### **M2 Test Plan**

* Menu System
  + Start on main menu screen
  + Click on Start to go to level select
  + Click on Back to return to main menu
  + Click on Start to return to level select
  + Click on level 1 to start
  + Win the level (by directing the light to the end zone; purple gem looking sprite)
  + Click on restart to reload the level
  + Win the level
  + Click on main menu to return to main menu
  + Click on Start to go to level select
  + Click on level 1 to start
  + Win the level
  + Click on continue to go to next level
* Pause System
  + Start on main menu screen
  + Click on start to go to level select
  + Click on level 1 to start
  + Hit escape immediately to pause
  + Click resume to resume level
  + Hit escape immediately to pause again
  + Hit escape to unpause
  + Hit escape immediately to pause again
  + Click restart to restart level
  + Hit escape immediately to pause
  + Click main menu to return to main menu
  + Click on start to go to level select
  + Click on level 1 to start
  + Win the level
  + Hit escape when level end popup appears, nothing should happen
* Text rendering
  + Start on main menu screen
  + Screen should show title and start button text, along with team information in the bottom left corner
  + Click start
  + Screen should show level select title, back button text, and numbers for each level
  + Click on level 1
  + Screen should show help text for the level
  + Click escape
  + Screen should show text for pause menu buttons
  + Resume the game, complete the level
  + Screen should show text for the buttons in the level win menu
* FPS text
  + On any game screen
  + Press ‘F’
  + Expect: FPS text appears in top left corner
  + Expect: FPS text updates every second
  + Press ‘F’
  + Expect: FPS text disappears from screen
  + Press ‘F’ again
  + Expect: FPS text appears again
* Blackhole
  + Go to level 3
  + Aim the light directly at the blackhole - you should expect the light to be sucked in
  + Gradually aim the light further away from the blackhole – you should eventually reach a stage where the light doesn’t fall into the blackhole
  + Use the blackhole to curve the path of the light ray to reach the end zone!
* Radial Collisions
  + Go to level 1
  + Rotate the bottom left mirror so it intercepts the light ray path
  + Vary angle, testing multiple interceptions
  + Expect: regardless of the angle of the mirror, the light reflects at the edge of its (visible) radius, not on rectangular corners
* Reflections on all sides of mirrors
  + Go to level 1
  + Rotating the mirror, align each edge of the mirror (top, left, right, bottom) to face the incoming light
  + Expect: light bounces off at incident angles off of each face
* No weird/double reflections
  + Go to level 1
  + Rotate the bottom left mirror so one of its short sides is reflecting the light
  + Slowly rotate the mirror until the light reflects along one of its long sides
  + Expect: At no point during the rotation, the light gets stuck inside the mirror, vibrates, or reflects at a non-incident angle
* Mesh collisions
  + Caveat: mesh collision system is designed to interpret all non-mesh colliders as rectangular, including the radial light. It works on convex and concave meshes, as this test should illustrate
  + Go to level 6
  + Align the mirrors to direct the light into the mini sun (shaped like a star)
  + Expect: the light should disappear and activate the mini sun (turning it bright yellow)
  + Expect: As it is a round-looking object, it should appear to collide right before or right as it visually hits the star
* Sprite Animation
  + Go to level 6
  + When the mini sun (the dimly lit star mesh) is not lit up, the turtle should be playing the **sleep** animation
  + After you redirect the light ray to collide with the star, the star should light up.
  + The turtle should move towards the star and should be playing the **walk** animation
  + After the turtle pushes a lever, it should play and stay in the **sleep** animation
  + When a lever is pushed, the lever should play the **push** animation
* AI System
  + Go to level 6
  + When the mini sun (the dimly lit star mesh) is not lit up, the turtle should be in the **SLEEP** state
  + After you redirect the light ray to collide with the star, the star should light up.
  + The turtle should move towards the star after the star lights up.
  + Once the turtle collides with the lever, the obstacle blocking the path to win should disappear.
  + The turtle is now in a tired state and will not respond to any interaction.