3D Texture Mapping

CAP 3027 Fall 2015

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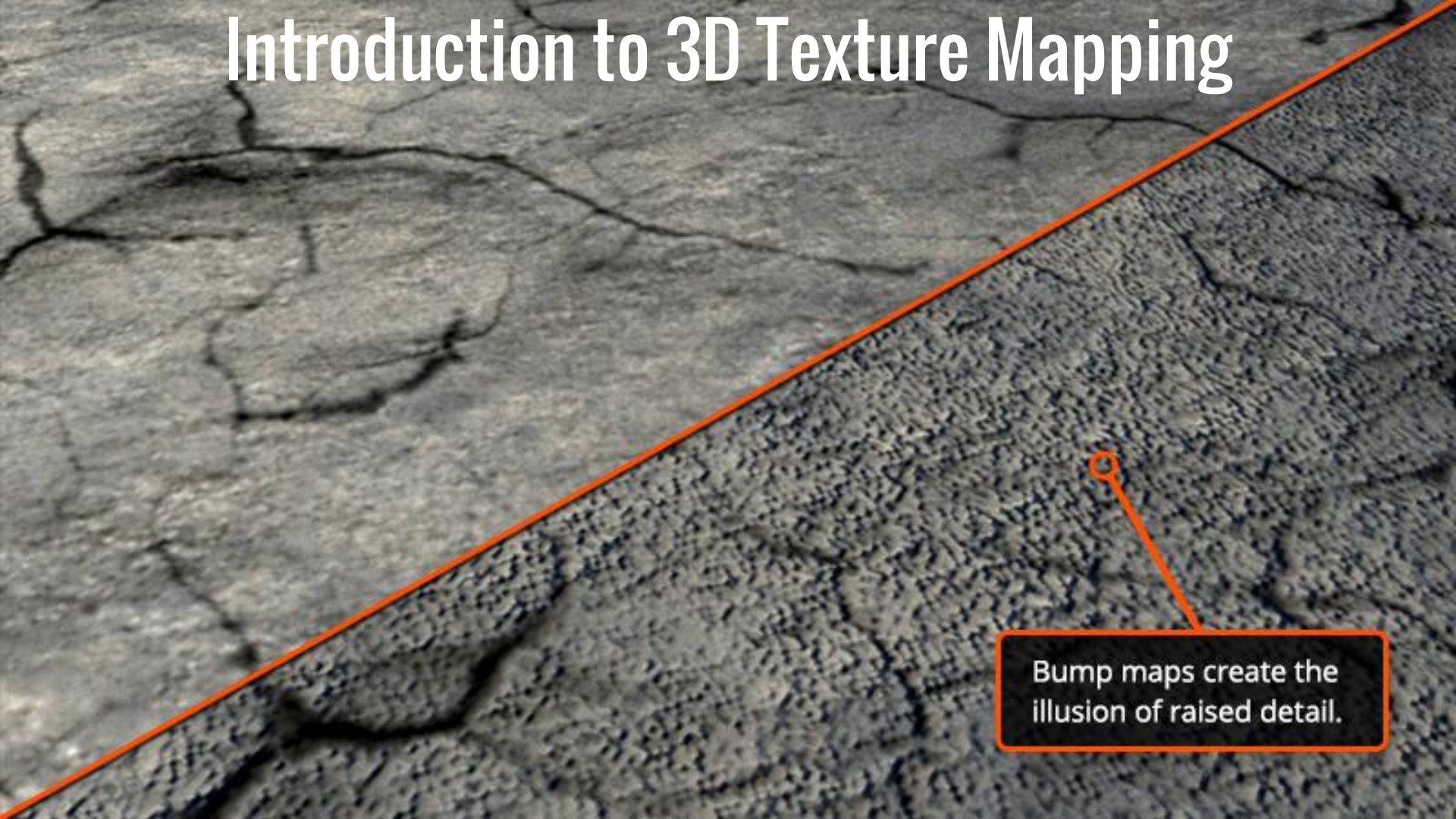
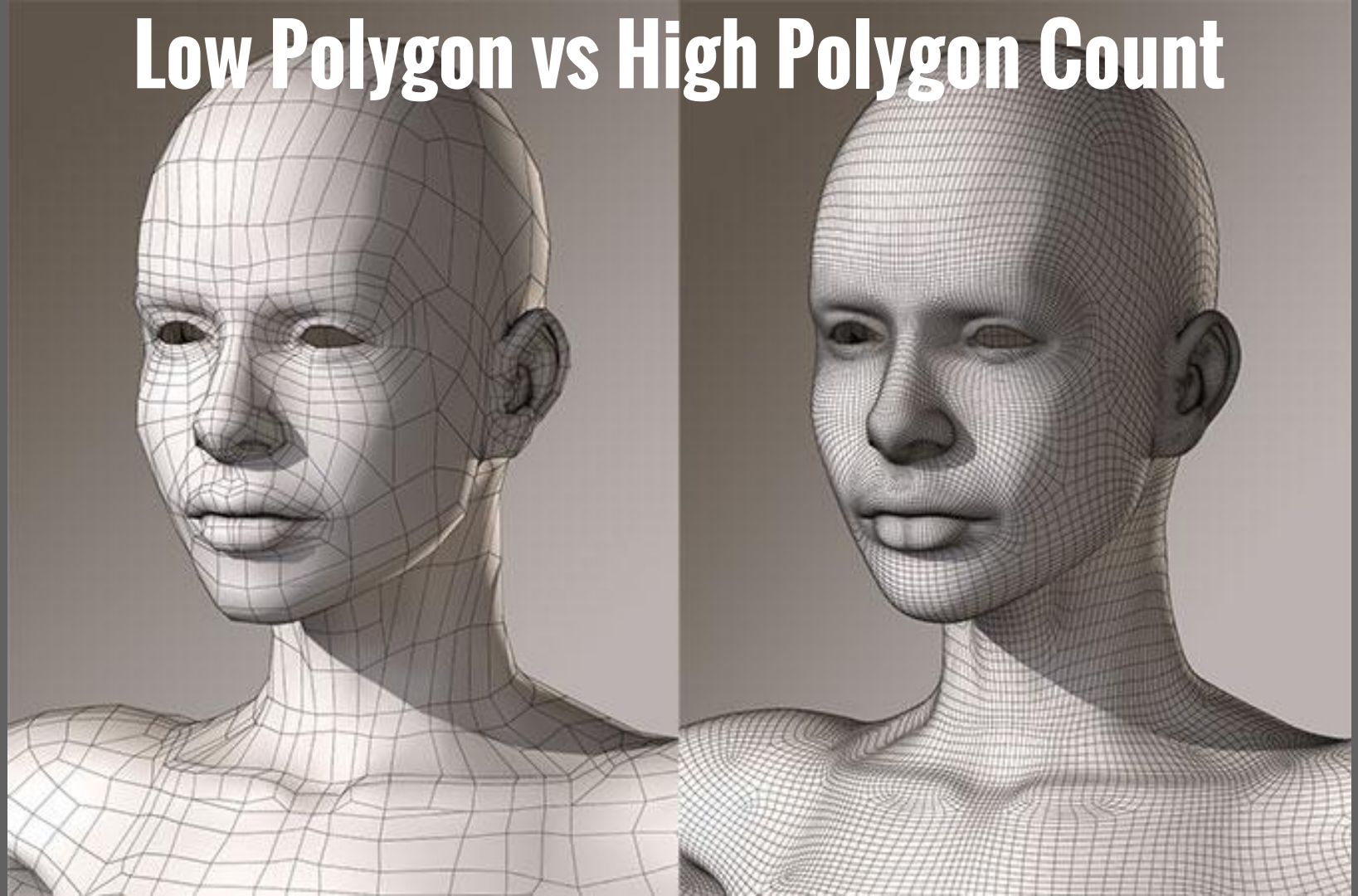
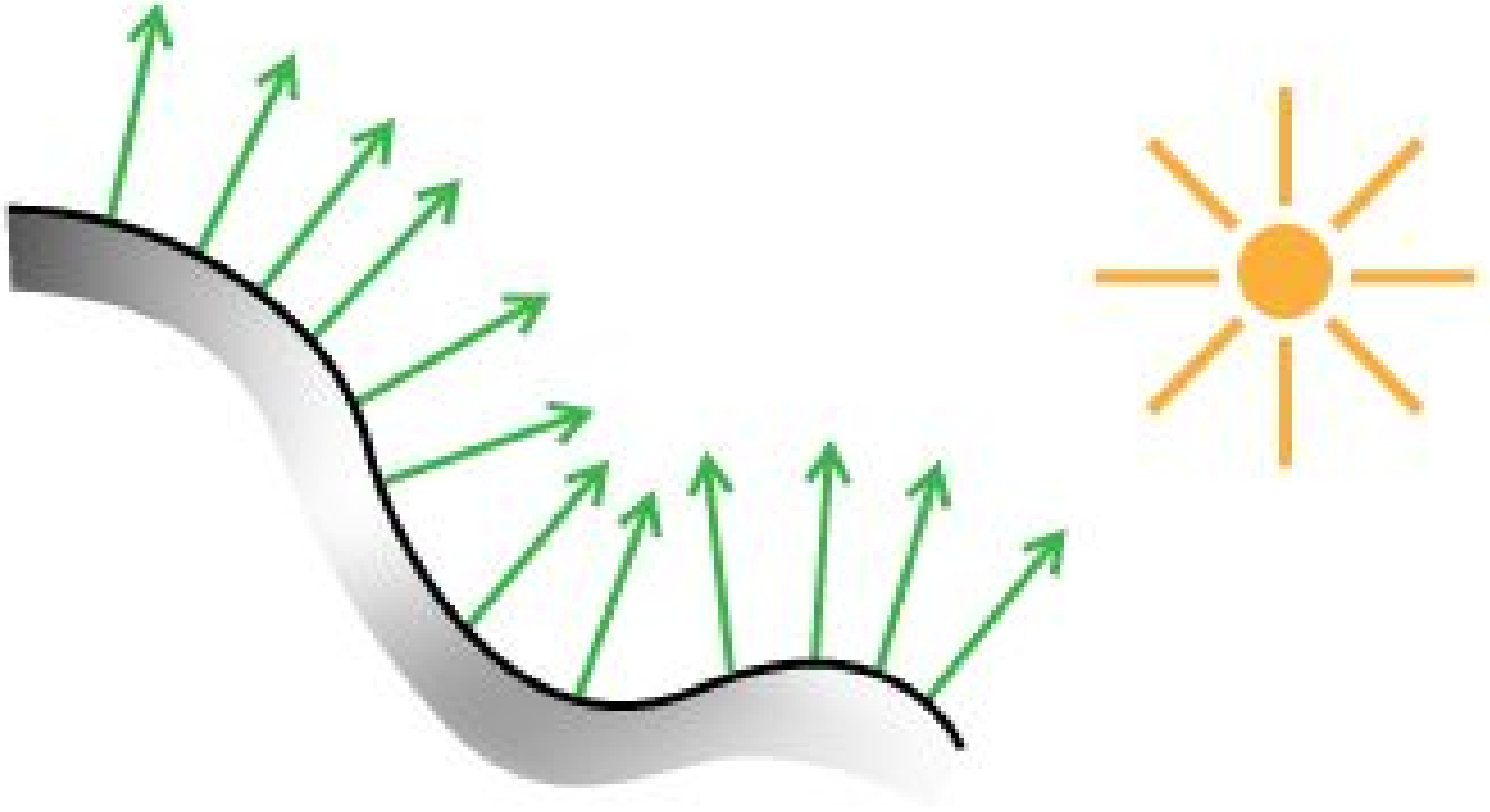
Introduction to 3D Texture Mapping



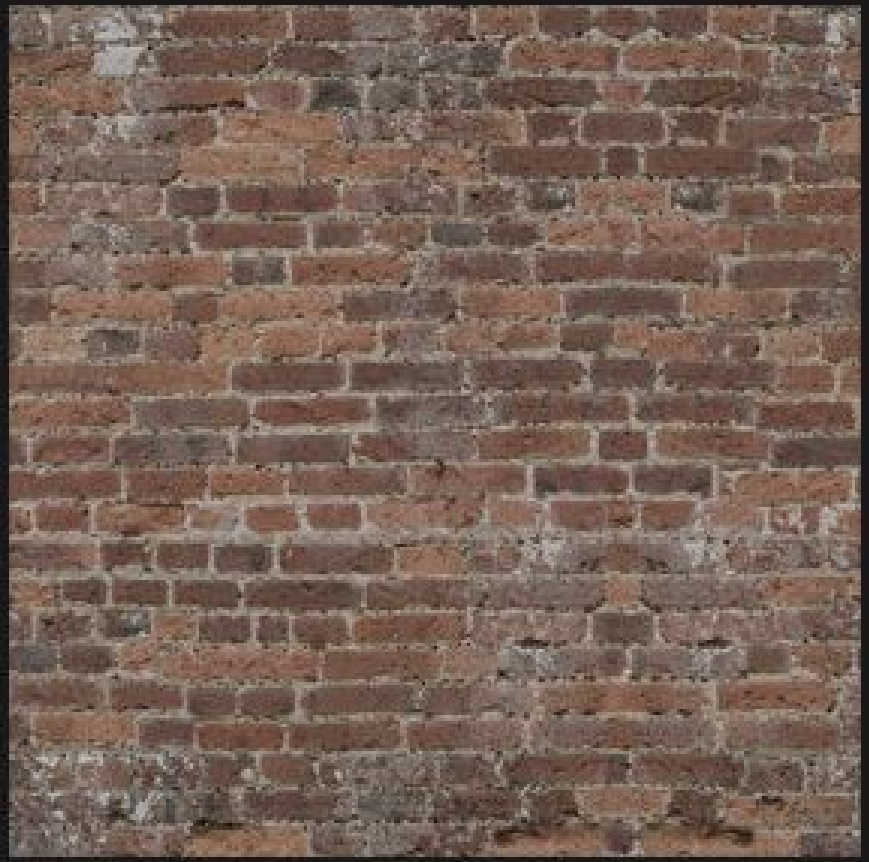
Low Polygon vs High Polygon Count



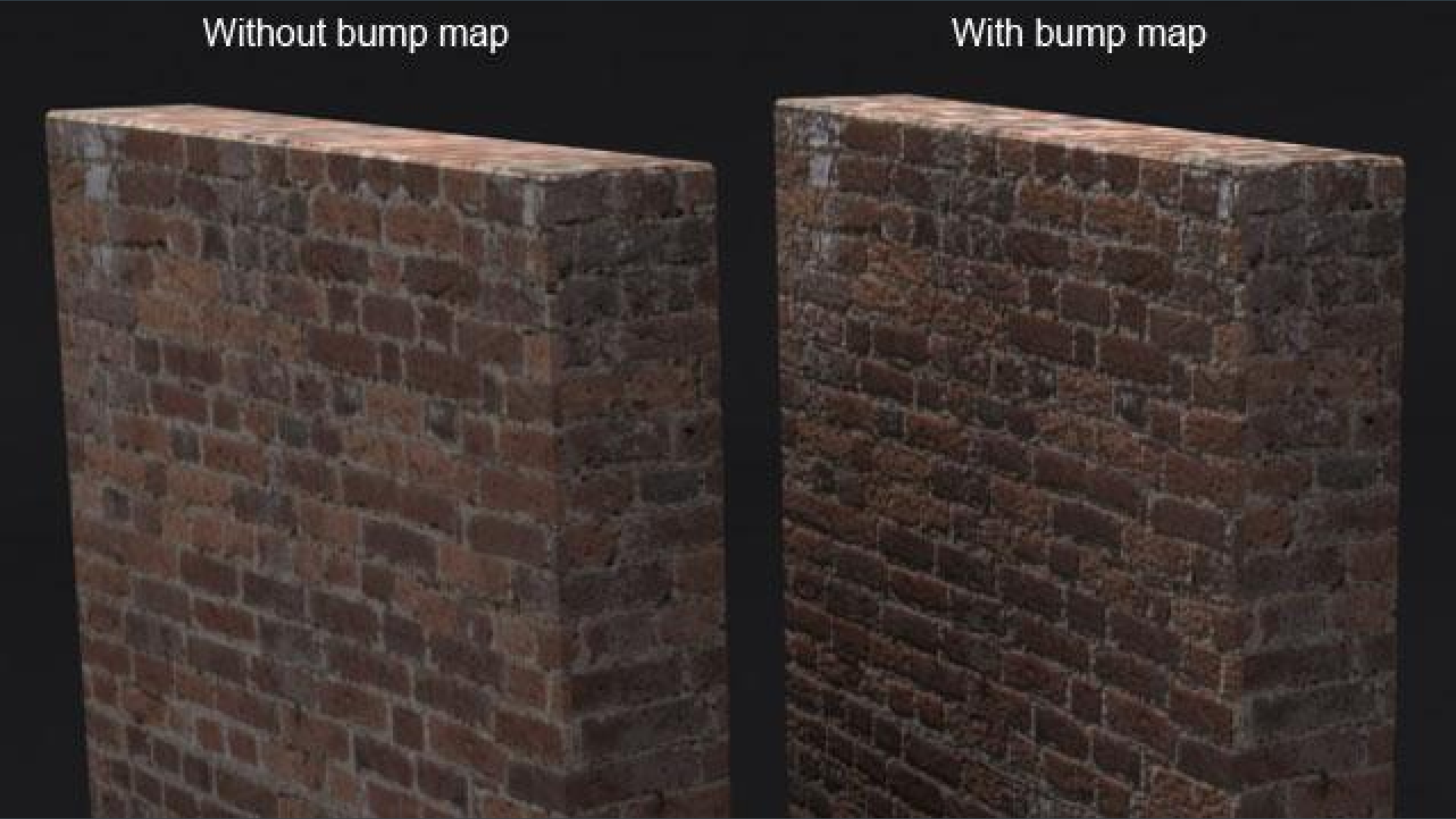


Bump Mapping

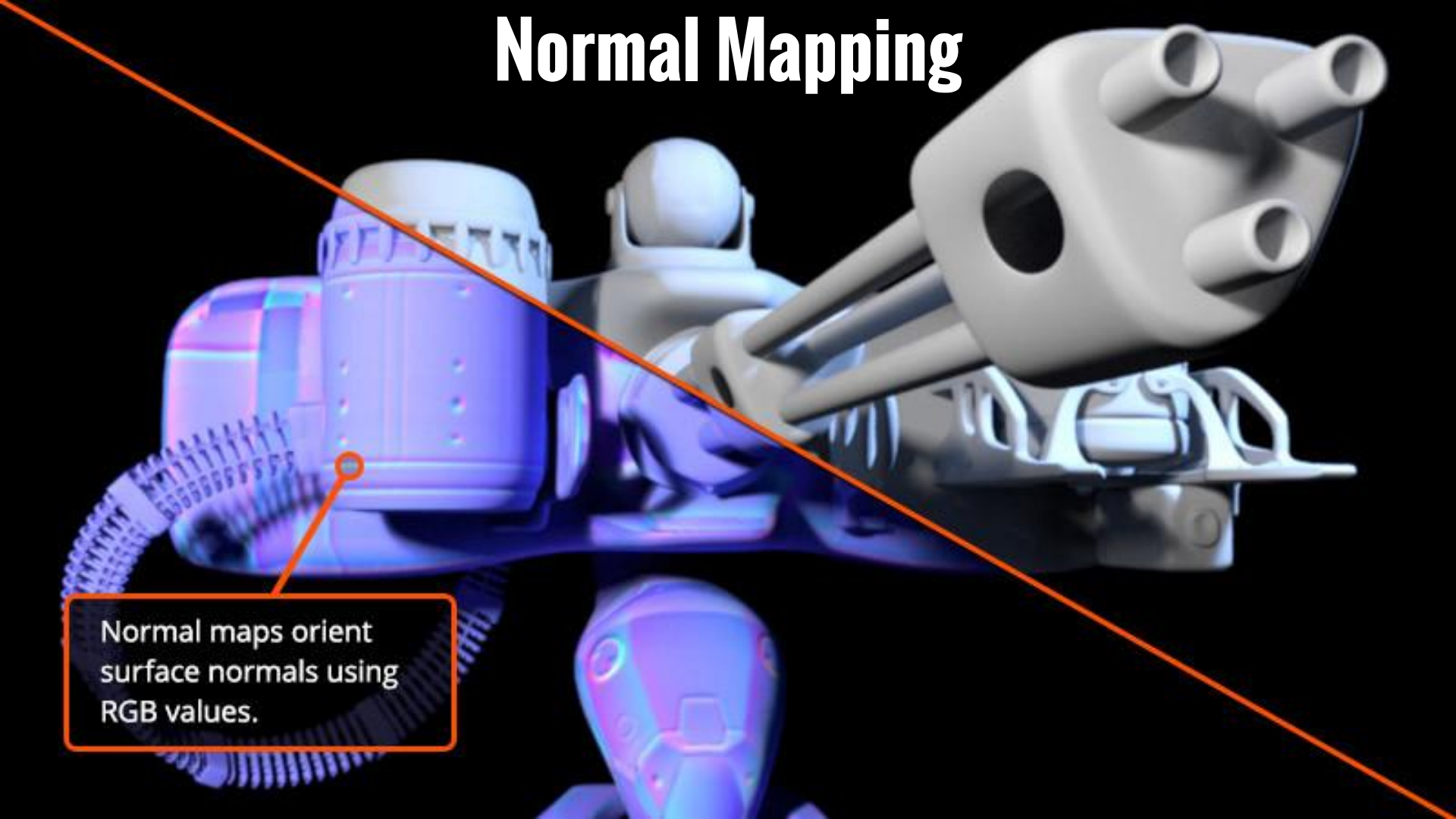
Texture map

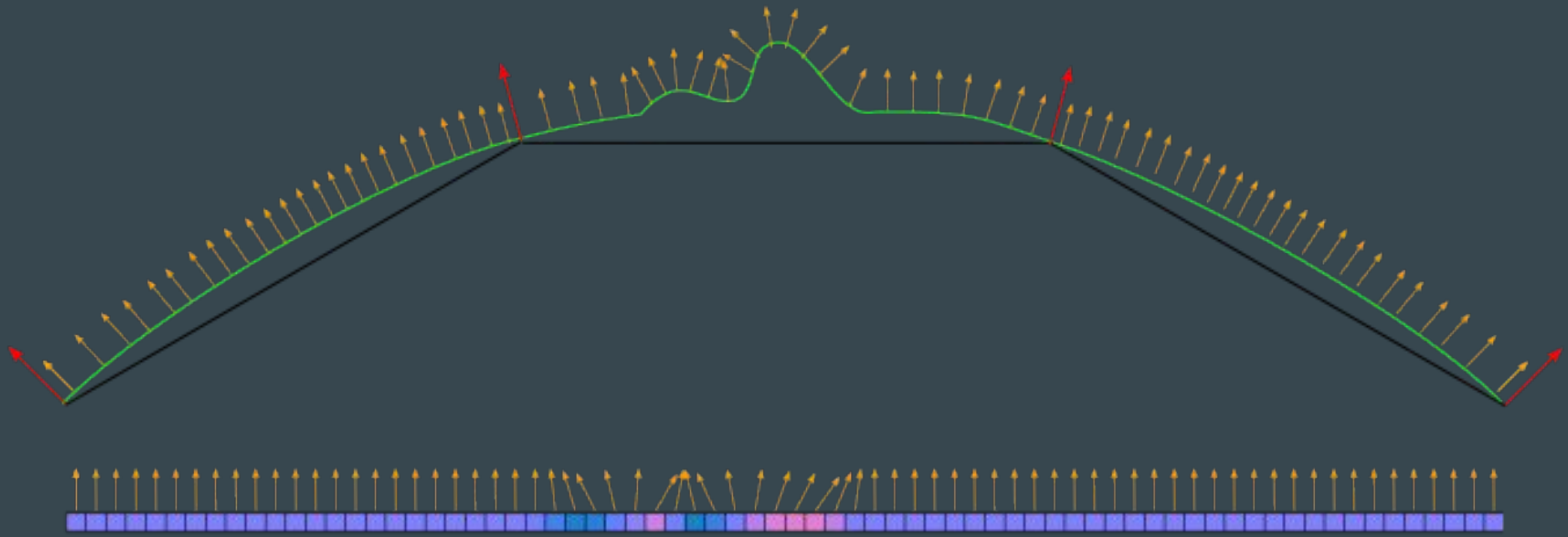


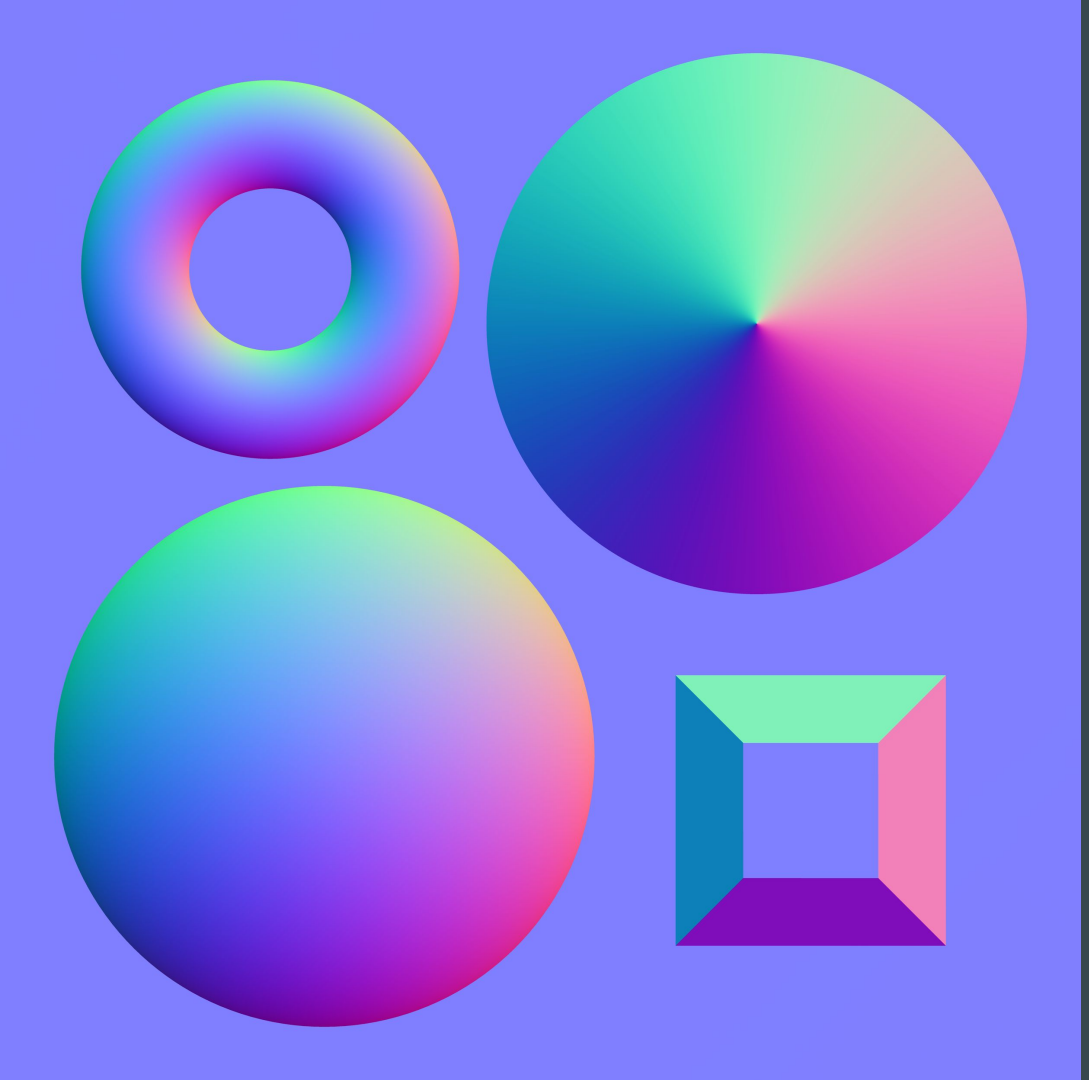
Bump Map

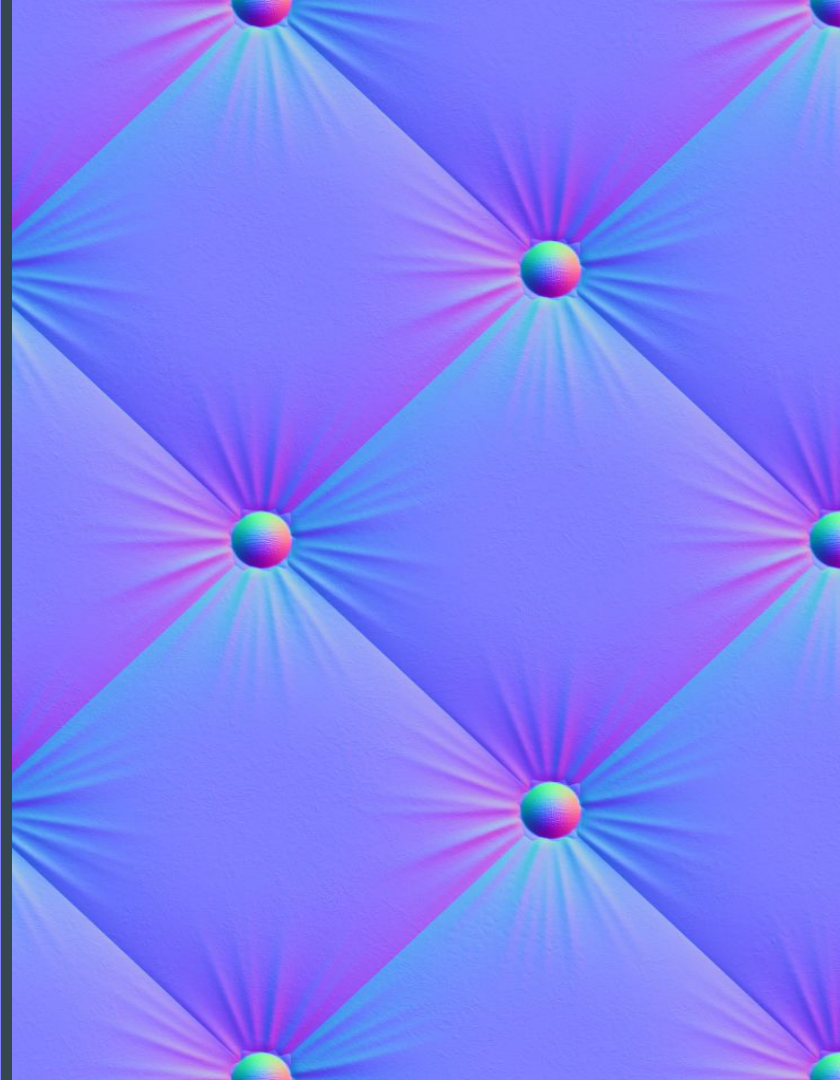

Without bump map
With bump map

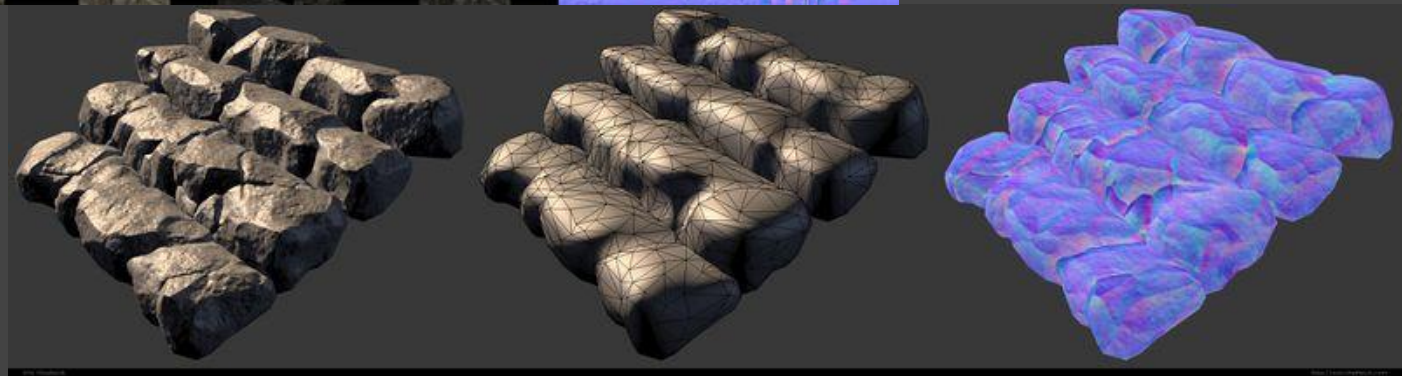
Normal Mapping



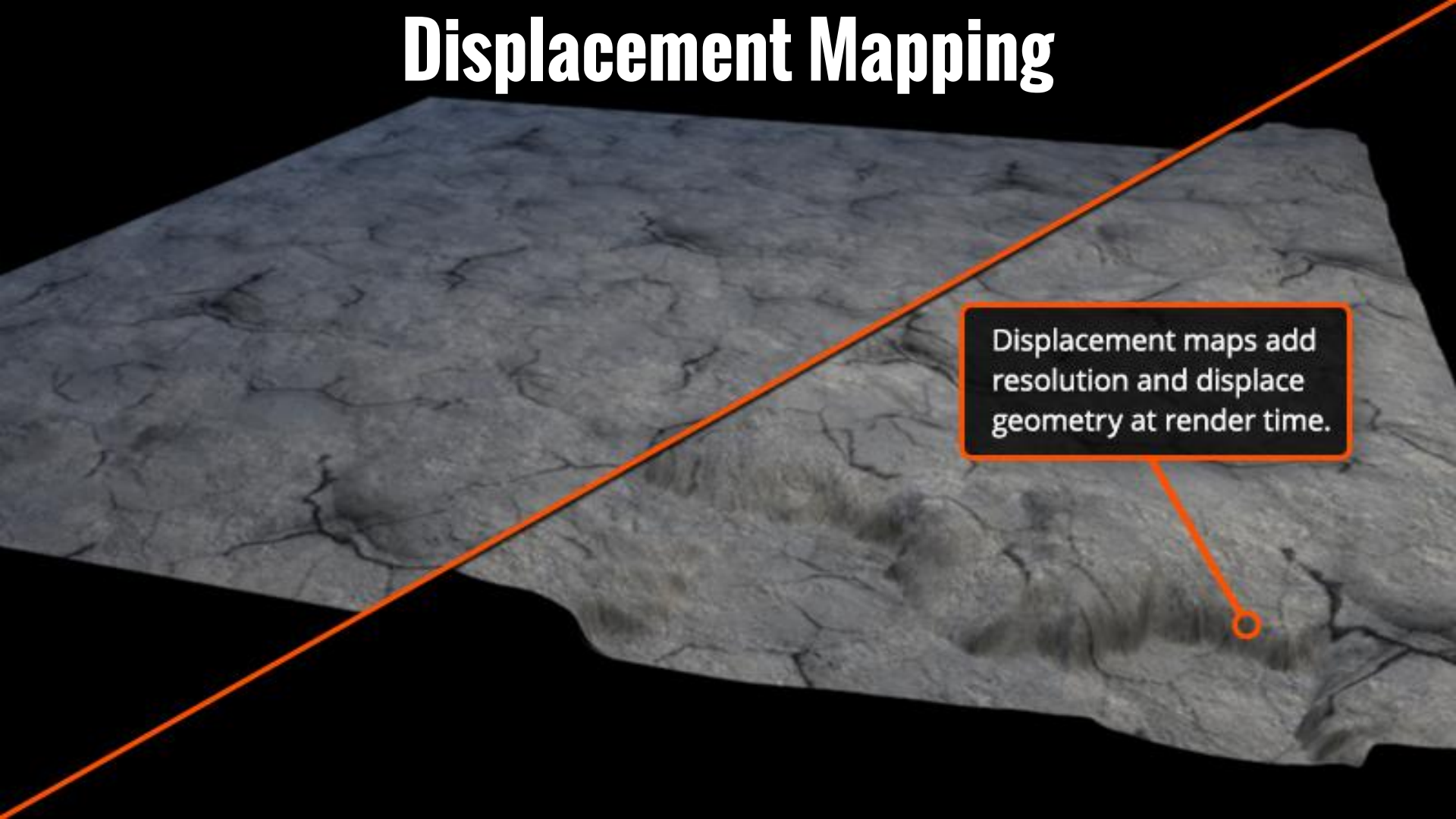


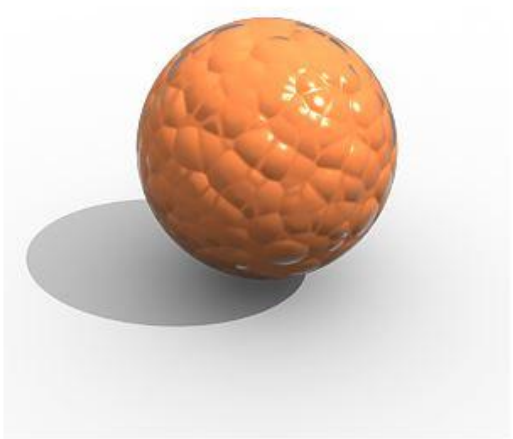




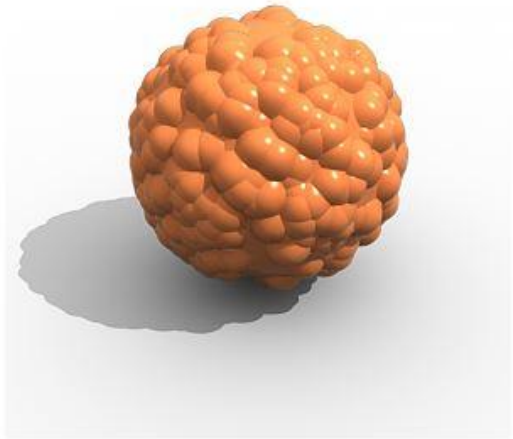


Displacement Mapping

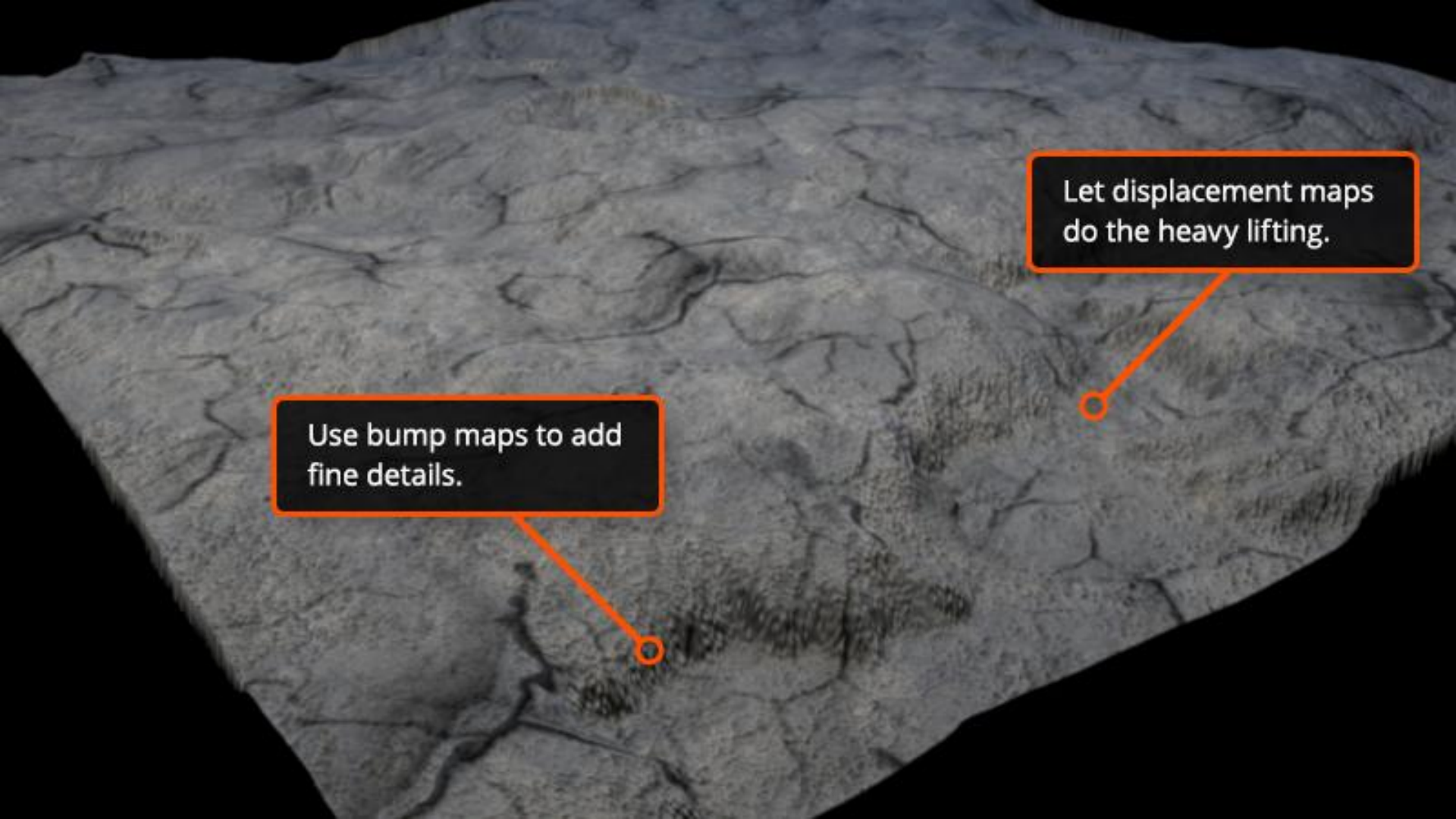




Bump mapping



Displacement mapping


Let displacement maps do the heavy lifting.
Use bump maps to add fine details.

Relief Mapping

Figure 1. Town rendered using conventional texture mapping. The façades and brick walls represented with one texture each.

Figure 2. Same view as in Figure 1 rendered using relief texture mapping. Both scenes contain the same number of polygons. Notice the bricks standing out and the protruding dormers.

MAYA DEMO

Parallax Mapping

Normal Mapped

Parallax Mapped

Steep Parallax Mapped

Horizon Mapping

Bringing It All Together