



**CALIFORNIA STATE SCIENCE FAIR  
2009 PROJECT SUMMARY**

<b>Name(s)</b> <b>Emelia E. Maglieri</b>	<b>Project Number</b>  29116
<b>Project Title</b> <b>Effectiveness of Different Materials In Preventing the Transmission of Airborne Material</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of my science project is to determine which material blocks the most amount of bacteria when sneezing. The reason that I am doing this investigation is to figure out which material is most effective in stopping the spreading of bacteria. Everyone is concerned about health and no one wants to get ill. People are buying the product Airborne and taking vitamin D to keep them from getting viruses. What if using a simple handkerchief could stop others from getting infected. <b>Methods/Materials</b> I am using seven different types of materials in my investigation. The materials are a paper towel, napkin, tissue, a cloth handkerchief, and a bandana handkerchief. I will inoculate a nutrient broth with Bacillus Substillus. I plan to spray the Bacillus Substillus in a spray bottle at a two inch distance through the seven different materials onto a Petri dish. I will repeat this 10 times per material. The Petri dish will have agar and the bacteria will grow for 48 hours. I will count the bacteria colonies using a centimeter grid transparency and figure out which material is most effective in blocking the spread of bacteria. I will count the bacteria in 5 squares and multiply that number by 10. There are 50 squares on the centimeter grid that cover the petri dish. I will than average the amount of bacteria on the 10 petri dishes counted for each material. In the control group I will not use any material to block the spray of the Bacillus Substillus. <b>Results</b> After my investigation I learned that the napkin was the most effective material in blocking the bacteria from spreading. The petri dish with the bacteria had an average count of 9 bacteria colonies. After completing my investigation, I found that my hypothesis was incorrect. My hypothesis stated that the bandana would be the most effective material in blocking the spreading of bacteria but it was in fact the one of the least effective materials. The bandana had an average bacteria count of 970. <b>Conclusions/Discussion</b> The Petri dish with the bacteria from the bandana and the scotchguarded handkerchief had the most bacteria. The paper towel had a count of 25 bacteria colonies, and the tissue had 266 bacteria colonies. The washed handkerchief had 958 bacteria colonies and the cotton handkerchief had 945 colonies. In conclusion people should use a napkin when sneezing to stop the spreading of bacteria.	
<b>Summary Statement</b> My experiment tested which material effectively blocked bacteria from spreading in a sneeze.	
<b>Help Received</b> Mom helped type.	