

// MinTuts/Procedural Terrain.shader

```
Shader "MinTuts/Procedural Terrain" {
  SubShader {
    Pass {
      CGPROGRAM

      #pragma vertex   vert
      #pragma fragment frag

      #include "UnityCG.cginc"

      struct v2f {
        float4 pos : SV_POSITION;
        float3 wpos : POSITION1;
      };

      v2f vert(float4 vertex : POSITION) {
        v2f o;

        o.pos = UnityObjectToClipPos(vertex);
        o.wpos = mul(unity_ObjectToWorld, vertex);

        return o;
      }

      float4 frag(v2f i) : COLOR {
        float p = i.wpos.y * 0.015;
        float3 y = float3(p, p, p);

        return float4(y, 1);
      }
    }
  }
}
```

First things first: create our output data structure

Then we populate **v2f**'s **pos** and **wpos** properties

This function is available because... we **#included** Unity's **Cg** helper functions

We pass the **vertex** input parameter to this function

Since **SV_POSITION** and **POSITION** have the same semantic meaning (the **vertexs** position in object, aka local, space)...

passing **vertex** results in our local/object coordinates... being transformed to clip space coordinates

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NOTE: Even though the **semantics** are identical, the values for **o.pos** and **vertex** will be different because...