



Effect of Temperature on Bean Plant Growth



Background

Bean plants are sensitive to environmental conditions, especially temperature. Temperature influences growth rate, leaf development, stem strength, and productivity. This experiment helps students understand how climate variables affect plant health.

Research Question

How does temperature affect the growth and quality of bean plants? Why is this important? Understanding environmental impact on plants Connecting plant growth to climate change

Methodology

Two groups of bean plants were planted in the same soil type One group placed in a warm environment One group placed in a cold environment Growth was monitored and recorded regularly Temperature was measured using standard tools

Results – Data Table

Data collected showed clear differences between warm and cold environments. Warm environment: Faster growth rate

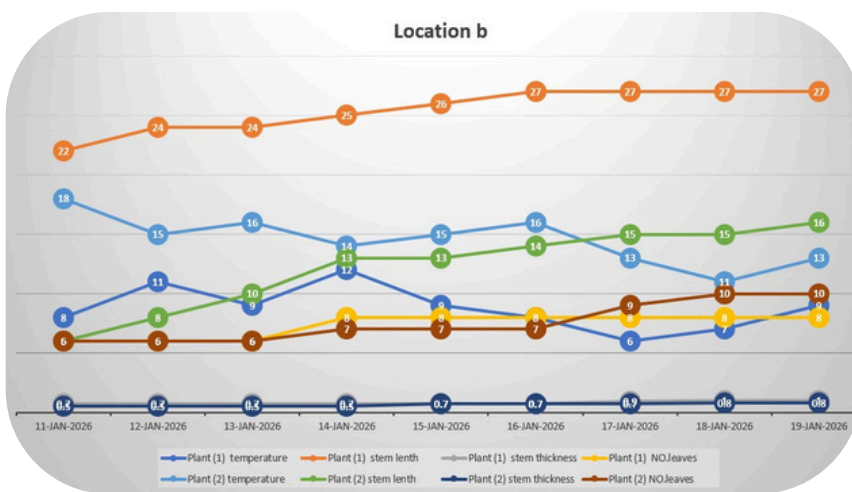
Fewer leaves

Thin and weak stems

Cold environment: Slower growth

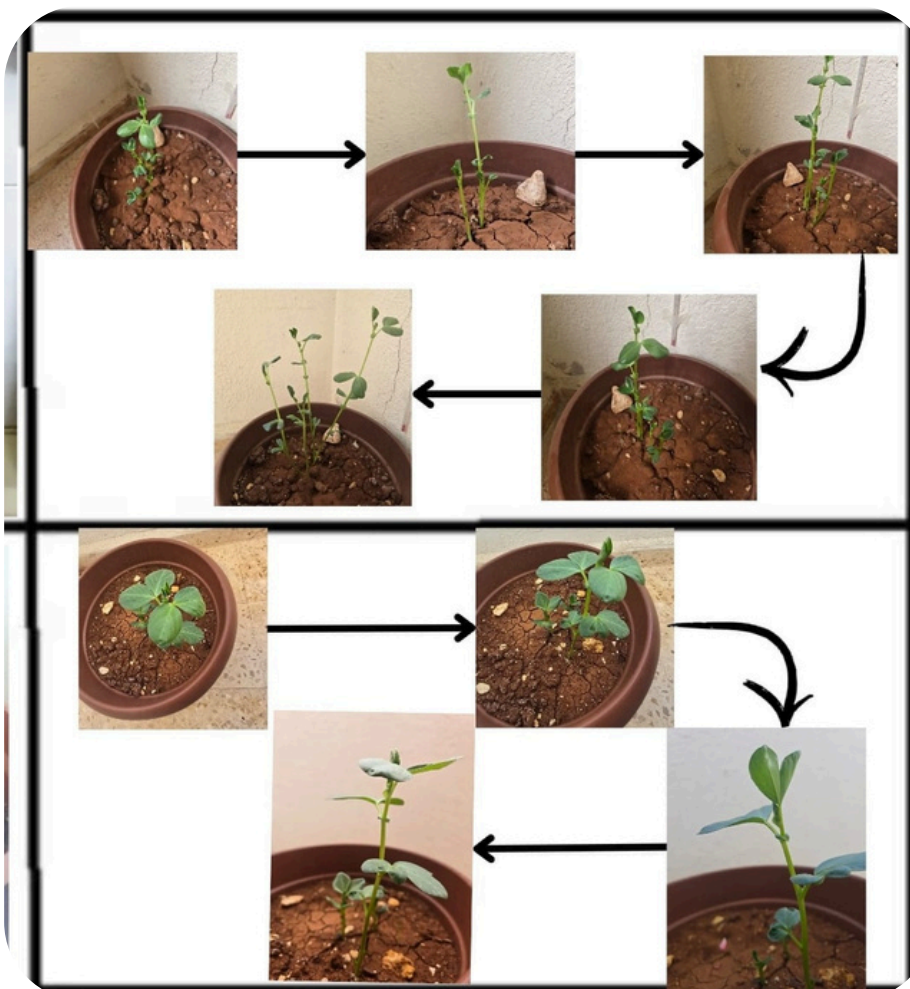
More leaves

Stronger stems



Results – Graphs

Graphs were created to compare:
Growth rate
Number of leaves
Stem thickness
Visual data clearly supports the observed results



Discussion

Although higher temperature increased growth speed, it caused negative effects:
Weak stems unable to support leaves or flowers
Reduced plant productivity

Plants grown in cooler environments were healthier and stronger

Future Work

Test additional temperature ranges
Study long-term productivity
Compare results with other plant species

This project investigates the effect of different temperature conditions on the growth of bean plants. Students conducted a controlled scientific experiment using GLOBE protocols to measure growth parameters. Results showed that higher temperatures increased growth speed but negatively affected plant strength and productivity.

GLOBE Protocols Connection

This project followed GLOBE scientific practices: Atmosphere Protocol – Air Temperature Measurement Regular data collection and documentation Use of standardized procedures to ensure accurate results

Conclusion

Higher temperatures increase growth speed but reduce plant quality.
Moderate or cooler temperatures produce healthier and stronger bean plants.

Connection to VSS Theme

:This project aligns with the VSS theme GLOBE Data Detectives: Using Data to “Explore Change in Your Local Environment”

Students used real data to study environmental change and its impact on plant growth.

Acknowledgment

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