

CAMERA

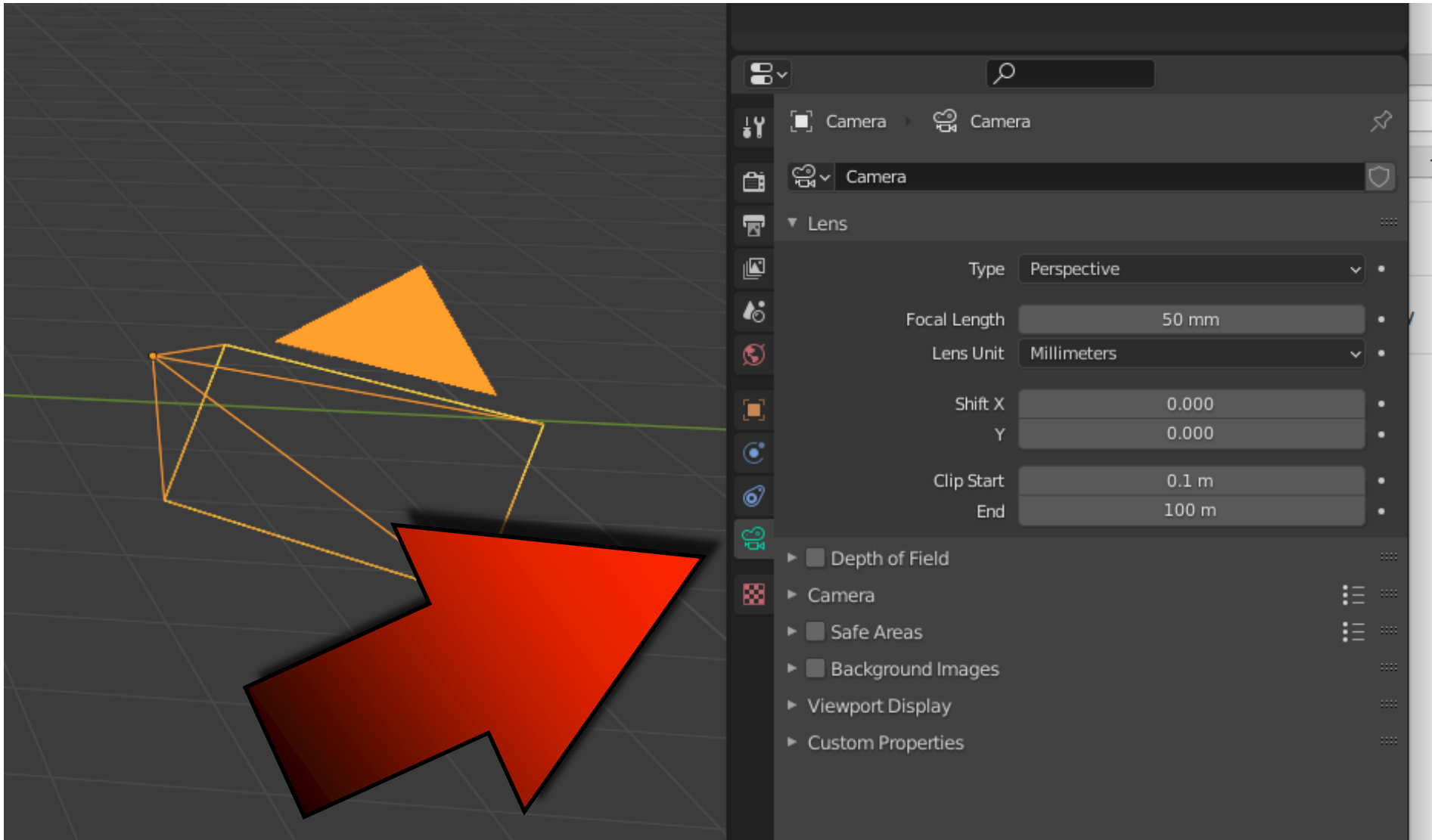


**Co-funded by
the European Union**



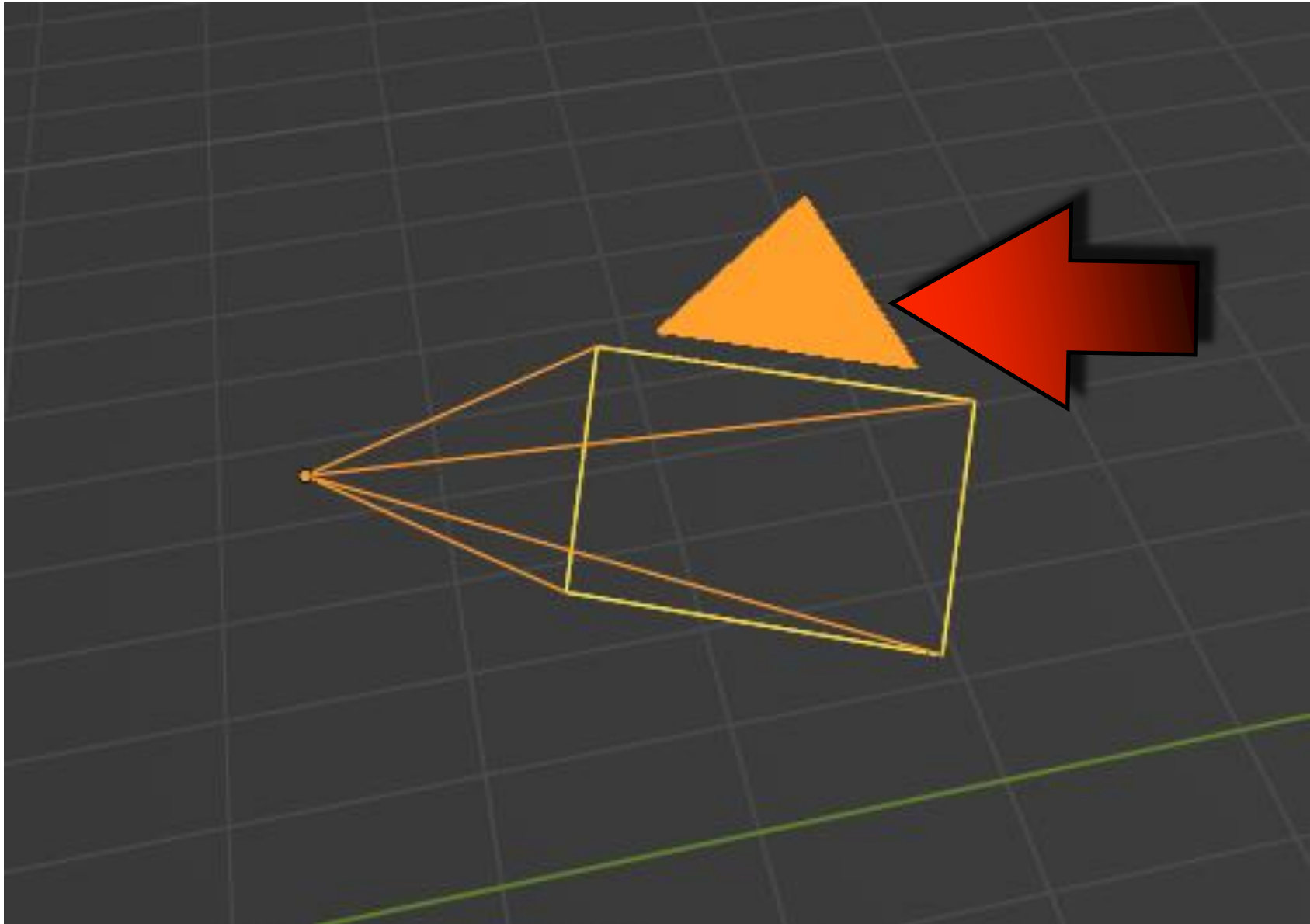
2024-1-PL01-KA220-VET-000243150

HERE ARE **THE PROPERTIES OF THE CAMERA**



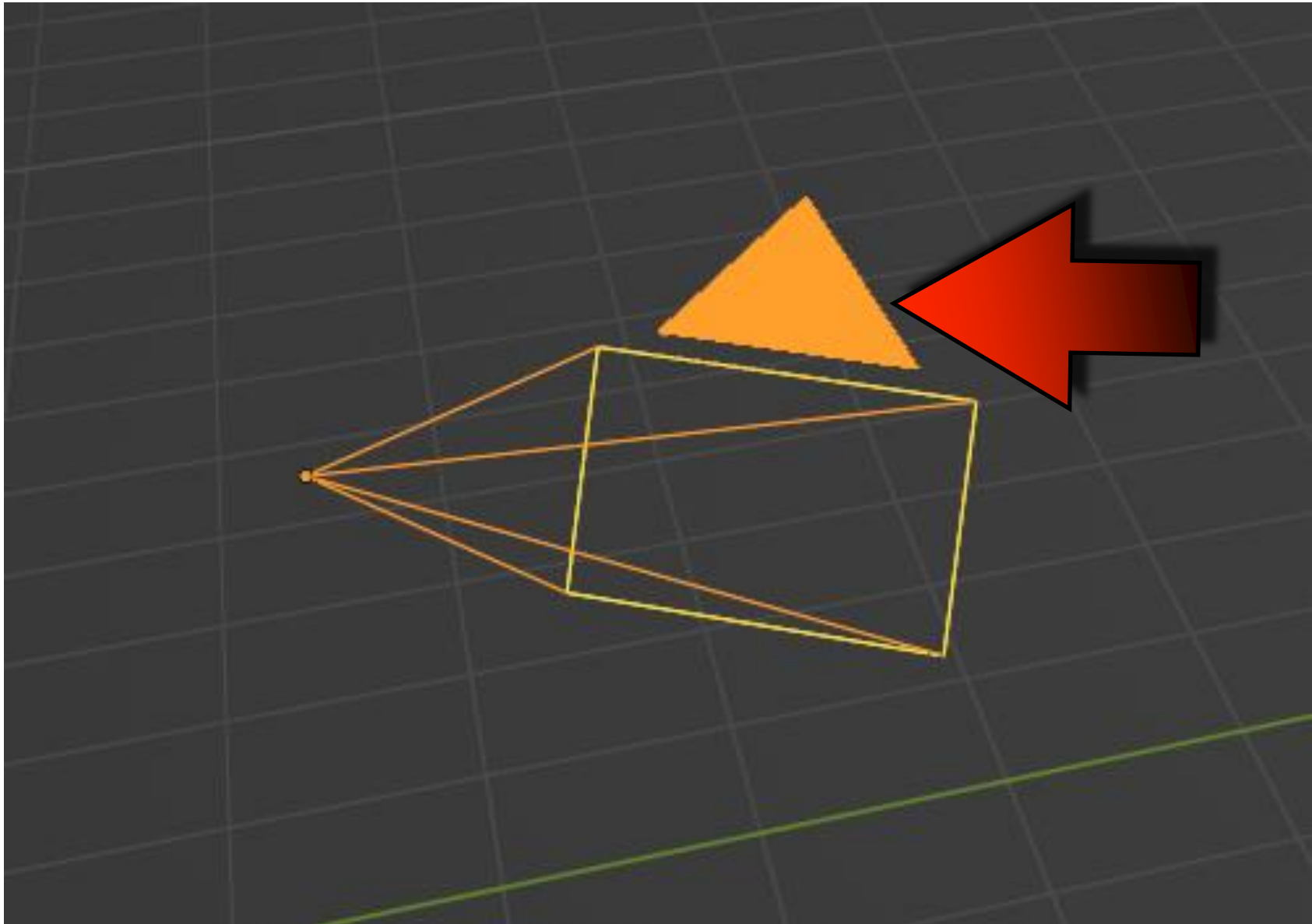
CAMERA

THE TRIANGLE MEANS THE TOP OF THE CAMERA



CAMERA

FILLING OUT MEANS THAT THIS CAMERA IS ACTIVE

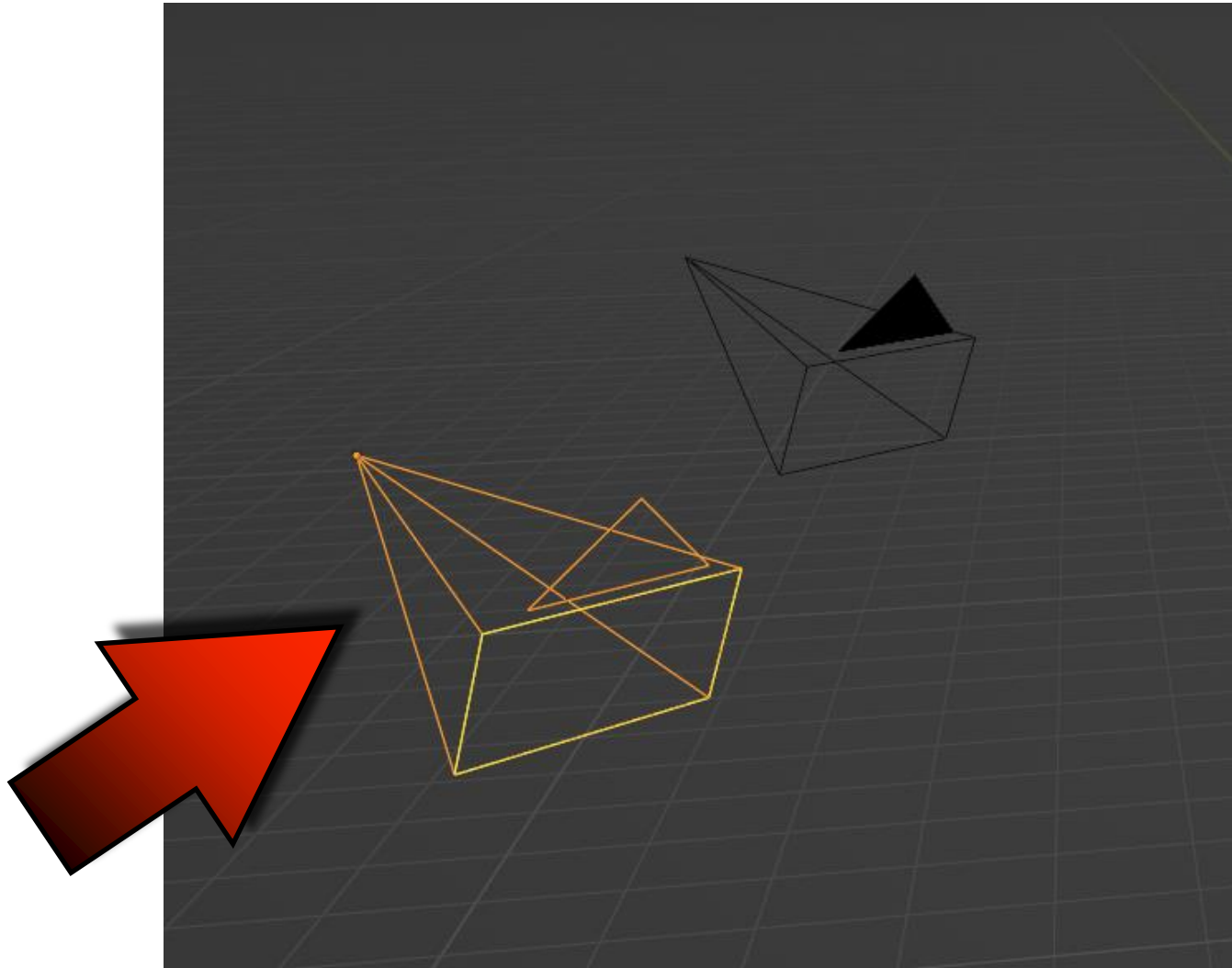


CAMERA

POWER OF AR AND VR

USE SHIFT + D

INSERT SECOND CAMERA



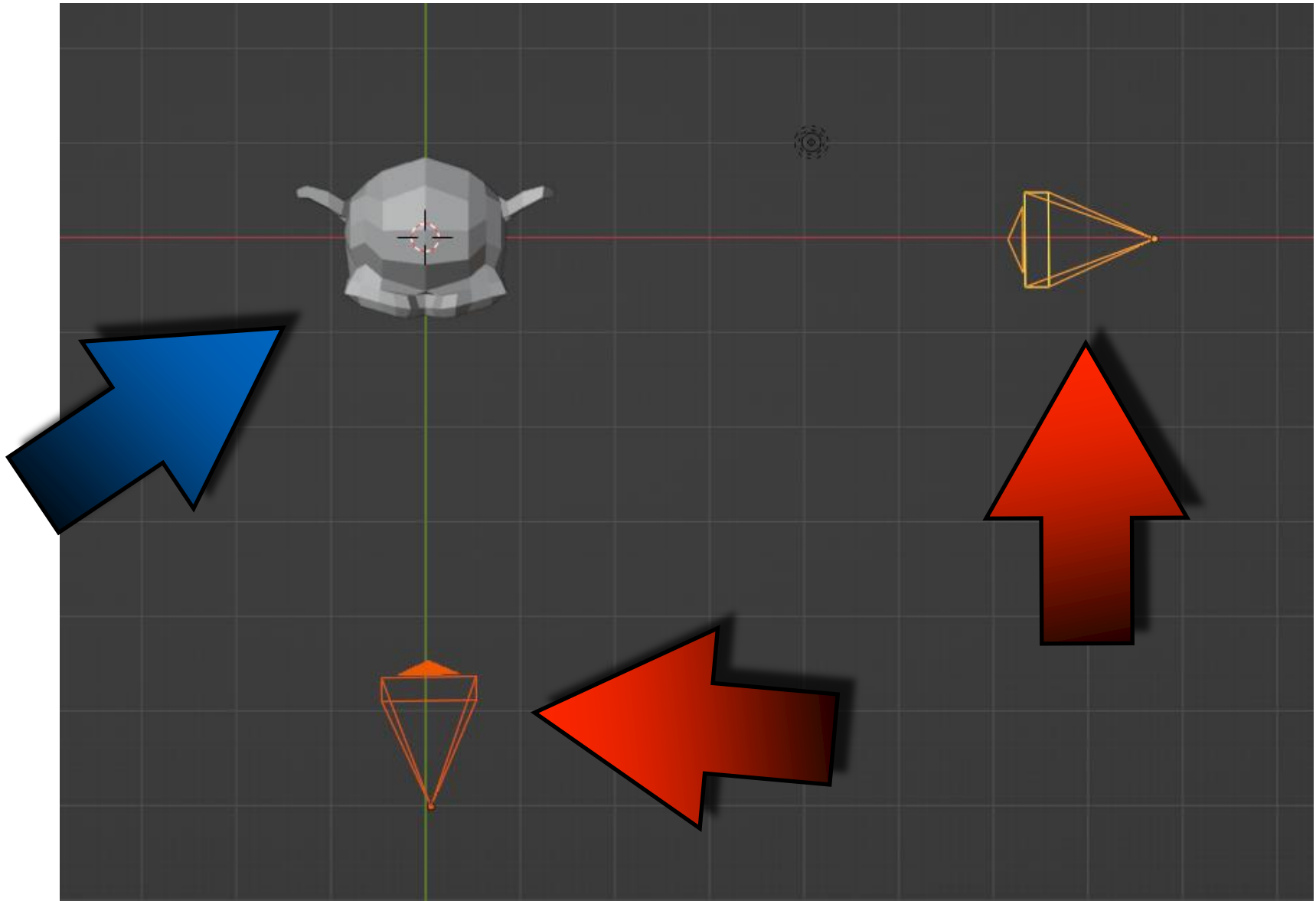
CAMERA



POWER OF AR AND VR



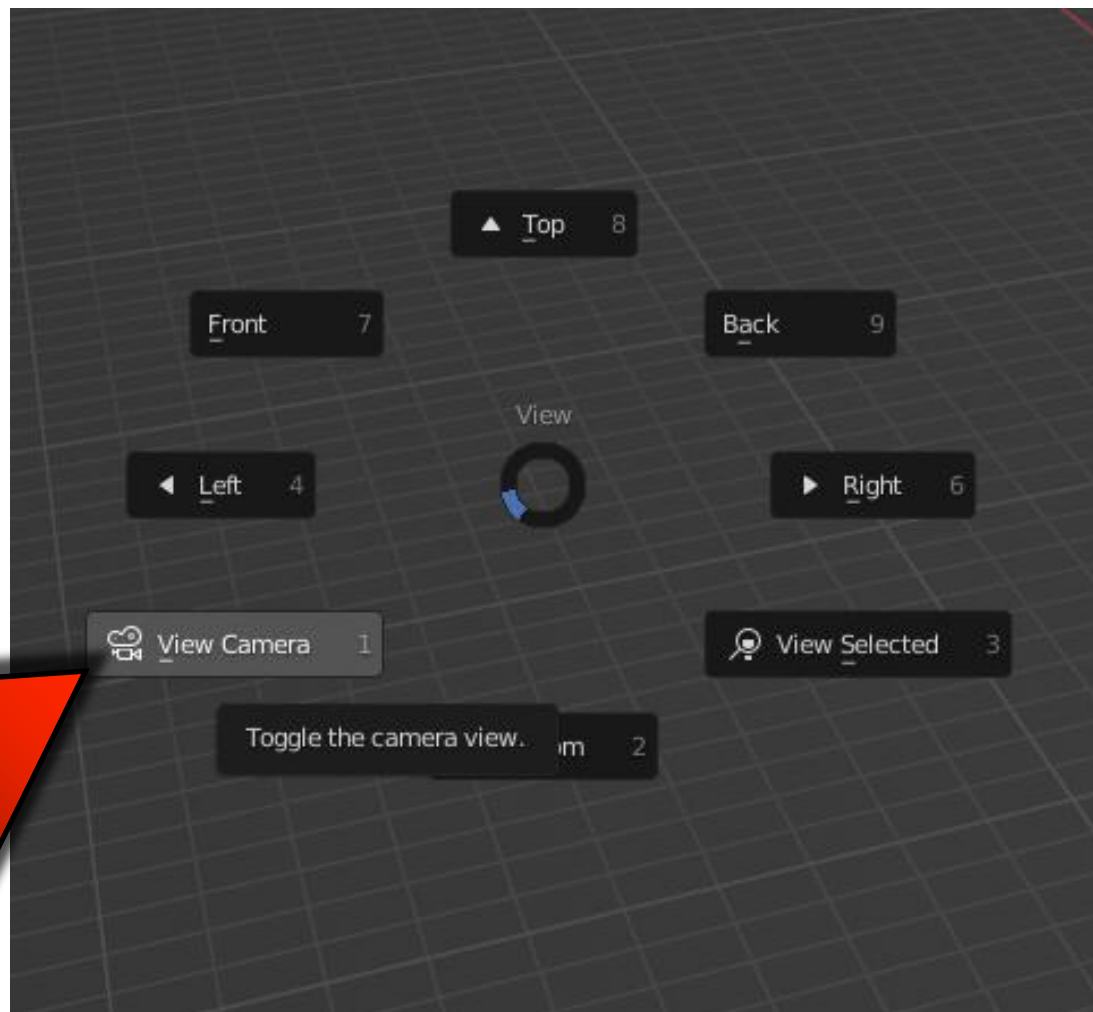
INSERT MONKEY AND SET CAMERAS AS ON SCREEN



CAMERA

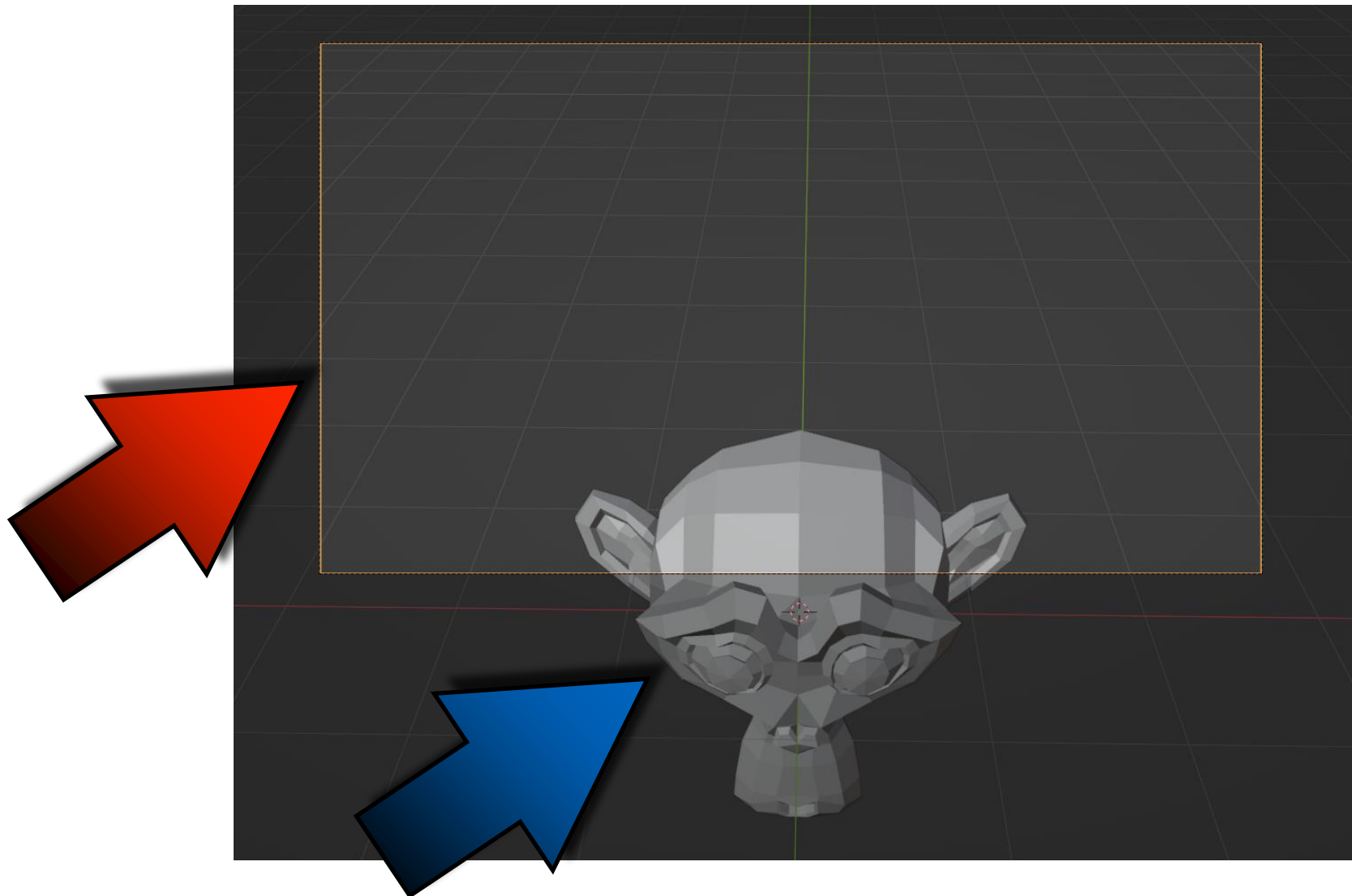
POWER OF AR AND VR

**TO SEE THE VIEW FROM THE CAMERA
PRESS 0 FROM THE NUMBER KEYPAD
OR CHOOSE VIEW CAMERA**



CAMERA

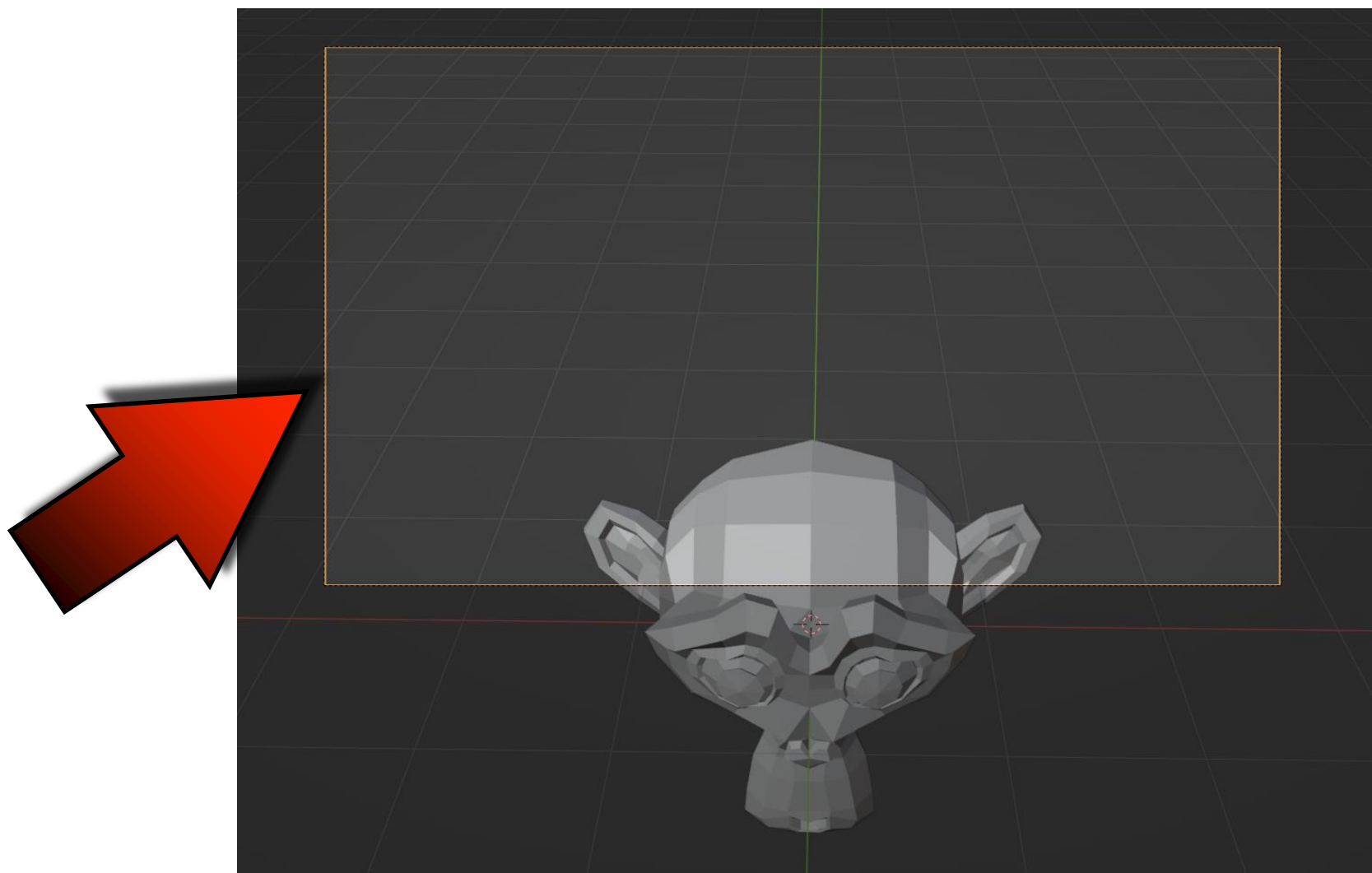
THE MODEL IS OUT OF THE CAMERA



CAMERA

POWER OF AR AND VR

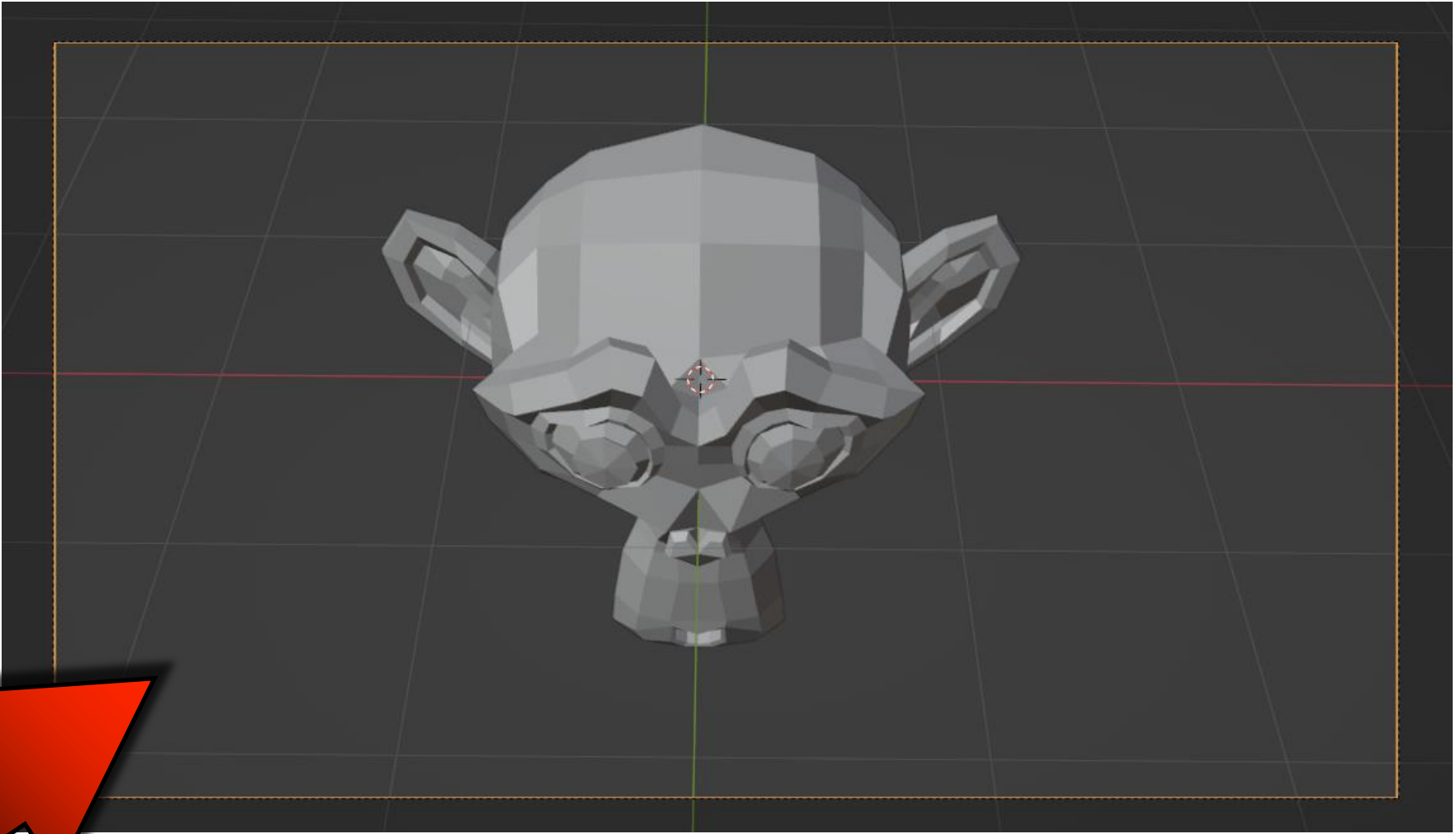
SELECT THE CAMERA



CAMERA

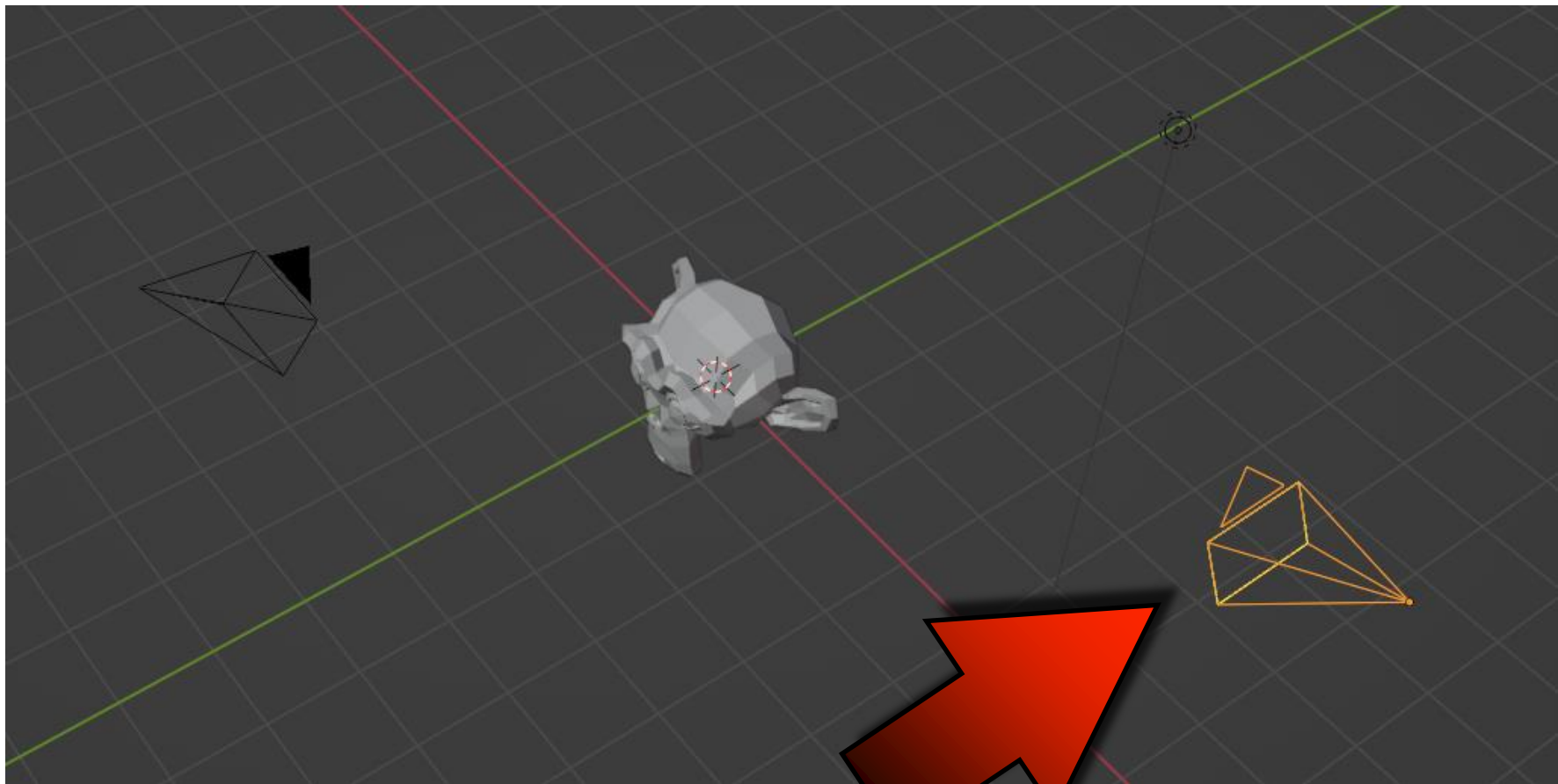
POWER OF AR AND VR

PRESS THE R KEY TWICE
AND SET WITH THE MOUSE CORRECT VIEW



CAMERA

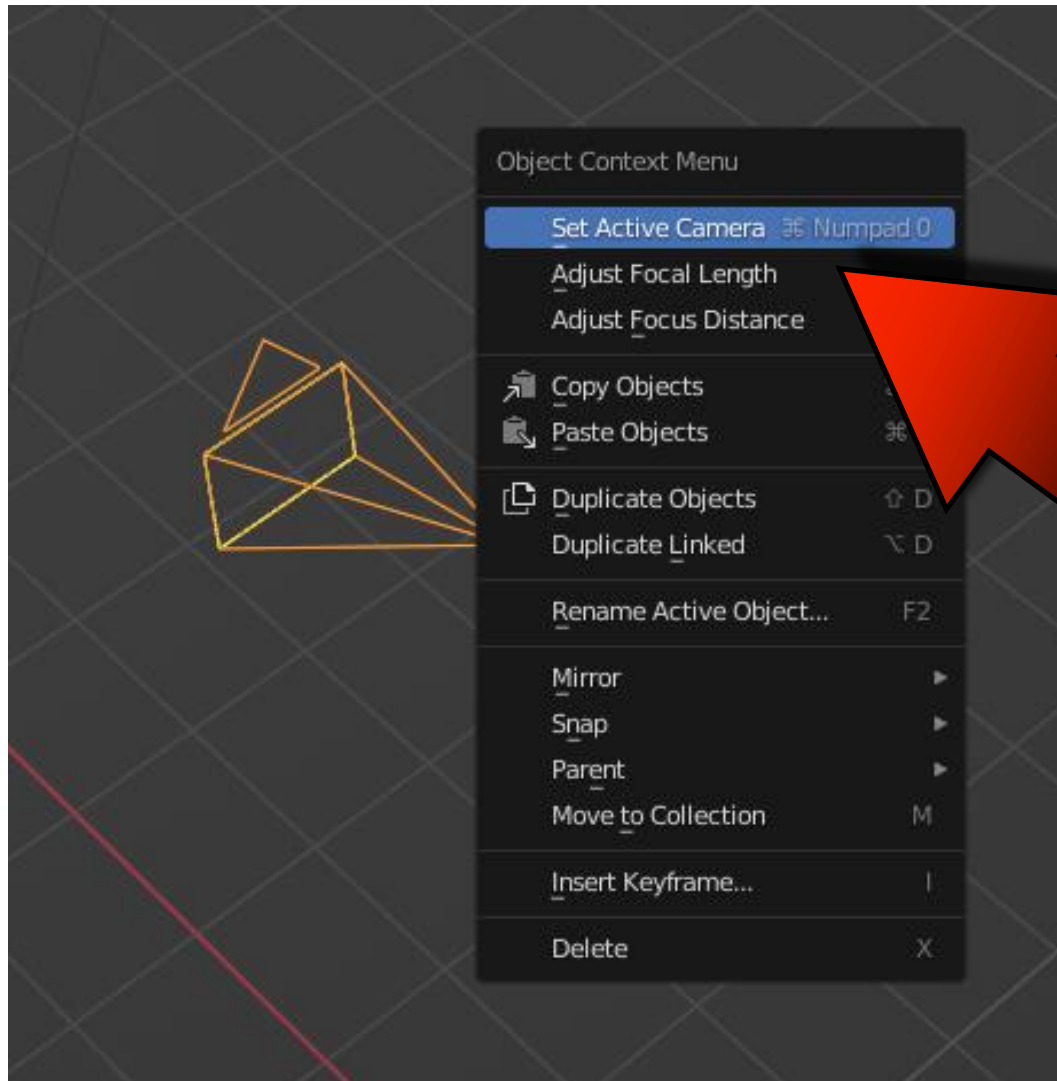
SELECT SECOND CAMERA TO SWITCH VIEW



CAMERA

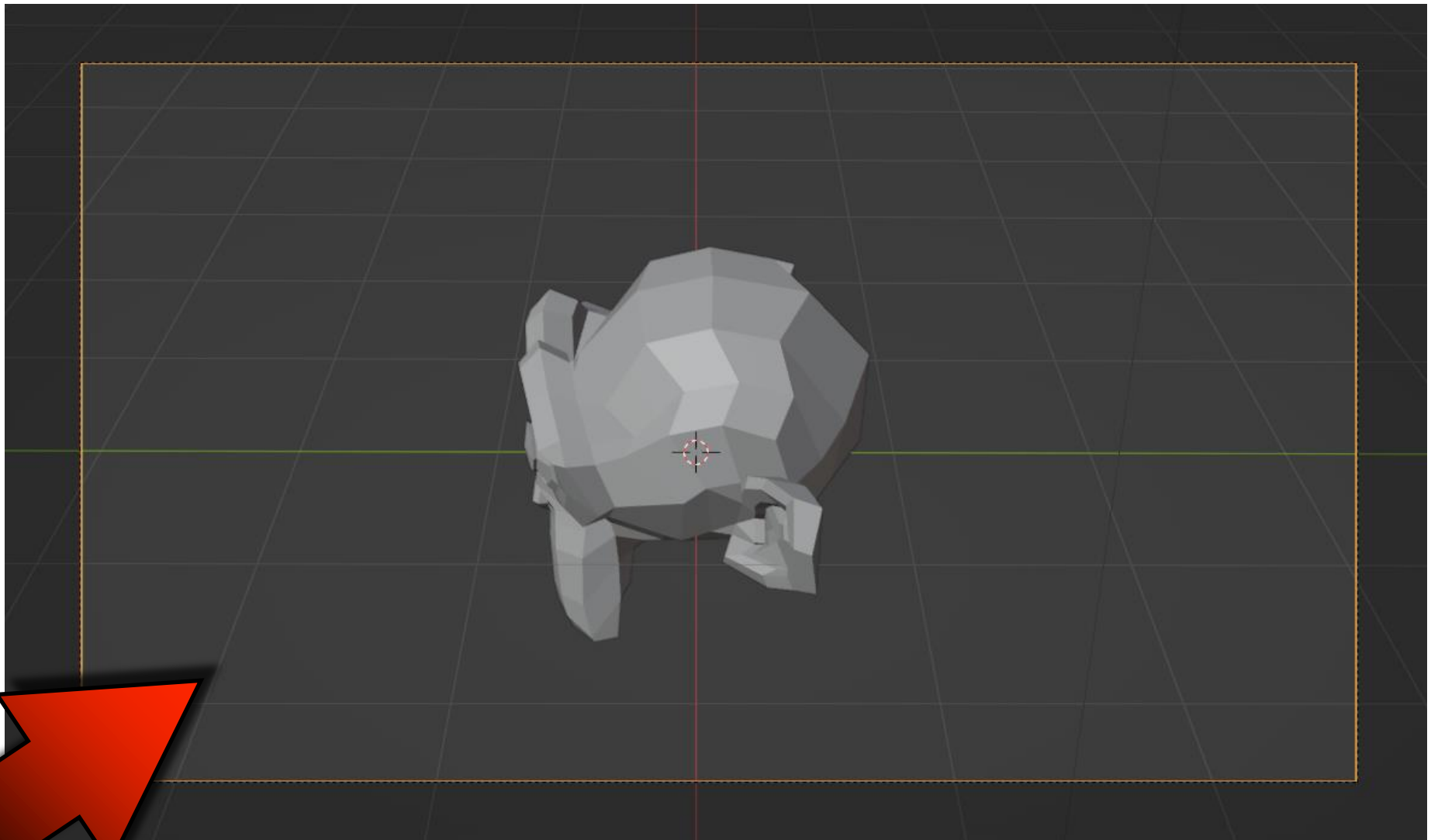
POWER OF AR AND VR

**PRESS CTRL + 0 FROM THE NUMBER KEYPAD
OR CHOOSE SET ACTIVE CAMERA**



CAMERA

WE SEE THE MODEL FROM THE SIDE



CAMERA

START ANIMATION

**WE CAN STANDARD
MOVE THE CAMERA WITH THE G, R KEY S**



<https://youtu.be/NqrsGld8wWs>

START ANIMATION

PRESS **G** AND THEN TWO TIMES **Z**
THIS GIVES A **ZOOM EFFECT**



https://youtu.be/_w1d-qFDCSQ



POWER OF AR AND VR



WE HAVE TWO WAYS TO NAVIGATE

FLY NAVIGATION

The image shows a screenshot of the Blender 2.79 software interface, specifically the Viewport menu. The menu is open, showing various navigation options. A blue arrow points to the 'View' menu, a green arrow points to the 'Navigation' sub-menu, and a red arrow points to the 'Fly Navigation' option. A tooltip for 'Fly Navigation' is visible at the bottom right of the menu, stating 'Interactively fly around the scene.'

Option	Shortcut
Toolbar	T
Sidebar	N
Tool Settings	
Adjust Last Operation	
Frame Selected	Numpad .
Frame All	Home
Perspective/Orthographic	Numpad 5
Local View	
Cameras	
Viewpoint	
Navigation	
Align View	
View Regions	
Play Animation	Spacebar
Viewport Render Image	
Viewport Render Animation	
Viewport Render Keyframes	
Area	
Orbit Left	Numpad 4
Orbit Right	Numpad 6
Orbit Up	Numpad 8
Orbit Down	Numpad 2
Orbit Opposite	Numpad 9
Roll Left	⇧ Numpad 4
Roll Right	⇧ Numpad 6
Pan Left	⌘ Numpad 4
Pan Right	⌘ Numpad 6
Pan Up	⌘ Numpad 8
Pan Down	⌘ Numpad 2
Zoom In	Numpad +
Zoom Out	Numpad -
Zoom Region...	⇧ B
Dolly View...	⇧ ⌘ Middle Mouse
Zoom Camera 1:1	
Fly Navigation	
Walk Navigation	

CAMERA

START ANIMATION

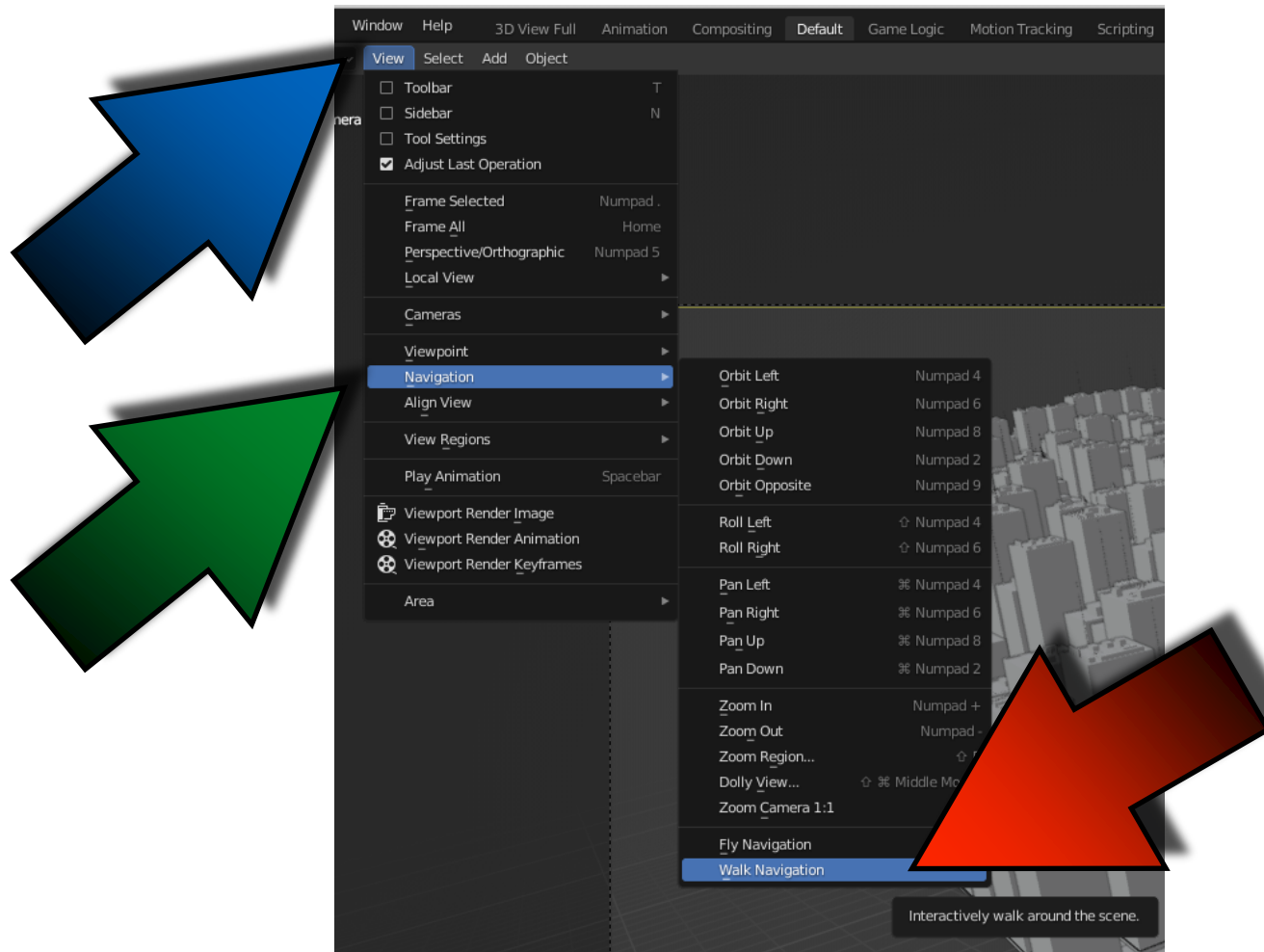
EXAMPLE FLY NAVIGATION



<https://youtu.be/Eon5hNIRvVg>

POWER OF AR AND VR

AND WALK NAVIGATION



CAMERA

START ANIMATION

EXAMPLE WALK NAVIGATION



<https://youtu.be/vmVbGziOMT0>

**TO CONTROL WE USE THE ARROWS
OR KEYS W, A, S, D AND MOUSE**



CAMERA

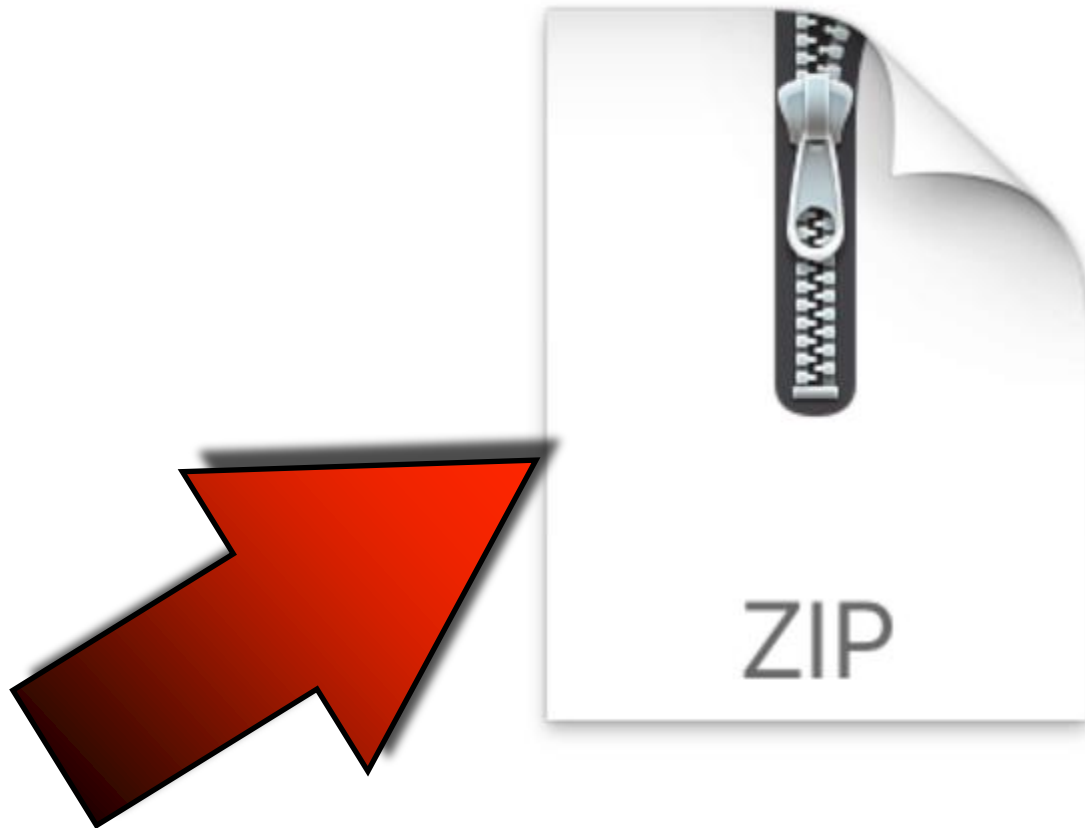
**WALK MODE IS FREQUENTLY USED IN
COMPUTER GAMES FOR EXAMPLE TOMB RAIDER**



CAMERA

**IN THE WAY,
I WILL PRESENT
HOW QUICKLY
YOU CAN
GENERATE ANY CITY**

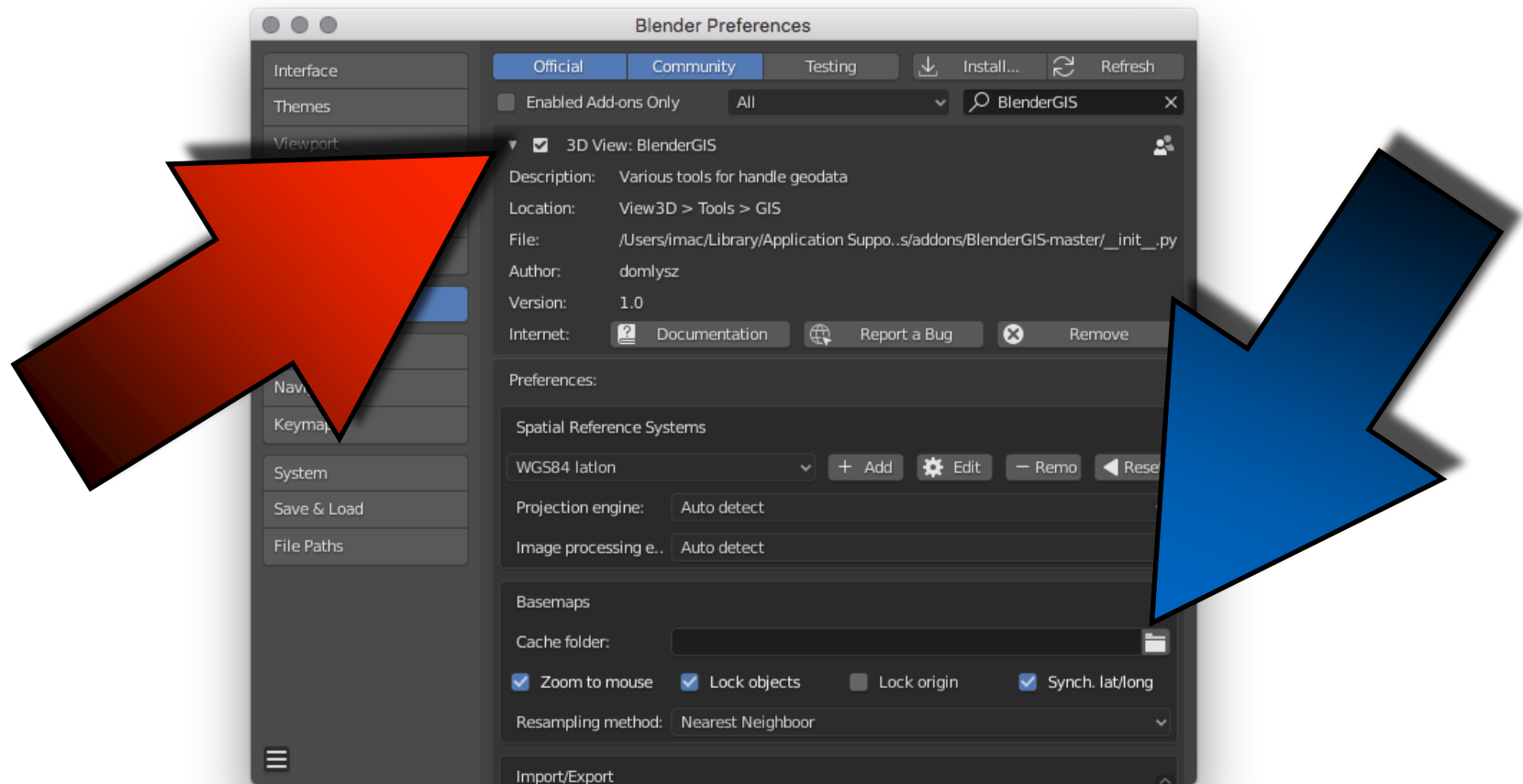
WE WILL INSTALL **THE GIS ADD-ON**



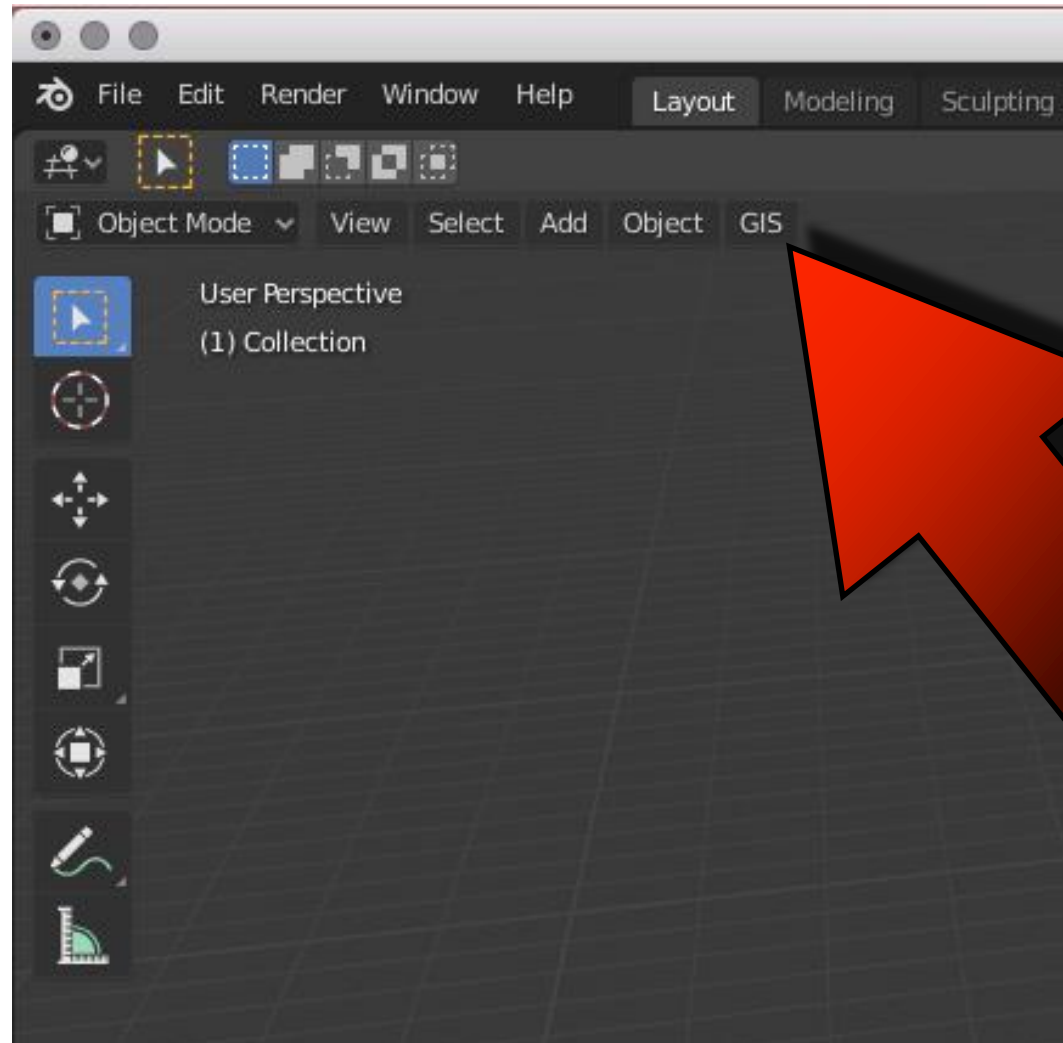
BlenderGIS-master.zip

CAMERA

**OPEN THE INSTALLED ADD-ON
AND CLICK ON THE CACHE FOLDER ICON
TO CHOOSE THE TEMPORARY DATA
PROCESSING DIRECTORY**

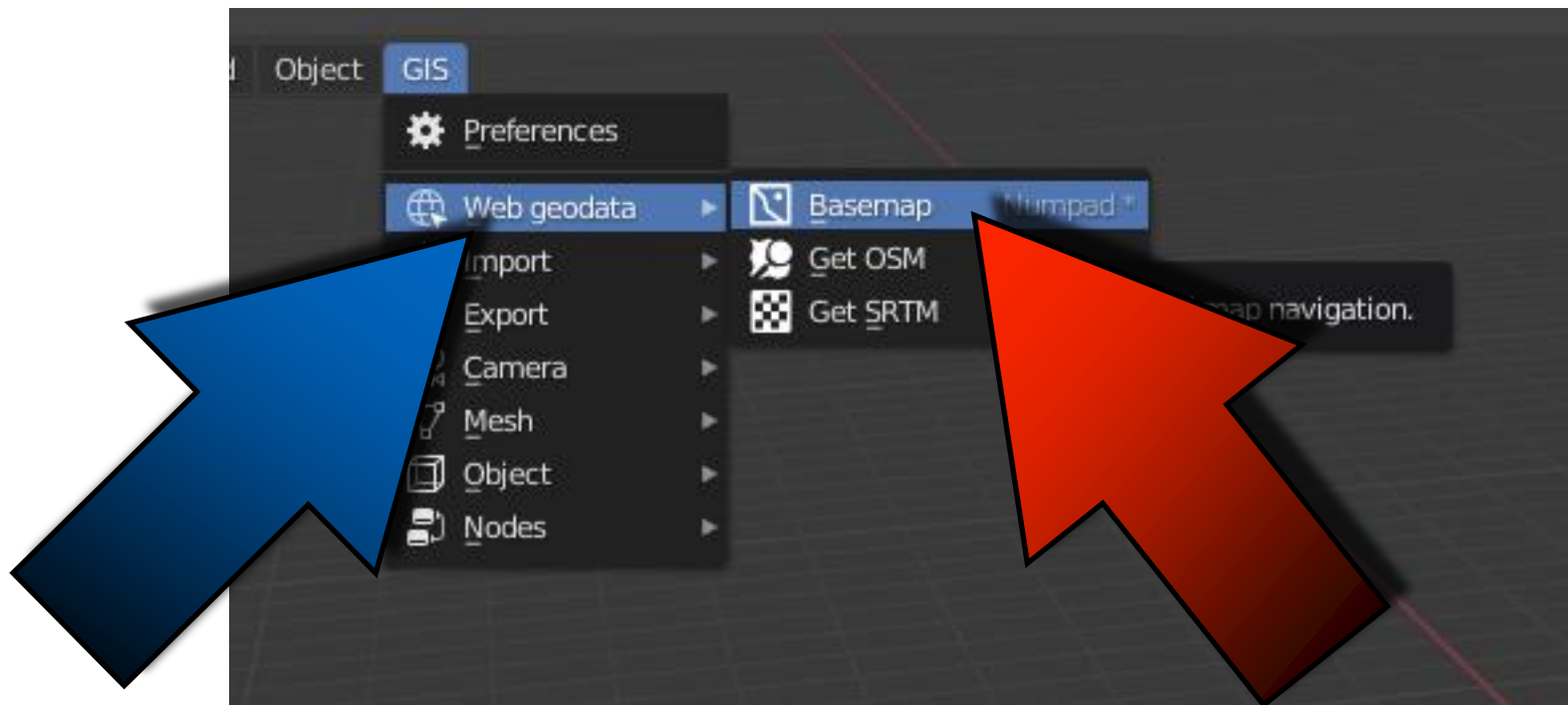


HERE WE WILL SEE THE INSTALLED ADD-ON

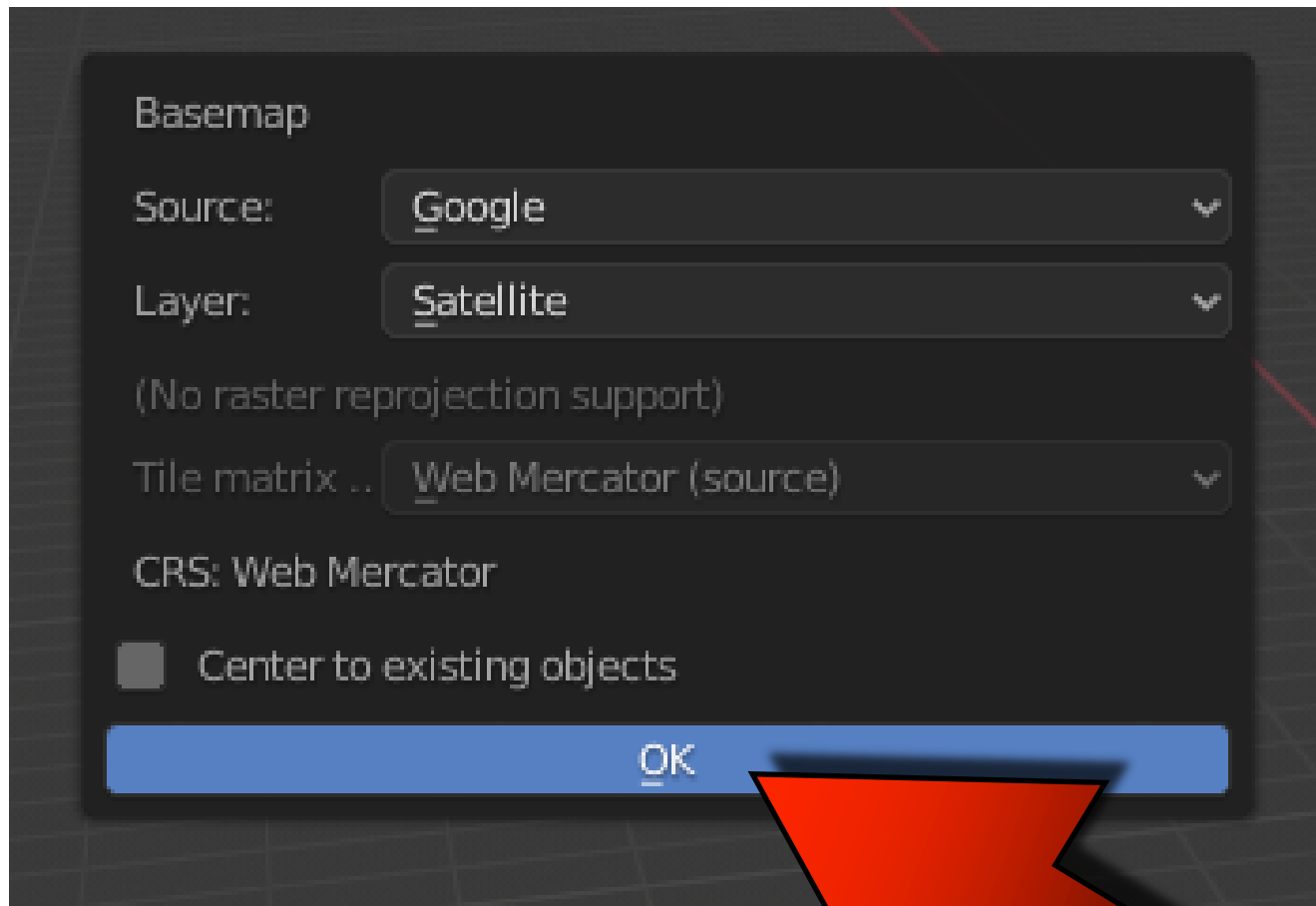


CAMERA

SELECT WEB GEODATA BASEMAP



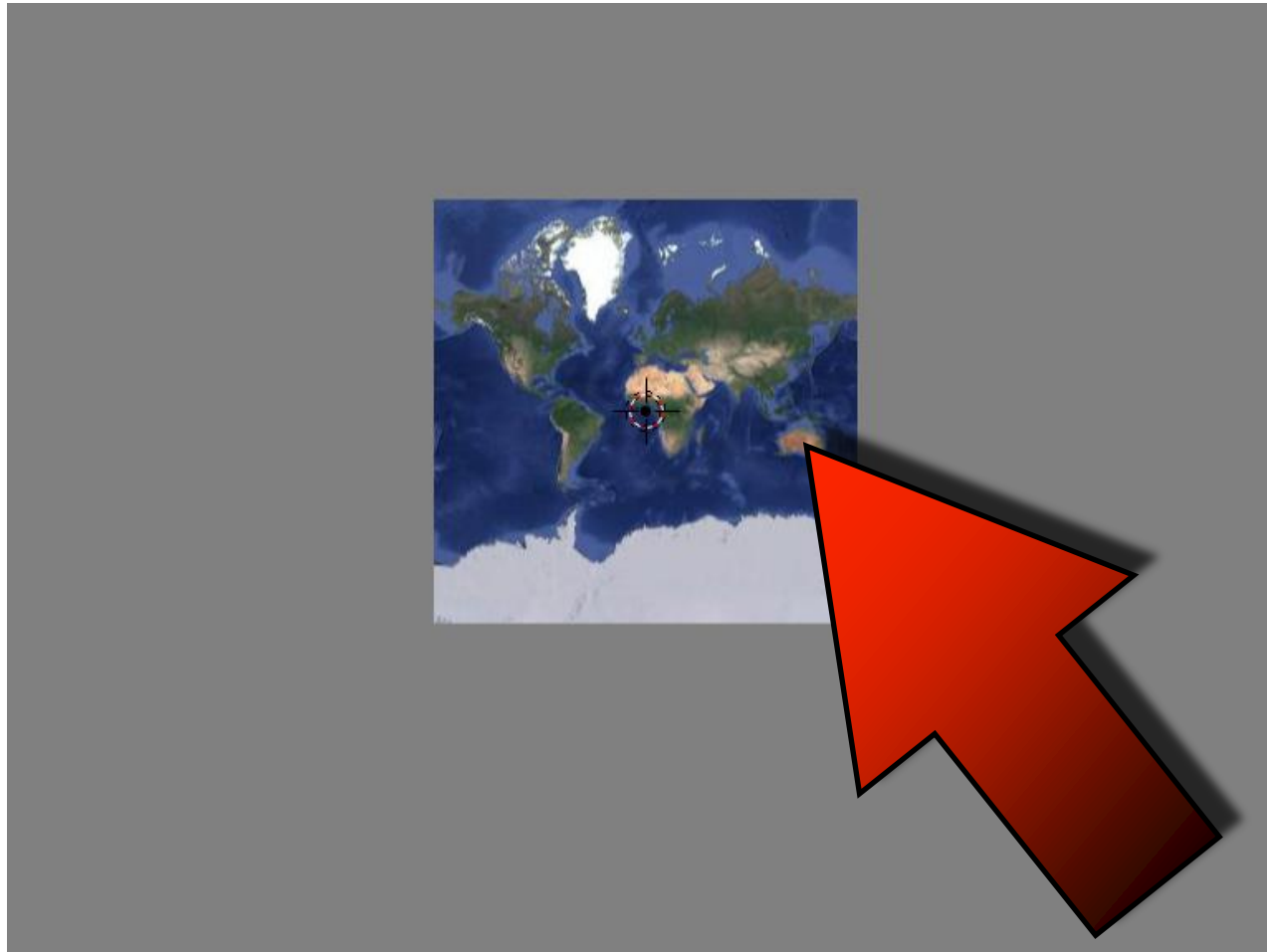
THEN CLICK ON **OK**



CAMERA

POWER OF AR AND VR

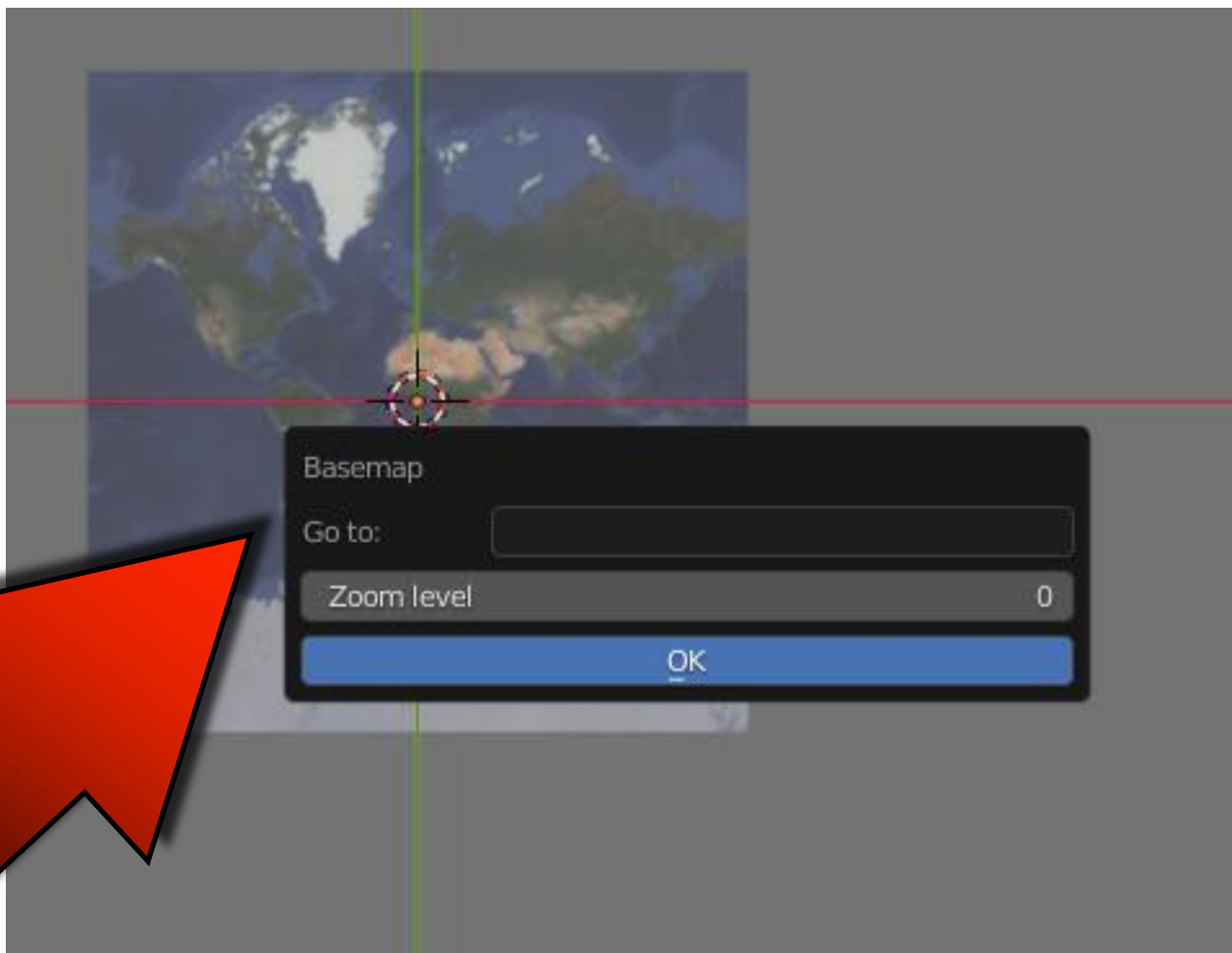
**AFTER A WHILE YOU WILL SEE
A MAP DOWNLOADED FROM
THE INTERNET**



CAMERA

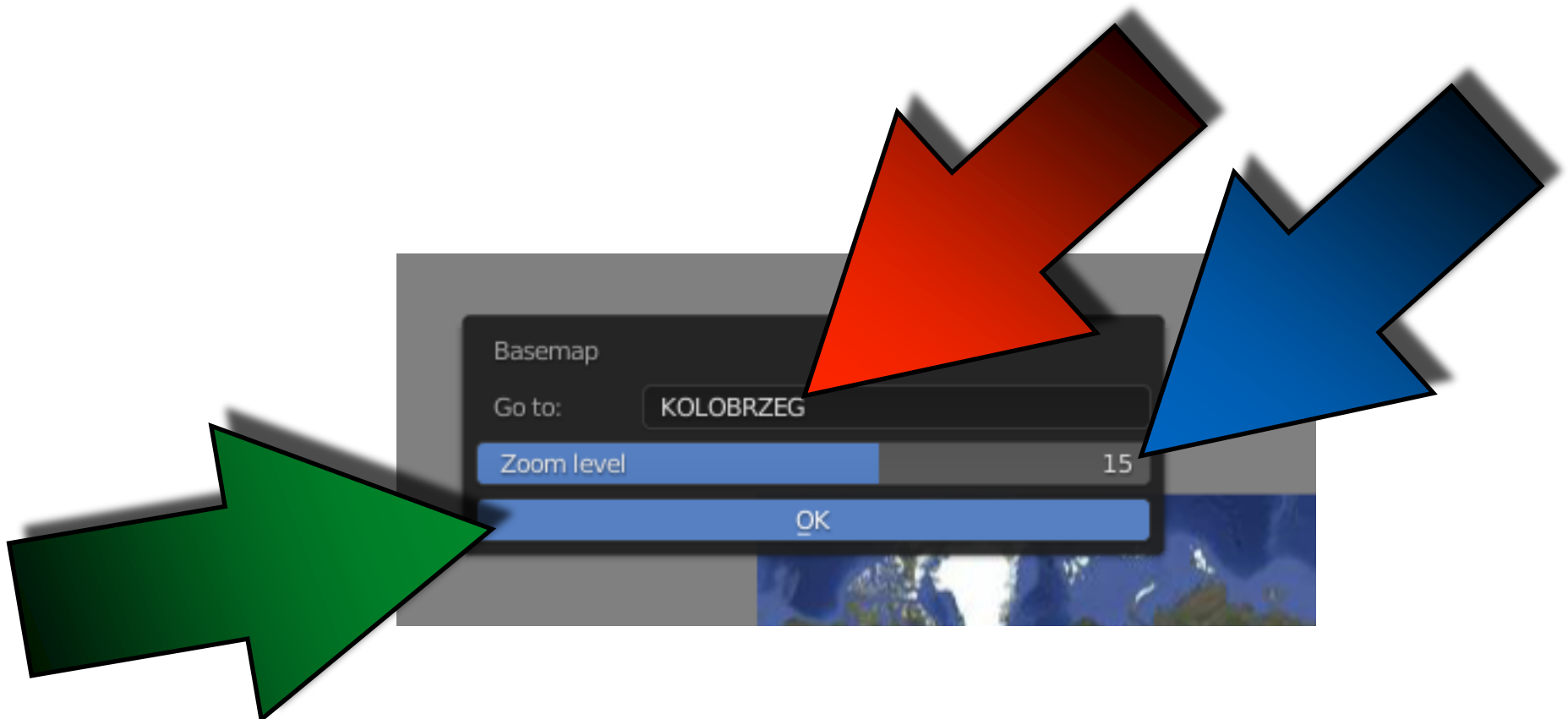
POWER OF AR AND VR

**PRESS THE G KEY TO VIEW
BASEMAP WINDOW**



CAMERA

**WRITE KOLOBRZEG
AND ZOOM LEVEL SET TO 15
AND PRESS OK**



CAMERA



POWER OF AR AND VR

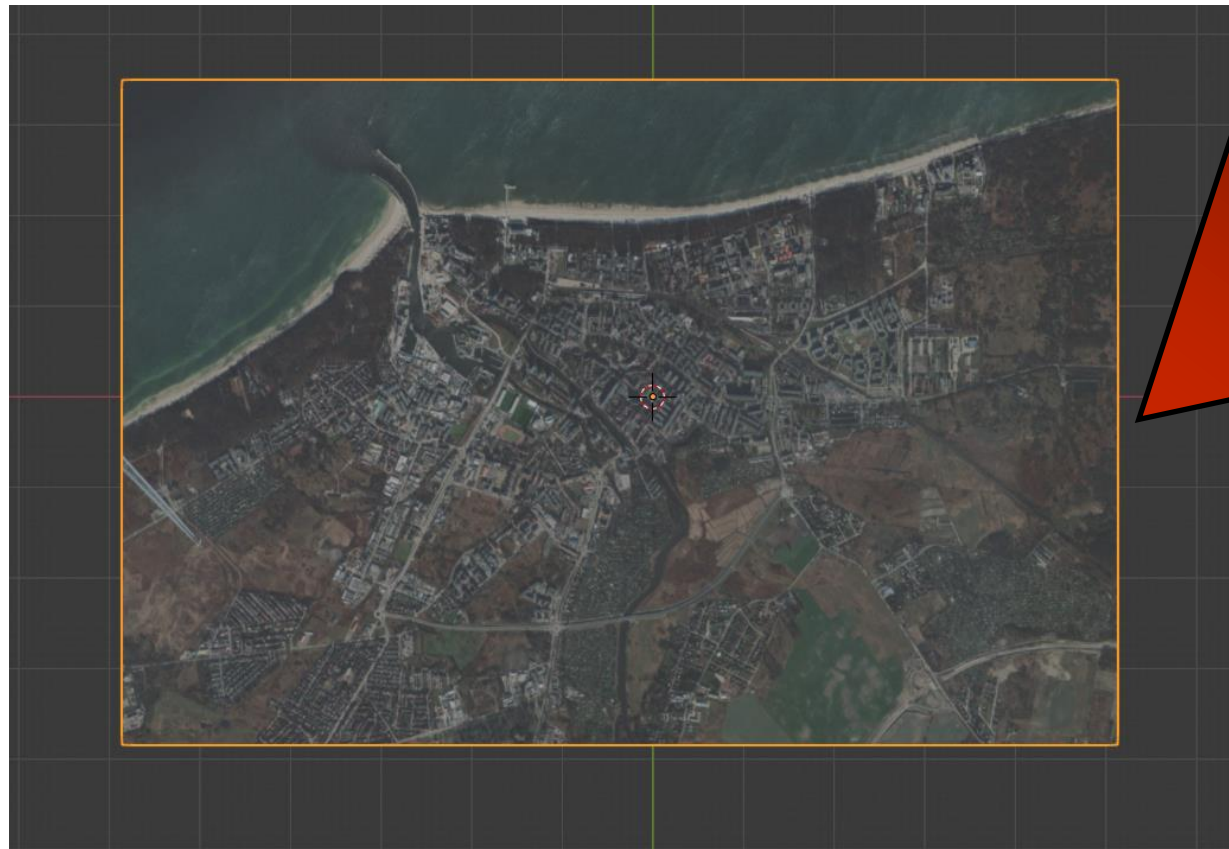


YOU WILL SEE THIS **MAP**



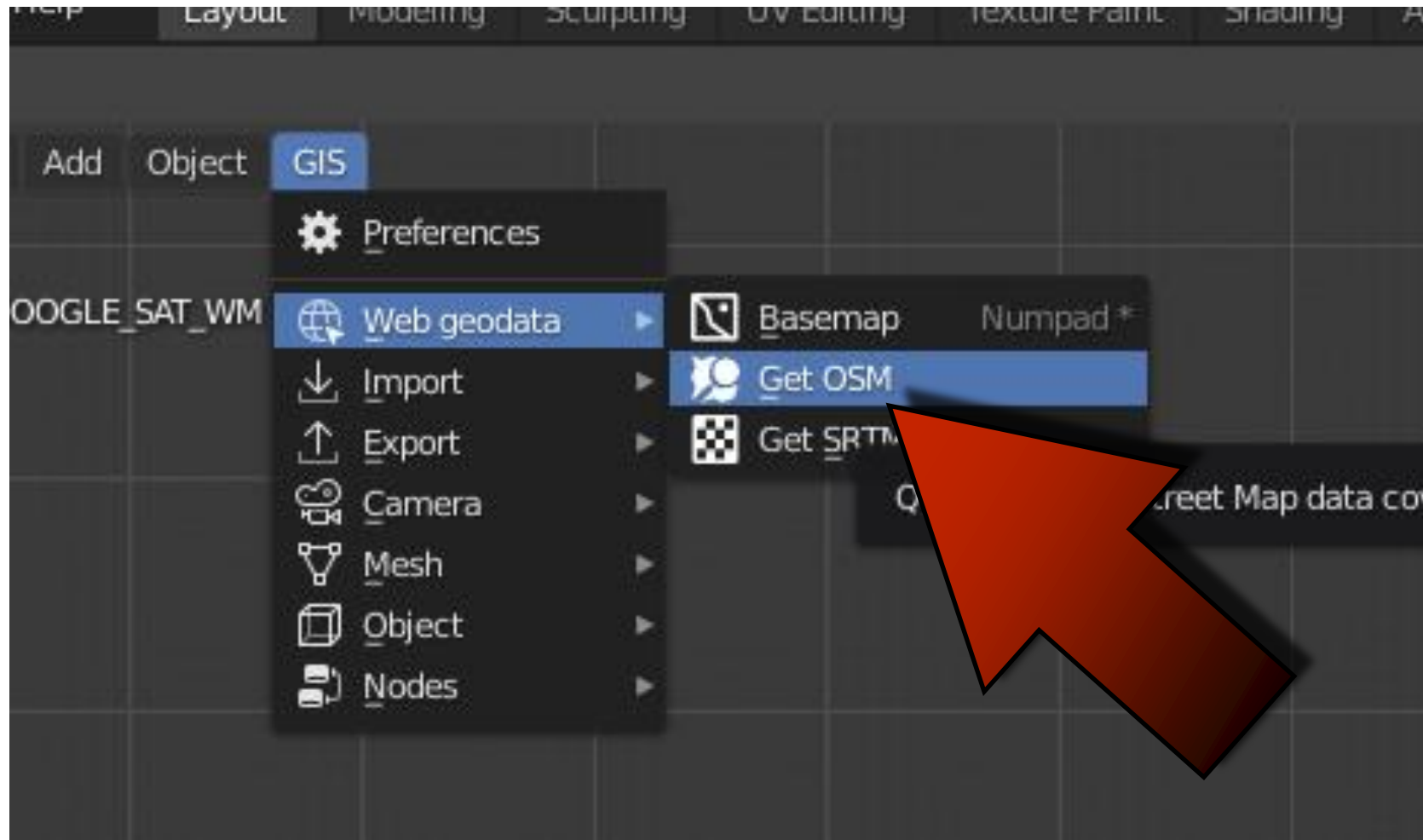
CAMERA

**PRESS THE E KEY TO CUT OUT
A PART OF THE MAP**

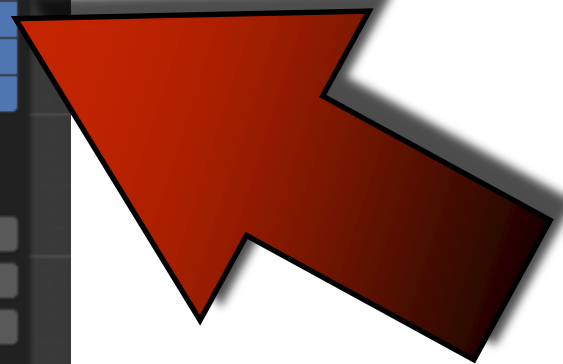
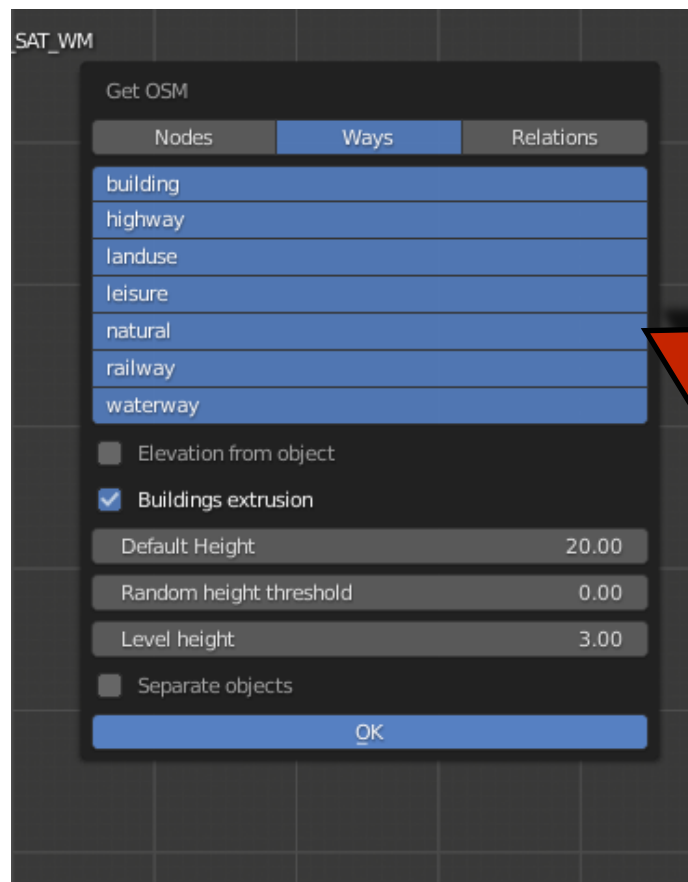


CAMERA

CHOOSE **GET OSM** NOW



SELECT ALL ITEMS WHILE HOLDING THE SHIFT KEY



POWER OF AR AND VR

PRESS **THE OK KEY** TO VIEW A GENERATED 3D MAP

SAT_WM

Get OSM

Nodes	Ways	Relations
building		
highway		
landuse		
leisure		
natural		
railway		
waterway		

Elevation from object

Buildings extrusion

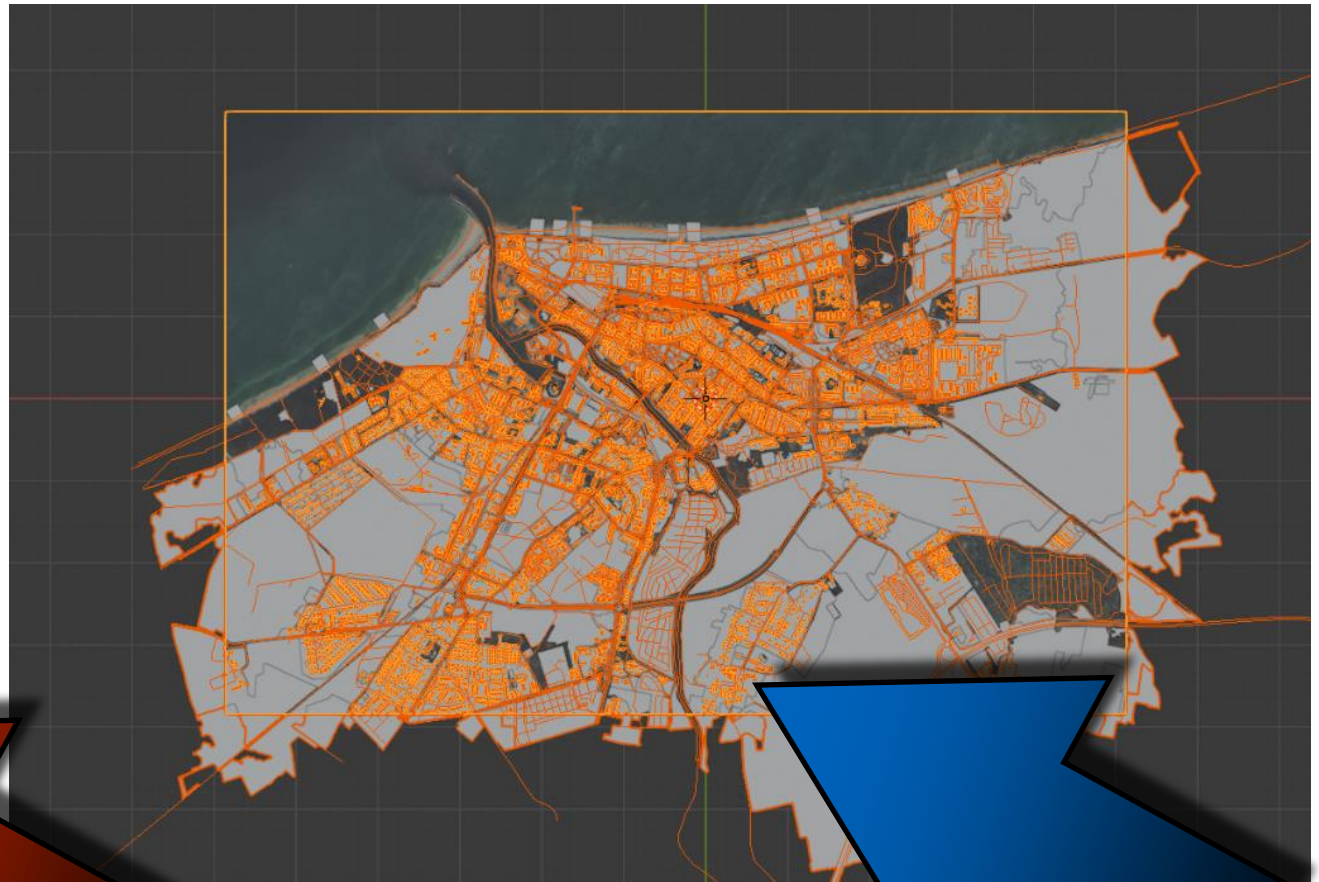
Default Height 20.00

Random height threshold 0.00

Level height 3.00

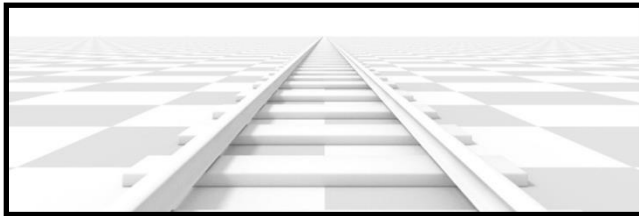
Separate objects

OK



CAMERA

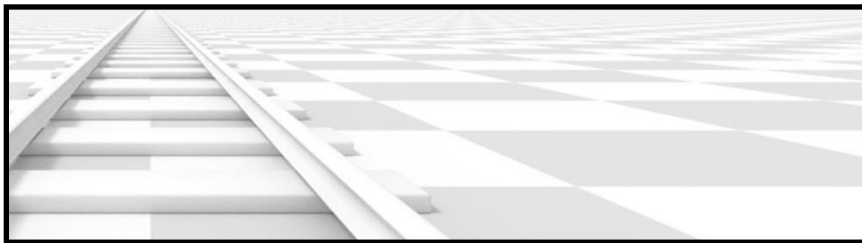
WE HAVE THREE KINDS OF CAMERAS



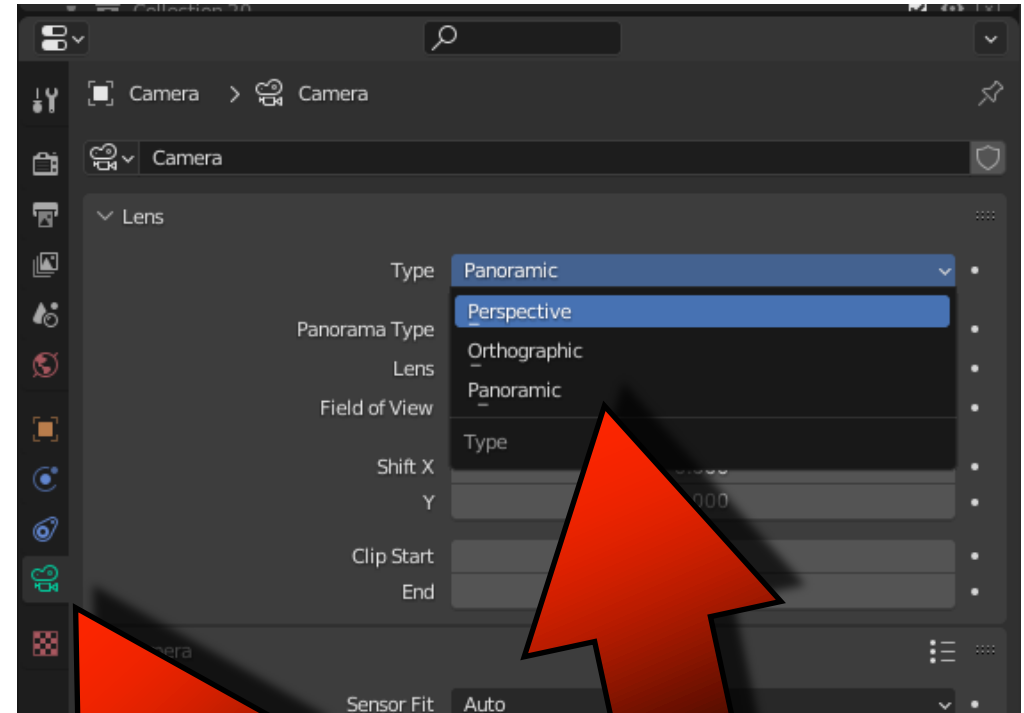
PERSPECTIVE



ORTHOGRAPHIC



PANORAMIC



START ANIMATION

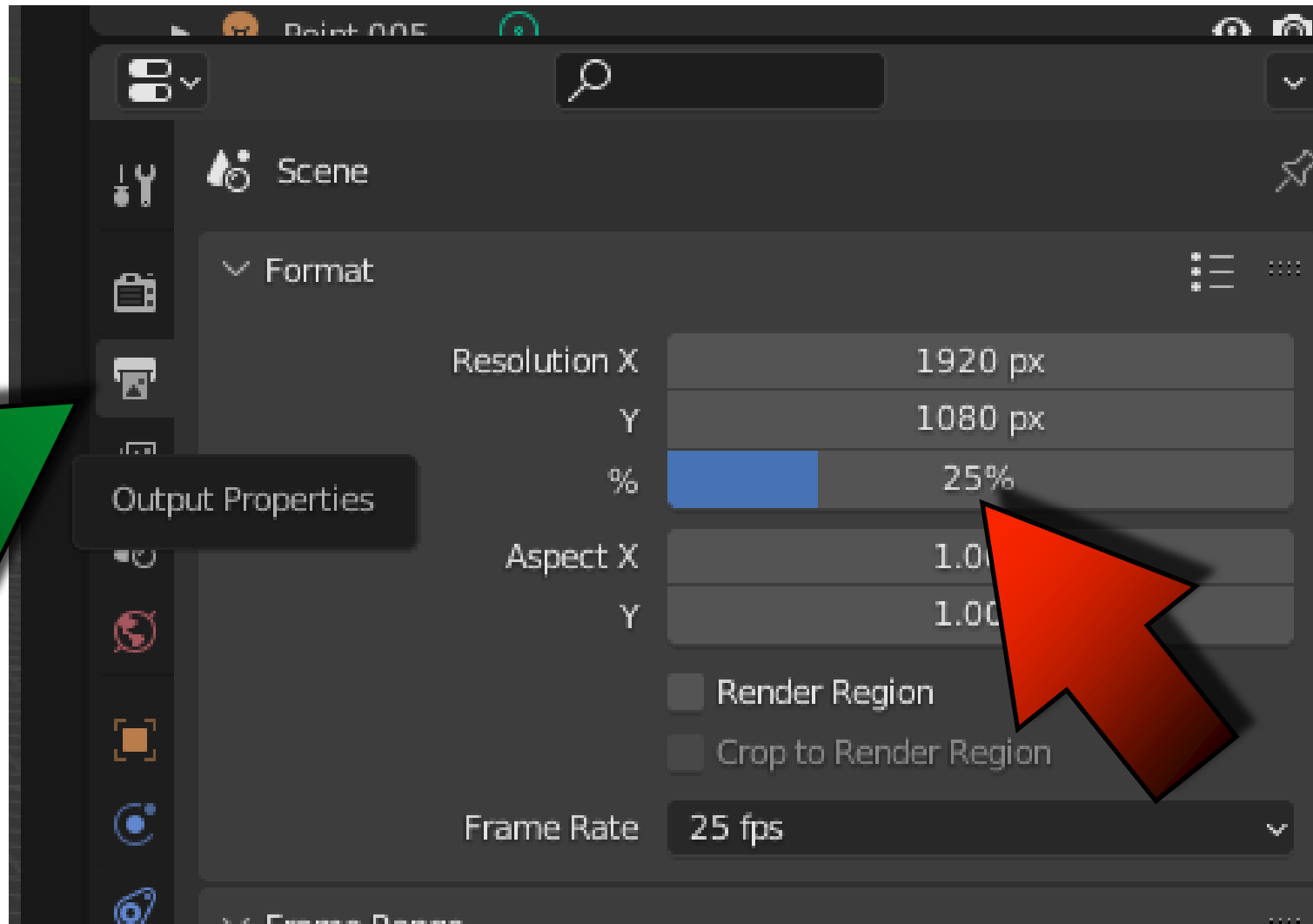


<https://youtu.be/qPJnOX14dQ0>

POWER OF AR AND VR

FOR FASTER ANIMATION CREATION

ENTER **OUTPUT PROPERTIES** AND SELECT **25%**




CAMERA

SET ANIMATION FOR 500 FRAMES

Frame Range

Frame Start	1
End	500
	1

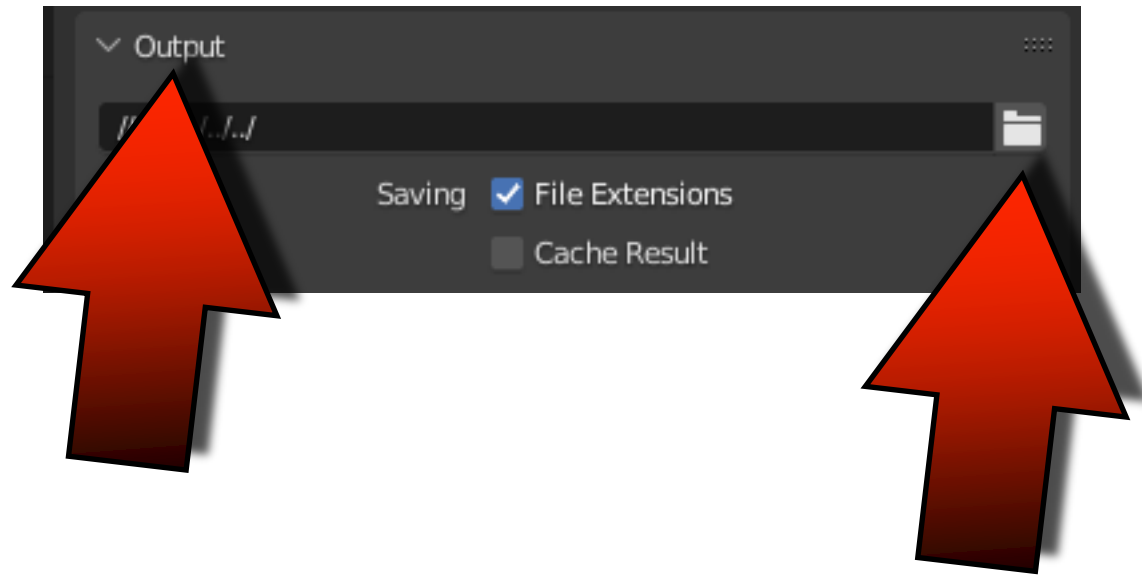
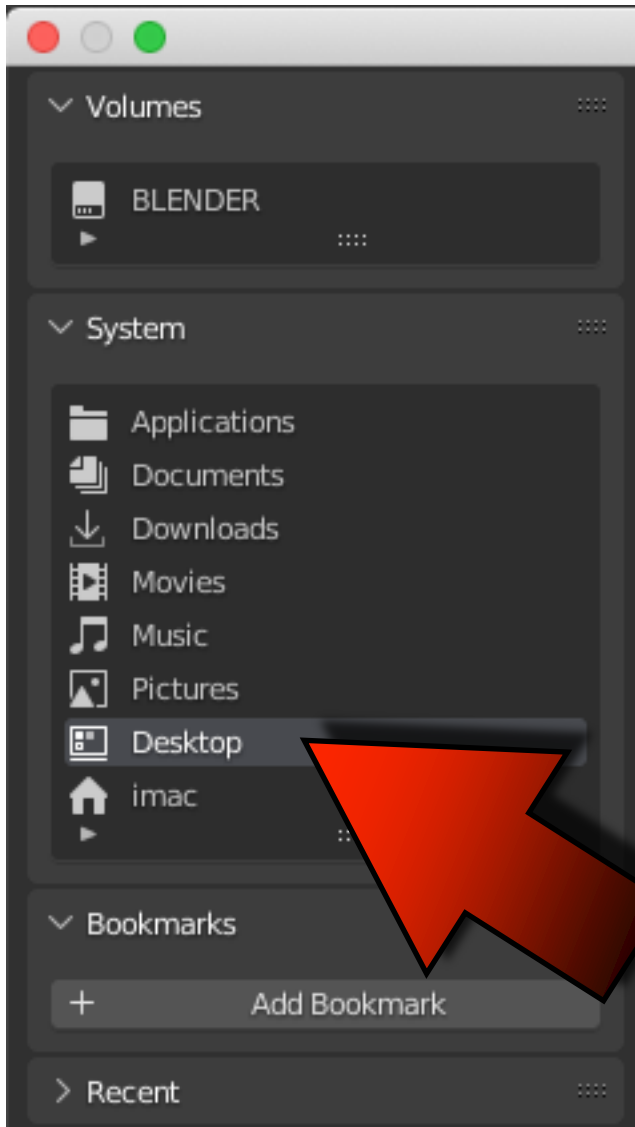




POWER OF AR AND VR



SET ANIMATION SAVING ON THE DESKTOP

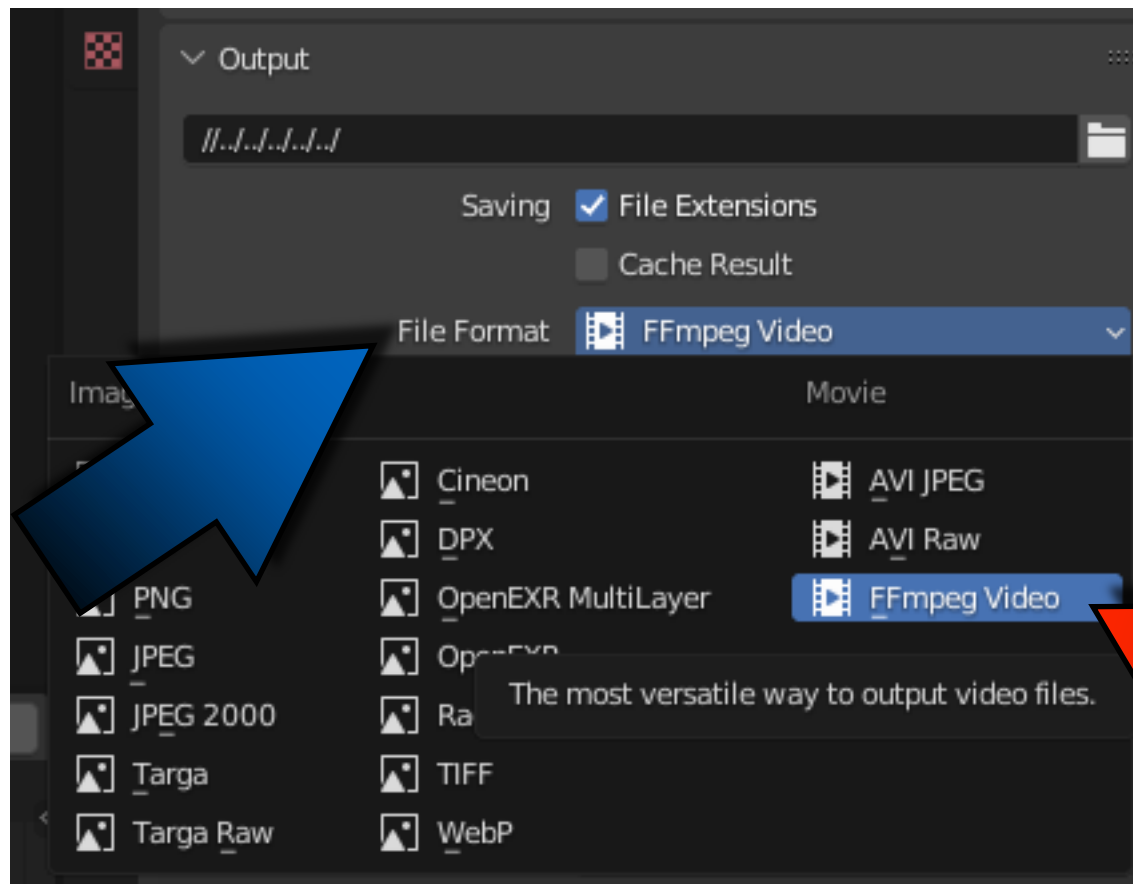


CAMERA

POWER OF AR AND VR

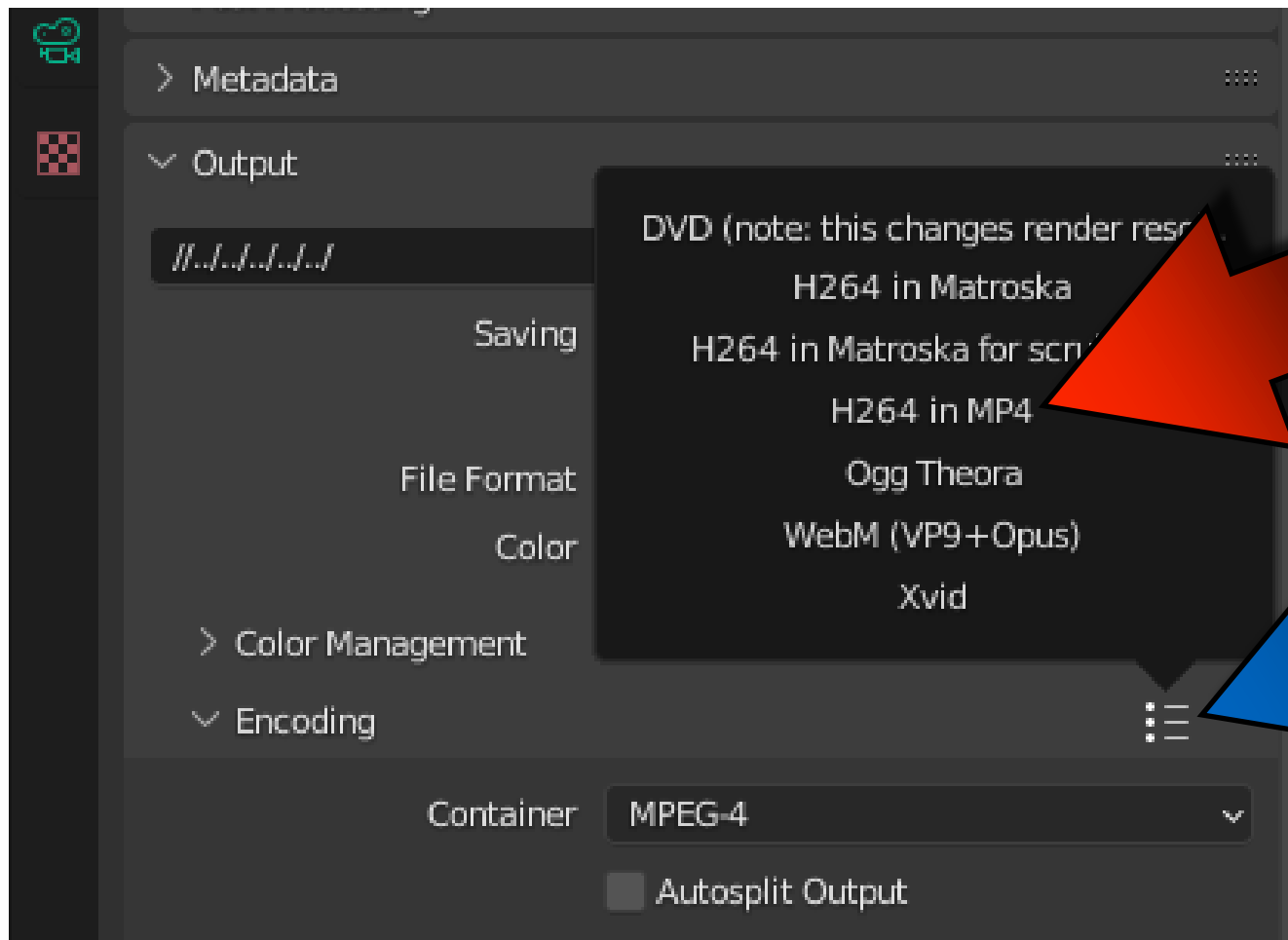
CHOOSE FILE FORMAT

FFMPEG VIDEO



CAMERA

CLICK ON THE ENCODING ICON
AND CHOOSE H264 IN MP4



The screenshot shows a video encoding software interface. The 'Output' section is expanded, showing a list of output formats. A red arrow points to 'H264 in MP4', and a blue arrow points to the 'Encoding' section. The 'Container' is set to 'MPEG-4' and 'Autosplit Output' is unchecked.

Metadata

Output

File Format

Color

Color Management

Encoding

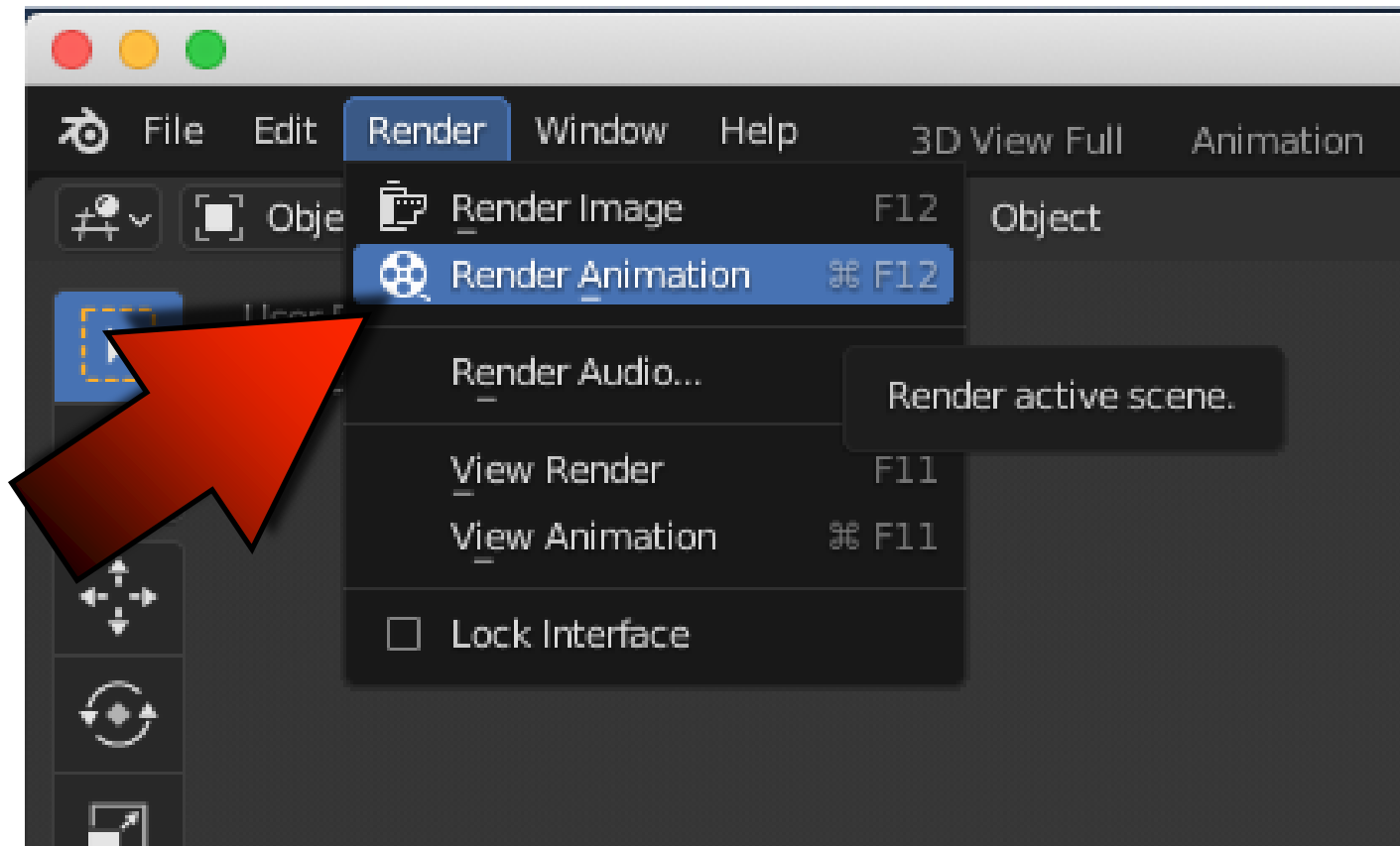
Container: MPEG-4

Autosplit Output

Output Format List:

- DVD (note: this changes render res...
- H264 in Matroska
- H264 in Matroska for scr...
- H264 in MP4**
- Ogg Theora
- WebM (VP9+Opus)
- Xvid

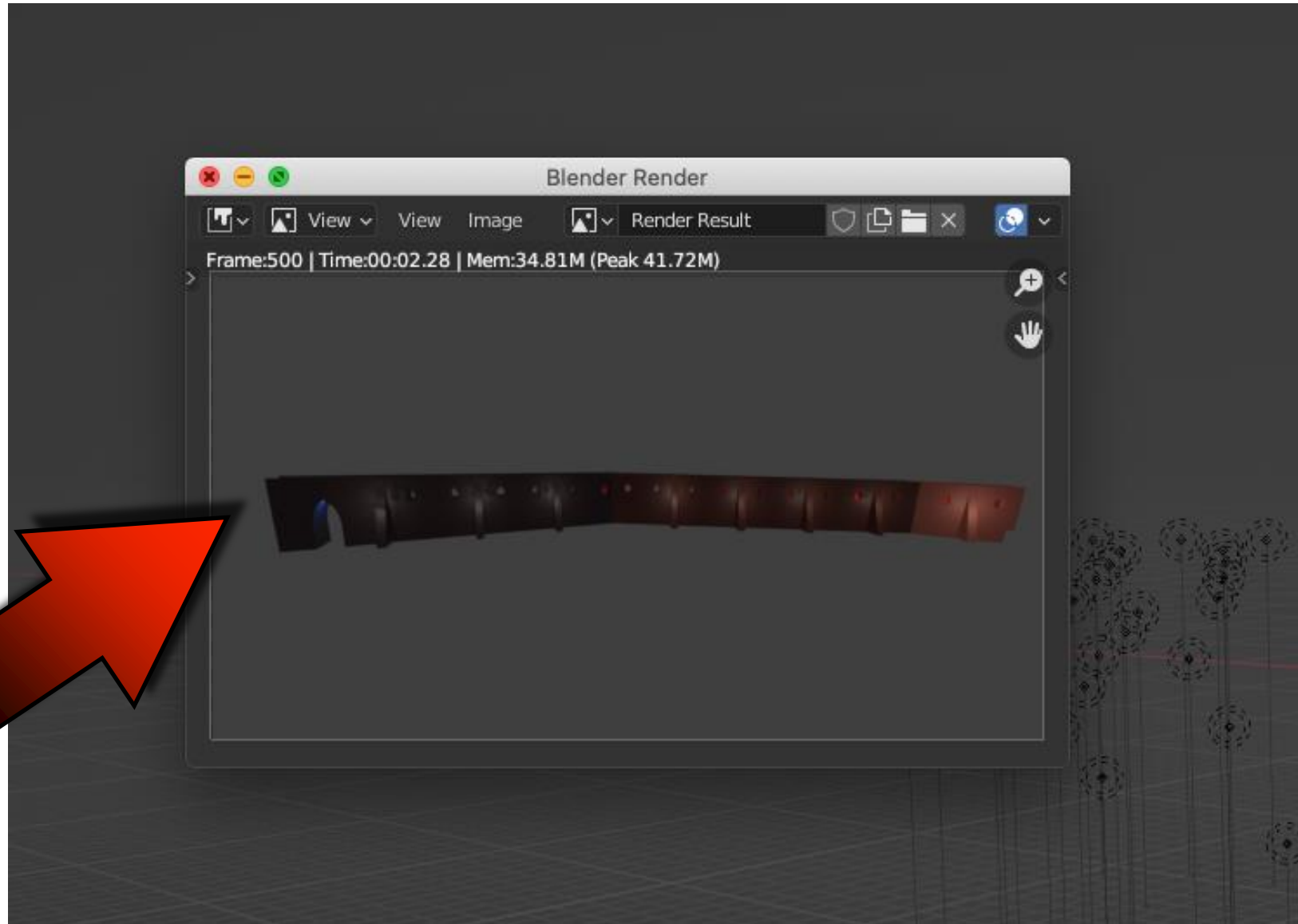
NEXT CHOOSE RENDER ANIMATION



CAMERA

POWER OF AR AND VR

WAIT UNTIL ANIMATION ARISES



CAMERA

MAKE SUCH ANIMATION
USE MODIFIERS, MULTIPLE CAMERAS, DIFFERENT LIGHTS AND CURVES



<https://youtu.be/RmdIXOined4>

**FOR THE PRESENTATION OF PROJECTS
WE ARE VERY OFTEN CREATING DIFFERENT ANIMATIONS**



<https://youtu.be/xFcThHvW4Lk>

POWER OF AR AND VR

**THANK YOU FOR
YOUR ATTENTION**



**Co-funded by
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JACEK KAWAŁEK