Intro

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Theme – Current
Title – Resistor
Synopsis – Resistor is a two player, competitive board game based off of current and electrical circuitry. It requires players to utilize strategic movement, risk assessment and sacrifice.

G.A.T.O.R.S. Pt. 1

Goals

1. Ampere Team
    a. To maneuver pieces across the board toward the charging area in order to turn an ampere into a charger.
    b. To maneuver charger pieces back across the board toward the start in order to score a point.
    c. To avoid any contact with resistors.
2. Resistor Team
    a. To prevent amperes from reaching the charging area.
    b. To prevent chargers from reaching the current source.

Actions

1. Move
2. Slingshot
3. Drain
4. Overload
5. Recharge
6. Cycle
7. Convert
8. Score

Transitioning Actions

1. Resistors have captured all amperes/chargers.
2. Amperes/charger player forfeits due to lack of productive moves.

Objects

1. Eight arrow shaped ampere pieces
2. Four square shaped resistor pieces
3. One game board with fourteen columns and twenty rows. The leftmost and rightmost columns are reserved for the cycle action. The lowermost row is reserved for the current source (Start) and the uppermost is reserved for the charge zone.
4. Four "X" shaped pieces to signify dead spaces within the circuit.
5. Three six sided die (used ONLY in setup.)
6. A pen and paper to track scores.

G.A.T.O.R.S. Pt. 2

Rules

1. Moving
    a. Amperes
        1. Amperes may only move up, left, or right. Not diagonally or back.
        2. If there are three or less ampere pieces on the board then two moves may be made per turn. This is part one of the duty cycle rule.
            a. The two moves may be split by two pieces and the second move can be used to bring a fourth piece onto the board.
        3. If there are more than three ampere pieces on the board then only one move may be made per turn. This is part two of the duty cycle rule.
        4. If ampere pieces occupy adjacent spaces then one of the pieces may "slingshot" the other. This means that one of the pieces may move one extra space in addition to the allotted moves per turn.
        5. If a slingshot results in an ampere landing onto a space occupied by a resistor that resistor is sent to a dead space and rendered unusable on the next turn. This is known as "overloading".
        6. If an ampere moves into one of the two cycle columns then that ampere is sent back to the current source.
        7. If an ampere lands on a spot in the charge zone then that ampere is turned into a "charger."
        8. If an ampere lands in the charge zone before all allotted moves are made then the remainder of moves may be used by another ampere or the player may choose to end the turn.
        9. Ampere player may elect to end the turn before all allotted moves are exhausted.
    b. Resistors
        1. Resistors may only move diagonally. Diagonal movements can be backwards or forwards.
        2. If a resistor moves onto a space occupied by an ampere then that ampere is "drained," This means that the ampere piece is rendered unusable until touched by a charger.
            a. In this instance, the resistor may choose any adjacent space that lies diagonally from the drained piece to move to. This will be considered one turn even though it is technically two moves.
        3. Resistors may not move into the charge cycle columns, the charge zone or the current source.
        4. If a resistor moves onto a space occupied by a charger then that charger is converted back into an ampere and sent back to the current source.

G.A.T.O.R.S. Pt. 3

Rules (continued)

1. Moving (continued)
   c. Chargers
      1. Chargers may move up, left, right and diagonally. Chargers may not move backwards.
      2. Chargers may move two spaces per turn.
      3. The duty cycle rule does not apply to chargers, likewise chargers do not get counted when applying the rule to amperes. For example, if there are three amperes on the board and one charger then the amperes may still gain an additional move so long as those moves do not involve a charger.
      3. The slingshot rule only applies to chargers when adjacent to other chargers.
      4. If a charger moves into one of the two cycle columns then that charger is sent back to the charge zone.
      4. If a charger lands on a space occupied by a drained ampere then that ampere is "recharged" and sent back to the current source.
         a. If a charger lands on a drained ampere and the charger still has remaining moves left in the turn then the charger may use those remaining moves or elect to end the turn.
      5. If a charger crosses the board and reaches the current source then a point is scored and the charger is converted back to an ampere.
   d. Miscellaneous
      1. Only one ampere/charger/resistor is allowed to occupy any single space.
         a. A space containing a drained ampere is still considered an occupied space.
      2. Any moves made within the current source or the charge zone are considered normal moves and count against the constraints of moves per turn.
      3. The arrows of amperes should face the charge zone at all times. When an ampere becomes a charger the arrow should be spun to face the current source at all times.
      4. No tokens may occupy a dead space with the exception of an overloaded resistor,
      5. Amperes and chargers cannot both be played on the same turn, players must choose one.
      6. If a resistor is overloaded, the resistor player may choose which dead space to place the resistor.

G.A.T.O.R.S. Pt. 3

Rules (Continued)

2. Scoring
   a. Only chargers can score.
   b. A point is earned when a charger successfully navigates from the charge zone to the current source.
3. Winning
   a. A round ends when either all amperes are drained or when the ampere player forfeits due to lack of productive moves.
      1. After a round the ampere player totals his/her own score.
   b. After a round ends, the ampere player and the resistor player switch roles for the next round.
   c. After the completion of two rounds the player with the highest score is the winner.
      1. If the score is tied after two rounds, another two rounds should be played until a winner is declared.

Setup

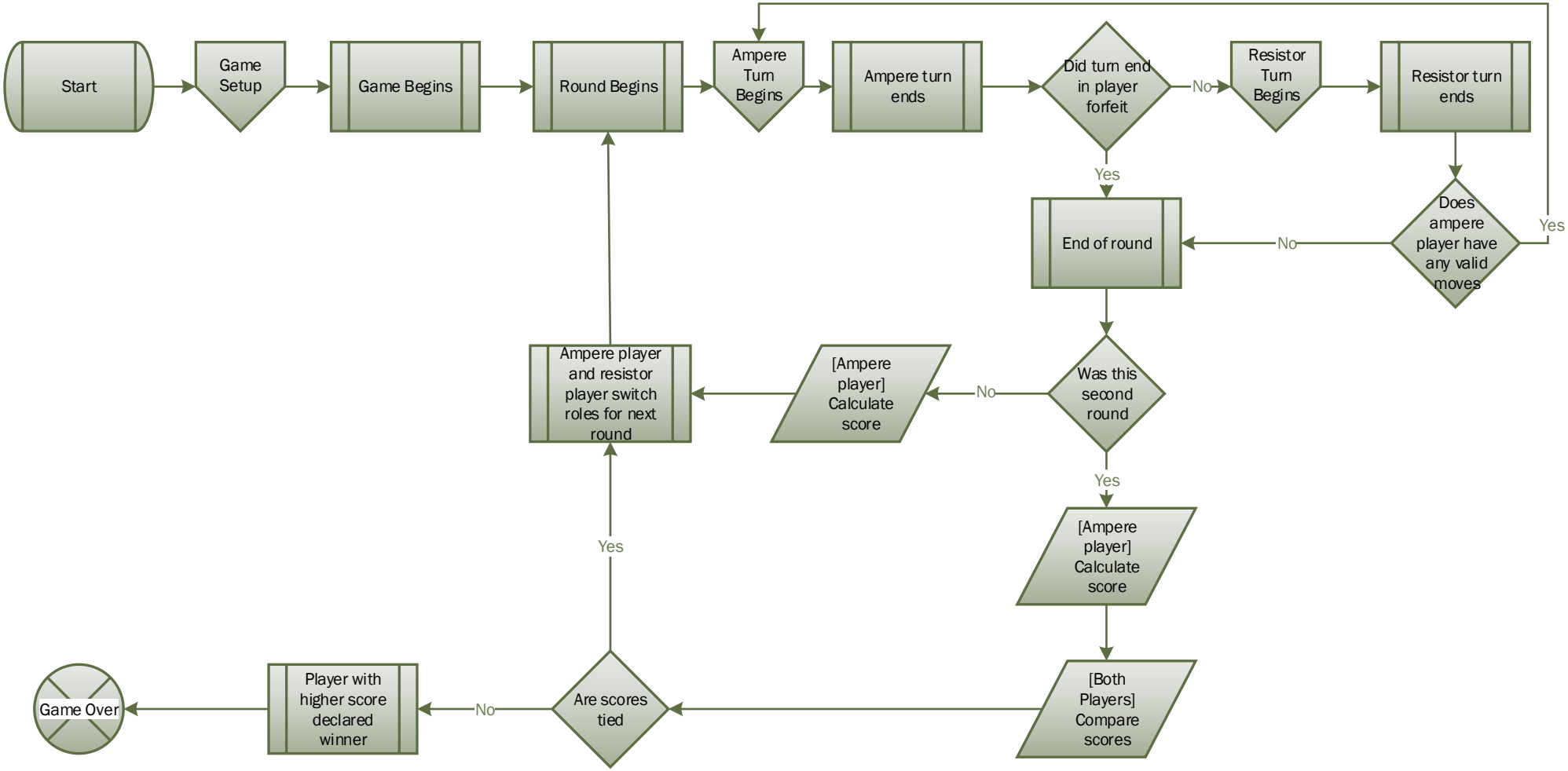
1. Set up the board by designating the cycle columns, the current source and the charge zone. This leaves the playable area as 12 columns by 18 rows.
2. Roll a six sided die, whichever player rolls higher gets to choose whether to be the resistors or amperes first.
3. The ampere player is in charge of keeping his/her own score.
4. The resistor player rolls dice to determine where the dead spaces will be placed.
   a. The resistor player rolls two of the six sided die. The accumulated total will determine which of the 12 playable columns the dead space will be placed on.
   b. The resistor player rolls three six sided die. The accumulated total will determine which row the dead space will be placed on. For example if the first roll totaled 6 and the second roll totaled 12 the dead space will be placed on the spot lying in the 6^{th} column of the 12^{th} row. Repeat this process for each dead space.
5. The ampere player places the eight arrow tokens on any of the twelve starting points in the current source with the point of the arrows facing toward the charge station.
6. The resistor player places their resistors on any of the spaces within the 8^{th} and 9^{th} rows.

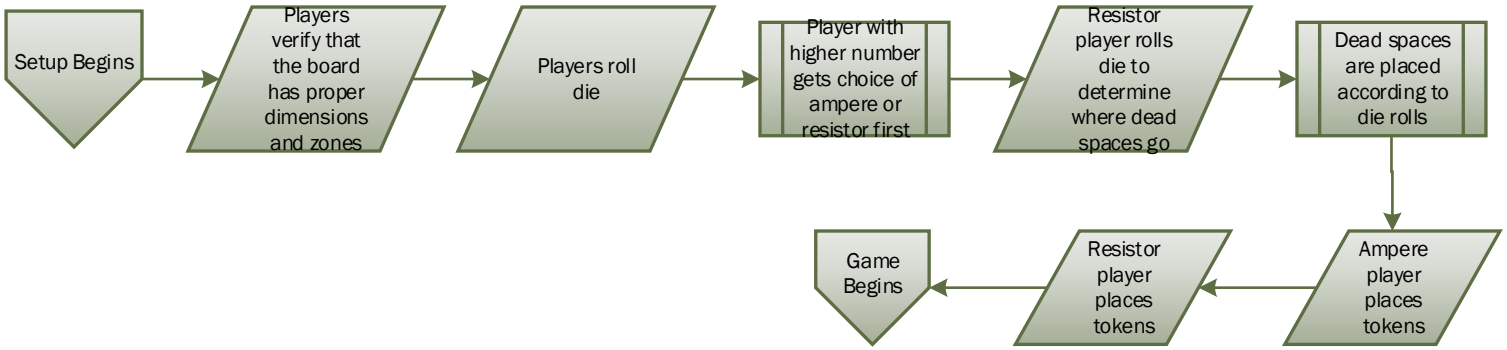
Meaningful Actions Analysis

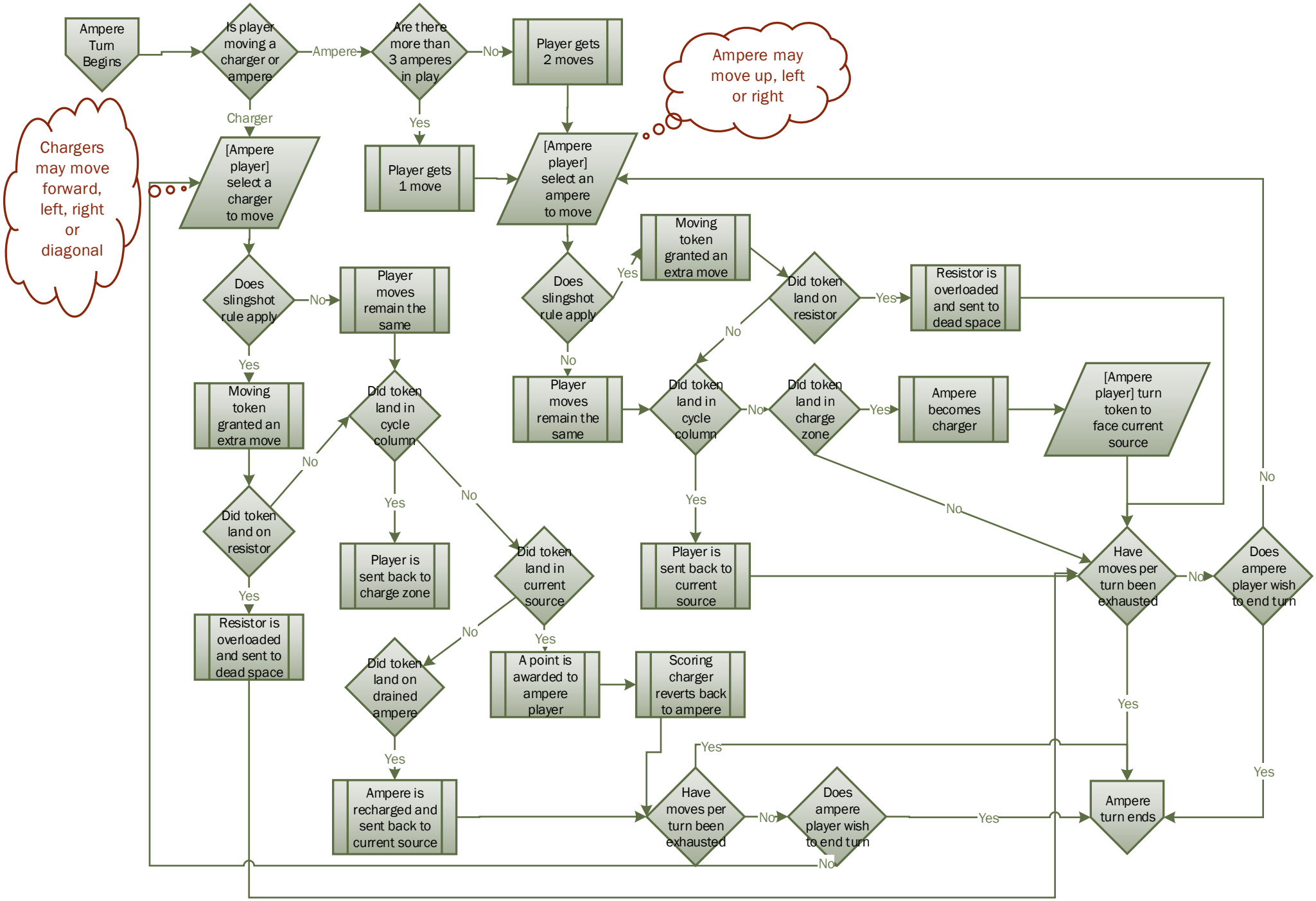
1. Move – This is the essential action of the game. Every move must be made with meaning otherwise defeat is a certainty. One miscalculated move could result in a drained piece. The player has complete control over which piece to move and which moves to place value upon.
2. Slingshot – This is a type of move with an abundance of meaning. The slingshot gives the amperes/chargers an edge in maneuverability against the resistors, making each slingshot a meaningful decision on the part of the player.
3. Drain – This is a meaningful action on the part of the resistors because it not only prevents an ampere from becoming a charger, but essentially, creates an additional dead space.
4. Overload – This a vital move. Without overload the ampere team would have no attack against the resistors. Setting up slingshots and overloads is a choice the player must always keep in mind. I wanted to allow the resistor player to choose which dead space to move the token because I felt that even an overloaded token could prove to be a strategic windfall depending on the location of the dead spaces.
5. Recharge – Chargers are not only responsible for scoring points, but also recharging drained amperes. When navigating back to the current source, chargers may be faced with a decision, is it worth taking the risk to go off course in order to recharge an ampere or is it smarter to just go for the point? This introduces themes of sacrifice into the game.
6. Cycle – This is an important action because, typically, amperes cannot move backwards. This offers the choice of backwards movement but at the cost of ALL forward progression. Again, this brings sacrifice into the game.
7. Convert – This occurs when a resistor catches a charger. This is vital in order to setback the ampere player as well as preventing any drained amperes from being recharged.
8. Score – To choose not to score is to choose to lose. This in itself should be a clear cut choice, but that's not to say players cannot choose to lose. The meaning in scoring is in all the choices the player has in order to achieve this action.

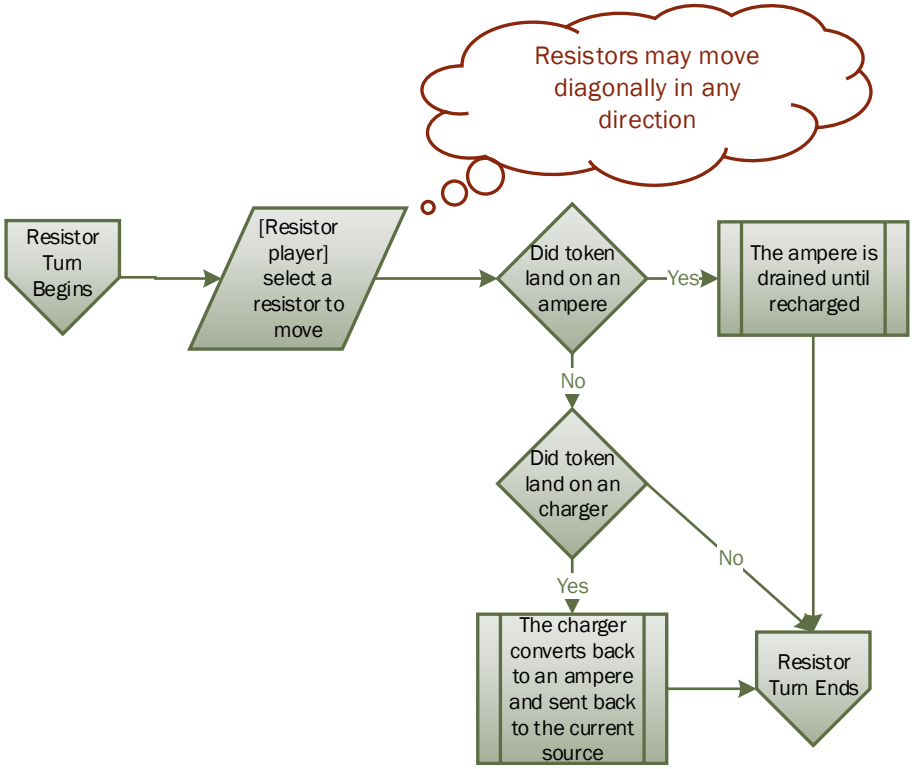
Meaningful Actions Analysis

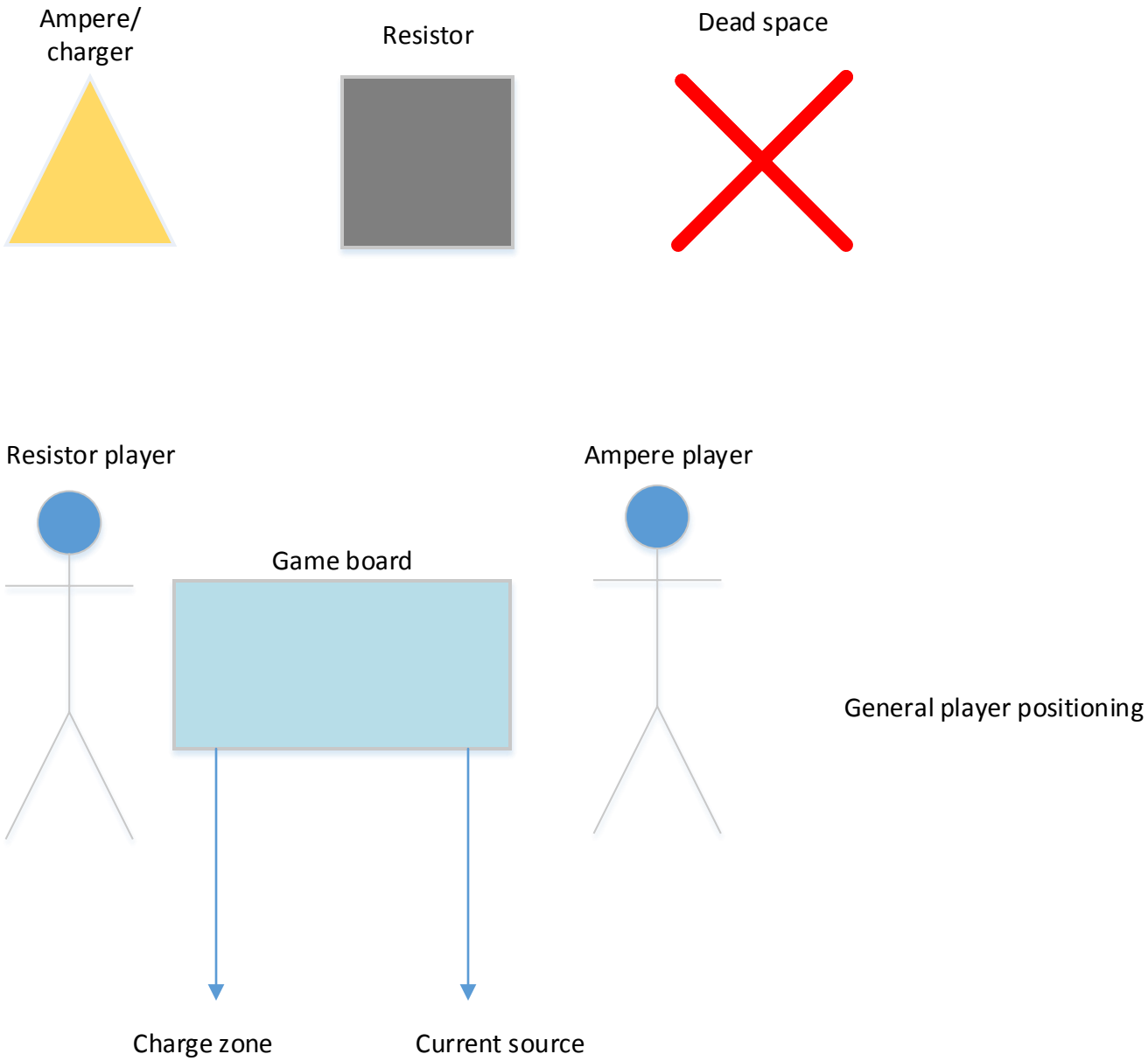
Exploring actions and themes – I wanted to play around with a few elements of electrical current and find ways to place them into game elements. I found that resistors are what restrict current and the main measurement of current is amperes, thus my tokens were named. Further playing with this relationship I decided that the best way for the resistors to restrict the current would be to "drain" them. Granted, most electricians would scoff at the thought, but in the end I'm creating a game, not an electrician's manual. The drain is important because I wanted the resistors to be able to capture the amperes, but I also wanted to play with some form of risk/reward system, so I decided to allow the amperes get drained rather than removed altogether. Taking this thought further, I felt that if they could be drained they should also have some way to become charged. I read about the way current in dead electronics reacts to a charge and came up with the charger/drained ampere dynamic. Again, as with most of the game, this thought cascaded into chargers should have more mobility given their nature. Current is very much about flow and motion so the cycle columns were my way of allowing amperes/chargers to move backwards with out compromising the gameplay. I feel it adds to the feel of ebb and flow. There is also a sense of unity embedded in current. To show this, I made the amperes more mobile when adjacent. Finally, I want to talk about the duty cycle rule. Again, it is not exactly accurate to the principles that inspired it, but essentially acts as a mirror. I wanted to play with the idea that the less intensely a machine is operated, the more efficiently it runs. So rather than complicate the system with percentages and such, I simplified it to three pieces being the precipice for the rule. I pulled all of these ideas together to help create a game that is very much inspired by electrical current.


Start
Game Setup
Game Begins
Round Begins
Ampere Turn Begins
Ampere turn ends
Did turn end in player forfeit
No
Resistor Turn Begins
Resistor turn ends
Yes
Does ampere player have any valid moves
Yes
No
End of round
Was this second round
No
[Ampere player] Calculate score
Ampere player and resistor player switch roles for next round
Yes
[Ampere player] Calculate score
[Both Players] Compare scores
Are scores tied
Yes
No
Player with higher score declared winner
Game Over


Setup Begins
Players verify that the board has proper dimensions and zones
Players roll die
Player with higher number gets choice of ampere or resistor first
Resistor player rolls die to determine where dead spaces go
Dead spaces are placed according to die rolls
Ampere player places tokens
Resistor player places tokens
Game Begins

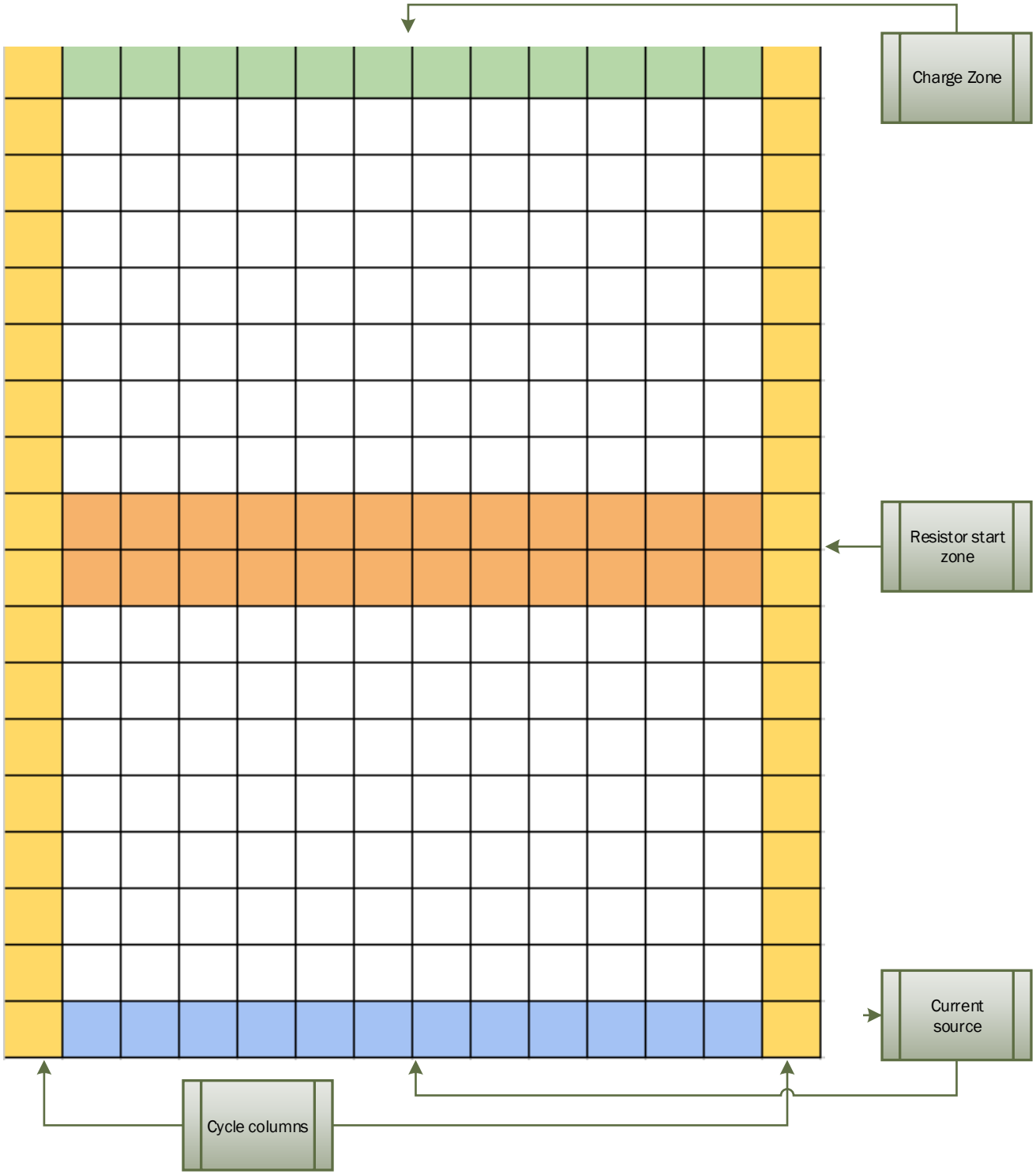

Ampere Turn Begins
Is player moving a charger or ampere
Ampere
Are there more than 3 amperes in play
No
Player gets 2 moves
Ampere may move up, left or right
Charger
Yes
Chargers may move forward, left, right or diagonal
[Ampere player] select a charger to move
Player gets 1 move
[Ampere player] select an ampere to move
Does slingshot rule apply
No
Player moves remain the same
Yes
Moving token granted an extra move
Did token land on cycle column
Yes
Player is sent back to charge zone
No
Did token land in current source
Yes
A point is awarded to ampere player
Scoring charger reverts back to ampere
No
Did token land on drained ampere
Yes
Ampere is recharged and sent back to current source
Did token land on resistor
Yes
Resistor is overloaded and sent to dead space
No
Does slingshot rule apply
Yes
Moving token granted an extra move
Did token land on resistor
Yes
Resistor is overloaded and sent to dead space
No
Player moves remain the same
Did token land in cycle column
No
Did token land in charge zone
Yes
Ampere becomes charger
[Ampere player] turn token to face current source
Yes
Player is sent back to current source
No
Have moves per turn been exhausted
No
Does ampere player wish to end turn
No
Yes
Yes
Have moves per turn been exhausted
No
Does ampere player wish to end turn
No
Yes
Ampere turn ends
Yes

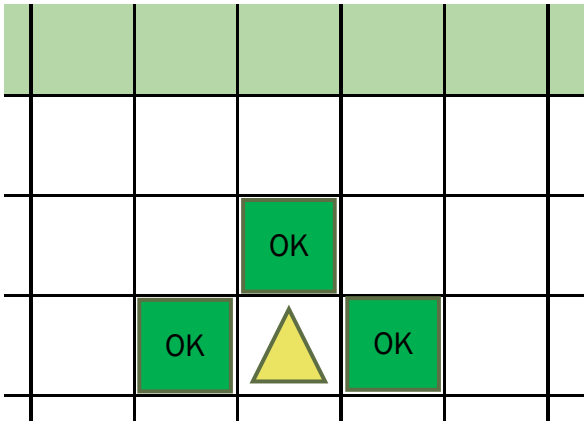

Resistors may move diagonally in any direction
Resistor Turn Begins
[Resistor player] select a resistor to move
Did token land on an ampere
Yes
The ampere is drained until recharged
No
Did token land on an charger
No
Yes
The charger converts back to an ampere and sent back to the current source
Resistor Turn Ends



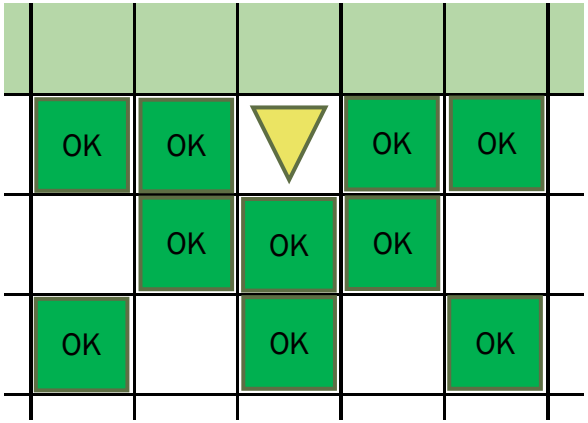
General player positioning

Game Board

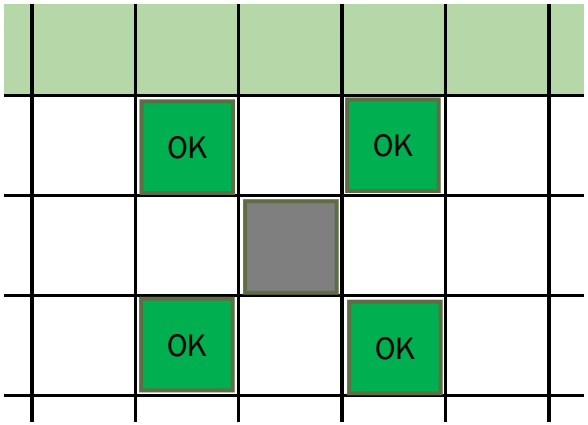

Charge Zone
Resistor start zone
Current source
Cycle columns



Example of valid ampere movements



Example of valid charger movements



Example of valid resistor movements

Examples of slingshot movement. Note that only one ampere may move per slingshot.
(Color of amperes changed to highlight permissible moves)