Research Proposal: Investigating plant growth - A classroom-based propagation study

Gozo College Agius de Soldanis Middle School, Victoria, Gozo

Students: Year 7 & Year 8 GLOBE students Teacher: Ms Ramona Mercieca

Research Question

Which plant species propagated from cuttings shows the highest growth rate under classroom conditions?

Hypothesis

We hypothesise that spider plants (Figure 2) will show a higher growth rate than other local plant species e.g. Maltese Stocks (Figure 3) because they are well adapted to indoor environments and propagation.

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Study Site

The study will be conducted in classrooms within our school (Figure 1). Each classroom will have 3 propagated plant cuttings planted in pots.

Location: Gozo College Agius de Soldanis Middle School
GPS coordinates: 36.0444 N, 14.2457 E
Environment: Indoor educational setting (classrooms)
Climate: Mediterranean climate; however, plants will be grown indoors under similar light and temperature conditions.
Relevant features: Natural daylight through classroom windows, regular student interaction and consistent care.

Figure 1 Classroom setting where plants will be grown.

Data Collection Plan

A. Data Types and Sources

- Primary data collected by students.
- GLOBE Green-up protocol - Plant growth data including plant height (cm).
- GLOBE Atmosphere protocol - air temperature and humidity.

B. Data Collection Schedule

- Cuttings will be planted at the same time.
- Measurements will be taken once per week.
- Data collection will take place over a period of 10 - 12 weeks.

C. Equipment and Tools

- Plant pots and recycled containers.
- Soil and water. Plants will be watered using RO water to ensure consistency in water quality.
- Rulers and data recording sheets.
- Labels for plant species.
- Data recording sheets.
- Datalogger to measure air temperature and humidity.

D. Who Will Collect the Data?

- Students will work in small groups.
- The teacher will supervise data collection and ensure consistency in measurement techniques.

Figure 2 Spider Plants

Figure 3 Maltese Stocks

Background Information

Plant propagation through cuttings is a simple and sustainable method of producing new plants. This study was chosen to help students understand plant growth, variables in scientific investigations and the importance of local plant species. It also supports environmental education by promoting greening of classrooms and responsibility for living organisms. A botanical expert was consulted for guidance and will conduct an educational session with students, both at school and outdoors, to support learning about plant propagation and care.

Expected Outcomes

- To identify which plant species grows best in classroom conditions.
- To develop students' scientific inquiry & data collection skills.
- To increase awareness of plant, sustainability & biodiversity.
- To ensure each classroom has plants grown & cared for by students.

Challenges & Considerations

- Differences in light exposure between classrooms
- Inconsistent watering routines.

Mitigation Measures:
Clear care schedules will be established and data will be averaged where necessary to account for small variations.

References

Mifsud, S. (n.d.). Online flora of Malta – Home page. MaltaWildPlants.com. https://maltawildplants.com/maltawildplants.html (Accessed January 2026)

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