



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.



Results – Graphs

Graphs were created to compare:

Growth rate

Number of leaves

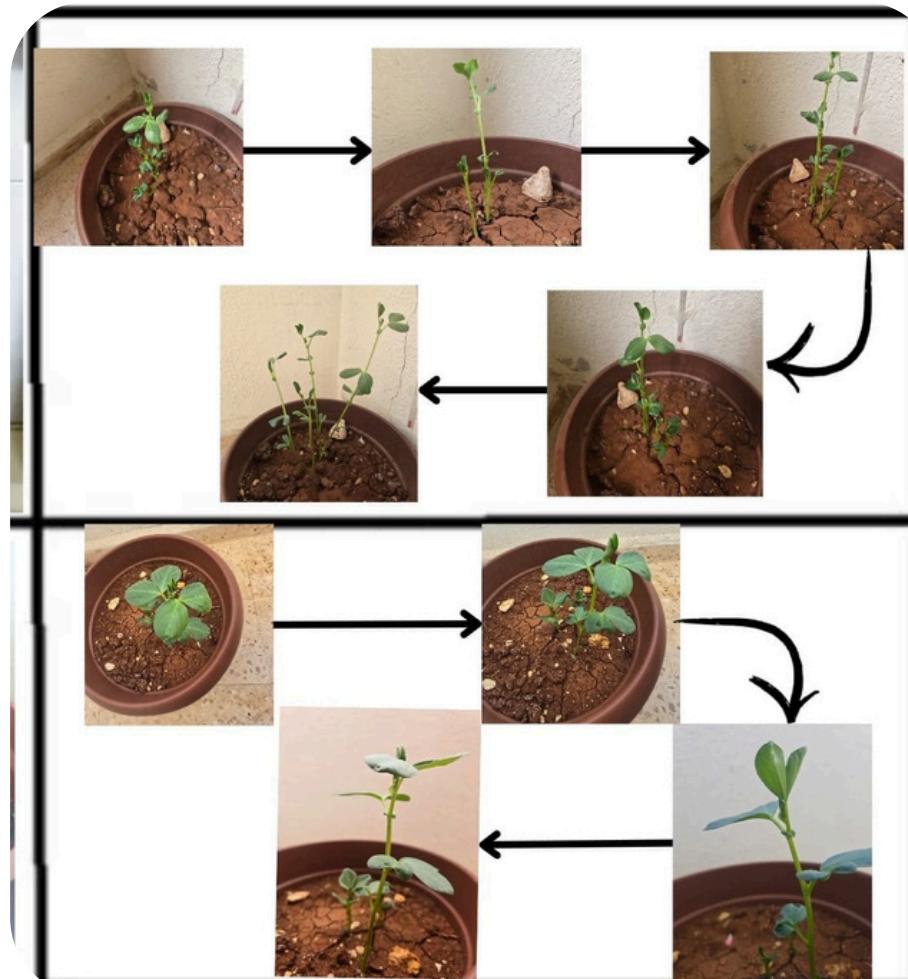
Stem thickness

Visual data clearly supports the observed results

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



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

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

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

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

Acknowledgment

Thanks to GLOBE Program
Teachers and Students
School Administration