1125-VW-679 **Ralph P Grimaldi*** (grimaldi@rose-hulman.edu), Rose-Hulman Institute of Technology, 5500 Wabash Avenue, Terre Haute, IN 47803. *Extraordinary Subsets: A Generalization.*

For n a positive integer, a subset S of $[n]$ is called extraordinary if $|S|$ equals the smallest element of S. The number of such extraordinary subsets, for a given n, is counted by F_n, the nth Fibonacci number. For $1 \leq k \leq n$, we call a subset S of $[n]$ k-extraordinary if $|S|$ equals the kth smallest element of S. When $k = 1$ such a subset S is 1-extraordinary (or, simply extraordinary). If we let $a_{n,k}$ count the number of k-extraordinary subsets of $[n]$, we examine how $a_{n,k}$ is related to $a_{n-1,k}$ and $a_{n-2,k}$. Further, we find that $\sum_{k=1}^{n} a_{n,k} = 2^{n-1}$ and that $\sum_{i=1}^{n} a_{i,k} = a_{n+2,k} - a_{n+1,k-1}$. (Received September 09, 2016)