META-META Club

WORKBOOK · MODULE 1 OF 5

Case studies

Browser Worlds. Matatu Ride and the Villa walkthrough.

Pro studios | 2 lessons | 60 min | 4-question practice quiz | Notes pages

IN THIS MODULE

Case studies

Matatu Ride and the Villa walkthrough.

#	LESSON	TYPE	TIME	DONE
1.1	Matatu Ride	XR	30 min	☐
1.2	Villa walkthrough	XR	30 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 1.1 · XR · 30 MIN

Matatu Ride

Drive Matatu Ride, a browser drive through Nairobi CBD built on a real street graph. Then take it apart with your browser's developer tools to see how a browser world loads, moves and stays smooth. You're learning to look like a builder, not a player.

Key points

Why study a shipped world

Reading finished work teaches you what "done" feels like. You'll notice what loads first, what the controls feel like and where the craft went.

What to look for

- **Load order.** Good worlds let you move early and stream detail in after.
- **Draw calls.** Every separate mesh and material costs a draw call. In your own Three.js scenes, `renderer.info.render.calls` shows the count. Repeated objects that share geometry and material are cheap; thousands of unique ones are not.
- **Camera feel.** How far behind the vehicle does the camera sit? Does it lag a little?
- **Sense of place.** Which details carry Nairobi: signage, street width, building heights, sound?

Steps checklist

- [ ] **Play it first.** Open Matatu Ride on a laptop. Drive for two minutes. Write down three things that make it feel like Nairobi and one thing that surprised you.
- [ ] **Open DevTools.** In Chrome or Edge, press F12 (Cmd+Option+I on a Mac).
- [ ] **Network panel.** Reload with the panel open. Sort by size. Find the largest files. Are they models (.glb), textures (.jpg, .png, .ktx2), audio or code? Note how long until you could first move.
- [ ] **Performance panel.** Record five seconds of driving. Look at the frame bars. Smooth driving means most frames fit in about 16 ms (60 frames a second).
- [ ] **Rendering tools.** In the DevTools menu, open More tools → Rendering and turn on "Frame rendering stats" to see the frame rate as you drive.
- [ ] **Controls.** Try keyboard, touch and a slow connection (Network panel → throttling → Fast 4G). What changes?
- [ ] **On a phone.** Open the same link. Does it still run? What looks simpler?

SHIP IT

A one-page teardown note: the three biggest files, the frame rate on laptop and phone, how you control it and the three details that make it feel like the place.

- [ ] Shipped. Link or file: _____

Check yourself

1. Can you name the largest asset types and why they're large?

2. Do you know what a draw call is and why fewer is better?

3. Can you point to one design choice that makes it feel like Nairobi?

LESSON 1.2 · XR · 30 MIN

Villa walkthrough

Walk through the Villa walkthrough and study three things: how it's lit, how it loads and how you move through it. An architectural walkthrough has a different job from a game. It has to sell space, light and materials honestly.

Key points

A walkthrough is a guided argument

A good walkthrough tells you where to look. Doors frame views.

Craft details worth stealing

- **Eye height.** About 1.6 m. Too high feels like a drone; too low feels like a child.
- **Walk speed.** Close to real walking, about 1.4 m/s, a little faster for big sites.
- **Colour.** Correct colour management makes materials look like the real thing. In Three.js, keep `renderer.outputColorSpace` as sRGB and pick a tone mapping such as `THREE.ACESFilmicToneMapping` or `THREE.AgXToneMapping`.
- **Fewer lights, better placed.** One clear sun beats ten small lamps.

Steps checklist

- [ ] **Walk it.** Open the Villa walkthrough. Spend three minutes moving through every space you can reach.
- [ ] **Map it.** Sketch a rough floor plan from memory. Mark where you started, the route you took and the best view.
- [ ] **Study the light.** Where is the sun? Are shadows soft or hard? Do interiors feel bright without looking flat? Real-time scenes often mix a sun with sky light and some pre-baked lighting so rooms look right without heavy maths each frame.
- [ ] **Study loading.** Open DevTools → Network and reload. What arrives first? How long until you can move? Is there a loading screen, and does it tell you anything?
- [ ] **Study navigation.** Mouse, keyboard, touch, click-to-move? How fast do you walk? Can you get stuck or walk through walls?
- [ ] **Compare.** Put your notes next to your Matatu Ride teardown. A drive and a walk need different speeds, cameras and detail levels.

SHIP IT

Your sketched floor plan with your route and three annotated observations: one on light, one on loading, one on navigation.

- [ ] Shipped. Link or file: _____

Check yourself

1. Can you explain why a walkthrough needs a slower, steadier camera than a drive?

2. Do you know what tone mapping does for a bright scene?

3. Can you name one choice that guides the visitor through the space?

PRACTICE QUIZ

Check your module

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

1. Which DevTools panel shows which files are largest and when they arrive?

- (A) Elements
- (B) Network
- (C) Console
- (D) Application

2. In Three.js, what does renderer.info.render.calls tell you?

- (A) How many draw calls the last frame used
- (B) How many users are online
- (C) How many textures failed to load

3. What is a sensible eye height for a walkthrough camera?

- (A) 0.5 m
- (B) 1.6 m
- (C) 5 m

4. To hit 60 frames a second, roughly how long can each frame take?

- (A) About 16 ms
- (B) About 100 ms
- (C) About 1 s

ANSWER KEY

Answers and why

1 · B Network

The Network panel lists every request with its size and timing, so you can see what slows the first load.

2 · A How many draw calls the last frame used

It counts draw calls per frame. Fewer draw calls usually means a smoother scene.

3 · B 1.6 m

About 1.6 m matches a standing adult. It keeps rooms, doors and furniture at believable scale.

4 · A About 16 ms

1000 ms ÷ 60 ≈ 16.7 ms per frame. Go over and the motion stutters.

NOTES

Build log and notes

SESSION	WHAT I MADE OR LEARNED	NEXT STEP