# Print and check before cutting

Test one sheet pair first; printer alignment varies

## A practical duplex check

1. Print pages 1 and 2 of one operation PDF on plain US Letter paper, at 100% / actual size, duplex, flip on the long edge. Do not use booklet or multiple-pages-per-sheet printing.

2. Hold the sheet against a light. The outer grid borders should align. A001 on the first front must have A001 and 0 + 0 = 0 directly behind it. Also check the top-right and bottom-left card IDs.

3. If IDs do not match, change the printer flip setting or paper-feed orientation and retest. Do not cut the full deck until the trial works. For a single-sided printer, the reload direction depends on your printer: mark a test sheet to learn it.

4. For A4, use the same fit setting on front and back and repeat the alignment test. Scaling changes card dimensions. Avoid separate automatic scaling on just one side.

5. Print only the page pairs you need. Cut on the thin borders. Final partly filled sheets contain spare cards. Both sides of a spare card stay blank of mathematical facts.

## Single-sided alternative

Print only the question pages (odd numbers). Keep answer pages as an adult reference. You can write answers on the backs after cutting. The original free sample decks use a different, unnumbered selection; their answers cannot be paired with these full decks.



At actual size, this line is 2 inches / 50.8 mm.

# Worked practice example

Fictional observations, not real student data

An adult selects six multiplication cards for a learner who is exploring the sixes. The aim is to hear strategies and choose useful next practice, not to rank the learner by speed.

| Card | Fact | Fictional observation | Next step |
|---|---|---|---|
| M079 | 6 × 0 = 0 | Independent; explains no groups | Mix into later review |
| M080 | 6 × 1 = 6 | Independent | Mix into later review |
| M081 | 6 × 2 = 12 | Doubles 6 with counters | Try a drawing next time |
| M084 | 6 × 5 = 30 | Counts six groups of five | Connect to 6 × 10, then halve |
| M085 | 6 × 6 = 36 | Says 30, then adds one group of 6 | Revisit using 6 × 5 + 6 |
| M086 | 6 × 7 = 42 | Not yet sure | Use 6 × 5 + 6 × 2 |

## Connect related operations

A085 is 6 + 6 = 12. S085 is 12 − 6 = 6. M085 is 6 × 6 = 36. D072 is 36 ÷ 6 = 6. Matching ID numbers across operations do not always form a fact family: read the printed facts before choosing cards.

Next session: choose M081 and M085 for explanation, add M080 as a familiar fact, then try M086 with counters. Record what actually happened. If support is still needed, keep it available and adjust the chosen facts.