Draw a Vine: Alternating Leaves and Tendrils on a Stem

Original tasks 1, 2, 3 / complete keys

Task 1

Draw a vine with four nodes on a straight stem. Use x-height = 1 unit, node interval = 2 units, leaf length = 1.5 units, leaf width = 0.9 units. Alternate sides starting on the left. Add one tendril between nodes 2 and 3.

Answer: Four nodes at 0, 2, 4, and 6 units. Leaves on L, R, L, R. Each leaf is 1.5 units long and 0.9 units wide with a 0.3-unit petiole. One thin tendril between nodes 2 and 3, not touching either node.

Reason: The interval and proportions are fixed by the prompt, so the main check is alternation and tendril placement. Starting left means node 1 is L, node 2 is R, and so on.

Check: Measure node gaps: all should be 2 units. Confirm adjacent nodes differ in side. Confirm the tendril lies between nodes 2 and 3 and does not cross a node.

Task 2

A student draws five nodes with leaves on L, R, R, L, R. Identify the arrangement error and state the corrected side sequence if the first node stays L.

Answer: The error is two consecutive R leaves at nodes 2 and 3. Corrected sequence: L, R, L, R, L.

Reason: Alternating placement requires each node to differ from the one before it. Keeping node 1 as L forces the rest of the sequence.

Check: Compare each adjacent pair; no pair should match. Write the sequence and scan for repeats.

Task 3

Using x-height = 2 units, draw three leaves with lengths 4, 4, and 6 units. State whether the set is consistent and what change makes it consistent.

Answer: The set is inconsistent because the third leaf is 6 units instead of 4. Change the third leaf to 4 units, or state a deliberate variation rule before drawing.

Reason: Leaf length is defined as a multiple of x-height. With x-height 2, a 4-unit leaf is 2 x-height units. The 6-unit leaf is 3 x-height units, breaking the stated ratio.

Check: Divide each length by x-height. Consistent leaves give the same multiple; here 2, 2, and 3.

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Original tasks 4 / complete keys

Task 4

Draw a vine with six nodes and tendrils at alternate internodes. Use node interval = 3 units and leaf length = 2 units with x-height = 1 unit. Place tendrils so no tendril touches a node.

Answer: Six nodes at 0, 3, 6, 9, 12, and 15 units. Leaves alternate L, R, L, R, L, R, each 2 units long. Tendrils between nodes 1-2, 3-4, and 5-6, each a thin open coil clear of the nodes.

Reason: Alternate internodes means every other gap between nodes. With six nodes there are five gaps, so three tendrils fit at gaps 1, 3, and 5.

Check: Count nodes and gaps. Confirm tendril count equals alternate gaps. Check each tendril's endpoints sit in the gap, not on a node.

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Source rubric / reflection

- [ ] Stem path is continuous and readable as a vine.
- [ ] Nodes are marked at a stated interval; spacing is equal or deliberately varied.
- [ ] Exactly one leaf attaches per node, alternating sides.
- [ ] Leaf length and width are consistent multiples of the stated x-height.
- [ ] Petioles are short and attach at nodes without hiding them.
- [ ] Tendrils sit between leaves or at alternate internodes and do not obscure nodes.
- [ ] Valid alternative leaf shapes are accepted if proportions and attachment are consistent.
- [ ] Final hierarchy reads: stem, then leaves, then tendrils.

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