

Hot Off the Desk

Non-Metallic

Metal

Aaron's Rules for Light



Studio paint job for Dark Sword Miniatures.
[Owl Warrior](#)

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People always ask me for color recipes for painting Non-Metallic Metal, or NMM for short. I always tell them, "It's not about the colors as much as it is about the color placement. That makes all the difference!" In the next few pages, I am going to show you how and where to put your highlights and shadows to make convincing NMM. Don't worry, I'll give you a couple of recipes as well!!!



This armor looks great in silver and gold....but it also looks great purple and green. The colors don't matter. Just where you put them!!



[Eldar Avatar from Forge World](#)
Best of Show Draconic Awards - LVO

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Here is what we will cover:

- Light is a Circle!
- Rules for Light on Different Shapes
- Adding the “Bling Bling”
- Global Color vs. Color Modulation
- Color Recipes

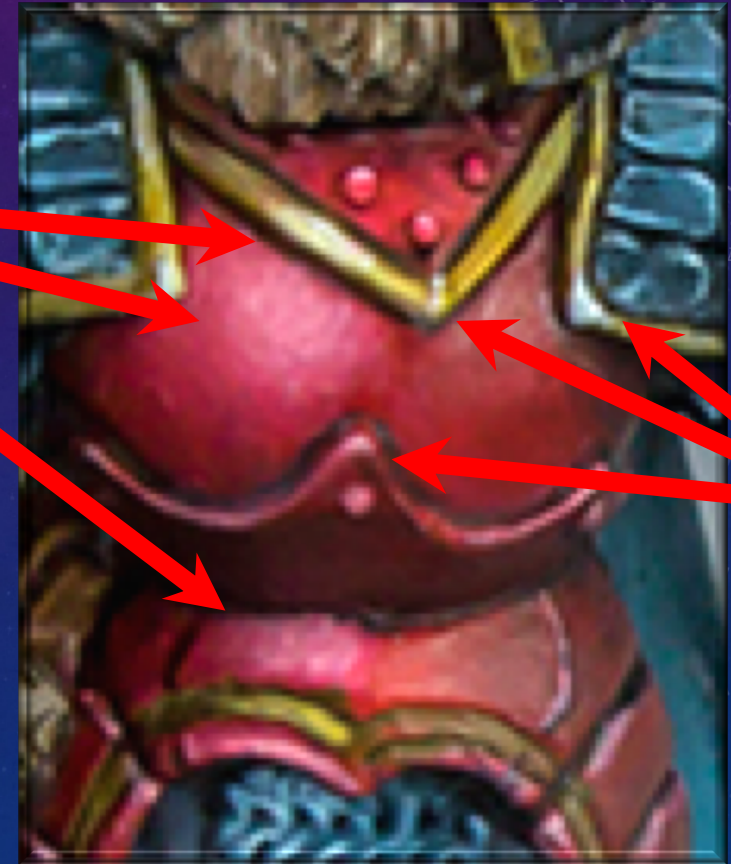


Light is a Circle!!!

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This is my first rule...if you follow this rule, half of the battle is won! Even the seemingly straight lines on a cylinder or edge highlight have elements of a circle of light to them. When painting your highlights, always have an element of a circular pattern to them.



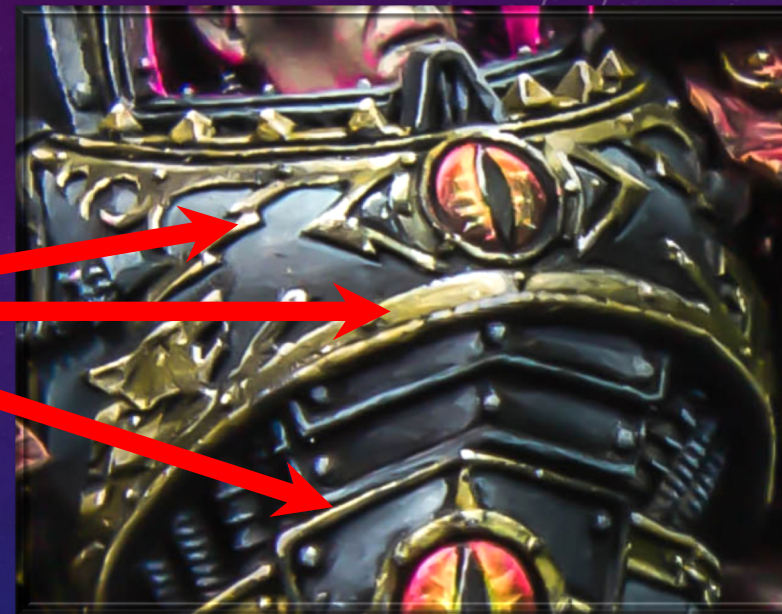


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Here are a few more examples of light reflecting in a circular pattern.



The obvious circle of light is on the blade but you can also see circles of light on the edge highlights.

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Some shapes can seem pretty complex. The key is to break down each shape into more basic shapes. I came up with some “general” rules for light that I apply to different shapes. It doesn’t always work, but it usually puts me in the right direction. Rules are made to be broken so feel free to break or modify these rules as you see fit. The following are the general shapes that I have made rules for.

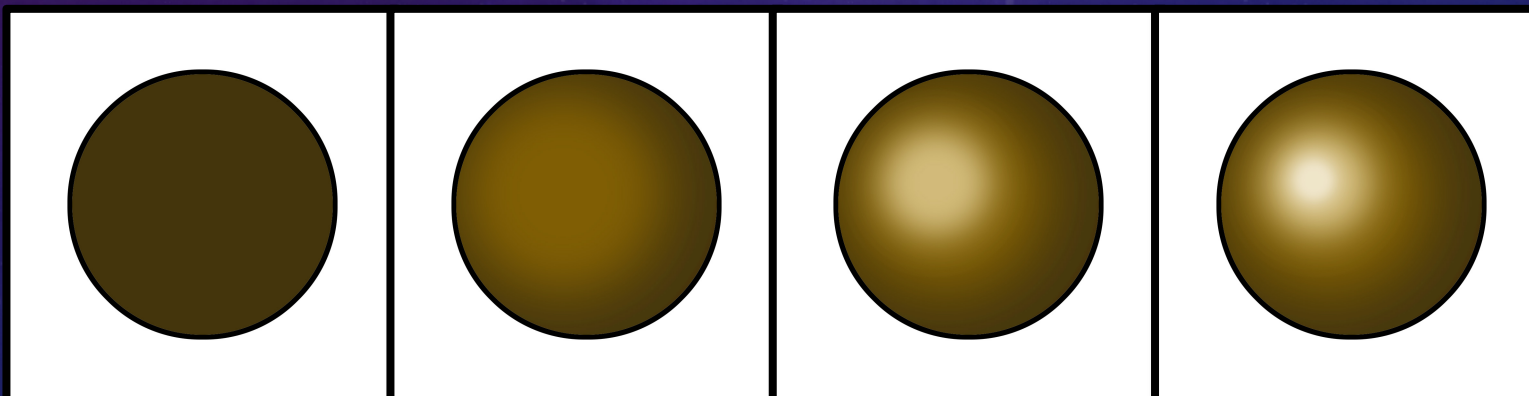
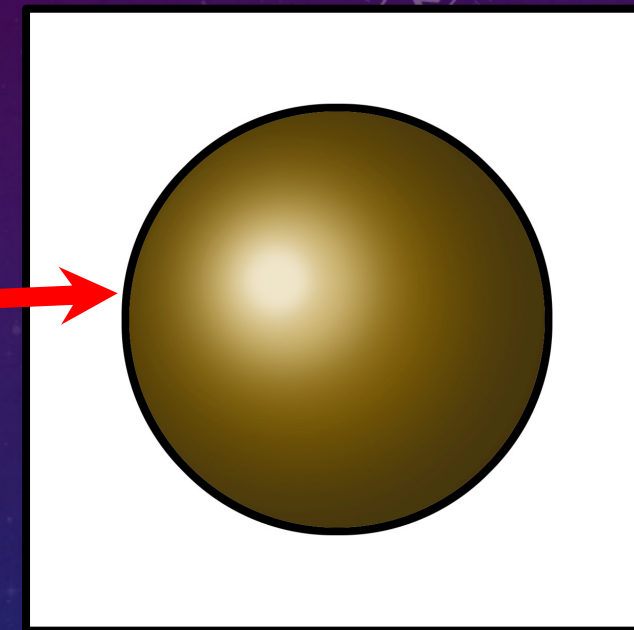
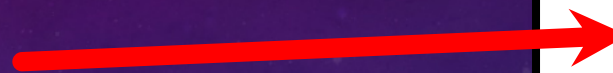
- The Sphere
- Flat Planes
- The Cylinder
- The Fat Cylinder
- The Cone





The Sphere:

Any shape that is a sphere will have the light similar to this. The light does not reflect directly from the top but rather travels down/forward about 45 degrees. It reflects towards your eyes.



Shadow Color

Midtone Color

First Highlight

Second Highlight

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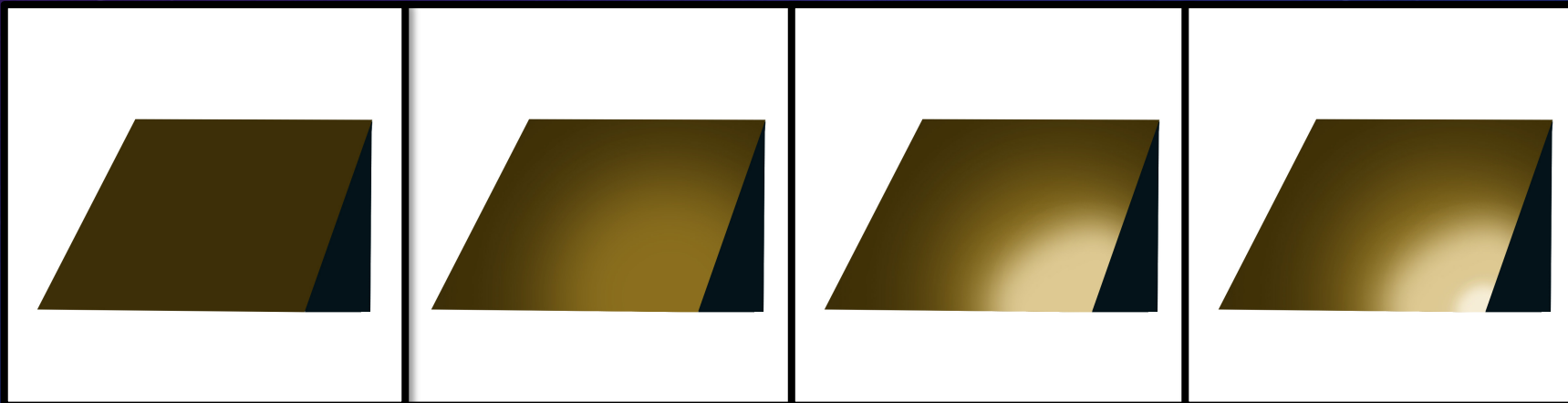
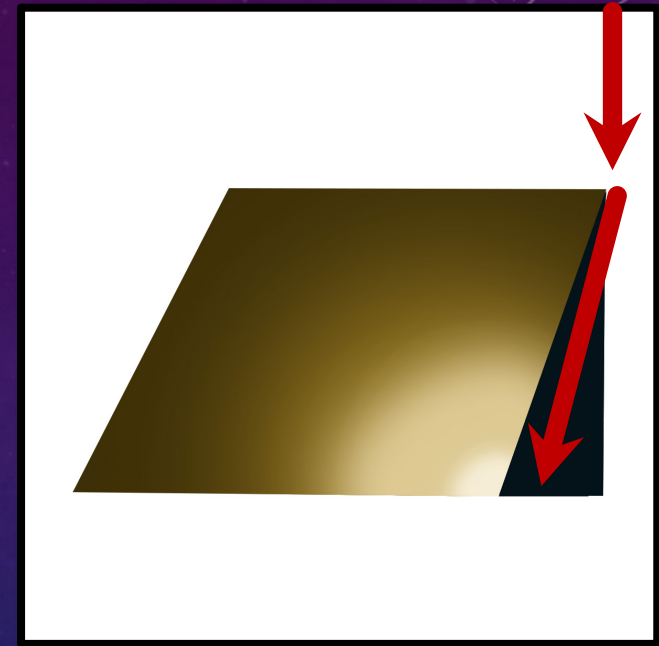
Even though this armor is not a “sphere,” it has a spherical shape in areas, so the general lighting for spheres applies perfectly. Notice how the strongest part of the reflection is not at the top of the armor plate but moved forward/down. Again, note the circular pattern of the light! Go onto [coolminiornot](https://www.patreon.com/miniaturemonthly) and look at the top rated pics that have NMM. You will see this time and time again.

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Flat Planes:

Flat planes are pretty simple, yet tricky at the same time. First off, the light reflects **backwards** on really shiny surfaces. It comes in from the top but travels down the surface and reflects from the lowest point. The intensity of this reflection will depend on the angle of the plane. *The more vertical the plane, the smaller the reflection.*



Shadow Color

Midtone Color

First Highlight

Second Highlight

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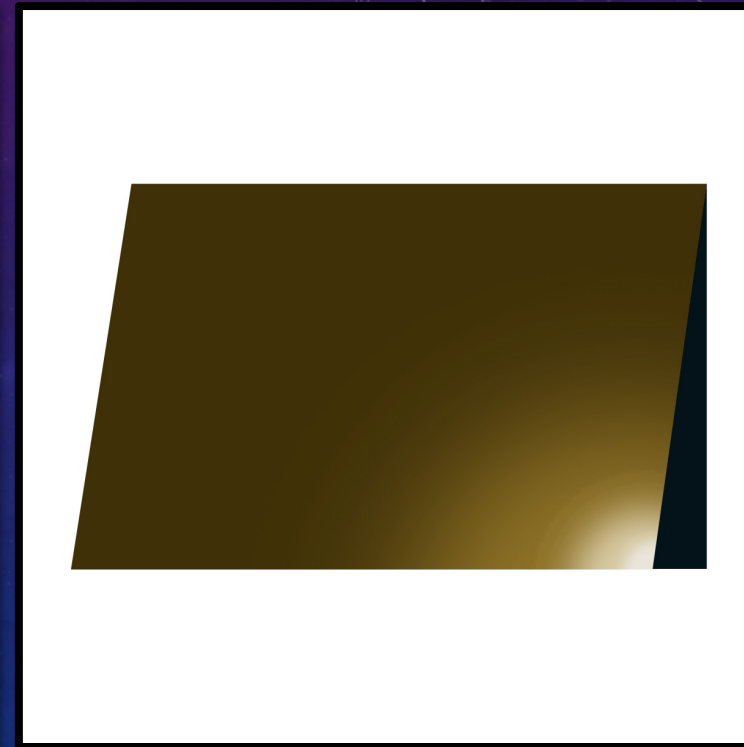
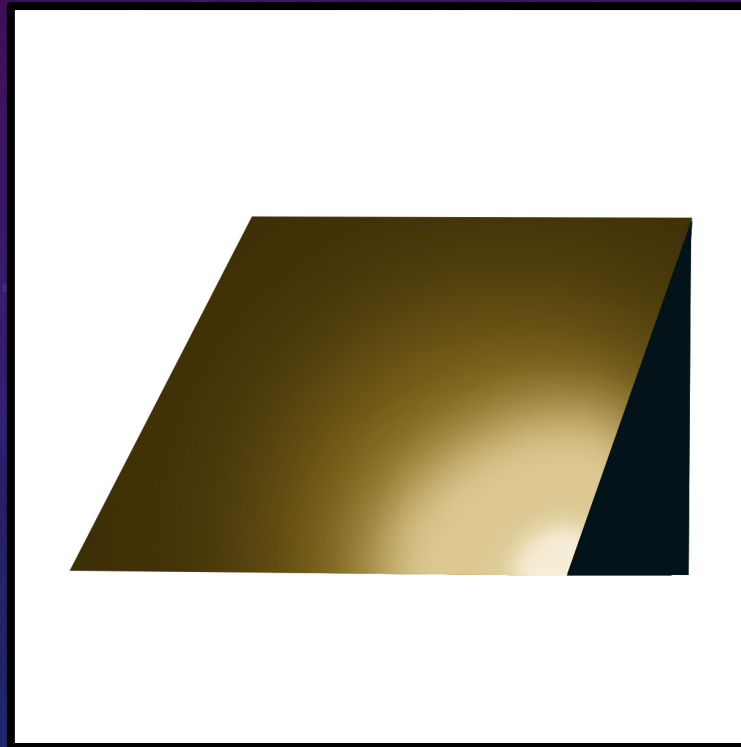
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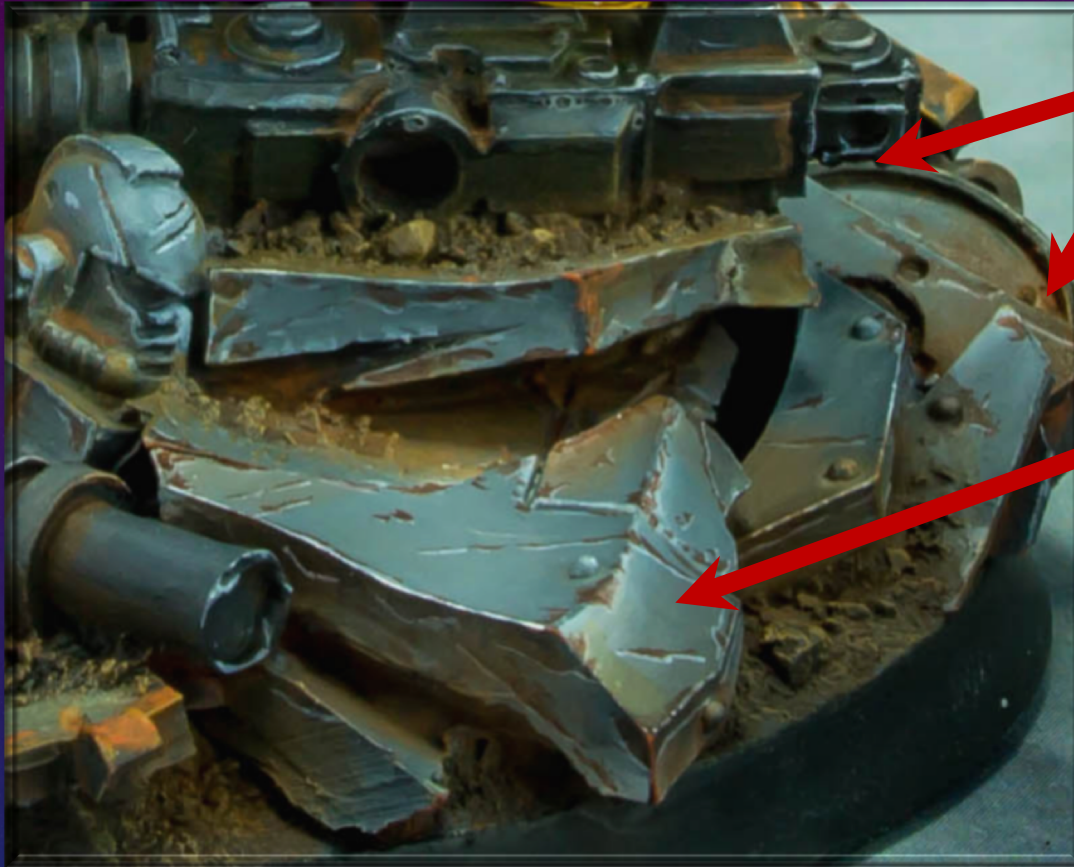


A more horizontal plane will have
a very large reflection.



A more vertical plane will have
a very small reflection.

Now if you want to create a dull metallic surface, you paint the light in a more Zenithal fashion. Be sure to add rust and dirt to help sell the effect.



Notice the light reflects from the top of the plane rather than the bottom.

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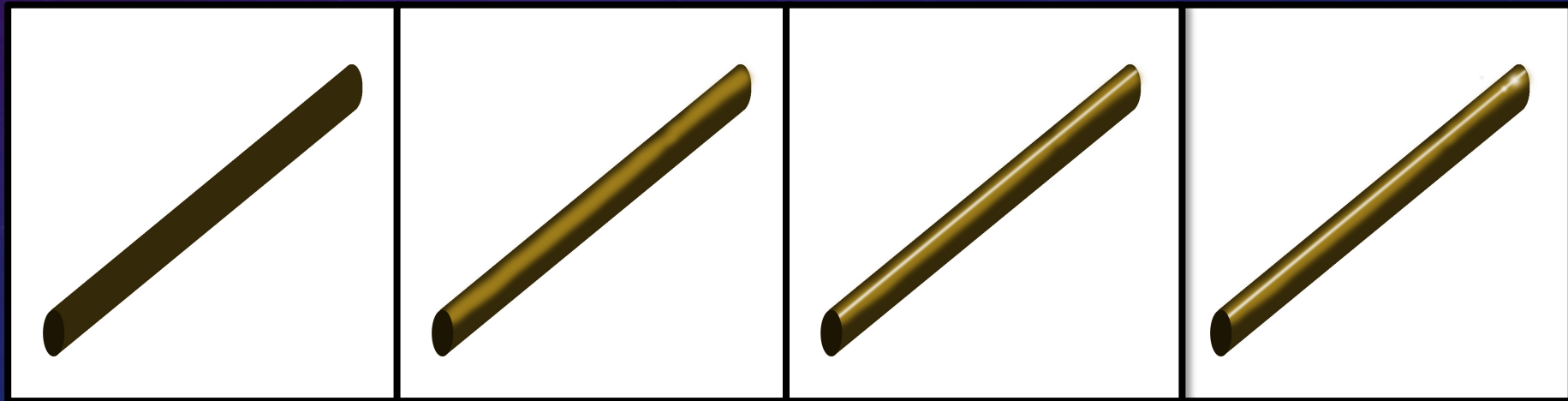
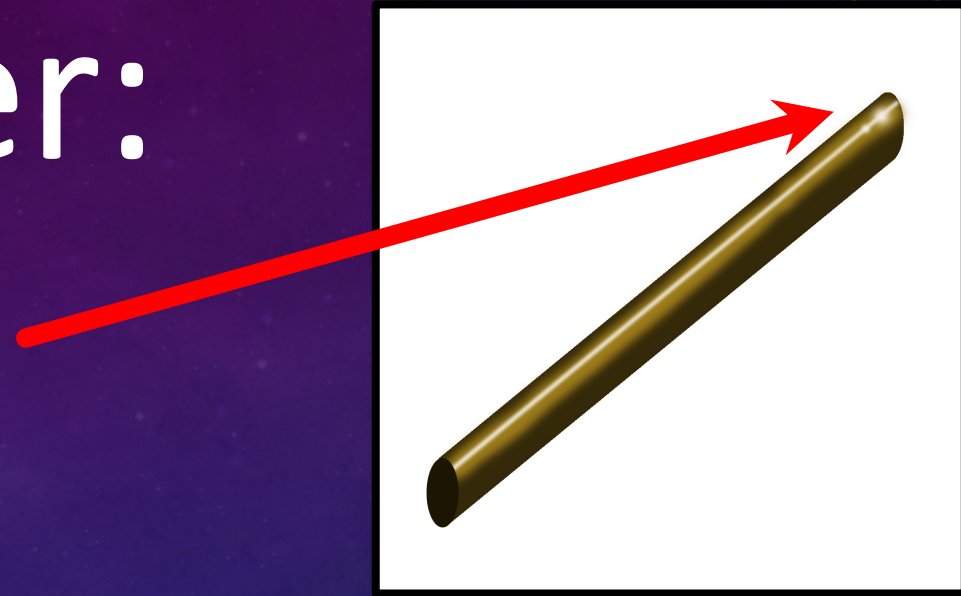
The contrast between shiny and dull metallics can be very pleasing to the eye.



The sword and armor are shiny, whereas the destroyed tank on the base, is dull.

The Cylinder:

Cylinders are pretty easy. There is just a straight line highlight on them, however, I do put a couple of circular highlights towards the top of the cylinder to keep with the circular light theme. No matter what, there will always be a circle of light somewhere!!



Shadow Color

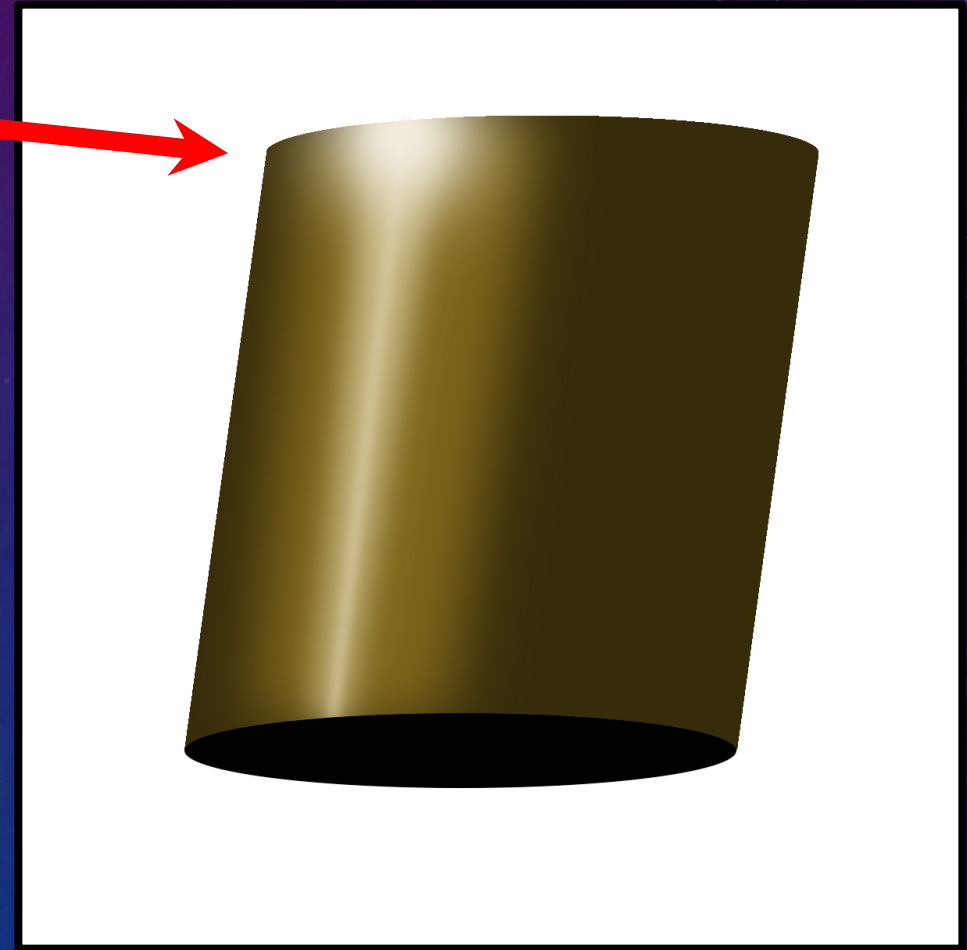
Midtone Color

First Highlight

Second Highlight

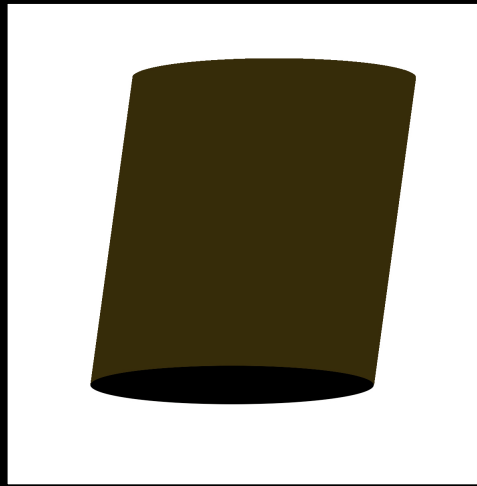
The Fat Cylinder:

This shape is typically seen in leg armor. It is similar to a normal cylinder but the light gets more diffused across the surface. The circle of light is much more evident on this type of cylinder.

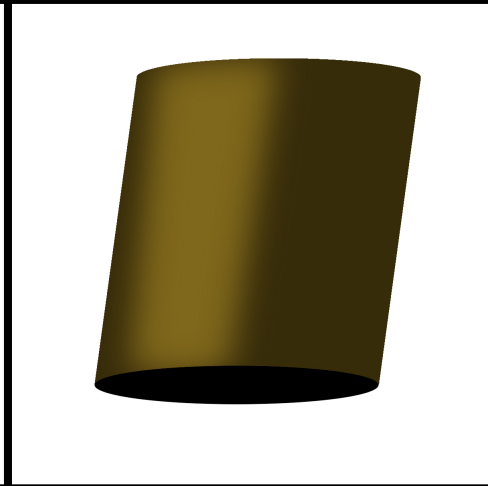




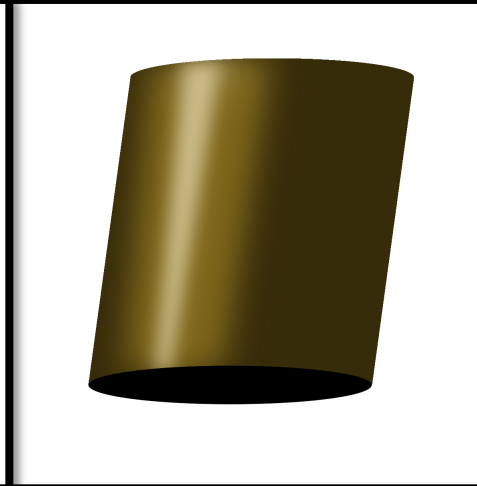
Notice that the midtone and highlight colors get wider towards the top of the cylinder with the final highlight being circular in shape.



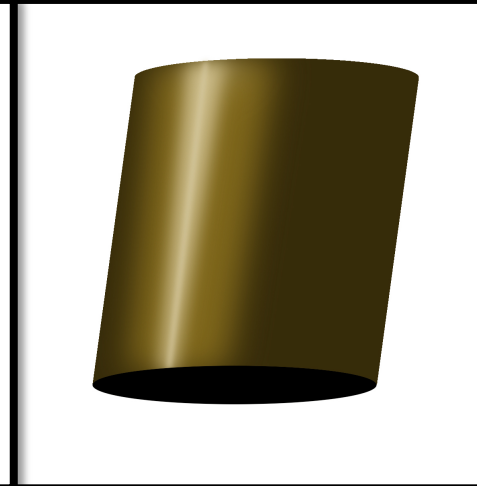
Shadow Color



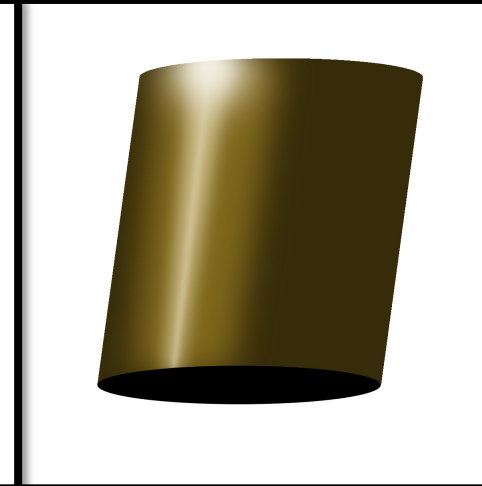
Midtone Color



First Highlight



Second Highlight



Third Highlight

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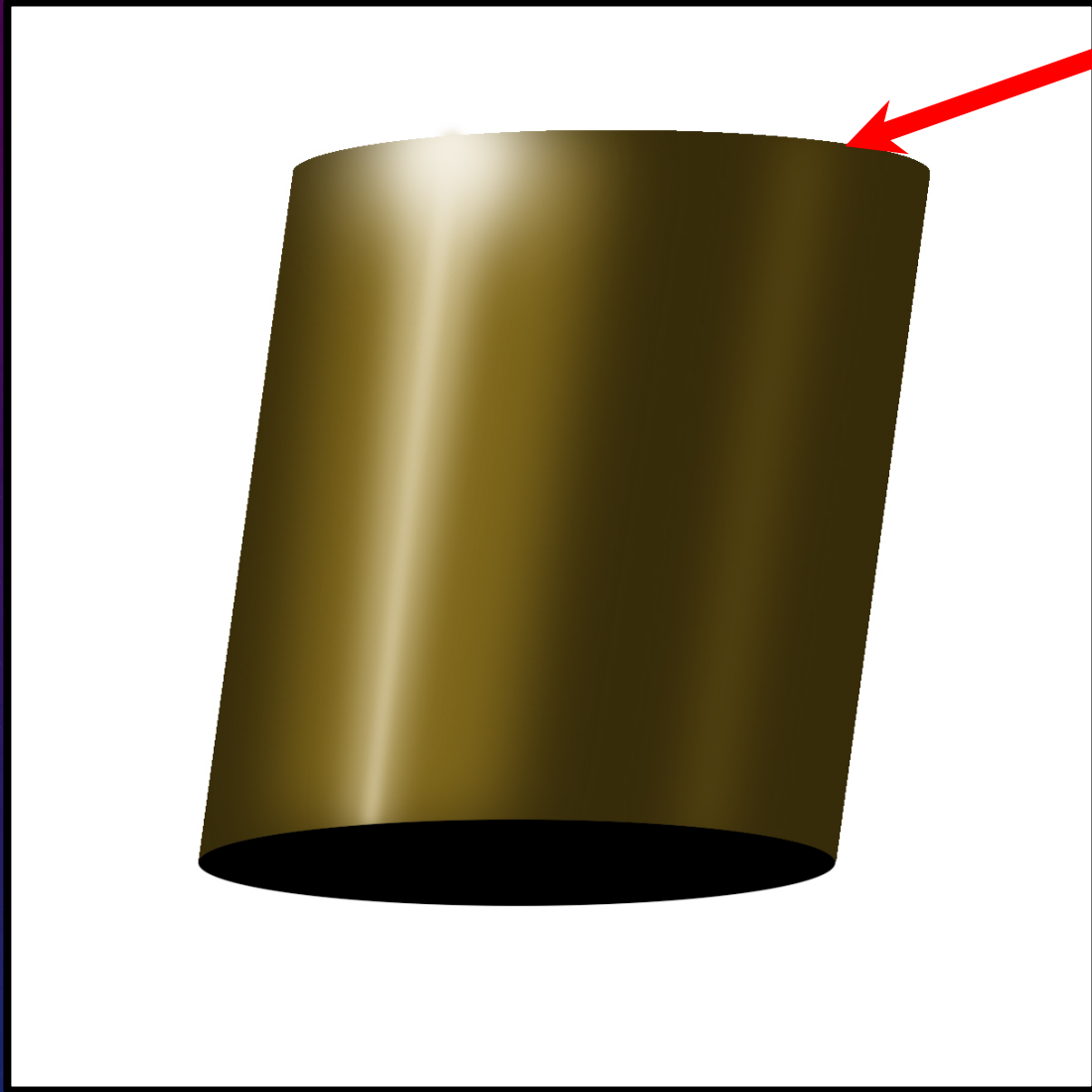
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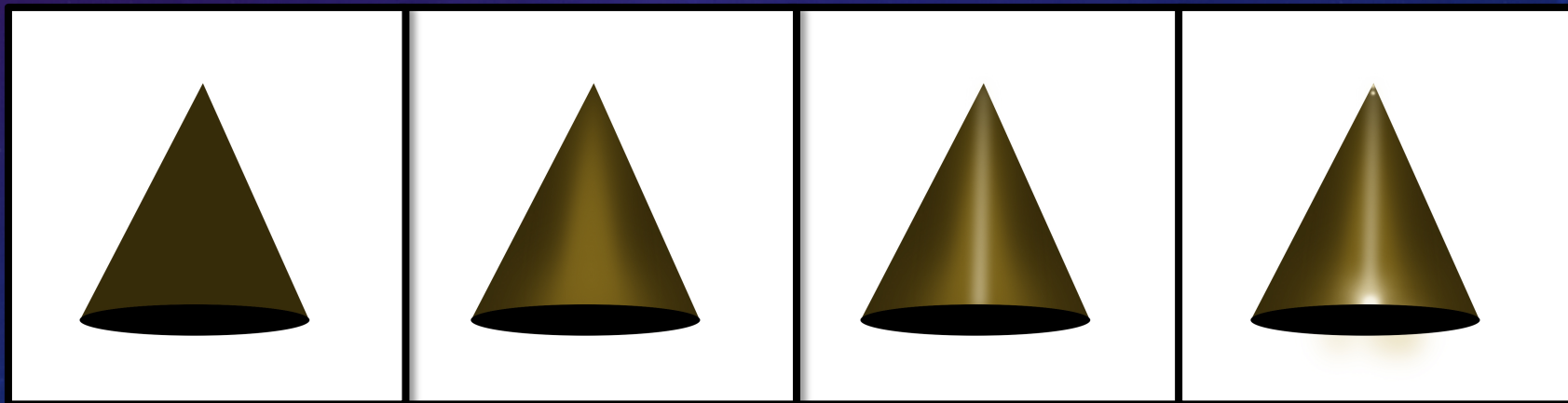
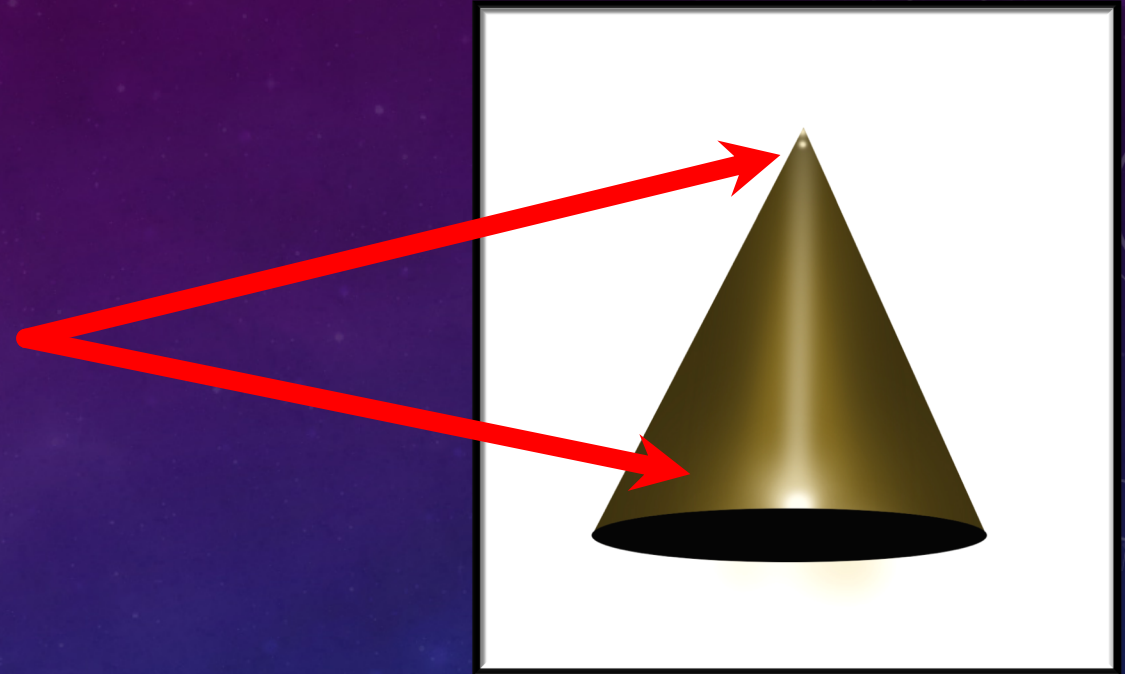
You can add a second strip of midtone color to the cylinder to make it look even more reflective.





The Cone:

We see cones a lot on spikey armor, weapons, and helmets. It's a combination of the cylinder and fat cylinder. Place a narrow line at the thin point of the cone and thicker, rounder highlight at the wide end of the cone.



Shadow Color

Midtone Color

First Highlight

Second Highlight



Alright, you have the basecoats on your model but that is not the end of the story. The devil is in the details. We have to bling out this metal. Tiny edge highlights are what really make metal shine!! The key is not to put them everywhere, and to vary the intensity of the color so that you can really see the light. Too many highlights will actually cancel themselves out, so do it sparingly! Also, shiny surfaces are one of the only things that reflect light off of the bottom edge of the object.



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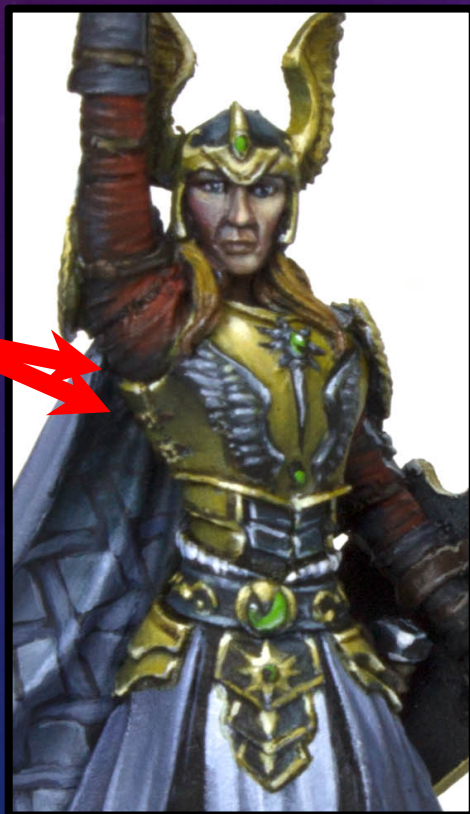
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Adding little glimmers of light in shadow areas help define the shape, as well as tell us that the object is shiny metal.



Notice how adding glimmers of light in these shadow areas really adds to the effect and helps you see the detail all the better.

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Here is an example of what your initial base coat might look like. It kind of looks metallic but not quite. This is the part where most people start making changes and reworking things to death. Trust me, the next step will make all the difference!





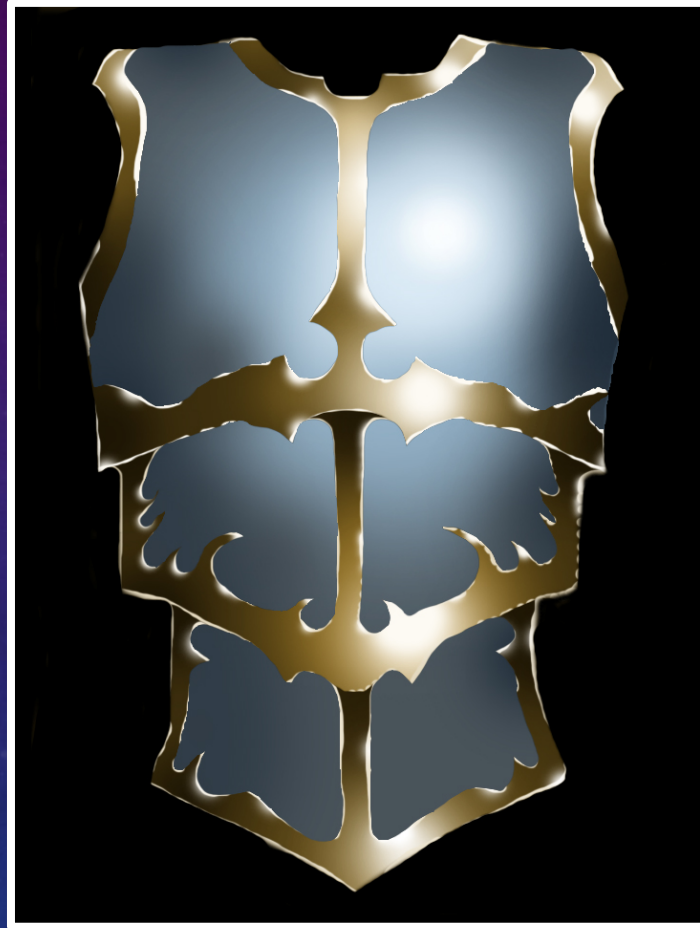
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Initial Base Coat



Edge Highlighting



Final Shadows



See the difference the edge highlighting and final shadows do for the overall look of the metal?

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Breaking the Rules:

Rules are made to be broken. I find that if I follow the rules enough, that allows me to break them in certain situations to make the paint job look better! This happens a lot with things like swords. According to my rules, the sword should have a very bright and small highlight at the bottom of it but that doesn't look all that great. It looks way better at the top of the sword so that's how I did it.



[The Aaron Lovejoy White Knight from RN Estudios.](#)

Painted with true metallics.

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In the photo to the right, the sword is almost perfectly flat, which would mean the highlight would go across the entire sword. That's not very dramatic, so I gave it a shadow towards the tip with one last glimmer of light before the blade tapers off.

Below you see that I reversed the highlight but did not put it completely at the top of the blade due to the angle of the sword.





Global Light vs. Modular Light

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The choice is yours...

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Global Light vs. Modular Light

Global light is a little more realistic. See how the light travels down the armor? It's not light to dark on each plate, rather the light covers all the plates as if they were just one plate. It also tells us that each plate is at relatively the same angle to each other.





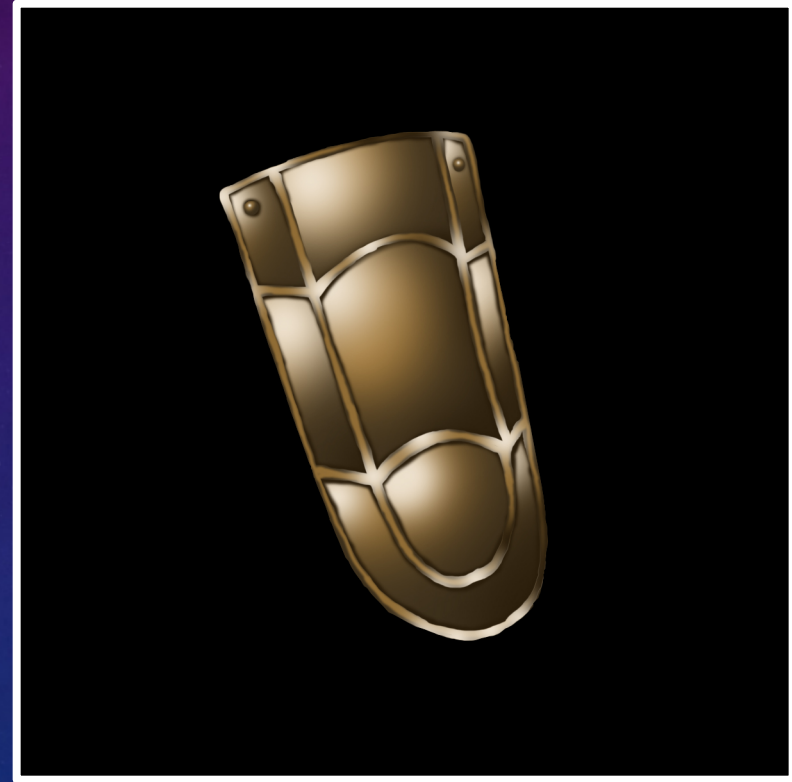
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Global Light vs. Modular Light

This is how most people do NMM. Each plate is light to dark because, well, everyone says you have to have max contrast to make it believable. However, often times it comes out looking a bit off.



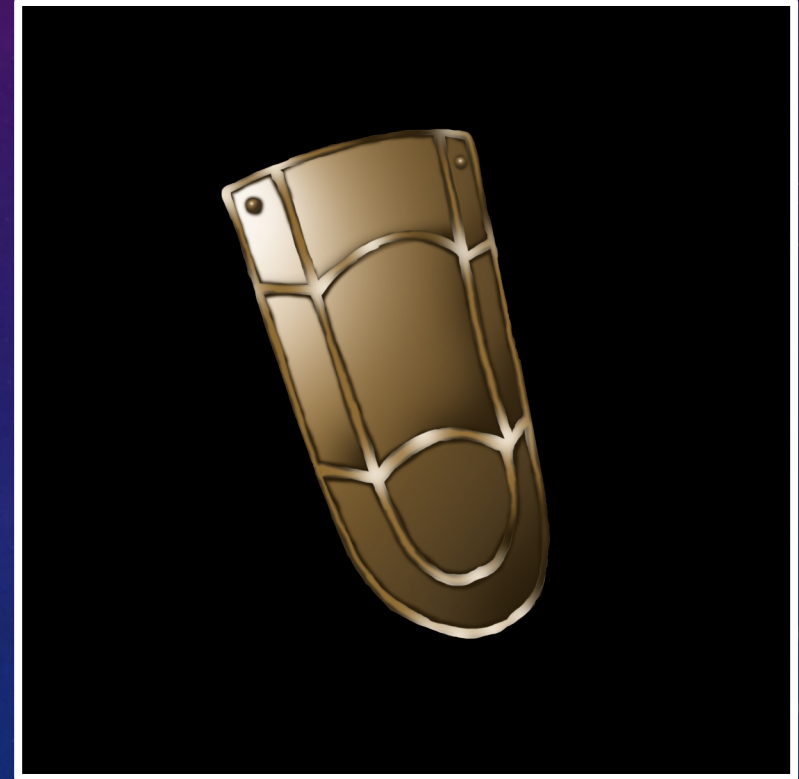


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Global Light vs. Modular Light

With global light you can still achieve a great amount of contrast, and it looks great! Play around with which style you like better.

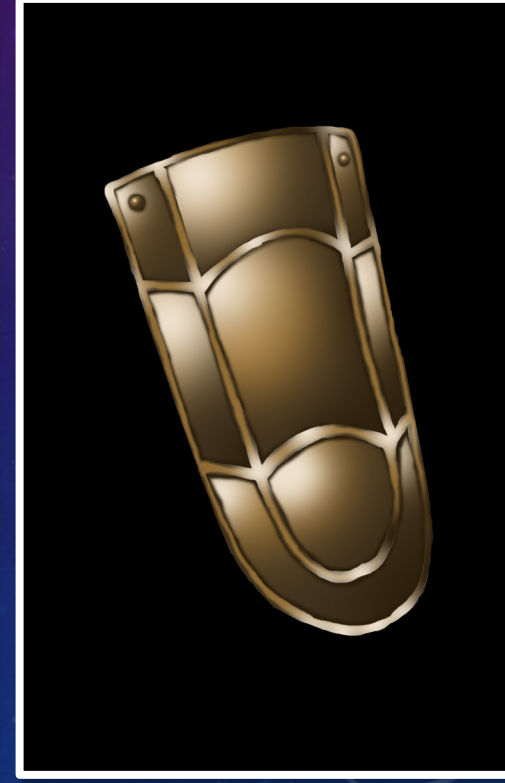
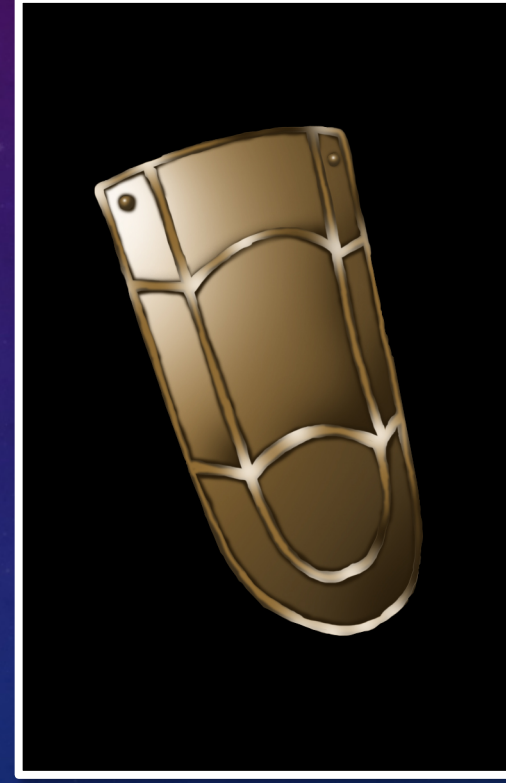




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Global Light vs. Modular Light

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In the case of the chest armor, it looks fine either way, but with the leg armor the global light wins all day long!



Color Recipes:

Here are a few recipes I use for my NMM. Feel free to try out NMM with colors you like.

NMM Gold (Typically used for painting the “good guy.”):

Shadows: [Rhinox Hide \(GW\)](#)

Base: [Rhinox Hide](#) mixed with [Balor Brown \(GW\)](#)

Highlight: Add [Titanium White](#) (artist acrylic color) to previous mix. Keep adding white until you get the color brightness that you want.



NMM Gold (Typically used for painting the “bad guy.”):

Shadows: [RMS HD Solid Black](#) mixed with [Japanese Uniform \(Vallejo\)](#)

Base: [RMS HD Solid Black](#) mixed with [Japanese Uniform \(Vallejo\)](#) This is your basetone so obviously mix more Japanese Uniform into this!

Highlights: Add [Titanium White](#) to previous mix. Keep adding white until you get the color brightness that you want.



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Color Recipes:

NMM Silver:

Shadows: [RMS HD Solid Black](#)

Base: [RMS HD Solid Black](#) mixed with [Temple Guard Blue \(GW\)](#)

More blue than black, obviously.

Highlight: Add [Titanium White](#) (artist acrylic color) to previous mix. Keep adding white until you get the color brightness that you want.

NMM Copper:

Shadows: [Rhinox Hide \(GW\)](#) mixed with [RMS Solid Black](#)

Base: [Rhinox Hide](#) mixed with [Mornfang Brown \(GW\)](#)

Highlights: Add [Titanium White](#) to previous mix. Keep adding white until you get the color brightness that you want. It should be a nice, light, peach-type of color.



Color Recipes:

NMM Black:

Shadows: [RMS Solid Black](#)

Base: [Coal Black \(P3\)](#)

Highlight: Add [Titanium White](#) (artist acrylic color) to previous mix. Keep adding white until you get the color brightness that you want.





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I hope this helps you to better grasp the non-metallic metal process. The key is to always respect the direction of your light source. It took me a long time to get comfortable with the process. It is, however, very rewarding when you do finally start to get it. Practice makes perfect, and don't be afraid to fail. You only fail if you don't try!

Thank you for your ongoing support and being an active member of the Miniature Monthly Team! Now go paint something!!!

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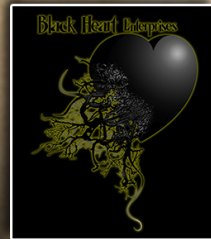
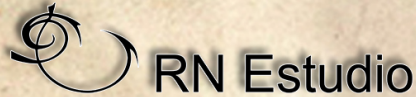
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