# Plant Height and Leaf Count

Make a scatter plot and describe association, a cluster, and a possible outlier

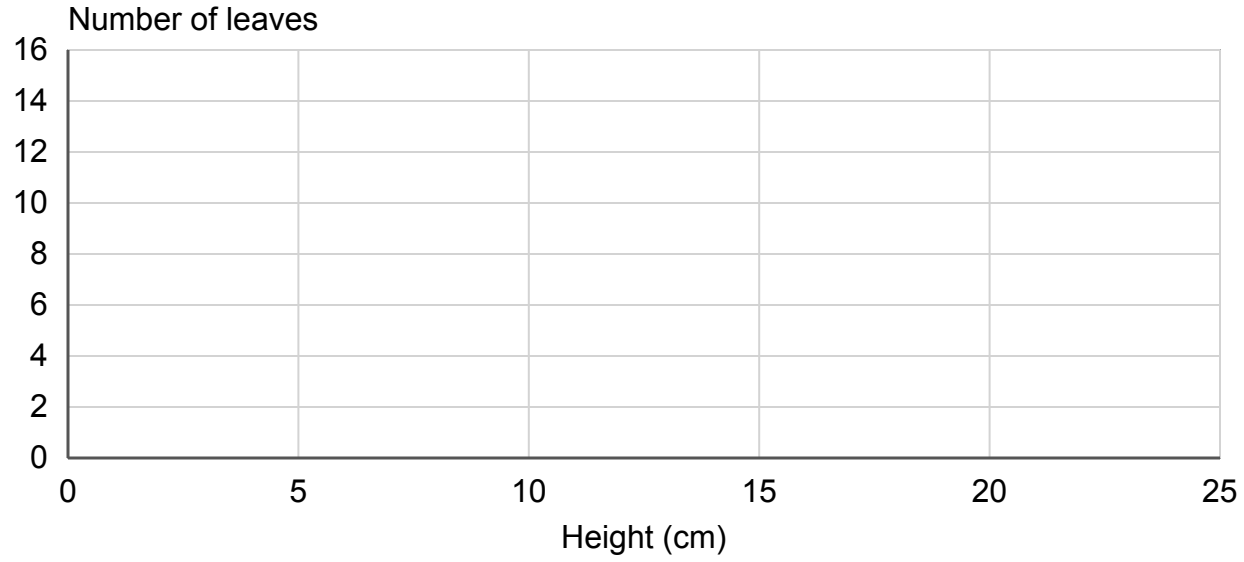
Name: _____ Date: _____

## Part 1 - Plot the paired measurements

**Fictional instructional data:** A class measured the height and number of leaves of 11 bean plants on the same day. Each letter names one plant. Keep each height and leaf-count pair together.

| Plant | Height (cm) | Leaves | Plant | Height (cm) | Leaves |
|---|---|---|---|---|---|
| A | 8 | 4 | G | 18 | 9 |
| B | 10 | 5 | H | 20 | 10 |
| C | 12 | 6 | I | 22 | 11 |
| D | 14 | 7 | J | 24 | 12 |
| E | 15 | 8 | K | 16 | 15 |
| F | 16 | 8 | | | |

**1.** Plot all 11 points. Write the plant letter beside each dot. Check that the horizontal coordinate is height and the vertical coordinate is leaves.




**Quick check:** Locate plant F in the table. Its dot should be at (____, ____).

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## Part 2 - Read the pattern

Use evidence from your scatter plot. A pattern of association does not, by itself, show that one quantity causes the other.

**2.** Describe the overall association. Include its direction and whether the points are roughly linear, nonlinear, or neither.

**3.** Is there a cluster? Name a reasonable height-and-leaf-count region where several points are grouped, or explain why there is no clear cluster.

**4.** Identify one possible outlier by plant letter and coordinates. Explain why it is unusual compared with the main pattern.

**5.** Complete the claim carefully: “These measurements show an association between plant height and leaf count. They do not prove that _____.”

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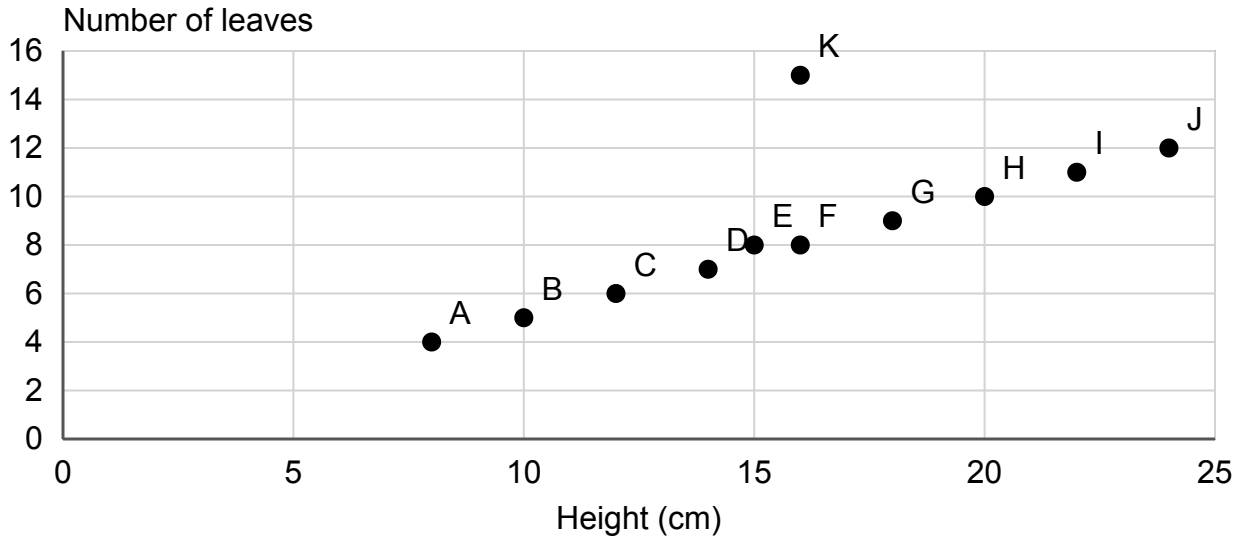
## Answer key and teaching notes

**Setup:** Print and supply all student pages, keeping teacher-key pages separate. Supply pencils and rulers. Keep each height paired with its leaf count.

**Teacher script:** “Each plant’s height-and-leaf-count entry gives one point. Most table rows show two plant entries, so each of those rows gives two points. Plot height first and leaves second. Describe patterns across all points. Association alone does not show that one variable causes the other.”

**Observe:** Check that students plot all 11 pairs, support a pattern with coordinates, and distinguish an outlier from the main group. Prompt: “Which coordinate is horizontal?”

**1. Completed plot:** A(8,4), B(10,5), C(12,6), D(14,7), E(15,8), F(16,8), G(18,9), H(20,10), I(22,11), J(24,12), K(16,15). F is (16,8).




**2.** Sample response: “There is a positive, roughly linear association. As height increases, leaf count generally increases.” Accept “roughly linear positive association” with supporting evidence.

**3.** Sample response: “Several points cluster around heights of 12-20 cm and leaf counts of 6-10.” Other reasonable regions containing several main-pattern points are acceptable.

**4.** Plant K at (16,15) is a possible outlier because plants near 16 cm generally have about 8 leaves, while K has 15 leaves and lies well above the main pattern.

**5.** Sample completion: “...do not prove that being taller causes a plant to have more leaves.” Also accept statements noting that other conditions or measurements may affect both quantities.

**Source credit:** Original fictional instructional dataset created for this worksheet, 2026. It is not a report of an actual class investigation.