Problem 1: Eating Nachos with Fibonacci Numbers

Two children eat nachos in turns, taking the next number in the Fibonacci sequence: 1,1,2,3,5,8,13,..., restarting from the beginning if the next number is greater than the remaining nachos.

What is the smallest number of nachos less than 500 that requires the most restarts?

As always, show your work, fully explain and justify your answer.