# GPROG Artefact Planning

Primary mechanic -> multi-layer Astar pathfinding

Secondary mechanic -> inventory/held item system/puzzle mechanics

Overview:

My game will be a puzzle game, involving a 2d isometric grid. The player clicks on a tile to move to it, can pick up ‘puzzle pieces’ and carry one at a time. The player can place puzzle pieces on podiums to interact with the environment and collect more puzzle pieces. Once the player has collected all the puzzle pieces for a level, they can progress to the next level until they beat all the levels/

Task List:

* Pathfinding
  + The player will move by left clicking on a visible tile, an A-star pathfinding algorithm will then calculate a path to that tile. The player will then walk across that path until they have reached the destination tile
  + The grid will be isometric allowing for three dimensions to be displayed on a 2d screen, the pathfinding algorithm must be able to locate ‘layer-traversal tiles’ such as stairs or ramps so the the player can move between the layers
  + Extension: If the player clicks on a visible podium, the pathfinding algorithm should calculate the closest adjacent tile. Double extension: without calculating and comparing traversal costs for all adjacent tiles.
* Puzzles
  + Player must be able to pick up puzzle pieces, only one at a time
  + Player must be able to ‘hold’ a puzzle piece and move with it
  + Player must be able to place a puzzle piece on a pedestal
  + Pedestals should open doors or reveal new areas with different pieces in order to create complex logic puzzle and engage the player
  + Once the puzzle is complete – the game finishes/the player progresses to the next level