Student notes 025 – Distributing rocks using a particle system

The method of creating a weight map and particle system for rocks is very similar to that in module 023 for distributing leaves over a tree. Again, use the Hair type. It is possible to use the default Emission type but that is targeted towards animation and is not as controllable as Hair for static images.

Groups
Rather than spreading two hundred copies of the same rock around a landscape it’s better to have three or four different rocks and distribute the group. Use Group rather than Object in the Render tab and check the Pick Random option.

The original objects for your rocks won’t rescale or relocate. Put them on layer 2; the particle system will still be able to find them. Make sure their object origins are in their geometric centers; the origin is what’s placed on the landscape surface, so if it’s at the edge of the rock mesh the rock may end up entirely buried or standing on its point, depending on its rotation.

There is a full guide to making sculpted rocks and placing them across a landscape mesh at https://users.soe.ucsc.edu/~yonge/02_PDF_guides/025_ParticleSystemsRocks.pdf

Rotation
Always enable Advanced at the top of the Hair particle systems tab; this gives you a Rotation panel with much more control over orientation of the hair objects.

Object origins
Objects (and objects in groups) are placed on surfaces using their origin points. For rocks having the origin point in the center works well for soft ground and sand, but if you’re modeling a mountain slope they need to sit on the surface.

There are two ways to do this. The first is to place every rock’s origin at its base (do this in Edit mode) and ensure they all sit upright on that base, only making their local Z axis rotations random. There is a risk that the similarity of the rocks will be noticable, however. The second way is to use a non-rendering mesh duplicate of the ground and move it upwards until the rocks appear to be sitting on the visible ground.

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