Asteroid Game Design

1. Create the Player’s ship
   1. Enable movement
   2. If player moves off-screen then wrap them to the opposite side of the screen
2. Create 10 or more asteroids on screen
   1. If these initial asteroids are destroyed then a new level with even more asteroids begins
   2. Upon creation they should be a random mass
3. Asteroids initially move in a random direction
   1. They also wrap around to the opposite side of the screen if they go off-screen
4. Asteroids that collide with each should breakaway according to Newtonian mechanics
   1. They should play a sound effect when this happen
5. Asteroids destroy the player’s ship upon impact
   1. A sound should play when this happens
   2. When this happens the player loses one of their 3 lives
   3. Life counter is displayed somewhere in the GUI
6. The Player should be able to shoot lasers
   1. Laser should disappear when it moves off-screen
   2. A sound should play when this happens
7. The laser should break an asteroid into two smaller pieces when it hits them
   1. These pieces each have a fraction of the original’s mass
   2. These pieces should move in opposite directions
   3. Once an asteroid is small enough it is destroyed
8. The player’s score, level, and lives should be displayed somewhere
   1. Upon hitting escape text should display which says how to play
      1. At the start of the game display this text before anything happens
      2. Player must hit spacebar to start the game
9. Extra: the ship should warp to a random location when a button is hit
   1. Location should not be occupied by anything and should be in bounds of the screen
10. Extra: Ufos should appear periodically and shoot at the player.
    1. They are destructible
    2. They award bonus points