



MODELING GUIDE



Inspiration

Final fantasy, Zelda, and other 16-bit RPG inspired worlds



Modeling Guidelines



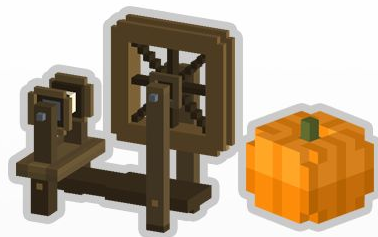
Voxel Density

Ogres are way bigger than Hearthings in game, but their models are actually smaller than goblins.



There's no concrete sweet spot for the perfect number of voxels, but most models fit well within a 30x30x30 matrix and most don't even approach that.

While the goal isn't necessarily to see how few voxels you can use, it definitely isn't to see how much you can render: the final asset should resemble a 16-bit RPG sprite.



Implied roundness

THERE ARE NO CIRCLES IN STONEHEARTH.

But should you find yourself needing to model something circular, like a wheel or a watermelon, there are work-arounds. Start with a square or cube, and chip off the corners.



Try to keep the corner-softening to a minimum. It's tempting to keep going, but the end result is always going to be kind of a crumbly mess.



Voxel Geometry

Adding geometry is most useful for calling attention to important features of a character or object at the silhouette level. For minor details, it's best to paint those in. Once lit, every modeled detail will introduce complexity in the form of weird chunky shadows everywhere.

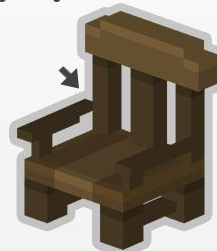


At the scale Stonehearth models typically run, just one extra row of voxels can have an unexpectedly huge impact on a silhouette.



Plushie Rule

When creating with voxels, try thinking of the subject as a plushie - simple, stubby, and mostly cute. Modeling thin, delicate details will cause the asset to feel fragile or brittle, especially if the design incorporates jagged diagonals.



It's also usually best to avoid modeling pieces that stick off the rest of the asset by either a single voxel face or side. This isn't a hard rule, but most of the time these details just feel like they'd break off.

Silhouette & Hierarchy

Head > Hands > Body

Hearthlings and other small-med bipeds are about 2 - 2.5 heads tall. Their proportions feature:

- Oversized heads and hands
- small, simplified body and feet
- no arms or legs



Stonehearth's proportions borrow inspiration from sprites like these. They're cute and nostalgic, but they also help focus attention to characters' faces and hands. We want players to clearly see what Hearthlings are doing, and more recently, how they're feeling.



Exaggerated head size is still important for characters without the same range of expressions as Hearthlings. It's easier to resonate with characters and critters when they have a face, and a larger head lends both better visibility, and readability.



Character and Uniform

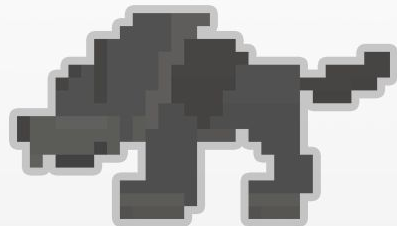
The second layer of information steps inward from silhouette and fills in details about the character or critter. What faction are they from? What's their job? Are they friendly?



More often than not, this level of detail is painted rather than sculpted onto the models, which are usually very small to begin with. Headgear, hairstyles, and handheld objects offer a nice, large space to break silhouette.



Silhouette & Hierarchy, cont'd



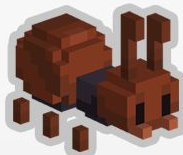
Head > front paws > back paws



body > hands > head



back/seat > legs



body > head > feet



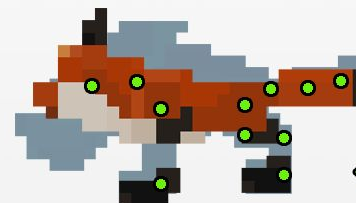
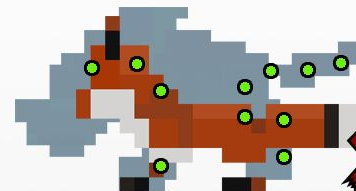
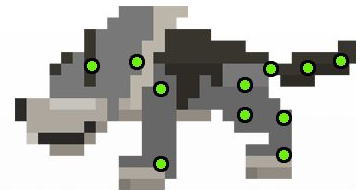
body > face > feet

Quadrupeds

With the notable exception of sometimes still having limbs connecting their shoulders to their paws 'n claws, four-legged critters observe a similar hierarchy to bipeds as long as you think of their front paws as hands.

Change is good!

The purpose of having hierarchy at all is to create appealing, dynamic silhouettes that draw attention to the most important features of a character, critter, or object - there's no point in forcing head > hands > body if it doesn't suit the subject.

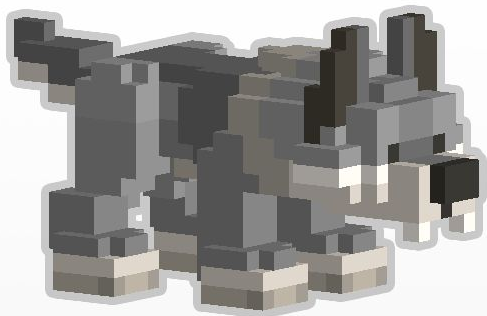


Just... mind the rig.

Lots of things in Stonehearth share animations, which means most of the time their joints need to match an existing model's. Be sure to import one to reference new models against to ensure silhouette explorations aren't getting in the way of functionality.

Visual storytelling

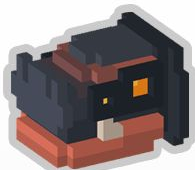
Details tell stories. When creating an asset, think about what it is you want players to learn when they see it, and let that be context for what to emphasize and what to tone down (or take away).



Weird dog



Ferocious wolf



Dragon



...with a powerful BITE



hooded goblin



Shady goblin



Chair



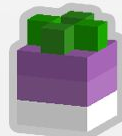
Expensive chair



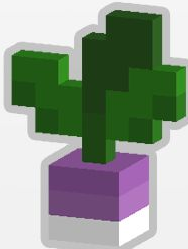
Forest



Desert



Tasty turnip



Tasty... greens?

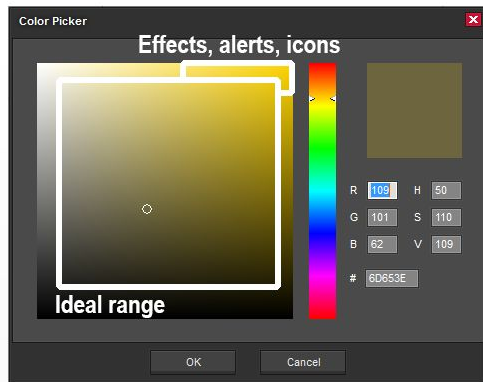


Hammer



Maul

Using color and contrast



Dusty, natural palette

Stonehearth's overall color palette is relatively subtle. Intense hues are saved for effects, like magic and glowing eyes, and also for icons and alerts that are essential to the player. True neutral grays rarely get used, and black almost never.



Public > Stonehearth > assets > voxels > colormaps

To keep Stonehearth looking cohesive, we're growing an official color library for specific materials. You can find and download these cubicle palettes in Public, in the above location. The files and the above guide will be updated as we get them a little more organized, but the color values represented are unlikely to change.

The only other firm rule is to please be aware when using red, green, and blue for designs, as these are faction specific (Rayya's Children, Ascendancy, and Northern Alliance respectively)



Start broad



Start by blocking out the main beats of the model. Use contrast to draw the eye to important features - the less there is of something, the more it will stand out. The varanus, for example, is made up of mostly medium valued greens and golds, with just a little bit of deep dark green to make it's shadowy face pop, and to really show off its plates.

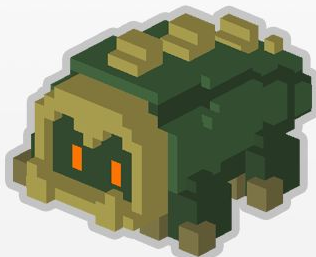


Subtle detail



For baked-in shadows, highlights, and other minor details, choose colors that are very, very close in value to whatever is being touched up. Adding a subtly lighter value to the edges and tops of the Varanus scales make them feel worn. The shading and highlight on the gold shell around it's face gives it an almost rounded feel.

it doesn't take much for this to feel heavy-handed. the majority of the model's palette should still feel like a solid color.



Here's an example without that punch of contrast. Even though the front of the shell and the claws are blocked in with gold, the lack of value separation makes it seem quiet and muddy.



Some models make use of a small color or value gradient at this stage. In zilla's case, it allows the orange to fade up and add definition around the burnt plates on its back. A solid jump from gray to orange on its body would compete with it's jaw for attention, and make the plates feel boxed in.