

## Topics

Symbols (instances vs. copies). “Face me” billboards. Geometry proxies (aka “replace me” components). Displacement maps. Procedural texture geometry (fur/grass). Particle systems (smoke). Fractals.

## Learning goals

Understand some of the ways in which very dense or large models may be made manageable through the use of specialized aspects of the geometry or rendering engine in use. Learn about some of the advanced rendering or modeling options available in other software.

## Production goals

Several images illustrating the options available in your software (for R+V: instances, proxies, fur).

## Readings

Tapestry > 3D Data > Types > Procedural, Tapestry > 3D Data > Symbols > proxies

## Instructions:

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1. Read about the various options or techniques. This may involve Tapestry pages as well as web bookmarks to other websites, academic papers, etc. (some of these topics involve features not available in the software we currently use).
2. Download the “Chair” object (in Furniture) from the entourage database. This object is a group of meshes. If you Explode it, you can access the individual meshes. The goal is to assign materials and layers to the meshes to create a block (a .3dm file) such that it is possible to insert two instances of the chair into a new model with different finishes on the metal parts. This will involve working with the “by parent” “by layer” and “by object” controls. Create a rendering demonstrating that your block works, and turn in the .3dm file as well as the rendering.
3. Create a Proxy object from an entourage file or from something in your model (e.g. a tree?). Insert the proxy into a new file, add materials if needed, render it, and save. Turn in the .rvmesh and rendering as well as the original geometry.
4. (This next one is fun and easy to do if you use the “V-Ray Interactive” viewport renderer while you try out different settings.) Use the V-Ray fur feature to add fur, or grass to your model. Render. Record (and turn in, see below) the settings, then change them to produce a different look. Re-render.
5. Turn in answers to the following questions.

## Write-up Questions:

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1. In your own words describe briefly what each of these terms are talking about and why they are part of our vocabulary:
  - a. Block
  - b. Proxy
  - c. Billboard
  - d. Displacement Map
  - e. Fur
  - f. Particle system
  - g. Fractal
2. Identify which of the above you were able to use. Do you see yourself using any of these again?
3. Does your Proxy object have sub-parts? How do you control the materials (colors) on the parts?
4. For your fur exploration, record the settings you used (add more rows if you want)

Length	Thickness	Gravity	Bend	Taper	Scale

3. How long did this exercise take?