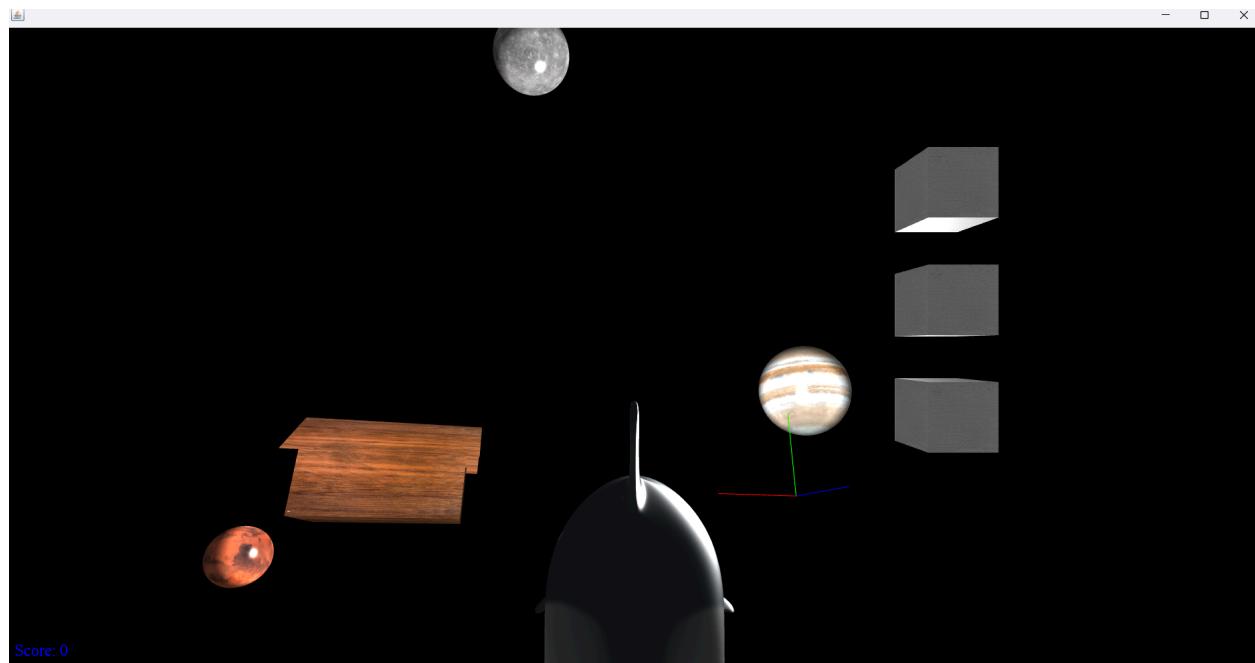


Lab 1
Conner Childers
2/19/2026
CSC 165 Section 1



How the game is played:

Movement keys are handled with either WASD or with the X, Y Axis on a controller. The controls are as follows:

Keyboard:

- W - Move Forward
- A - Rotate Left (Yaw left)
- S - Move Backward
- D - Rotate Right (Yaw Right)
- P - Take a picture
- SPACE - Hop on or off the dolphin
- ESC - Close the game
- UPARROW - Look Up (Pitch up)

DOWNARROW - Look Down (Pitch down)

Controller:

X-Axis - Forward/Backward

Y-Axis - Yaw Left/Yaw Right

A Button - Hop on or off the dolphin

B Button - Take a picture

Dolphin's Home:

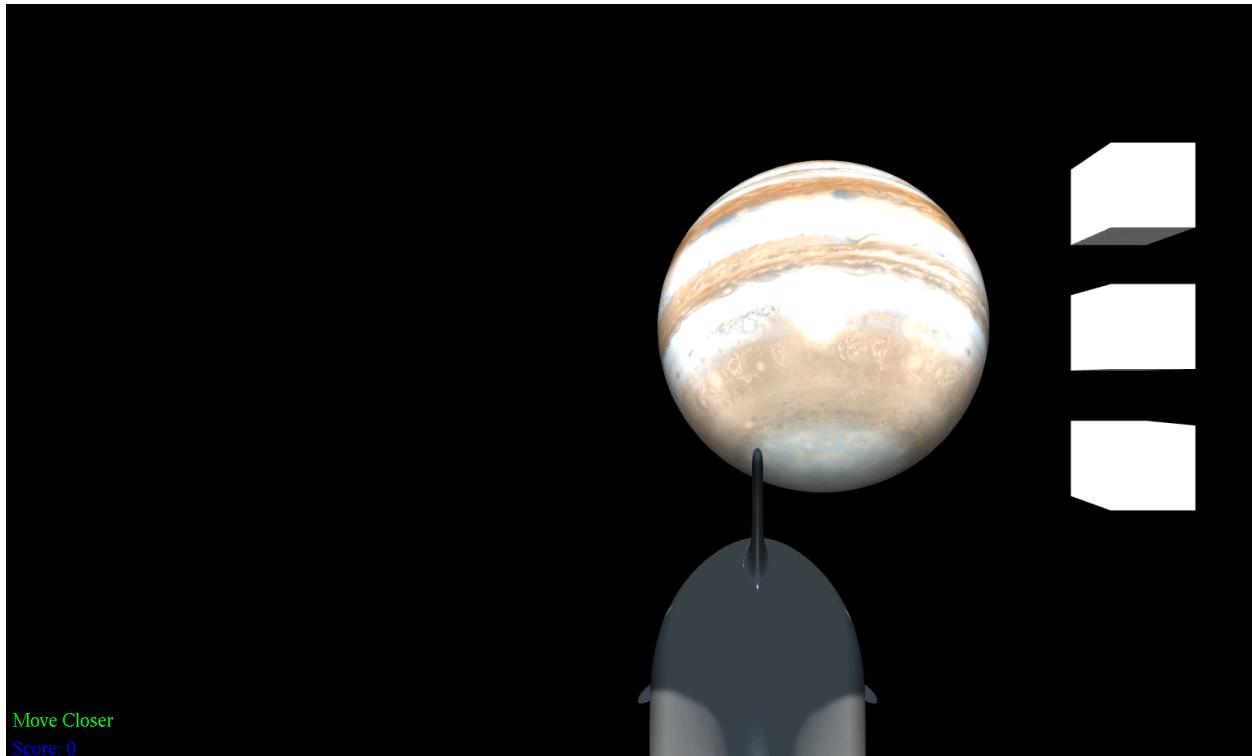


The dolphin's home is made up of 90 vertices (30 tris) that make up the two walls, the floor and the sloped ceiling. Inside the house there

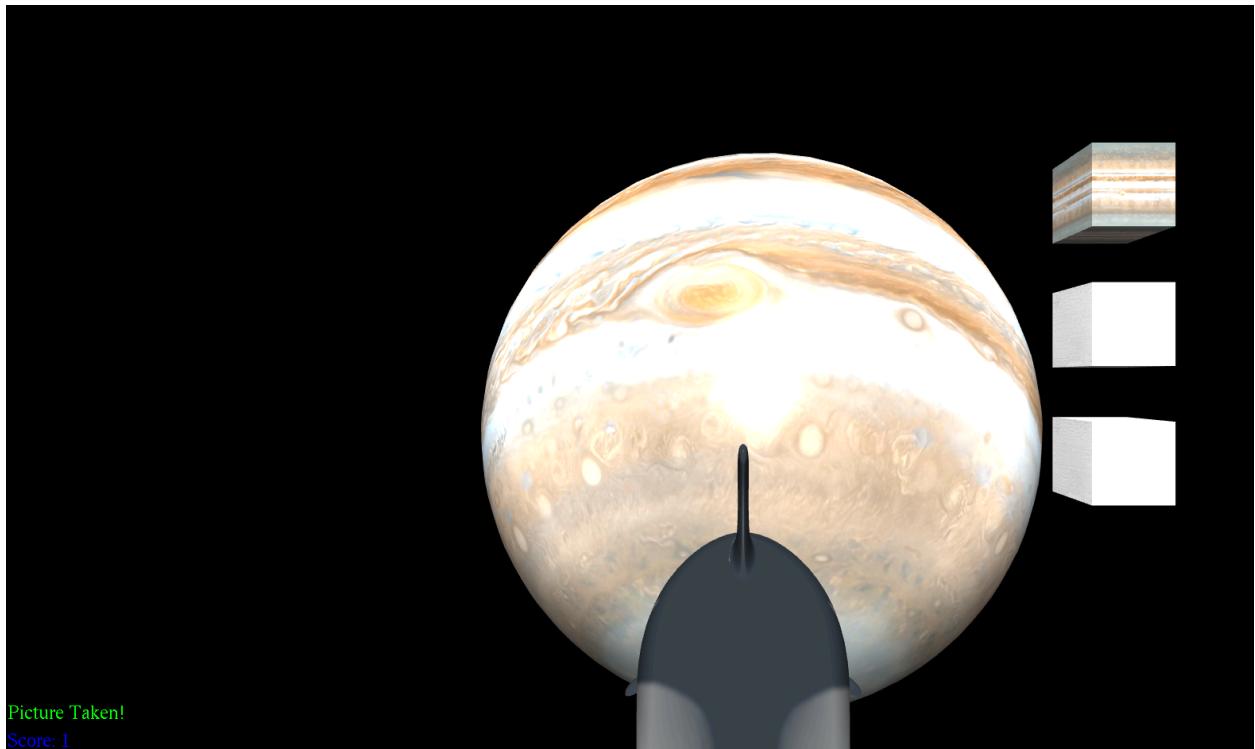
are 3 cubes which (when the dolphin is present inside with all the pictures taken, will take on the texture of the pictures and end the game. Here are the vertices used to generate the structure:

```
private float[] vertices = new float[] 1 usage
{
    3.0f,2.5f,2.0f,      -3.0f,2.5f,2.0f,      3.0f,0.0f,2.0f,      // front wall
    3.0f,0.0f,2.0f,      -3.0f,2.5f,2.0f,      -3.0f,0.0f,2.0f,
    -3.0f,2.5f,-2.0f,    3.0f,2.5f,-2.0f,     -3.0f,0.0f,-2.0f,    // back wall
    -3.0f,0.0f,-2.0f,    3.0f,2.5f,-2.0f,     3.0f,0.0f,-2.0f,
    -3.0f,0.0f,2.0f,      3.0f,0.0f,2.0f,      -3.0f,0.0f,-2.0f,    // floor
    -3.0f,0.0f,-2.0f,    3.0f,0.0f,2.0f,      3.0f,0.0f,-2.0f,
    -3.5f,4.0f,0.0f,      3.5f,4.0f,0.0f,      3.5f,2.3f,2.5f,      // roof - slope
    -3.5f,4.0f,0.0f,      3.5f,2.3f,2.5f,      -3.5f,2.3f,2.5f,
    -3.5f,4.0f,0.0f,      3.5f,4.0f,0.0f,      3.5f,2.3f,-2.5f,
    -3.5f,4.0f,0.0f,      3.5f,2.3f,-2.5f,     -3.5f,2.3f,-2.5f
```

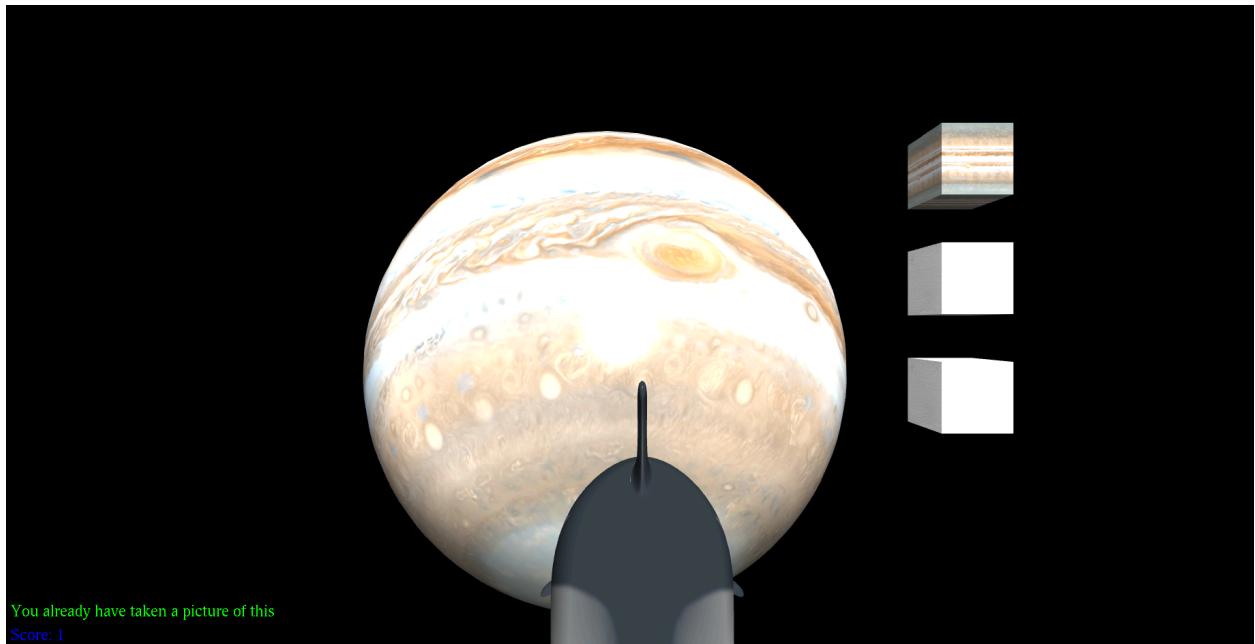
Hud Messages:



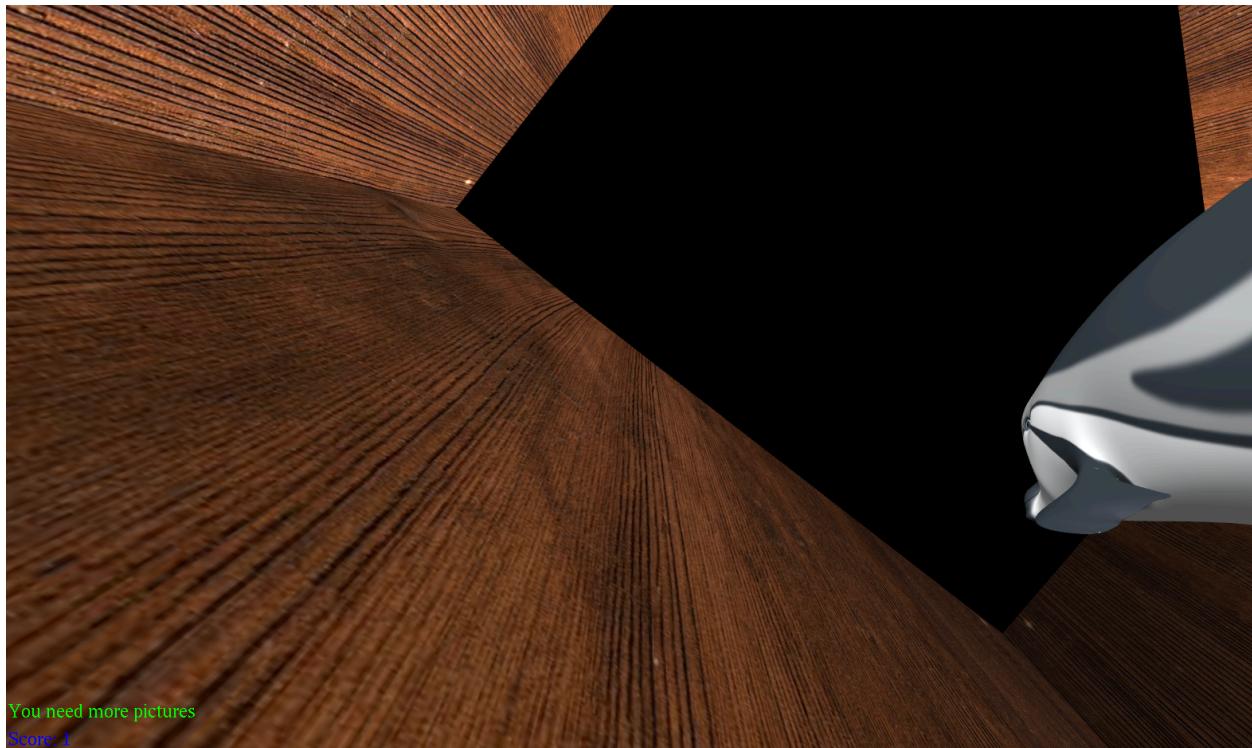
During all of the playtime a score is displayed in the bottom left, when the player presses “P” but is not close enough to one of the planets, a message shows “Move Close”



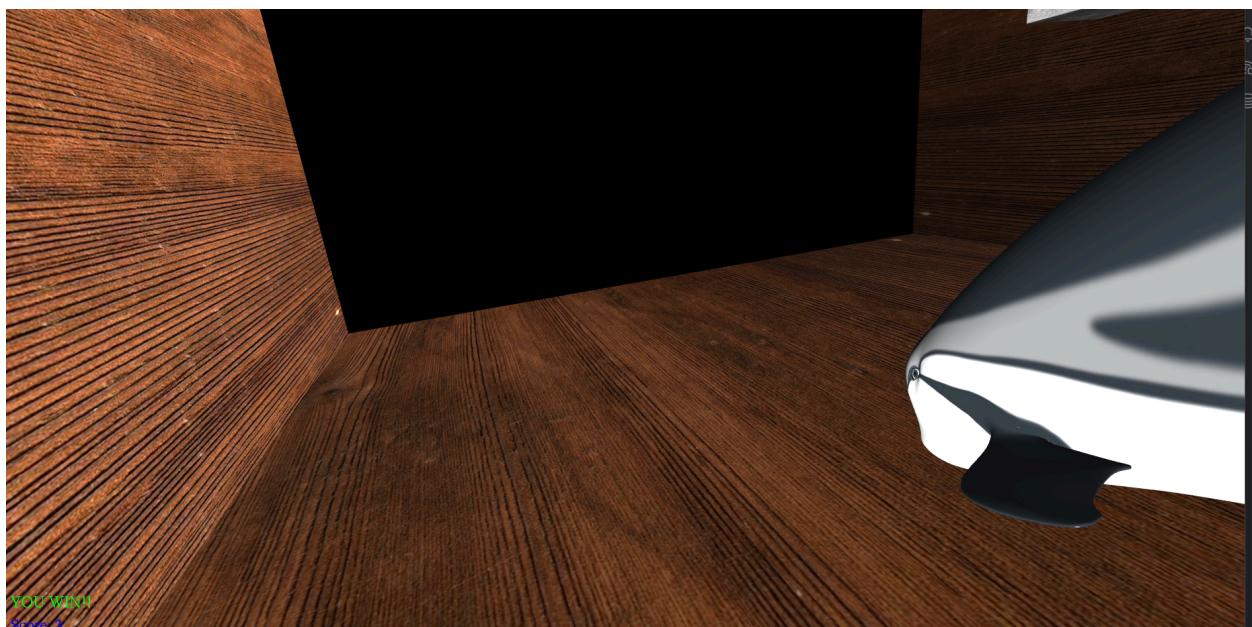
If the player is within range and presses “P” a picture is taken as shown on the right hand side with the texture of the planet being imposed on the top cube. Alongside that a message is sent showing that the picture was taken.



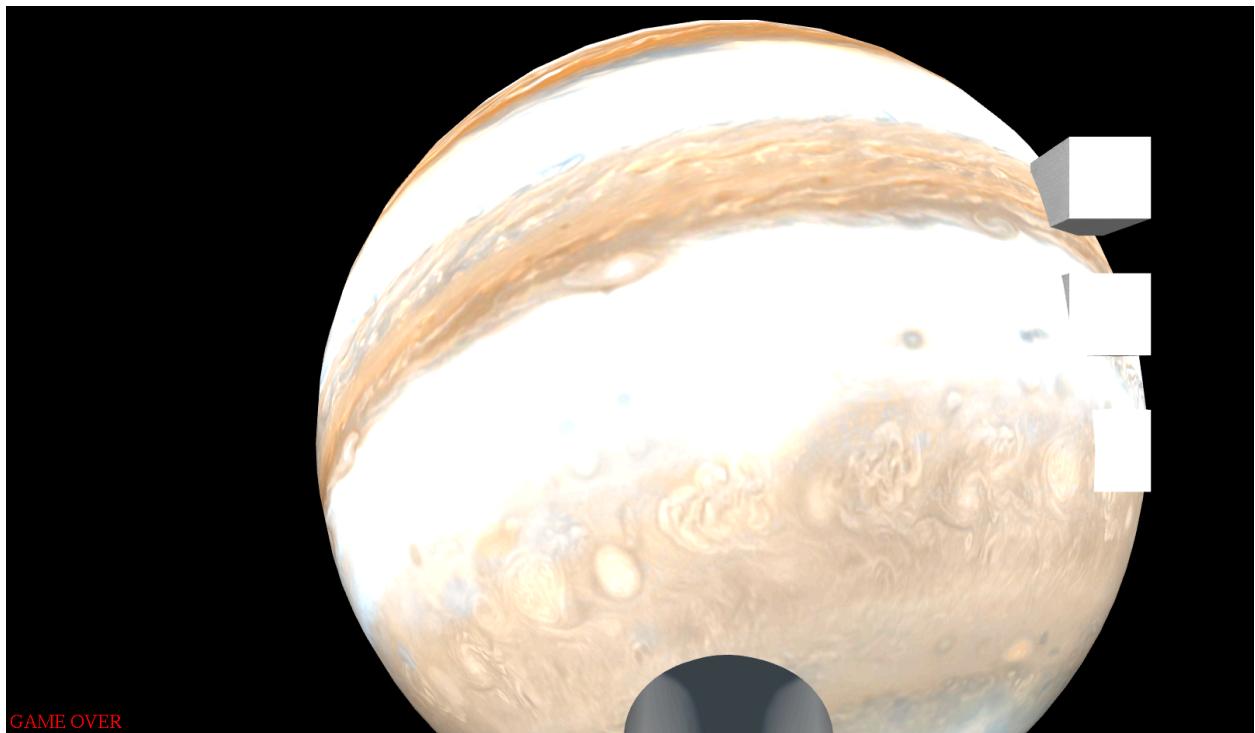
If the player tries to take another picture of the same planet, a message is sent showing the picture of that planet was taken.



If you enter the dolphin's home with not enough pictures, a message is shown that the player needs more pictures.



If you enter the home with all the needed pictures, the game ends with a message saying, “YOU WIN!”



If the dolphin collides with a planet, the game ends and a “GAME OVER” message is sent to the player alongside the game pausing.

Changes:

The two changes made to TAGE were in the Camera and GameObject classes which added the pitch and yaw function. The way these functions work is by having the user provide an amount of angle to increase the given pitch and yaw rotations by (positive or negative) then the GameObject or Camera’s local rotation is adjusted to match.

Requirements I could not get working:

There are a couple HUD issues with the message “Move Closer” not being able to happen again after the first instance. Alongside the

dolphin's home has a graphical bug where the texture on the inside of the roof where the texture appears to stretch, I tried to fix it by increasing the vertices count, but I believe there is an issue with either the normals or the texture coordinates.

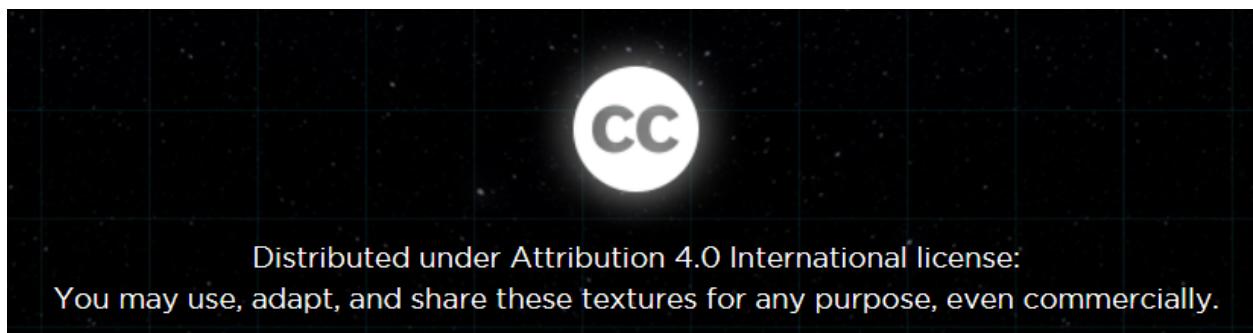
Special features I added:

Nothing of note as I was pressed for time. I tried to be as close to requirements as possible.

Asset List:

- “2k_juptier.jpg” - Used for the texture for one of the planets
 - Source: <https://www.solarsystemscope.com/textures/>
- “2k_mars.jpg” - Used for the texture for one of the planets
 - Source: <https://www.solarsystemscope.com/textures/>
- “2k_mercury.jpg” - Used for the texture for one of the planets
 - Source: <https://www.solarsystemscope.com/textures/>

License for the planet textures:



- “TextureLabs_Grunge_138S.jpg” - Used as the placeholder texture for the picture holders both on the dolphin and inside its house
 - Source: “https://texturelabs.org/textures/wood_189/”
- “TextureLabs_Wood_189S.jpg” - Used as the texture for the dolphin's house:

- Source: “https://texturelabs.org/textures/grunge_138/”

License for these two textures:

TEXTURELABS

Wood 189

Aged fine grain wood

FREE FOR COMMERCIAL USE

TEXTURELABS

Grunge 138

Cracked paint grunge

FREE FOR COMMERCIAL USE