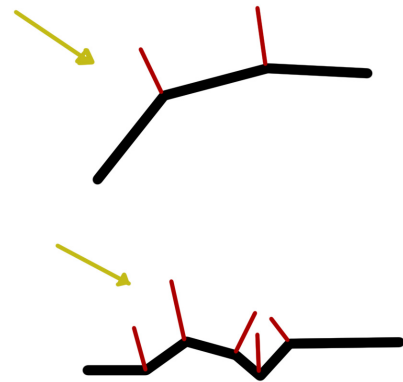# Texture Mapping

Team Mayans

Bump Mapping

- Simulates bumps or wrinkles without needing to alter the model

- Shadow of objects won't change since the actual geometry of the object stays the same

- When a bump map is applied, the renderer will calculate the normal of the vertices and project the light rays

- The light ray (yellow line) hits the mesh (black line) and will bounce off at a certain angle calculated with the normal

- Adding the bump map (2nd image), the light that bounces is changed based on the combination of the two normal maps, therefore the render will look more detailed

Displacement Mapping

- Renders bumps as true geometry

- Physically displaces the mesh to which they are applied
  - Creates triangles between texels

- Good for creating detail in low-resolution meshes

- More system intensive than bump maps

Base Model

Bump Mapping

Displacement Mapping