



**CALIFORNIA STATE SCIENCE FAIR  
2005 PROJECT SUMMARY**

<b>Name(s)</b> Amy H. Lee	<b>Project Number</b> <b>J1419</b>
<b>Project Title</b> <b>Don't Let the Bed-Bugs Bite You!</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective is to determine what is the best way to remove dust mites found on a pillowcase. I believe that a piece of pillowcase washed in hot water in a washer and dried under the sun would be the best method in removing the dust mites comparing to that washed or soaked in cold water or dried in a dryer.</p> <p><b>Methods/Materials</b> A set of pillowcase pieces were soaked in hot (120°F) and cold (68°F) water and then dried in a dryer and under the sun. Another set of pillowcase pieces were washed in hot and cold water in a washer and dried in a dryer and under the sun. Also, a piece of pillowcase was placed directly under the sun without prior soaking or washing. Repeat the above steps twice more. Observed for dust mites and compared the results to find out which method was most effective in removing dust mites. The materials were: microscope, two pillows with regular size pillowcases, household-type washer, dryer, gas stove, six Qt. Size pot, 2000 ml of water for each soak, one pair of scissors, a ruler, one thermometer, outdoor clothes hanger/dryer, clothes pins, sterile gloves, watch, notebook, and pencil.</p> <p><b>Results</b> The best way to get rid of dust mites on the piece of pillowcase was to wash it in the washer on a regular cycle (25 minutes) with hot water and to dry it under the sun for one hour. The results also showed that the water temperature made a difference whether the piece of pillowcase was soaked or washed; the hot water removed more dust mites than cold water. It was the drying phase of the experiment that made the greatest difference; drying under the sun removed more dust mites than drying in dryer. Placing the piece of pillowcase directly under the sun alone without wash removed more than half of dust mites.</p> <p><b>Conclusions/Discussion</b> My test results support that my hypothesis was correct. My conclusion is that the best way to get rid of the dust mites found on a piece of pillowcase is to wash it in hot water and then dry it under the sun. Water temperature and the method of drying the pillowcase were the key factors in determining the effectiveness of removing the dust mites. Also, the length of the time that the pillowcase had been used (one week vs. one month) made the difference in collecting the dust mites. My test data suggest that people who use humidifiers should wash and dry their pillowcase regularly since humidity attracts dust mites.</p>	
<b>Summary Statement</b> My project is about determining what is the best way to remove dust mites found on a pillowcase.	
<b>Help Received</b> I received help from the technicians at Ridgecrest Regional Hospital Laboratory Department. They not only allowed me to use their microscope, but also taught me how to operate it. I also received help from my parents and many valuable suggestions from my science teacher Mr. Ganner.	