



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Bianca Guerra; Antonia Perez	Project Number J1118
Project Title Investigating the Effects of Added Materials and Temperature on Plant Decomposition	
Abstract Objectives/Goals The objective of this study was to determine if different variables can be added to soil to increase a plant's decomposition rate. Methods/Materials Decomposition Litter bags, fresh grass clippings, soil, plastic bottles, dried leaves, banana peels, incubator, refrigerator, glass beakers, digital scale (grams measurement). We constructed 60 individual plant decomposition litter bags to use with our various testing variables. Bags were left to decompose the grass clippings for seven days. We weighed the bags on day 1 of testing and after day 7. Then the masses were subtracted to determine the total decomposition loss. Results After testing 6 different variables with our plant decomposition litter bags (cold environment, warm environment, room temperature environment, plastic filled bag, banana peel filled bag, and a bag filled with dry leaves), we discovered the bag that had the banana peel decomposed the most on average of the plant material in the litter bag (8.2 grams). The liter bag filled with the non-biodegradable materials was least effective on average (4.43 grams). Conclusions/Discussion From completing this project, we have learned the benefits of using added materials and temperature to compost. Decomposition is a natural process that aids our environment; without it, the successful growth of new plants wouldn't be possible. Decomposition is, in many ways, a foundation for the growth and rebirth in an ecosystem. Composting is a way to harness the decomposition process and use it to our advantages, while doing something good for our environment. To accelerate decomposition rates, our testing proved adding biodegradable material (i.e. banana peels) to be effective.	
Summary Statement We showed that adding biodegradable materials to plant clippings can accelerate the natural decomposition rate.	
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