

Plant growth: light and water

Design two fair comparisons using the same temperature and observation time.

Name: _____ Date: _____

1. For light trials, set water = 100, temperature = 25°C and days = 20.
2. For water trials, set light = 100, temperature = 25°C and days = 20. Record modelled height and rate.

Trial	Light	Water	Height	Rate
L1	0	100		
L2	25	100		
L3	50	100		
L4	75	100		
L5	100	100		
W1	100	0		
W2	100	25		
W3	100	50		
W4	100	75		
W5	100	100		

1. Which variables did you keep the same?
2. Compare L2 and W2. What pattern do you notice?
3. How would a real plant experiment differ?

Teacher notes and answers

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Temperature (25°C), elapsed days (20), and the other resource input remain fixed.

L2 and W2 give the same model rate and height because the growth calculation uses the smaller of light and water.

Real plants vary. Use repeated biological samples; units, species, soil, starting size and waterlogging matter. Model outputs are not crop predictions.

Teaching notes

Allow pupils to record rounded displayed values. Calculated height is zero when light or water is zero. The drawn plant is an illustration; use the numerical readout for the table.

Open the matching resource

<https://kiwibee.io/en/simulations/plant-growth-simulation>

Use the student page separately from this answer section. Model outputs are illustrative and depend on the stated settings.