

Seed germination: compare conditions

Compare one condition with a fixed reference seed.

Name: _____ Date: _____

1. Observe day 10 with moisture 60%, temperature 25°C and oxygen 21%.
2. Change one condition per row. The reference keeps moisture 60%, 25°C and oxygen 21%.

Moisture	Temperature	Oxygen	Day	Observed stage
60%	25°C	21%	10	
0%	25°C	21%	10	
60%	25°C	0%	10	
60%	5°C	21%	10	

1. Which conditions prevent root and shoot emergence in this model?
2. Can a wet seed absorb water without proceeding to growth?
3. Why should you not use these timings to predict a crop?

Teacher notes and answers

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Reference: early seedling. Dry condition: seed. No oxygen and 5°C: water absorbed, with no further growth in this simplified model.

Yes. Hydration is represented separately from subsequent oxygen-dependent growth.

The timing and thresholds are illustrative. Species, dormancy, seed viability and disease are omitted.

Teaching notes

The moisture and oxygen controls are independent. In real waterlogged soil, reduced air space can restrict oxygen; the model does not calculate that coupling.

Open the matching resource

<https://kiwibee.io/en/simulations/seed-germination-simulation>

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