Draw a Family Tree with Branch Layout and Generational Tiers

Original tasks 1, 2, 3 / complete keys

Task 1

A page has a usable tier width of 200 mm. You want four name-slot boxes of 35 mm width with 8 mm gaps. Does the tier fit? Show the arithmetic.

Answer: Yes. Four boxes and three gaps equal 4 times 35 plus 3 times 8, which is 140 plus 24, totaling 164 mm. This is less than 200 mm, leaving 36 mm.

Reason: Multiply box width by the number of boxes, multiply gap width by the number of gaps between boxes, add the two totals, and compare with the tier width.

Check: Recount the gaps: four boxes have three gaps between them. Confirm 164 is less than 200.

Task 2

You have three tiers with row heights of 50 mm, 50 mm, and 50 mm, and two gaps of 12 mm between tiers. The paper height is 297 mm and you reserve 40 mm for a title and 30 mm for notes. Does the layout fit?

Answer: Yes. Three rows equal 150 mm, two gaps equal 24 mm, and the reserved space equals 70 mm. The total is 150 plus 24 plus 70, which is 244 mm, less than 297 mm, leaving 53 mm.

Reason: Add row heights, add inter-tier gaps, add reserved title and notes space, then compare with paper height.

Check: Re-add in a different order: 70 plus 24 equals 94, and 94 plus 150 equals 244. Confirm 244 is less than 297.

Task 3

A middle-tier connector must branch to three child boxes. The child boxes are 40 mm wide with 10 mm gaps, centered under the connector. Describe where the horizontal spread line should start and end relative to the child boxes.

Answer: The spread line should start above the left edge of the leftmost child box and end above the right edge of the rightmost child box, passing over the gaps. Short vertical drops then enter each box top edge.

Reason: The spread line distributes the branch to all children. Aligning its ends with the outer box edges keeps the drops vertical and avoids diagonal lines that could cross text.

Check: Trace each drop from the spread line to a box top edge. Confirm three drops and no drop ending in empty space.

Draw a Family Tree with Branch Layout and Generational Tiers

Original tasks 4 / complete keys

Task 4

You are drawing a name slot 40 mm wide and 12 mm tall. A name written in print has lowercase letters that rise 5 mm above the baseline. Where should the midline be, and does the name fit below it?

Answer: The midline is halfway up the box, at 6 mm above the baseline. Lowercase letters rising 5 mm stay below the 6 mm midline, so the name fits the convention.

Reason: The midline is defined as half the box height. Compare the lowercase letter height with the midline height to check the convention.

Check: Measure the box height, divide by two, and compare with the measured lowercase letter height. Confirm 5 mm is less than 6 mm.

Draw a Family Tree with Branch Layout and Generational Tiers

Source rubric / reflection

- [ ] Tier labels are present and match the number of generation rows.
- [ ] Name-slot boxes are aligned to tier lines and do not overlap.
- [ ] Names use a consistent baseline and lowercase letters stay below the midline; alternative letter styles are accepted if legible.
- [ ] Branch lines connect every child to a parent connector without crossing text.
- [ ] Arithmetic check for box width plus gap is shown or stated.
- [ ] Diagram is legible and free of stray lines that end in empty space.

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