

FACTORS AND MULTIPLES

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

FACTORS AND MULTIPLES Factors and Multiples – Goal and Directions

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

Ten items per form, the same split every form: four ask the student to list every factor of a number from 10 to 46, and six ask for the first 4, 5 or 6 multiples of a number from 3 to 15. The student writes the list in a wide box. An item is correct only when the list is complete with nothing extra, so a miss names the task and the number to reach, not just a lower score.

Sample goal — invented; edit every bracket to fit the student.
By [annual review date], when given 10 prompts to list the factors of a number or its first multiples, [Student] will write the complete correct list for [8 of 10] prompts on [3] consecutive weekly probes, as measured by teacher-scored factors and multiples 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: FACTORS AND MULTIPLES, 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 BASELINE)

Benchmarks toward the goal

BENCHMARK	TARGET DATE	TARGET SCORE	ACTUAL SCORE	MET?

My name: _____ **Date:** _____

List the factors or multiples. Write them in the box.

READ EACH ONE - WRITE YOUR LIST IN THE BOX

- List all the factors of 15.
- List the first 6 multiples of 10.
- List the first 4 multiples of 9.
- List all the factors of 11.
- List the first 6 multiples of 6.
- List all the factors of 22.
- List all the factors of 34.

FACTORS AND MULTIPLES Factors and Multiples – 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
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

Probe (week)

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

FACTORS AND MULTIPLES Factors and Multiples – 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.

What it is for
Grouping: When six students sit on the same goal.

EXAMPLE A Filled-In Data Log (Invented Student)

Marcus is invented. Twelve weekly probes on factors and multiples, the aim line, the change that three low points forced, and the criterion being met.

The goal, as written for Marcus, fifth grade (invented)
By May 20, when given 10 prompts to list the factors of a number or its first multiples, Marcus will write the complete correct list for 8 of 10 prompts on 3 consecutive weekly probes, as measured by teacher-scored factors and multiples probes (Forms A-F).

#	DATE	FORM	CORRECT	ERRORS	GRAPHED	NOTES
1	9/8	A	3	7	3	baseline
2	9/9	B	4	6	4	baseline
3	9/10	C	3	7	3	baseline (median of 3, 4, 3 = 3)
4	9/17	D	3	7	3	Isolated factors in pairs but left out 1 and the number itself on most factor items, while the multiples items were mostly right.
5	9/24	E	2	8	2	same pattern
6	10/1	F	3	7	3	3 under aim line: added a check step: write 1 and the number first, then look for pairs
7	10/8	A	6	4	6	--
8	10/15	B	7	3	7	--
9	10/22	C	7	3	7	errors narrowing to one pattern
10	10/29	D	8	2	8	criterion met, 1 of 3
11	11/5	E	8	2	8	criterion met, 2 of 3
12	11/12	F	8	2	8	criterion met, 3 of 3 - goal met

How to read the log
☐ Baseline was the median of three forms on three days: 3, 4, 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

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 where errors land.

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 it and you score that same sheet.
☐ 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

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 where errors land.

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 it and you score that same sheet.
- ☐ 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. Every form is untimed and ten items long, so a score of 8 means the same on every form.

Equivalent forms, and why it matters

Every form has ten items: four ask for every factor of a number from 10 to 46 and six ask for the first 4, 5 or 6 multiples of a number from 3 to 15, the same split every form. No item repeats 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.

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

Ten items per form, the same split every form: four ask the student to list every factor of a number from 10 to 46, and six ask for the first 4, 5 or 6 multiples of a number from 3 to 15. The student writes the list in a wide box. An item is correct only when the list is complete with nothing extra, so a miss names the task and the number to reteach, not just a lower score.

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

By [annual review date], when given 10 prompts to list the factors of a number or its first multiples, [Student] will write the complete correct list for [8 of 10] prompts on [3] consecutive weekly probes, as measured by teacher-scored factors and multiples 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: FACTORS AND MULTIPLES, FORMS A–F, PAGE 6–11)

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

BASILINE PROBE 1	BASILINE PROBE 2	BASILINE 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 one. Write every factor, or the multiples, in the box."
- ☐ Correct: the complete list with nothing missing and nothing extra. Order does not matter.
- ☐ Four factor items and six multiples items on every form, so a missed item names the task and the number to reteach.
- ☐ 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: _____



List the factors or multiples. Write them in the box.

READ EACH ONE · WRITE YOUR LIST IN THE BOX

1. List all the factors of **15**.

2. List the first 6 multiples of **10**.

3. List the first 4 multiples of **9**.

4. List all the factors of **11**.

5. List the first 6 multiples of **6**.

6. List all the factors of **22**.

7. List all the factors of **34**.

8. List the first 5 multiples of **15**.

9. List the first 6 multiples of **7**.

10. List the first 5 multiples of **5**.

My name: _____

Date: _____



List the factors or multiples. Write them in the box.

READ EACH ONE · WRITE YOUR LIST IN THE BOX

1. List all the factors of **39**.

2. List all the factors of **45**.

3. List the first 4 multiples of **10**.

4. List all the factors of **28**.

5. List the first 5 multiples of **3**.

6. List the first 4 multiples of **13**.

7. List the first 4 multiples of **12**.

8. List all the factors of **27**.

9. List the first 5 multiples of **6**.

10. List the first 6 multiples of **8**.

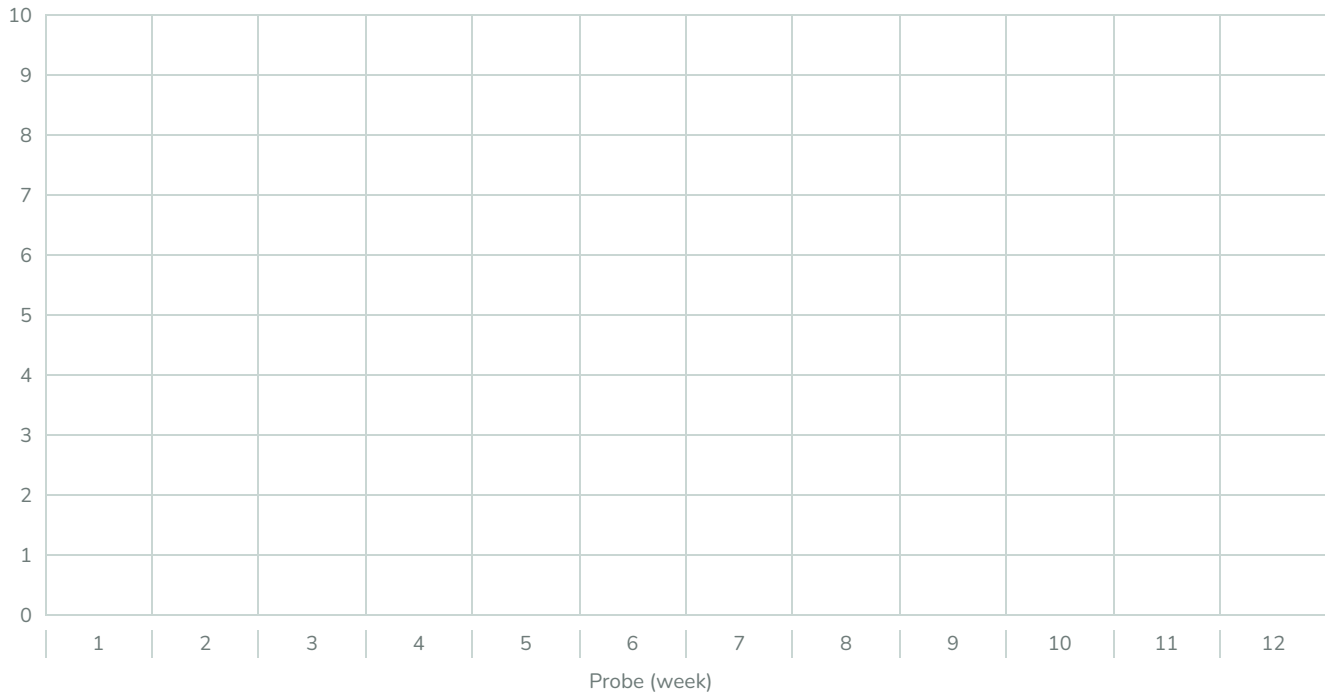
One row per probe. Three points in a row under the aim line is a decision, not a feeling: change the teaching and write what changed in the notes.

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)

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	BASELINE	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 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)

Marcus is invented. Twelve weekly probes on factors and multiples, the aim line, the change that three low points forced, and the criterion being met.

The goal, as written for Marcus, fifth grade (invented)

By May 20, when given 10 prompts to list the factors of a number or its first multiples, Marcus will write the complete correct list for 8 of 10 prompts on 3 consecutive weekly probes, as measured by teacher-scored factors and multiples probes (forms A–F).

#	DATE	FORM	CORRECT	ERRORS	GRAPHED	NOTES
1	9/8	A	3	7	3	baseline
2	9/9	B	4	6	4	baseline
3	9/10	C	3	7	3	baseline (median of 3, 4, 3 = 3)
4	9/17	D	3	7	3	listed factors in pairs but left out 1 and the number itself on most factor items, while the multiples items were mostly right
5	9/24	E	2	8	2	same pattern
6	10/1	F	3	7	3	3 under aim line: added a check step: write 1 and the number first, then look for pairs
7	10/8	A	6	4	6	–
8	10/15	B	7	3	7	–
9	10/22	C	7	3	7	errors narrowing to one pattern
10	10/29	D	8	2	8	criterion met, 1 of 3
11	11/5	E	8	2	8	criterion met, 2 of 3
12	11/12	F	8	2	8	criterion met, 3 of 3 — goal met

How to read the log

- ☐ Baseline was the median of three forms on three days: 3, 4, 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: “listed factors in pairs but left out 1 and the number itself on most factor items, while the multiples items were mostly right” is what sent the teaching somewhere specific, and a score on its own would not have said that.
- ☐ Criterion was met on probes 10, 11 and 12 — three in a row at 8 of 10 or better — so the goal was already met by probe 12, not merely approached.

The progress report sentence this log produces

“On weekly factors and multiples probes (10 items, untimed), Marcus scored 3 of 10 at baseline in September and met the goal of 8 of 10 on three consecutive probes by 11/12.” Every number in it is on the log above; nothing is from memory.