Word morph

Number of players: $N \geq 1$

Instructions: the first player says/writes any four-letter word. (Well, almost any. . . we are still at school!) After that, on your turn, you change (only) one of the letters in the word to make another real word. Keep taking turns until you get to a word whose letters are all different than your original word; then, your team wins!

Example: player 1 says "fake," player 2 says "make," then "male," then "mile," then "milk" wins (the first letter "f" of "fake" turned into "m," the second letter "a" turned into "i," the third letter "k" turned into "l," and the last letter "e" turned into "k").

Example: surf→sure→cure→core→code

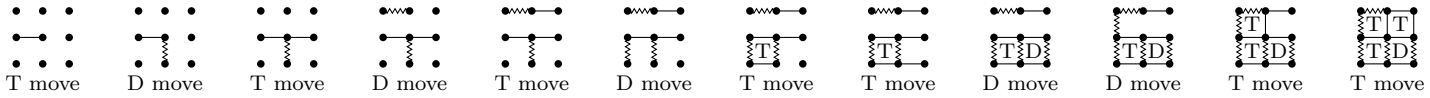
(Yes: this is math! We'll return to this game later when we explore graph theory.)

Dots

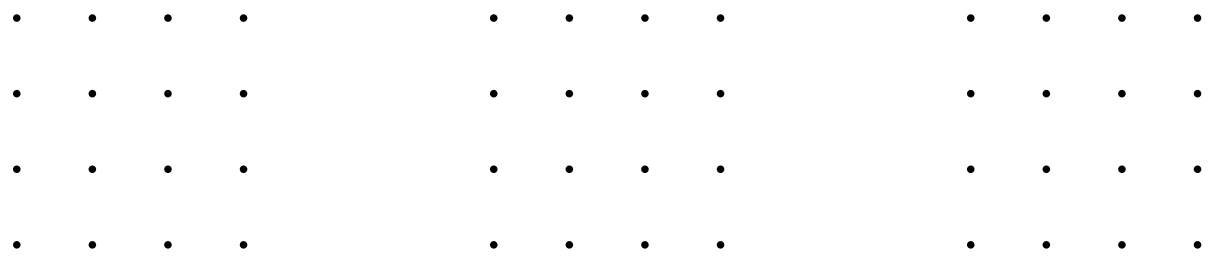
Number of players: $N \geq 2$

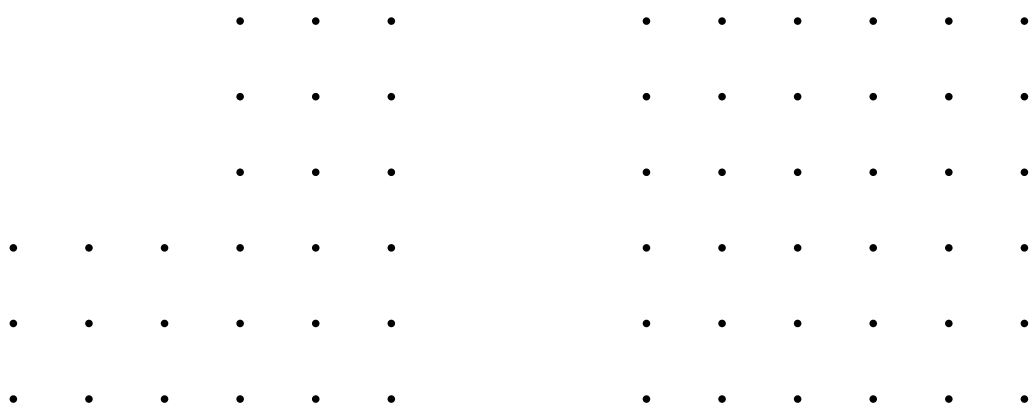
Instructions: on your turn, draw a line connecting two adjacent dots (next to each other) with a horizontal or vertical line, so it looks like ⊷ or ⋮. If you complete a box like ⊡ then write your first (or last) name's initial inside like [D] and you (must) take another turn. You are not ever required to complete a box (although if you don't, then the next player may take it), but you are required to take another turn if you do. After the board is full, count how many points you got.

Example game sequence (two players):



Here are some game boards. You can also draw your own on any blank piece of paper, whatever shape/size you like.





Addy

Number of players: $N = 2$ (some variations allow $N > 2$)

Instructions (original Addy):

1. Decide who is Player X and who is Player Y.
2. Both players secretly write down either a 1 or a 2.
3. Both players show what they wrote.
4. If the sum is a prime number $(2, 3, 5, 7, \ldots)$, then Player X wins; if not, then Player Y wins.
5. Play again! (Does the same player always win? Why?)

If this version gets boring (why?), try the following variations. Do the same strategies work? Does the same player always win?

Addy variation #1: same as original, except Player X says their number first, then Player Y picks their number.

Addy variation #2: same as original, except players can choose 1, 2, or 3.

Addy variation #3: same as variation #2, except Player Y has to say their number first, then Player X gets to pick.

Daisy

Number of players: $N = 2$

Instructions: start at zero, and take turns adding either 1 or 2; whoever says 11 wins. (Equivalently: start with a daisy flower that has 11 petals; each turn, you can remove 1 or 2 petals; whoever removes the last petal wins.)

Example: Player A says 1; Player B says 2; A says 4; B says 6; A says 7; B says 9; A says 11 and wins.

Goal: work together to find a strategy for Player A to always win.

Variations: try changing the winning number (to 14, for example); try changing the amount you can add each turn (to 1, 2, or 3, for example). Can Player A or B always win in your version? Which player? How?