9, H
(See-to-write subtraction facts, with answers 0-9, horizontal format)
-- **TP**(M) 193a SW/SUB FACTS, 0-9, V
(See-to-write subtraction facts, with answers 0-9, vertical format)

M-1-03.0-03-C --- SM/0 = IDENT ELEM/ADD & SUB

Objective 3. Recognize zero is the identity element for addition and subtraction.

M-1-03.0-03-U -- **TP** 12 AB SW/ADD FACT-ADD 0
(See-to-write addition facts with 0)

M-1-03.0-04-C --- SM/ADD & SUB AS INVER OPER

Objective 4. Recognize addition and subtraction as inverse operations.

M-1-03.0-04-PT -- **TP**(M) 203 SW/INVERSE, SUM-DIF, +5, H
(See-to-write inverse relations between sums and differences related to sums of 5, horizontal format)
-- SB(M) 204 SW/MSN ADN, INV, SUM 5 OR LESS
(See-to-write missing addends in horizontal facts with inverse relations)
-- **DP**(M) 209 SW/INV REL, + & -, H & V, TO 7
(See-to-write missing addends and answers to horizontal and vertical addition and subtraction problems)
-- **DP**(M) 210 SM/SETS (+ & -), > < =
(See-to-mark sets of addition and/or subtraction problems and answer as greater than [>], less than [<], or equal to [=])

M-1-03.0-05-C --- SW/ADD FACTS to 12

Objective 5. Perform addition facts to 12.

M-1-03.0-05-PT -- SB(M) 82 SW/ADD FACTS +1 TO 10C
(See-to-write addition facts, +1, to 10, with cues)
-- **TP**(M) 144a SW/ADD FACTS +1 TO 10-A
(See-to-write addition facts, +1, to 10, Form A)
-- **TP**(M) 145a, SW/ADD FACTS +1, TO 10-B
(See-to-write addition facts, +1, to 10, Form B)
-- SB(M) 83 SW/ADD FACTS 2's, SUM 2-11C
(See-to-write addition facts, +2, to 11, with cues)
-- SB(M) 146a SW/ADD FACTS 2's, SUM 5-11-A
(See-to-write addition facts, 2's, with sums from 5 to 11, Form A)
-- SB(M) 147a SW/ADD FACTS 2's, SUMS 5-11-B
(See-to-write addition facts, 2's, with sums from 5 to 11, Form B)
-- **TP** 99 SW/ADD FACTS 1's and 2's, -11, A
(See-to-write addition facts, 1's and 2's, with sums up to 11, Form A)
-- **TP**(M) 149a SW/ADD FACTS, 1's and 2's, -11, B
(See-to-write addition facts, 1's and 2's, with sums up to 11, Form B)
-- SB(M) 84 SW/ADD FACTS 3's, SUMS 3-12-C
(See-to-write addition facts, 3's, with sums from 3 to 12, with cues)
-- SB(M) 150a SW/ADD FACTS 3's, SUMS 3-8
(See-to-write addition facts, 3's, with sums from 3 to 8)
-- SB(M) 151a SW/ADD FACTS 3's, SUMS 8-12
(See-to-write addition facts, 3's, with sums from 8 to 12)
-- SB(M) 152a SW/ADD FACTS 3's, SUMS 3-12
(See-to-write addition facts, 3's, with sums from 3 to 12)
-- **TP** 99 SW/ADD 0,1,2,3, SUMS 0-10
(See-to-write additon facts, with 0's, 1's, 2's, or 3's, with sums from 0 to 10)
-- **TP**(M) 153a SW/ADD FACTS, 1,2,3-12
(See-to-write addition facts, 1's, 2's, or 3's with sums up to 12)
-- SB 146 SW/ADD 4's, SUMS 4-12
(See-to-write addition facts, 4's, with sums up to 12) corrected
-- SB(M) 154a SW/ADD FACTS, 4's, SUMS 4-9
(See-to-write addition facts, 4's, with sums from 4 to 9)
-- **TP** 148 SW/ADD 1,2,3,4, SUMS 2-12
(See-to-write addition facts, 4's, with sums from 2 to 12) corrected
-- SB(M) 158a SW/ADD 5's, SUMS 5-9, C
(See-to-write addition facts, 5's, with sums from 5 to 9, with cues)
-- SB(M) 162a SW/ADD 6's, SUMS 6-10, C
(See-to-write addition facts, 6's, with sums from 6 to 10, with cues)

M-1-03.0-06-C --- SW/ADD SUMS to 18 W/OBJS (W/O OJBS)

Objective 6. Perform addition for sums to 18 using objects.

M-1-03.0-06-PT -- SB(M) 85 SW/AD FACT, 4's, SUMS 4-13, C-A
(See-to-write addition facts, 4's, with sums from 4 to 13, with cues, Form A)
-- SB(M) 156a SW/AD FACT, 4's, SUMS 4-13, C-B
(See-to-write addition facts, 4's, with sums from 4 to 13, with cues, Form B)
-- SB(M) 155a SW/ADD FACT, 4's, SUM 9-13C
(See-to-write addition facts, 4's, with sums from 9 to 13, with cues)
-- **TP**(M) 157a SW/ADD 1's, 2's, 3's, 4's, -13
(See-to-write addition facts: 1's, 2's, 3's, 4's; with sums up to 13)
-- SB(M) 86 SW/ADD 5's, SUMS 5-14C
(See-to-write addition facts, 5's, with sums from 5 to 14, with cues)
-- SB 154 SW/ADD 5's, SUMS 5-14C
(See-to-write addition facts, 5's, with sums from 5 to 14, with the addend 5 in the top or in the bottom position in the column of digits, with cues)
-- SB 152 SW/ADD 5's, SUM 10-14C
(See-to-write addition facts, 5's, with sums from 10 to 14, with cues)
-- **TP** 156 SW/AD 1's-5's, SUMS 2-14
(See-to-write addition facts: 1's, 2's, 3's, 4's, 5's; with sums from 2 to 14)
-- SB(M) 87 SW/ADD 6's, SUMS-15C
(See-to-write addition facts, 6's, with sums up to 15, with cues)
-- SB 162 SW/ADD 6's, SUMS 6-15C
(See-to-write addition facts, 6's, with sums from 6 to 15, with the addend 6 in the top or in the bottom position in the column of digits, with cues)
-- SB 160 SW/ADD 6's, SUMS 11-15C
(See-to-write addition facts, 6's, with sums from 11 to 15, with cues)
-- SB(M) 165a SW/ADD 7's, SUMS 7-11C
(See-to-write addition facts, 7's, with sums from 7 to 11, with cues)
-- SB 166 SW/ADD 7's, SUMS 12-16C
(See-to-write addition facts, 7's, with sums from 12 to 16, with cues)
-- SB(M) 167a SW/ADD 7's, SUMS 7-16C
(See-to-write addition facts, 7's, with sums from 7 to 15, with 7 as an addend as either the top or bottom digit in the problem, with cues)
-- SB 174 SW/ADD 8's, SUMS 8-17C
(See-to-write addition facts, 8's, with sums from 8 to 17, with cues)
-- SB 172 SW/ADD 8's, SUMS 13-17C
(See-to-write addition facts, 8's, with sums from 13 to 17, with cues)

-- **TP** 176 SW/ADD 1's-8's, SUMS 2-17
(See-to-write addition facts: 1's, 2's, 3's, 4's, 5's, 6's, 7's, 8's; with sums from 2 to 17)
-- SB 178 SW/ADD 9's, SUMS 9-13C
(See-to-write addition facts, 9's, with sums from 9 to 13, with cues)
-- SB 180 SW/ADD 9's, SUMS 14-18C
(See-to-write addition facts, 9's, with sums from 14 to 18, with cues)
-- SB 182 SW/ADD 9's, SUMS 9-18C
(See-to-write addition facts, 9's, with sums from 9 to 18, with 9 as an addend as either the top or the bottom digit in the problem, with cues)
-- **TP**(M) 176a SW/ADD 1's-9's, SUMS-18
(See-to-write addition facts: 1's, 2's, 3's, 4's, 5's, 6's, 7's, 8's, 9's; with sums up to 18)
-- SB 96 SW/AD, SUM-13, 2 DIGIT CO/C
(See-to-write addition facts with sums up to 13, with one addend a 2-digit column in some problems, with cues)
-- **TP** 108 SW/ADD, SUMS 10-13
(See-to-write addition facts with sums from 10 to 13, with one addend a 2-digit column in some problems)
-- SB 98 SW/AD, SUMS-14, 2-DIGIT COLC
(See-to-write addition facts with sums up to 14, with one addend a 2-digit column in some problems, with cues)
-- **TP** 110 SW/ADD, SUMS 11-14
(See-to-write addition facts with sums from 11 to 14, with one addend a 2-digit column in some problems)
-- SB 100 SW/ADD, SUMS-15, 2 DIGIT COLC
(See-to-write addition facts with sums up to 15, with one addend a 2-digit column in some problems, with cues)
-- **TP** 112 SW/ADD, SUMS 12-15
(See-to-write addition facts with sums from 12 to 15, with one addend a 2-digit column in some problems)
-- SB 102 SW/AD, SUM-16, 2 DIGIT COLC
(See-to-write addition facts with sums upto 16, with one addend a 2-digit column in some problems, with cues)
-- **TP** 114 SW/ADD, SUMS 13-16
(See-to-write addition facts with sums from 13 to 16, with one addend a 2-digit column in some problemsO
-- SB 104 SW/AD, SUM-17, 2-DIGIT COLC
(See-to-write addition facts with sums up to 17, with one addend a 2-digit column in some problems, with cues)

-- **TP** 116 SW/ADD, SUMS 14-17
(See-to-write addition facts with sums from 14 to 17, with one addend a 2-digit column in some problems)
-- SB 106 SW/AD, SUM-18, 2 DIGIT COLC
(See-to-write addition facts with sums up to 18 with one addend a 2-digit column in some problems, with cues)
-- **TP** 118 SW/ADD, SUMS 15-18
(See-to-write addition facts with sums from 15 to 18, with one addend a 2-digit column in some problems)
-- SB 68 SW/ADD SUMS 11-18
(See-to-write addition facts with sums from 11 to 18, single digit addends)
-- **DP** 70 SW/ADD SUMS 0-18A
(See-to-write addition facts with sums from 0 to 18, Form A)
-- **DP** 185 SW/ADD SUMS 0-18B
(See-to-write addition facts with sums from 0 to 18, Form B)
-- **TP**(M) 98 SW/ADD SUMS 11-18, HORIZ
(See-to-write addition facts with sums from 11 to 18, horizontal problems)

M-1-03.0-07.C --- SW/SUB FACTS FROM 12

Objective 7. Perform subtraction facts from 12.

M-1-03.0-07-PT -- SB 292 SW/SUB, -0, ANS 0-9C
(See-to-write subtraction facts, -0, with answers from 0 to 9, with cues)
-- SB 294 SW/SUB, -1, ANS 0-9C, FORM A
(See-to-write subtraction facts, -1, with answers from 0 to 9, with cues, Form A)
-- SB(M) 117 SW/SUB, -1, ANS 0-9C, FORM B
(See-to-write subtraction facts, -1, with answers from 0 to 9, with cues, Form B)
-- **TP** 296 SW/SUB, -0, -1, ANS 0-9
(See-to-write subtraction facts, -0 and -1, with answers from 0 to 9)
-- SB(M) 178 SW/SUB, -2, ANS 0-9C, FORM A
(See-to-write subtraction facts, -2, with answers from 0 to 9, with cues, Form A)
-- SB 298 SW/SUB, -2, ANS 0-9C, FORM B
(See-to-write subtraction facts, -2, with answers from 0 to 9, with cues, Form B)
-- **TP** 300 SW/SUB, -0, -1, -2, ANS 0-9
(See-to-write subtraction facts: -0, -1, -2; with answers from 0 to 9)
-- SB 302 SW/SUB, -3, ANS 0-9C, FORM A
(See-to-write subtraction facts, -3, with answers from 0 to 9, with cues, Form A)

-- SB(M) 179 SW/SUB, -3, ANS 0-9C, FORM B
(See-to-write subtraction facts, -3, with answers from 0 to 9, with cues, Form B)

M-1-03.0.07-U -- SB 12 BB SW/SUB -0, -1, -2, -3, ANS 0-5
(See-to-write subtraction facts: -0, -1, -2, -3; with answers from 0 to 5)

M-1-03.0-07-PT -- **TP** 304 SW/SUB, -0, -1, 02, 03; ANS 0-9
(See-to-write subtraction facts: -0, -1, -2, -3; with answers from 0 to 9)

-- SB 254 SW/SUB FACT-ANS TO 5
(See-to-write subtraction facts with answers from zero to five)

-- SB 256 SW/SUB FROM 5-C
(See-to-write subtraction facts, -0 to -5 from five, with cues)

-- SB 258 SW/SUB FROM 6-C
(See-to-write subtraction facts, -0 to -6 from six, with cues)

-- **TP** 261 SW/SUB FROM 4, 5, 6
(See-to-write subtraction facts from 4, 5, or 6)

-- SB 262 SW/SUB FROM 7-C
(See-to-write subtraction facts, -0 to -7 from seven, with cues)

-- SB 265 SW/SUB FROM 8-C
(See-to-write subtraction facts, -0 to -8 from eight, with cues)

M-1-03.0-07-U -- **TP** 12 BB SW/SUB FROM 6, 7, 8-A
(See-to-write subtraction facts from 6, 7, or 8, Form A)

M-1-03.0-07-PT -- **TP** 267 SW/SUB FROM 6, 7, 8-B
(See-to-write subtraction facts from 6, 7, or 8, Form B)

-- SB 269 SW/SUB FROM 9-C
(See-to-write subtraction facts from 9 with cues)

M-1-03.0-07-U -- **TP** 12 BB SW/SUB FROM 9-A
(See-to-write subtraction facts from 9, Form A)

M-1-03.0-07-PT -- **TP** 271 SW/SUB FROM 7, 8, 9
(See-to-write subtraction facts from 7, 8, or 9)

-- SB 272 SW/SUB FROM 10-C
(See-to-write subtracton facts from 10, with cues)

-- **TP** 274 SW/SUB FROM 8, 9, 10
(See-to-write subtraction facts from 8, 9, or 10)

-- SB 277 SW/SUB FROM 11-C
(See-to-write subtraction facts from 11, with cues)

-- SB 278 SW/SUB FROM 12-C
(See-to-write subtraction facts from 12, with cues)

M-1-03.0-08-C --- SW/SUB DIFF FROM 18 W/OBJ (W-O/OJB)

Objective 8. Perform subtraction for differences from 18 using objects (with math facts).

M-1-03.0-08-PT -- SB(M) 180 SW/SUB 4's, CUES (0-9) A
(See-to-write subtraction facts, 4's, with answers from 0 to 9, with cues, Form A)
-- SB 306 SW/SUB 4'S, CUES (0-9) B
(See-to-write subtraction facts, 4's, with answres from 0 to 9, with cues, Form B)
-- **TP** 308 SW/SUB 0's TO 4's
(See-to-write subtraction facts: 0's, 1's, 2's, 3's, and 4's; from 1 to 13)
-- SB(M) 181 SW/SUB 5's, CUES (0-9) A
(See-to-write subtraction facts, 5's, with answers from 0 to 9, with cues, Form A
-- SB 311 SW/SUB 5's, CUES (0-9) B
(See-to-write subtraction facts, 5's, with answers from 0 to 9, with cues, Form B)
-- **TP** 312 SW/SUB 0's TO 5's
(See-to-write subtraction facts: 0's, 1's, 2's, 3's, 4's, or 5's; from 1 to 13)
-- SB(M) 182 (SW/SUB 6's, CUES (0-9) A
(See-to-write subtraction facts, 6's, from 6 to 15, with answers 0-9, with cues, Form A)
-- SB 315 SW/SUB 6's, CUES (0-9) B
(See-to-write subtraction facts, 6's, from 6 to 15, with answers 0-9, with cues, Form B)
-- **TP** 317 SW/SUB 0's to 6's
(See-to-write subtraction facts: 0's, 1's, 2's, 3's, 4's, 5's, or 6's)
-- SB(M) 183 SW/SUB 7's, CUES (0-9) A
(See-to-write subtraction facts, 7's, from 7 to 16, with answers 0-9, with cues, Form A)
-- SB 319 SW/SUB 7's, CUES (0-9) B
(See-to-write subtraction facts, 7's, from 7 to 16, with answers 0-9, with cues, Form B)
-- **TP** 320 SW/SUB 0's to 7's
(See-to-write subtraction facts: 0's, 1's, 2's, 3's, 4's, 5's, 6's, 7's)
-- SB 322 SW/SUB 8's, CUES (0-9) A
(See-to-write subtraction facts, 8's, from 8 to 17, with answers 0 to 9, with cues, Form A)
-- SB(M) 184 SW/SUB 8's, CUES (0-9) B
(See-to-write subtraction facts, 8's, from 8 to 17, with answers 0 to 9, with cues, Form B)
-- **TP** 324 SW/SUB 0's to 8's)
(See-to-write subtraction facts: 0's, 1's, 2's, 3's, 4's, 5's, 6's, 7's, 8's)
-- SB(M) 185 SW/SUB 9's, CUES (0-9) A
(See-to-write subtraction facts, 9's, from 9 to 18, with answers from 0 to 9, with cues, Form A)
-- SB 327 SW/SUB 9's, CUES (0-9) B
(See-to-write subtraction facts, 9's, from 9 to 18, with answers from 0 to 9, with cues, Form B)
-- SB 290 SW/SUB FROM 18-C
(See-to-write subtraction facts from 18, with cues)
M-1-03.0-08-U -- **TP** 12 BB SW/SUB FROM 10-18
(See-to-write subtraction facts fro 10 to 18)

M-1-03.0-08-PT -- **TP**(M) 194a SW/SUB FROM 10-18, HORIZON
(See-to-write subtraction facts from 10 to 18, in horizontal format)
-- **DP**(SP)(a) SW/SUB FACT, 0's-9's (1-18) A
(See-to-write subtraction facts, 0's to 9's, from 1 to 18, Form A)
-- **DP** 328 SW/SUB FACT, 0's-9's, (1-18) B
(See-to-write subtraction facts, 0's to 9's, from 1 to 18, Form B)

M-1-03.0-09-C --- SW/+ & -/1 & 2 DIG NO/NO REGROUP

Objective 9. Add and subtract one-digit and two-digit numbers without regrouping.

M-1-03.0-09-PT -- **TP** 192 SW/2 COL ADD/NO REGROUP
(See-to-write addition problems with 2 columns, without regrouping)
-- **TP** 194 SW/2 COL ADD/NO REGROUP
(See-to-write addition problems with 2 columns, without regrouping)
-- **TP** 196 SW/2 COL, 3 ROW ADD/W-O REG
(See-to-write addition problems with 2 columns and 3 rows of addends, without regrouping)
-- **TP** 198 SW/2 COL, 4 ROW ADD/W-O REG
(See-to-write addition problems with 2 columns and 4 rows, without regrouping)
-- **TP** 200 SW/2 COL, 5 ROW ADD/W-O REG
(See-to-write addition problems with 2 columns and 5 rows, without regrouping)
M-1-03.0-09-G -- **TP** 01A SW 2 COL, SUB/W-O REG
(See-to-write subtraction problems with 2 columns and 5 rows, without regrouping)

M-1-03.0-10-C --- SM/UNION OF SETS AS ASSOC

Objective 10. Recognize the union of sets as associative.

M-1-03.0-11-C ---SW/WHOLE #/MIN IS $\geq$ SUB

Objective 11. Perform subtraction on whole numbers only if the minuend is larger than, or equal to, the subtrahend.

STANDARD 4 **The students will use geometry to introduce basic shapes by mastering the following objective.**

M-1-04.0-01-C --- SM/CIR/SQ/TRI/RECT

Objective 1. Identify circles, squares, triangles, and rectangles as standard shapes.

STANDARD 5 **The students will know that measurement is the comparing of objects with standard units by mastering the following objectives.**

M-1-05.0-01-C --- TD/MSM-COMP L/V/T/M/W

Objective 1. Use standard measuring devices as tools to compare length, volume, time, money, and weight.

M-1-05.0-01-U -- **TP** 11 CB SM/COMPARE-LENGTH, HT
(See-to-mark size comparisons, length, and height, longest, tallest)
-- **TP** 11 CB SM/COM-LENGTH, HT, SHORTEST
(See-to-mark size comparisons, length and height, shortest)

M-1-05.0-02-C --- TM/TIME-HOUR & HALF-HOUR

Objective 2. Tell time in hour and half-hour dimensions.

M-1-05.0-02-U -- **TP** 15 BD SM/TIME ON CLOCK, HR
(See-to-mark time as indicated by the hour on clock faces)
-- **TP** 15 BE SM/TIME-1/2 HR
(See-to-mark time as indicated by the half-hour on clock faces)

M-1-05.0-03-C --- SM/1¢/5¢/10¢-SPECIFIC VAL

Objective 3. Identify that pennies, nickels, and dimes are specific values.

M-1-05.0-03-U -- **TP** 15 EA SW/VAL-PENNY, NICKEL, DIME
(See-to-write the value of pennies, nickels, or dimes)

M-1-05.0-04-C --- TD/COMB COINS TO DIMES

Objective 4. Combine combinations of coins to dimes.

M-1-05.0-05-C --- SM/MEAS NEAREST INCH/CENT

Objective 5. Measure to the nearest inch and/or centimeter.

M-1-05.0-05-U -- **TP** 15 CC SW/MEAS, NEAREST INCH-A
(See-to-mark measurements of objects to the nearest inch, Form A)
-- **TP** 15 CC SW/MEAS, NEAREST INCH-B
(See-to-mark measurements of objects to the nearest inch, Form B)

M-1-05.0-06-C --- SM/TIME MIN/HR/DA/MO/SEA

Objective 6. Categorize time in minutes, hours, days, months, or seasons.

STANDARD 6 **The students will know that mathematics is used to solve problems in the environment by mastering the following objectives.**

M-1-06.0-01-C --- LW/ORAL WORD PBS-MATH SEN

Objective 1. Translate oral word problems into mathematical sentences.

M-1-06.0-01-U -- **TP** 15 GA LW/SUB WORD PBS-MATH SENT
(Listen-to-write mathematical sentences which match subtraction word problems)
-- **TP** 15 GA RW/SUB WD PROB-MATH SENT
(Read-to-write mathematical sentences which match subtraction word problems)

M-1-06.0-02-C TD/VAR L & T-TRA & NON WD PBS

Objective 2. Use various levels and techniques of thinking to solve traditional (textbook) and nontraditional word problems.

LEVEL 2

STANDARD 1 **The students will know that numeration systems provide symbolic representations for comparing numbers and identifying characteristics relative to other numbers by mastering the following objectives.**

M-2-01.0-01-C --- TS/COUNT 1-1000

Objective 1. Count numbers from 1 to 1000.

M-2-01.0-01-U -- **TP** 11 BB TS/NOS 100-999-SERIAL
(Think-to-say numbers 100 to 999 in serial order)
M-2-01.0-01-G -- SB 03G SS/NOS 100-1000-RANDOM
See-to-say numbers 100 to 1000 in random order)
M-2-01.0-01-U -- **TP** 11 BD SS/NOS 100-999-RANDOM
(See-to-say numbers 100 to 999 in random order)

M-2-01.0-02-C --- TW/WRITE NUM 0 TO 100

Objective 2. Write numbers from 0 to 100.

Note: Need to be able to write numerals to 999 as a prerequisite for Standard 2, Objective 3, and for Standard 3, Objective 4.

M-2-01.0-02-U -- SB 11 BE RW/NO WDS TO NUM (11-19)
(Read-to-write number words, 11 to 19, to numerals)
-- SB 11 BG RW/NO WDS TO NUM (11-20)
(Read-to-write number words, 11 to 20, to numerals)
-- SB 11 BE RW/NO WDS TO NUM (30-100)
(Read-to-write number words, 30 to 100, to numerals)
-- **TP** 11 BE RW/NO WORDS TO NUM (1-100)
(Read-to-write number words, 1 to 100, to numerals, random order)
M-2-01.0-02-G -- **TP** 03D SW/NUM TO NO WDS (1-15) R
(See-to-write numerals, 1 to 15, to number words, random order)
-- **TP** 03E SW/WDS (16-19); (10's TO 90) R
(See-to-write numerals, 16 to 19, to number words and 10's to 90, random order)
-- SB 03F SW/NUM TO NO WDS (20-100) R
(See-to-write numerals to number words, random order)

M-2-01.0-03-C --- TD/SEP GEO FIG/= FRAC PTS

Objective 3. Separate a geometric figure into equal parts so that each part represents a fractional portion of the original unit.

M-2-01.0-04-C -- SM/SYM & NAME/1/2,1/3,1/4

Objective 4. Identify symbols and names for fractions (1/2, 1/3, 1/4).

M-2-01.0-04.-U -- **TP** 13 AA SW/FRAC OF SHP-1/2, 1/3, 1/4
(See-to-write the fraction denoted by the marked portion of a shape)
-- SB 13 AA SM/FRAC-1/2, 1/3, 1/4
(See-to-mark the fraction representative for a shaded part of a figure)

STANDARD 2 **The students will know that numbers can be ordered and compared by mastering the following objectives. When related to the environment, numbers can be used to order and compare characteristics of various components of the environment.**

M-2-02.0-01-C --- SW/ORDER NOS 1 TO 1000

Objective 1. Order numbers from 1 to 1000.

M-2-02.0-02-C --- SS/PL VAL/DIG-ONE/TEN/HUN

Objective 2. Determine the place value of a digit by its position in the numeral (ones, tens, and hundreds).

M-2-02.0-02-U -- **TP** 11 DD RW/PLACE VALU, 1's, 10's, 100's
(Read-to-write numeral representing place value specified, 1's, 10's, 100's, for 3-digit numerals)
M-2-02.0-02-G -- **TP** 1C SW/NUM=PL VALU, 1's, 10's, 100's
(See-to-write word which identifies the place value for the underlined numeral in a 3-digit numeral)

M-2-02.0-03-C --- SM/PL VAL TO 999-EXP NOT

Objective 3. Identify place value to 999 using expanded notation of numbers.

M-2-02.0-03-U -- SB 11 BG RM/NO WD TO NUM, 1-999, RAN
(Read-to-mark, select numeral from 3 distractors which represents the number word in each item, 1-999, random sampling)
-- SB 11 BG RW/NO WD TO NUM, 1-999, RAN
(Read-to-write numeral which represents number words in each item, 1-999, random sampling)
-- **TP** 11 DD SW/PL VAL TO 999-EXP NOT
(See-to-write numeral which represents the numeral or number words in expanded notation items)

M-2-02.0-04-C --- TD/N TO 100 INTO EVEN/ODD

Objective 4. Separate the set of counting numbers to 100 into subsets of even and odd numbers.

M-2-02.0-05-C --- RM/ORDINAL NOS TO 10TH

Objective 5. Identify ordinal numbers to 10th.

M-2-02.0-05-U -- **TP** 11 BJ RM/ORDINAL NOS TO 10th
(Read-to-mark numeral to represent ordinal number words)

M-2-02.0-06-C --- SM/COMP 2 NOS/>/</=/TO 99

Objective 6. Compare two numbers using symbols greater than (>), less than (<), and equal (=), to 99.

M-2-02.0-07-C --- TD/OBJ 1-6 W/OBJ FROM ENV

Objective 7. Use objects from the environment to demonstrate a knowledge of Objectives 1 through 6.

STANDARD 3 **The students will know that through computation, combinations of numbers may be related to other numbers by mastering the following objectives. Characteristics of groups of objects can be related to numbers and combinations of objects can be examined.**

M-2-03.0-01-C --- SW/ADD FACTS - SUMS TO 18

Objective 1. Perform single digit addition facts to sums of 18.

M-2-03.0-01-U -- **TP** 12 AB SW/ADD FACTS-SUMS TO 18
(See-to-write addition facts with sums to 18)

M-2-03.0-02-C --- SW/SUB FACTS-DIFF FROM 18

Objective 2. Perform subtraction facts for differences from 18.

M-2-03.0-02-PT -- SB(M) 180 SW/SUB FACTS-4, FROM 4-13
(See-to-write subtraction facts, -4, from 5 to 14)
-- SB(M) 181 SW/SUB FACTS-5, FROM 5-14
(See-to-write subtraction facts, -5, from 5 to 14)
-- SB(M) 182 SW/SUB FACTS-6, FROM 6-15
(See-to-write subtraction facts, -6, from 6 to 15)
-- SB(M) 183 SW/SUB FACTS-7, FROM 7-16
(See-to-write subtraction facts, -7, from 7 to 16)

-- SB(M) 184 SW/SUB FACTS-8, FROM 8-17
(See-to-write subtraction facts, -8, from 8 to 17)
-- SB(M) 185 SW/SUB FACTS-9, FROM 9-18
(See-to-write subtraction facts, -9, from 9 to 18)
-- SB 280 SW/SUB FROM 13, -2 TO -9
(See-to-write subtraction facts, -2 to -9, from 13)
-- SB 282 SW/SUB FROM 14, -2 TO -9
(See-to-write subtraction facts, -2 to -9, from 14)
-- SB 284 SW/SUB FROM 15, -2 TO -9
(See-to-write subtraction facts, -2 to -9, from 15)
-- SB 286 SW/SUB FROM 16, -2 TO -9
(See-to-write subtraction facts, -2 to -9, from 16)
-- SB 288 SW/SUB FROM 17, -2 TO -9
(See-to-write subtraction facts, -2 to -9, from 17)
-- **TP**(M) 195 SW/SUB -1 TO -9, FROM 10-18
(See-to-write subtraction facts, -1 to -9, from 10 to 18)
-- **TP**a SW/SUB -0 TO -9, FROM 0-18
(See-to-write subtraction facts, -0 to -9, from 0 to 18)

M-2-03.0-00-__ --- SW/ADD & SUB/2 DIG-NO REGROP

Objective 00.

M-2-03.0-00-G -- **TP** 02A SW/ADD 2 COL, 2 ROW, W-0, A
(See-to-write addition of 2 column, 2 row facts without regrouping, Form A)
M-2-03.0-00-U -- **TP** 12 AD SW/ADD 2 COL, 2 ROW, W-0, B
(See-to-write addition of 2 column, 2 row facts without regrouping, Form B)
M-2-03.0-00-PT -- **TP** 208 SW/ADD 2 COL, 5 ROW, W-0
(See-to-write addition of 2 column, 5 row facts without regrouping)
-- SB 336 SW/SUB 2 DIG-1 DIG NO W-0 GP
(See-to-write subtraction of a 2 digit number, a 1 digit number, without regrouping)
-- **TP** 330 SW/SUB 2 COL, W-0 REGROP
(See-to-write subtraction in 2 column problems, without regrouping)

M-2-03.0-03-C --- SW/ADD&SUB/3 DIG-NO REGROP

Objective 3. Add and subtract three-digit numbers without regrouping.

M-2-03.0-03-U -- SB 12 AD SW/ADD 3 COL, 2 ROW, W-0 GP
(See-to-write addition with three columns and 2 rows, without regrouping)
M-2-03.0-03-PT -- **TP** 202 SW/ADD 3 COL, 2 ROW, W-0 GP
(See-to-write addition with three columns and two rows, without regrouping)

-- **TP** 204 SW/ADD 3 COL, 3 ROW, W-O GP
(See-to-write addition with 3 columns and 2 rows, without regrouping)
-- **TP** 206 SW/ADD 3 COL, 4 ROW, W-O GP
(See-to-write addition with 3 columns and 4 rows, without regrouping)
-- SB 338 SW/SUB, 3 DIG-1-2-DIG, NO W-O
(See-to-write subtraction with 1- or 2-digit subtrahends taken from 3-digit numbers, without regrouping)

M-2-03.0-03-U -- **TP** 12 BC SW/SUB, 3 COL, W-O GP, A
(See-to-write subtraction with 3 columns, with no regrouping, Form A)

M-2-03.0-03-PT -- **TP** 332 SW/SUB, 3 COL, W-O GP, B
(See-to-write subtraction with 3 columns, without regrouping, Form B)

M-2-03.0-04-C --- SW/ADD-2 & 3 DIG NO W/REGRP

Objective 4. Add two-digit and three-digit numbers with regrouping.

M-2-03.0-04-PT -- **TP** 216 SW/ADD, 2 COL, 2 ROW, REGROUP
(See-to-write addition, 2 columns, 2 rows, with regrouping)

M-2-03.0-04-G -- SB 02C SW/ADD, 2 COL, 2 ROW, REGRP
(See-to-write addition, 2 columns, 2 rows, with regrouping)

M-2-03.0-04-PT -- SB 219 SW/ADD, 2 COL, 3 ROW, 1 PL-RG
(See-to-write addition, 2 columns, 3 rows, with 1 place regrouping)
-- SB 221 SW/ADD, 2 COL, 4 ROW, 1 PL-RG
(See-to-write addition, 2 columns, 4 rows, with 1 place regrouping)
-- SB 223 SW/ADD, 2 COL, 5 ROW, 1 PL-RG
(See-to-write addition, 2 columns, 5 rows, with 1 place regrouping)
-- **TP** 231 SW/ADD, 2 COL, 3 ROW, 2 PL-RG
(See-to-write addition, 2 columns, 3 rows, with 2 place regrouping)
-- **TP** 233 SW/ADD, 2 COL, 4 ROW, 2 PL-RG
(See-to-write addition, 2 columns, 4 rows, with 2 place regrouping)

M-2-03.0-04-G -- **DP** 02E SW/AD, 2 COL, 3-4 ROW, 2 PL-RG
(See-to-write addition, 2 columns, 3 or 4 rows, with 2 place regrouping)

M-2-03.0-04-PT -- **TP** 235 SW/ADD, 2 COL, 5 ROW, 2 PL-RG
(See-to-write addition, 2 columns, 5 rows, with 2 place regrouping)

M-2-03.0-04-U -- **TP** 12 AE SW/ADD, 3 COL, 2 ROW/REGROUP
(See-to-write addition, 3 columns, 2 rows, with 2 or 3 place regrouping)

M-2-03.0-05-C --- SW/AD 3(4,5)-1 DIG NO RG

Objective 5. Add three (four or five) single-digit numbers (with regrouping).

M-2-03.0-05-G -- SB 01A SW/ADD, 1 COL, 3 ROW, REGROUP
(See-to-write addition, 1 column, 3 rows, with grouping tens)
-- SB 01B SW/AD, 1-DIG, 3#, EQUA, RG
(See-to-write addition, 3 number, single-digit equation, with grouping tens)
M-2-03.0-05-U -- SB 12 AC SW/ADD, 1-DIG, 3#, 0-18
(See-to-write addition of 3 single-digit numbers with sums 0 to 18)
M-2-03.0-05-G -- SB 01C SW/AD, 1-DIG, 3#, REGROUP
(See-to-write addition of 3 single-digit numbers with regrouping)
-- SB 01D SW/AD, 1-DIG, 3#, RG, EQUA
(See-to-write addition equation of 3 single-digit numbers with regrouping)
-- SB 01E SW/AD, 1-DIG, 3#, REGROUP
(See-to-write addition of 3 single-digit numbers with some groupings of tens)
-- SB 01F SW/AD, 1-DIG, 3#, RG, EQUA
(See-to-write addition equation of 3 single-digit numbers with regrouping)
M-2-03.0-05-PT -- **TP** 210 SW/AD, 1-DIG, 3#, REGROUP
(See-to-write addition of 3 single-digit numbers with regrouping)
-- **TP** 212 SW/AD, 1-DIG, 4#, REGROUP
(See-to-write addition of 4 single-digit numbers with regrouping)
M-2-03.0-05-G -- **TP** 01H SW/AD, 1-DIG, 4#, RG, EQUA
(See-to-write addition equation of 4 single-digit numbers with regrouping)
M-2-03.0-05-PT -- **TP** 214 SW/AD, 1-DIG, 5#, REGROUP
(See-to-write addition of 5 single-digit numbers with regrouping)

M-2-03.0-06-C --- SM/MISSING ADDEND/2ND POS

Objective 6. Identify a missing addend in the second position.

M-2-03.0-07-C --- SM/MULT AS REPEATED ADD

Objective 7. Recognize multiplication as repeated addition.

M-2-03.0-07-G -- **TP** 02C TW/MULT OF 4-TO 48
(Think-and-write multiples of 4 up to 48)
-- **TP** 02E TW/MULT OF 6-TO 72
(Think-and-write multiples of 6 up to 72)
-- **TP** 02F TW/MULT OF 7-TO 84
(Think-and-write multiples of 7 up to 84)

-- **TP** 02G TW/MULT OF 8-TO 96
(Think-and-write multiples of 8 up to 96)
-- **TP** 02H TW/MULT OF 9-TO 108
(Think-and-write multiples of 9 up to 108)

M-2-03.0-08-C --- SM/OPER OF MULT BY "X"

Objective 8. Recognize the operation of multiplication by the sumbol "x".

M-2-03.0-08-PT -- SB 388 SW/MULT X1, (0-5) C
(See-to-write multiplication facts, x1, with answers 0 to 5, with cues)
-- SB 390 SW/MULT X1, (5-9) C
(See-to-write multiplication facts, x1, with answers 5 to 9, with cues)
-- SB 392 SW/MULT X1, (0-9) C
(See-to-write multiplication facts, x1, with answers 0 to 9, with cues)
-- SB 394 SW/MULT X2, (0-10) C
(See-to-write multiplication facts, x2, with answers 0 to 10, with cues)
-- SB 418 SW/MULT X5, (0-20) C
(See-to-write multiplication facts, x5, with answers 0 to 20, with cues)

M-2-03.0-09-C --- TD/OBJ 1-8 WITH OBJS

Objective 9. Use physical objects to demonstrate a knowledge of Objectives 1 through 8.

STANDARD 4 **The students will show geometry is used to symbolically explore the relationship of one-, two-, and three-dimensional objects in the environment by mastering the following objectives.**

M-2-04.0-01-C --- SM/CONG SHAP 1/2/3 DIM OB

Objective 1. Recognize congruent shapes in one-, two-, and three-dimensional objects.

M-2-04.0-02-C --- TD/MEAS PERIMET - NEAR WHOL

Objective 2. Measure perimeter of basic geometric figures to the nearest whole unit.

M-2-04.0-02-U -- **TP** 15 DB SW/PERIMETER-SHAPES
(See-to-write perimeters of various shapes)

STANDARD 5 **The students will show measurement is the comparing of objects with standard units by mastering the following objectives.**

M-2-05.0-01-C --- TD/MEAS LEN/CM/M/IN/FT/YD

Objective 1. Measure the length of objects in centimeters, meters, inches, feet, and yards.

M-2-05.0-01-U -- **TP** 15 CD SW/MEASUREMENT-CENTIMETER
(See-to-write measurements in centimeters)
-- **TP** 15 CD SW/MEASUREMENT-CENTIMETER
(See-to-write measurements in centimeters)
-- SB 15 CD SW/MEASUREMENT-CENTIMETER
(See-to-write measurements in centimeters)

M-2-05.0-02-C --- ST/25¢/50¢/$-COMP VAL

Objective 2. Identify quarters, half-dollars, and dollars and compare their specific values.

M-2-05.0-03-C --- TD/CHANGE 25¢ W/1¢/5¢/10¢ (USING 25¢/1¢/10¢)

Objective 3. Make monetary change for a quarter using pennies, nickels, and dimes (using quarters, dimes, nickels, and pennies).

M-2-05.0-03-U -- SB 15 EB TW/CHANGE-TOTAL WORTH
(Think-to-write by adding change to total amount of worth)
-- SB 12 AF TW/CHANGE SEQ-AMT
(Think-to-write in sequence the amount of change)
-- SB 12 AF TW/CHANGE SEQ-AMT
(Think-to-write in sequence the amount of change)

M-2-05.0-04-C --- TD/TIME HR/1/2HR/5 MIN INT

Objective 4. Measure time in hours, half-hours, and five-minute intervals.

M-2-05.0-04-U -- **TP** 15 BE TM/TIME-5 MIN INT
(Think-to-mark the time on clock faces to match designated times by the 5 minute interval after the hour)
-- **TP** 15 BE TW/TIME-5 MIN INT
(Think-to-write the time as indicated on clock faces by the 5 minute interval after the hour)

STANDARD 6 **The students will use mathematics to solve problems in the environment by mastering the following objectives.**

M-2-06.0-01-C --- SW/BAR GRAPH/TALLIES/PICT

Objective 1. Read and construct bar graphs, tallies, and pictographs.

M-2-06.0-01-U -- **TP** 15 GD RW/ANS ?-USE BAR GRAPH
(Read-to-write answers to questions using information from a bar graph)

M-2-06.0-02-C --- TD/VAR TECH/TRA & NON PROB

Objective 2. Use various techniques to solve traditional (textbook) and nontraditional problems.

LEVEL 3

LEVEL 3

STANDARD 1 **The students will know that numeration systems provide symbolic representations for comparing numbers and identifying characteristics relative to other numbers by mastering the following objectives.**

M-3-01.0-01-C --- SM/PERIODS/NUM TO 99,999

Objective 1. Identify periods in numerals to 99,999.

M-3-01.0-02-C --- SW/NUMERALS TO 10,000

Objective 2. Recognize, count, and write numerals to 10,000.

M-3-01.0-03-C --- SM/FRACT EXP/PART OF SET

Objective 3. Identify the fractional expression for a part of a set or region.

M-3-01.0-03-G -- **TP** 05A SW/FRAC OF CIRCLE-1/2 TO N/10
(See-to-write, 1/2 to N/10 fractional parts shown on a circle)
-- **TP** 02C SM/FRAC OF CIRCLE-1/1 TO N/8
(See-to-mark whole to n/8 fractional part on a circle as indicated by fraction)

M-3-01.0-03-U -- **TP** 13 AA SW/FRAC OF SET-1/2 TO N/12
(See-to-write fractional part of a set as marked)

M-3-01.0-03-G -- **TP** 02B SM/FRAC OF SET-1/2 TO N/12
(See-to-mark fractional part of a set as indicated by fraction)

M-3-01.0-03-U -- **TP** 13 AA SM/FRAC OF SET-1/2 TO N/12
(See-to-mark fractional part of a set as indicated by fraction)

STANDARD 2 **The student will show that numbers can be ordered and compared. When related to the environment, numbers can be used to order and compare characteristics of various components of the environment by mastering the following objectives.**

M-3-02.0-01-C --- SS/PL VAL DIG/to 10,000

Objective 1. Determine the place value of a digit by its position in the numeral (up to 10,000).

M-3-02.0-01-U -- SB SS/NOS-THOUSANDS, RANDOM
(See-to-say thousand numerals arranged in random order)

M-3-02.0-02-C --- SM/PL VAL to 9999-EXP NOT

Objective 2. Identify place value to 9,999, using expanded notation of numbers.

M-3-02.0-02-U -- **TP** 11 BG RM/NO WORDS TONUM TO 9,999
(Read-to-mark number words expressed in numerals)

M-3-02.0-03-C --- SM/COMP NO >/</=/to 9999

Objective 3. Compare numbers using symbols greater than (>), less than (<), and equal (=), to 9,999,

M-3-02.0-03-G -- SB 05B RW/NUM-SM TO LG-4# SERIES
(Read a series of four numbers, then arrange them in order - smallest to largest-thousands)

M-3-02.0-03-U -- **TP** 11 CE SM/NOS- >,<,=
(See-to-mark, if first number is >, <, or = the second number, to 9,999)

M-3-02.0-04-C --- TD/NOS-COMP CHAR/OBJ & ACT

Objective 4. Use numbers to compare characteristics of physical objects and activities in living.

STANDARD 3 **The students will know that through computation, combinations of numbers may be related to other numbers by mastering the following objectives. Characteristics of groups by objects can be related to numbers and combinations of objects can be examined.**

M-3-03.0-01-C --- SW/+- 3-DIGIT/REGROUPING

Objective 1. Add and subtract three-digit numerals with regrouping.

M-3-03.0-01-G -- SB 02A SM/SUB REGROUP NEED/NO NEED
(See-to-mark, recognize, and mark if regrouping is needed)

-- SB 02B SW/SUB-SIN DIG/REGROUP-LG
(See-to-write subtraction, single-digit, with regrouping, large print)

M-3-03.0-01-PT -- SB 343 SW/SUB-SIN DIG/REGROUP-SM
(See-to-write subtraction, single-digit, with regrouping, small print)

M-3-03.0-01-G -- SB 02E SW/SUB-2 COL/REGROUP-0
(See-to-write subtraction, 2 column, with regrouping, some 0 in regrouping)

M-3-03.0-01-PT -- SB 345 SW/SUB 2 COL/REGROUP
(See-to-write subtraction, 2 columns, with regrouping)

-- SB 347 SW/SUB 3 COL/REGROUP ONES
(See-to-write subtraction, three columns, with one, two, three column subtrahends, with regrouping in ones column)
-- **TP** 353 SW/SUB 3 COL/REGROUP
(See-to-write subtraction, 3 columns, with two and three column subtrahends, with regrouping in tens and hundreds columns)

M-3-03.0-01-U -- **TP** 12 AE SW/ADD 3 COL 2 ROW/REGROUP
(See-to-write addition, 3 columns, 2 rows, with regrouping) + = = =

M-3-03.0-01-PT -- **TP** 225 SW/ADD 3 COL 3 ROW/REGROUP
(See-to-write addition, 3 columns, 3 rows, with regrouping)
-- **TP** 227 SW/ADD 3 COL 4 ROW/REGROUP
(See-to-write addition, 3 columns, 4 rows, with regrouping)

M-3-03.0-02-C --- TW/MULT FACTS THRU 9X9

Objective 2. Give the basic multiplication facts through 9 x 9.

M-3-03.0-02-U -- SB 12 CB SW/MULT FACTS -XOC
(See-to-write multiplication facts, 0 x 0 to 0 x 9, with cues)

M-3-03.0-02-PT -- SB 364 SW/MULT FACTS X1C
(See-to-write multiplication facts, 0 x 1 to 9 x 1, with cues)
-- SB 366 SW/MULT FACTS X2C
(See-to-write multiplication facts, x2, with cues)
-- **TP**(M) 421a SW/MULT FACTS (0,1,2) EQU
(See-to-write multiplication facts, x0, x1, x2, in equations)
-- SB 368 SW/MULT FACTS X3C
(See-to-write multiplication facts, x3, with cues)
-- SB 370 SW/MULT FACTS X4C
(See-to-write multiplication facts, x4, with cues)
-- **TP**(M) 421b SW/MULT FACTS (0-4) EQU
(See-to-write multiplication facts, 0, 1, 2, 3, 4, in equations)
-- SB 372 SW/MULT FACTS X5C
(See-to-write multiplication facts, x5, with cues)
-- **TP** 357 SW/MULT FACTS (XO-X5)
(See-to-write multiplication facts, x0 to x5)
-- SB 424 SW/MULT FACTS X6 TO 24C
(See-to-write multiplication facts, x6, with answers 0 to 24, with cues)
-- SB 426 SW/MULT FACTS X6, 30-54C
(See-to-write multiplication facts, x6, with answers from 30 to 54, with cues)
-- SB 428 SW/MULT FACTS X6, TO 54C
(See-to-write multiplication facts, x6, with answers 0 to 54, with cues)

-- SB 374 SW/MULT FACTS X6, TO 54RC
(See-to-write multiplication facts, x6, with answers 0 to 54, with reduced cues)
-- **TP**(M) 421c SW/MULT FACTS (X0-X6) EQU
(See-to-write multiplication facts, x0 to x6, with answers to 54, in equations)
-- **TP** 430 SW/MULT FACTS (X1-X6)
(See-to-write multiplication facts, x1 to x6, with answers 0 to 54)
-- SB 432 SW/MULT FACTS X7, 0-28C
(See-to-write multiplication facts, x7, with cues)
-- SB 434 SW/MULT FACTS X7, 35-63C
(See-to-write multiplication facts, x7, with answers 35 to 63, with cues)
-- SB 436 SW/MULT FACTS X7, 0-63C
(See-to-write multiplication facts, x7, with answers 0 to 63, with cues)
-- SB 376 SW/MULT FACTS X7, TO 64RC
(See-to-write multiplication facts, x7, with answers 0 to 63, with reduced cues)
-- **TP** 483 SW/MULT FACTS (X1-X7), 0-63
(See-to-write multiplication facts, x1 to x7, with answers 0 to 63)
-- SB 440 SW/MULT FACTS X8, 0-32C
(See-to-write multiplication facts, x8, with answers 0 to 32, with cues)
-- SB 442 SW/MULT FACTS X8, 40-72C
(See-to-write multiplication facts, x8, with answers 0 to 32, with cues)
-- SB 444 SW/MULT FACTS X8, 0-72C
(See-to-write multiplication facts, x8, with answers 0 tO 72, with cues)
-- SB 378 SW/MULT FACTS X8, TO 72RC
(See-to-write multiplication facts, x8, with answers to 72, with reduced cues)
-- **TP**(M) 422a SW/MULT FACTS (X0-X8) EQU
(See-to-write multiplication facts, x0, x1, x2, x3, x4, x5, x6, x7, x8, in equations)
-- **TP** 446 SW/MULT FACTS (X1-X8), 0-72
(See-to-write multiplication facts, x1, x2, x3, x4, x5, x6, x7, x8, with answers 0 to 72)
-- SB 448 SW/MULT FACTS X9, 0-36C
(See-to-write multiplication facts, x9, with answers 0 to 35, with cues)
-- SB 450 SW/MULT FACTS X9, 45-81C
(See-to-write multiplication facts, x9, with answers 45 to 81, with cues)
-- SB 380 SW/MULT FACTS X9, TO 81C
(See-to-write multiplication facts, x9, with answers to 81, with cues)
-- SB 358 SW/MULT FACTS (X5-X9), TO 81
(See-to-write multiplication facts, x5 to x9, with answers to 81)

-- SB 362 SW/MULT FACTS X0, TO 9C
(See-to-write multiplication facts, x0, with answers to 9, with cues)
-- **DP** 454 SW/MULT FACTS (X1-X9), TO 81
(See-to-write multiplication facts, x1 to x9, with answers to 81)
-- SB 382 SW/MULT FACTS X10, TO 100C
(See-to-write multiplication facts, x10, with answers to 100)
-- **DP**(M) 422b SW/MULT FACTS (X0-X10), TO 100
(See-to-write multiplication facts, x0 to x10, with answers to 100)

M-3-03.0-02-G -- **TP** 02I SW/MULT FACTS X11, TO 132
(See-to-write multiplication facts, x11, with answers to 132

M-3-03.0-02-PT -- **DP**(M) 422c SW/MULT FACTS (X0-X12), TO 144
(See-to-write multiplication facts, x0 to x12, with answers to 144)

M-3-03.0-03-C --- SW/"0" FACTOR-PRODUCT = "0"

Objective 3. Recognize the number zero, used as a factor, yields the product of zero.

M-3-03.0-03-U -- **TP** 12 CB SW/MULT FACTS X0, TO 9
(See-to-write multiplication facts, x0, with answers to 9)

M-3-03.0-00.1-__ --- SW/MULT 2-3 COL W-0 REGROU

Objective 00.1 See-to-write multiplication problems in two or three columns with one-, two-, or three-digit multipliers without regrouping.

M-3-03.0-00.1-PT -- **TP** 456 SW/MULT "_ X __" W-0 REGROUP
(See-to-write multiplication with 2 columns and a single-digit multiplier without regrouping)
-- **TP** 458 SW/MULT "__ X __" W-0 REGR
(See-to-write multiplication with 2 columns and a 2-digit multiplier without regrouping)
-- **TP** 460 SW/MULT "___ X _ OR __" W-0 REG
(See-to-write multiplication with 3 columns and a 1- or 2-digit multiplier without regrouping)
-- **TP** 462 SW/MULT 3 COL W-0 REGROUP
(See-to-write multiplication with 3 columns and a 3-digit multiplier without regrouping)
-- **DP** 464 SW/MULT 3 COL W-0 REGROUP
(See-to-write multiplication with 3 columns and a 1-, 2-, or 3-digit multiplier without regrouping)

M-3-03.0-04-PT-C --- S/W/"__ X _"/REGROUPING

Objective 4. Multiply a two-digit numeral by a one- (or two-) digit numeral with regrouping.

M-3-03.0-04-PT -- SB 466 SW/"__ X _"/REGROUPING
(See-to-write multiplication, 2 columns, with 1-digit multiplier with regrouping)
-- **TP** 466 SW/"__ X _"/REGROUPING
(See-to-write multiplication, 2 columns, with 1-digit multiplier with regrouping)
-- **DP** 468 SW/"__ X __"/REGROUPING
(See-to-write multiplication, 2 columns, with a 2-digit multiplier with regrouping)

M-3-03.0-05-PT-C --- TW/"X" & "÷ = INVERSE OPERAT

Objective 5. Recognize multiplication and division are inverse operations.

M-3-03.0-06-PT-C --- SS/SYMBOLS "÷" & " "

Objective 6. Recognize division can be represented by the symbols "-:" and " ".

M-3-03.0-07-C --- SW/PERFORM BASIC DIV "÷_"

Objective 7. Perform division using the basic division facts. (Single digit divisor.)

M-3-03.0-07-PT -- SB(M) 289 SW/DIV (÷1) C
(See-to-write division, ÷1, with single-digit answers, with cues)
-- SB(M) 290 SW/DIV (÷2)C-FORM A
(See-to-write division, ÷2, with single-digit answers, with cues, Form A)
-- SB 484 SW/DIV (÷2)C-FORM B
(See-to-write division, ÷2, with single-digit answers, with cues, Form B)
-- **TP** 486 SW/DIV (÷2)
(See-to-write division, ÷2, with single-digit answers)
-- SB(M) 291 SW/DIV (÷3)C-FORM A
(See-to-write division, ÷3, with single-digit answers, with cues, Form A)
-- SB 488 SW/DIV (÷3)C-FORM B
(See-to-write division, ÷3, with single-digit answers, with cues, Form B)
-- **TP** 490, SW/DIV (÷1, 2, 3)
(See-to-write division, ÷ 1, 2, or 3, with single-digit answers)

-- SB(M) 292 SW/DIV (÷4)C-FORM A
(See-to-write division, ÷4, with single-digit answers, with cues, Form A)
-- SB 492 SW/DIV (÷4)C-FORM B
(See-to-write division, ÷4, with single-digit answers, with cues, Form B)
-- **TP** 494 SW/DIV (÷1, 2, 3, 4)
(See-to-write division, ÷ 1, 2, 3, or 4, with single-digit answers)
-- SB(M) 293 SW/DIV (÷5)C-FORM A
(See-to-write division, ÷5, with single-digit answers, with cues, Form A)
-- SB 496 SW/DIV (÷5)C-FORM B
(See-to-write division, ÷5, with single-digit answers, with cues, Form B)
-- **TP** 498 SW/DIV (÷1, 2, 3, 4, 5)
(See-to-write division, ÷1, 2, 3, 4, or 5, with single-digit answers)
-- **TP** 476 SW/DIV (÷0, 1, 2, 3, 4, 5)
(See-to-write division, ÷0, 1, 2, 3, 4, or 5, with single-digit answers)
-- SB 294 SW/DIV (÷6)C-FORM A
(See-to-write division, ÷6, with single-digit answers, with cues, Form A
-- SB 500 SW/DIV (÷6)C-FORM B
(See-to-write division, ÷6, with single-digit answers, with cues, Form B)
-- **TP** 502 SW/DIV (÷1, 2, 3, 4, 5, 6)
(See-to-write division, ÷1, 2, 3, 4, 5, or 6, with single-digit answers)
-- SB 95 SW/DIV (÷7)C-FORM A
(See-to-write division, ÷7, with single-digit answers, with cues, Form A)
-- SB 504 SW/DIV (÷7)C-FORM B
(See-to-write division, ÷7, with single-digit answers, with cues, Form B)
-- **TP** 506 SW/DIV (÷1 TO ÷7)
(See-to-write division, ÷1, 2, 3, 4, 5, 6, or 7, with single-digit answers)
-- SB 296 SW/DIV (÷8)C-FORM A
(See-to-write division, ÷8, with single-digit answrs, with cues, Form A)
-- SB 508 SW/DIV (÷8)C-FORM B
(See-to-write division, ÷8, with single-digit answers, with cues, Form B)
-- SB 297 SW/DIV (÷9)C-FORM A
(See-to-write division, ÷9, with single-digit answers, with cues, Form A
-- SB 510 SW/DIV (÷9)C-FORM B
(See-to-write division, ÷9, with single-digit answers, with cues, Form B)
-- **TP** 478 SW/DIV (÷6 TO ÷9)
(See-to-write division, ÷6, 7, 8, or 9, with single-digit answers)

-- **TP** 512 SW/DIV (÷1 TO ÷9) FORM A
(See-to-write division, ÷1, 2, 3, 4, 5, 6, 7, 8, or 9, with single-digit answers, Form A)
-- **TP** 001 SW/DIV (÷1 TO ÷9) FORM B
(See-to-write division, ÷1, 2, 3, 4, 5, 6, 7, 7, or 9, with single-digit answers, Form B)
-- **DP** 480 SW/DIV (÷0 TO ÷9) FORM A
(See-to-write division, ÷0, 1, 2, 3, 4, 5, 6, 7, 8, or 9, with single-digit answers, Form A)
-- **DP** 12 DB SW/DIV (÷0 TO ÷9) FORM B
(See-to-write division, ÷0, 1, 2, 3, 4, 5, 6, 7, 8, or 9, with single-digit answers, Form B)

M-3-03.0-07-U -- **DP** 12 DB SW/DIV (÷1 TO ÷9)
(See-to-write division, ÷1 to ÷9, with single-digit answers)

M-3-03.0-08-C --- SW/"÷1" QUOTIENT=DIVIDEND

Objective 8. Recognize that in division by one, the quotient is the same as the dividend.

M-3-03.0-08-PT -- **DP** 482 SW/DIV (÷1)
(See-to-write division, ÷1, with the quotient response the same as the dividend)

M-3-03.0-09-C --- SW/"__ ÷ _"=0/NO-0 REMAINDER

Objective 9. Divide a two-digit numeral by a one-digit numeral with zero and non-zero remainders.

M-3-03.0-09-PT -- **DP** 514 SW/"__ ÷ _ = __" 0-REMAINDER
(See-to-write division with a two-digit answer with no remainder)
-- **DP** 516 SW/"__ ÷ __" W-REMAINDER
(See-to-write division with a two-digit answer with a remainder)

M-3-03.0-10-C --- TD/"÷" BY PHYSICAL OBJECT

Objective 10. Use physical objects to demonstrate Objectives 1 through 9.

STANDARD 4 **The students will use geometry to symbolically explore the relationships of one-, two-, and three-dimensional objects in the environment by mastering the following objectives.**

M-3-04.0-01-C --- SM/GEOMETRIC FIG/SYMMETRY

Objective 1. Recognize geometric figures that exhibit symmetry.

M-3-04.0-02-C --- SM/PARALLEL/NOT INTERSECT

Objective 2. Recognize that parallel lines in a plane do not intersect.

M-3-04.0-03-C --- SM/CIR-CENTER/RADIUS/DIAM

Objective 3. Recognize the center, radius, and diameter of a circle.

M-3-04.0-04-C --- SM/CUBE/SPHERE/PYRA/CYLIN

Objective 4. Recognize cubes, spheres, cylinders, and pyramids.

STANDARD 5 **The students will use measurement to compare objects with standard units by mastering the following objectives.**

M-3-05.0-01-C --- SM/MEASUR LENGTH-1/2 UNIT

Objective 1. Measure length to the nearest half unit.

M-3-05.0-01-U -- **DP** 15 CC SW/MEASUR LENGTH=1/2 UNIT
(See-to-write measurement to the nearest 1/2 inch from a pictorial representation of a ruler measurement of a line)

M-3-05.0-02-C --- SM/TIME-HR/1/2HR/1/4HR/5 MIN

Objective 2. Measure time in hour, half-hour, quarter-hour, and five-minute intervals.

M-3-05.0-02-PT -- SB(M) 432b SM/TIME-HR
(See-and-match the time on clock as indicated by the designated time on the hour)
-- SB(M) 433b SM/TIME-5 MIN/HR
(See-and-mark the time on clocks as indicated by the designated time on the 5 minutes and hour)
-- SM(M) 433a SW/TIME-5 MIN
(See-and-write the time as indicated by clocks on the 5 minutes and hour)
-- SB(M) 434b SM/TIME-10 MIN/HR
(See-and-mark the time on clocks as indicated by the designated time on the 10 minutes and hour)
-- SB(M) 434a SW/TIME-10 MIN
(See-and-write the time as indicated by clocks on the 10 minutes and hour)
-- SB(M) 435b SM/TIME-5 OR 10 MIN/HR
(See-and-mark the time on clocks as indicated by the designated times on the 5 minute, 10 minute, and hour)

-- SB(M) 436b SM/TIME-10, 15 MIN/HR
(See-and-mark the time on clocks as indicated by the designated times on the 10 minute, quarter hour, and hour)
-- SB(M) 436a SW/TIME-10, 15 MIN/HR
(See-and-write the time as indicated by clocks on the 10 minute, quarter hour, and hour)
-- SB(M) 437b SM/TIME-20 MIN/HR
(See-to-mark the time on clocks as indicated by the designated times by the 20 minute and hour)
-- SB(M) 437a SW/TIME-20 MIN/HR
(See-to-write the time as indicated by clocks on the 20 minutes and hour)
-- SB(M) 438b SM/TIME-25 MIN/HR
(See-to-mark the time on clocks as indicated by the designated times by the 25 minutes and hour)
-- SB(M) 438a SW/TIME-25 MIN/HR
(See-to-write the time as indicated by clocks on the 25 minutes and hour)
-- **TP**(M) 439b SM/TIME-15, 20, 25 MIN/HR
(See-to-mark the time on clocks as indicated by the designated times by the 15, 20, and 25 minute and by the hour)
-- **TP**(M) 439a SW/TIME-15, 20, 25 MIN/HR
(See-to-write the time as indicated by clocks on the 15, 20, and 25 minutes and by the hour)
-- SB(M) 444a SM/TIME-1/2 HR/HR
(See-to-mark on eht clocks as indicated by the designated times by the 1/2 hour and on the hour)
-- SB(M) 440b SW/TIME-1/2 HR/HR
(See-to-write the time as indicated by clocks on the 1/2 hour and on the hour)
-- SB(M) 441b SM/TIME-35 MIN/HR
(See-to-mark time on the clocks as indicated by the designated time by the 35 minutes and by the hour)
-- SB(M) 441a SW/TIME-35 MIN/HR
(See-to-write the time as indicated by clocks on the 35 minutes and on the hour)
-- SB(M) 442b SM/TIME-40 MIN/HR
(See-to-mark time on the clocks as indicated by the designated times on the 40 minute and on the hour)
-- SB(M) 442a SW/TIME-40 MIN/HR
(See-to-write the time as indicated by clocks on the 40 minutes and on the hour)
-- **TP**(M) 443b SM/TIME-30, 35, 40 MIN/HR
(See-tO-mark time on the clocks as indicated on the 30, 35, or 40 minutes and on the hour)
-- **TP**(M) 443a SW/TIME-30, 35, 40 MIN/HR
(See-to-write the time as indicated by clocks on the 30, 35, or 40 minutes and on the hour)
-- SB(M) 444b SM/TIME-45 MIN/HR
(See-to-mark time on the clocks as indicated on the 45 minutes and on the hour)

-- SB(M) 444a SW/TIME-45 MIN/HR
(See-to-write time as indicated by clocks on the 45 minutes and on the hour)
-- SB(M) 445b SM/TIME-50 MIN/HR
(See-to-mark time on the clocks as indicated on the 50 minutes and on the hour)
-- SB(M) 445a SW/TIME-50 MIN/HR
(See-to-write time as indicated by clocks on the 50 minutes and on the hour)
-- SB(M) 446b SM/TIME-55 MIN/HR
(See-to-mark time on clocks by the 55 minutes and on the hour)
-- SB(M) 446a SW/TIME-55 MIN/HR
(See-to-write time from clocks on the 55 mintes and on the hour)
-- **TP**(M) 447b SM/TIME-45, 50, 55 MIN/HR
(See-to-mark time on clocks on the 45, 50, and 55 minutes and on the hour)
-- **TP**(M) 447a SW/TIME-45, 50, 55 MIN/HR
(See-to-write time from clocks on the 45, 50, and 55 minutes and on the hour)
-- **TP**(M) 435a SW/TIME-BY 5 MIN INTER
(See-to-write time from clocks on the 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, and 55 minutes and on the hour)
-- **DP**(M) 431b SM/TIME HR/1/2 HR/1/4 HR/5 MIN
(See-to-mark time in hour, half hour, quarter hour, and five-minute intervals on a clock)
-- **DP**(M) 431a SW/TIME HR/1/2 HR/1/4 HR/5 MIN
(See-to-write time in hour, half hour, quarter hour, and five-minute intervals from a clock model)

M-3-05.0-03-C --- SM/CHANGE = $1

Objective 3. Combine coins to $1.00.

M-3-05.0-03-PT -- SB 507 SW/CENTS TO NICKELS (-50¢)
(See-to-write 5¢ to 50¢ changed to X number of nickels)
-- SB 502 SW/NICKELS TO CENTS (-50¢)
(See-to-write X number of nickels changed to cents up to 50¢)
-- SB 503 SW/DIMES TO CENTS (-90¢)
(See-to-write X number of dimes changed to cents up to 90¢)
-- SB 506 SW/CENTS TO DIMES (-90¢)
(See-to-write X number of dimes changed to cents up to 90¢)
-- SB 510 SW/CENTS TO NO NICKEL-DIME
(See-to-write cents, up to 80¢, to nickels or dimes, random order)
-- SB 505 SW/NICKEL-DIME-PENNY/CENT
(See-to-write nickels, pennies, and dimes to cents, random order)

-- **TP** 508 SW/CHANGE (1¢, 5¢, 10¢)
(See-to-write pennies, nickels, and dimes to cents for sequence of change)
-- SB(M) 500 SS/NAME (1¢, 5¢, 10¢, 25¢)
(See-to-say coin names and/or values)
-- SB 01 SW/COINS TO CENTS (P-N-D-Q)
(See-to-write coins - penny, nickel, dime, quarter - to cents)
-- SB 02 SW/COINS WDS TO CENTS
(See-to-write names of coins to cents)
-- **TP** 509 SW/CHANGE FOR COINS-SEQ
(See-to-write five coins to change in sequence)

M-3-05.0-03-G -- **DP** 01A SW/$1.00 TO COINS
(See-to-write $1.00 to X number of pennies, nickels, dimes, or quarters)

M-3-05.0-04-C --- SW/MONEY-EXPRESS TO $100

Objective 4. Read, write, add, and subtract monetary expressions to $100.00.

M-3-05.0-05-C --- SW/CENTS = $?.__

Objective 5. Give dollar notation for cent notation.

M-3-05.0-05-U -- **DP** 15 EB SW/CENTS=$?.__
(See-to-write cents to dollar value)
-- **TP** 15 EB SW/CHANGE=$?.00
(See-to-write pictures of coins to dollars)

M-3-05.0-05-G -- **TP** 01C SW/PEN-NICK-DIME=$?.00
(See-to-write X number of nickels, pennies, or dimes to dollars)

STANDARD 6 **The students will use mathematics to solve problems in the environment by mastering the following objectives.**

M-3-06.0-01-C --- SW/WORD PROB "+/-/x/÷/$"

Objective 1. Solve word problems (including the use of money) using addition, subtraction, multiplication, and division.

M-3-06.0-01-PT -- **TP**(M) 348 RM/WORD TO SYMBOL- +, -, = - A
(Read-to-mark key words, used in problem solving, to symbols used in solution - plus, minus, equal to, Form A)
-- **TP**(M) 347 RM/WORD TO SYMBOL - +, -, = - B
(Read-to-mark key words, used in problem solving, to symbols used in solution - +, -, =, -Form B)
-- SB(M) 480a RM/WORDS TO SYMBOL - +, -
(Read-to-mark key words, used in problem solving, to symbols used in solutions - +, -)

-- **TP**(M) 482a RM/WORDS TO SYMBOL - x, -, +
(Read-to-mark key words, used in problem solving, to symbols used in solutions - x, -, +)

M-3-06.0-01-U -- **TP** 15 GA RW/STORY PROB-SUB 3 COL
(Read-to-write story problems with subtraction computation using 3 columns)

-- SB 15 GA RW/STORY PROB- +, -/$
(Read-to-write story problems with addition or subtraction money computations)

-- **TP** 15 GA RW/MONEY STORY PROB- +, -, A
(Read-to-write money story problems with addition or subtraction computation, Form A)

-- **TP** 15 GA RW/MONEY STORY PROB- +, -, B
(Read-to-write money story problems with addition or subtraction computation, Form B)

-- SB 15 GA RW/STORY PROB - X
(Read-to-write money story problems with addition and subtraction computation)

-- **TP** 15 GA RW/STORY PROB - X (__ X _)
(Read-to-write story problems with one place multipliers)

-- **TP** 15 GA RW/STORY PROB - ÷ _ or ÷ __
(Read-to-write story problems with one or two place divisors)

M-3-06.0-02-C --- SW/PROB SOLV-TRAD/NON-TRA

Objective 2. Use various techniques to solve traditional (textbook) and nontraditional word problems.

LEVEL 4

LEVEL 4

STANDARD 1 **The students will understand that numeration systems provide symbolic representations for comparing numbers and identifying characteristics relative to other numbers by mastering the following objectives.**

M-4-01.0-01-C --- SW/"0-100,000,000"

Objective 1. Read and write numerals to 100,000,000.

M-4-01.0-01-U -- SB 11 BC SW/# PRECEDE NUM (1,000's)
(See-to-write the number which precedes the numeral, thousands, hundreds, tens, ones)
-- SB 11 DB SM/COMMA-#s TO 99,999, RW
(See-to-mark the commas in numbers up to 99,000; then rewrite number with comma)
-- SB 11 BG SM/NO WD TO NUM, MULT CH
(See-to-mark the correct numeral which corresponds to the number words from 3 distractor numerals)
-- **TP** 11 BD SS/NO, 10,000's, RANDOM
(See-to-say numbers, ten thousands, in random order)
-- **TP** 11 BD SS/NO, 100,000's, RANDOM
(See-to-say numbers, hundred thousands, in random order)

M-4-01.0-01-G -- **TP** 02B RW/NO WD-NUM,-MILLIONS, R
(Read-to-write numerals from number words, millions, random order)

MK-4-01.0-02-C --- SW/PL VAL to 100,000,000

Objective 2. Recognize, read, and write place values to 100,000,000.

M-4-01.0-02-G -- **TP** 05A RW/COMPARE SEQ, 3 NUM, MILLI
(Read-to-write by comparing three numerals and writing them in correct sequence, up to millions)

STANDARD 2 **The students will show that numbers can be ordered and compared by mastering the following objectives.**

M-4-02.0-01-C --- SW/ESTIMATE SUMS/DIF

Objective 1. Round numbers to estimate sums and differences.

M-4-02.0-01-G -- **TP** 04B SM/ROUND NO
(See-to-mark best answer, rounded number)
-- SB 04H SW/ROUND-PLACE INDICATED
(See-to-write rounded numbers to place indicated, emphasis on effects of 9's)

-- SB 04G SW/ROUND-T,H,TH,T-TH
(See-to-write rounded numbers to nearest tens, hundreds, thousands, or ten thousands)

M-4-02.0-02-C --- SW/ORDER FRACT/LIKE DENOM

Objective 2. Put fractions with like denominators in order.

M-4-02.0-02-G -- SB 02A AM/FRAC PT-CIR, 2-8 PTS
(See-to-mark fractional part(s) of a circle-halves, thirds, fourths, sixths, eighths)
-- SB 05A SW/WHOLE NO TO FRACTION
(See-to-write whole number to a fraction)

M-4-02.0-03-C --- SW/ORDER NUMB TO 10,000

Objective 3. Order numbers to 10,000.

M-4-02.0-03-U -- SB 11 BI SM/NO 1000 >, <, TO 99,999
(See-to-mark numbers from 3 distractors, which are 1,000 greater than or less than numeral specified, up to 99,999)

STANDARD 3 **The students will show that through computation, combinations of numbers may be related to other numbers by mastering the following objectives. Objects can be related to numbers, and combinations of objects can be examined.**

M-4-03.0-01-C --- SW/+/-/4-DIGIT/REGROUPING

Objective 1. Add and subtract four-digit numerals with regrouping.

M-4-03.0-01-PT -- SB 334 SW/SUB, 4 COL, 2 ROW, W-O GP
(See-to-write subtraction problems with 4 columns, 2 rows, without regrouping)
-- SB 340 SW/SUB, 2-3-4 COL, W-O GP REV
(See-to-write subtraction problems with 2, 3, or 4 columns, without regrouping, review)
M-4-03.0-01-G -- SB 01D SW/SUB, 3-4 COL, W-O GP, EQUATI
(See-to-write subtraction equation problems with 3 or 4 columns, without regrouping)
M-4-03.0-01-PT -- SB 348 SW/SUB, 4 COL, R-G, TENS
(See-to-write subtraction problems with regrouping in the tens column)
-- SB 350 SW/SUB, 4 COL, R-G, T/H
(See-to-write subtraction problems with regrouping in the tens and/or hundreds columns)
M-4-03.0-01-U -- TP 12 BD SW/SUB, 4 COL, R-G
(See-to-write subtraction problems with regrouping across the columns)

M-4-03.0-01-PT -- **DP** 354 SW/SUB, 3-4 COL, R-G, REV
(See-to-write subtraction problems with 3 or 4 columns, with regrouping, review)

M-4-03.0-02-C --- SW/"___ X _ ="

Objective 2. Compute the product of one-digit multiplier and up to three-digit multiplicand.

M-4-03.0-03-C --- SW/BASIC MULT FACT - "0 to 9"

Objective 3. Give the basic multiplication facts 0 to 9.

M-4-03.0-03-U -- **TP** 12 CB SW/MULT FACT-0 TO 9, RAN
(See-to-write multiplication facts from 0 to 9 in random order)

Note: Level 3

M-4-03.0-04-C --- SW/COMPUTE "X 0 ="

Objective 4. Compute multiplication by zero.

M-4-03.0-04-G -- SB 02D SW/MULT OF TENS & HUND-0
(See-to-write multiplication problems with 4-digit multiplicand times tens or hundreds with 0's)
-- **TP** 04A SW/MULT POWERS-10, 100,1000
(See-to-write multiplication problems up to ten thousands times ten, hundreds, or thousands)

M-4-03.0-05-C --- SW/COMPUTE "__ ÷ _ = __"

Objective 5. Compute a two-digit quotient using a one-digit divisor.

M-4-03.0-05-U -- **TP** 12 DC SW/DIV "__ ÷ _ = __" W-0 R
(See-to-write division with 2-digit dividend, a 1-digit divisor, and a 2-digit answer without a remainder)
M-4-03.0-05-G -- **TP** 01B SW/DIV EQ "__ ÷ _ = __" W-0 R
(See-to-write division equation with a 2-digit dividend, a one-digit divisor, and a 2-digit answer without a remainder)
M-4-03.0-05-U -- **TP** 12 DC SW/DIV "__ ÷ _ = __" W R
(See-to-write division with a 2-digit dividend, a 1-digit divisor, and a 2-digit answer with a remainder)

M-4-03.0-06-C --- SW/COMPUTE "__ ÷ __ = _"

Objective 6. Compute a two-digit quotient using a two-digit divisor.

M-4-03.0-06-PT -- **TP** 518 SW/DIV, 2-DIG Q/2-DIG DIV
(See-to-write 2-digit quotient for division problems with 2-digit divisors without a remainder in answers)
-- **TP** 520 SW/DIV/2# Q/2# DIV-WR
(See-to-write 2-digit quotient for division problems with 2-digit divisors with a remainder in answers)

M-4-03.0-07-C --- SW/BASIC DIV FACTS (1 to 9)

Objective 7. Give the basic division facts 1 to 9.

M-4-03.0-07-PT -- **TP**(M) 303a SW/DIV FACT (1-9) RANDOM
(See-to-write basic division facts from 1 to 9 in random order)
-- SB(M) 307a SW/DIV FACT (1-2) RANDOM
(See-to-write basic division facts from 1 to 2, in random order)
-- SB(M) 309a SW/DIV FACT (1-3) RANDOM
(See-to-write basic division facts from 1 to 3, in random order)
-- SB(M) 311a SW/DIV FACT (1-4) RANDOM
(See-to-write basic division facts from 1 to 4, in random order)
-- SB(M) 313a SW/DIV FACT (1-5) RANDOM
(See-to-write basic division facts from 1 to 5, in random order)
-- SB(M) 315a SW/DIV FACT (1-6) RANDOM
(See-to-write basic division facts from 1 to 6, in random order)
-- SB(M) 317a SW/DIV FACT (1-7) RANDOM
(See-to-write basic division facts from 1 to 7, in random order)
-- SB(M) 318 SW/DIV FACT (1-8) RANDOM
(See-to-write basic division facts from 1 to 8, in random order)
-- SB(M) 319a SW/DIV FACT (9's) RAN-C
(See-to-write basic division facts, 9's, with cues, in random order)
-- **TP**(M) 320a SW/DIV FACT (1-9) RANDOM
(See-to-write basic division facts, 1 to 9, in random order)
-- **DP**A SW/MIXED FACTS, +, -, ÷, x
(See-to-write mixed facts, addition, subtraction, division, and multiplication)

M-4-03.0-08-C --- SW/"÷0 = UNDEFINED

Objective 8. Recognize that division by zero is undefined.

M-4-03.0-09-C --- SW/FRACT/+/-/LIKE DENOM

Objective 9. Add and subtract fractions with like denominators.

M-4-03.0-09-G -- **TP** 01A SW/ADD FRAC, LIK DENOM, NR
(See-to-write addition of fractions with like denominators with no reduction in answer)
-- **TP** 01B SW/AD FRAC, LIK DEN, REDUC
(See-to-write addition of fractions with like denominators, with answers reduced to lowest terms)
-- **TP** 01C SW/AD FRAC, LIK DEN, RE IMP
(See-to-write addition of fractions with like denominators, with improper fraction answers reduced to mixed numbers)
-- **TP** 01D SW/AD FR, LIK D, RE/M-LCD
(See-to-write addition of fractions withlike denominators, with improper fraction answers reduced to mixed numbers with lowest terms)
-- **TP** 01E SW/AD F, LD, RE/M-LT, EQUAT
(See-to-write equation addition of fractions with like denominators, with answers reduced to mixed numbers with lowest terms)
-- **DP** 01F SW/AD F, LD, REDUCE APPROPRI
(See-to-write addition of fractions with like denominators, reduce appropriately)

M-4-03.0-09-U -- **TP** 13 BA SW/AD F, EQ, LD, REDUCE
(See-to-write equation addition of fractions with like denominators, reduce appropriately)

M-4-03.0-09-G -- **TP** 01A SW/SUB F, LD, RE-LT
(See-to-write subtraction of fractions with like denominators, reduce answer to lowest terms)
-- **TP** 01B SW/SUB F, LD, RE-LT, EQUATIO
(See-to-write equation subtraction of fractions with like denominators, reduce to lowest terms)

M-4-03.0-10-C --- SM/FRACTIONS=1

Objective 10. Identify fractions equal to 1.

M-4-03.0-10-U -- **TP** 13 AC SW/FRAC NUM=1
(See-to-write fraction numerator to equal 1)

M-4-03.0-11-C --- SW/NO REGROUP/MIX FRAC/+-

Objective 11. Add and subtract mixed and proper fractions using like denominators without regrouping.

M-4-03.0-11-U -- **TP** 13 CC SW/SUB MIX #-LD, NO RENAME
(See-to-write subtraction of mixed numbers with like denominators with no renaming in answer)

STANDARD 4 **The students will understand that geometry is used to symbolically explore the relationships of one-,two-, and three-dimensional objects in the environment by mastering the following objectives.**

M-4-04.0-01-C --- SM/LINE SEGMENT/END PTS

Objective 1. Identify a line segment by its end points.

M-4-04.0-02-C --- SM/SIMP CLOS FIG/>3 SEG

Objective 2. Identify a simple closed figure composed of three or more segments which intersect only at their end points.

M-4-04.0-03-C --- SM/3-DIMEN FIGURES

Objective 3. Identify three-dimensional figures, such as cubes, triangular pyramids, cones, cylinders, and spheres.

STANDARD 5 **The students will understand that measurement is the comparing of objects with standard units by mastering the following objectives.**

M-4-05.0-01-C --- SM/LENGTH TO 1/8 INCH ACC

Objective 1. Measure length to 1/8 inch accurately.

M-4-05.0-01-U -- **TP** 15 CC SW/MEASUREMENT-1/8 INCH
(See-to-write measurement to the nearest 1/8 inch)
-- SB 15 CC SW/MSMT-1/4 INCH
(See-to-write measurement to the nearest 1/4 inch)

M-4-05.0-00-__ --- SM/LENGTH-IN, FT, YD, MI

Objective 00. Length measurement with inches, feet, yards, or miles.

M-4-05.0-00-G -- SB 02B SW/ABBREV, IN, FT, YD, MI
(See-to-write abbreviations to words for inch, foot, yard, mile)
-- SB 02A SW/IN, FT, YD, MI, ABBREVIATI
(See-to-write abbreviations for words, inch, foot, yard, mile)
-- SB 01A SW/IN TO FT; FT TO IN
(See-to-write inches to feet or feet to inches)
M-4-05.0-00-U -- SB 15 CH SW/INCHES TO FEET
(See-to-write inches to feet)
M-4-05.0-00-G -- SB 01B SW/YD TO FT; YD TO IN
(See-to-write yards to feet or yards to inches)

-- **TP** 02 SW/MSMT CON-YD, FT, IN, MI
(See-to-write measurement conversions for yards, feet, inches, and miles)

M-4-05.0-02-C --- SM/LENGTH TO MILLIMETER

Objective 2. Measure length to nearest millimeter.

M-4-05.0-03-C --- SW/METERS = ? KILOMETERS

Objective 3. Convert meters to kilometers.

M-4-05.0-04-C --- SW/PERIMETER-GEOM FIGURE

Objective 4. Measure the perimeter of a geometric figure.

M-4-05.0-04-U -- **TP** 15 DB SW/POLYGON PERIMETER
(See-to-write the perimeter for polygons)
-- **TP** 15 DB SW/FIGURE PERIMETER
(See-to-write the perimeter for figures)

M-4-05.0-05-C --- SW/AREA = SQ UNITS

Objective 5. Give area in square units.

M-4-05.0-06-C --- SW/TIME-MN/HR/DA/WK/MO/YR

Objective 6. Measure time: minutes, hours, days, weeks, months, and years.

M-4-05.0-06-U -- **TP** 15 BE SW/CLOCK TIME TO TIME, MIN
(See-to-write clock time to time in minutes)

M-4-05.0-06-G -- **TP** 02A SW/WK-YR-CE-DEC-MIN-HR-DA
(See-to-write conversions of time for one week, year, century, decade, minute, hour, day)
-- SB 03 RW/CONV SM UN-LG UN, TIM
(Read-to-write conversion of smaller units to larger units of time)
-- SB 02 RW/CONV LG UN-SM UN, TIME
(Read-to-write conversion of larger units to smaller units of time)

M-4-05.0-07-C --- TW/APPR UNIT OF WT

Objective 7. Select an appropriate unit of weight.

M-4-05.0-07-G -- SB 01A SW/ABBREV TO WD-WT
(See-to-write abbreviations to words for weight measurements)

-- SB 01B SW/WD TO ABBREV-WT
(See-to-write weight measurement words to abbreviations, lb., oz., T., pk., bu., tbsp., tsp., C., pt., qt., gal.)

M-4-05.0-07-U -- SB 15 CI SW/EST MSMT UNIT, PICT
(See-to-write estimate measurement unit for items in pictures; oz., T., lb.)

M-4-05.0-07-G -- **TP** 02 SW/CONVERT LG UN TO SM UN
(See-to-write conversions of larger units to smaller units of measurement; lb., gal., qt., C., tb.)

-- **TP** 03 SW/CONVERT SM UN TO LG UN
(See-to-write conversions of smaller units to larger units of measurement; pts., cups, quarts, gallons)

M-4-05.0-07-U -- **TP** CI SM/APPRO MSMT FOR UNITS
(See-to-mark appropriate units of measurement for items)

STANDARD 6 **The students will understand that mathematics is used to solve problems in the environment by mastering the following objectives.**

M-4-06.0-01-C --- SW/STORY PROB/"- ____ = ?"

Objective 1. Using four-digit numbers in a story problem context, identify the subtraction process as the correct method for solution.

M-4-06.0-01-U -- **TP** 15 GA RW/STORY PROB, SUB 4-DIG#
(Read-to-write answers to story problems, subtracting 4-digit numbers)

M-4-06.0-02-C --- SW/STORY PROB/"X _ = ?"

Objective 2. Using one-digit (or two-digit) multipliers in a story problem context, identify the multiplication process as the correct method for solution.

M-4-06.0-02-U -- **TP** 15 GA RW/STORY PROB/"X__=?"
(Read-to-write answers to story problems, multiplying by one- or two-digit multipliers, with decimals and/or dollars and cents in answers)

M-4-06.0-03-C --- SW/STORY PROB/"÷ _ = ?"

Objective 3. Using a one-digit divisor in a story problem context, identify the division process as the correct method for solution.

M-4-06.0-03-U -- **TP** 15 GA RW/STORY PROB "÷ _ = ?"
(Read-to-write solutions to division story problems, using one- to two-digit divisors)

-- **TP** 15 GB RW/STORY PROB, ADD/DIV
(Read-to-write solutions to story problems using two-step solution process by adding and subtracting)

M-4-06.0-04-C --- SW/STORY PROB/+/-/x/< $100

Objective 4. Using story problem context, add, subtract, and multiply monetary denominations less than $100.00.

STANDARD 7 **The students will be aware that explorations in mathematics develop an understanding of the structure of arithmetic by mastering the following objectives.**

M-4-07.0-01-C --- SM/FACTORS OF NUMBERS

Objective 1. Recognize the factors of a number.

M-4-070-01-G
-- SB 04A SW/DIVISIBILITY-2, 5, 10, N
(See-to-write whether numbers are divisible by 2, 5, 10, or neither)
-- SB 04C SM/DIVISIBILITY, 3-Y, N
(See-to-mark if number is or is not divisible by 3)
-- SB 02J TW/MULTIPLES 2, 3, 4, 5, 6, 8, 9, 12
(Think-to-write multiples for 2, 3, 4, 5, 6, 8, 9, and 12)
-- SB 02K TW/MULTIPLES, 2-12
(Think-to-write multiples for 2, 3, 4, 5, 6, 7, 8, 9, 11, and 12)
-- SB 02L RW/MULTIPLES/LCM
(Think-to-write multiples for 2 numbers; then write least common multiples)
-- SB 02M SW/MULTIPLES/LCM-2
(See-to-write multiples of largest number of a pair until least common multiple is reached for the pair of numbers)
-- SB 02N SW/MULTIPLES/LCM-3
(See-to-write multiples of largest number of three numbers until least common multiple is reached for the three members)
-- SB 02P SW/MULTIPLE-LCM, #PAIR-CUE
(See-to-write least common multiple for number pairs, with cues)
-- SB 02Q SW/LCD-MULTIPLES
(See-to-write the lowest common denominator for number pairs by finding least common multiples)
-- SB 03A SW/FACTORS FOR NO
(See-to-write factors for numbers)
-- **TP** 03B TW/FACTORS
(Think-to-write factors for numbers to 56)
-- **DP** 03C TM/FAC-MULT-NEITHER
(Think-to-mark factors, multiples, or neither for numbers)

M-4-07.0-02-C --- SM/MATH SENT = T or F

Objective 2. Recognize that mathematical sentences can be either true or false.

M-4-07.0-03-C --- SM/FRACT UNIT OF GEOM FIG

Objective 3. Separate a geometric figure into equal parts so that each part represents a fractional portion of the original unit.

M-4-07.0-04-C --- SM/NUM/DENOM/BAR-FRACTION

Objective 4. Identify parts of a fraction as numerator, denominator, and fraction bar.

M-4-07.0-04-U -- **TP** 13 AB SM/NUMERATORS
(See-to-mark numerators of fractions)

M-4-07.0-05-C --- SM/MIX NUM/FRAC-PRO-IMPRO

Objective 5. Identify mixed numbers, proper fractions, and improper fractions.

M-4-07.0-05-G -- SB 04A SW/IMP FRAC-MIXED NO, CUES
(See-to-write improper fraction as a mixed number with cues)
-- SB 311B SW/DRAW, NAME IM FR-MIX NO
(See-to-write mixed number after drawing improper fraction on figures)
-- SB 03B SW/DRAW, NAME MIX NO=IM FR
(See-to-write improper fraction after drawing mixed number on figures)
-- SB 04C SW/DRAW, NAME IM FR-MIX NO
(See-to-write mixed number after drawing improper fraction - including putting in figure segments)
-- SB 03C SW/DRAW, NAME MIX NO=IM FR
(See-to-write improper fraction after drawing mixed number - including putting in figure segments)

SECTION V

Reference Note:

What is the meaning of the codes?

Core Curriculum → **STANDARD 1** — **The students will show numerals are symbolic representations of numbers by mastering the following objectives.**

Core Objective

M-K-01.0-01-C --- SM/REC NUM as SYM for NO

Objective 1. Recognize numerals as symbols for numbers.

Computer label for probe

M = Math
K = Kindergarten

M-K-01.0-01-PT -- TP 1 SS/NO. 1-5 (serial)
(See-to-say numbers one to five in serial order)

Description of label

-- SB 00 SW/NUM. 1-5 (serial)
(See-to-write numerals one to five in serial order)
-- SB 2 SS/NO. 1-5 (random) LG.PR
(See-to-say numbers one to five in random order)
-- TP 33 SS/NO. 0-5 (random)
(See-to-say numbers one to five in random order)
-- TP 33 SW/NUM. 1-5 (random)
(See-to-write numerals one to five in random order)
-- SS/NO. 6-10 (random)
(See-to-say numbers six to ten in random order)
-- SB 5 SS/NO. 1-10 (serial)
(See-to-say numbers one to ten in serial order)
-- TP 6 SS/NO. 1-10 (random)
(See-to-say numbers one to ten in random order)

Probes came from Precision Teaching →

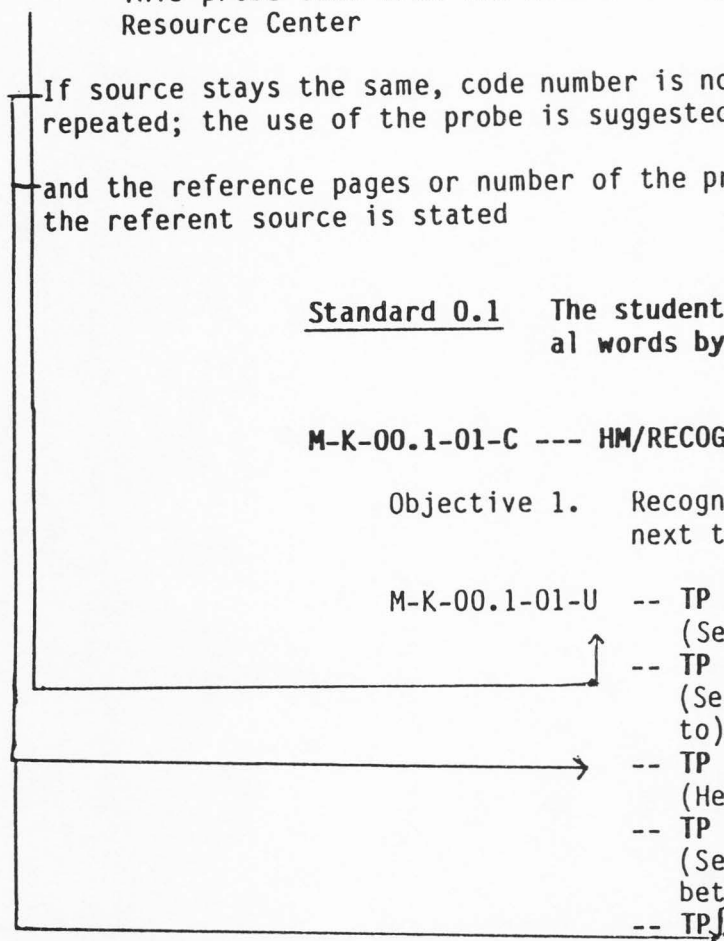
Question: How do I know the material source?

Reference Note:

What does the U mean?
This probe came from the Utah Learning Resource Center

If source stays the same, code number is not repeated; the use of the probe is suggested

and the reference pages or number of the probe in the referent source is stated



Standard 0.1 **The students will demonstrate an understanding of directional words by mastering the following objectives.**

M-K-00.1-01-C --- HM/RECOG DIRECTIONS

Objective 1. Recognize directions and mark them on grids, between, next to, over, under, left, right, first, last, middle.

M-K-00.1-01-U
-- TP 11 CA SS/OVER, UNDER DIRECTIONS
(See-to-say directions on a grid for over and under)
-- TP 11 CA SS/BETWEEN, NEXT TO-DIR.
(See-to-say directions on a grid for between and next to)
-- TP 11 CA/HM/LEFT, RIGHT-DIR.
(Hear-to-mark directions on a grid for left to right)
-- TP 11 CA SS/1st, LAST, BETWEEN, MIDDL
(See-to-say directions on a grid for first, last, between, and middle)
-- TP 11 CA SM/1st, LAST, BETWEEN, MIDDL
(See-to-mark directions on a grid for first, last, between, and middle)

M-K-02.0-02-C --- SW/REC/REP/EXT SIM PATTER

Reference Note: Objective 2. Recognize, reproduce, and extend simple patterns.

There were no probes for this Utah Core objective.

Reference Note:

The first probe came from materials developed at Utah Learning Resource Center. The second probe came from the Gems probes. The third probe also came from the Gems materials.

M-K-02.0-05-C --- SW/">"/"<"/"=" COMPARE

Objective 5. Compare items in sets to develop the idea of "greater than," "less than," and "equal to."

M-K-02.0-05-U -- TP 11 CD SM/SETS WITH SYM (>,<,=)
(See-to-mark sets with symbols for more, less, or equal)

M-K-02.0-05-G -- TP 06A SS/SYM TO NAME (>,<,=)
(See-to-say symbol names)

-- SB 06B HW/NAME TO SYM (>,<,=)
(Hear-to-write name to symbol)

Reference Note:

What is the reference source for this probe?
Utah Learning Resource Center.

M-1-02.0-07-U -- TP 11 CE SM/SETS WITH SYMBOLS, > < =, B
(See-to-mark sets with appropriate symbol of >, <, or =, Form B)

M-1-02.0-07-G -- TP 06D SM/SETS MATCH SYMBOL, > < =
(See-to-mark numbers which make sets to match symbols: >, <, and =)

What is the reference source for this probe?
GEMS - a set of materials developed for precision teaching in the Jordan School District, Utah.

Reference Note:

What do I record as the probe title in the MID Project?

You have a 27-character line on which to record your probe title. In this case, the title is SW/ADD FACTS SUM-7 V-H. You cannot use "," in the MID program because commas cue the computer to eliminate everything on the line following the comma. Omit all commas for MID probe titles.

-- SB(M) 136 SW/ADD FACTS, SUM-7, V, H
(See-to-write addition facts, sums to 7, vertical and horizontal formats)
-- SB(M) 137 SW/ADDEND MSN, -7, H
(See-to-write addition facts, sums to 7, with addends missing, horizontal format)
-- SB(M) 82 SW/ADD FACTS, 1's, SUMS 1-10, C
(See-to-write addition facts with 1's, sums one to ten with cues)
-- SB(M) 144 SW/ADD FACTS, 1's, SUMS 6-10
(See-to-write addition facts with 1's, sums six to ten)
-- SB(M) 145b SW/ADD FACTS, 1's, SUMS 1-10
(See-to-write addition facts with 1's, sums one to ten)

Reference Note:

What is the source of this probe:
TP(M)?

Precision Teaching - look at the reference from the preceding reference probe which is written.

M-1-02.0-07-C --- SM/">""<" COMP NO to 99

Objective 7. Use the concepts of "less than" and "greater than" to compare numbers to 99.

M-1-02.0-07-PT -- DP(M) 342 SS/NAME SYMBOLS, + = < >
(See-to-say the names for symbols for addition, subtraction, equal, less than, greater than)
-- TP(M) 341 SM/SET WITH SYMBOL, > < +, A
(See-to-mark sets with appropriate symbol of >, <, or =, Form A)

M-K-01.0-02-C --- SM/REC CARD NUM to SET-10

Objective 2. Recognize cardinal numbers (counting numbers to ten) are used to designate the numbers of items within a set (0-10).

Reference Note:

M-K-01.0-02-PT -- TP (M) 328 SW/SET TO NUMS 1-5
(See-to-write a numeral to represent the number in a set of 1-5)
Both from PT
-- SB (M) 331 SW/SET TO NUM, 6-10
(See-to-write a numeral to represent the number in a set of 6-10)

Reference Note:

M-K-01.0-02-U -- TP 11 BA SW/SET TO NUM, 1-9
(See-to-write a numeral to represent the number in a set, 1-9)

Taken from Utah Learning Resource Center materials

M-3-03.0-07-C --- SW/PERFORM BASIC DIV "÷_"

Objective 7. Perform division using the basic division facts. (Single digit divisor.)

M-3-03.0-07-PT -- SB(M) 289 SW/DIV (÷1) C
(See-to-write division, ÷1, with single-digit answers, with cues)
-- SB(M) 290 SW/DIV (÷2)C-FORM A
(See-to-write division, ÷2, with single-digit answers, with cues, Form A)
-- SB 484 SW/DIV (÷2)C-FORM B
(See-to-write division, ÷2, with single-digit answers, with cues, Form B)
-- TP 486 SW/DIV (÷2)
(See-to-write division, ÷2, with single-digit answers)
-- SB(M) 291 SW/DIV (÷3)C-FORM A
(See-to-write division, ÷3, with single-digit answers, with cues, Form A)
-- SB 488 SW/DIV (÷3)C-FORM B
(See-to-write division, ÷3, with single-digit answers, with cues, Form B)
-- TP 490, SW/DIV (÷1, 2, 3)
(See-to-write division, ÷ 1, 2, or 3, with single-digit answers)

What does the C tell me in the abbreviated probe descriptor?
All the division facts with single-digit answers with "÷1" are written with answers at the top of the probe.

M-3-03.0-04-PT-C --- S/W/"__ X _"/REGROUPING

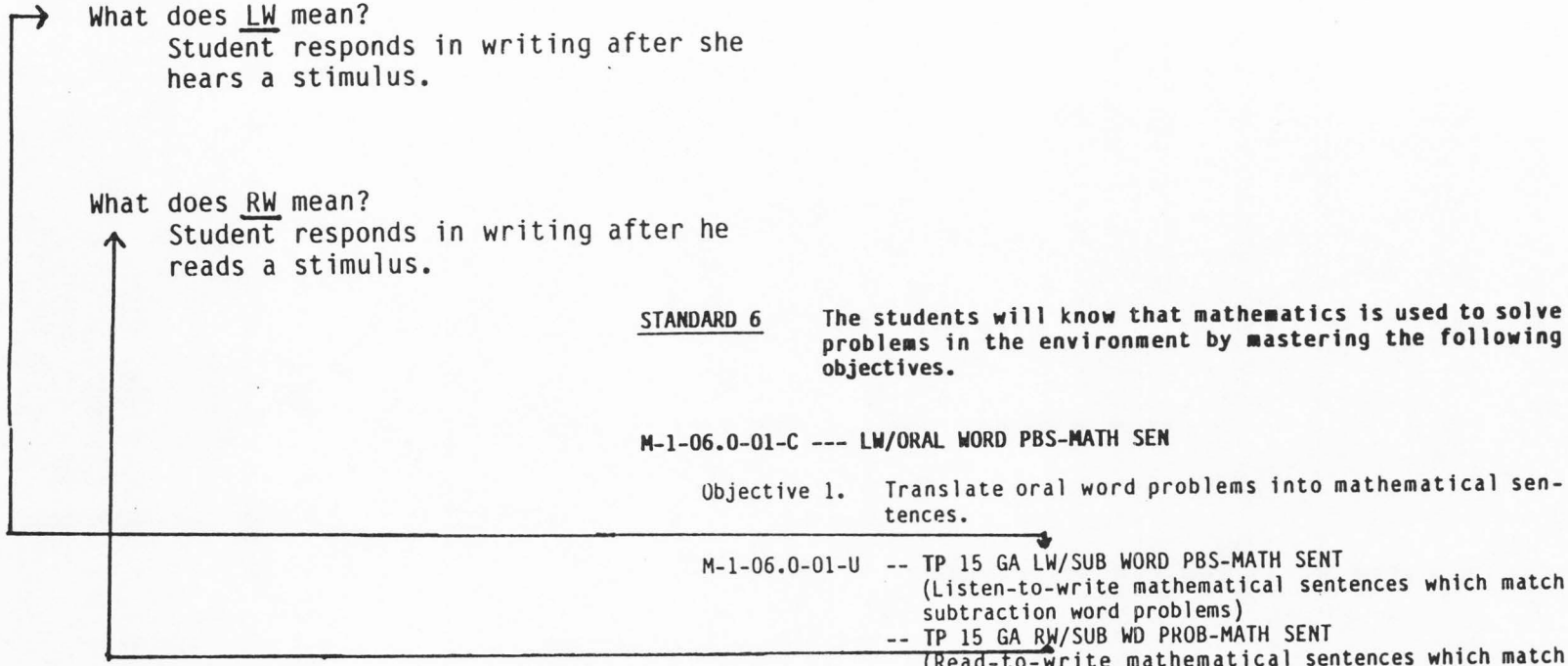
Objective 4. Multiply a two-digit numeral by a one- (or two-) digit numeral with regrouping.

M-3-03.0-04-PT -- SB 466 SW/"__ X _"/REGROUPING
(See-to-write multiplication, 2 columns, with 1-digit multiplier with regrouping)
-- TP 466 SW/"__ X _"/REGROUPING
(See-to-write multiplication, 2 columns, with 1-digit multiplier with regrouping)
-- DP 468 SW/"__ X __"/REGROUPING
(See-to-write multiplication, 2 columns, with a 2-digit multiplier with regrouping)

Reference Note:

What does it mean when something is added in parentheses to the Core Objective?
The addition represents a skill or subskill which is not integrated in the core curriculum objectives, but which is a prerequisite for later skills in the developmental sequence of the Core Objectives.

Reference Note:



STANDARD 6 **The students will know that mathematics is used to solve problems in the environment by mastering the following objectives.**

M-1-06.0-01-C --- LW/ORAL WORD PBS-MATH SEN

Objective 1. Translate oral word problems into mathematical sentences.

M-1-06.0-01-U -- TP 15 GA LW/SUB WORD PBS-MATH SENT
(Listen-to-write mathematical sentences which match subtraction word problems)
-- TP 15 GA RW/SUB WD PROB-MATH SENT
(Read-to-write mathematical sentences which match subtraction word problems)

M-1-02.0-02-PT -- TP 54 SM/10's TO 100
(See-to-mark every tenth numeral by counting by 10's to 100)

M-1-02.0-02-U -- SB 11 BI SW/10>, 10< NO. GIVEN
(See-to-write numeral that is 10 greater than the number given; that is 10 less than the number given)

Reference Note:
What does SM Mean?
-The student responds by seeing (looking) an item and the marking it in some way, specified on the probe; in this instance, the student must circle the correct response.

-- SB 11 BD SS/NUMBERS, 60-69, RANDOM
(See-to-say numbers, 60 to 69, in random order)

-- SB 11 BD SS/NUMBERS, 70-79, RANDOM
(See-to-say numbers, 70 to 79, in random order)

-- SB 11 BD SS/NUMBERS, 80-89, RANDOM
(See-to-say numbers, 80 to 89, in random order)

-- SB 11 BD SS/NUMBERS, 90-99, RANDOM
(See-to-say numbers, 90 to 99, in random order)

-- SB 11 BB TS/THINK TO SAY NO., 1-100
(Think-to-say numbers from 1 to 100)

M-1-02.0-01-PT -- SB(M) 025 SW/N 0-100, SERIAL, CUE
(See-to-write numerals from 0 to 100 in serial order with cues)

Reference Note:

What does the (M) mean in the reference page numbers?
This was a probe taken from the older edition of the Precision Teaching material developed at Great Falls, Montana.

M-1-02.0-01-U -- TP 11 BC SW/MSN NO, 1-99, SERIAL
(See-to-write missing numbers in serial order, 1 to 99)

M-1-02.0-02-C --- TS/1-5-10 to 100/2 to 20

Objective 2. Count numbers by 1's to 100, by 2's to 20, by 5's to 100, and by 10's to 100.

M-1-02.0-02-G -- TP 02A TW/2's TO 30
(Think-to-write by 2's to 30)

-- TP 02B TW/3's TO 36
(Think-to-write by 3's to 36)

Reference Note:

What does TW mean?
The student's response mode will be to first think of the correct response, then to write it.

M-1-02.0-02-PT -- SB 44 SM/5's TO 100
(See-to-mark every fifth numeral by counting by 5's to 100)

M-1-02.0-02-G -- TP 02D TW/5's TO 100
(Think-to-write by 5's to 100)

M-1-02.0-02-U -- SB 11 BH SM/5's PATTERN
(See-to-mark patterns of numerals which represent 5's sequence)

Reference Note:

What is TP?
In this case, the test probe (TP) tests subskills.

M-1-03.0-05-PT -- SB(M) 82 SW/ADD FACTS +1 TO 10C
(See-to-write addition facts, +1, to 10, with cues)
-- TP(M) 144a SW/ADD FACTS +1 TO 10-A
(See-to-write addition facts, +1, to 10, Form A)
-- TP(M) 145a, SW/ADD FACTS +1, TO 10-B
(See-to-write addition facts, +1, to 10, Form B)
-- SB(M) 83 SW/ADD FACTS 2's, SUM 2-11C
(See-to-write addition facts, +2, to 11, with cues)
-- SB(M) 146a SW/ADD FACTS 2's, SUM 5-11-A
(See-to-write addition facts, 2's, with sums from 5 to 11, Form A)
-- SB(M) 147a SW/ADD FACTS 2's, SUMS 5-11-B
(See-to-write addition facts, 2's, with sums from 5 to 11, Form B)
-- TP 99 SW/ADD FACTS 1's and 2's, -11, A
(See-to-write addition facts, 1's and 2's, with sums up to 11, Form A)
-- TP(M) 149a SW/ADD FACTS, 1's and 2's, -11, B
(See-to-write addition facts, 1's and 2's, with sums up to 11, Form B)
-- SB(M) 84 SW/ADD FACTS 3's, SUMS 3-12-C
(See-to-write addition facts, 3's, with sums from 3 to 12, with cues)
-- SB(M) 150a SW/ADD FACTS 3's, SUMS 3-8
(See-to-write addition facts, 3's, with sums from 3 to 8)
-- SB(M) 151a SW/ADD FACTS 3's, SUMS 8-12
(See-to-write addition facts, 3's, with sums from 8 to 12)
-- SB(M) 152a SW/ADD FACTS 3's, SUMS 3-12
(See-to-write addition facts, 3's, with sums from 3 to 12)
-- TP 99 SW/ADD 0,1,2,3, SUMS 0-10
(See-to-write additon facts, with 0's, 1's, 2's, or 3's, with sums from 0 to 10)
-- TP(M) 153a SW/ADD FACTS, 1,2,3-12
(See-to-write addition facts, 1's, 2's, or 3's with sums up to 12)
-- SB 146 SW/ADD 4's, SUMS 4-12
(See-to-write addition facts, 4's, with sums up to 12) corrected
-- SB(M) 154a SW/ADD FACTS, 4's, SUMS 4-9
(See-to-write addition facts, 4's, with sums from 4 to 9)
-- TP 148 SW/ADD 1,2,3,4, SUMS 2-12
(See-to-write addition facts, 4's, with sums from 2 to 12) corrected

Instructional Note:

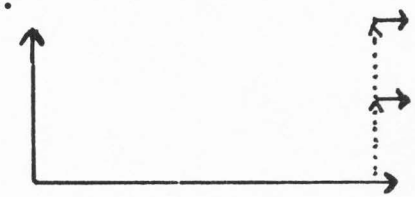
Notice that these subskills are incremental. Students may be tested at several levels in the developmental sequence of skills which are related to a core objective. Appropriate placement along this continuum of skill development is a process of personalizing instruction and/or practice. Individual student needs vary.

The SB's are arranged in hierarchial incremental steps. This allows for personalization of pacing of the skill development. Some students can learn larger "chunks" of material than others. In error analysis, a teacher may identify different areas of needs for subskill instruction and/or practice. Example: Student A may need extra practice in SB(M) 15ba SW/ADD FACTS 3's, SUMS 8-12; another may need instruction and practice with the probe with cues - SB(M) 84 SW/ADD FACTS 3's, SUMS 3-12-C.

Question: How do you use the DP and TP here?

Instructional Note:

The DP might be used to diagnose students' skills in division. Then if slice-back instruction and/or practice occurs, the TP can be used. Also, the DP includes the skill of dividing by 0.



-- TP 512 SW/DIV (÷1 TO ÷9) FORM A
(See-to-write division, ÷1, 2, 3, 4, 5, 6, 7, 8, or 9, with single-digit answers, Form A)

-- TP 001 SW/DIV (÷1 TO ÷9) FORM B
(See-to-write division, ÷1, 2, 3, 4, 5, 6, 7, 7, or 9, with single-digit answers, Form B)

-- DP 480 SW/DIV (÷0 TO ÷9) FORM A
(See-to-write division, ÷0, 1, 2, 3, 4, 5, 6, 7, 8, or 9, with single-digit answers, Form A)

-- DP 12 DB SW/DIV (÷0 TO ÷9) FORM B
(See-to-write division, ÷0, 1, 2, 3, 4, 5, 6, 7, 8, or 9, with single-digit answers, Form B)

M-3-03.0-07-U -- DP 12 DB SW/DIV (÷1 TO ÷9)
(See-to-write division, ÷1 to ÷9, with single-digit answers)

M-1-03.0-04-C --- SM/ADD & SUB AS INVER OPER

Objective 4. Recognize addition and subtraction as inverse operations.

M-1-03.0-04-PT -- TP(M) 203 SW/INVERSE, SUM-DIF, +5, H
(See-to-write inverse relations between sums and differences related to sums of 5, horizontal format)
-- SB(M) 204 SW/MSN ADN, INV, SUM 5 OR LESS
(See-to-write missing addends in horizontal facts with inverse relations)
-- DP(M) 209 SW/INV REL, + & -, H & V, TO 7
(See-to-write missing addends and answers to horizontal and vertical addition and subtraction problems)
-- DP(M) 210 SM/SETS (+ & -), > < =
(See-to-mark sets of addition and/or subtraction problems and answer as greater than [>], less than [<], or equal to [=])

Reference Note:

What is vertical format?
Example:
$$\begin{array}{r} 5 \\ -1 \\ \hline 4 \end{array}$$

Instructional Note:

What is horizontal format?
Example: 3 + 1 = 4

Instructional Note:

What is the difference between a diagnostic probe (DP) and a test probe (TP)?
The DP assesses skills over two or more objectives. In this case, it tests Objective M-1-03.0-06-C and Objective M-1-03.0-05-C (pp. 11-15).

-- TP 116 SW/ADD, SUMS 14-17
(See-to-write addition facts with sums from 14 to 17, with one addend a 2-digit column in some problems)
-- SB 106 SW/AD, SUM-18, 2 DIGIT COLC
(See-to-write addition facts with sums up to 18 with one addend a 2-digit column in some problems, with cues)
-- TP 118 SW/ADD, SUMS 15-18
(See-to-write addition facts with sums from 15 to 18, with one addend a 2-digit column in some problems)
-- SB 68 SW/ADD SUMS 11-18
(See-to-write addition facts with sums from 11 to 18, single digit addends)
-- DP 70 SW/ADD SUMS 0-18A
(See-to-write addition facts with sums from 0 to 18, Form A)
-- DP 185 SW/ADD SUMS 0-18B
(See-to-write addition facts with sums from 0 to 18, Form B)
-- TP(M) 98 SW/ADD SUMS 11-18, HORIZ
(See-to-write addition facts with sums from 11 to 18, horizontal problems)

Instructional Note:

How do I use two forms (A and B)?
Two forms make it possible to alternate the forms for probes. Students are less likely to memorize the answers.

What does SS/ mean?
This tells you the student's response modes. First, the student looks at the item (see), then she says the correct response orally.

STANDARD 1 The students will recognize that numerals are symbolic representations for identifying numbers by mastering the following objectives.

M-1-01.0-01-C --- SM/NO. 0-100

Objective 1. Recognize numbers from 0 to 100.

M-1-01.0-01-U -- SB 11 BD SS/NO. 1-10
(See-to-say numbers from one to ten)
-- SB 11 BE RW/WORDS TO NUM. RANDOM (0-9)
(Read-to-write number words to numerals, 6 to 9)
-- SB 11 BG RW/WORD-NUM, RANDOM (1-10)
(Read-to-write number words to numerals, 1 to 10)
M-1-01.0-01-PT -- SB 37 SS/NUM 1-100, SERIAL
(See-to-say numerals to numbers in serial order, 1 to 100)
M-1-01.0-01-U -- TP 11 BD SS/NUM, 1-100, RANDOM-A
(See-to-say numerals to numbers in random order [Form A], 1 to 100)
M-1-01.0-01-PT -- TP 11 SS/NUM, 1-100, RANDOM-B
(See-to-say numerals to numbers in random order [Form B], 1 to 100)
-- TP 472 TW/NUM-SERIAL ORDER
(Think-to-write numerals in serial order)

Instructional Note:

What is the assumption regarding prior learning?

M-1-03.0-06-C --- SW/ADD SUMS to 18 W/OBJS (W/O OJBS)

Objective 6. Perform addition for sums to 18 using objects.

M-1-03.0-06-PT -- SB(M) 85 SW/AD FACT, 4's, SUMS 4-13, C-A
(See-to-write addition facts, 4's, with sums from 4 to 13, with cues, Form A)
-- SB(M) 156a SW/AD FACT, 4's, SUMS 4-13, C-B
(See-to-write addition facts, 4's, with sums from 4 to 13, with cues, Form B)
-- SB(M) 155a SW/ADD FACT, 4's, SUM 9-13C
(See-to-write addition facts, 4's, with sums from 9 to 13, with cues)
-- TP(M) 157a SW/ADD 1's, 2's, 3's, 4's, -13
(See-to-write addition facts: 1's, 2's, 3's, 4's; with sums up to 13)

The student has mastered a skill at an appropriate accuracy and fluency rate: M-1-03.0-05-C--- SW/ADD FACTS TO 12, a Core Objective. The test probe (TP) for this skill is TP 148 SW/ADD 1,2,3,4,SUMS 2-12. It can be used to determine mastery of prerequisite skills (see p.12, Level 1).

Objective 3. Recognize zero is used to designate the number of elements in the empty set.

Reference Note:

What does ST/NUM "0" mean?
The line under the abbreviated form of the probe name describes the probe in more detail (See-to-trace the numeral "0"). In this case, the SB probe can be used for instruction and/or practice.

M-K-01.0-04-C --- SW/READ/WRITE 0-10

Objective 4. Read and write numerals from 0 to 10.

M-K-01.0-04.PT -- SB 00 ST/NUM. "0"
(See-to-trace the numeral "0")
-- SB 12 ST/NUM. "1"
(See-to-trace the numeral "1")
-- SB 13 ST/NUM. "2"
(See-to-trace the numeral "2")
-- SB 14 ST/NUM. "3"
(See-to-trace the numeral "3")
-- SB 15 ST/NUM. "4"
(See-to-trace the numeral "4")
-- SB 16 ST/NUM. "5"
(See-to-trace the numeral "5")
-- SB 21 SW/NUM. "0"
(See-to-write the numeral "0")
-- SB 22 SW/NUM. "1"
(See-to-write the numeral "1")
-- SB 23 SW/NUM. "2"
(See-to-write the numeral "2")
-- SB 24 SW/NUM. "3"
(See-to-write the numeral "3")
-- SB 25 SW/NUM. "4"
(See-to-write the numeral "4")
-- SB 26 SW/NUM. "5"
(See-to-write the numeral "5")
-- SB 31 SW/NUM. 1-5 (serial)
(See-to-write numerals one to five in serial order)

Instructional Note:

The probes in the hierarchial sequential development of skills which are needed to master the objective may be used in a variety of ways:

-- for a slice back, break a skill down into small components for instruction and remediation practice
-- for additional practice on a particular skill component
-- for a developmental instructional sequence

Instructional Note:

Developmental lessons and slice-back lessons can start/go back to any step in this sequential hierarchy. Also, students do not always follow the same hierarchy of skills development. Sometimes there are gaps/holes in their skill development. Not all students need to do all the probes.

-- SB 00 SS/NUM. 0-5 (serial)
(See-to-say numerals one to five in serial order)
-- SB 00 SW/NUM. 0-5 (serial)
(See-to-write numerals one to five in serial order)
-- SB 7 SS/NUM. 0-9 (serial)
(See-to-say numerals one to nine in serial order)
-- SB 4 SS/NUM. 6-10 (random)
(See-to-say numerals six to ten in random order)
-- SB 8 SS/NUM. 0-9 (random)
(See-to-say numerals zero to nine in random order)
-- SB 17 ST/NUM. 6
(See-to-trace the numeral 6)
-- SB 18 ST/NUM. 7
(See-to-trace the numeral 7)
-- SB 19 ST/NUM. 8)
(See-to-trace the numeral 8)
-- SB 20 ST/NUM. 9
(See-to-trace the numeral 9)