In a biased weak \((a, b)\) polyform achievement game, the maker and the breaker alternately mark \(a, b\) previously unmarked cells on an infinite board, respectively. The maker’s goal is to mark a set of cells congruent to a polyform. The breaker tries to prevent the maker from achieving this goal. A winning maker strategy for the \((a, b)\) game can be built from winning strategies for games involving fewer marks for the maker and the breaker. A new type of breaker strategy called the priority strategy is introduced. The winners are determined for all \((a, b)\) pairs for polyiamonds and polyominoes up to size four. (Received August 03, 2014)