

GREATEST COMMON FACTOR AND LEAST COMMON MULTIPLE

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

GCF AND LCM **Greatest Common Factor and Least Common Multiple – Goal and Directions**

Goal, baseline, directions and benchmarks for one skill. Untimed; score is GCF/LCM answers correct out of 10.

Ten number-pair problems per form: five ask for the GCF (greatest common factor) and five ask for the LCM (least common multiple), the same 5/5 split every form. Every number is 2 to 24, and every pair's LCM stays at or under 100, so the answer is always findable by listing, not a wall of computation.

Sample goal — invented; edit every bracket to fit the student:
By [annual review date], when given 10 number pairs each asking for either the greatest common factor (GCF) or the least common multiple (LCM), [Student] will write the correct value for [8 of 10] pairs on [3] consecutive weekly probes, as measured by teacher-scored GCF/LCM probes.

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

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

AS MEASURED BY (THIS PROBE: GCF AND LCM FORMS A-F, PAGE 8-11)

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

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	MET?

Giving and scoring the probe

☐ Say: "Read each problem. It tells you whether to find the GCF or the LCM. Write the number in the box."

☐ Correct: the exact GCF or LCM for that pair, whichever the item names.

☐ A pair with GCF = 1 (no common factor but 1) is a correct answer, not an error.

☐ Untimed. Let the student finish all ten.

Scoring rules for this student (accepted answers, errors, etc.)

What the errors say to reteach (carry over from this form)

My name: _____ **Date:** _____

Read the problem. Write the number in the box.

EACH PROBLEM NAMES GCF OR LCM. WRITE THE NUMBER IN THE BOX

- Find the GCF of 2 and 11.
- Find the LCM of 2 and 17.
- Find the LCM of 5 and 13.
- Find the GCF of 4 and 6.
- Find the LCM of 2 and 7.
- Find the LCM of 3 and 11.
- Find the GCF of 8 and 22.
- Find the GCF of 3 and 15.
- Find the LCM of 6 and 15.
- Find the GCF of 8 and 18.

GCF AND LCM **Greatest Common Factor and Least Common Multiple – 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 RETEACHED)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

GCF AND LCM **Greatest Common Factor and Least Common Multiple – Caseload Summary**

Every student 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 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

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 the folders.

EXAMPLE A Filled-In Data Log (Invented Student)

Darius is invented. Twelve weekly probes on greatest common factor and least common multiple, the aim line, the change that three low points formed, and the criterion being met.

The goal, as written for Darius, fifth grade (invented)
By May 20, when given 10 number pairs each asking for either the greatest common factor (GCF) or the least common multiple (LCM), Darius will write the correct value for 8 of 10 pairs on 3 consecutive weekly probes, as measured by teacher-scored GCF/LCM probes (forms A-F).

#	DATE	FORM	CORRECT	ERRORS	GRAPHED	NOTES
1	5/8	A	3	7	3	baseline
2	5/9	B	4	6	4	baseline
3	5/10	C	3	7	3	baseline (median of 3, 4, 3 = 3)
4	5/17	D	2	8	2	found the GCF correctly but gave the GCF again when the item asked for the LCM, missing up which task the item named
5	5/24	E	3	7	3	same pattern
6	10/1	F	2	8	2	3 under aim line: practiced reading which word, GCF or LCM, the item asked for before computing anything
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	8	2	8	criterion met, 2 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 (2, 3, 2) 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: "found the GCF correctly but gave the GCF again when the item asked for the LCM, missing up which task the item named" 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

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 fit. 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 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 from the baseline and the student's IEP. Every form.

Equivalent forms, and why it matters

Every form has ten number-pair problems, five asking for the GCF and five for the LCM, the same split every form, and no pair-and-task combination repeats across the six forms. A score on one form

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.

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- ☐ 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.

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- ☐ 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 number-pair problems, five asking for the GCF and five for the LCM, the same split every form, and no pair-and-task combination 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.

Greatest Common Factor and Least Common Multiple — Goal and Directions

Goal, baseline, directions and benchmarks for one skill. Untimed; score is GCF/LCM answers correct out of 10.

Ten number-pair problems per form: five ask for the GCF (greatest common factor) and five ask for the LCM (least common multiple), the same 5/5 split every form. Every number is 2 to 24, and every pair's LCM stays at or under 100, so the answer is always findable by listing, not a wall of computation.

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

By [annual review date], when given 10 number pairs each asking for either the greatest common factor (GCF) or the least common multiple (LCM), [Student] will write the correct value for [8 of 10] pairs on [3] consecutive weekly probes, as measured by teacher-scored GCF/LCM 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: GCF AND LCM, 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. It tells you whether to find the GCF or the LCM. Write the number in the box."
- ☐ Correct: the exact GCF or LCM for that pair, whichever the item names.
- ☐ A pair with GCF = 1 (no common factor but 1) is a correct answer, not an error.
- ☐ 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 the problem. Write the number in the box.

EACH PROBLEM NAMES GCF OR LCM · WRITE THE NUMBER IN THE BOX

1. Find the **GCF** of 9 and 11.2. Find the **LCM** of 2 and 17.3. Find the **LCM** of 5 and 13.4. Find the **GCF** of 4 and 6.5. Find the **LCM** of 2 and 7.6. Find the **LCM** of 3 and 11.7. Find the **GCF** of 8 and 22.8. Find the **GCF** of 3 and 15.9. Find the **LCM** of 6 and 15.10. Find the **GCF** of 8 and 18.

My name: _____ Date: _____



Read the problem. Write the number in the box.

EACH PROBLEM NAMES GCF OR LCM · WRITE THE NUMBER IN THE BOX

1. Find the **GCF** of 12 and 24.

2. Find the **LCM** of 16 and 20.

3. Find the **GCF** of 4 and 12.

4. Find the **GCF** of 4 and 8.

5. Find the **GCF** of 5 and 14.

6. Find the **LCM** of 9 and 12.

7. Find the **LCM** of 6 and 9.

8. Find the **LCM** of 6 and 24.

9. Find the **GCF** of 12 and 18.

10. Find the **LCM** of 6 and 13.

Greatest Common Factor and Least Common Multiple — Data Log and Graph

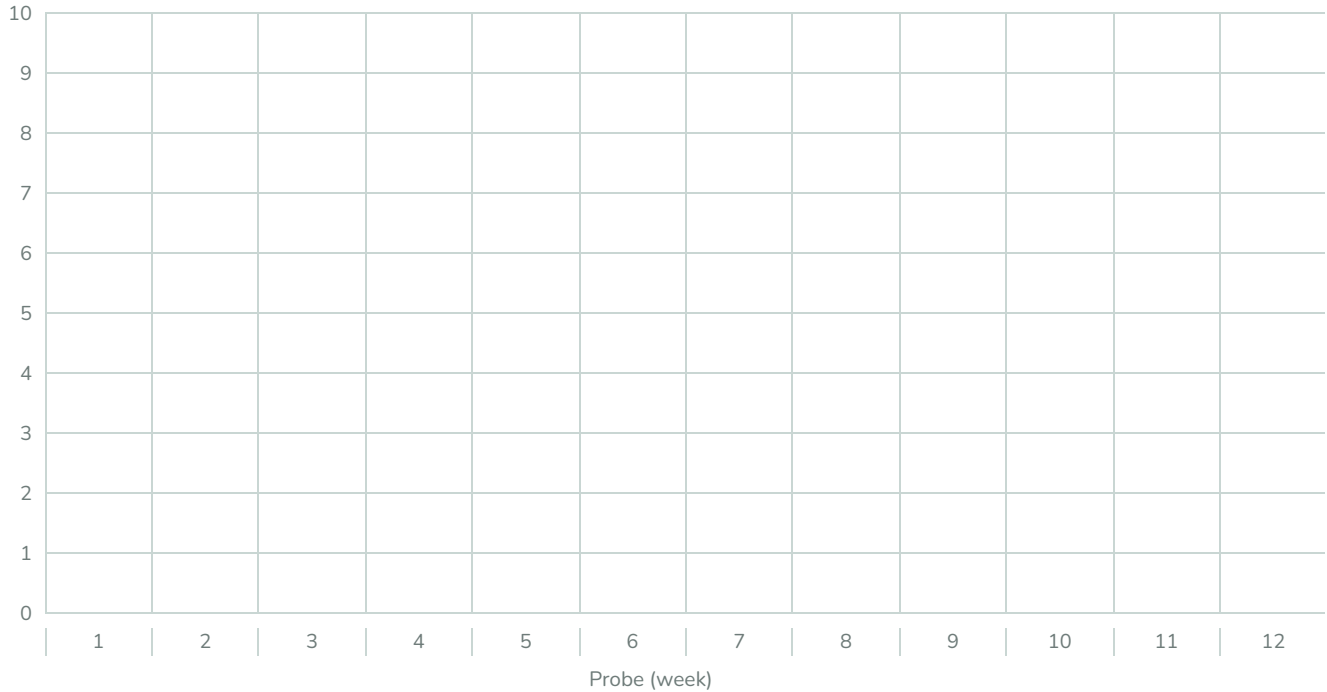
One row per probe. Three points in a row under the aim line is a decision, not a feeling: change the teaching and write what changed in the notes.

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)

Greatest Common Factor and Least Common Multiple – 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)

Darius is invented. Twelve weekly probes on greatest common factor and least common multiple, the aim line, the change that three low points forced, and the criterion being met.

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

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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	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 (2, 3, 2) 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: “found the GCF correctly but gave the GCF again when the item asked for the LCM, mixing up which task the item named” 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 greatest common factor and least common multiple probes (10 items, untimed), Darius 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.