

**Alana Wilbee**

Senior Division Chemistry

*A Well Spun Yarn*

The purpose of my project, A Well Spun Yarn, was to determine the durability of three commonly used types of yarns: cotton, wool and acrylic. To be effective in my experiment I knit the yarn into swatches and tested them in that form instead of their original state. To test the durability of the swatches I devised a number of procedures. For the first test, I washed and dried the swatches. For the second I rubbed them against various substances. In the third procedure the swatches were left out in the light. Every ten days I examined the swatches by taking a series of measurements from them. After completing this procedure for the length of the experiment I analyzed the data in terms of durability. In doing this I saw that each test affected the swatches in a different way. For example, the washing tests had different affects on all the swatches, like making them stiff, larger, and stickier. The drying tests generally made the swatches fuzzier and flatter. The rubbing tests all made the swatches extremely fuzzy and the light test didn't do much of anything to the swatches. Through an in depth analysis of all of the swatches I was able to conclude that the acrylic swatches were the most durable. This test is also helpful in the real world. By looking at this data knitters can make better choices about which yarns they use so that they can make products that will last.