Read an invented growth log

What does a small growth table support, and what cannot it tell us?

Read two complete invented plant-height logs and separate a measured change in the example from an explanation of its cause.

Investigate | 15–25 minutes, or two differences | The supplied example, read or heard, Optional scrap paper and a pen or pencil

Start here Use this invented table: day 0, 2, 4; plant A heights 2, 3, 4 cm; plant B heights 2, 4, 5 cm. Their growing conditions are not supplied.

Height and growth answer different questions

Plant	Day 0	Day 2	Day 4	Change 0–4
A	2 cm	3 cm	4 cm	+2 cm
B	2 cm	4 cm	5 cm	+3 cm

Days 2–4: both gain 1 cm. Growing conditions are not supplied.

Invented records · no plants were measured for this example

Height is not the same as growth

1 Keep units and timing

Copy or read both rows with the same day headings. These numbers are a constructed practice dataset, not plants measured by Horizon.

2 Calculate a change

From day 0 to 4, A changes by 4 - 2 = 2 cm and B by 5 - 2 = 3 cm. Compare changes from the starting height, not only final heights.

3 Keep cause open

B has a larger total change in this example. You cannot explain that difference by light, water or treatment because those conditions and repeated samples are missing.

4 Choose a next question

Name information that would help a fair comparison, such as the starting type, conditions and repeated records. You can leave the cause unresolved.

Invented record same start different changes

Day headings are 0, 2, 4. A is 2, 3, 4 cm; B is 2, 4, 5 cm. The table supplies no growing conditions.

• Both begin at 2 cm. A gains 2 cm by day 4; B gains 3 cm.

• During days 2 to 4 both gain 1 cm, although their final heights differ.

• The table supports these differences; it does not identify why they occurred.

What this example can show Two invented logs cannot establish that a treatment causes growth, predict a species' growth or represent all plants.

A different way

Compare the start and finish labels aloud, or draw arrows showing the changes. Growing a plant or plotting a graph is optional.

If you want to go further

Plot the three supplied values for each plant on the same labelled axes. Explain why B's two interval changes are unequal rather than assuming a constant growth rate.

Something to notice

Did I describe a difference without inventing its cause?

Read or explore more

Horizon topic Plant Growth Data

https://launchhorizonhq.com/learn/plant-growth-data/

Horizon topic Plants Photosynthesis

https://launchhorizonhq.com/learn/plants-photosynthesis/

Horizon topic Statistics Data

https://launchhorizonhq.com/learn/statistics-data/

OpenStax, Rice University 30.1 The Plant Body

https://openstax.org/books/biology-2e/pages/30-1-the-plant-body

Australian Bureau of Statistics Correlation and causation

https://www.abs.gov.au/statistics/understanding-statistics/statistical-terms-and-concepts/correlation-and-causation