![A picture containing floor, indoor, ceiling, building

Description automatically generated]()

Sparkle the Rat

Project 6

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# Images

![A picture containing floor, indoor, building, ceiling

Description automatically generated]()

Figure 1: Slightly different blue, we can see a mild reflection on the tummy of the rat



Figure 2: Large increase in uKr to really see the reflection

## Key Code

vec4 ambient = uKa \* uColor;

float d = max( dot(Normal,Light), 0. );

vec4 diffuse = uKd \* d \* uColor;

vec3 R = normalize( reflect( -Light, Normal ) );

float s = 0.;

if( dot(Normal,Light) > 0. ) // only do specular if the light can see the point

{

vec3 ref = normalize( 2. \* Normal \* dot(Normal,Light) - Light );

s = pow( max( dot(Eye,R),0. ), 10 );

}

//Use reflect in lighing for a very shinny look

vec4 specular = uKs \* s \* uSpecularColor;

vec3 reflcolor = textureCube( uReflectUnit, R ).rgb;

gl\_FragColor = vec4( ambient.rgb + diffuse.rgb + specular.rgb + uKr\*reflcolor.rgb, 1. );

}

## Video Link

## <https://media.oregonstate.edu/media/t/0_di5bxu8i>

## Comments

My rat’s name is Sparkle. Using noise small sparkly specs appear across her body. She also has reflective lighting to show how shiny and sparkly she can be. The lighting can be adjusted so Sparkle reflects less or more of the cube map around her. A-D-S can be set at 0 to really showcase the reflective lighting.