Checklist

Start with midtones and paint everything with them.

If the atmosphere is bright, then the objects should be bright. If the atmosphere is overcast, then the objects are all close to midtone.

Three or five values in big, harmonious shapes (notan). Squint to see them.

Low-contrast details close in value to that of the big shape for a ghost-like quality to emphasize the big, simplified shapes.

Higher value contrast for subject.

Low-contrast for awkward areas.

Low-contrast for interior areas unless they're focal points.

Group objects into one, low-contrast shape.

Promote contrast with reverse-gradation.

Different values for surface, walls, and ceiling.

Brightest area might not be the focal point.

Hard edges can be in the b.g. if they are low-contrast.

Soft edges can be in the f.g. if they are high-contrast.

Different local values for different object types.

The more intense the lighting, the darker the shadow.

Low-key lighting occupies the lower end of the value scale; high-key occupies the upper end; mid-key occupies the middle grays; full scale has the most contrast and occupies the full range (not necessarily all the values). A dark environment is always low-key and low-contrast.

Dusk and dawn have the same values.

A tense scene might use a full-scale key, while an ominous scene might use a low-key.

Keep the light halftone short to avoid mud.

Bounce lighting cannot be as bright as the light halftone or highlight unless there is a secondary light source.

Values darken at the turning planes, including those that turn toward shadows and/or the environment.

Cast shadows are not opaque, but you can make them so as long as the values are correct.

Freshen your eyes every 20 mintues.

Texture will affect the value ratio: cotton is absorbent, so it lacks the highlights of chrome.

Metals have greater contrast than diffuse surfaces.

Do not use modeling factors where they wouldn't be discernible in real life.

Avoid dark values in nostrils and ear sockets, else they will draw the viewer's attention.

Checklist (cont)

Form light is beside and above the subject and promotes form. Front light is airy but lacks shadow shapes. Top light provides a god-like quality. Side-lighting is dramatic. Rim lighting is behind and above the subject and is edgy and hip. Backlighting creates a silhouette and even more monsterous than bottom-lighting. Usually, it's best to use multiple lights, with one stronger and closer than the others.

There should be a cast shadow for each direct light source.

With enough light or a really white room, there will be little or no shadows. Likewise with overcast skies.

If there are particles or humidity in the air, light rays will reflect them. It'll look like a cone of light.

Create the form shadows in the early stages.

Do not use dark shadows on a white (or near-white) object. Use midtones or lighter.

There should be more detail in areas hit by light.

Sunlight is stronger than moonlight. The moon receives light from the sun, so the environment receives, at best, secondary lighting from the moon. The sun is a star, but it /appears/ brighter than the others stars (even though it is smaller than many of them) because it is so much closer to us. Don't paint what you know; paint what you see.

On most specular highlights, there is a darker highlight around the brightest bright (unless it's on metal or shiny plastic). There is also darker texture in the highlight if the object has texture.

The size of bounce lighting is determined by the size of the object bouncing the light. If the bounce lighting is big enough, the core shadow will be thinner.

Either expose for the shadows or for the light. If for the shadows, the values of the shadows are raised to allow for more detail, and the light area will be blown out.

Underplanes

There is no difference in underplanes of the same column (and that column is in shadow) if there is no ground or a dark ground.

There /is/ a difference in underplanes of /different/ columns, even if there is no ground or a dark ground.

The bottom underplanes are brighter than the top underplanes of the same column if there is a light ground. Middle underplanes notwithst-anding.

Angles to the light source of underplanes of the same column does not affect their values.

When light bounces from the ground *and* a wall, bottom underplanes are still brighter than top underplanes.

Underplanes (cont)

Multiple bounce planes of different values require simple math and logic: the darker the bounce plane, the less bounce lighting it will produce.

The closer underplanes are to the light source (and in different columns from one another), the brighter they are, even if the underplane that is farther from the light source is receiving more bounce lighting.

Front Planes

In shadow, there is little difference in planes of the same column. In light, there is a big difference between top planes and bottom planes.

If a front plane is closer to the light source, but facing a dark bounce plane, it will have a lower value than a front plane that is farther from the light source but also farther from the dark bounce plane.

Top Planes

A top plane that is closer to the light source on the local Y-axis is brighter than a top plane that is farther from the light source on the same axis, even if the farther plane is closer to the light source on the Z-axis.

A long body of water is brighter close to the horizon because it is closer to the sun. It should be less bright closer to the viewer.

Cast Shadows

If the local value of the receiving surface is the same as the local value of the casting object, then the cast shadow will be the same value as the form shadow of the casting object.

If the local value of the receiving surface is of a darker value than the local value of the casting object, then the cast shadow will be darker than the form shadow of the casting object.

If the local value of the receiving surface is of a lighter value than the local value of the casting object, then the cast shadow will be lighter than the form shadow of the casting object.

Regardless of the rules, if a plane is hit by cast shadow, then it will be darker than it otherwise would be from direct or ambient lighting.

The brighter and more overhead the light source, the harder and darker the cast shadows, but if the casting object is far from the receiving surface or farther from the light, the cast shadows will be softer and lighter.

If there are particles or humidity in the air, cast shadows will show it. It'll look like a cone of shadow.

Cast shadows mimic the shape of the receiving surface.

Cast Shadows (cont)

Cast shadows do not differentiate between objects; they are all just one object as far as shadows are concerned, so there is only one cast shadow for them all.

If multiple objects are in different locations, they're cast shadows will build up where and if they overlap. Overlapping cast shadows help to build unity between the objects.

If the object casting a shadow is reflective, the cast shadow can be reflected onto the shadow plane of the casting object.

If you have a hard light, the terminator of a sphere is going to be sharper. The light and dark halftones are still soft.

Ambient Occlusion

Ambient occlusion is not the entire shadow; it is the /darkest/ part of the shadow.

Direct lighting is stronger than ambient lighting because once direct lighting bounces, it becomes ambient lighting and loses strength with each bounce.

Ambient lighting brightens the part of the shadows that are occluded from direct light.

There are degrees of ambient occlusion: darkest close to the object, and lighter where the ambient lighting starts to reach it. The lightest part of the cast shadow is where it is most exposed to ambient lighting.

The farther the casting object from the receiving surface, the less occlusion you have because ambient lighting is able to reach that area.

Overcast skies will produce ambient lighting everywhere, and thus low contrast along the midtones of the value scale.

Outdoors, ambient occlusion is directly beneath the object because the ambient lighting is coming from everywhere (the part that's skewed away from the object is the cast shadow). Indoors, AO can be skewed because the ambient lighting is funneled through a window at an angle.

The AO is where you lose edges.

If the entire object is in shadow, it still has AO. Unless the environment is pitch black, there will be AO.