Choose Multichoose

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By name, binomial identities involve the coefficients, $\binom{n}{k}$ that count size k subsets of an n set. If instead we look at these through the lens of 'multichoose' coefficients, $\left(\!\binom{n}{k}\!\right)$ that count size k multisets from an n set, we get bijective proofs that are different from standard binomial proofs in more than just notation. We start with multichoose versions the hockey stick formula and the Fibonacci-Binomial identity then explore a (possibly) new bijection establishing $\left(\!\binom{n}{k}\!\right) = \binom{n+k-1}{k}$ that maps sets that 'appear' on both sides to themselves. This makes it easier to play multiset poker. We will conclude introducing notation that yields nice formulas to compare generic multiset poker with dealing with replacement or regular multideck poker.