# VertexColorShader

Shader Type: This is a surface shader, meaning that it defines the appearance of a surface in the scene, taking into account factors such as lighting, shadows, and texture mapping.

## Shader Properties:

vMultiplier: This property controls the height of the surface.

_MinHeight: This property sets the minimum height value for the surface.

_MaxHeight: This property sets the maximum height value for the surface.

_ColorLow: This property sets the color of the surface at the lower end of the height range.

_ColorMid: This property sets the color of the surface in the middle of the height range.

_ColorHigh: This property sets the color of the surface at the upper end of the height range.

_Shininess: This property controls the shininess of the surface.

_Texture: This property sets the texture of the surface.

_SpecMap: This property sets the specular map of the surface.

SubShader Tags:

RenderType: This tag specifies that the shader should be used for opaque objects.

SubShader LOD:

200: This specifies the level of detail for the shader.

CGPROGRAM:

#pragma surface surf Lambert: This line specifies that the surface shader should use the Lambert lighting model.

#pragma vertex vert: This line specifies that the vertex function should be used to modify the vertices of the mesh.

#pragma target 3.0: This line specifies that the shader should be compiled for Shader Model 3.0 or higher.

Input Structure:

float4 vertColor: This member holds the vertex color.

float2 uv_MainTex: This member holds the texture coordinates.

float3 worldPos: This member holds the world position of the vertex.

Vertex Function (vert):

vertex.vertex.y *= vMultiplier: This line modifies the height of the vertex based on the vMultiplier property.

surfInput.vertColor = vertex.color: This line sets the vertex color in the input structure.

Surface Function (surf):

float height = IN.worldPos.y * vMultiplier: This line calculates the height of the surface based on the vertex position and the vMultiplier property.

float heightRatio = (height - _MinHeight) / (_MaxHeight - _MinHeight): This line calculates the height ratio of the surface based on the height, _MinHeight, and _MaxHeight properties.

heightRatio = clamp(heightRatio, 0.0, 1.0): This line clamps the height ratio between 0 and 1.

if-else statements: These statements set the surface color based on the height ratio, using the _ColorLow, _ColorMid, and _ColorHigh properties.

output.Albedo: This member sets the surface color in the output structure.

FallBack:

"Diffuse": If the shader is not supported, the scene will fall back to using the Diffuse shader.