

## Auction Scrabble Rules

This document describes the rules to a new version of scrabble developed by Jeff Ely, Ben Handel, and Mallesh Pai at Northwestern University. Please contact one of the authors above with any thoughts or suggestions. Analysis of the advantages and disadvantages of Auction Scrabble compared to traditional Scrabble is done elsewhere.

### Start of the Game

- The game begins with an auction of  $7N$  tiles to  $N$  players where  $2 \leq N \leq 4$ . Unlike traditional scrabble, throughout the game each player's letters are visible.
- Players begin with  $X$  points, which we initially set at 100. Players points are used to bid for tiles in the auction format; the points you bid and points you score come from the same place. The goal is to finish with the highest number of points. At no point in the game can a player go below 0 points.
- The auction rules for the beginning of the game are:
  1. One letter is drawn at random from the bag
  2.  $k = 1$  for the first letter. Player  $k$  is 'assigned' that letter with a standing bid of zero.
  3. Moving clockwise, each subsequent player chooses to top the current high bid  $b_h$  or leave the auction for the tile. If no player bids, 0 is the high bid and the tile is given to the 'assigned' player.
  4. Once the high bid has been established that player keeps the tile. Once the player has 7 tiles he can no longer bid on subsequent tiles.
  5. Repeat starting from step one.  $k == k + 1$  if  $k < N$  and  $k == 1$  if  $k = N$ . Thus, the player initially assigned each tile rotates. Once the auction has been completed for  $7N$  tiles the game moves to the word play round.

### Game Play

After the initial tiles have been allocated standard game play begins, consisting of two alternating phases, playing words and auctioning off new letters. Word play occurs as follows:

- A given player  $j$  is the first to play in each word play round. The first person to play in each round cycles clockwise so that the person who goes first rotates.
- That person plays a scrabble word on the board as normal. All scoring rules for words are as in traditional scrabble. The points you score are added to your total which depends on the points you have bid for tiles as well.
- Starting from  $j$  each person plays a word in clockwise fashion until  $j$  is reached again.

After word play and the accumulation of points, players re-bid for tiles drawn from the bag one by one until each player has 7 tiles again. Mid-game bidding is very similar to the initial auction procedure:

1. One tile is drawn at random from the bag.
2. This tile is assigned to player  $k = j$  at a bid of 0 if this is the first tile bid for this round. Thus, the player who is first assigned the tile at a bid of 0 rotates from round to round as the first to play a word does in the word play round.
3. Moving clockwise, each subsequent player chooses to top the current high bid  $b_h$  or leave the auction for the tile. If no player bids, 0 is the high bid and the tile is given to the 'assigned' player.
4. Once the high bid has been established that player keeps the tile. Once the player has refilled his set to 7 tiles he can no longer bid on subsequent tiles.
5. Repeat starting from step one.  $k == k + 1$  if  $k < N$  and  $k == 1$  if  $k = N$ . Thus, the player initially assigned each tile rotates within the auction round. Once each player has 7 tiles the game moves back to the word play round. at starting from step one.  $k == k + 1$  if  $k < N$  and  $k == 1$  if  $k = N$ . Thus, the player initially assigned each tile rotates within the auction round. Once each player has 7 tiles the game moves back to the word play round.

Play goes back and forth between the word play round and bidding round until the end of the game. At the end of the game the person with the most points wins. The total number of points, which of course is updated as the game progresses, equals:

Initial Points – Total Points Bid + Total Word Points Accumulated

One final note concerns the end of the game word play round. As is normal, once one player uses up all his tiles he is finished and he adds the points of all letters left for the other players to his total while they subtract the amount they have left from their own. Since this game is played in a round format, once a player finishes, players who have not yet played in the current round are allowed to do so and use all of their letters to avoid this point transfer. In the event that two players complete, the first player to do so accrues the points from a player who does not finish.