For two convex bodies, $C$ and $D$, consider a packing $S$ of $n$ positive homothets of $C$ contained in $D$. We estimate the total perimeter of the bodies in $S$, denoted $\text{per}(S)$, in terms of $n$. When all homothets of $C$ touch the boundary of the container $D$, we show that either $\text{per}(S) = O(\log n)$ or $\text{per}(S) = O(1)$, depending on how $C$ and $D$ “fit together,” and these bounds are the best possible apart from the constant factors. Specifically, we establish an optimal bound $\text{per}(S) = O(\log n)$ unless $D$ is a convex polygon and every side of $D$ is parallel to a corresponding segment on the boundary of $C$ (for short, $D$ is parallel to $C$). When $D$ is parallel to $C$ but the homothets of $C$ may lie anywhere in $D$, we show that $\text{per}(S) = O((1+\text{esc}(S)) \log n/\log \log n)$, where $\text{esc}(S)$ denotes the total distance of the bodies in $S$ from the boundary of $D$. Apart from the constant factor, this bound is also the best possible. (Joint work with Adrian Dumitrescu)