

Blu's World Creation Notes

Self-notes based on my hobbyist experience making VRChat Worlds.

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World Setup

VRChat's Layers

What are Layers?

In Unity, a game developer can determine a set of collision layers in order to allow/disallow things from colliding with each other at runtime. VRChat uses this to it's advantage with 14 additional Layers, which helps determine what Meshes, Objects, and functions should collide with and where.

Below, you will find the Collision Layers that VRChat uses as of December 7th, 2022.

Varneon made a similar article about this [here](#) with similar information. The difference is that I've added my own research based on my own discoveries.

No	Name	Description	Known Visual Elements	Notes
0	Default	Default Layer.	- Avatar Pedestals	
1	TransparentFX			
2	IgnoreRaycast			
4	Water		- Portals - Mirrors	
5	UI			Interactive objects on this Layer cannot be interacted with until the Quick Menu is opened.
8	Interactive			

9	Player	Remote Players.	- Any and all Remote Players in the current instance.	
10	PlayerLocal	The Local Player's Avatar Body seen in First-Person View.	- Local Player without a Head.	VRCMirrorReflection refuses to render this Layer anymore (because it makes you look headless?)
11	Environment	Static World Meshes.		Shares the same Collision Matrix as the Default Layer.
12	UiMenu	User Interface Elements, Part 1.	- Nameplates	
13	Pickup	Default Pickup Layer.		This Layer is automatically assigned to any GameObject with a VRCPickup Component attached to it.
14	PickupNoEnvironment	Secondary Pickup Layer. Does not collide with the World.		Avoid using Gravity on Pickups in this Layer as it will never collide with the World whatsoever.

15	StereoLeft	Left Eye of the Local Player's VR Headset.		
16	StereoRight	Right Eye of the Local Player's VR Headset.		
17	Walkthrough	GameObjects and Meshes that should never collide with Players.		This Layer can prove useful for Tabletop Games that should never collide with Players whatsoever (e.g. Billiards).
18	MirrorReflection	Used for Objects that should only be visible in Mirrors rendered by the <code>VRCMirrorReflection</code> Script.	- Complete Local Player (that's you!) is shown in Mirrors.	Only Layer that is never rendered by the Main Camera (Local Player's sees the headless copy of themselves on Layer 10). Colliders on this layer never block VRChat Raycasts.
19	reserved2	User Interface Elements, Part 2.	- HUD. - Quick Menu and Main Menu. - Camera UI. - Camera Lens. - Tooltips.	This Layer is immune to all Post Processing Volumes!
20	reserved3	Currently not used. Reserved for future use in VRChat.		

21	reserved4	Currently not used. Reserved for future use in VRChat.		
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