



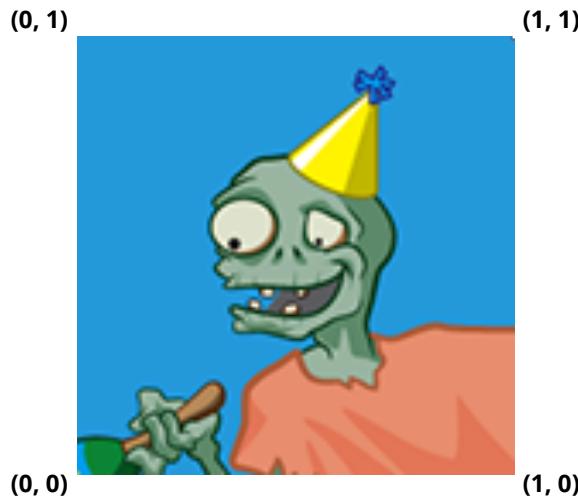
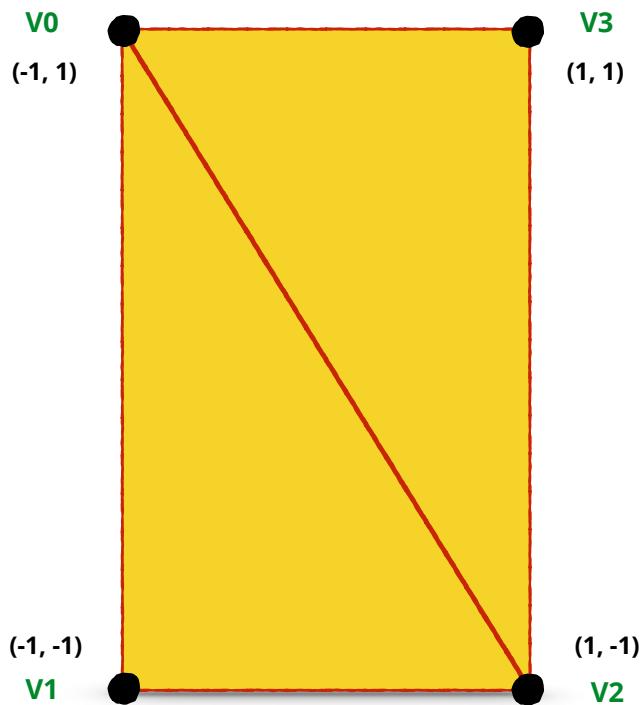
BEGINNING METAL



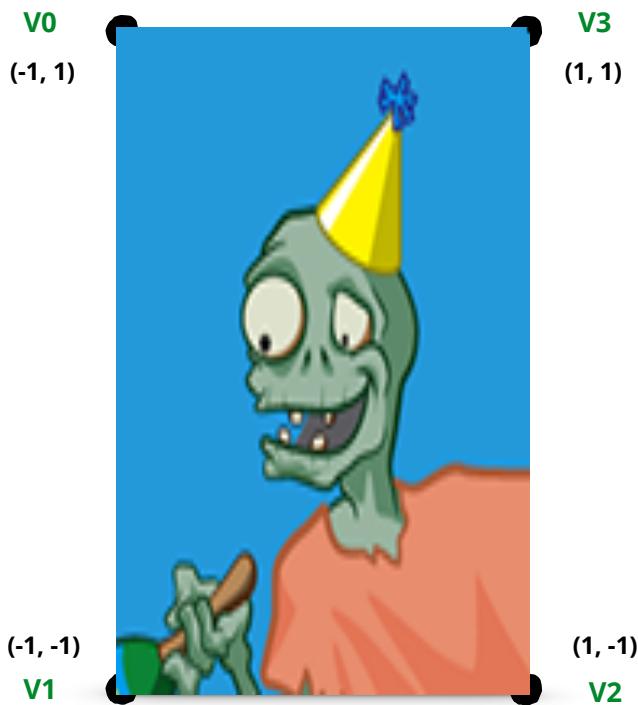
PART 6: TEXTURES



TEXTURE COORDINATES



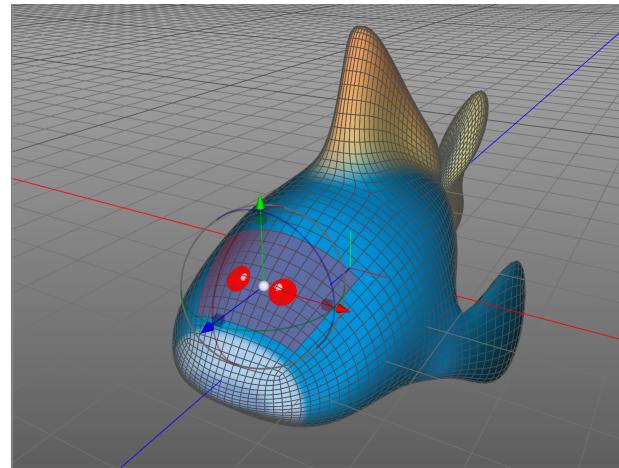
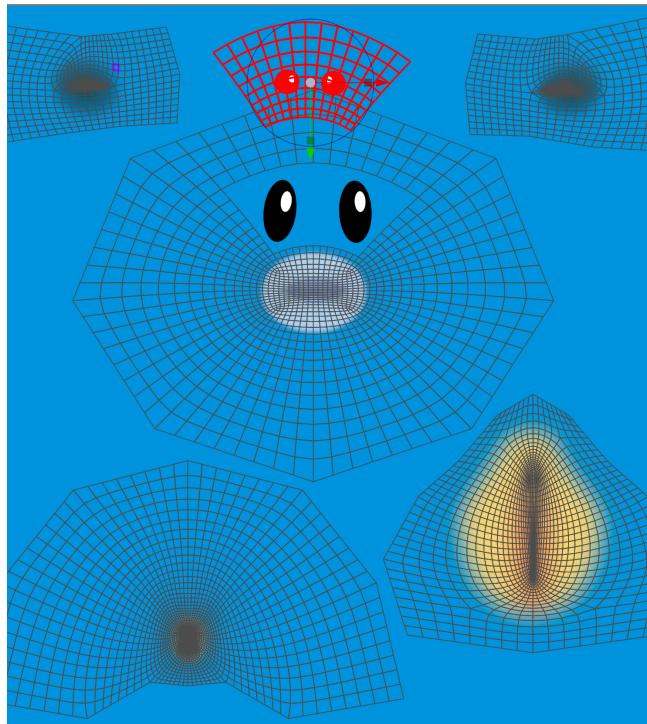
TEXTURE COORDINATES



```
vertices = [
    Vertex(position: float3(-1, 1, 0), // v0
           texture: float2(0, 1)),
    Vertex(position: float3(-1, -1, 0), // v1
           texture: float2(0, 0))]
```



UV MAPS



TEXTURE LOADING

- ▶ Update texture coordinates in:
 - ▶ Vertex Array
 - ▶ Vertex Descriptor
 - ▶ Vertex function
 - ▶ Fragment function



TEXTURE LOADING

```
let textureLoader = MTKTextureLoader(device: device)
texture = try textureLoader.newTexture(withContentsOf: textureURL,
                                         options: nil)
```

```
commandEncoder.setFragmentTexture(texture, at: 0)
```

```
fragment half4 textured_fragment(VertexOut vertexIn [[ stage_in ]],
                                  texture2d<float> texture [[ texture(0) ]]) {
    constexpr sampler defaultSampler;
    float4 color = texture.sample(defaultSampler, vertexIn.texture);
    return half4(color.r, color.g, color.b, 1);
}
```



SAMPLER STATES



Linear



Nearest



DEMO



CHALLENGE TIME!

