Cake Pan Conversion Chart

Eleven pans, measured two ways — area and volume — with the batter multiplier between any two of them, plus how to move the oven time and temperature instead of guessing.

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01 Every pan, two measurements

Area and volume disagree, and knowing which one your recipe cares about is the whole trick. **Area** controls how fast the batter sets — it is what matters for thin batters, brownies, bars and sheet cakes. **Volume** controls how much batter the pan holds — it is what matters for thick batters and anything that rises.

Pan	Area sq in	Volume cups	Relative to 9" round	Area source
6" round	28	4.0	**0.44×**	πr^2
7" round	38	5.3	**0.59×**	πr^2
8" round	50	7.0	**0.78×**	πr^2
9" round	64	8.8	**1.00×**	πr^2 (reference)
10" round	78	10.9	**1.22×**	πr^2
12" round	113	15.7	**1.77×**	πr^2
8 × 8 square	64	8.9	**1.00×**	w × d
9 × 9 square	81	11.2	**1.27×**	w × d
9 × 13 rectangle	117	16.2	**1.83×**	w × d
9 × 5 loaf	45	8.6	**0.70×**	w × d
10" bundt	100*	12	**1.56×**	approximation

Area is computed from pan dimensions — πr^2 for rounds, width × depth for rectangles — the same method King Arthur Baking publishes. **Volume** is geometric volume for a standard 2-inch-deep pan (2.75 in for the loaf) divided by 14.44 cu in per cup; the results match King Arthur's published 8.8 cups for both the 8" square and the 9" round. ***The 10" bundt area is a proxy** — a fluted ring has no simple formula — but its 12-cup volume is a published figure, and volume is what governs how much batter it takes.

WHERE THE TWO MEASUREMENTS DISAGREE

8" round and 8×8 square have the same area — 64 sq in — but different volumes: 7.0 cups against 8.9. The square holds more batter because it has corners the round does not. Swap the same batter between them and you get a thinner cake than the recipe expects, even though the areas match.

That is why the matrix below is based on area and the time guidance is separate: area tells you how the batter spreads, volume tells you whether it fits.

02 Moving the oven time, not just the batter

Scaling the batter is arithmetic. Moving the bake time is not — it depends on how the depth changed, which is why these are ranges rather than a formula.

If you moved to…	Bake time	Oven temp	Why
A larger pan batter shallower	**−15 to 20%** or start checking 10–15 min early	unchanged	A thinner layer sets faster
A smaller pan batter deeper	**+5 to 15 min**	**−25 °F** (−14 °C)	Deep batter browns the edge before the centre sets

THESE ARE RANGES, NOT A RULE

Established baking practice, not a computed formula. The bigger the change in depth, the further toward the top of each range you should go. **Test doneness with a skewer — never with the clock.**

03 Batter multiplier between pans

Find the pan your recipe is written for on the left, the pan you actually own across the top, and read the multiplier. **Multiply every ingredient by that number.**

$$\text{new batter} = \text{recipe batter} \times (\text{target pan area} \div \text{original pan area})$$

Recipe is for	6"R	8"R	9"R	10"R	8×8	9×9	9×13	loaf	bundt
8" round	0.56	**1.00**	1.28	1.56	1.28	1.62	2.34	0.90	2.00
9" round	0.44	0.78	**1.00**	1.22	1.00	1.27	1.83	0.70	1.56
8 × 8 square	0.44	0.78	1.00	1.22	**1.00**	1.27	1.83	0.70	1.56
9 × 9 square	0.35	0.62	0.79	0.96	0.79	**1.00**	1.44	0.56	1.23
9 × 13 rectangle	0.24	0.43	0.55	0.67	0.55	0.69	**1.00**	0.38	0.85
6" round	**1.00**	1.79	2.29	2.79	2.29	2.89	4.18	1.61	3.57

A multiplier near 1.00 does not mean an identical cake. 9" round and 8×8 square share an area, so the batter volume is the same, but the 9" round is shallower and its edges brown faster. Treat multipliers between 0.9 and 1.1 as "same amount of batter, different shape" — see the time guidance next.

04 Two things worth knowing before you swap

Glass and dark metal pans run hot

If you move from a light aluminium pan to glass or dark non-stick, drop the oven by 25 °F as well. That rule and the "smaller pan" rule can stack — but do not drop more than 50 °F total, or the centre will not set before the edges dry out.

Check the capacity before you commit

Fill any pan no more than two-thirds full for batter that rises. The volume column in section 01 is the pan's rated capacity, so 2/3 of it is what you can safely pour. A 9×13 holds 14 cups, meaning about 9 cups of batter; a 10" bundt holds 12 cups, meaning 8.

05 Sources

1. **King Arthur Baking** — published standard pan volumes for 6", 8", 9", 10" rounds, 8×8 and 9×9 squares, 9×13 rectangles, 9×5 loaves and 10" bundt pans, and guidance that pan size changes bake time by roughly 10–15 minutes either way.
2. **King Arthur Baking** — *Why the size of your baking pan matters so much*, on volume differences between pans and how they drive timing. kingarthurbaking.com/blog
3. **Food Network** — standard guidance to reduce oven temperature by 25 °F when batter is deeper than the recipe intended.

Areas are computed from pan dimensions; the arithmetic is ours and is reproducible from the sizes printed. Volumes are King Arthur's published figures. The bake-time and temperature adjustments are established practice summarised from the sources above, not measured values — they appear here as ranges for that reason.