Unit 3 Reading (due Thursday, January 31)

Please let the instructor know immediately if you have trouble accessing any of these materials. There is nothing to turn in for your reading, but you will be expected to be comfortable with these concepts for your quizzes.

Required Reading:

Projections:

Introduction to Computer Graphics, Chapter 4 (https://www.safaribooksonline.com/library/view/introduction-to-computer/9781439852798/K12432_C004.xhtml) - Please read sections 4.6 (including any subsections you skipped in the last assignment) through 4.8.

Scratchapixel 2.0: The Perspective and Orthographic Project Matrix - The coding examples are in OpenGL, but you'll find that the WebGL version looks very similar. Please read the following sections:

- **What Are Projection Matrices and Where/Why Are They Used? (https://www.scratchapixel.com/lessons/3d-basic-rendering/perspective-and-orthographic-projection-matrix/projection-matrix-introduction)**
- **What You Need to Know First (https://www.scratchapixel.com/lessons/3d-basic-rendering/perspective-and-orthographic-projection-matrix/projection-matrices-what-you-need-to-know-first)**
- **The OpenGL Perspective Projection Matrix (https://www.scratchapixel.com/lessons/3d-basic-rendering/perspective-and-orthographic-projection-matrix/opengl-perspective-projection-matrix)** - You can skip the "Derivation" subsection. This is optional reading if you want to know how the perspective projection matrix is derived, but you don't need to know that for this class.
- **About the Projection Matrix, the GPU Rendering Pipeline and Clipping (https://www.scratchapixel.com/lessons/3d-basic-rendering/perspective-and-orthographic-projection-matrix/projection-matrix-GPU-rendering-pipeline-clipping)**

Computer Graphics Through OpenGL (https://www.safaribooksonline.com/library/view/computer-graphics-through/9781482258394/K24133_C004.xhtml) - Please read subsection 4.6.1. You may ignore the sidebar on the dot product.

Introduction to Computer Graphics, Chapter 5 (https://www.safaribooksonline.com/library/view/introduction-to-computer/9781439852798/K12432_C005.xhtml) - Please read section 5.2. You may skip subsection 5.2.2 on Scanline, as we'll talk about that later in the term. Also please read subsections 5.3.1 to 5.3.3.

WebGL Fundamentals: 3D Perspective (https://webglfundamentals.org/webgl/lessons/webgl-3d-perspective.html)

WebGL Fundamentals: 3D Camera (https://webglfundamentals.org/webgl/lessons/webgl-3d-camera.html)

Optional Reading:

Explaining Homogeneous Coordinates (https://www.tomdalling.com/blog/modern-opengl/explaining-homogenous-coordinates-and-projective-geometry/)