

The library staff is considering a **new** security system for books and all other materials. The **new** system utilizes an adhesive electronic tag that is placed on the top left-hand corner of the book. When someone checks out a book, the book is electronically scanned for release so the book doesn't trigger the security alarm system at the doors.

The staff has determined that red is the preferred color for the security tag because it provides the greatest contrast with the exterior of the book for the greatest possible number of colors. Utilizing a high contrast color allows library staff to determine at a glance if the security tag has been removed or destroyed. However, red is ineffective as a theft deterrent for books that have red covers. The staff plans to use white security tags on books with red on the top left-hand of their covers.

It is far less expensive to order security tags in larger quantities. The price per 5000 tags is \$1,900.00. The price per 1000 tags is \$450.00, and the price per 100 tags is \$72.00.

In order to purchase the proper number of white security tags for the library so that costs are minimized, the head librarian has come to you to ask for an estimate of the proportion of books in the library that have red covers. The total number of books in the library is known.

**Your task:**

You are assigned to a small group whose task is to determine an estimate for the proportion of books in the Shatford library (building LL) that would need the white tag. You have 20 minutes to explore the library in order to produce this estimate. At the end of the 20 minutes, your group must have returned. Your group will then have 10 minutes to create a list of issues that arose, if any, during your exploration of the library and to agree upon your estimated proportion. Each member from each group will present this summary and the estimated proportion of red books to another group, and will explain the group's strategy for determining this value.

1. Write down the names of your group members.

2. Plan a strategy to find out the correct proportion, and write down your plan here.

\*Now GO and try to execute your plan. Have someone in your group set a 20 minute timer so you can come back to class on time.

3. While at the library, write below any questions or issues that arose within your group.

4. Our group believes that the proportion (decimal) of red books in the library is \_\_\_\_\_.

5. Write the method you ended up actually using below (it may be different from your original plan from above).

\*Now share your method & estimate with another group. WAIT for instructions on how to do this.

6a. After hearing from other groups, which method does your group believe to be the best? It may be your method, or another group's method, or even one that no one tried.

6b. What proportion of red books do you believe that the library now has? Explain your reasoning.