We say that a permutation $\pi = \pi_1 \pi_2 \cdots \pi_n \in S_n$ has a descent at index $i$ if $\pi_i > \pi_{i+1}$. Let $\text{Des}(\pi)$ denote the set of indices where $\pi$ has a descent. Given a set $I$ of positive integers, we define $D(I; n) = \{ \pi \in S_n | \text{Des}(\pi) = I \}$ and $d(I; n) := |D(I; n)|$. We say $d(I; n)$ is the descent polynomial of $I$. In this talk we will show that descent polynomials, like peak polynomials, can be written in a binomial basis with (strictly) positive coefficients. We will then describe the coefficients combinatorially, and explore some of their properties. (Received September 14, 2017)