

MULTIPLICATIVE COMPARISON

One skill, start to finish: the IEP goal, six probe forms, the graph. Untimed. Fillable PDF.

MULTIPLICATIVE COMPARISON **Multiplicative Comparison Word Problems – Goal and Directions**

Goal, baseline, directions and benchmarks for one skill. Untimed; score is problems correct out of 10.

Ten multiplicative-comparison word problems per form — four ask for the larger quantity, three for the smaller, three for the comparison factor — each solved by one multiplication or exact division, using only "times as many."

Sample goal — invented; edit every bracket to fit the student

By [desired review date], when given 10 multiplicative comparison word problems (times as many as), [Student] will write and solve the matching multiplication or division equation and write the correct answer for [8 of 10] problems on [3] consecutive weekly probes, as measured by teacher-scored word problem probes.

BY (DATE) _____ CRITERION (SCORE OUT OF 10, OR PERCENT) _____

GIVEN CONDITION: WHAT IS SHOWN, ANY ALLOWED SUPPORT) _____ ON ____ OF ____ CONSECUTIVE PROBES _____

STUDENT WILL (THE BEHAVIOR, IN THE WORDS OF THE PROBES) _____ AS MEASURED BY (THIS PROBE: MULTIPLICATIVE COMPARISON WORD PROBLEMS, FORMS A-F, PAGE 6-11) _____

Baseline: give Forms A, B and C on three days and take the middle score

BASLINE PROBE 1	BASLINE PROBE 2	BASLINE PROBE 3	MEDIAN (THE BASLINE)

Benchmarks toward the goal

BENCHMARK	TARGET DATE	TARGET SCORE	ACTUAL SCORE	MEET

Giving and scoring the probe

☐ Say: "Read each problem. Write the equation, then the answer in the box." If reading is not the goal, read it aloud and note that on the log.

☐ Correct: the right number in the Answer box. The Equation line is the student's own work space and is not scored.

Multiplicative Comparison – Form A

My name: _____ Date: _____

Read. Write the equation. Write your answer in the box.

WRITE THE EQUATION, THEN WRITE THE ANSWER IN THE BOX

- Eli has 40 shells. Zoe has 10 shells. How many times as many shells does Eli have as Zoe? Equation: _____ Answer: _____
- Sam has 9 cards. Kai has 6 times as many. How many cards does Kai have? Equation: _____ Answer: _____
- Zoe has 44 seeds. That is 4 times as many as Max has. How many seeds does Max have? Equation: _____ Answer: _____
- Zoe has 35 coins. That is 5 times as many as Ivy has. How many coins does Ivy have? Equation: _____ Answer: _____
- Mia has 80 cards. That is 8 times as many as Sam has. How many cards does Sam have? Equation: _____ Answer: _____
- Tom has 2 cards. Ana has 2 times as many. How many cards does Ana have? Equation: _____ Answer: _____
- Tom has 60 crayons. Max has 10 crayons. How many times as many crayons does Tom have as Max? Equation: _____ Answer: _____
- Ben has 6 shells. Zoe has 2 shells. How many times as many shells does Ben have as Zoe? Equation: _____ Answer: _____

Multiplicative Comparison Word Problems – Data Log and Graph

One row per probe. Three points in a row under the aim line is a decision, not a feeling: change the teaching and write what changed in the notes.

STUDENT _____ CRITERION / AIM _____ GOAL DATE _____

CORRECT OUT OF 10 - DRAW THE AIM LINE FROM THE BASELINE TO THE CRITERION FIRST, THEN PLOT EACH WEEK

WEEK	1	2	3	4	5	6	7	8	9	10	11	12
10												
9												
8												
7												
6												
5												
4												
3												
2												
1												

Probe (week)

#	DATE	FORM	CORRECT	ERRORS	SCORE USED ON GRAPH	NOTES (CONDITIONS, WHAT WAS RETEACHED)

Multiplicative Comparison Word Problems – Caseload Summary

Every student on this goal, on one grid. Twelve rows, eight probes, one decision column.

TEACHER / CASE MANAGER _____ SKILL (AS THE GOAL WORDS IT) _____ MARKING PERIOD _____

STUDENT	BASLINE	CRITERION	P1	P2	P3	P4	P5	P6	P7	P8	TREND	DECISION THIS MONTH

How to fill it

☐ One row per student who has a goal on this skill. Baseline is the median of the first three probes.

☐ One column per weekly probe; write the score out.

What it is for

Grouping: When six students sit on the same goal, the individual graphs answer "how is this child doing" and nothing answers "who needs the same

EXAMPLE A Filled-In Data Log (Invented Student)

Jon is invented. Twelve weekly probes on multiplicative comparison word problems, the aim line, the change that three low points forecast, and the criterion being met.

The goal, as written for Jon, fourth grade (invented)

By May 20, when given 10 multiplicative comparison word problems (times as many as), Jon will write and solve the matching multiplication or division equation and write the correct answer for 8 of 10 problems on 3 consecutive weekly probes, as measured by teacher-scored word problem probes (forms A-F).

#	DATE	FORM	CORRECT	ERRORS	GRAPHED	NOTES
1	9/8	A	2	8	2	baseline
2	9/9	B	3	7	3	baseline
3	9/10	C	3	7	3	baseline (median of 2, 3, 3 = 3)
4	9/17	D	3	7	3	comparison problems answered by adding the two numbers instead of multiplying or dividing
5	9/24	E	2	8	2	same pattern
6	10/1	F	3	7	3	3 under aim line: underlined the comparison phrase ("times as many") and the quantity the question asked for before writing the equation
7	10/8	A	5	5	5	
8	10/15	B	6	4	6	
9	10/22	C	7	3	7	errors narrowing to one pattern
10	10/29	D	7	3	7	
11	11/5	E	8	2	8	criterion met, 1 of 3
12	11/12	F	8	2	8	criterion met, 2 of 3

How to read the log

☐ Baseline was the median of three forms on three days: 2, 3, 3, so 3. Not the average, not the best.

☐ The aim line runs from 3 in week 1 to 8 at the goal date. Probes 4, 5 and 6 (3, 2, 3) sit under it: three in a row, so the teaching changed and the change is written on the row.

☐ The notes name the pattern, not just the count: "comparison problems answered by adding the two numbers instead of multiplying or dividing" is what sent the teaching somewhere specific, and a score on its own would not

PROGRESS MONITORING How This Pack Works

Goal, baseline, weekly probe, graph, decision. Six steps, one skill.

A progress monitoring goal needs a thing to count and a page to count it on. This file is both, for one skill: a goal, written in the probe's own words, 6 equivalent forms of the probe that measures it, and a graph scaled to it. Nothing has to be built or found.

- Baseline.** Give Forms A, B and C on three different days. The middle score of the three is the baseline; write it on the goal page.
- Write the goal** from the six-part frame on the goal page. Start from the sample and change every bracket: the date, the condition, the criterion, the number of probes.
- Probe once a week** with the forms in rotation (A, B, C, D, E, F, A...). Never the same form two weeks running. Every form is ten items, untimed. Score it against the answer key (pages 16-17).
- Log and plot** the score the same day. Draw the aim line first, from the baseline on the left to the criterion at the goal date on the right, then plot each week's dot.
- Decide from the graph.** Three dots in a row under the aim line: change the teaching this week and write the change on the log. Three in a row over it: raise the target.
- Report from the log.** The log gives the progress report its numbers: baseline, the last two scores, and what the errors keep landing on.

The weekly routine, about five minutes

☐ Monday: pull the next form in the rotation (A, B, C, D, E, F, A...).

☐ Any day: give the probe one-to-one, untimed; ten items takes a few minutes.

☐ Same day: score it; log the row, plot the point, look at the last three points.

☐ Friday: if three points sit under the aim line, write the change you are making on the log.

Print and prep

☐ Print one copy per student per week: the student works on the form and that same sheet is the one you score.

☐ The forms are student sheets with nothing on them but the problems. The answer key and the Correct ____ / 10 box for every form are on pages 16 and 17; score there, then log it.

☐ Keep the goal page and the graph page for each student at the front of the data folder; type into them or write on them.

☐ The caseload page is one grid for every student on this goal; print it once a month.

Goal, baseline, weekly probe, graph, decision. Six steps, one skill.

A progress monitoring goal needs a thing to count and a page to count it on. This file is both, for one skill: a goal written in the probe's own words, 6 equivalent forms of the probe that measures it, and a graph scaled to it. Nothing has to be built or found.

- 1 **Baseline.** Give Forms A, B and C on three different days. The middle score of the three is the baseline; write it on the goal page.
- 2 **Write the goal** from the six-part frame on the goal page. Start from the sample and change every bracket: the date, the condition, the criterion, the number of probes.
- 3 **Probe once a week** with the forms in rotation (A, B, C, D, E, F, A...). Never the same form two weeks running. Every form is ten items, untimed. Score it against the answer key (pages 16–17).
- 4 **Log and plot** the score the same day. Draw the aim line first, from the baseline on the left to the criterion at the goal date on the right, then plot each week's dot.
- 5 **Decide from the graph.** Three dots in a row under the aim line: change the teaching this week and write the change on the log. Three in a row over it: raise the target.
- 6 **Report from the log.** The log gives the progress report its numbers: baseline, the last two scores, and what the errors keep landing on.

The weekly routine, about five minutes

- ☐ Monday: pull the next form in the rotation (A, B, C, D, E, F, A...).
- ☐ Any day: give the probe one-to-one, untimed; ten items takes a few minutes.
- ☐ Same day: score it, log the row, plot the point, look at the last three points.
- ☐ Friday: if three points sit under the aim line, write the change you are making on the log.

Print and prep

- ☐ Print one copy per student per week: the student writes on the form and that same sheet is the one you score.
- ☐ The forms are student sheets with nothing on them but the problems. The answer key and the Correct ____ / 10 box for every form are on pages 16 and 17; score there, then log it.
- ☐ Keep the goal page and the graph page for each student at the front of the data folder; type into them or write on them.
- ☐ The caseload page is one grid for every student on this goal: print it once a month.

What this probe is not

It is not a norm-referenced test and it carries no benchmark score. The sample goal uses invented criteria in brackets; your team sets the real ones from the baseline and the student's IEP. Every form is untimed and ten items long, so a score of 8 means the same thing on every form, and a student is never scored on speed.

Equivalent forms, and why it matters

Every form has ten items drawn the same way, from one shuffle of the same bank, and no item appears on two forms — 60 different items across the six forms. A score on one form means the same as a score on another, so the line on the graph is the student, not the paper. Rotate the forms and the page cannot be memorized.

Multiplicative Comparison Word Problems — Goal and Directions

Goal, baseline, directions and benchmarks for one skill. Untimed; score is problems correct out of 10.

Ten multiplicative-comparison word problems per form — four ask for the larger quantity, three for the smaller, three for the comparison factor — each solved by one multiplication or exact division, using only ‘times as many.’

Sample goal — invented; edit every bracket to fit the student

By [annual review date], when given 10 multiplicative comparison word problems (‘times as many as’), [Student] will write and solve the matching multiplication or division equation and write the correct answer for [8 of 10] problems on [3] consecutive weekly probes, as measured by teacher-scored word problem probes.

BY (DATE)

CRITERION (SCORE OUT OF 10, OR PERCENT)

GIVEN (CONDITION: WHAT IS SHOWN, ANY ALLOWED SUPPORT)

ON ____ OF ____ CONSECUTIVE PROBES

STUDENT WILL (THE BEHAVIOR, IN THE WORDS OF THE PROBE)

AS MEASURED BY (THIS PROBE: MULTIPLICATIVE COMPARISON WORD PROBLEMS, FORMS A–F, PAGE 6–11)

Baseline: give Forms A, B and C on three days and take the middle score

BASELINE PROBE 1	BASELINE PROBE 2	BASELINE PROBE 3	MEDIAN (THE BASELINE)

Benchmarks toward the goal

BENCHMARK	TARGET DATE	TARGET SCORE	ACTUAL SCORE	MET?

Giving and scoring the probe

- ☐ Say: “Read each problem. Write the equation, then the answer in the box.” If reading is not the goal, read it aloud and note that on the log.
- ☐ Correct: the right number in the Answer box. The Equation line is the student’s own work space and is not scored.
- ☐ Every item names the unknown quantity — larger, smaller, or the comparison factor. Sort a miss by which one before the numbers.
- ☐ Untimed. Let the student finish all ten.

Scoring rules for this student (accepted answers, reversals, supports allowed)

What the errors say to reteach (carry over from the log)

My name: _____

Date: _____



Read. Write the equation. Write your answer in the box.

WRITE THE EQUATION, THEN WRITE THE ANSWER IN THE BOX

1.	Eli has 40 shells. Zoe has 10 shells. How many times as many shells does Eli have as Zoe?	Equation _____	Answer
2.	Sam has 9 cards. Kai has 6 times as many. How many cards does Kai have?	Equation _____	Answer
3.	Zoe has 44 seeds. That is 4 times as many as Max has. How many seeds does Max have?	Equation _____	Answer
4.	Zoe has 35 coins. That is 5 times as many as Ivy has. How many coins does Ivy have?	Equation _____	Answer
5.	Mia has 80 cards. That is 8 times as many as Sam has. How many cards does Sam have?	Equation _____	Answer
6.	Tom has 2 cards. Ana has 2 times as many. How many cards does Ana have?	Equation _____	Answer
7.	Tom has 60 crayons. Max has 10 crayons. How many times as many crayons does Tom have as Max?	Equation _____	Answer
8.	Ben has 6 shells. Zoe has 2 shells. How many times as many shells does Ben have as Zoe?	Equation _____	Answer
9.	Mia has 4 coins. Eli has 8 times as many. How many coins does Eli have?	Equation _____	Answer
10.	Jen has 10 marbles. Ivy has 7 times as many. How many marbles does Ivy have?	Equation _____	Answer

My name: _____

Date: _____



Read. Write the equation. Write your answer in the box.

WRITE THE EQUATION, THEN WRITE THE ANSWER IN THE BOX

1.	Eli has 28 crayons. That is 7 times as many as Tom has. How many crayons does Tom have?	Equation _____	Answer
2.	Jen has 36 cards. Eli has 6 cards. How many times as many cards does Jen have as Eli?	Equation _____	Answer
3.	Mia has 7 marbles. Jen has 9 times as many. How many marbles does Jen have?	Equation _____	Answer
4.	Leo has 55 stickers. Ivy has 11 stickers. How many times as many stickers does Leo have as Ivy?	Equation _____	Answer
5.	Max has 6 cards. Jen has 5 times as many. How many cards does Jen have?	Equation _____	Answer
6.	Ana has 5 pencils. Mia has 8 times as many. How many pencils does Mia have?	Equation _____	Answer
7.	Ana has 72 blocks. That is 9 times as many as Jen has. How many blocks does Jen have?	Equation _____	Answer
8.	Leo has 2 seeds. Eli has 6 times as many. How many seeds does Eli have?	Equation _____	Answer
9.	Jen has 16 stickers. That is 2 times as many as Ivy has. How many stickers does Ivy have?	Equation _____	Answer
10.	Ben has 9 coins. Sam has 3 coins. How many times as many coins does Ben have as Sam?	Equation _____	Answer

Multiplicative Comparison Word Problems — Data Log and Graph

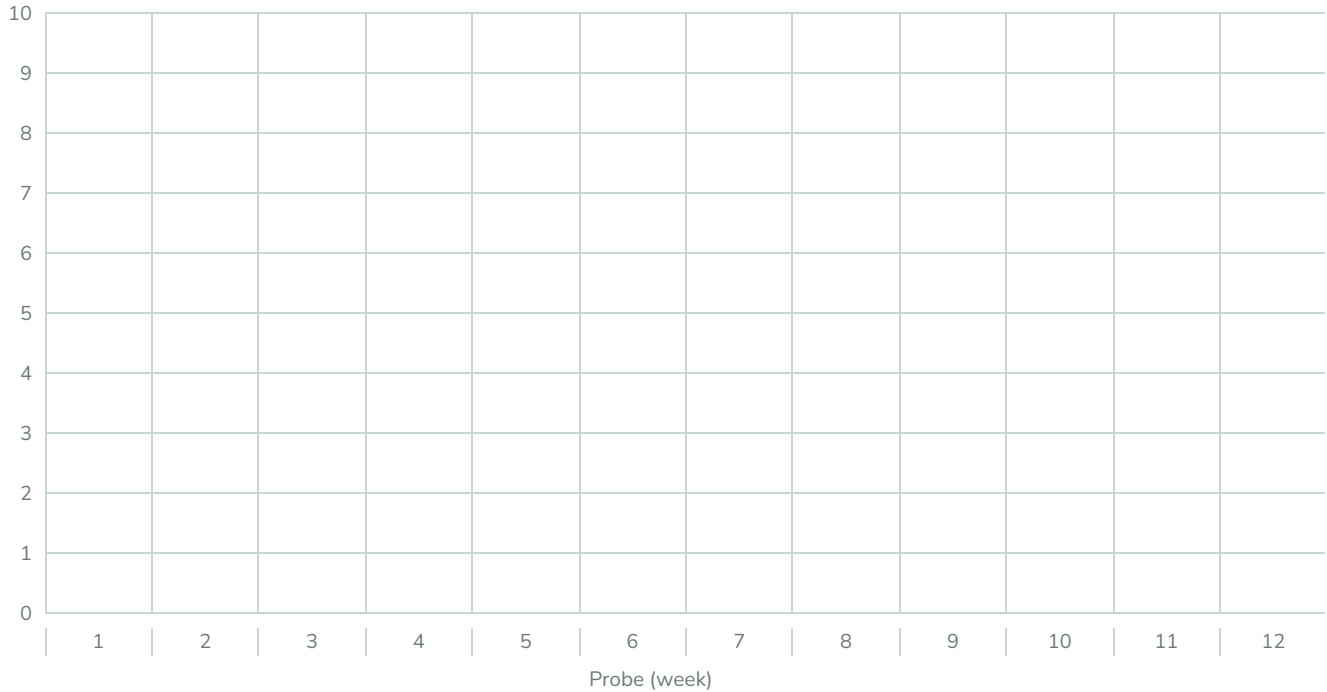
One row per probe. Three points in a row under the aim line is a decision, not a feeling: change the teaching and write what changed in the notes.

STUDENT

CRITERION / AIM

GOAL DATE

CORRECT OUT OF 10 · DRAW THE AIM LINE FROM THE BASELINE TO THE CRITERION FIRST, THEN PLOT EACH WEEK



#	DATE	FORM	CORRECT	ERRORS	SCORE USED ON GRAPH	NOTES (CONDITIONS, WHAT WAS RETEACHED)

Multiplicative Comparison Word Problems – Caseload Summary

Every student on this goal, on one grid. Twelve rows, eight probes, one decision column.

TEACHER / CASE MANAGER

SKILL (AS THE GOAL WORDS IT)

MARKING PERIOD

[illegible]

How to fill it

- ☐ One row per student who has a goal on this skill. Baseline is the median of the first three probes.
- ☐ One column per weekly probe; write the score out of 10, not a percent, so the rows compare.
- ☐ Trend: up, flat or down over the last four probes. That word, not the last score, is what the decision follows.
- ☐ Decision: keep going, change the teaching, or raise the target. A blank decision on a flat row is the thing this page exists to catch.

What it is for

Grouping. When six students sit on the same goal, the individual graphs answer “how is this child doing” and nothing answers “who needs the same fifteen minutes.” Rows that are flat together are a group; a row that is flat alone is a different question. Take this page to the data meeting instead of ten folders.

EXAMPLE

A Filled-In Data Log (Invented Student)

Jon is invented. Twelve weekly probes on multiplicative comparison word problems, the aim line, the change that three low points forced, and the criterion being met.

The goal, as written for Jon, fourth grade (invented)

By May 20, when given 10 multiplicative comparison word problems ('times as many as'), Jon will write and solve the matching multiplication or division equation and write the correct answer for 8 of 10 problems on 3 consecutive weekly probes, as measured by teacher-scored word problem probes (forms A–F).

#	DATE	FORM	CORRECT	ERRORS	GRAPHED	NOTES
1	9/8	A	2	8	2	baseline
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4	9/17	D	3	7	3	comparison problems answered by adding the two numbers instead of multiplying or dividing
5	9/24	E	2	8	2	same pattern
6	10/1	F	3	7	3	3 under aim line: underlined the comparison phrase ('times as many') and the quantity the question asked for before writing the equation
7	10/8	A	5	5	5	–
8	10/15	B	6	4	6	–
9	10/22	C	7	3	7	errors narrowing to one pattern
10	10/29	D	7	3	7	–
11	11/5	E	8	2	8	criterion met, 1 of 3
12	11/12	F	8	2	8	criterion met, 2 of 3

How to read the log

- ☐ Baseline was the median of three forms on three days: 2, 3, 3, so 3. Not the average, not the best.
- ☐ The aim line runs from 3 in week 1 to 8 at the goal date. Probes 4, 5 and 6 (3, 2, 3) sat under it: three in a row, so the teaching changed and the change is written on the row.
- ☐ The notes name the pattern, not just the count: “comparison problems answered by adding the two numbers instead of multiplying or dividing” is what sent the teaching somewhere specific, and a score on its own would not have said that.
- ☐ Criterion met on probes 11 and 12; one more consecutive probe at 8 or better and the goal is met.

The progress report sentence this log produces

“On weekly multiplicative comparison word problems probes (10 items, untimed), Jon scored 3 of 10 at baseline in September and 8 of 10 on each of the two most recent probes in November. Progress is sufficient to meet the goal of 8 of 10 on three consecutive probes by May.” Every number in it is on the log above; nothing is from memory.