# Interaction Sphere

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To swap out the bulky hand models for an interaction sphere without physics, a model for this sphere was created by simply adding a red material to a sphere that does not receive shadows. This should communicate that the sphere is not part of the natural looking environment and should therefore aid the user to recognize it as their means to manipulate the world around them.
To still make use of SteamVR's hand system that was also used during the pilot studies, which provides useful functionalities such as the "onPickup" and "onRelease" functions, as well as the built in highlighting system when hovering over an interactable object, a custom "HandCollider" for the sphere was needed. Here the previously created interaction sphere prefab was duplicated and a sphere collider added to it. Since the collider should not be visible to the user, the mesh renderer was removed from this newly created prefab.

The final step to integrate the interaction sphere into SteamVR's hand system was the addition of a "RenderModel" that simply consists of a reference to the prefab of the interaction sphere. This model will then be rendered upon startup at the tracked hand position of the corresponding hand, as the name suggests.

To finally remove all physical interactions with the sphere a new layer was added that will be ignored by all physics simulations. Contrary to what one might suspect, the "HandCollider" needed to be added to this layer, and not only the interaction sphere's model or the hand itself. Interestingly, removing a script from SteamVR's hands called "HandPhysics", does not turn off physics simulations for interactions with this hand.

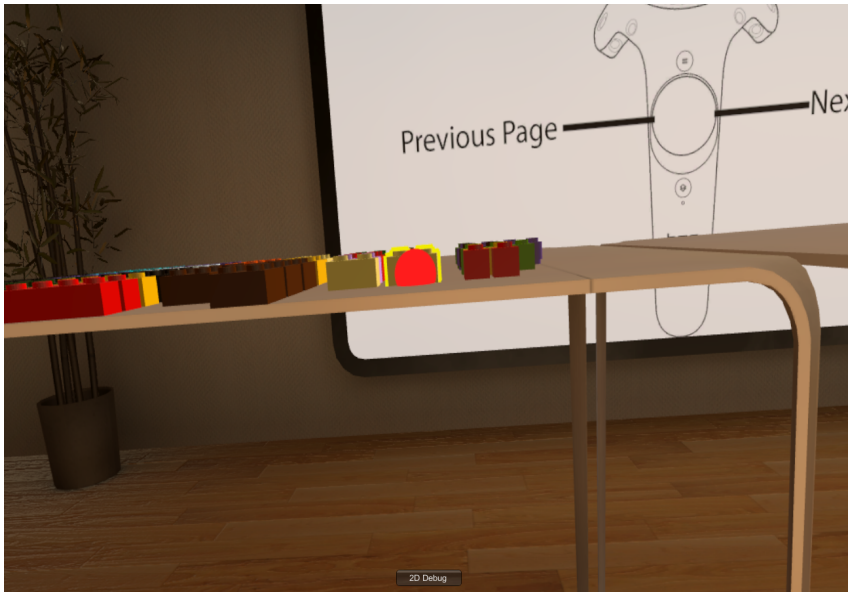


**Figure 1:** Interaction sphere in use