

ELEMENTARY MATH SKILLS CONTINUUM

**Texas School for the Blind and Visually Impaired
1978**

This continuum was prepared by committees of teachers in the elementary program.

The teachers who were in the program are:

Eddie langdon
John Campbell
Roland Cardenas
Dorothea Collier
Sidney Cozby
Carol Frank
Irene Harlan
Marcia Hopkins
Peggy Jones
Paulette Kamenitsa
Rita Livingston
Maurine Lloyd
Marion Morrison
Paula Pendergast
Betty Purcell
Bonnie Rudel
Kathy Shafer
Barbara Shaw
Mildred Smith
Linda Spence
Myra Trout
Carol Vaughn

CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
CLUSTER 1					
1. Given three objects, picks the two that are the same					
2. Given a group of objects, picks the two that are the same					
3. Given a group of four objects, picks the one that is different					
CLUSTER 2					
1. Sorts according to shape					
2. Sorts according to size					
3. Sorts according to length					
4. Identifies big and little					
5. Identifies larger and smaller					
6. Identifies largest and smallest up to sets of 5 objects					
CLUSTER 3					
1. Matches one-to-one					
2. Given 2 groups with neither having more than 5 objects, finds the group which has more or less					
3. Locates first, middle and last in a group					
4. Counts orally from 0-3					
5. Identifies teacher constructed sets of 0-3					
6. Counts orally by pointing to an object and saying the appropriate number from 0-3					
17. Selects or construct a set that contains as many objects as a given number from 0-3					
CLUSTER 4					
1. Counts orally from 4-10					
2. Identifies teacher constructed sets from 4-10					
3. Counts orally by pointing to an object and saying the appropriate number from 4-10					
4. Selects or constructs a set that contains as many objects as a given number from 4-10					

CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
CLUSTER 5					
1. Matches a numeral with a verbal and concrete number up to 5					
2. Writes numerals in sequence (0-5),					
3. Matches a numeral with a verbal and concrete number up to 10					
4. Writes numerals in sequence (0-10)					
5. Writes numerals in sequence from any given sequence (0-10)					
CLUSTER 6					
1. Matches groups having equal numbers of objects up to ten					
2. Determines when there are enough, not enough, too many objects in a group to Matches specified number up to 10					
3. Finds group having more, less, or the same number of objects as a given group up to 10					
4. Identifies what number comes before and after a given number or between two numbers up to 10					
5. Identifies what number is greater than or less than a given number up to 10					
CLUSTER 7					
1. Identifies the signs > and < (defer this step for Braille students)					
2. Places <, or > between two numbers (up to 10) to make a true statement (orally for Braille students)					
3. Given 2 sets, demonstrates the meaning of "equal", using the word verbally					
4. Recites the first ten original numbers					
5. Locates an object of given number in a group of ten objects (e.g., fourth object)					
6. Places the sign between two numbers (up to 10) to make a true statement					
CLUSTER 8 (First Written Pre-Test)					
1. Demonstrates the union of two sets using the term plus to form a new set up to 5					
2. Adds sums to 5					
3. Finds the missing addends					
4. Writes an addition equation using symbols (0-5)					

CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
CLUSTER 9					
1. Demonstrates the separation of a set using the term minus to form a new set up to 5					
2. Subtracts combinations 0-5					
3. Finds missing subtrahends					
4. Writes a subtraction equation using symbols (0-5)					
5. Adds and subtracts when problems are mixed (0-5)					
CLUSTER 10					
1. Understands that the line takes the place of the equal sign in vertical form					
2. Adds in vertical form (0-5)					
3. Subtracts in vertical form (0-5)					
4. Adds and subtracts in vertical form when problems are mixed					
CLUSTER 11					
1. Adds sums to 10					
2. Finds missing addends to 10					
3. Writes addition equations with sums to 10					
CLUSTER 12					
1. Subtracts combinations 6-10					
2. Finds missing subtrahends and minuends					
3. Writes subtraction equations 0-10					
4. Adds and subtracts when problems are mixed using both vertical and horizontal equations					
5. Solves story problems using addition and subtraction facts					
6. Adds using the associative property					
CLUSTER 13 ABACUS SKILLS (Abacus should be used as a check. The child should not become dependent on abacus for all work.) (Optional for print students)					
1. Define set, clear, columns, bead value, and horizontal bar					
2. Counts on abacus through 9					
3. Adds to 4 and subtract from 4					
4. Adds to 9 and subtract from 9					
CONCEPTS	Pre-Test		Post-Test		

	Date	✓	1st	2nd	3rd
CLUSTER 14					
1. Counts orally to 100 by tens					
2. Counts orally from 11-30					
3. Associates groups of tens with appropriate numeral					
4. Writes to 100 by tens					
5. Group by tens and ones					
6. Writes numerals in order (11-30)					
7. Writes numerals in order from any given numeral within 11-30					
8. Writes $>$, $<$, $=$ (0-30) *Teach Braille signs for $>$, $<$, and $=$					
CLUSTER 15					
1. ABACUS SKILLS Counts to 90 by tens on abacus					
2. ABACUS SKILLS Sets any numeral to 30 on abacus					
3. Counts orally to 100					
4. Counts orally to 100 from any given number					
CLUSTER 16					
1. Writes numerals in order to 100					
2. Writes numerals in order to 100 from any given number					
3. Writes $>$, $<$, $=$ (0-100)					
4. Counts to 100 on abacus					
5. Sets numerals to 100 on abacus					
CLUSTER 17					
1. Adds to sums of 12					
2. Subtracts to combinations of 12					
3. Finds missing addends to 12					
4. Finds missing subtrahends to 12					
CLUSTER 18					
1. Counts by twos from 0					
2. Counts by twos from 1					
3. Identifies even numbers					
CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd

4. Identifies odd numbers					
5. Counts by fives to 100					
6. Writes tens in order to 300					
7. Writes numerals in expanded or compact form					
CLUSTER 19					
1. Adds a number less than 10 using a basic fact					
2. Subtracts a number less than 10 using a basic fact					
3. Adds sums 13-16 in equation form					
4. Subtracts combinations 13-16 in equation form					
5. Finds missing addends, equation form					
6. Finds missing subtrahends, equation form					
7. Adds sums 13-16, vertical form					
8. Subtracts combinations 13-16, vertical form					
9. Finds missing addends 13-16, vertical form					
10. Finds missing subtrahends 13-16, vertical form					
CLUSTER 20					
1. Identifies coins, penny, nickel, dime					
2. Names the value of coins, penny, nickel, dime					
3. Names the value of sets of coins containing pennies, nickels, and dimes					
4. Matches equivalent sets of coins containing pennies, nickels, and dimes					
5. Demonstrates how many pennies, nickels, and dimes are needed to make specified amounts					
CLUSTER 21					
1. Adds sums of 17-18, equation form					
2. Subtracts combinations of 17-18, equation form					
3. Finds missing addends 17-18, equation form					
4. Finds missing subtrahends 17-18, equation form					
5. Adds sums of 17-18, vertical form					
6. Subtracts combinations of 17-18, vertical form					
CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
7. Finds missing addends, vertical form					

8. Finds missing subtrahends, vertical form					
9. Adds using the associative property					
10. Writes <, >, = in problems (17-18)					
CLUSTER 22					
1. Reads and writes number names zero-ten					
2. ABACUS SKILLS Adds and subtracts all combinations to 14 on the abacus					
3. Adds and subtracts all combinations using 14-18 on the abacus					
4. Does story problems using addition and subtraction concepts 0-18					
CLUSTER 23					
1. Marks halves of regions					
2. Marks halves of sets					
3. Matches numeral "1/2" with appropriate number					
4. Marks fourths of regions					
5. Marks fourths of sets					
6. Matches numeral "1/4" with appropriate number					
7. Marks three fourths of regions, sets					
8. Matches "3/4" with appropriate number					
9. Marks thirds of regions					
10. Marks thirds of sets					
11. Matches "1/3" and "2/3" with appropriate number					
12. Writes numerals to Identifies fractional numbers 1/2, 1/4, 3/4, 1/3, 2/3					
CLUSTER 24					
1. Marks longest and shortest objects					
2. Uses ruler to measure in inches					
3. Measures length to 1/2 inch					
4. Measures liquid in cups., pints, and quarts					
5. Measures time to the hour					
6. Measures time to the 1/2 hour					
CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
7. Measures time to the 1/4 hour					
CLUSTER 25					

1. Adds tens equation form					
2. Adds tens vertical form					
3. Subtracts tens equation form					
4. Subtracts tens vertical form					
5. Adds 2-digit numbers without renaming - 3 step form					
6. Adds 2-digit numbers without renaming - short form					
CLUSTER 26					
1. Subtracts 2-digit numbers involving multiples of 10, expanded form					
2. Subtracts 2-digit numbers without renaming, expanded form					
3. Subtracts without renaming, column form					
4. Subtracts 2-digit numbers, without renaming, short form					
5. Adds and subtracts without carrying or borrowing through 99					
6. Reads and writes number names ten-one hundred					
7. Does story problems using addition and subtraction concepts through 99					
CLUSTER 27					
1. Matches curves that are the same shape and size					
2. Marks closed curves					
3. Writes names for points inside, outside and on closed curves					
4. Draws closed curves with points inside, outside, and on the curve (omit for Braille)					
5. Marks circles					
6. Marks triangles					
7. Marks rectangles					
8. Marks squares					

CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
CLUSTER 28					
1. Adds tens to tens and ones					
2. Adds a number less than 10, expanded form					
3. Adds a number less than 10, short form					
4. Adds one and two digit numbers					
CLUSTER 29					
1. Adds 2 digit numbers with renaming, expanded form					
2. Adds 2 digit numbers with renaming, 3-step form					
3. Adds 2 digit numbers with renaming, short form					
4. Adds 2 digit numbers using the associative property					
CLUSTER 30 ABACUS SKILLS					
Repeat same skill sequence as in CLUSTER 29 except using the abacus. This cluster is optional for print students.					
CLUSTER 31					
1. Subtracts a number less than 10 with renaming					
2. Subtracts 2-digit numbers involving a multiple of 10 - short form					
3. Subtracts 2-digit numbers with renaming - expanded form					
4. Subtracts 2-digit numbers with renaming - short form					
5. Does story problems using 2-digit numbers in addition and subtraction					
CLUSTER 32 ABACUS SKILLS					
Repeat same skill sequence as in CLUSTER 31 except using the abacus. This cluster is optional for print students.					
CLUSTER 33					
1. Identifies coins, penny, nickel, dime and quarter					
2. Names value of sets of coins containing penny, nickel, dime, quarter					
3. Matches equivalent sets of coins with pennies, nickels, dimes, quarters					
4. Marks how many pennies, nickels, dimes, and quarters are needed to make specified amounts					
CONCEPTS	Pre-Test		Post-Test		

	Date	✓	1st	2nd	3rd
CLUSTER 34					
1. Represent points with dots					
2. Writes names for points					
3. Identifies lines and line segments					
4. Writes names for line segments					
5. Finds the length of line segments					
CLUSTER 35					
1. Associates groups of tens with appropriate numeral to 800					
2. Writes hundreds + tens + ones in compact form					
3. Expand 3-digit numbers into hundreds + tens + ones					
4. Writes 3-digit numbers associated with number word					
5. Adds 3-digit numbers in expanded form					
6. Adds 3-digit numbers in short form					
7. Writes >, <, = with hundreds					
CLUSTER 36					
1. Subtracts 3-digit numbers in expanded form					
2. Subtracts 3-digit numbers in short form					
CLUSTER 37 ABACUS SKILLS					
Repeat same skill sequence as in CLUSTERS 35 & 36 except using the abacus. This cluster is optional for print students.					
CLUSTER 38					
1. Join points to make curves					
2. Marks simple and not simple curves					
3. Matches shapes					
4. Matches shapes to their names					
5. Names simple closed curves by points					
CLUSTER 39					
1. Describe sets					
2. Writes {} in naming sets					
CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd

3. Lists members of sets					
4. Names cardinal numbers of sets by writing appropriate numeral					
5. Lists members of subsets					
6. Names sets as finite or infinite					
7. Uses addition and subtraction rules to form sets of number pairs					
CLUSTER 40					
1. Associates groups of hundreds with appropriate numeral					
2. Writes thousands, hundreds, tens, and ones in compact form					
3. Expand a 4-digit numeral into thousands, hundreds, tens, ones.					
4. Writes 4-digit numeral associated with number word					
CLUSTER 41					
1. Associates groups of thousands with appropriate numeral					
2. Writes 5-digit numeral in compact form					
3. Writes 5-digit numeral in expanded form					
4. Writes 5-digit numeral associated with number word					
CLUSTER 42 ABACUS SKILLS					
Repeat same skill sequence as in CLUSTERS 40 & 41 except using the abacus. This cluster is optional for print students.					
CLUSTER 43					
1. Associates groups of ten thousands with appropriate numeral					
2. Writes 6-digit numeral in compact form					
3. Writes 6-digit numeral in expanded form					
4. Writes 6-digit numeral associated with numeral					
5. Writes numerals to millions					
CLUSTER 44 ABACUS SKILLS					
Repeat same skill sequence as in CLUSTER 43 except using the abacus. This cluster is optional for print students.					

CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
CLUSTER 45					
1. Identifies coins, penny, nickel, dime, quarter, and half-dollar					
2. Writes the value of sets of coins including pennies, nickels, dimes, quarters, and half-dollar					
3. Marks how many pennies, nickels, dimes, quarters, and half-dollars are needed to make specified amounts					
4. Names value in cents of sets of money using pennies, nickels, dimes, quarters, half-dollars, and dollars					
5. Makes change from sets of money with pennies, nickels, dimes, quarters, half-dollars, and dollars					
CLUSTER 46					
1. Measures length in feet and inches to 1/4 inch or 1/2 inch where appropriate					
2. Measures length in yards, feet, and inches					
3. Tell time past the hour and to the hour					
4. Tell time to five minutes					
5. Uses the calendar					
6. Names equivalent measures of time in minutes, days, hours					
CLUSTER 47					
1. Multiplies by joining two equivalent sets					
2. Shows meaning of X					
3. Shows meaning of factor by marking appropriate number					
4. Shows meaning of product by marking appropriate number					
CLUSTER 48					
1. Multiplies with 2 as a factor - equation form					
2. Finds missing factors - equation form (2 as a factor)					
3. Multiplies with 2 as a factor vertical form					
4. Shows commutative property of multiplication					

CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
CLUSTER 49					
1. Multiplies by joining 3, 4, and 5 equivalent sets					
2. Multiplies with 3, 4, and 5 as a factor - equation form					
3. Finds missing factors with 3, 4, or 5 as a factor - equation form					
4. Multiplies with 3, 4, or 5 as a factor - vertical form					
5. Finds missing factors - vertical form					
6. Translate word problems to equation form and solve equation					
7. Uses multiplication order rule to complete sets of number pairs					
CLUSTER 50 ABACUS SKILL					
1. Compute all multiplication facts through 5 including setting the problem and the answer on the abacus					
CLUSTER 51					
1. Divides by finding numbers of sets of 2					
2. Identifies factor in division by marking appropriate number					
3. Identifies product in division by marking appropriate number					
4. Divides with 2 as a factor - equation form					
5. Divides with 3, 4, or 5 as factors - equation form					
6. Writes a family of facts for each set of 2 factors and a product					
7. Solves division word problems					
CLUSTER 52 ABACUS SKILLS (Optional for print students)					
Sets and solves a division problem on the abacus using number facts through 5.					
CLUSTER 53					
1. Marks fifths of regions					
2. Marks fifths of sets					
3. Matches $\frac{1}{5}$ and $\frac{4}{5}$ to appropriate numbers					
4. Writes numerals to Identifies $\frac{1}{5}$ and $\frac{4}{5}$					
5. Names fractional parts of a line					
6. Associates fractions with division					
CONCEPTS	Pre-Test		Post-Test		

	Date	✓	1st	2nd	3rd
7. Writes different names for the same fractional number using fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{5}$					
8. Writes $>$, $<$, $=$ with fractional numbers					
CLUSTER 54 ABACUS SKILLS (Optional for print students)					
Sets fractions on the abacus					
CLUSTER 55					
1. Adds hundreds and tens using column method					
2. Adds 3-digit numbers, renaming tens as hundreds					
3. Adds 3-digit numbers, renaming tens as hundreds, and ones as tens					
4. Adds hundreds and tens, renaming hundreds as thousands					
CLUSTER 56 ABACUS SKILLS					
Does concepts from Cluster 55 on abacus.					
CLUSTER 57					
1. Multiplies numbers with common factors (0-5)					
2. Multiplies using 6, 7, 8, and 9 as factors					
3. Multiplies with common factor (0-9)					
CLUSTER 58 ABACUS SKILLS					
Multiplies numbers with common factors (0-9) on abacus					
CLUSTER 59					
1. Identifies factors by marking appropriate number					
2. Identifies product by marking appropriate number					
3. Divides using the sign $\overline{) \quad}$ with factors 1-9					
4. Divides using the sign \div with factors 1-9					
5. Uses multiplication and division rules to complete sets of number pairs					
CLUSTER 60					
1. Multiplies with one factor > 10 , with renaming - equation form					
2. Multiplies with one factor > 10 , with renaming - expanded form					
3. Multiplies with one factor > 10 with renaming - 3-step method					
4. Multiplies with one factor > 10 , with renaming - short form					

CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
CLUSTER 61					
1. Solves word problems using money					
2. Writes amounts of money using ¢					
3. Writes amounts of money using the \$ and the decimal point to separate dollars and cents					
4. Adds when \$ and point are involved					
5. Subtracts when \$ and point are involved					
6. Multiplies when \$ and point are involved					
7. Divides when \$ and point are involved					
CLUSTER 62 ABACUS SKILLS					
Concepts in CLUSTER 61 except on abacus					
CLUSTER 63					
1. Marks curves, lines, and line segments					
2. Writes names for points, lines, and line segments					
3. Writes names for lines, line segments, and rays					
4. Draws lines, line segments, and rays					
5. Identifies planes					
6. Identifies angles					
7. Identifies right angles					
8. Identifies parallel lines and diagonal lines					
9. Names the diameter and radius of a circle					
10. Measures the area of regions					
11. Measures volumes					
12. Identifies curve, circle, angle, parallel lines, rectangle, parallelogram, sphere, cube, cylinder					
13. Recognize symmetrical figures					
14. Uses coordinate system to locate points					
15. Uses graphs to show data					

CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
CLUSTER 64					
1. Lists the subset of odd numbers from given set of numerals					
2. Lists the subset of even numerals from given set of numerals					
3. Add, subtract, and multiply to make even and odd numbers					
4. Writes multiples of factors 0-9					
5. Lists common multiples of number pairs less than 50					
6. Lists the set of factors for given numbers					
7. Lists sets of common factors					
8. Lists prime numbers					
9. Solves word problems involving factor and prime numbers					
CLUSTER 65					
1. Uses the distributive property to multiply in equations					
2. Uses the distributive property to multiply expanded numbers					
3. Recognize the associative property for multiplications					
CLUSTER 66					
1. Writes +, —, x, or ÷ to replace Δ					
2. Writes >, <, = in addition, subtraction, multiplication, division					
3. Uses property of numbers and operations by marking equations that are true					
4. Writes inverse equations					
5. Uses inverse operations to check addition and subtraction					
6. Adds 4-digit numerals					
CLUSTER 67					
1. Uses equation form to name remainders					
2. Solves division problems with remainders					
3. Uses the distributive property in solving division problems					
4. Divides with the missing > 10					
5. Solves division problems using the standard form					

CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
CLUSTER 68					
1. Writes fractions to compare sets with subsets					
2. Names missing fraction in sequence of progression					
3. Identifies terms numerator and denominator					
4. Join fractions with like denominators					
5. Renames fractional numbers					
6. Complete sets of equivalent fractions					
7. Uses multiplication and division to name equivalent fractions					
8. Renames fractional numbers in the simplest form					
9. Uses 2 forms of division for separating sets					
10. Uses fractions to show division					
11. Separate sets with fractions					
12. Adds and subtracts fractions with like denominators					
13. Adds and subtracts fractions using the distributive property					
14. Writes fractional number > 1					
15. Renames fractions as a whole number and a fraction					
16. Writes $>$, $<$, or $=$ with fractions					
17. Adds and subtracts fraction numbers with renaming					
CLUSTER 69					
1. Matches sets that are equivalent					
2. Lists members of subsets					
3. Names the union of sets					
4. Writes members of sets $>$ or $<$ of a given number					
5. Pair members of sets					
6. Names the intersection of sets					
7. Lists sets of common factors as intersection of sets					
8. Describe universal sets					

CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
CLUSTER 70					
1. Rewrite expanded numerals as compact numerals					
2. Rewrite compact numerals as expanded numerals					
3. Finds sums with thousands and millions					
CLUSTER 71 ABACUS SKILLS					
Repeat CLUSTER 70 for abacus students					
CLUSTER 72					
1. Renames Roman Numerals as Arabic Numerals					
2. Writes families of facts					
3. Complete sets of number pairs					
4. Names the rule for each set of number pairs					
CLUSTER 73					
1. Measures length using the metric system					
2. Renames measure from metric to English					
3. Writes equivalent measure of inches, feet, yards, miles					
4. Writes equivalent measures of time in seconds, minutes, hours					
5. Writes equivalent measures of weights in ounces, pounds, and tons					
6. Adds and subtracts with measures					
7. Solves clock equations					
CLUSTER 74					
1. Complete multiplication equations with 10 and 100 as factors					
2. Uses the associative property with multiples of 10 and 100					
3. Uses associative property of multiplication without parenthesis					
4. Multiplies with one factor > 10 and < 100					
5. Works extended multiplication problems with distributive property					
6. Multiplies with one factor for a multiple of 10					
7. Multiplies with both factors > 10					
8. Multiplies with one factor > 100					
CONCEPTS	Pre-Test		Post-Test		

	Date	✓	1st	2nd	3rd
9. Complete functions					
CLUSTER 75 ABACUS SKILLS					
Repeat CLUSTER 74 for abacus students					
CLUSTER 76					
1. Names quotients and remainders in division					
2. Checks division that has remainders					
3. Solves 2-step division problems					
CLUSTER 77 ABACUS SKILLS					
Repeat CLUSTER 76 for abacus students					
CLUSTER 78					
1. Uses factors to add					
2. Renames numbers as the sum of 2 primes					
3. Organize the prime factors in a branching pattern					
CLUSTER 79 ABACUS SKILLS					
Repeat CLUSTER 78 for abacus students					
CLUSTER 80					
1. Shows the meaning of fractions by comparing a subset with a set					
2. Multiplies a fractional number with a whole number					
3. Multiplies 2 fractional numbers					
4. Multiplies fraction and whole number using regrouping					
5. Renames fractional numbers by multiplication					
6. Renames fractions by division					
CLUSTER 81					
1. Writes fractions to show ratio					
2. Finds rate					
3. Adds and subtracts fractions using the distributive rules					
4. Adds and subtracts fractions vertical form					
5. Solves word problems with fractional numbers					
6. Adds and subtracts fractional numbers with renaming (simple numbers)					
CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd

7. Adds and subtracts fractional numbers with renaming (mixed numbers)					
8. Adds fractional numbers using functional rules					
CLUSTER 82					
1. Adds and subtracts mixed numerals					
2. Adds and subtracts mixed numerals with renaming					
3. Subtracts larger mixed numerals with renaming					
4. Writes fractions to indicate probability					
5. Multiplies fractions using associative property					
6. Multiplies with fractional numbers and mixed numbers					
7. Shows reciprocity of multiplication and division of fractions					
8. Names reciprocals					
9. Divides with fractional numbers					
CLUSTER 83					
1. Writes decimals for fractional numbers (tenths)					
2. Writes fractional numbers for decimals					
3. Adds and subtracts with decimal fractions (tenths)					
4. Writes decimals for fractional numbers (hundredths)					
5. Writes fractional numbers for decimals					
6. Adds and subtracts decimal fractions					
7. Multiplies with decimal fractions					
CLUSTER 84					
1. Names points at the intersection of lines					
2. Measures line segments					
3. Identifies congruent line segments					
4. Identifies parallel and perpendicular lines					
5. Names angles and vertices					
6. Names various polygons - quadrilateral, parallelogram, rectangle, square					

CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd
CLUSTER 85 (Optional)					
1. Measures radius and diameter of simple closed curve					
2. Measures the perimeter of a simple closed curve					
3. Locates points on a number plane					
4. Finds the region area on a number line					
5. Names line segments, rays, angles, vertices, intersections, intersecting planes, and parallel planes					
6. Names simple closed surfaces					
7. Finds volume of simple closed surfaces					
8. Makes and uses graphs to interpret data					
CLUSTER 86					
1. Writes billions + millions + thousands + ones in compact form					
2. Writes 9 digit numerals in expanded form					
3. Renames numerals using exponents					
4. Renames numerals in exponential form as compact numerals					
5. Uses exponents in expanded numerals					
6. Matches base 8 numerals with equivalent numerals in base 10					
7. Writes base 5 numerals					
8. Matches base 5 numerals with equivalent numerals in base 10					
CLUSTER 87					
1. Identifies triangle, quadrilateral, pentagon, hexagon, circle, ellipse					
2. Names properties of triangle, quadrilateral, pentagon, hexagon, circle, ellipse, square.					
3. Names polygons by the points at each vertex					
4. Identifies parallel and perpendicular planes					
5. Finds the perimeter of various polygons					
6. Measures angles					
7. Identifies congruent angles					
8. Draws angles					
CONCEPTS	Pre-Test		Post-Test		

	Date	✓	1st	2nd	3rd
9. Draws circles and measures arc and chords on circles					
10. Identifies and measures arc and chords on circles					
11. Constructs parallel and perpendicular lines					
CLUSTER 88					
1. Multiplies with one factor > 100					
2. Multiplies with both factors > 10					
3. Divides with divisors > 10					
4. Writes numerals to name rates					
5. Uses rates to name amounts					
6. Makes estimates to name quotients					
CLUSTER 89					
1. Makes a statement that disagrees with a declared statement					
2. Writes =, >, or < or in number sentences <i>these signs should have /s</i>					
3. Writes all, some, or none to complete sentences					
4. Makes if-then statements in relation to sets					
CLUSTER 90					
1. Identifies tetrahedron, cube, prisms, and pyramids					
2. Names the properties of tetrahedron, cube, prisms, and pyramids					
3. Identifies cones, cylinders, and spheres					
4. Names the properties of cones, cylinders, and spheres					
5. Names areas using multiplication					
CLUSTER 91					
1. Names members of sets of different kinds of numbers					
2. Writes factor, product addend, sum or quotient to show how underlined numerals are used					
3. Identifies number operations					
4. Writes properties of fundamental operations					
CLUSTER 92					
1. Finds the cross product of sets					
2. Uses the cross product with restrictional rules					
CONCEPTS	Pre-Test		Post-Test		
	Date	✓	1st	2nd	3rd

3. Uses the cross product to develop the concept of function					
4. Uses functional rules to complete ordered pairs					
5. Finds factors, common factors, and greatest common factors					
6. Finds multiples, common multiples, and least common multiples					
7. Lists subsets according to divisibility ruled					
8. Names the average, range, and median or sets and numbers					
CLUSTER 93					
1. Identifies congruent triangles					
2. Constructs triangles with sides of a given length					
3. Uses Theorem of Pythagoras to name length of side opposite the right angle in a right triangle					
4. Writes equations for naming area and volume					
5. Compares lengths of sides of similar triangles by using ratios					
6. Names properties of similar triangles					
7. Identifies similar triangles					
8. Uses ratio to make scale drawings					