



**CALIFORNIA SCIENCE & ENGINEERING FAIR  
2018 PROJECT SUMMARY**

<b>Name(s)</b> <b>Pola V. Pietrzkowski</b>	<b>Project Number</b> <b>J1923</b>
<b>Project Title</b> <b>The Effect of Music, Noise, and Silence on the Germination of Seeds</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of this project was to see if the germination of seeds could be affected by music differently than noise or silence.</p> <p><b>Methods/Materials</b> Cucumber and radish seeds were used. The seeds were put in Petri dishes with germination paper soaked in water. These Petri dishes were put in one of three styrofoam boxes with a controlled temperature, humidity, light, and sound exposure. All the sounds that the seeds were exposed to had the same frequency, loudness, and length.</p> <p><b>Results</b> 24 seeds of each type were used for each group. After 72 hours, the number of radish seeds germinated in music was 16, noise was 13, and silence (control) was 12. In comparison, the number of cucumber seeds germinated was 8 in music, 18 in noise, and 20 in silence (control).</p> <p><b>Conclusions/Discussion</b> In conclusion, this experiment showed that only some types of seeds are positively affected by music. These findings indicate that more research is needed to figure out what type of sound has a positive effect on different types of seeds.</p>	
<b>Summary Statement</b> My project is about the effect of music, noise, and silence on seeds germinating.	
<b>Help Received</b> I designed the project myself, I received help in understanding the data from my science mentor - Ms. Afsaneh Miller.	