# How to Draw Scale Rows on Easter Eggs: Curved Surface Guide

Original tasks 1, 2, 3 / complete keys

Task 1

An egg outline is 10 cm tall and 6 cm wide at the widest point. You choose a hypothetical row height of 1 cm and a hypothetical unit width of 1 cm at the widest row. The widest row guide is 6 cm long. How many full units fit in the widest row, and how many rows can you plan from the widest point to the top tip if the top tip is 5 cm above the widest point?

Answer: 6 full units in the widest row; 5 rows above the widest point.

Reason: 6 cm divided by 1 cm per unit equals 6 units. 5 cm divided by 1 cm per row equals 5 rows. The bottom half is also 5 cm, so the total including the widest row is 5 plus 1 plus 5 equals 11 rows.

Check: Multiply units by unit width to recover the guide length: 6 times 1 cm equals 6 cm. Add row counts: 5 above plus 1 widest plus 5 below equals 11 rows.

Task 2

A row guide is 7 cm long and you plan 7 units of 1 cm width. The next row above is 5 cm long. If you keep unit width at 1 cm, how many full units fit in the shorter row, and what do you do with the leftover space?

Answer: 5 full units fit; leave the leftover space as a clean margin rather than stretching units.

Reason: 5 cm divided by 1 cm per unit equals 5 units. The leftover 0 cm in this exact example means no partial unit is needed, but if the shorter row were 5.5 cm, you would still use 5 full units and leave a 0.5 cm margin.

Check: Multiply 5 units by 1 cm to get 5 cm, matching the shorter guide length. Confirm no unit was stretched by comparing unit widths in both rows.

Task 3

You have drawn row 1 with tips at 1 cm, 2 cm, and 3 cm along its guide. Row 2 is staggered. Where should the first two tips of row 2 fall if you use half-unit staggering?

Answer: At 1.5 cm and 2.5 cm along the guide.

Reason: Half-unit staggering places each new tip halfway between two tips of the previous row. Halfway between 1 cm and 2 cm is 1.5 cm; halfway between 2 cm and 3 cm is 2.5 cm.

Check: Check that 1.5 cm is not equal to any row 1 tip position and that the distance from 1 cm to 1.5 cm equals the distance from 1.5 cm to 2 cm.

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Original tasks 4 / complete keys

Task 4

An egg outline is 14 cm tall and 9 cm wide at the widest point. You choose a hypothetical row height of 1.5 cm and a hypothetical unit width of 1.5 cm at the widest row. The widest row guide is 9 cm long. How many full units fit in the widest row, and how many rows can you plan from the widest point to the top tip if the top tip is 6 cm above the widest point?

Answer: 6 full units in the widest row; 4 rows above the widest point.

Reason: 9 cm divided by 1.5 cm per unit equals 6 units. 6 cm divided by 1.5 cm per row equals 4 rows. The bottom half is also 6 cm, so the total including the widest row is 4 plus 1 plus 4 equals 9 rows.

Check: Multiply 6 units by 1.5 cm to get 9 cm. Multiply 4 rows by 1.5 cm to get 6 cm. Add row counts: 4 above plus 1 widest plus 4 below equals 9 rows.

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Source rubric / reflection

- [ ] Row guides are smooth arcs that meet the left and right outline at equal heights.
- [ ] Adjacent rows are staggered so no tip sits directly below a tip in the previous row.
- [ ] Unit width stays roughly constant while unit count decreases in shorter rows.
- [ ] All scale tips point toward the same narrow end.
- [ ] Shading uses a consistent two-value convention that keeps rows readable.
- [ ] Valid alternatives in scale shape or light-dark direction are accepted if applied consistently.

Reflection: What did you check, what did you change, and what will you try next?