What are these?

These shaders are the vanilla Koikatsu shaders with new features and a few fixes. You should be able to apply these shaders and maintain the vanilla koikatsu look.
These shaders, while designed for Koikatsu, will still work in Sunshine however they won't look exactly like Sunshine's lighting.

Currently there are shaders for main_skin, hair, hair_front, eye, eyeW, main_opaque, main_alpha, main_item, main_item_alpha (alpha variant of main_item)

Changes to vanilla

- Support for multiple lights with a few limitations
    - **Limited to 4 point lights + 1 directional light,** this is due to a combination of how Koikatsu does it's shading and Unity's renderer.
    - The additional point lights do not cast shadows to objects with these shaders, similar issue to above.
- Specular based on light color (a red light will give a red specular highlight), this can be disabled.
    - Also adds specular to hair
- Can set the overall darkness with the Custom Ambient property.
- Emission maps
    - RGB channels for color
    - Alpha channel for the mask, black = not emissive, white = emissive
    - Color and Intensity parameters
- Scale for normal maps which can be set higher than 1
- Colored hair gloss
    - Hair gloss can also be set so it's only shows when a light is reflecting it, similar to specular this is off by default

New in v1.0

- Clothing and accessory shaders can use environment reflections via reflection probes
    - Can be used by setting UseKKMetal to 0
    - Clothing shaders have the AnotherRampFull like accessories do. (Sets the entire object to be metal)
- Detail R can be used as specular maps when notusetexspecular is on
- New culling and alpha options, these don't need to be changed unless you're going for a specific effect, details in the next section.
- Clothing shaders now have outline slider like accessories (LineWidthS)

  Fixes
    - Lighting works properly in reflections, aka the mirror assets and reflection probes
        - It also works in 360 captures
    - Eyebrows and eyes appearing over hair won't have that colored outline issue, however they will still be a bit pixelated

        - This will depend on the eyebrow texture
    - Eye expressions (heart/stars) will follow the iris properly

New in v1.0

- Fixed notusetexspecular on accessories

How to use

Simply replace the vanilla shaders with the vanilla plus shaders, you may need to manually set up the render queue to what it was before if things don't look right (mainly applies to hair). You can also try setting the see eyebrow/eyes through hair options again.

- Shader Forge/main_skin → xukmi/SkinPlus
- Shader Forge/main_hair → xukmi/HairPlus
- Shader Forge/main_hair_front → xukmi/HairFrontPlus
- Shader Forge/toon_eye_lod0 → xukmi/EyePlus
- Shader Forge/main_opaque → xukmi/MainOpaque
- Shader Forge/main_alpha → xukmi/MainAlpha
- Shader Forge/main_item → xukmi/MainItem
- Shader Forge/main_item → xukmi/MainItemAlpha

There are a few shader options available in the various shaders, here is a quick description of what the new stuff does 1 = on, 0 = off

- UseLightColorSpecular (default on): Makes the specular reflections colored depending on light color
- UseRampForLights (default on): This will set it so the point lights's will lit based on Shadow Type in Scene Effects ramp. This is mainly for the sharp shadow options.
- UseRampForSpecular (default off): Same as above but for specular
- UseMeshSpecular (default off). Uses the mesh's specular for hair, similar to notusetexspecular.
- SpecularIsHighLights (default off): Will have the hairgloss only show if it's reflected light a specular light
    - SpecularIsHighlightsPow and SpecularIsHighlightsRange determines how diffused the specular light is (similar to how SpecularPower works)
- ExpressionDepth, ExpressionSize: Pretty self explanatory, affects the eye's expressions (heart/sparkling)

New in v1.0

- AlphaOptionCutoff (default on): Enables or disabled alpha cutoff
- Cutoff (default 0.5): Sets the threshold for alpha values to cutoff the mesh. You can try setting this higher for
- CullOption: Sets face culling for an object, 0 = off, 1 = front, 2 = back
    - 0 is usually for opaque objects, 2 is usually for transparent objects
- OutlineOn (default on): Self-explanatory

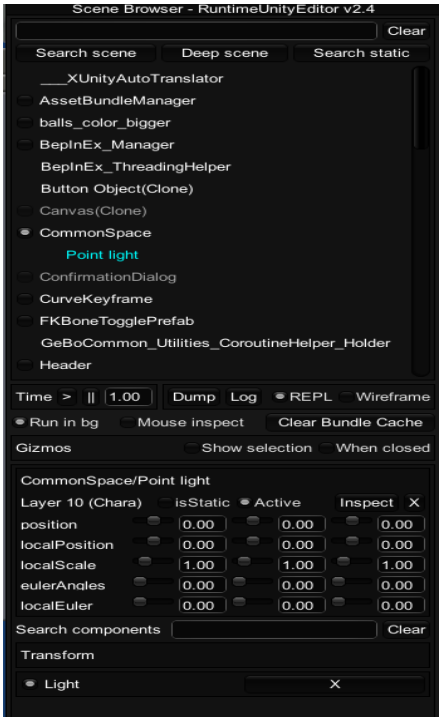
- UseDetailRAsSpecularMap (default off): Uses the red channel of detail mask as a specular mask when notusetexspecular is off. Black = no specular, Red = specular
- UseKKMetal (default on): Turning this off will use environment reflections instead of KK's anotherramp metallic effect.
- Reflective: Changes how blurry the reflection is 1 = perfect mirror
- ReflectiveMulOrAdd (0 = Mul, 1 = Add): Changes how the blending of the environment reflection works, darker colors work better with Add, lighter colors work better with Mul (also makes lighter colors look more metallic).
- ReflectiveBlend: Changes how much of the reflection to use.
- SpecularHeightInvert (default off): For some hair pieces the hair gloss gets messed up for some reason with the shader unless you turn this on. So only turn it on if the hair gloss different from vanilla.

To use pointlights add the P-MODMAP lights under Map Lights

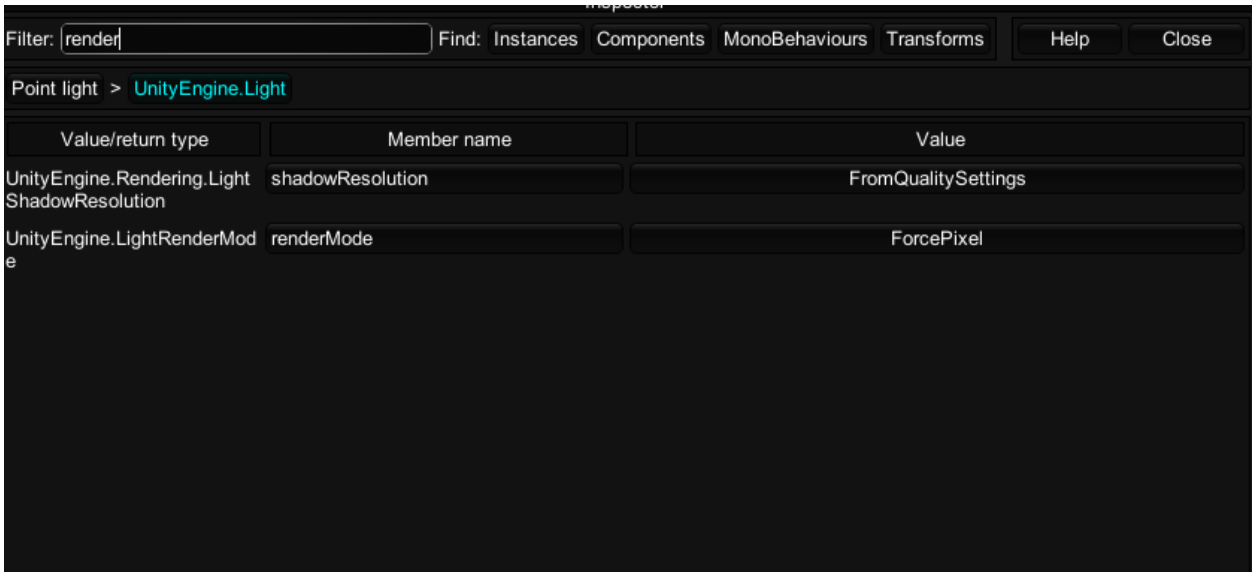
NOTE: You may run into issues where a light isn't lighting unless it's close enough or it's a certain color. This is because Unity is internally deciding which lights to use, this can be fixed with the Runtime Unity Editor plugin.

Make sure you can open the Runtime Editor with F1 and see if the hotkey to open it is set.

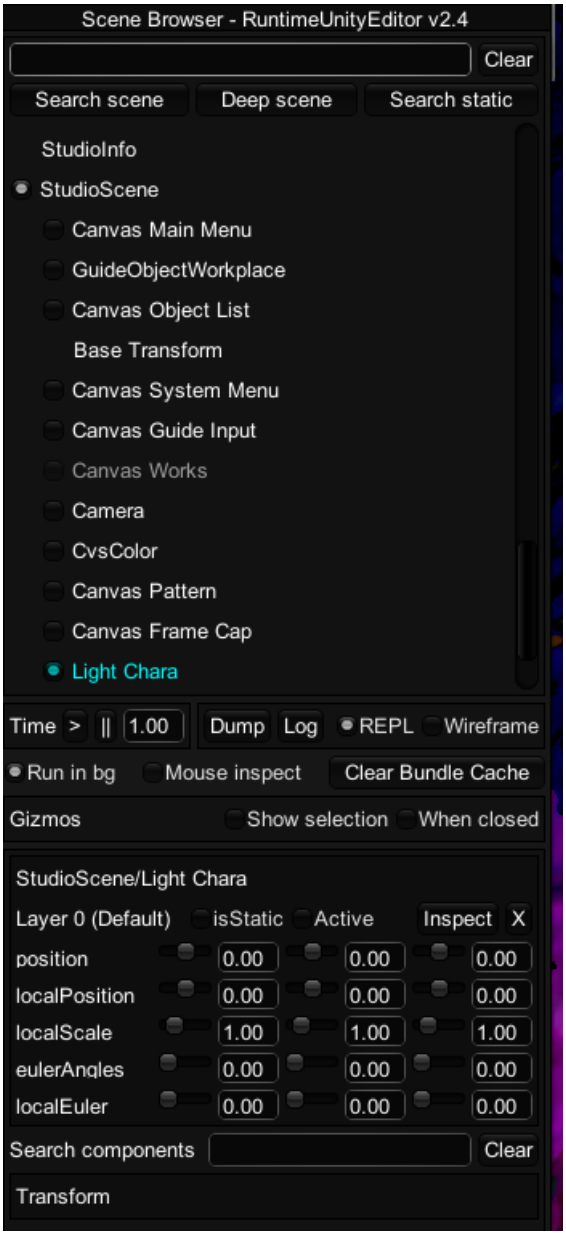
Once open find *Common Space* and press the checkbox near it to open the hierarchy. That is where studio objects are located and then select the light object (it will be highlighted if selected).



Click on light under transform near the bottom and it should open a new popup, at the top there will be a filter text field look up *render* and set the **rendermode** to **forcepixel** for **every point light. This is not saved to the scene**



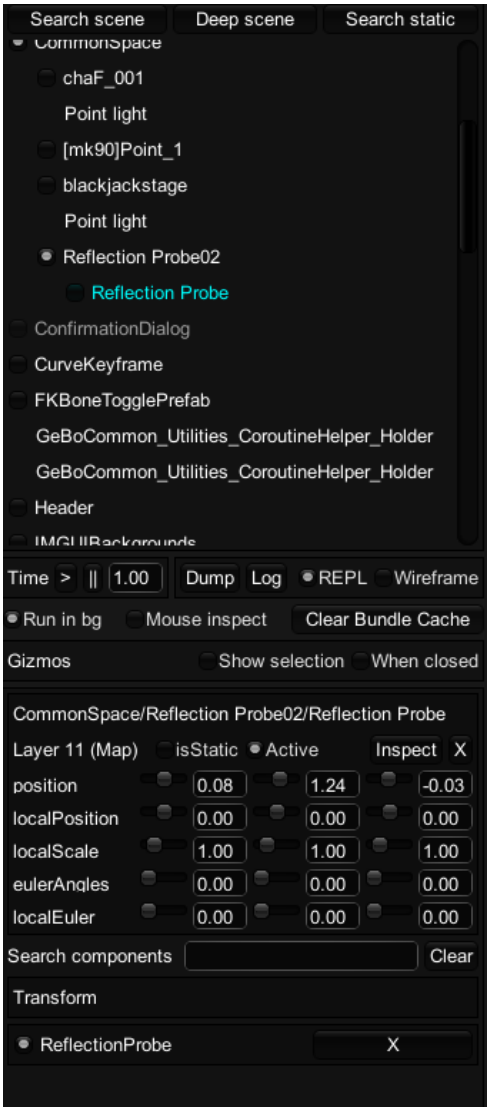
ALTERNATIVELY you can not use any directional lights, you can disable the main directional light by finding StudioScene (not under CommonSpace, usually near the bottom), and finding Light Chara where you can uncheck Active.
Note: This persists between scenes so if you load up another scene it will not have Light Chara enabled, you can simply re-enable it or restart the game



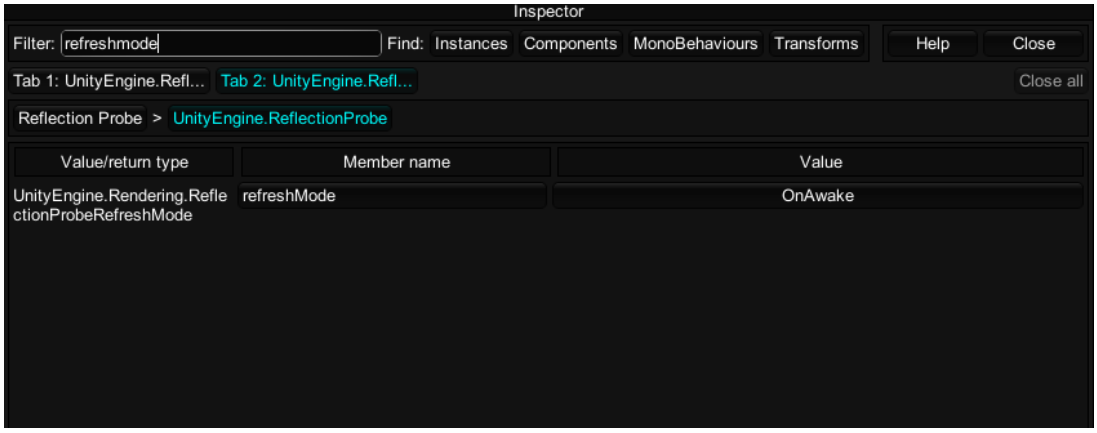
Reflections
Environment reflections replace KK's metal, the easiest way to make something metallic without making a metallic map is by setting anotherrampfull to be 1, and then disabling UseKKMetal

Sometimes reflections might not show up, this is because the map/environment does not have a reflection probe. The maker does not have a reflection probe to use.
In studio you can add a reflection probe with one of the reflection probe objects.

This may be very laggy because it is writing a new reflection every frame, you can help mitigate this by using Runtime editor and finding the reflection probe object in CommonSpace and find the light probe component (you may have to go deeper into the object's hierarchy)



Like for the light click on the ReflectionProbe component under Transform which should open the window. After that search refreshmode and set the **refreshMode** to **OnAwake**, this will stop updating the probe and give you your frames back. Again this is not saved to the scene


Inspector
Filter: refreshmode
Find: Instances Components MonoBehaviours Transforms
Help Close
Tab 1: UnityEngine.Refl...
Tab 2: UnityEngine.Refl...
Close all
Reflection Probe > UnityEngine.ReflectionProbe
Value/return type
Member name
Value
UnityEngine.Rendering.ReflectionProbeRefreshMode
refreshMode
OnAwake