META-META Club

WORKBOOK · MODULE 5 OF 6

Into the browser and Unity

Agent-Built 3D. Metameta Night week 4: villa → web viewer, and Unity MCP.

Pro studios | 5 lessons | ~3 h | 5-question practice quiz | Notes pages

IN THIS MODULE

Into the browser and Unity

Metameta Night week 4: villa → web viewer, and Unity MCP.

#	LESSON	TYPE	TIME	DONE
5.1	Demo: villa → web viewer, and Unity MCP	LIVE	25 min	☐
5.2	Build-along: your week-3 room in Three.js	LAB	55 min	☐
5.3	Critique: rooms in the browser	LIVE	25 min	☐
5.4	Ship it: a link people can open	PROJECT	15 min	☐
5.5	Unity MCP	LAB	60 min	☐

How to use this workbook

- Work through each lesson on metametaclub.com/learn, or listen to its narration, then use the page here to take notes.
- Tick the steps as you go, and write your answers under **Check yourself** before you look anything up.
- Do the practice quiz at the end, then mark it with the answer key on the last pages.
- Keep every **Ship it** piece. Together they become what you show.

Before you start

What do you already know about this, and what do you want to be able to make by the end?

LESSON 5.1 · LIVE · 25 MIN

Demo: villa → web viewer, and Unity MCP

Watch one Blender scene go two ways: into a browser as a shareable link, and into Unity, driven by an agent over MCP. You will learn what each path is good for and what breaks on the way.

Key points

How the demo runs

Mathew Munyao or a bench guest starts from a villa model in Blender, in the spirit of the Villa walkthrough. Part one exports it as a GLB file and loads it in a small Three.js page.

The two paths

- **Browser (Three.js).** One link, no install, works on phones, laptops and a Quest 3 browser. Best for sharing and for quick reviews with clients.
- **Unity.** A full engine with physics, UI, builds for Quest and desktop. Best when the scene needs to become an app.

The common format is **glTF**. Its binary form, `.glb`, packs mesh, materials and textures into one file.

What breaks on the way

- **Scale and axes.** Blender is Z-up, glTF is Y-up. The exporter converts this for you, if you export properly.
- **Modifiers.** Booleans and arrays must be applied on export or they vanish.
- **Materials.** glTF supports the Principled BSDF basics (colour, roughness, metal, normal maps). Complex node setups do not survive.
- **Size.** Huge textures make slow pages. Keep them at 2048 pixels or less for the web.

Steps checklist

- [ ] Note the export settings the presenter uses.
- [ ] Write down every problem that appears in the browser and how it was fixed.
- [ ] In the Unity part, log each instruction the agent receives and what the Editor did.
- [ ] Mark which path you would pick for a client review, and why.

SHIP IT

Post your notes: export settings, one problem and its fix, and your path choice.

- [ ] Shipped. Link or file: _____

Check yourself

1. Can you explain why glTF is the hand-off format?

2. What happens to an unapplied Boolean on export?

3. When would you pick Unity over a browser viewer?

LESSON 5.2 · LAB · 55 MIN

Build-along: your week-3 room in Three.js

Export your week-3 room from Blender as a GLB and open it in a browser page you can share as a link.

Key points

Export from Blender

From the folder holding `room.blend`, run:

`export_apply=True` applies modifiers, so nothing you built with them disappears.

The viewer

Save this as `index.html` next to `room.glb`.

Steps checklist

- [ ] Export `room.glb` with the command above.
- [ ] Save `index.html` in the same folder.
- [ ] Serve the folder. Browsers block loading files straight from disk: run `python3 -m http.server 8000` and open `http://localhost:8000`.
- [ ] Drag to orbit, scroll to zoom. If the room is black, check the lights. If it is missing, check the browser console.
- [ ] Ask your agent for one upgrade: shadows, a floor grid, or a button that resets the camera.

This lesson has code samples. They are printed in full in the lab handout (agent-built-3d-lab-5-2.pdf) and in the lesson on metametaclub.com/learn.

SHIP IT

A screen recording or screenshot of your room orbiting in the browser.

- [ ] Shipped. Link or file: _____

Check yourself

1. Why must the page be served over HTTP instead of opened as a file?

2. What does `controls.target` change?

3. Where would you look first if the model does not appear?

LESSON 5.3 · LIVE · 25 MIN

Critique: rooms in the browser

Show your room running in the browser and get feedback on how it feels to move through, not just whether it loads.

Key points

How the critique runs

Volunteers share their browser on the Discord Stage, or post a link if they have hosted it. Four minutes each: one to show, three for notes.

The rubric

Give one "keep" and one "try" from these five:

1. **First frame.** What do people see before they touch anything? A good starting camera frames the room, not a wall.
2. **Light match.** Does the browser version keep the mood of the Blender render, or did it go flat?
3. **Controls.** Can you orbit without flying through walls or losing the room?
4. **Load.** How long until something is on screen? Check the file size of `room.glb`.
5. **Fidelity.** What changed between Blender and the browser: materials, scale, missing parts?

Common fixes to suggest

- Flat look: add a directional light with shadows, or an environment map.
- Lost camera: limit `controls.maxDistance` and `controls.maxPolarAngle`.
- Slow load: shrink textures and remove hidden objects before export.
- Missing walls: export with modifiers applied.

Steps checklist

- [ ] Open your page and set the camera where you want people to start.
- [ ] Note the size of `room.glb` in kilobytes or megabytes.
- [ ] Show it when called, or post the recording.
- [ ] Write down the "try" notes you receive.
- [ ] Give a keep and a try to two other builders.

SHIP IT

Apply one "try" and post the before and after, with the file size of each.

- [ ] Shipped. Link or file: _____

Check yourself

1. Can you set a better starting camera for your room?

2. Do you know your GLB's file size and what made it that size?

3. Which control limit stops people flying away from the room?

LESSON 5.4 · PROJECT · 15 MIN

Ship it: a link people can open

Post your room to the Metameta Nights gallery channel on the Metameta Club Discord as something people can open, not just look at.

Key points

Getting a link

A link beats a screenshot. Any static host works because your viewer is just two files: `index.html` and `room.glb`.

What a good post has

- **The link** (or the recording).
- **One line of intent.** What the room is and what someone should try.
- **The path.** "Blender → GLB → Three.js", plus any fix you needed on the way.
- **File size.** The size of `room.glb`. It shows you care about load time.
- **Credits.** Any asset or texture you did not make.

Before you post

- Does the first frame show the room?
- Is the GLB under about 10 MB? Smaller is better.
- Does it run without errors in the browser console?

Steps checklist

- [ ] Test the page on your phone before you post. If it works on a phone, it will work for most people.
- [ ] Upload `index.html` and `room.glb` to your host.
- [ ] Open the hosted link in a private window to check it loads for a stranger.
- [ ] Post in the gallery with the five items above.
- [ ] Save everything in a `week-4` folder. The course modules after this build on it.

SHIP IT

Your gallery post with a working link or recording, intent, path, file size and credits.

- [ ] Shipped. Link or file: _____

Check yourself

1. Did your link work in a private window and on a phone?

2. Does your post explain the path from Blender to the browser?

3. Can you say what you would cut first if the file were too big?

LESSON 5.5 · LAB · 60 MIN

Unity MCP

Connect an agent to the Unity Editor over MCP, have it import your room, and add a small script so the scene does something when you press Play.

Key points

The setup

An MCP server for Unity runs as a package inside the Editor and talks to your agent. Several exist.

To read `.glb` files, add Unity's glTFast package: **Window → Package Manager → + → Add package by name** and enter `com.unity.cloud.gltfast`. After that, dropping a GLB into `Assets` imports it like any model.

The script

Ask the agent to create this file as `Assets/Scripts/OrbitCamera.cs` and attach it to the Main Camera. Or write it yourself.

Steps checklist

- [ ] Create a Unity 6 project with the Universal Render Pipeline (URP) template.
- [ ] Install glTFast and your chosen Unity MCP package. Connect your agent and ask it to list the scene's objects to prove the link works.
- [ ] Copy `room.glb` into `Assets`. Ask the agent to place it at the origin.
- [ ] Ask for a Directional Light angled through the window.
- [ ] Ask for the `OrbitCamera` script, attached to the Main Camera with the room as target.
- [ ] Press Play. Then give one taste note, such as "slower orbit, lower camera", and let the agent apply it.
- [ ] Read the agent's call log. Note any step that should become a script.

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This lesson has code samples. They are printed in full in the lab handout (agent-built-3d-lab-5-5.pdf)
and in the lesson on metametaclub.com/learn.
```

SHIP IT

A short screen recording of your room orbiting in Unity's Play mode.

- [ ] Shipped. Link or file: _____

Check yourself

1. What does the glTFast package add to Unity?

2. Why does the camera code run in `LateUpdate`?

3. Which agent step would you turn into a reusable script?

PRACTICE QUIZ

Check your module

Circle one answer for each question. The answer key is on the next page.

1. Which file format is the hand-off between Blender, Three.js and Unity in this week?

(A) OBJ
(B) glTF / GLB
(C) FBX only
(D) .blend

2. Your Boolean window cut is missing in the browser. What is the likely cause?

(A) Three.js cannot show windows
(B) The light is too weak
(C) Modifiers were not applied on export
(D) The camera is inside the wall

3. When is Unity a better target than a browser viewer?

(A) When you need a link anyone can open on a phone
(B) When the scene must become an app with physics, UI and a Quest build
(C) When the model is very small
(D) Never; browsers can do everything Unity does

4. What lets Unity import .glb files in the Unity MCP lesson?

(A) The XR Interaction Toolkit
(B) The glTFast package (com.unity.cloud.gltfast)
(C) The Unity Asset Store only
(D) Nothing; Unity reads .blend files directly

5. Why does OrbitCamera update in LateUpdate?

(A) It runs after other objects move, so the camera sees final positions
(B) It runs less often to save battery
(C) Update is not allowed on cameras
(D) It only runs in the Editor

ANSWER KEY

Answers and why

1 · B glTF / GLB

glTF (binary .glb) carries mesh, materials and textures in one file and is read by Three.js and Unity (via glTFast).

2 · C Modifiers were not applied on export

Unapplied modifiers are not baked into the mesh unless you export with export_apply=True.

3 · B When the scene must become an app with physics, UI and a Quest build

The browser wins on reach; Unity wins when you need a full app and engine features.

4 · B The glTFast package (com.unity.cloud.gltfast)

glTFast adds glTF/GLB import to Unity, so the browser asset works in the engine too.

5 · A It runs after other objects move, so the camera sees final positions

LateUpdate runs after all Update calls, the usual place for camera follow logic.

NOTES

Build log and notes

SESSION	WHAT I MADE OR LEARNED	NEXT STEP