Materials.

☐ Pencil   ☐ Timer   ☐ Clipboard (optional)   ☐ Administration Directions

☐ Scoring Procedures   ☐ Probes

Probes for Assessment to Determine Initial Placement.

To assess for initial placement, use the CBM procedures outline in the previous pages with the following 4 probes. Remember to begin with addition and only assess skills that the student has been taught.

Administration Directions.

➢ Provide student(s) with pencil and probe.

➢ Tell students to put their name and date on probe.

➢ Read the following instructions:

"The sheet on your desk has (addition, subtraction, multiplication, division) problems. When I say "BEGIN," start answering the problems. Start at the first problem, work across the page then go to the next row. You should work as fast as you can without skipping problems. If you come to a problem that you do not know, mark an 'X' through it and go on to the next problem. Continue working until I tell you to stop. Are there any questions? Ready. Begin"

➢ When you instruct student(s) to *"Begin"* start the timer.

➢ Monitor student procedural adherence. Prompt student if directions are violated. For example,

"Please work across the page"
"Do not skip problems, if you cannot answer it mark an 'X' through it"
"Keep working until I tell you to stop."

➢ After 1 minute elapses, tell the student(s) *"Stop, please put down your pencil."* Collect probe(s).

Probes for Assessment to Determine Initial Placement

To assess for initial placement, use the CBM procedures outline in the previous pages with the following 4 probes. Remember to begin with addition and only assess skills that the student has been taught.

Scoring Procedures.

Although many scoring approaches focus solely on fluency scores, to best match student responding to the optimal intervention accuracy rates are needed as well. To meet these needs it is recommended that student performance is reported using digits correct per minute (DC/M) and percentage of digits correct (ACC). To score each probe, count the number of *digits correct* (DC), count the number of possible digits (i.e., include incorrect digits and/or skipped problems), and record the duration of the assessment period (e.g., 2 minutes). To determine DC/M divide the number of DC by the duration of assessment. To determine ACC divide DC by the number of possible digits and multiply by 100 ((DC/PD)x100=__%).

Basic Scoring Procedures:

1. Score digit correct when the correct number is written in proper column.

2. Score digit incorrect if correct number is not written in proper column or number is illegible.

3. Score digit(s) of problem incorrect if the student marks an 'X' through, or skips, a problem.

4. Score digit as correct if student clearly writes the correct number in reverse

If a student skips over problems it is likely that the child cannot accurately complete the problem or the problem takes a large amount of response effort to complete – regardless the problem is not known to mastery. A DC/M score of a student who skips to complete easy problems and/or avoid difficult problems will not produce a valid representation of the student's computation skill and will result in an elevated DC/M score with high ACC due to the students self-selection of problems. This lack of validity will compromise educational decision making associated with CBM (e.g., screening, progress monitoring).

Scoring Examples.

Basic Fact Computation: Addition, Subtraction, Multiplication, & Division

4	8	7	5	7	3	36	7
+ 5	+ 9	- 4	x 5	x 8	x 8	÷ 6	9)72
9	16	3	25	63	21	6	

1/1 DC   1/2 DC   1 /1 DC   2/2 DC   0/2 DC   1/2 DC   1/1 DC   0/1 DC

Total: (7/12= 58% ACC)

Deno, S. L., & Mirkin, P. (1977). *Data-based program modification: A manual.* Reston, VA: Council for Exceptional Children.

Probe for Initial Placement: Addition

MIND: Computation TP/ET Worksheet Addition 1   Name: _____   Date: _____

1 + 8	8 + 9	5 + 9	6 + 6	4 + 4	2 + 7	2 + 8	2 + 3	9 + 9
4 + 5	1 + 9	7 + 9	0 + 5	4 + 7	5 + 8	6 + 9	7 + 8	7 + 7
2 + 4	1 + 5	3 + 9	4 + 9	6 + 8	5 + 5	5 + 6	3 + 3	1 + 4
2 + 6	3 + 4	4 + 6	1 + 7	2 + 2	3 + 8	6 + 7	2 + 9	2 + 5
3 + 5	5 + 7	4 + 8	0 + 8	3 + 7	3 + 6	4 + 2	5 + 2	2 + 1
7 + 4	7 + 6	9 + 2	6 + 6	7 + 7	8 + 8	7 + 0	5 + 5	6 + 2
4 + 3	7 + 3	8 + 6	9 + 9	7 + 2	3 + 0	8 + 7	5 + 4	1 + 0
4 + 4	6 + 4	3 + 2	7 + 5	6 + 3	3 + 3	3 + 1	8 + 4	8 + 5

Probe for Initial Placement: Subtraction

MIND: Computation TP/ET Worksheet Subtraction 1   Name: _____   Date: _____

4 - 2	16 - 8	8 - 3	9 - 1	10 - 3	15 - 7	6 - 2	11 - 2	8 - 4
2 - 1	7 - 3	12 - 6	9 - 3	2 - 2	7 - 2	12 - 4	14 - 5	6 - 3
11 - 5	11 - 3	14 - 6	4 - 0	16 - 7	17 - 8	13 - 4	11 - 4	13 - 5
1 - 1	15 - 6	14 - 7	12 - 5	10 - 5	10 - 4	12 - 3	3 - 1	18 - 9
9 - 4	9 - 9	10 - 2	8 - 2	13 - 6	9 - 2	5 - 2	8 - 4	15 - 8
3 - 0	10 - 5	14 - 8	6 - 3	12 - 7	5 - 3	10 - 7	8 - 6	5 - 0
10 - 8	7 - 6	13 - 8	8 - 5	4 - 2	11 - 8	16 - 9	12 - 8	11 - 9
6 - 5	15 - 9	16 - 8	9 - 6	17 - 9	14 - 7	4 - 3	13 - 7	6 - 4

Probe for Initial Placement: Multiplication

MIND: Computation TP/ET Worksheet Multiplication 1   Name: _____   Date: _____

7 × 9	2 × 8	5 × 7	1 × 3	6 × 6	3 × 6	5 × 8	2 × 6	0 × 0
4 × 7	5 × 9	2 × 5	2 × 3	2 × 2	4 × 5	8 × 8	0 × 9	5 × 6
7 × 7	4 × 9	3 × 7	3 × 9	6 × 8	0 × 4	3 × 3	4 × 6	0 × 2
5 × 5	6 × 7	3 × 8	2 × 4	9 × 9	6 × 9	0 × 3	7 × 8	4 × 8
2 × 7	3 × 5	4 × 4	3 × 4	1 × 5	8 × 9	2 × 9	7 × 1	6 × 6
5 × 5	9 × 5	8 × 8	7 × 0	9 × 4	9 × 6	8 × 5	4 × 4	4 × 3
6 × 4	6 × 0	9 × 7	9 × 2	6 × 5	3 × 2	8 × 2	5 × 2	7 × 3
9 × 3	8 × 0	6 × 2	6 × 3	2 × 1	7 × 4	8 × 6	7 × 6	5 × 4

MIND: Computation TP/ET Worksheet Division 1   Name: _____   Date: _____

1 ÷ 1	6 ÷ 2	63 ÷ 7	12 ÷ 2	25 ÷ 5	48 ÷ 6	9 ÷ 3	24 ÷ 4	14 ÷ 2
18 ÷ 3	0 ÷ 3	72 ÷ 8	40 ÷ 5	54 ÷ 6	0 ÷ 8	8 ÷ 2	30 ÷ 5	15 ÷ 3
35 ÷ 5	16 ÷ 2	10 ÷ 2	16 ÷ 4	36 ÷ 4	0 ÷ 2	28 ÷ 4	64 ÷ 8	20 ÷ 4
32 ÷ 4	6 ÷ 1	18 ÷ 2	4 ÷ 2	36 ÷ 6	81 ÷ 9	56 ÷ 7	0 ÷ 7	27 ÷ 3
49 ÷ 7	3 ÷ 1	24 ÷ 3	12 ÷ 3	45 ÷ 5	21 ÷ 3	42 ÷ 6	2 ÷ 1	30 ÷ 6
49 ÷ 7	25 ÷ 5	72 ÷ 9	12 ÷ 6	36 ÷ 6	10 ÷ 5	24 ÷ 8	5 ÷ 1	18 ÷ 6
45 ÷ 9	28 ÷ 7	20 ÷ 5	0 ÷ 6	15 ÷ 3	54 ÷ 9	21 ÷ 7	8 ÷ 1	40 ÷ 8
42 ÷ 7	9 ÷ 3	35 ÷ 7	16 ÷ 4	81 ÷ 9	6 ÷ 3	7 ÷ 1	16 ÷ 8	48 ÷ 8