Insights from user testing

Ben

* The user found the blue hologram cues showing where blocks can be placed very useful and liked how it guided them during assembly.
* They noted the yellow and red blocks did not have functional differences, just cues for orientation (horizontal/vertical), and colours alone weren't very meaningful.
* The user suggested rotation-based cues or prompts indicating correct orientation while grabbing blocks would be helpful.
* They appreciated the cues, mentioning it helped build a definite structure and made the task more structured and less guesswork.
* The physical layout mimicked a real-life scenario where blocks are pulled from a box, but the user suggested an infinite supply for more flexibility might be nice.
* The idea of showing the entire wall or assembly as a hologram to guide placement was suggested, allowing users to see where each block fits.
* The user found grabbing and snapping intuitive, mapping well to real-world actions, and felt hands were not necessary but could be more natural.
* They proposed that weight or haptic feedback could enhance the handling experience, especially for different types of materials or blocks.
* Some blocks were hard to reach comfortably, indicating workspace ergonomics could be improved.
* The user wanted negative validation (red cues) along with positive (blue) to better know when placements were wrong.
* Without validation cues, the user thought they could still complete assembly if they had a clear pattern or visual reference, but feedback speeds up learning.
* They suggested improvements around cue clarity, automatic snapping to the nearest available position, and better visual prompts for each task step.
* The overall impression was positive, with constructive suggestions to improve feedback, guidance, and interaction fidelity.

Lilly

* The participant was able to see and grab the yellow and red blocks, as well as a white plate on the ground, for building a structure.
* They noticed a blue shadow as an interaction cue on the plate showing where to place the block, and found it helpful when the block dropped exactly to that position.
* Some blocks were floating and hard to grab, which caused some frustration.
* The participant was able to build the structure both horizontally and vertically but mentioned some blocks were out of reach.
* They found the grabbing interaction smooth and intuitive, like building with physical Lego blocks.
* Colors (yellow and red) were distinguishable but didn’t seem to represent functional differences for them; the blue cues were more helpful for positioning.
* Without the blue cues, the participant said it would be confusing to know where to place blocks because the plate and ground are white.
* The participant suggested adding guidance or a sheet near the plate showing how the structure should look for more clarity and confidence.
* Overall, the interaction was good, but some ergonomic and feedback improvements could make it better.

Ella

* The user was able to see the controllers and physical objects (yellow blocks, red blocks, white plate) and understood how to grab and place the blocks on the plate.
* They found it a bit difficult to place blocks at times due to boundary issues and possibly physical object interference (like a chair).
* The participant liked the blue shadow guides showing where to put the block and found them helpful.
* Some interactions felt awkward because they had to stay within certain boundaries, which sometimes felt low or restricting.
* The user was able to complete most of the tasks but faced some difficulty reaching certain blocks.
* They suggested that having a visual guide or sheet nearby showing how the structure should look would help.
* The grabbing and placing interaction was described as intuitive and smooth, similar to building with physical blocks.
* The need to improve boundary settings and ease of movement within the VR environment was felt.
* Overall, the user felt positive about the interaction but pointed out specific ergonomic and guidance improvements.

Rithisha

* The user struggled with the boundary being too low and that their hand/controller was going outside the allowed play area, causing interaction difficulties.
* They mentioned the boundary might be affected by the chair or other physical objects, creating confusion when trying to reach parts of the virtual scene.
* The participant had to restart the app at one point due to losing tracking or going beyond boundaries.
* Overall, the user was able to grab and place blocks on the plate but had issues with some blocks floating or being in unreachable positions.
* Despite the setup issues, the user found the grabbing interaction smooth and the visual placement cues (blue shadows) helpful.
* The need to adjust or set clear boundaries in the virtual space was implied to improve comfort and interaction fidelity.

Prisha & Cimi

* Users consistently found the blue shadow or guiding cues very helpful in accurately placing blocks during assembly. This visual feedback served as a clear spatial guide, reducing confusion about where blocks should go.
* Grabbing and placing blocks felt intuitive, with participants likening the interactions to handling real physical objects like Lego blocks. The simplicity of the control scheme supported easy learning.
* Participants experienced some difficulty with blocks placed out of comfortable reach and suggested improvements such as allowing walking around the space or better mechanisms for grabbing distant objects.
* Colour coding helped users distinguish blocks visually but was secondary to the importance of placement guides; users relied more on spatial cues than colour for task completion.
* Users expressed desire for a visual reference or overview of the entire assembled structure, which would aid in planning, increase confidence, and signal task completion.
* Smooth interaction combined with consistent visual aids supported positive user engagement and creativity in building tasks, highlighting the potential of XR for educational and design simulations.