META-META Club

WORKBOOK · MODULE 3 OF 3

From AI to a 3D asset

XR & AI Foundations. Draft a 3D asset with AI, clean it up in Blender, and place it in your WebXR scene.

Open courses | 3 lessons | ~2.5 h | 4-question practice quiz | Notes pages

IN THIS MODULE

From AI to a 3D asset

Draft a 3D asset with AI, clean it up in Blender, and place it in your WebXR scene.

#	LESSON	TYPE	TIME	DONE
3.1	Make a 3D asset with AI	LAB	45 min	☐
3.2	Clean it up in Blender	LAB	60 min	☐
3.3	Ship: your asset in your WebXR scene	PROJECT	45 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 3.1 · LAB · 45 MIN

Make a 3D asset with AI

Use a text-to-3D or image-to-3D tool to draft one asset for your WebXR scene, and export it as a GLB file.

Key points

How AI-to-3D works

You give the tool a text prompt or a reference image. It returns a mesh (the shape) and usually a texture (the colour).

The file format: glTF and GLB

glTF is the open standard for 3D on the web, from the Khronos Group. GLB is the same thing packed into one binary file, with textures inside.

Rights of your inputs

The reference image you upload matters. Use your own photo or drawing, a work you have permission to use, or something with an open licence that allows changes.

Keep a log

Write down the tool, the prompt, the input image and which version you kept. You will need this for your credits note.

Steps checklist

- [ ] Choose one object for your scene. Keep it simple and solid.
- [ ] Write a prompt with four parts: object, style, material, use. Example: "A carved wooden stool, simple shapes, warm brown wood, low-poly game asset."
- [ ] If the tool takes an image, use your own photo or sketch of the object, on a plain background, lit evenly.
- [ ] Generate three versions. Change one thing each time: style, material or the image.
- [ ] Pick the best one. Judge the silhouette first, then the texture.
- [ ] Export as GLB. If GLB isn't offered, take glTF, OBJ or FBX; Blender can convert it in the next lesson.
- [ ] Open the file in a glTF viewer or in Blender to check it loads.

SHIP IT

One GLB file, plus your log: tool, prompt, input source, chosen version.

- [ ] Shipped. Link or file: _____

Check yourself

1. Why is GLB a good choice for the web?

2. What makes a good reference image for image-to-3D?

3. Do you have the right to use the image you uploaded? How do you know?

LESSON 3.2 · LAB · 60 MIN

Clean it up in Blender

Take your AI-made asset into Blender and make it scene-ready: right size, clean origin, light enough for a headset, and exported as GLB.

Key points

Why clean up

AI assets often arrive at the wrong size, rotated, with the origin floating in space and far too many polygons. In a browser or on a Quest 3, every extra polygon costs frame rate.

Or script it

The same clean-up as a script. Run it in the Scripting workspace, or headless with `blender -b asset.blend -P cleanup.py`.

Pick the ratio by eye. The script is a shortcut, not a substitute for looking.

Steps checklist

- [ ] Open Blender. Delete the default cube. Use File › Import to bring in your file.
- [ ] **Name it.** Rename the object "Asset" in the Outliner.
- [ ] **Scale.** Blender works in metres. Press N to see Dimensions. A stool is about 0.45 m tall. Scale until it is right.
- [ ] **Rotate.** Make sure it stands upright on the Z axis.
- [ ] **Apply transforms.** Object › Apply › All Transforms. Now scale reads 1 and rotation reads 0.
- [ ] **Origin.** Set the origin to the bottom centre so it sits on the floor when placed at height 0. A quick way: Object › Set Origin › Origin to Geometry, then move it so its base sits on the grid.
- [ ] **Decimate.** Check the triangle count in the status bar (enable Scene Statistics if it is hidden). Add a Decimate modifier and lower the ratio until the silhouette starts to break, then step back up. Apply it.
- [ ] **Materials.** Keep one material with the base colour texture. Principled BSDF exports cleanly to glTF.
- [ ] **Export.** File › Export › glTF 2.0. Choose GLB, tick "Selected Objects", and export.

This lesson has code samples. They are printed in full in the lab handout (xr-ai-foundations-lab-3-2.pdf) and in the lesson on metametaclub.com/learn.

SHIP IT

A cleaned `asset.glb` with real-world size, applied transforms and a sensible triangle count. Note the count before and after.

- [ ] Shipped. Link or file: _____

Check yourself

1. Why apply transforms before exporting?

2. Where should the origin be for an object that stands on the floor?

3. How did you decide when to stop decimating?

LESSON 3.3 · PROJECT · 45 MIN

Ship: your asset in your WebXR scene

Load your cleaned GLB into the WebXR scene from Metameta Night week 1, place it well, and ship the link. This is the course's finished piece.

Key points

How loading works

Three.js loads glTF with `GLTFLoader`. It reads the file, builds the meshes and materials, and hands you a `gltf.scene` you add like any other object.

Credits

Add a short credits line under the scene or in your post: the tool that drafted the asset, your input image and its source, and what you changed by hand.

Steps checklist

- [ ] Copy `asset.glb` into your `first-xr` folder, next to `index.html`.
- [ ] Add the import at the top of your script, under the VRButton import:
- [ ] Add this after the floor is created:
- [ ] Serve the folder again and reload. Your asset should stand on the floor, because you put its origin at the base.
- [ ] If it is black, the scene needs more light: add a `DirectionalLight` or raise the hemisphere light intensity.
- [ ] If it is huge or tiny, go back to Blender and fix the scale there, not in code.
- [ ] Place it with intent. Where should the eye go first: the spinning cube or your asset? Move one of them.
- [ ] Publish the folder to HTTPS and open it on a phone and, if you can, on a Quest 3.

```
This lesson has code samples. They are in the lesson on metametaclub.com/learn.
```

SHIP IT

A live link to your scene with your asset in it, plus a credits line. Post it in the Metameta Nights gallery channel on the Metameta Club Discord.

- [ ] Shipped. Link or file: _____

Check yourself

1. What does the loader's third callback (the error handler) save you from?

2. Why fix scale in Blender rather than with `model.scale` in code?

3. Does your link work on a phone?

PRACTICE QUIZ

Check your module

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

1. Why ask an AI-to-3D tool for GLB?

(A) It's the only format Blender opens
(B) It packs the glTF scene and its textures into one file the web reads well
(C) It has no polygon limit
(D) It removes the need for lighting

2. Your asset loads in Three.js floating half a metre above the floor. What's the cleanest fix?

(A) Move the floor up
(B) Set the origin to the asset's base in Blender and re-export
(C) Delete the floor
(D) Increase the camera's field of view

3. When do you stop lowering the Decimate ratio?

(A) At ratio 0.01, always
(B) When the silhouette starts to break, then step back up
(C) Never decimate AI assets
(D) When the file name changes

4. Which reference image is safe to feed an image-to-3D tool?

(A) Any image you found online
(B) Another artist's sculpture photo, without asking
(C) Your own photo, or a work you have permission or an open licence to adapt
(D) A screenshot from a game

ANSWER KEY

Answers and why

1 · B It packs the glTF scene and its textures into one file the web reads well

GLB is binary glTF, the open web standard for 3D, with textures inside one file.

2 · B Set the origin to the asset's base in Blender and re-export

Fix the source: put the origin at the base so placing it at height 0 sits it on the floor.

3 · B When the silhouette starts to break, then step back up

Decimation is a taste call: keep the shape readable while cutting polygons for frame rate.

4 · C Your own photo, or a work you have permission or an open licence to adapt

Consent comes first: use your own work, permitted work, or openly licensed work that allows changes.

NOTES

Build log and notes

SESSION	WHAT I MADE OR LEARNED	NEXT STEP