



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Heidi K. Van Beek	Project Number 31341
Project Title Plastic vs. Metal: Where Do Germs Prefer to Ride?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective is to determine which type of shopping cart, plastic or metal, will be a better place for growing bacteria.</p> <p>Methods/Materials I took samples from carts and allowed bacteria to grow in petri dishes. I measured the bacteria in two different ways to get the best results. One way that I measured was by the amount of bacteria colonies. I also measured the largest bacteria colony in millimeters.</p> <p>Results The results were that the plastic carts had an average amount of 47.2 millimeters of bacteria and the metal carts had an average amount of 36.6 millimeters of bacteria.</p> <p>Conclusions/Discussion My hypothesis was that plastic carts will grow more bacteria and be dirtier because they have a bigger surface area compared to the tiny metal rods. If I was to repeat this project I would start earlier because at the beginning of my project I made a mistake and had to restart. I would also try to be more careful when I swabbed the carts so that I wouldn't mess up the agar. I may even try the project on soap bottles, restaurants, and other places.</p>	
Summary Statement In my project, I tried to find out which type of shopping cart, plastic or metal, was the best place for bacteria growth.	
Help Received My mom helped me glue parts on my board.	