

MathWalk

#12) The Library Atrium

Centrally located on campus in a beautifully-designed facility, Belk Library and Information Commons is a hub of activity, opening its doors to over a million visitors per year. The library shares its holdings with Western Carolina University and UNC Asheville and features a rich and unique collection, from rare artifacts of Appalachian history to state-of-the-art technology (<https://library.appstate.edu>).

Stand in the library's atrium (the circular area just inside the doors). As of July 2013, the library had 939,291 books.



Fig 16: The Library Atrium

Tasks:

Grades 6 – 12:

- Estimate how many books it would take to fill the rotunda. The height of the atrium is 125 ft. with a diameter of approximately 32 ft. One of the librarians estimated that the average book is about 8" by 12" by 2". The formula for calculating volume of a cylinder is: $V = \pi r^2 h$.
- Are there enough books in the library to fill the rotunda (ignoring the packing problem of fitting rectangular solids into a circular space)?

Grades K – 5:

- If every student on campus (about roughly 18,000), were asked to move all the books (939,291) in the library how many books would each student have to carry?