

## ≡ Item Navigation

# Learning checkpoint - a closer look at mechanics of ARCore

- Surface detection allows ARCore to place digital objects on various surface heights, to render different objects at different sizes and positions, and to create more realistic AR experiences in general.
- Pose is the position and orientation of any object in relation to the world around it. Everything has its own unique pose: from your mobile device to the augmented 3D asset that you see on your display.
- Hit-testing lets you establish a pose for virtual objects and is the next step in the ARCore user process after feature-tracking (finding stationary feature points that inform the environmental understanding of the device) and plane-finding (the smartphone-specific process by which ARCore determines where horizontal surfaces are in your environment).
- Light estimation is a process that allows the phone to estimate the environment's current lighting conditions. ARCore is able to detect objects in suboptimal light and map a room successfully, but it's important to note that there is a limit to how low the light can be for the experience to function.
- Occlusion is when one 3D object blocks another 3D object. Currently this is only possible with digital objects, and AR objects cannot be occluded by a real world object. For example, in an AR game the digital object would not be able to be behind a real couch in the real world.
- Assets in multi-plane detection are scaled appropriately in relationship to the established planes, though only need to be placed on them (via anchor points) when it causes them to function like their real-world counterparts.
- Immersion can be broken by users interacting with AR objects as if they were physically real. Framing can be used to combat these immersion-breaking interactions.
- Spatial mapping is the ability to create a 3D map of the environment and helps establish where assets can be placed.
- Feature points are stationary and are used to further environmental understanding and place planes in an experience. ARCore assumes planes are unmoving, so it is inadvisable to attempt to anchor a digital object to a real world object that is in motion. In general, it's best not to place an object until the room has been sufficiently mapped and static surfaces have been recognized and designated as feature points.