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# Science Fair Research Paper 7th Grade

## Science Project Report: The Effects of Sunlight on Plant Growth

### Title Page

- **Project Title:** The Effects of Sunlight on Plant Growth
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- **Class:** 7th Grade Science, Section B
- **School Name:** Riverside Middle School
- **Date:** October 5, 2024

### Abstract

- This experiment investigates how different amounts of sunlight affect the growth of bean plants. Over a period of 30 days, bean plants were exposed to varying durations of sunlight: 4, 8, and 12 hours per day. Growth was measured by the height of each plant and the number of leaves. The results indicate that plants receiving 8 hours of sunlight per day achieved optimal growth, suggesting a moderate amount of sunlight maximizes plant health.

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## Introduction

- **Background Information:** This project explores plant biology, focusing on the importance of sunlight for plant health and growth. Sunlight is crucial for photosynthesis, the process by which plants make their food.
- **Research Question:** How does the amount of daily sunlight exposure affect the growth of bean plants?
- **Hypothesis:** It is hypothesized that bean plants exposed to moderate amounts of sunlight (8 hours per day) will show optimal growth compared to those receiving less or more daily sunlight.

## Materials and Methods

- **Materials:**
  1. Bean seeds (*Phaseolus vulgaris*)
  2. Potting soil
  3. Plant pots (15 cm diameter)
  4. Ruler
  5. Watering can
  6. Light timer
- **Procedure:**
  1. Fill three pots with equal amounts of potting soil and plant five bean seeds in each pot.
  2. Place the pots in locations where they can receive 4, 8, and 12 hours of sunlight respectively.
  3. Water the plants equally to keep the soil moist.

4. Measure the height of each plant and count the number of leaves every 5 days for 30 days.

## Results

- **Data Presentation:** Graphs illustrating plant heights and leaf count over time show clear trends. A table summarizing the average growth metrics for each light exposure group.
- **Observations:** Plants with 8 hours of sunlight displayed the most vigorous growth, both in height and leaf production.

## Discussion

- **Analysis:** The data supports the hypothesis that moderate sunlight exposure (8 hours) is optimal for the growth of bean plants.
- **Limitations:** Some plants showed signs of wilting which may have affected growth measurements. Future experiments could control for soil quality and watering consistency.
- **Future Work:** Further research could explore the effects of different light qualities (e.g., light spectrum) on bean plant growth.

## Conclusion

- The experiment confirmed the hypothesis that bean plants grow best with moderate sunlight exposure. This finding can help inform gardeners and farmers about optimal sunlight conditions for growing bean plants.

## References

- Doe, J. (2024). Effects of Light on Plant Growth. Riverside Science Fair Reference Materials.
- Smith, J. (2024). Introduction to Botany. Riverside Middle School Resources.

## Appendices

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- Appendix A: Raw Data Tables
  - Appendix B: Experiment Setup Photos

This format will help you present your science project in a professional and organized manner. If you have any more specific needs or questions about your project, feel free to ask!