# Wire Contour Drawing: Translate a Line Drawing into a Bendable Wire Plan

Original tasks 1, 2 / complete keys

Task 1

A contour drawing of a mug body is a closed loop with 4 bend points. The handle is a separate open wire joined at two points on the body. Using hypothetical 2.0 mm wire for the body and 1.5 mm for the handle, state the number of bend points, the number of joins, and whether each path is open or closed.

Answer: Body: closed loop, 4 bend points, 0 joins on the body itself. Handle: open path, 0 bend points if straight, 2 joins where it meets the body. Total joins: 2.

Reason: The body returns to its start, so it is closed. The handle has two free ends that attach to the body, creating two join points. A straight handle has no sharp direction changes, so no bend points.

Check: Trace the body loop on the grid to confirm it closes. Mark the two handle attachment points and confirm both sit on straight sections of the body.

Task 2

A leaf outline is a closed loop with 5 bend points. A straight stem of hypothetical length 35 mm joins at one point. Add 10 mm handling allowance at the stem's free end. State the stem cut length and the total number of joins.

Answer: Stem cut length: 35 mm + 10 mm = 45 mm. Total joins: 1.

Reason: The stem has one free end, so one handling allowance is added. The stem attaches to the outline at one point, creating one join. The closed loop has no free ends and needs no allowance.

Check: Add 35 and 10 to confirm 45 mm. Confirm the join point is on a straight section of the outline, not at a bend.

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Original tasks 3, 4 / complete keys

Task 3

A contour path has bend points at distances of 20 mm, 45 mm, and 70 mm from the start. The path is open and ends at 90 mm. Add 10 mm handling allowance at each free end. State the total cut length and list the bend distances in order.

Answer: Total cut length: 90 mm + 10 mm + 10 mm = 110 mm. Bend distances in order: 20 mm, 45 mm, 70 mm.

Reason: The open path has two free ends, so two allowances are added. The bend distances are listed in path order from the start.

Check: Add 90, 10, and 10 to confirm 110 mm. Confirm the three bend distances increase in order and fall before the 90 mm end point.

Task 4

A plan uses hypothetical 1.5 mm wire for a small contour with 3 bend points and one join. The contour length is 60 mm and the join adds a separate 20 mm wire with one free end. Add 10 mm handling allowance at the free end. State the total wire length and identify one mistake to avoid in this plan.

Answer: Total wire length: 60 mm + 20 mm + 10 mm = 90 mm. Mistake to avoid: placing the join at a sharp bend point.

Reason: The contour length and the separate join wire are added, then one handling allowance is added for the single free end. Joins should sit on straight sections to keep the connection strong and easy to form.

Check: Add 60, 20, and 10 to confirm 90 mm. Check that the join point is marked on a straight section of the contour, not at one of the 3 bend points.

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Source rubric / reflection

- [ ] Contour path is clearly drawn and numbered in order.
- [ ] Every sharp direction change is marked as a bend point.
- [ ] Open or closed path is stated and matches the drawing.
- [ ] Join points are marked on straight sections, not at bends.
- [ ] Wire gauge is measured and recorded in millimetres.
- [ ] Cut lengths include a stated handling allowance.
- [ ] Bend sequence is listed with angle and distance estimates.
- [ ] Plan is checked by tracing on the grid before cutting.

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