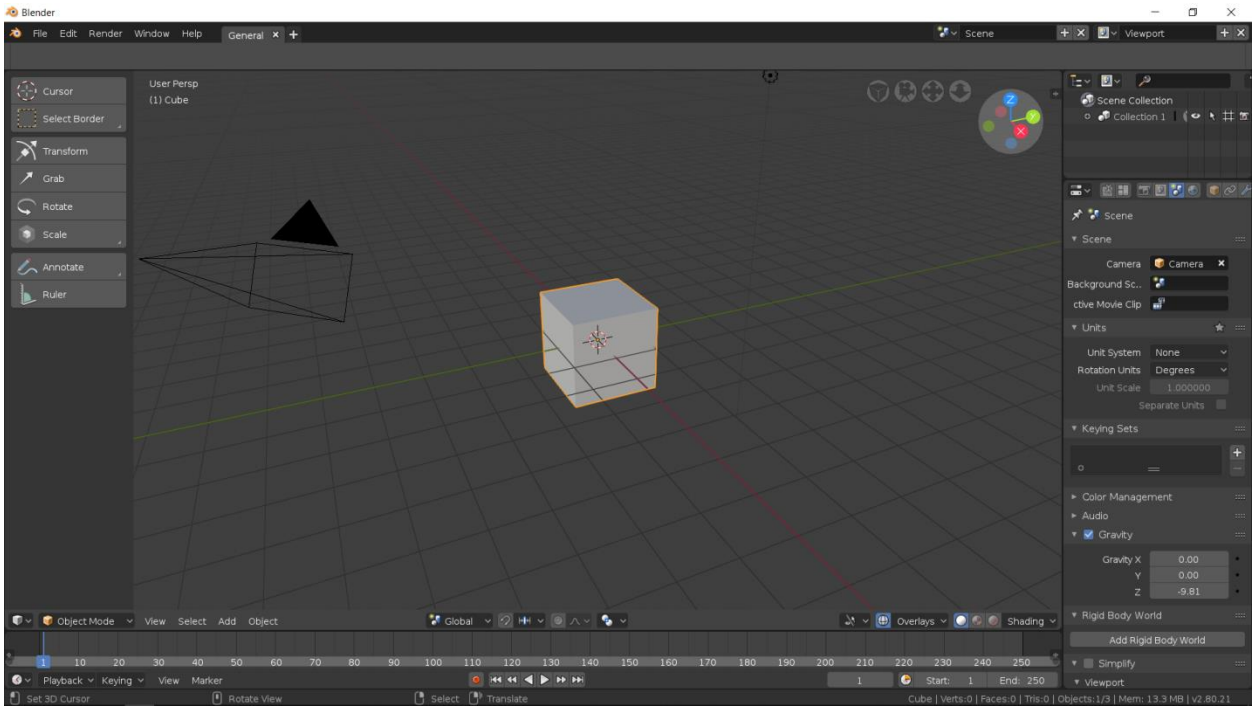
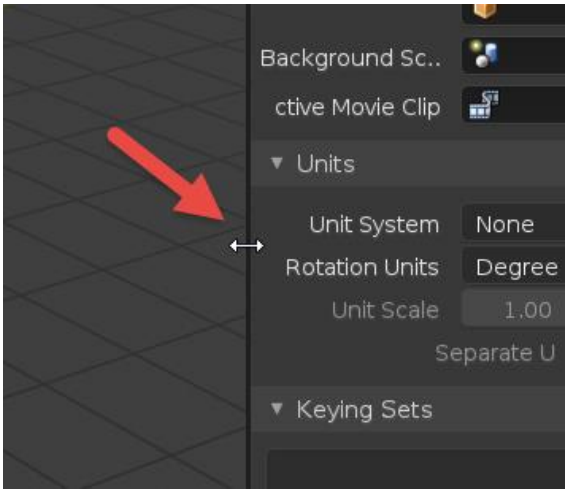
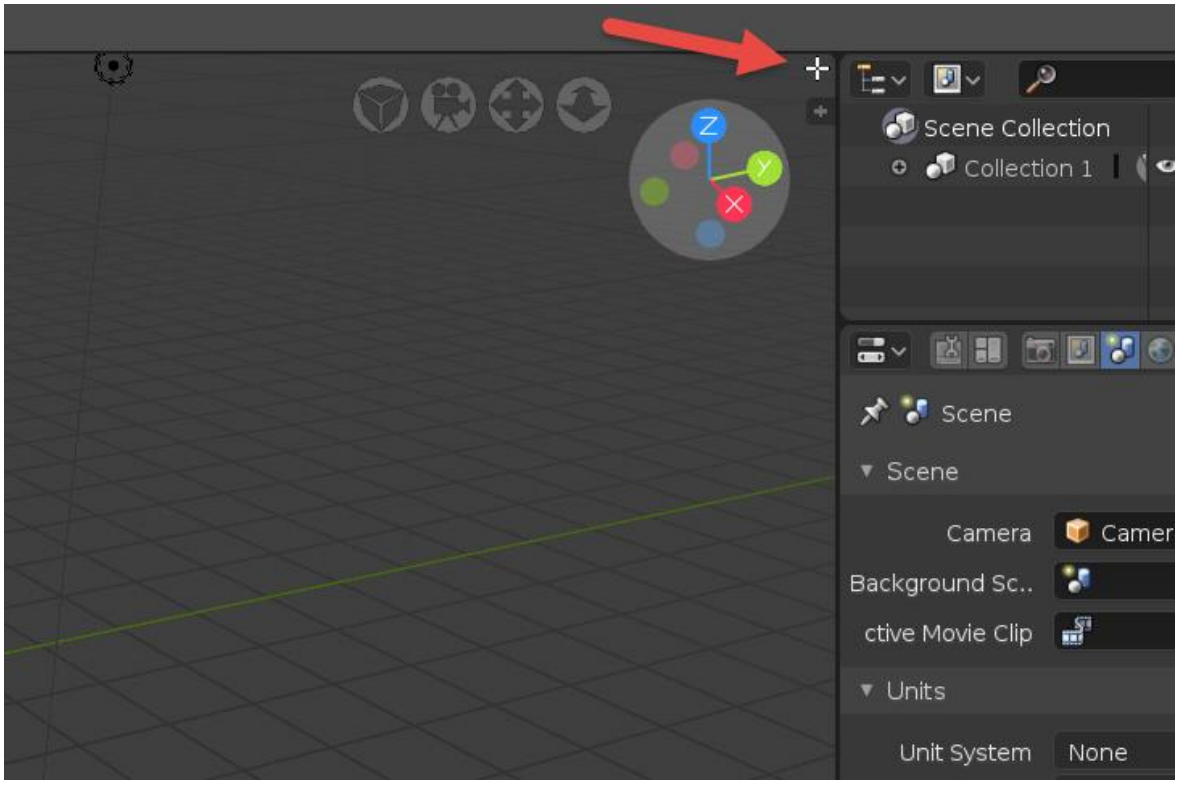
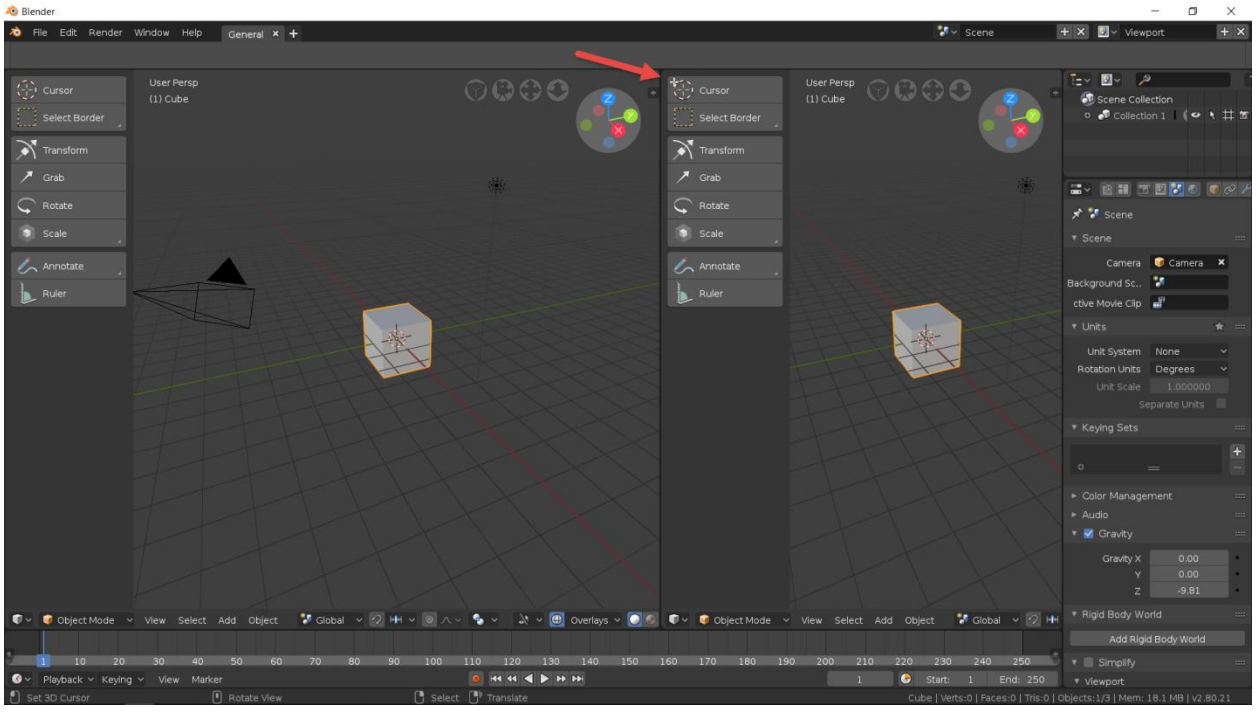
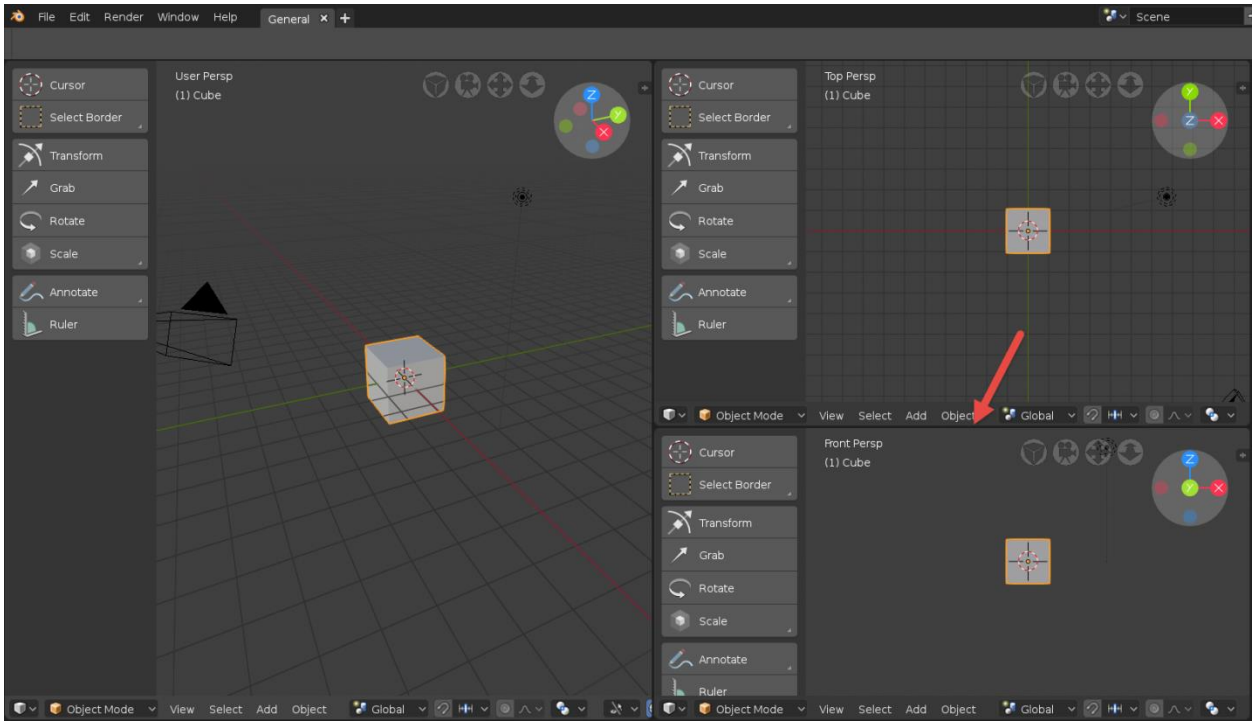
Chapter 1: Using Blender 2.8 UI, Shading and Navigator Widget

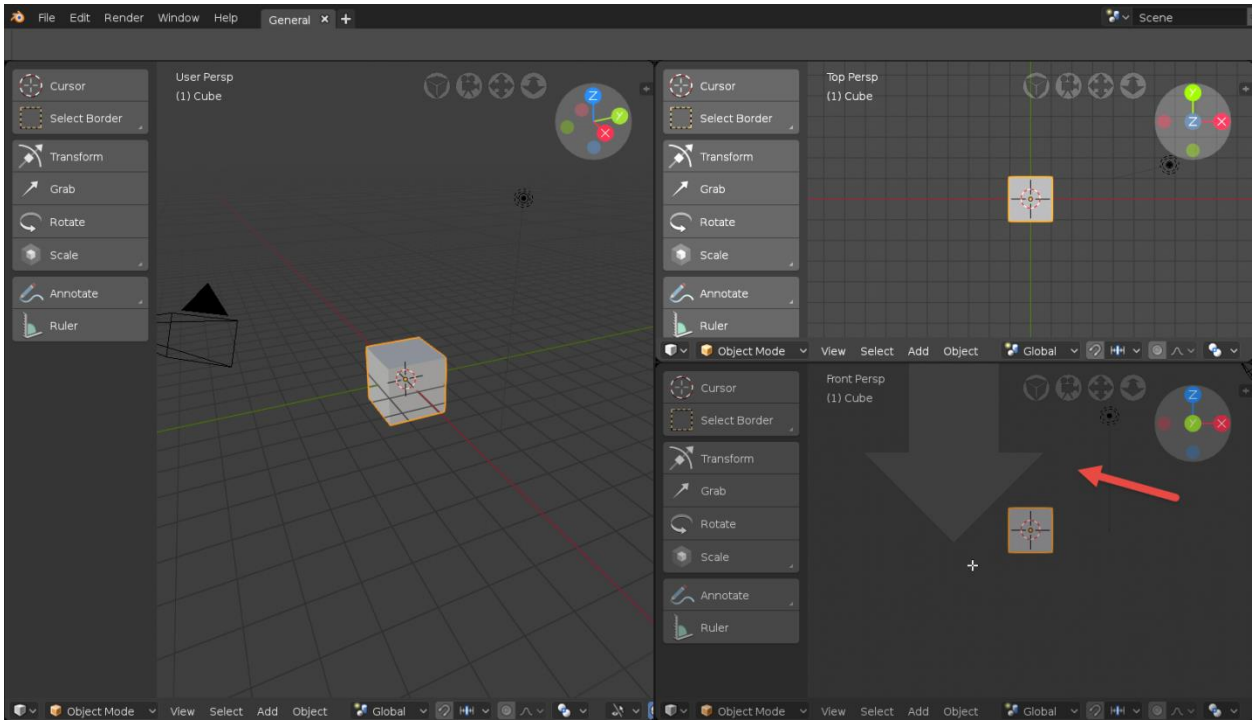


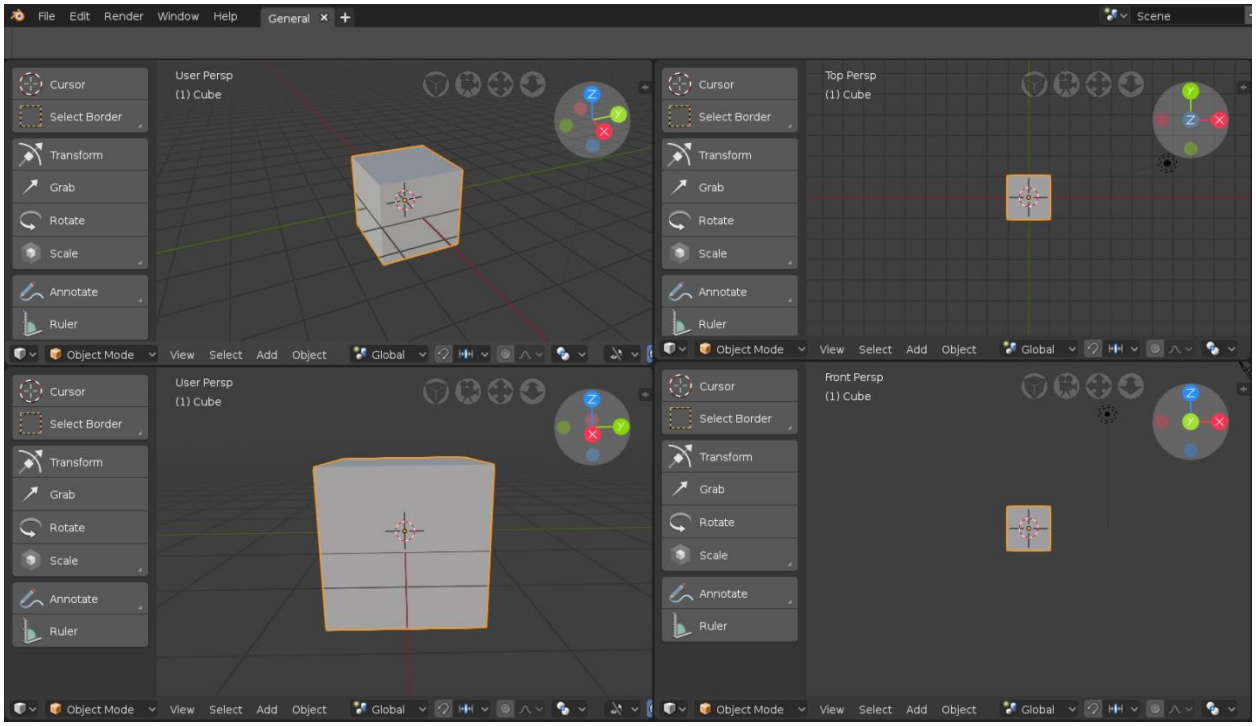


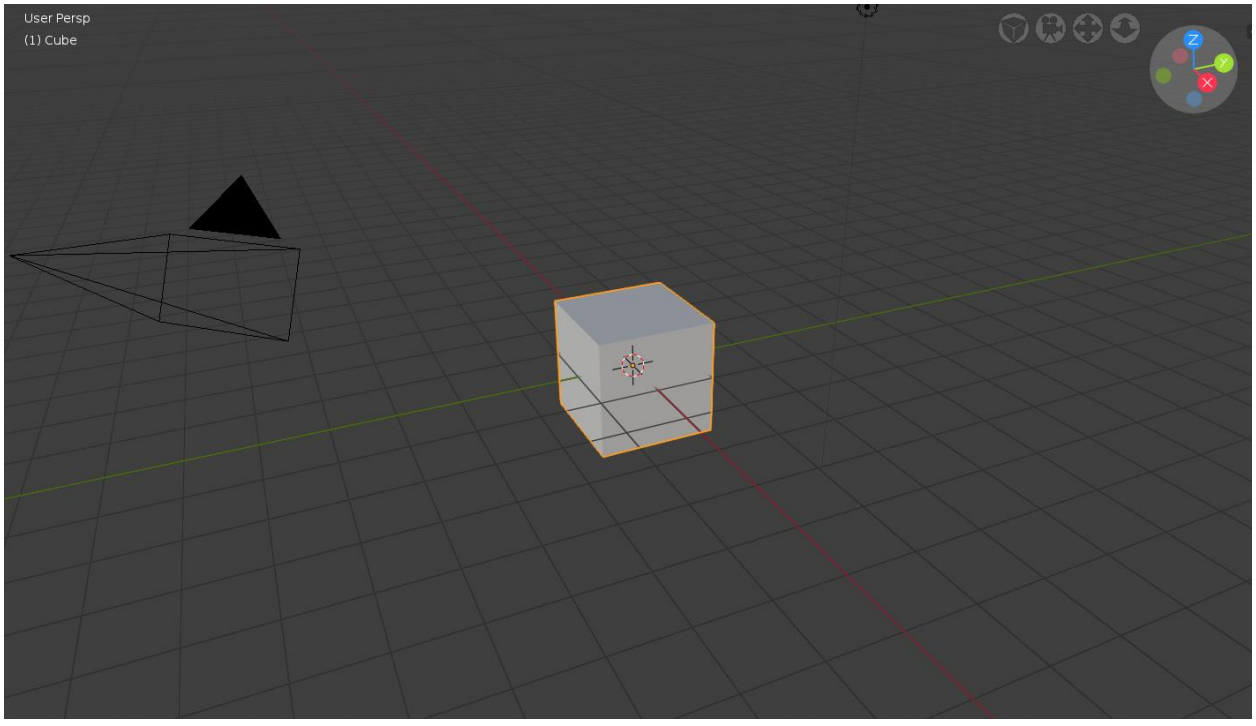

Scene Collection
Collection 1
Scene
Scene
Camera
Background Sc..
ctive Movie Clip
Units
Unit System
None

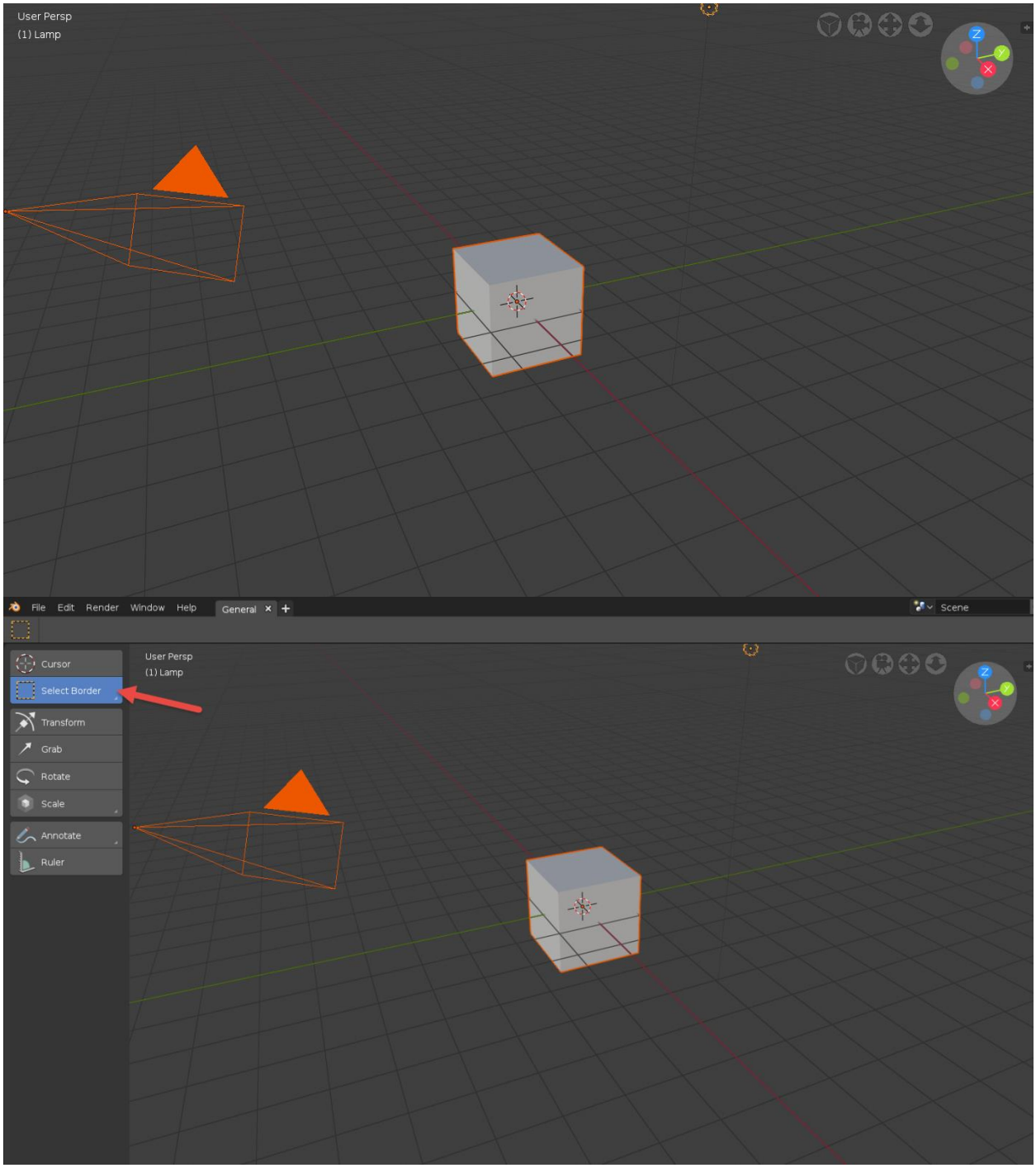

Blender
File Edit Render Window Help
General
Scene
Viewport
Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Cube
Scene Collection
Collection 1
Scene
Camera
Background Sc..
ctive Movie Clip
Units
Unit System
None
Rotation Units
Degrees
Unit Scale
Separate Units
Keying Sets
Color Management
Audio
Gravity
Gravity X
Y
Z
Rigid Body World
Add Rigid Body World
Simplify
Viewport
Object Mode
View
Select
Add
Object
Global
Overlays
Playback
Keying
Marker
Start:
End:
Set 3D Cursor
Rotate View
Translate

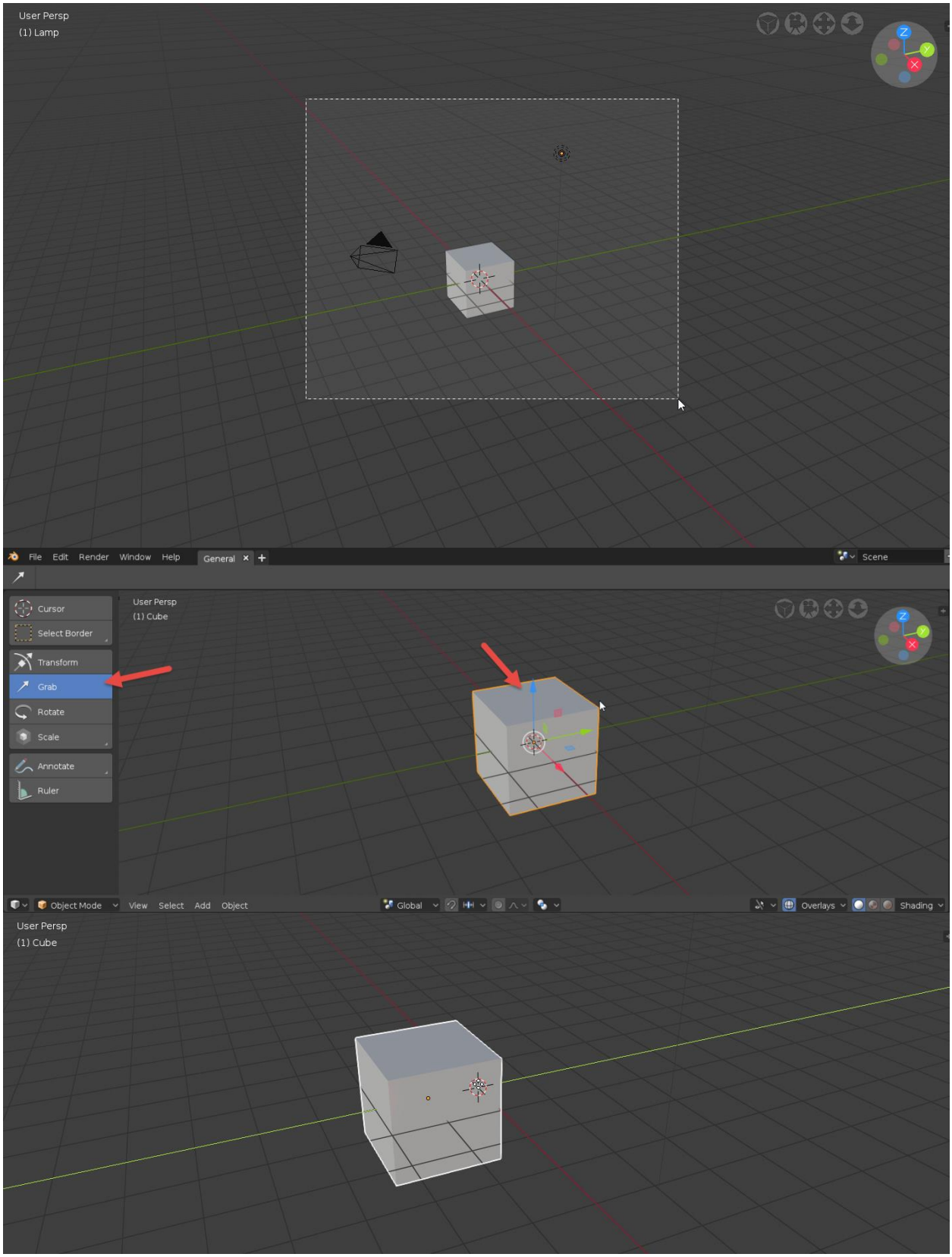

File
Edit
Render
Window
Help
General
Scene
User Persp
(1) Cube
Top Persp
(1) Cube
Front Persp
(1) Cube
Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
Object Mode
View
Select
Add
Object
Global

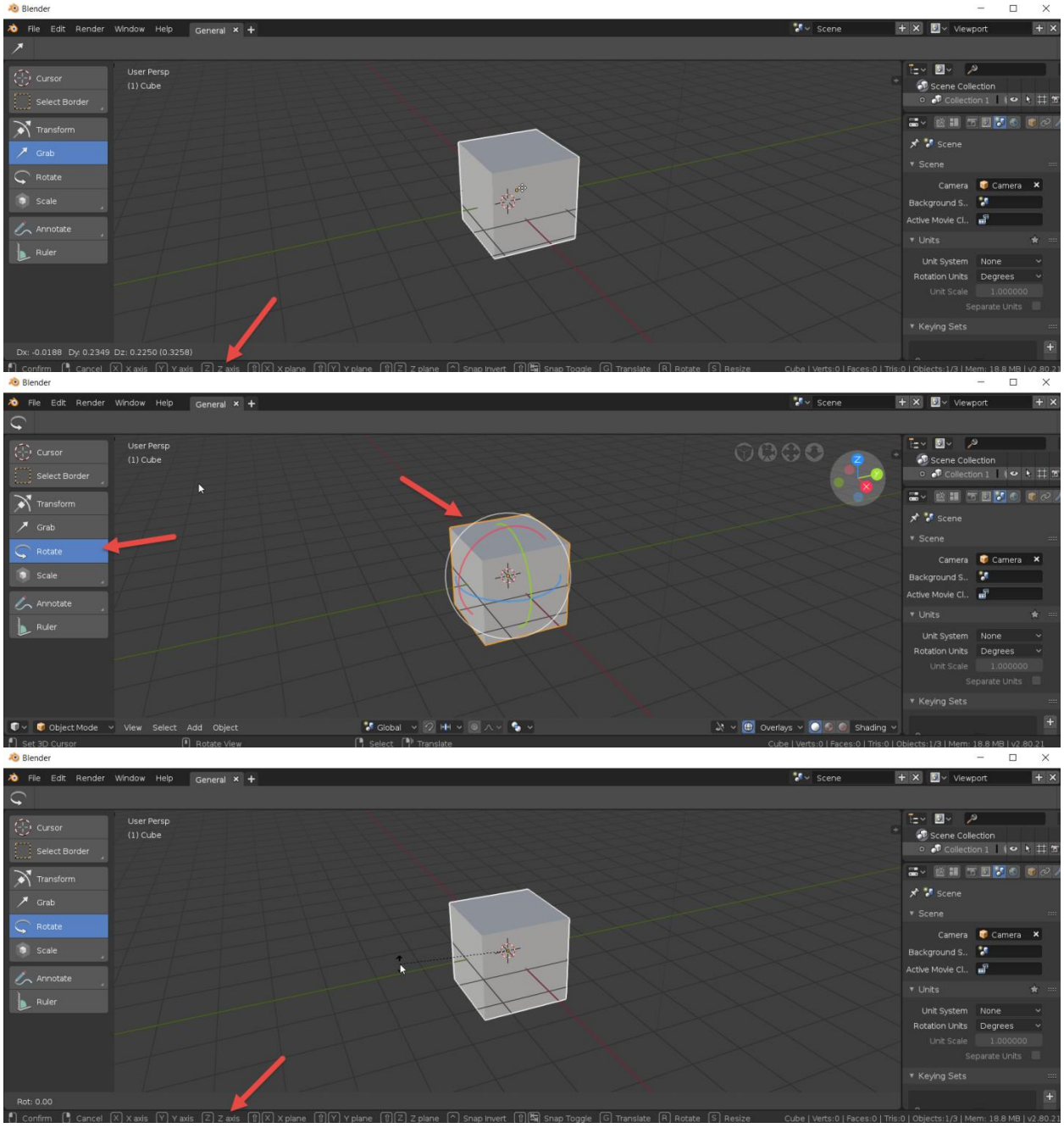

File
Edit
Render
Window
Help
General
Scene
User Persp
(1) Cube
Top Persp
(1) Cube
Front Persp
(1) Cube
Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
Object Mode
View
Select
Add
Object
Global

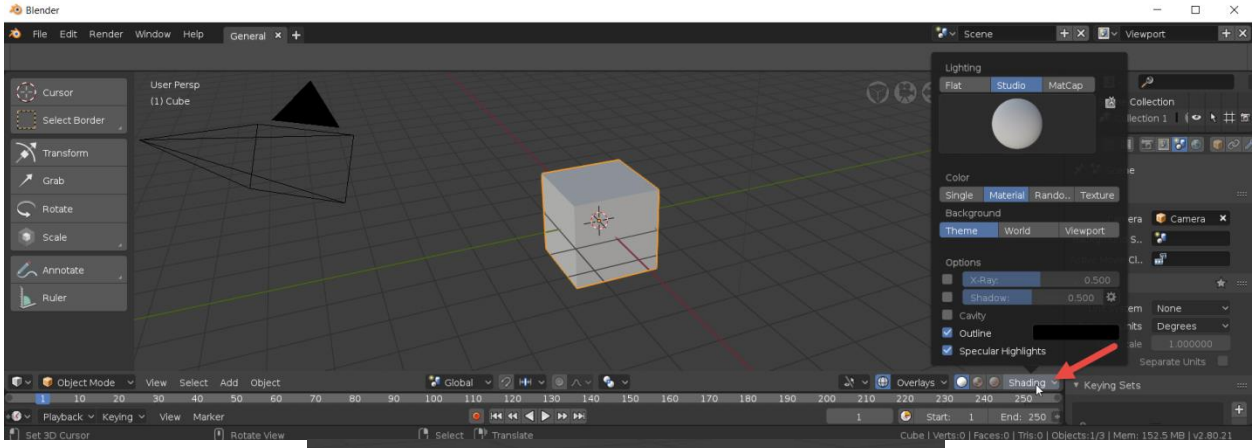

File
Edit
Render
Window
Help
General
Scene
Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Cube
Top Persp
(1) Cube
Front Persp
(1) Cube
Object Mode
View
Select
Add
Object
Global

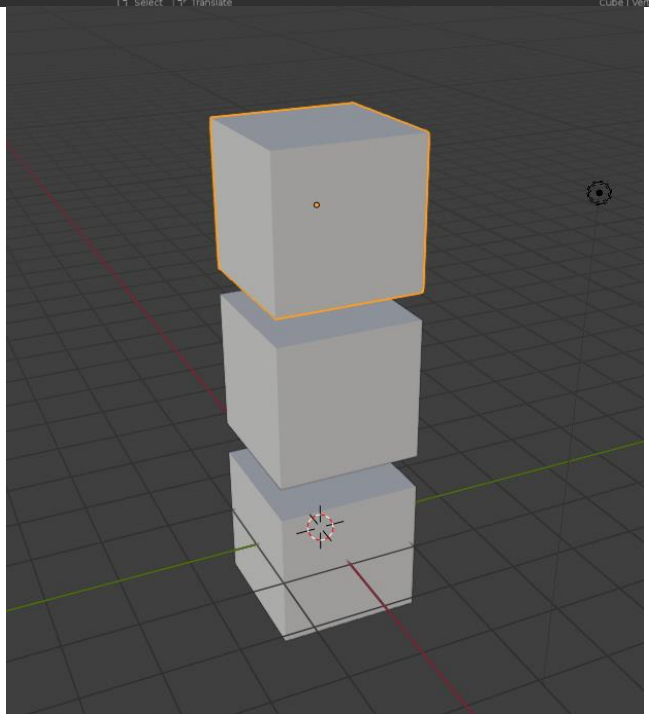

User Persp
(1) Cube

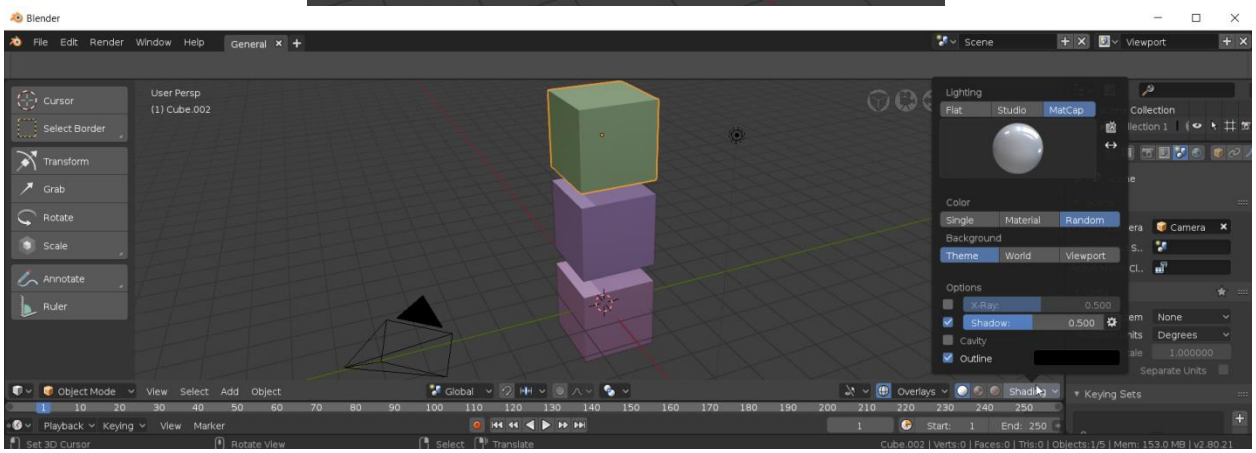

User Persp
(1) Lamp
File
Edit
Render
Window
Help
General
Scene
Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Lamp

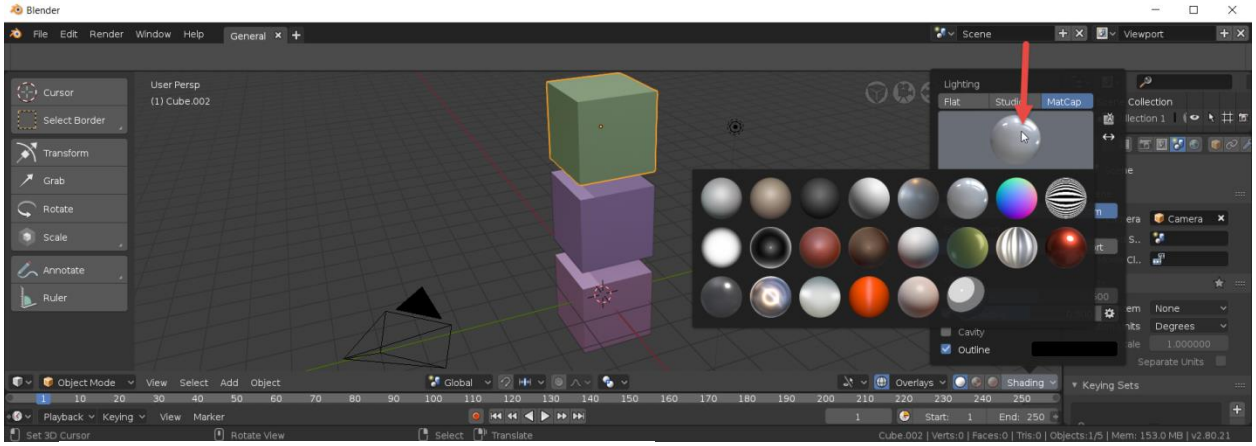

User Persp
(1) Lamp
File
Edit
Render
Window
Help
General
Scene
Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Cube
Object Mode
View
Select
Add
Object
Global
Overlays
Shading
User Persp
(1) Cube

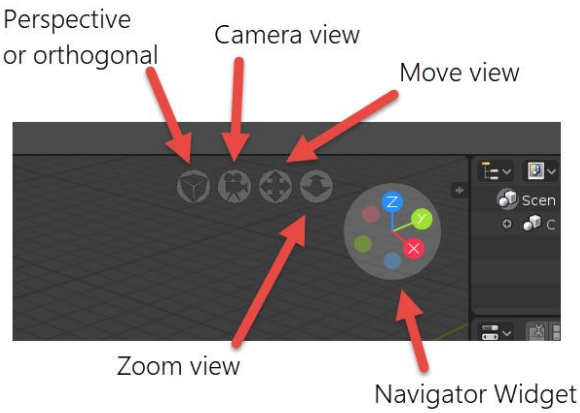

Blender
File Edit Render Window Help
General
Scene
Viewport
Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Cube
Scene Collection
Collection 1
Camera
Background S..
Active Movie Cl..
Units
Unit System None
Rotation Units Degrees
Unit Scale 1.000000
Separate Units
Keying Sets
Dx: -0.0188 Dy: 0.2349 Dz: 0.2250 (0.3258)
Confirm Cancel X axis Y axis Z axis X plane Y plane Z plane Snap Invert Snap Toggle Translate Rotate Resize
Object Mode View Select Add Object
Global
Overlays
Shading
Set 3D Cursor
Rotate View
Select
Translate
Rot: 0.00

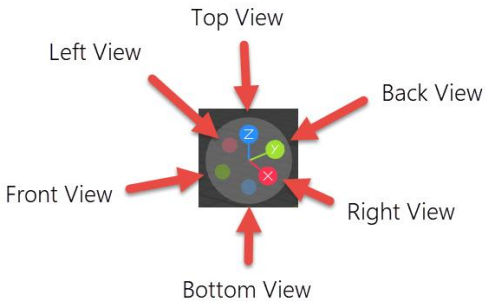

Blender
File Edit Render Window Help
General
Scene
Viewport
Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Cube
Lighting
Flat Studio MatCap
Color
Single Material Rando.. Texture
Background
Theme World Viewport
Options
X-Ray: 0.500
Shadow: 0.500
Cavity
Outline
Specular Highlights
Object Mode View Select Add Object
Global
Overlays
Shading
Keying Sets
Playback Keying View Marker
Start: 1 End: 250
Set 3D Cursor
Rotate View
Select
Translate
Cube | Verts:0 | Faces:0 | Tris:0 | Objects:1/3 | Mem: 152.5 MB | v2.80.21

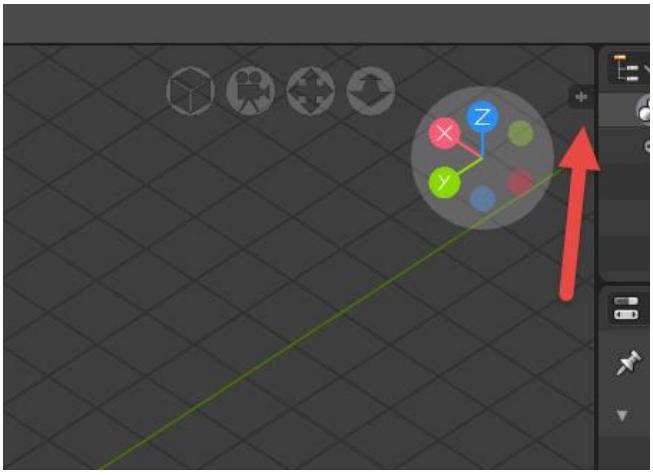


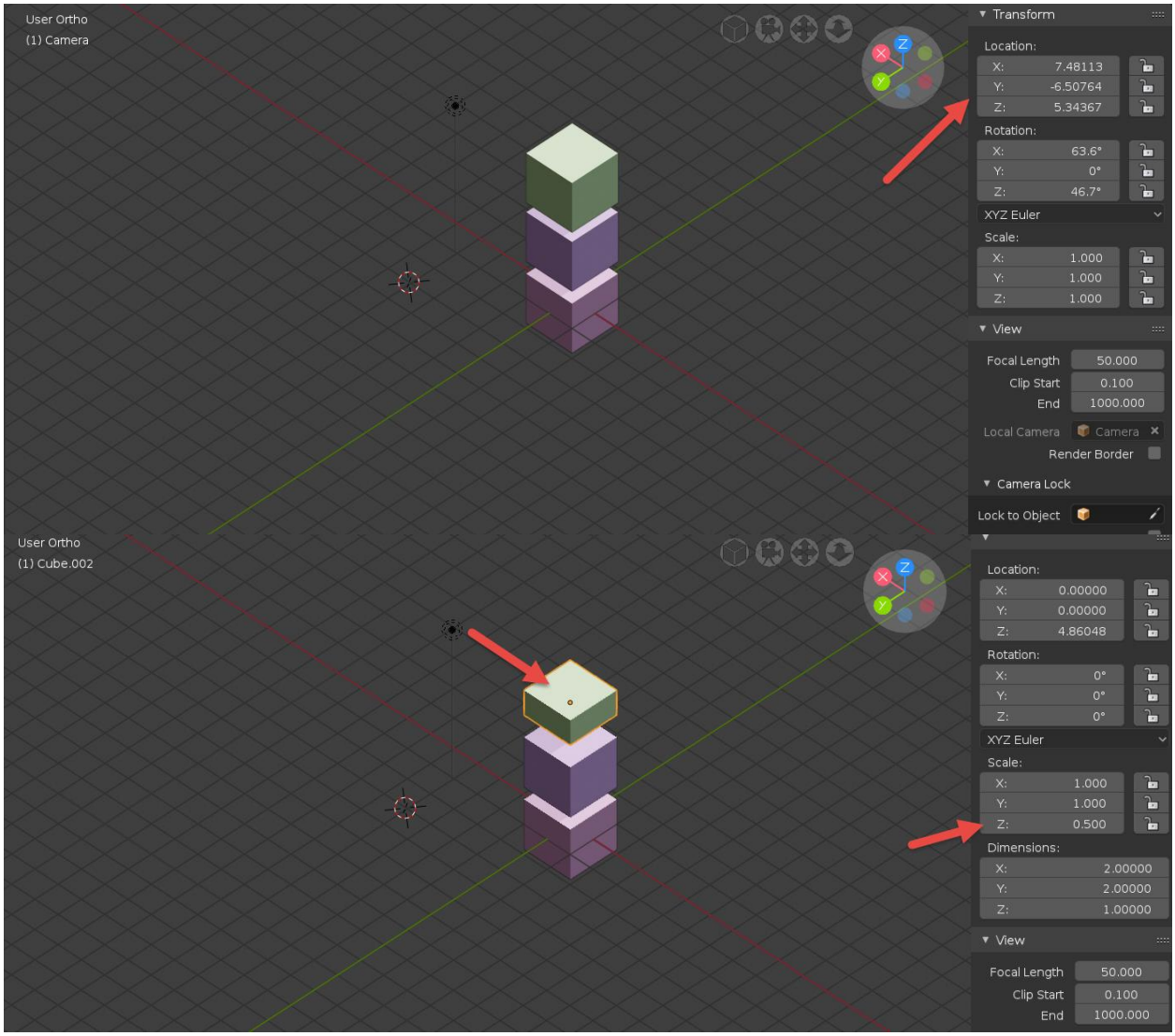

Blender
File Edit Render Window Help
General
Scene
Viewport
Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Cube.002
Lighting
Flat Studio MatCap
Color
Single Material Random
Background
Theme World Viewport
Options
X-Ray: 0.500
Shadow: 0.500
Cavity
Outline
Object Mode View Select Add Object
Global
Overlays
Shading
Keying Sets
Playback Keying View Marker
Start: 1 End: 250
Set 3D Cursor
Rotate View
Select
Translate
Cube.002 | Verts:0 | Faces:0 | Tris:0 | Objects:1/5 | Mem: 153.0 MB | v2.80.21


Blender
File Edit Render Window Help
General
Scene
Viewport
Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Cube.002
Lighting
Flat
MatCap
Collection
Camera
Cavity
Outline
Object Mode
View Select Add Object
Global
Overlays
Shading
Keying Sets
Playback Keying View Marker
Start: 1
End: 250
Set 3D Cursor
Rotate View
Select
Translate

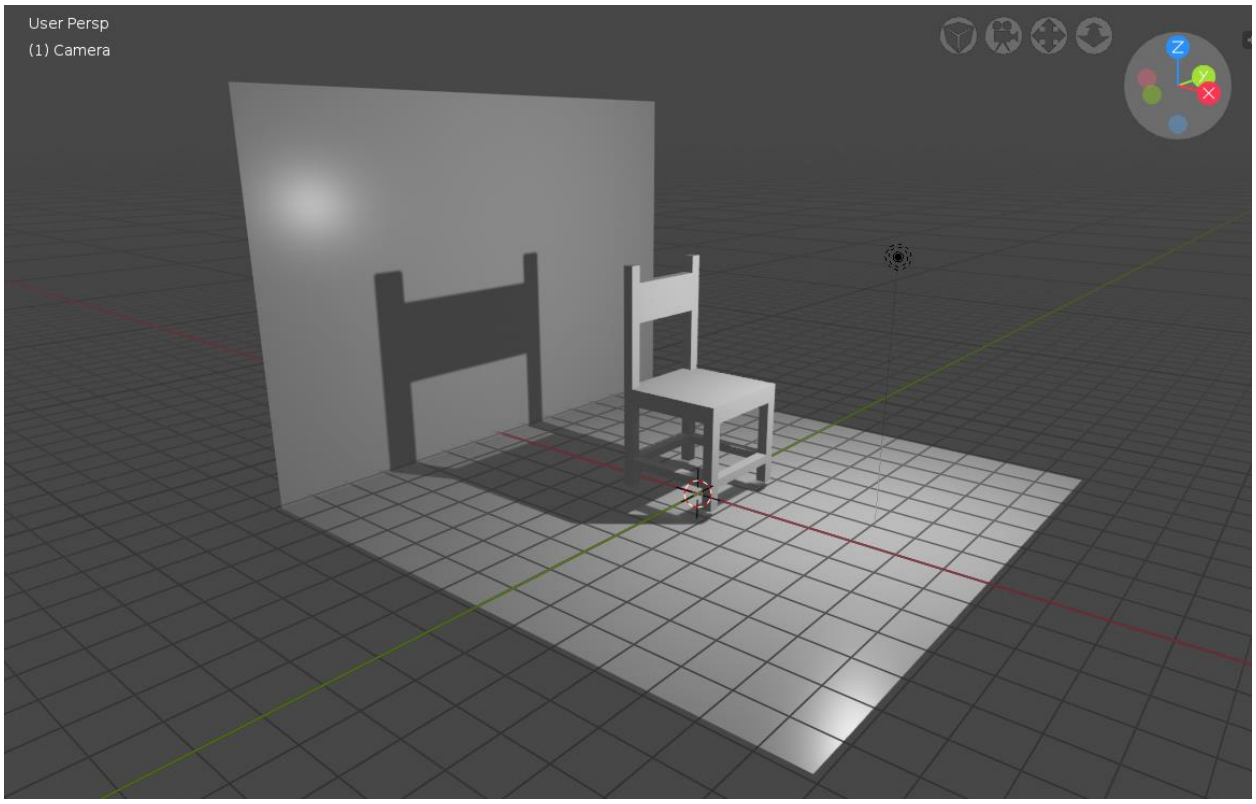

Perspective
or orthogonal
Camera view
Move view
Zoom view
Navigator Widget

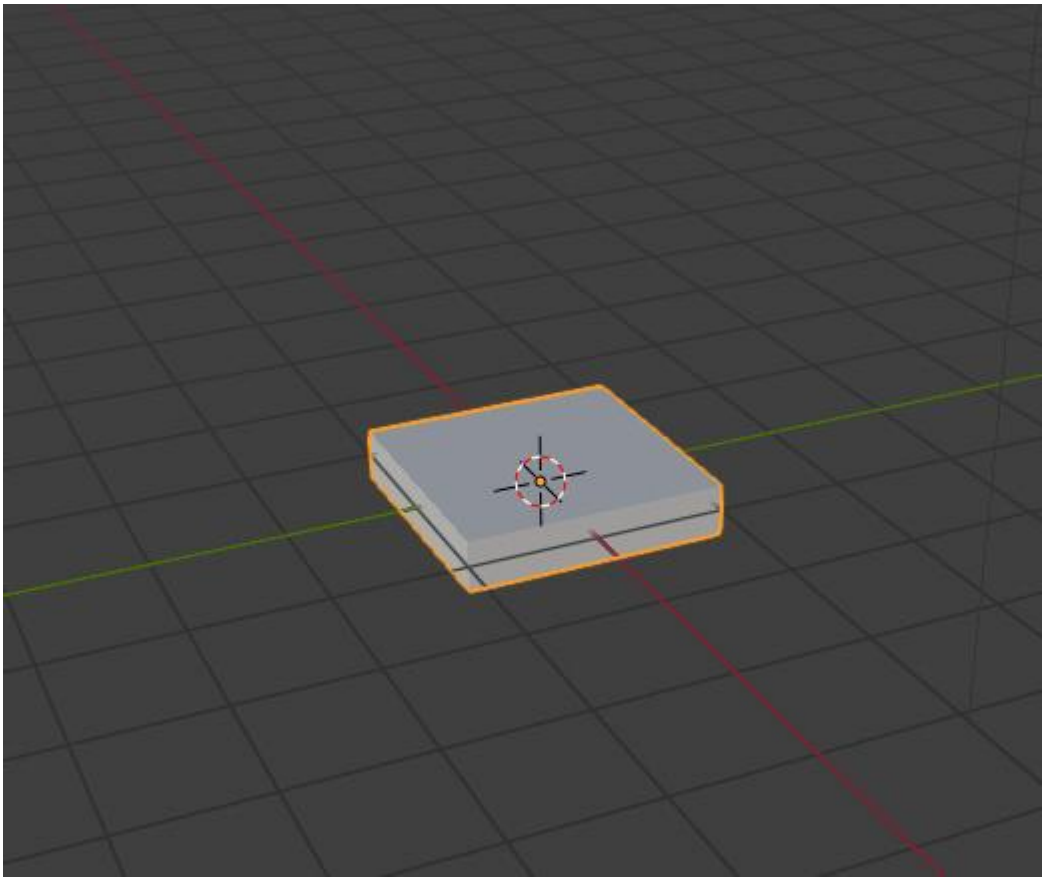

Top View
Left View
Back View
Front View
Right View
Bottom View

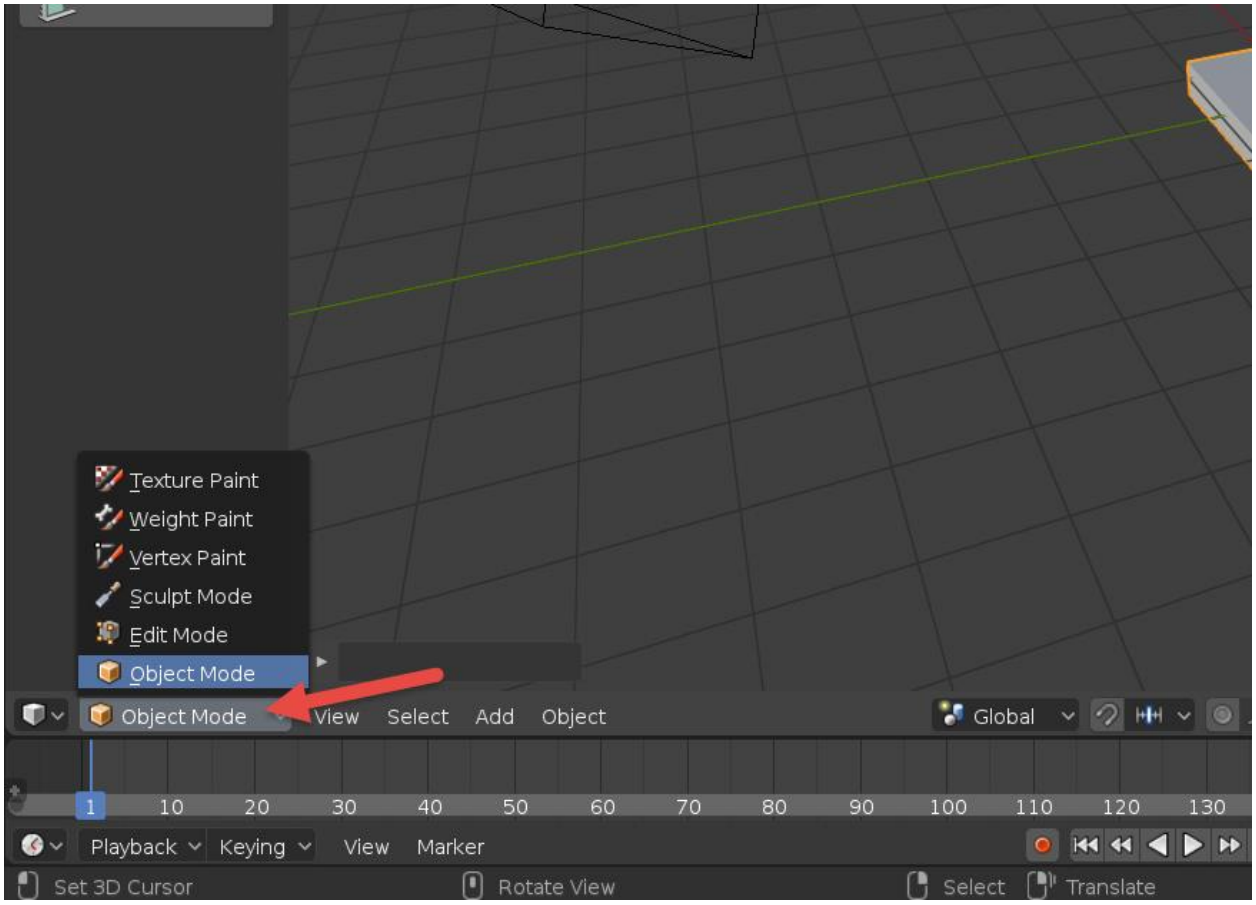


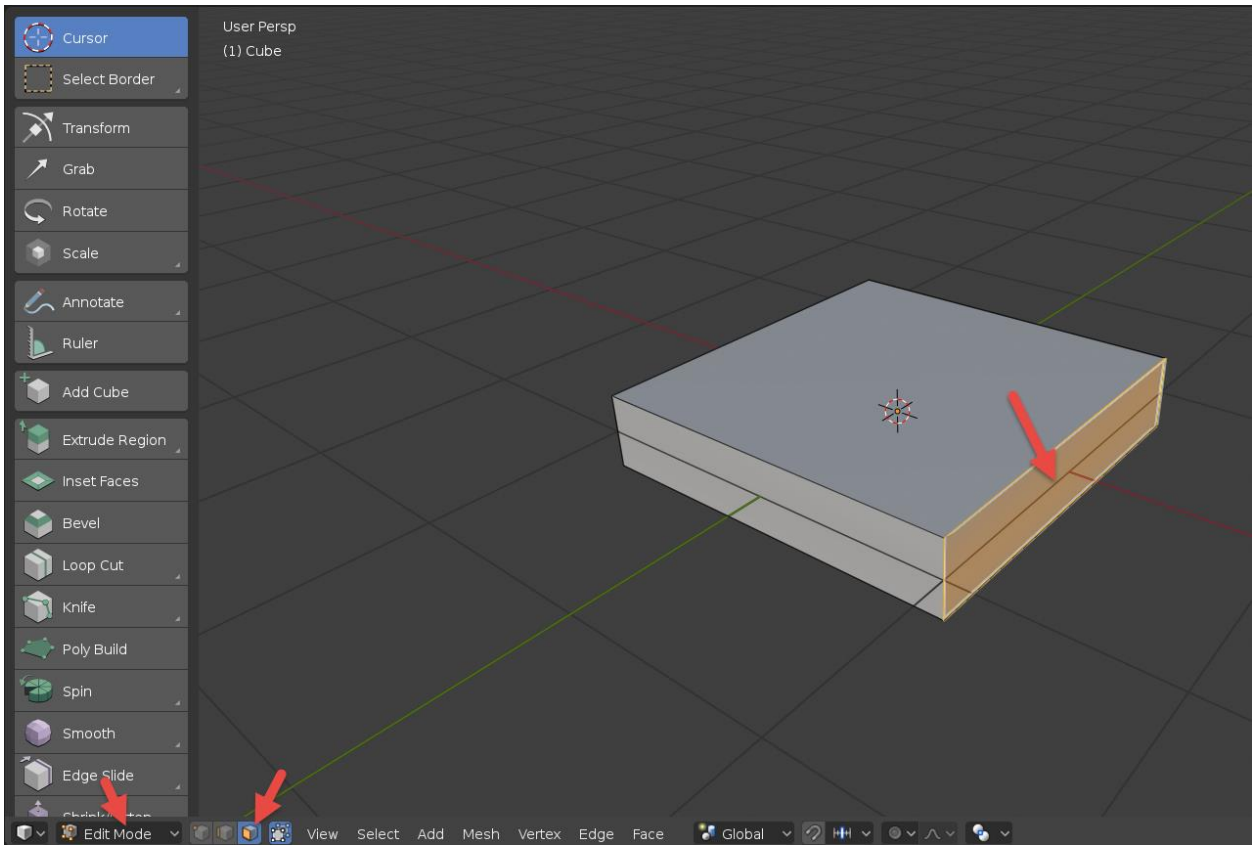


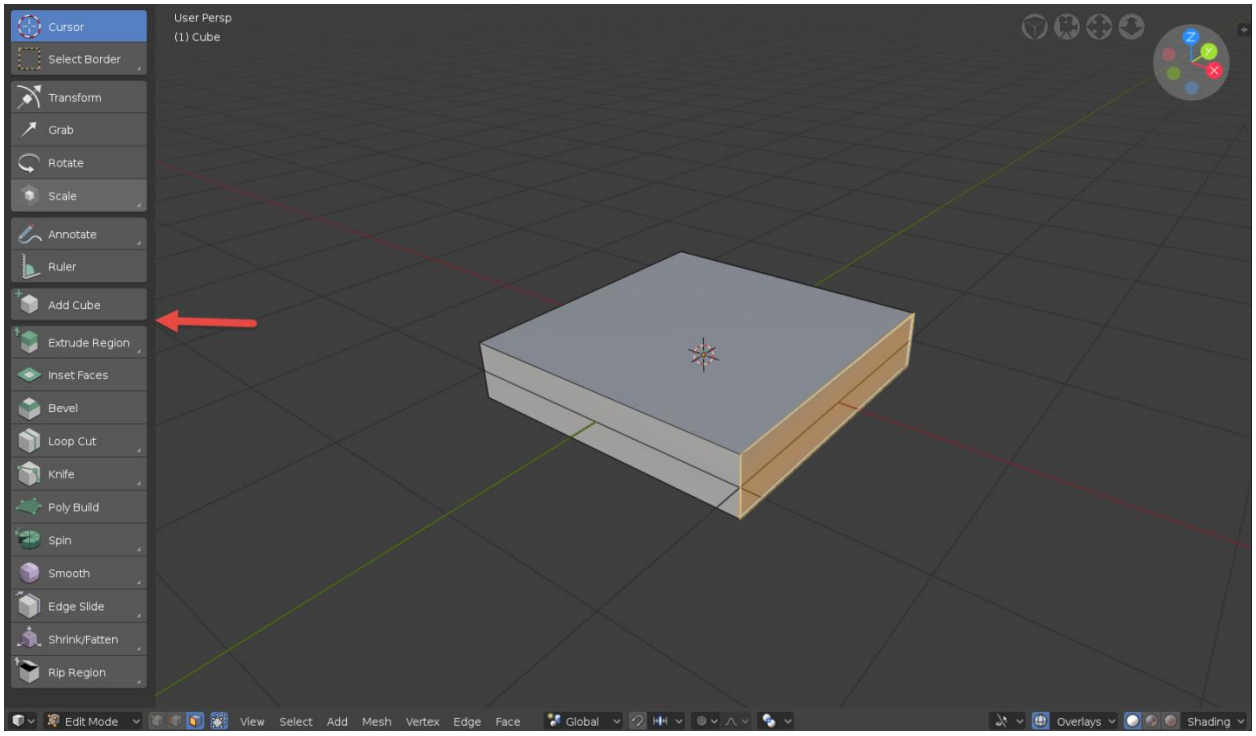
Chapter 2: 3D Modeling and Real-Time Rendering in Eevee

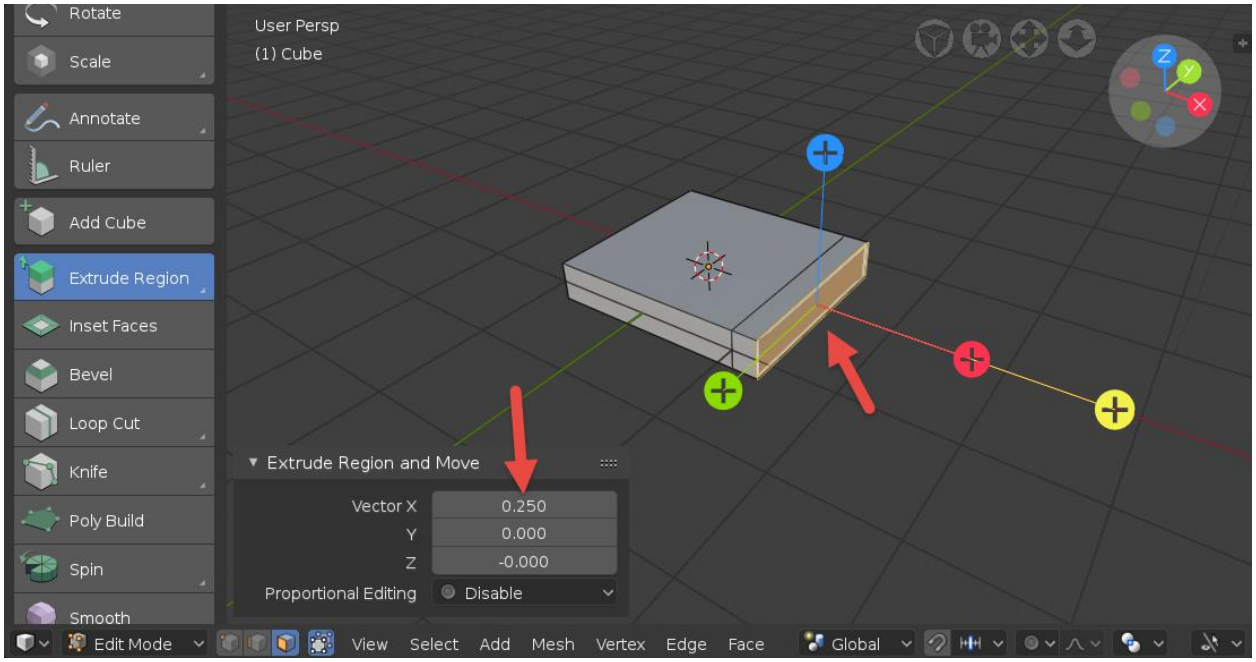

User Persp
(1) Camera
Z
Y
X

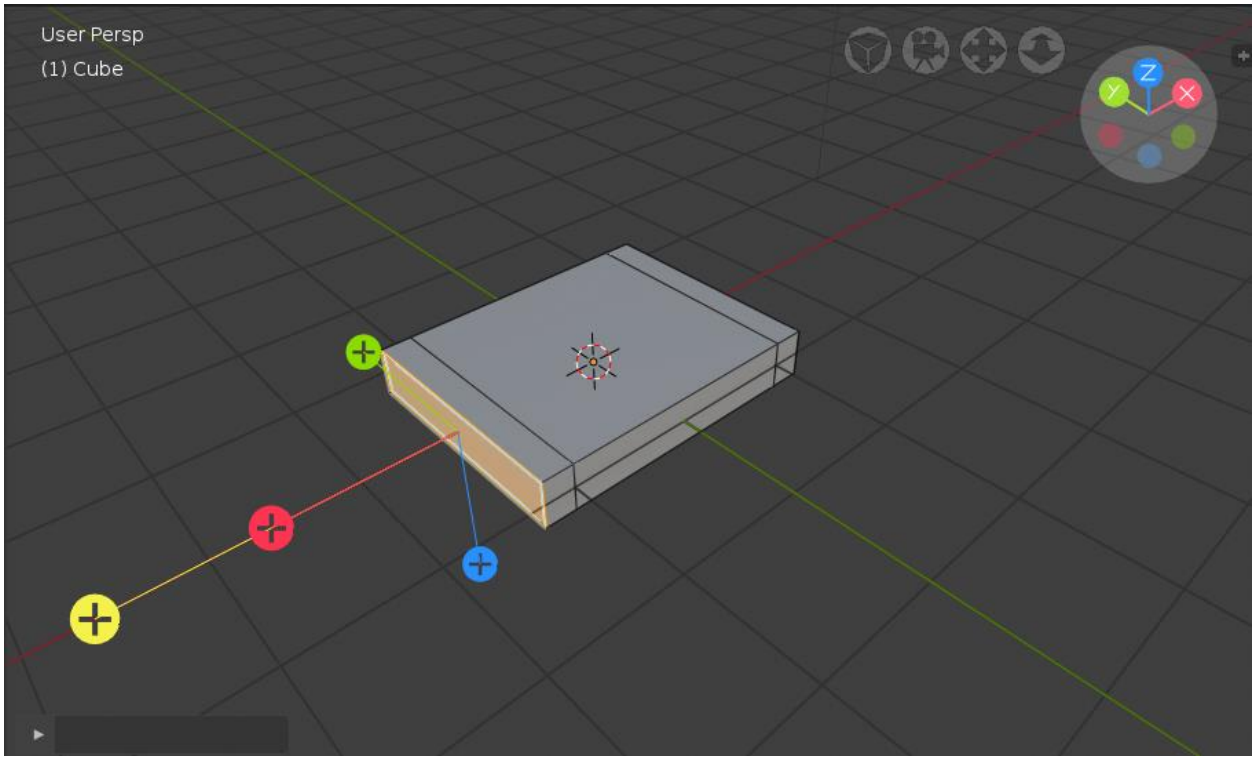


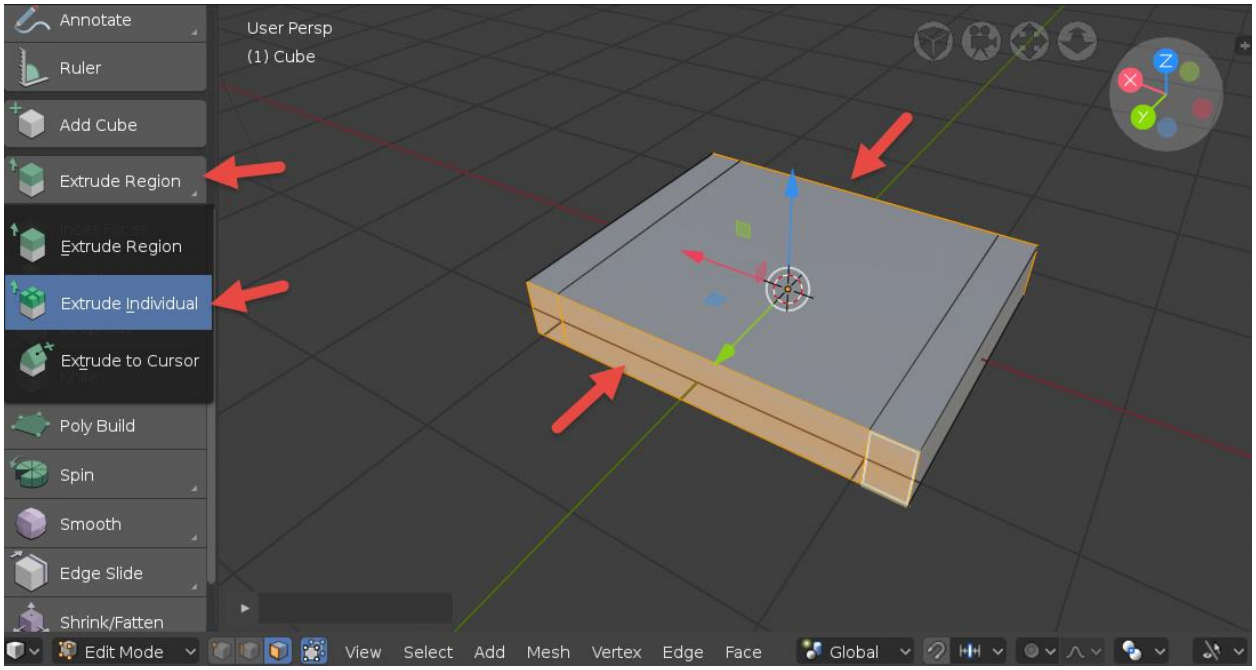

Texture Paint
Weight Paint
Vertex Paint
Sculpt Mode
Edit Mode
Object Mode
Object Mode
View
Select
Add
Object
Global
1
10
20
30
40
50
60
70
80
90
100
110
120
130
Playback
Keying
View
Marker
Set 3D Cursor
Rotate View
Select
Translate

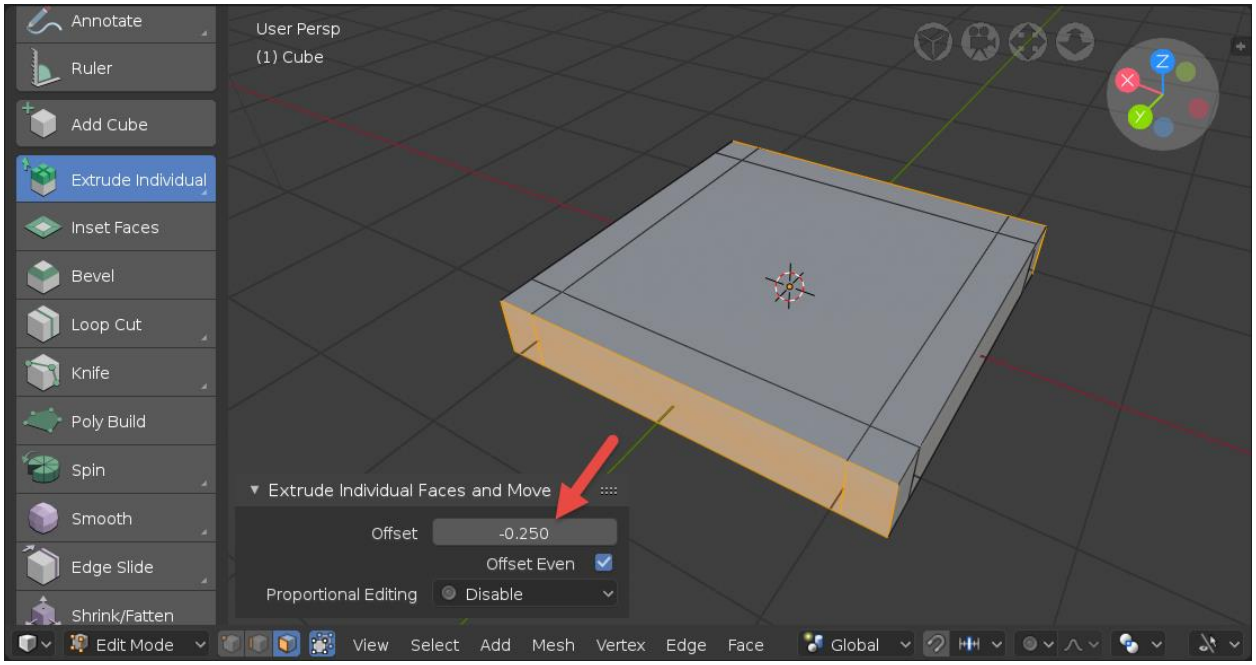

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
Add Cube
Extrude Region
Inset Faces
Bevel
Loop Cut
Knife
Poly Build
Spin
Smooth
Edge Slide
User Persp
(1) Cube
Edit Mode
View
Select
Add
Mesh
Vertex
Edge
Face
Global

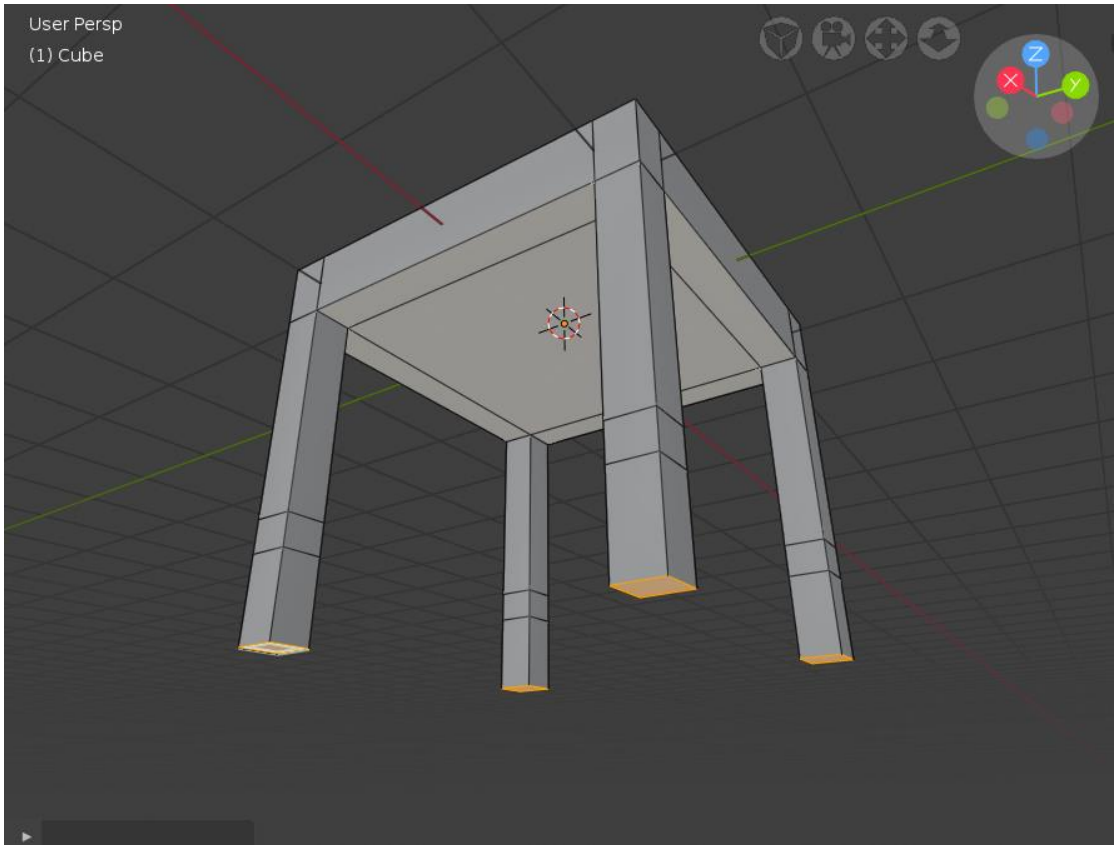

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
Add Cube
Extrude Region
Inset Faces
Bevel
Loop Cut
Knife
Poly Build
Spin
Smooth
Edge Slide
Shrink/Fatten
Rip Region
User Persp
(1) Cube
Edit Mode
View
Select
Add
Mesh
Vertex
Edge
Face
Global
Overlays
Shading

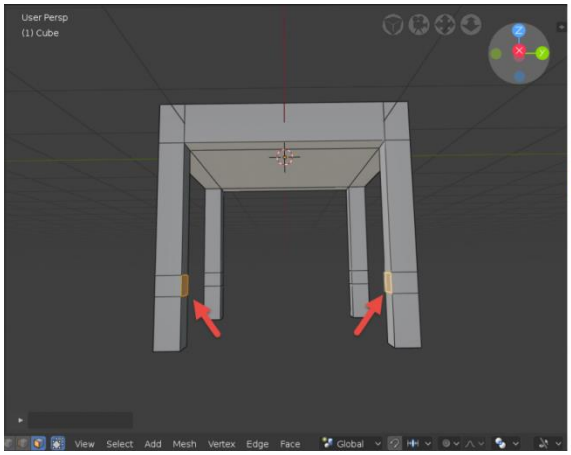

Rotate
Scale
Annotate
Ruler
Add Cube
Extrude Region
Inset Faces
Bevel
Loop Cut
Knife
Poly Build
Spin
Smooth
User Persp
(1) Cube
Extrude Region and Move
Vector X 0.250
Y 0.000
Z -0.000
Proportional Editing Disable
Edit Mode
View
Select
Add
Mesh
Vertex
Edge
Face
Global

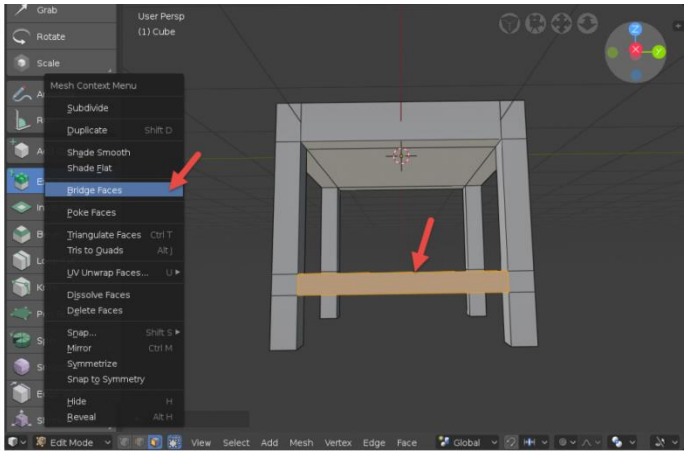

User Persp
(1) Cube

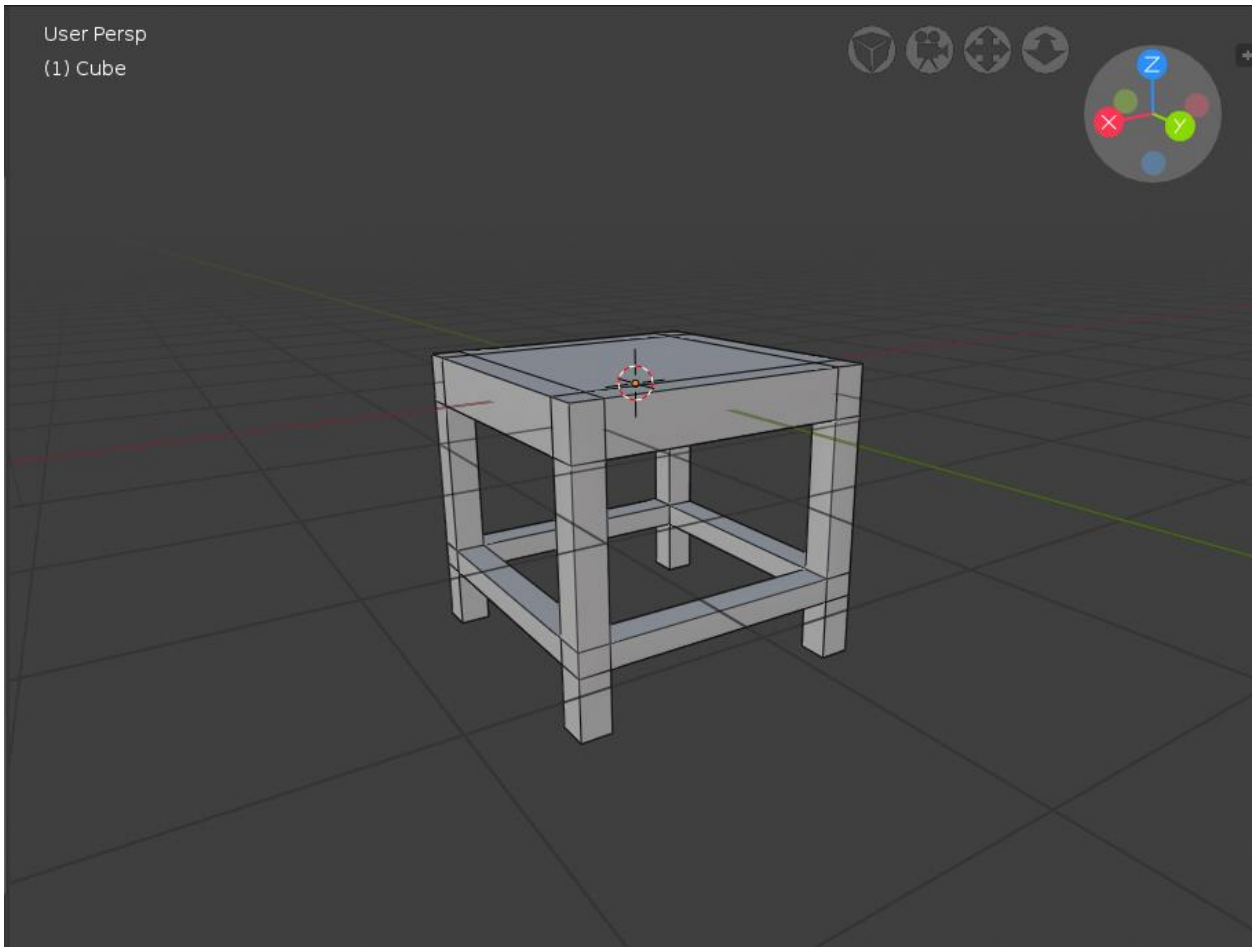

Annotate
Ruler
Add Cube
Extrude Region
Extrude Region
Extrude Individual
Extrude to Cursor
Poly Build
Spin
Smooth
Edge Slide
Shrink/Fatten
User Persp
(1) Cube
Edit Mode
View
Select
Add
Mesh
Vertex
Edge
Face
Global

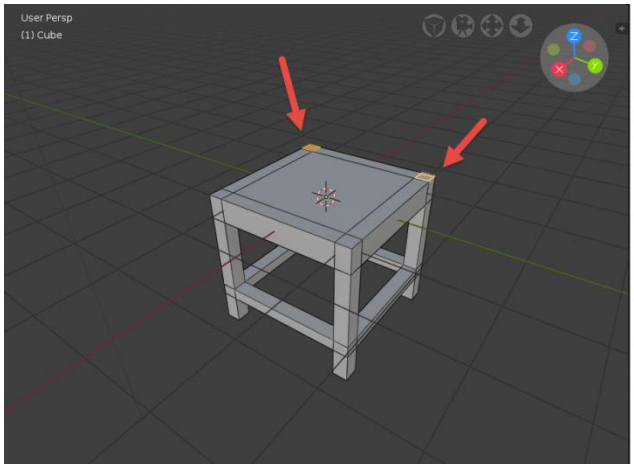

Annotate
Ruler
Add Cube
Extrude Individual
Inset Faces
Bevel
Loop Cut
Knife
Poly Build
Spin
Smooth
Edge Slide
Shrink/Fatten
User Persp
(1) Cube
Extrude Individual Faces and Move
Offset
-0.250
Offset Even
Proportional Editing
Disable
Edit Mode
View
Select
Add
Mesh
Vertex
Edge
Face
Global

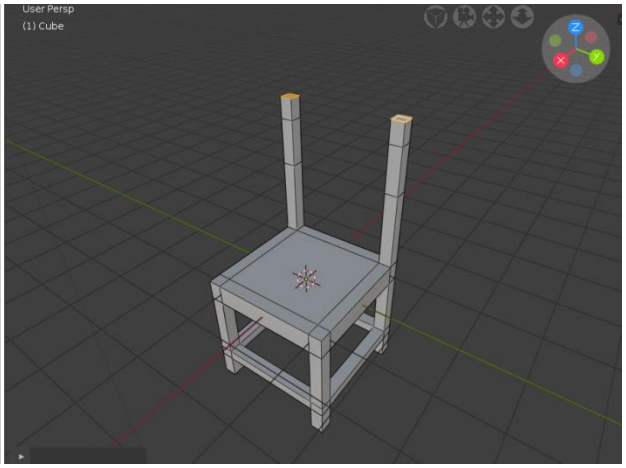

User Persp
(1) Cube

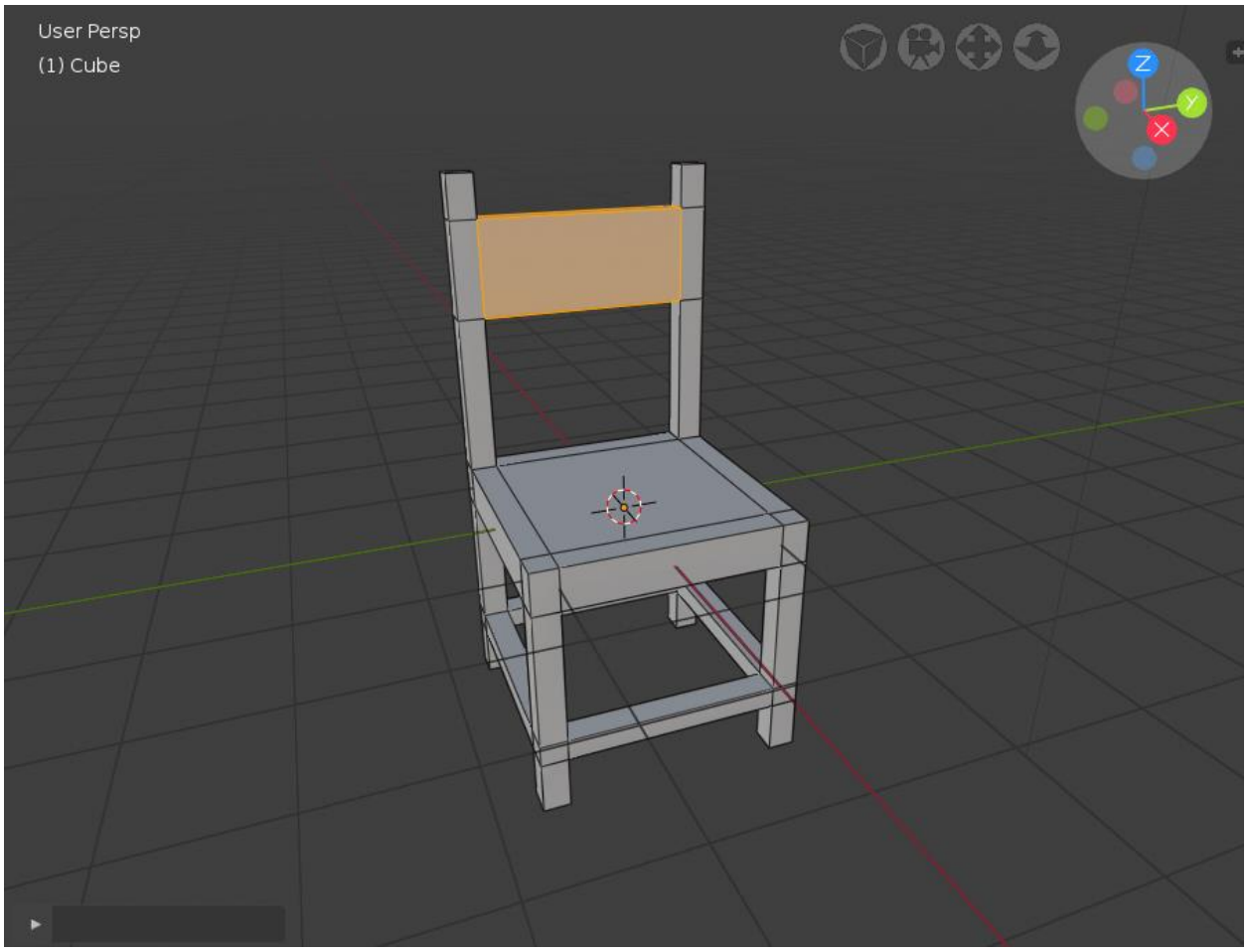

User Persp
(1) Cube
View Select Add Mesh Vertex Edge Face Global

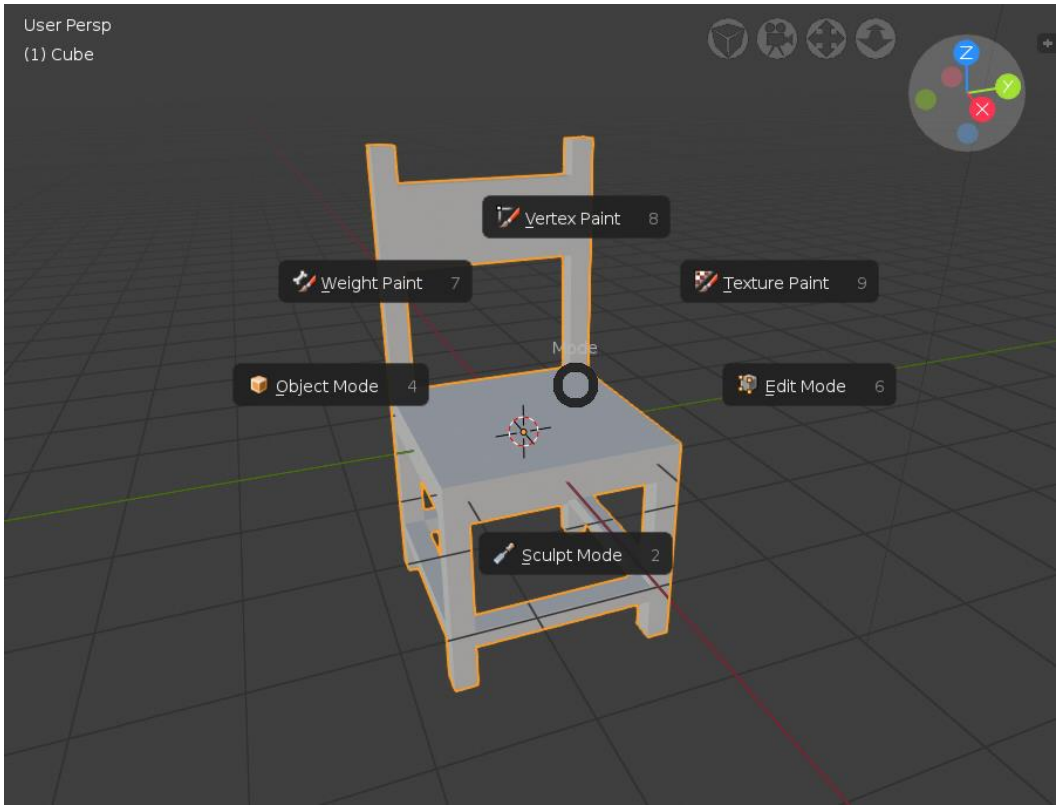

Grab
Rotate
Scale
Mesh Context Menu
Subdivide
Duplicate Shift D
Shade Smooth
Shade Flat
Bridge Faces
Poke Faces
Triangulate Faces Ctrl T
Tris to Quads Alt J
UV Unwrap Faces... U
Dissolve Faces
Delete Faces
Snap... Shift S
Mirror Ctrl M
Symmetrize
Snap to Symmetry
Hide H
Reveal Alt H
User Persp
(1) Cube
Edit Mode View Select Add Mesh Vertex Edge Face Global

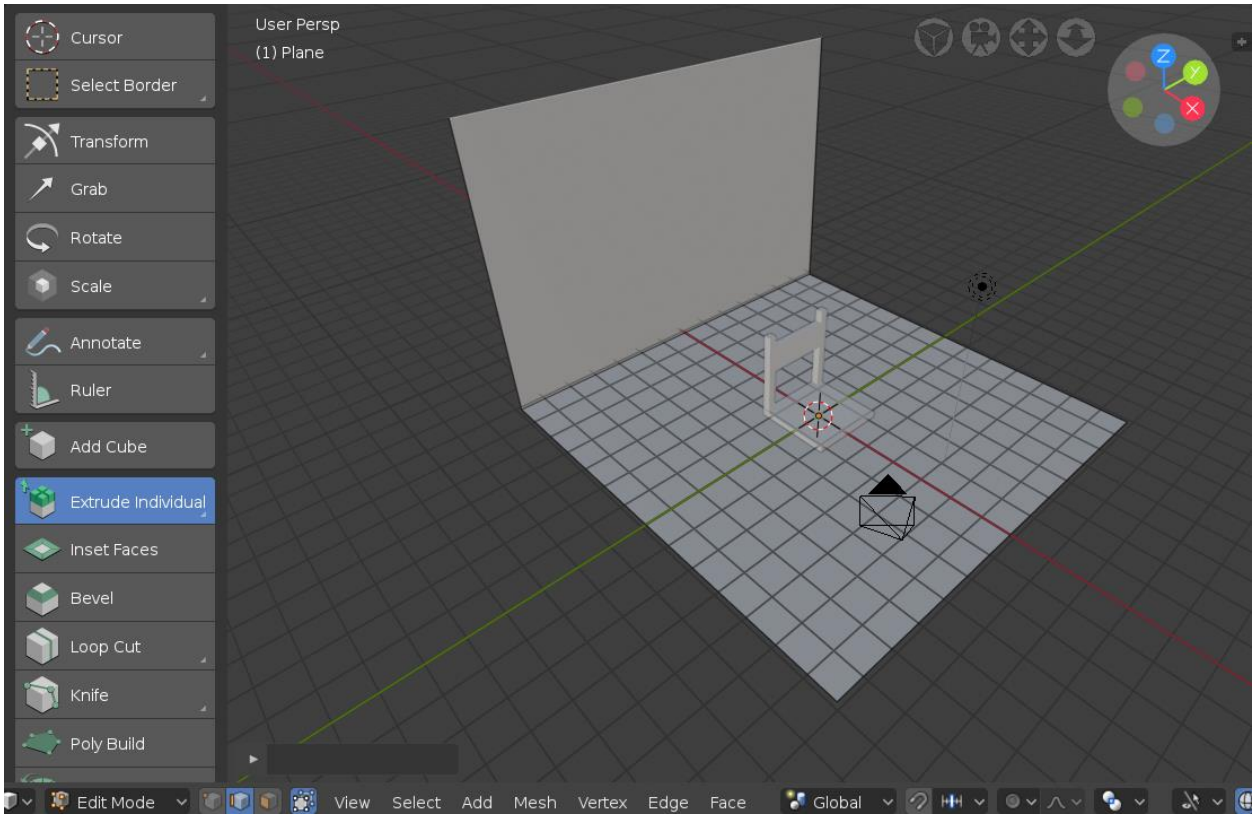

User Persp
(1) Cube

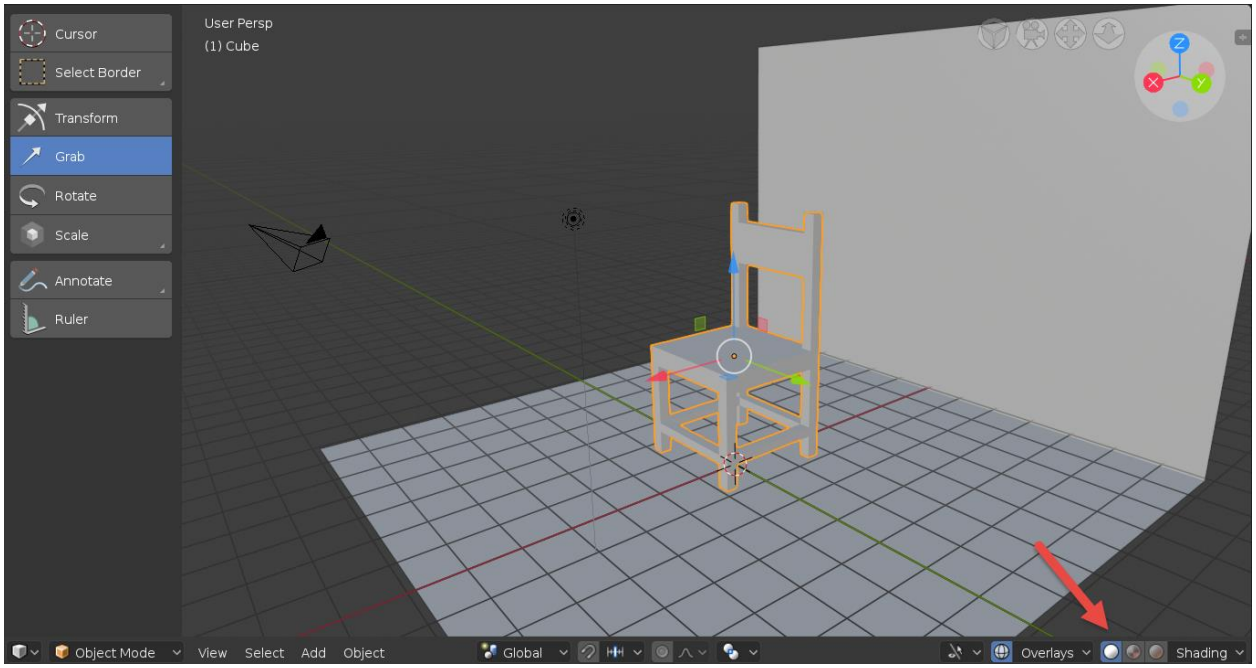

User Persp
(1) Cube

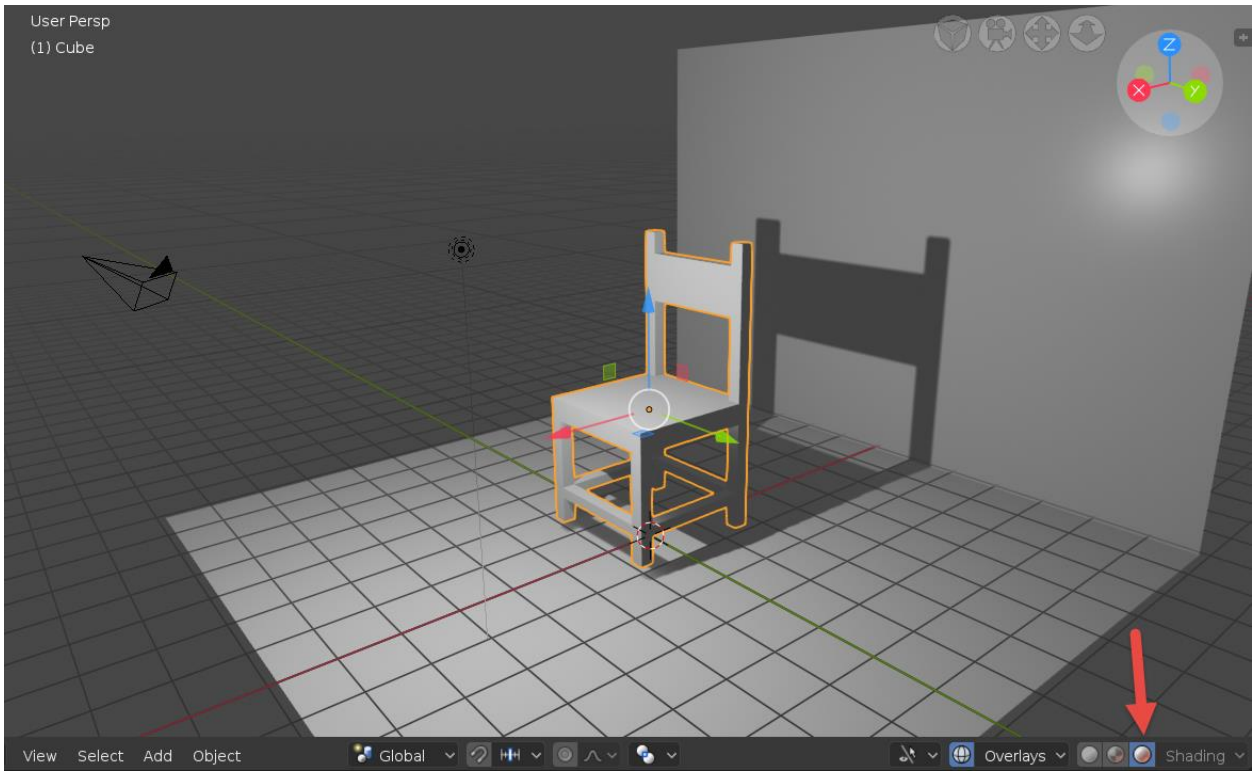

User Persp
(1) Cube

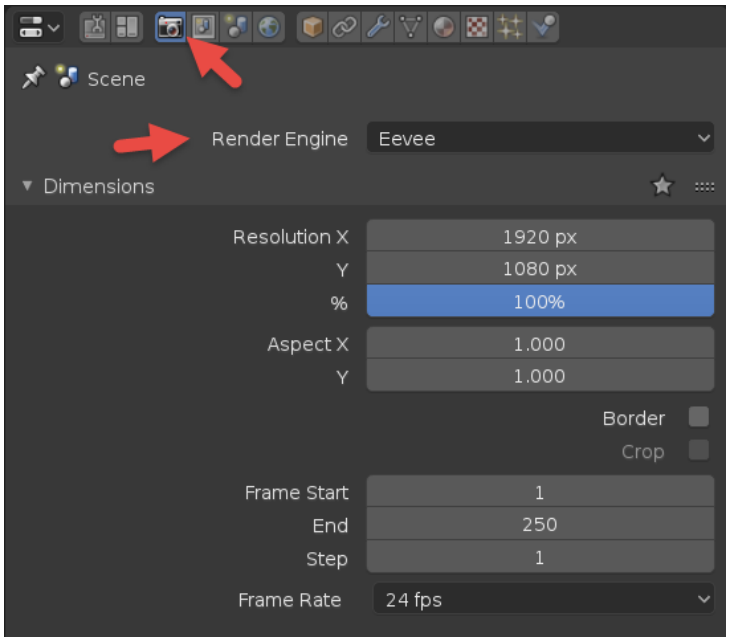

User Persp
(1) Cube
Z
Y
X

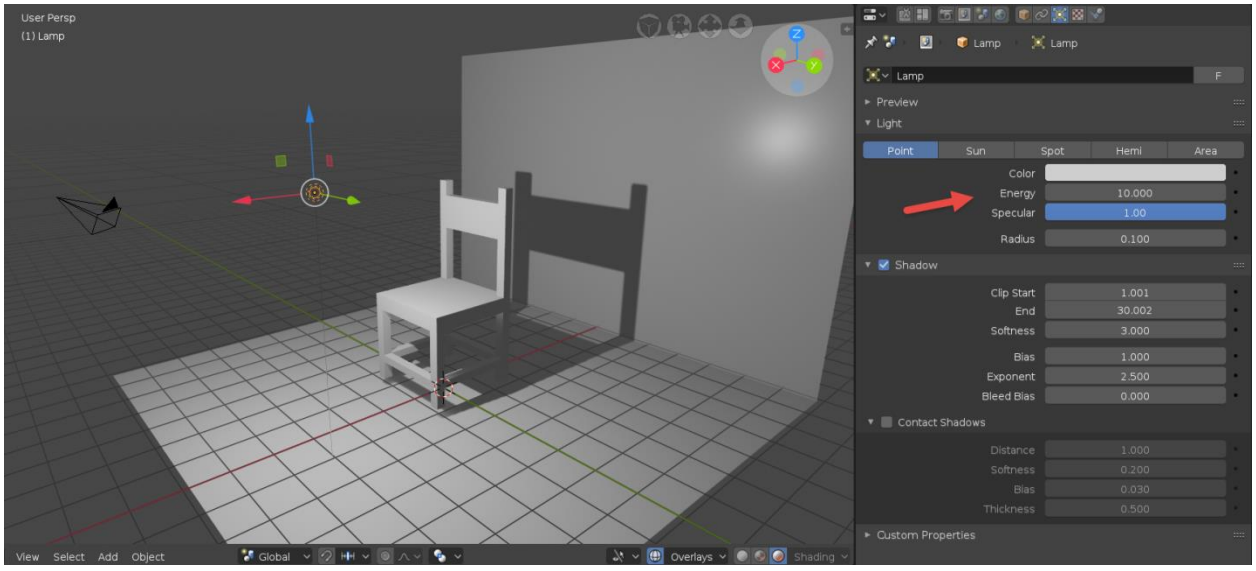

User Persp
(1) Cube
Vertex Paint 8
Weight Paint 7
Texture Paint 9
Object Mode 4
Edit Mode 6
Sculpt Mode 2


Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
Add Cube
Extrude Individual
Inset Faces
Bevel
Loop Cut
Knife
Poly Build
User Persp
(1) Plane
Edit Mode
View
Select
Add
Mesh
Vertex
Edge
Face
Global

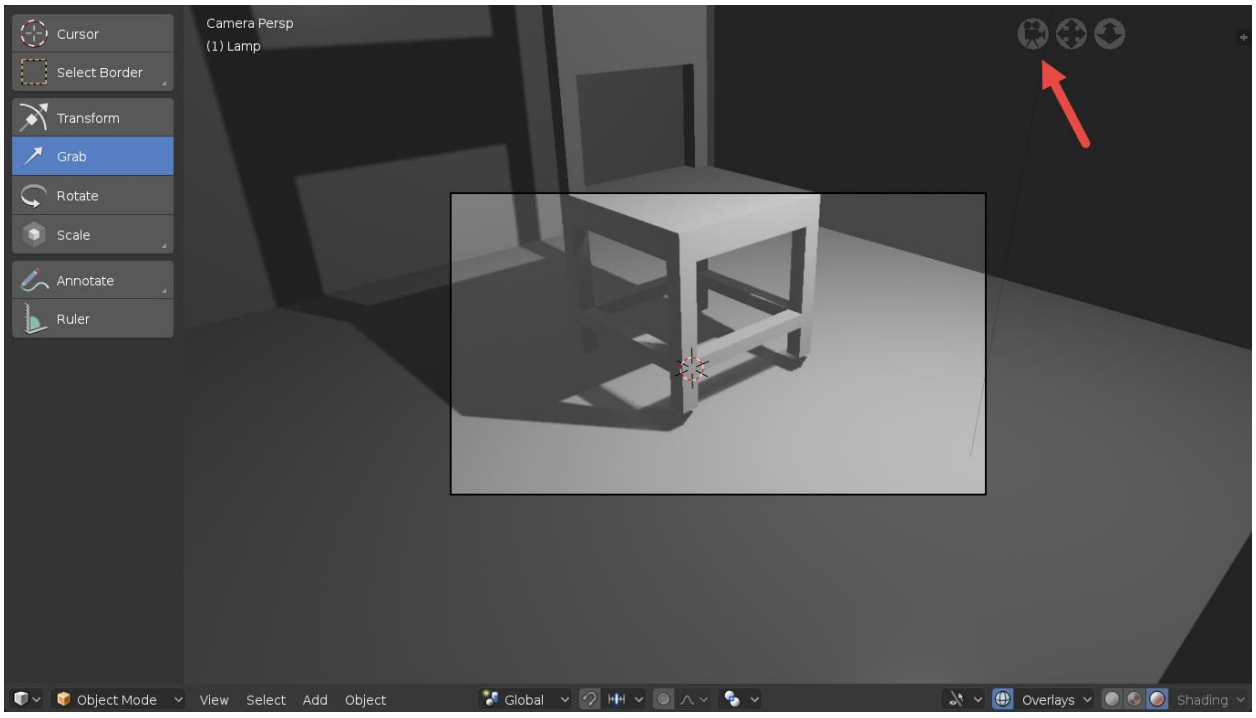

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Cube
Object Mode
View
Select
Add
Object
Global
Overlays
Shading

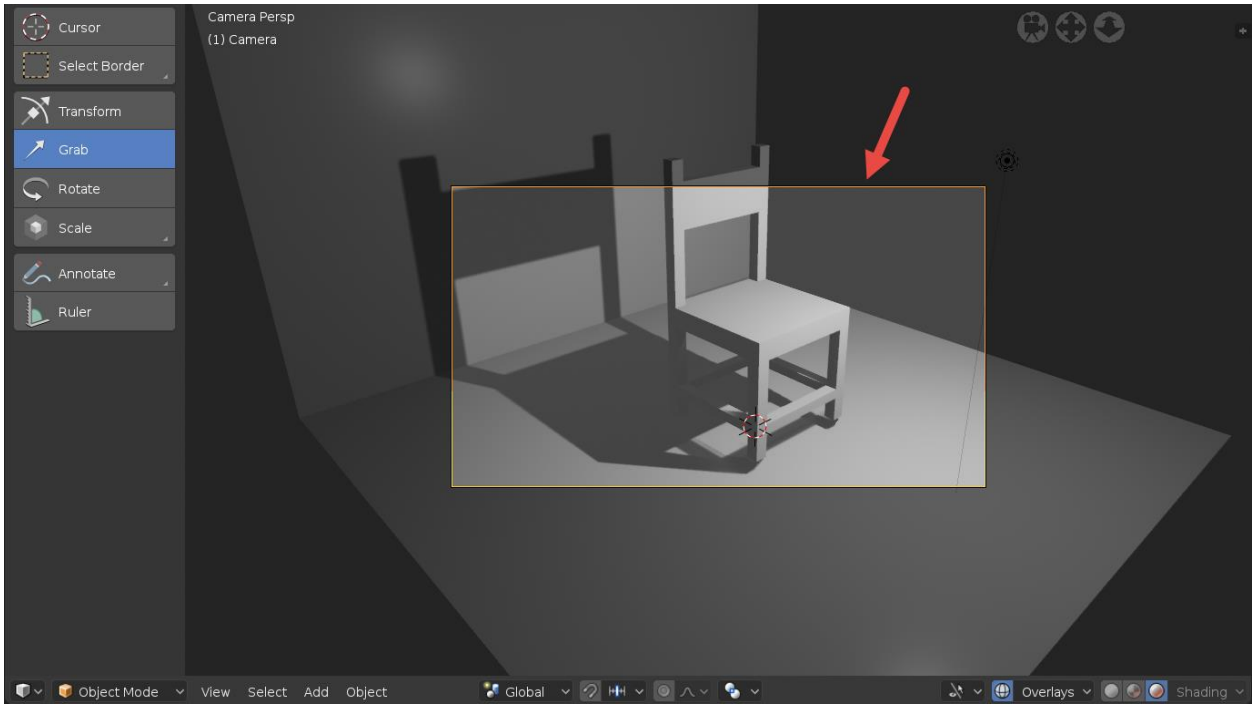

User Persp
(1) Cube
View
Select
Add
Object
Global
Overlays
Shading

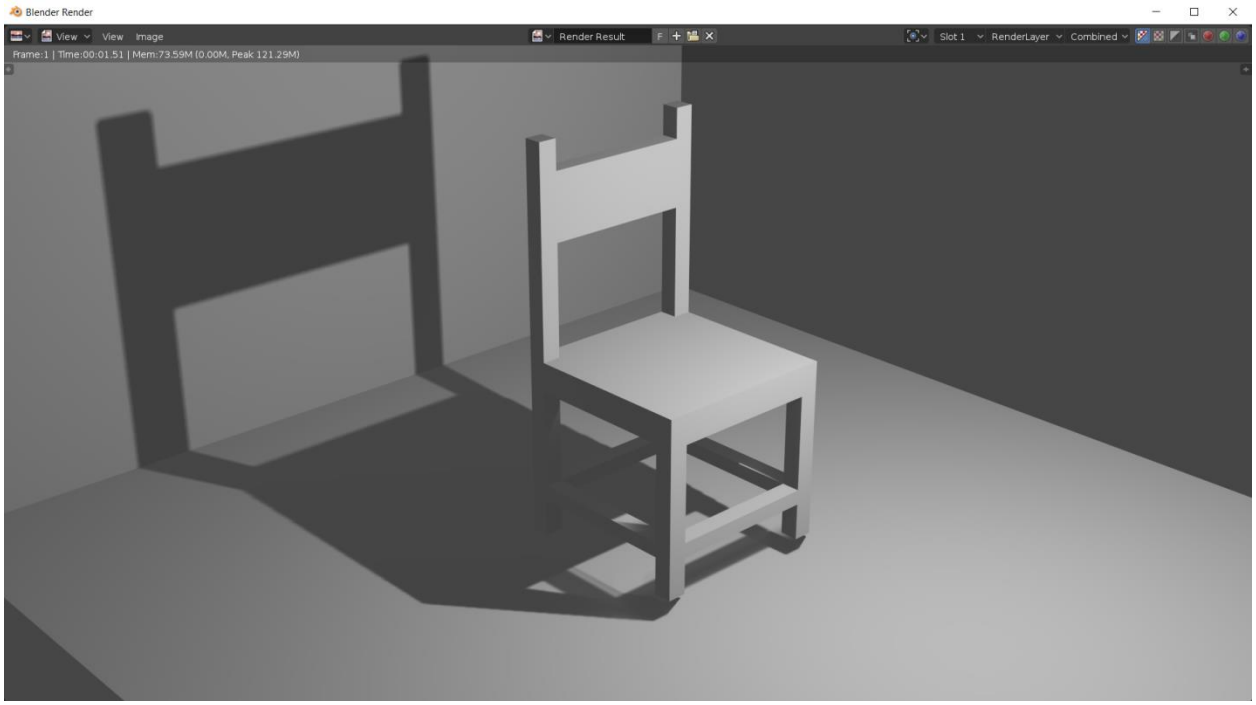

Scene
Render Engine
Eevee
Dimensions
Resolution X
1920 px
Y
1080 px
%
100%
Aspect X
1.000
Y
1.000
Border
Crop
Frame Start
1
End
250
Step
1
Frame Rate
24 fps

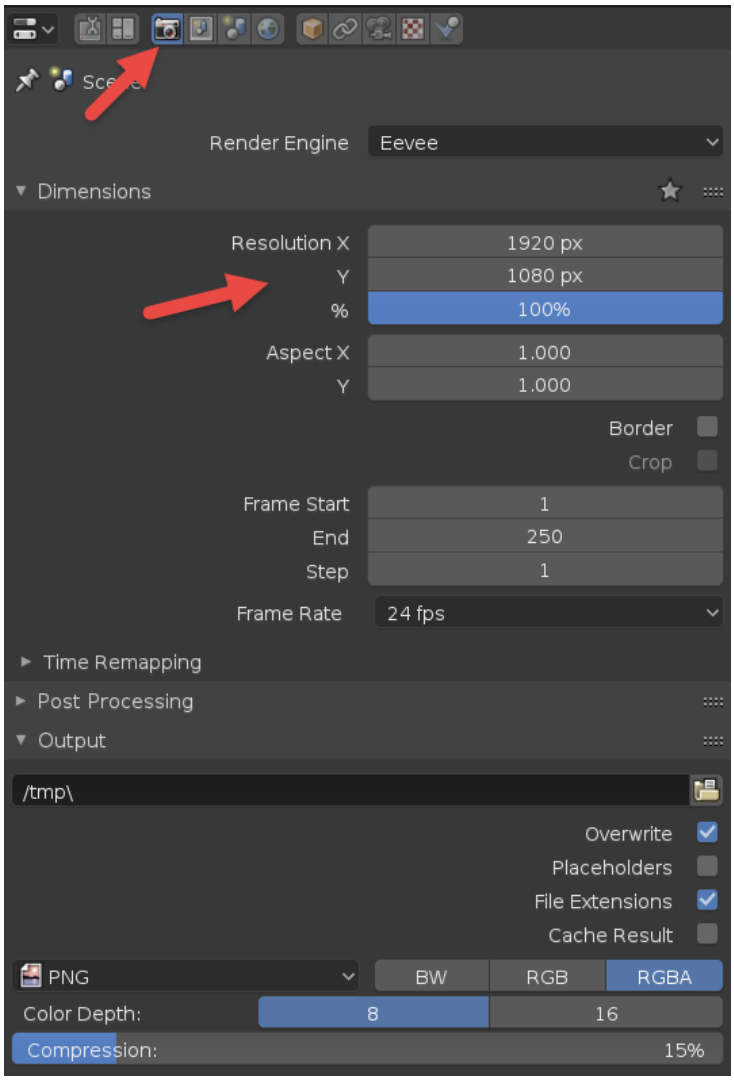

User Persp
(1) Lamp
Lamp
Lamp
Lamp
F
Preview
Light
Point
Sun
Spot
Hemi
Area
Color
Energy
10.000
Specular
1.00
Radius
0.100
Shadow
Clip Start
1.001
End
30.002
Softness
3.000
Bias
1.000
Exponent
2.500
Bleed Bias
0.000
Contact Shadows
Distance
1.000
Softness
0.200
Bias
0.030
Thickness
0.500
Custom Properties
View
Select
Add
Object
Global
Overlays
Shading

Shadow
Clip Start
1.001
End
30.002
Softness
3.000
Bias
1.000
Exponent
2.500
Bleed Bias
0.000
Contact Shadows
Distance
1.000
Softness
0.200
Bias
0.030
Thickness
0.500

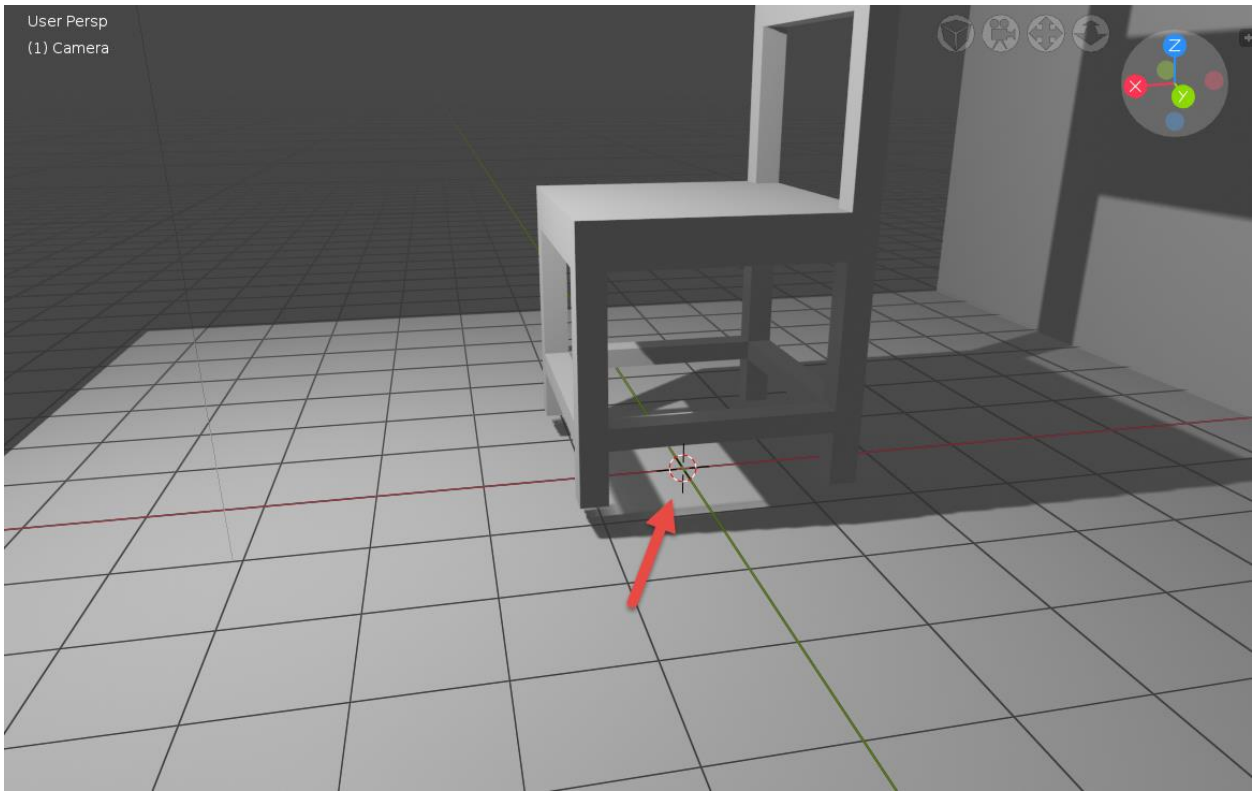

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
Camera Persp
(1) Lamp
Object Mode
View
Select
Add
Object
Global
Overlays
Shading

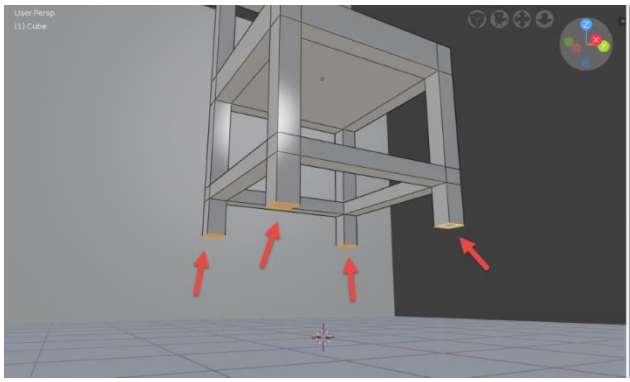

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
Camera Persp
(1) Camera
Object Mode
View
Select
Add
Object
Global
Overlays
Shading

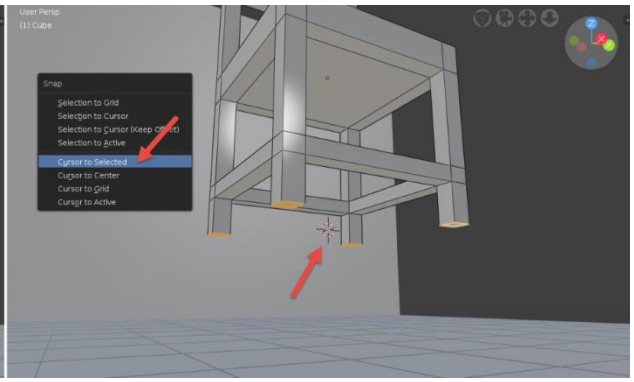

Blender Render
View
View
Image
Render Result
Slot 1
RenderLayer
Combined
Frame:1 | Time:00:01.51 | Mem:73.59M (0.00M, Peak 121.29M)

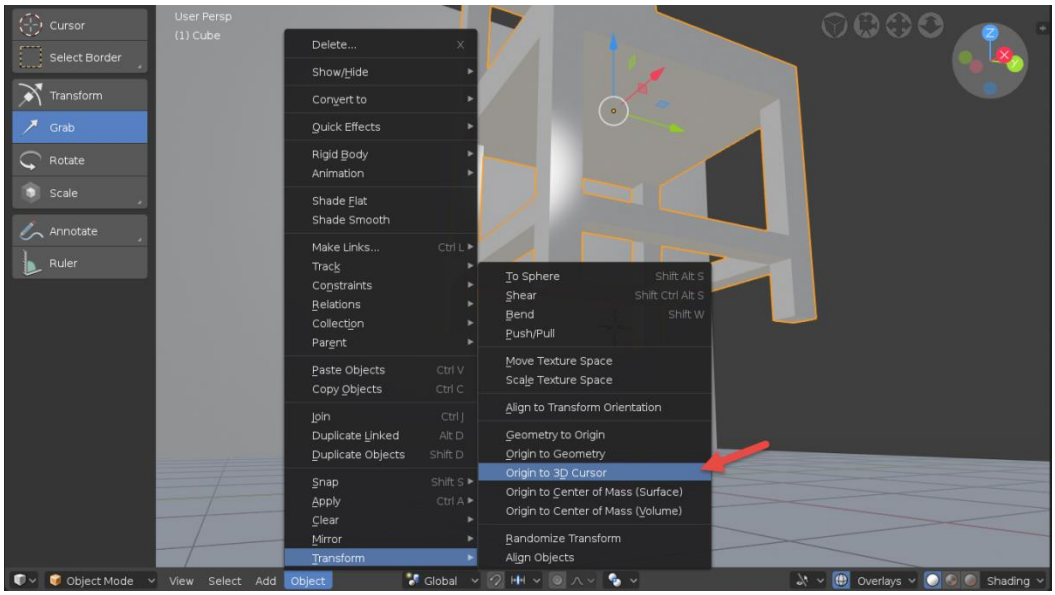

Render Engine
Eevee
Dimensions
Resolution X
1920 px
Y
1080 px
%
100%
Aspect X
1.000
Y
1.000
Border
Crop
Frame Start
1
End
250
Step
1
Frame Rate
24 fps
Time Remapping
Post Processing
Output
/tmp\
Overwrite
Placeholders
File Extensions
Cache Result
PNG
BW
RGB
RGBA
Color Depth:
8
16
Compression:
15%

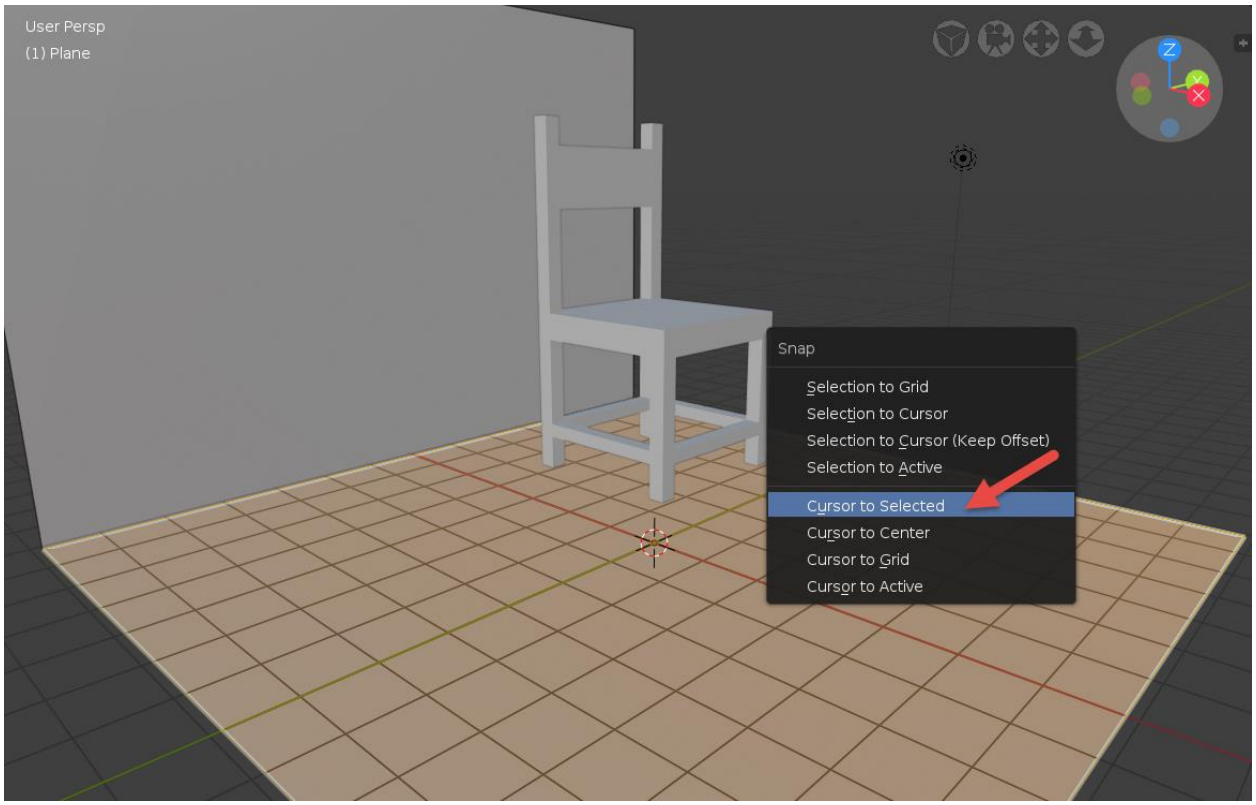
Chapter 3: The New 3D Cursor and Modeling Options

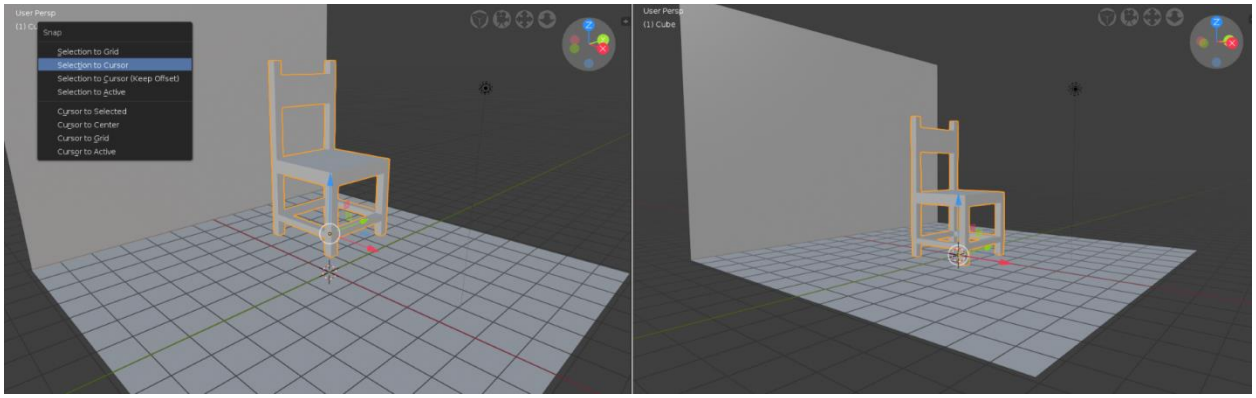


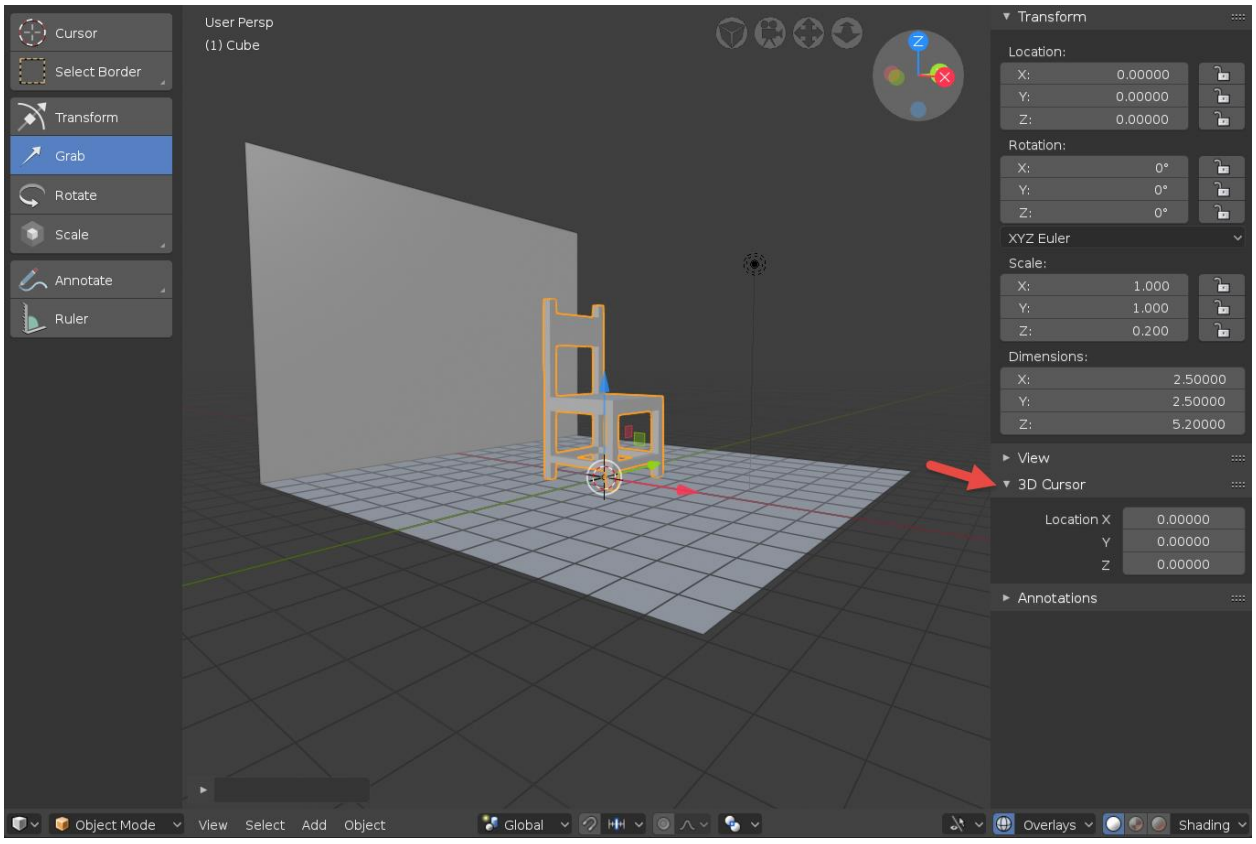


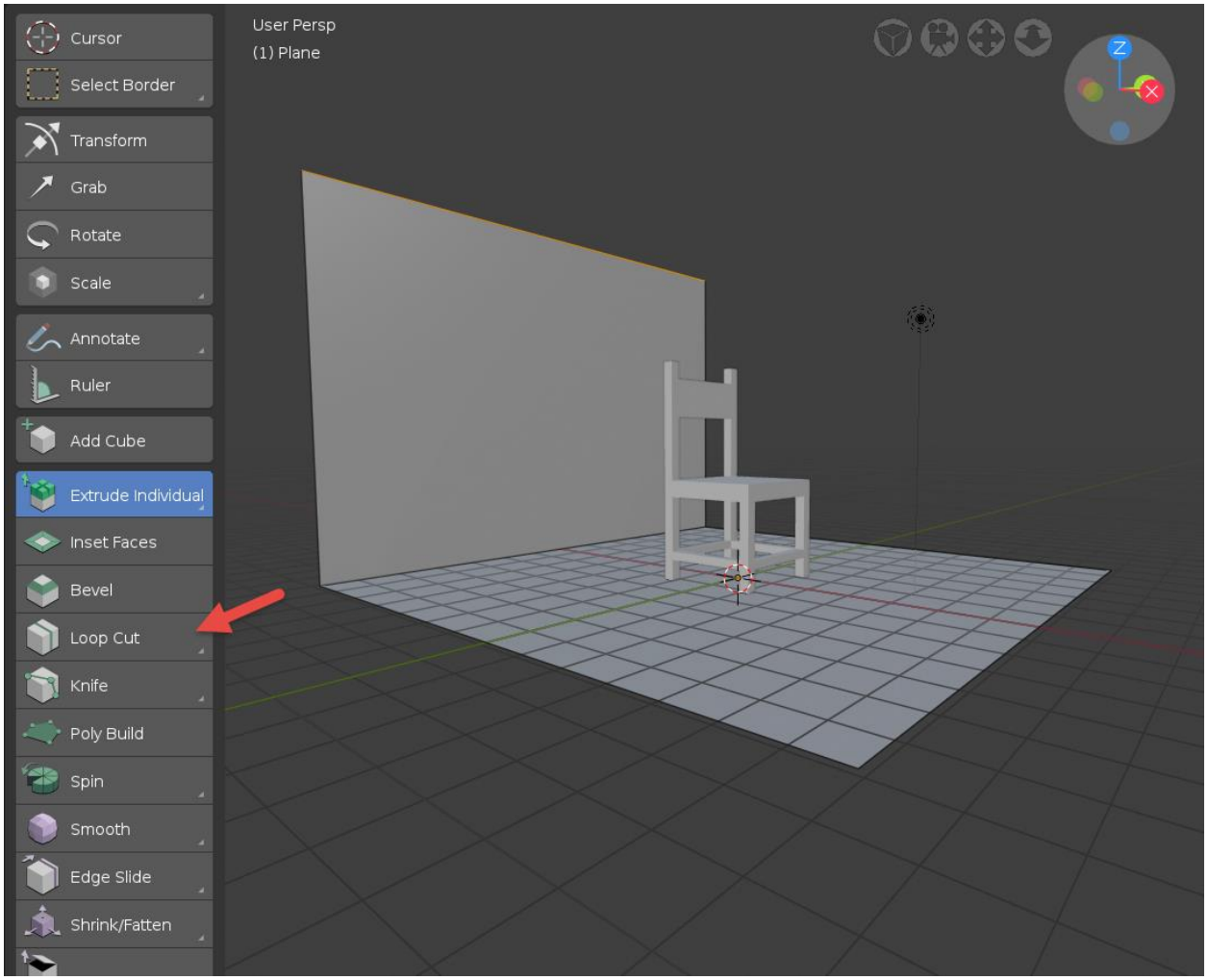


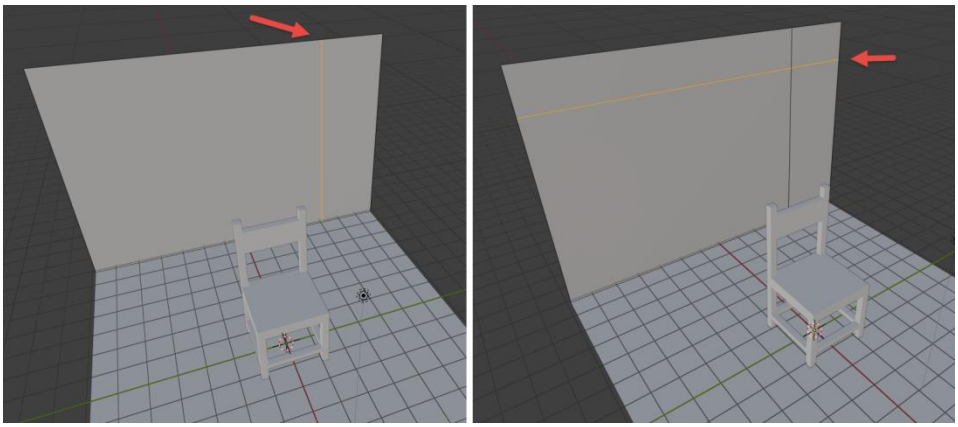

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Cube
Delete... X
Show/Hide
Convert to
Quick Effects
Rigid Body
Animation
Shade Flat
Shade Smooth
Make Links... Ctrl L
Track
Constraints
Relations
Collection
Parent
Paste Objects Ctrl V
Copy Objects Ctrl C
Join Ctrl J
Duplicate Linked Alt D
Duplicate Objects Shift D
Snap Shift S
Apply Ctrl A
Clear
Mirror
Transform
To Sphere Shift Alt S
Shear Shift Ctrl Alt S
Bend Shift W
Push/Pull
Move Texture Space
Scale Texture Space
Align to Transform Orientation
Geometry to Origin
Origin to Geometry
Origin to 3D Cursor
Origin to Center of Mass (Surface)
Origin to Center of Mass (Volume)
Randomize Transform
Align Objects
Object Mode
View
Select
Add
Object
Global
Overlays
Shading

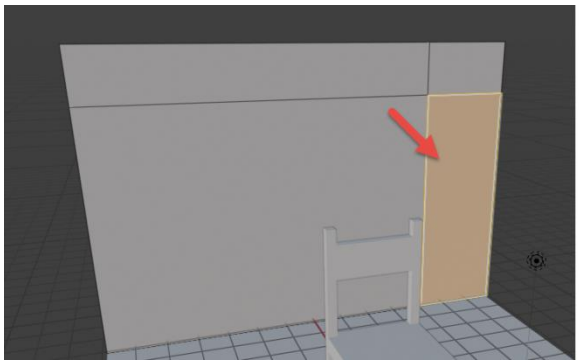

User Persp
(1) Plane
Snap
Selection to Grid
Selection to Cursor
Selection to Cursor (Keep Offset)
Selection to Active
Cursor to Selected
Cursor to Center
Cursor to Grid
Cursor to Active

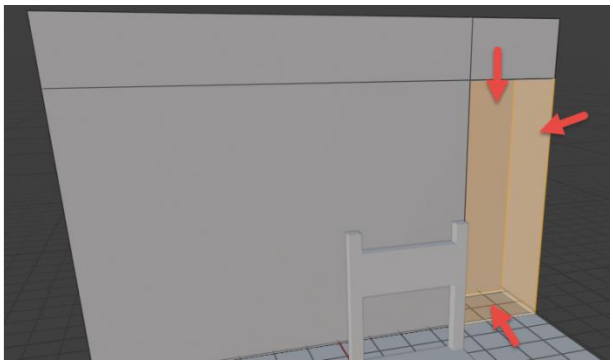

User Persp
Snap
Selection to Grid
Selection to Cursor
Selection to Cursor (Keep Offset)
Selection to Active
Cursor to Selected
Cursor to Center
Cursor to Grid
Cursor to Active
User Persp
(1) Cube

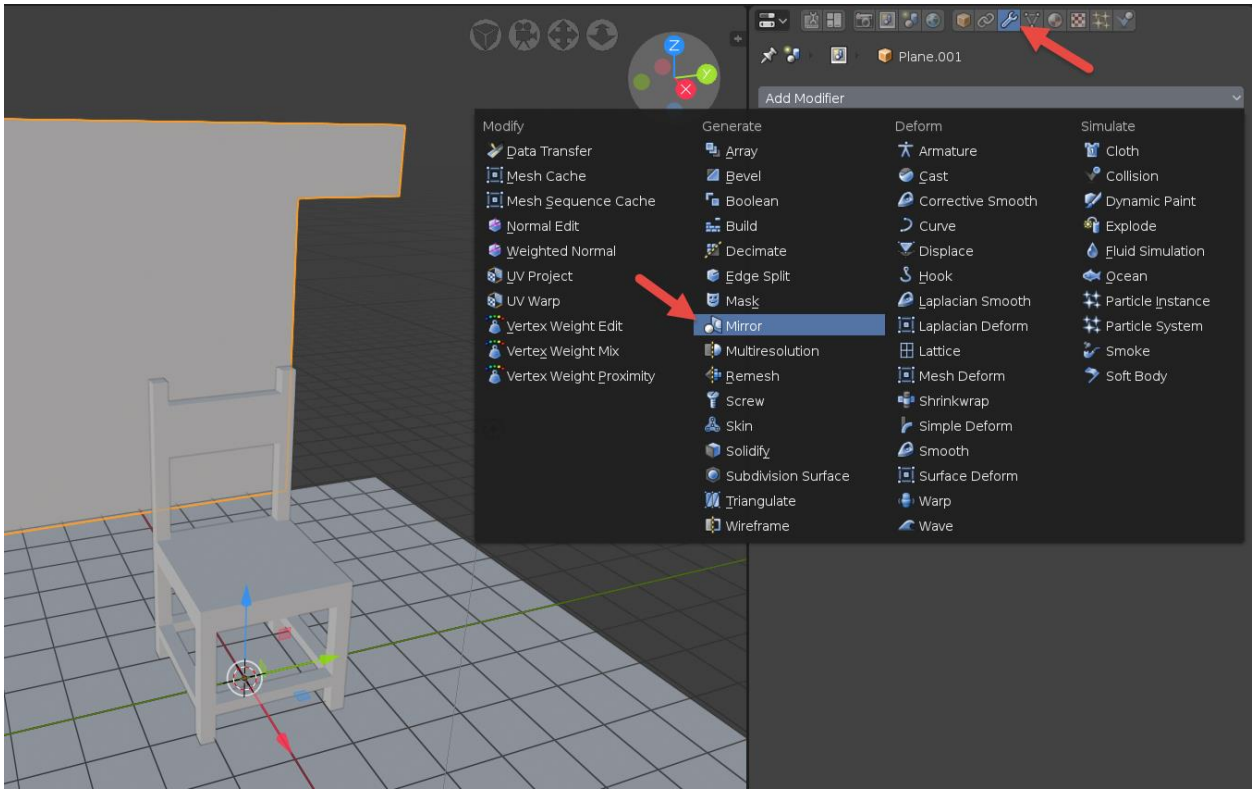

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Cube
Transform
Location:
X: 0.00000
Y: 0.00000
Z: 0.00000
Rotation:
X: 0°
Y: 0°
Z: 0°
XYZ Euler
Scale:
X: 1.000
Y: 1.000
Z: 0.200
Dimensions:
X: 2.50000
Y: 2.50000
Z: 5.20000
View
3D Cursor
Location X 0.00000
Y 0.00000
Z 0.00000
Annotations
Object Mode
View
Select
Add
Object
Global
Overlays
Shading

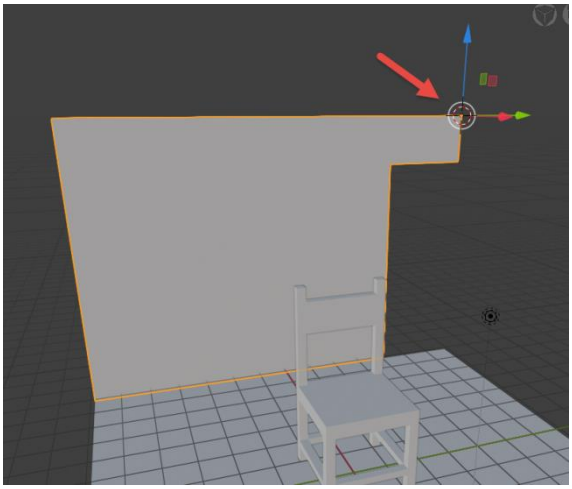

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
Add Cube
Extrude Individual
Inset Faces
Bevel
Loop Cut
Knife
Poly Build
Spin
Smooth
Edge Slide
Shrink/Fatten
User Persp
(1) Plane
Z
X

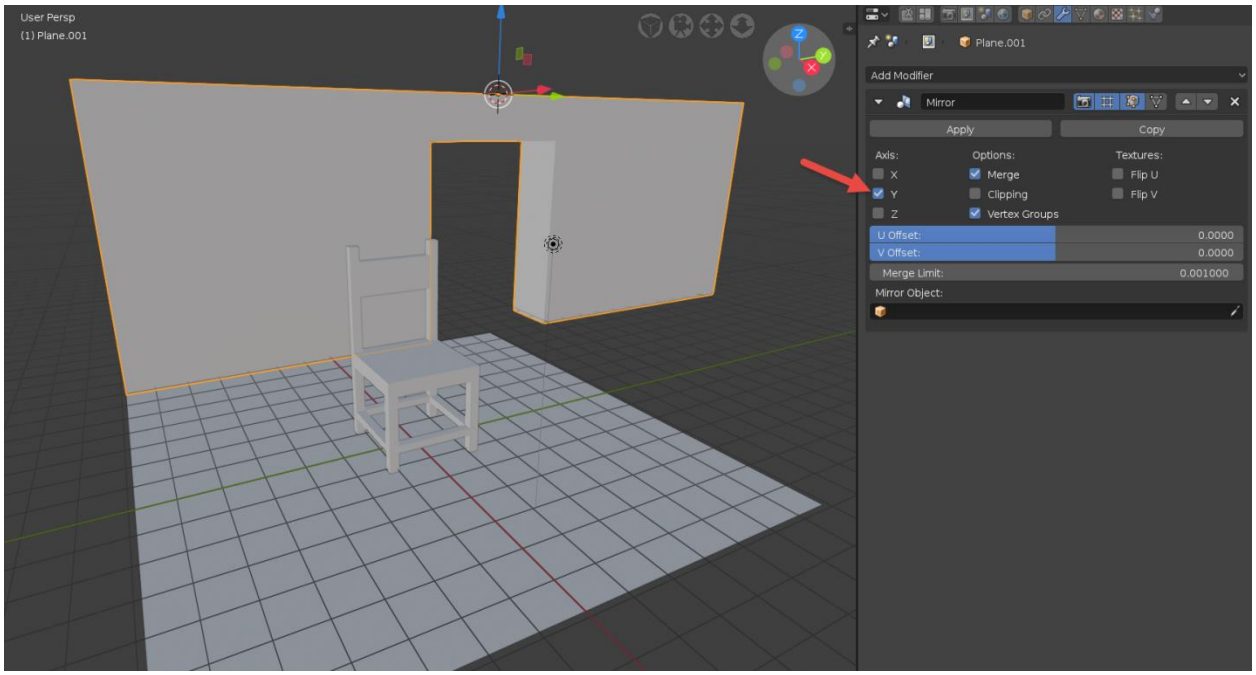


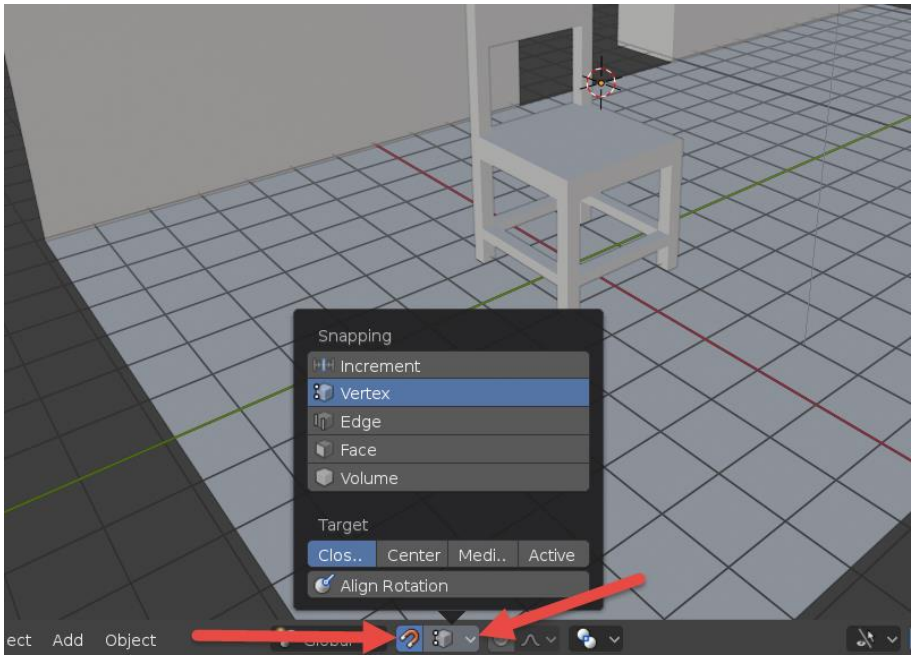


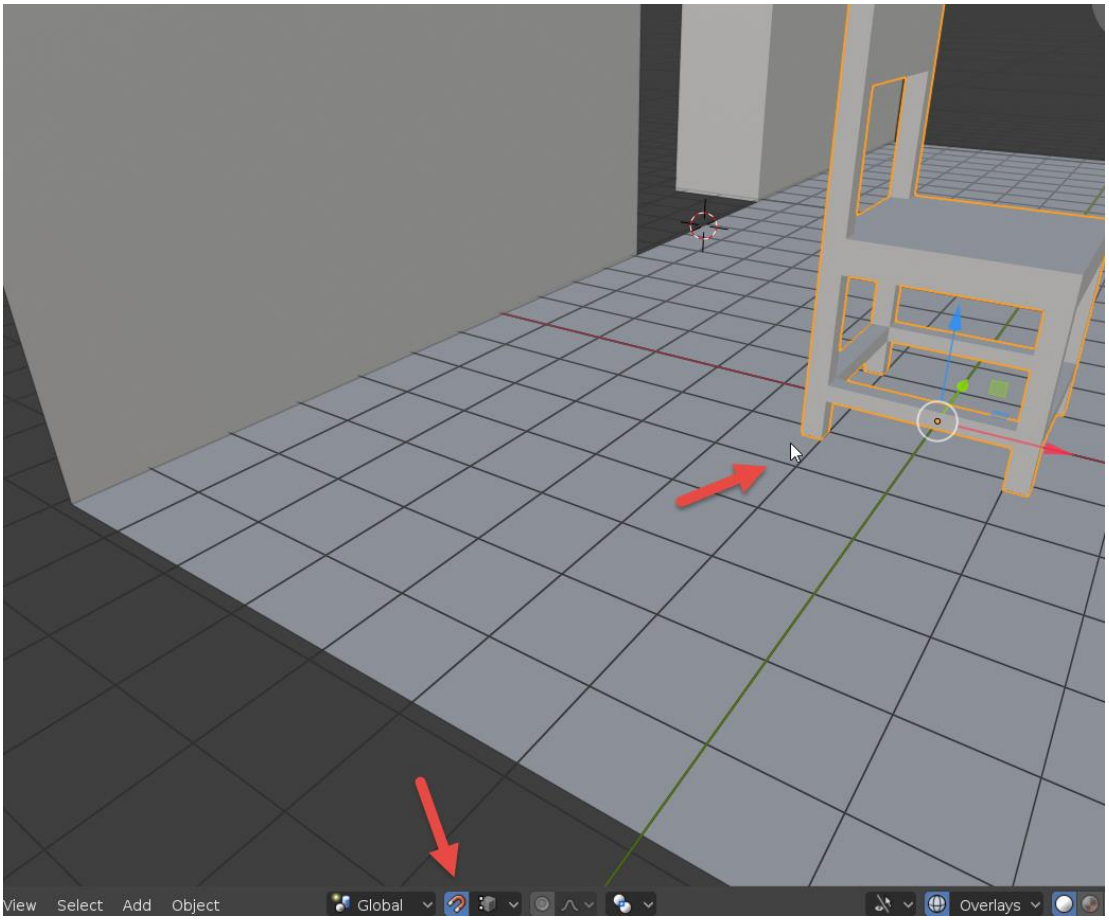


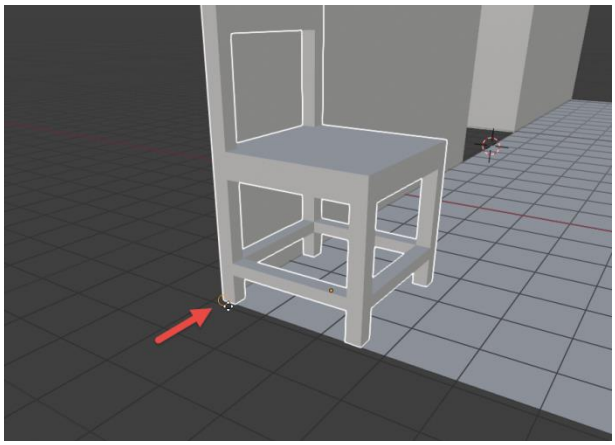

Plane.001
Add Modifier
Modify
Data Transfer
Mesh Cache
Mesh Sequence Cache
Normal Edit
Weighted Normal
UV Project
UV Warp
Vertex Weight Edit
Vertex Weight Mix
Vertex Weight Proximity
Generate
Array
Bevel
Boolean
Build
Decimate
Edge Split
Mask
Mirror
Multiresolution
Remesh
Screw
Skin
Solidify
Subdivision Surface
Triangulate
Wireframe
Deform
Armature
Cast
Corrective Smooth
Curve
Displace
Hook
Laplacian Smooth
Laplacian Deform
Lattice
Mesh Deform
Shrinkwrap
Simple Deform
Smooth
Surface Deform
Warp
Wave
Simulate
Cloth
Collision
Dynamic Paint
Explode
Fluid Simulation
Ocean
Particle Instance
Particle System
Smoke
Soft Body

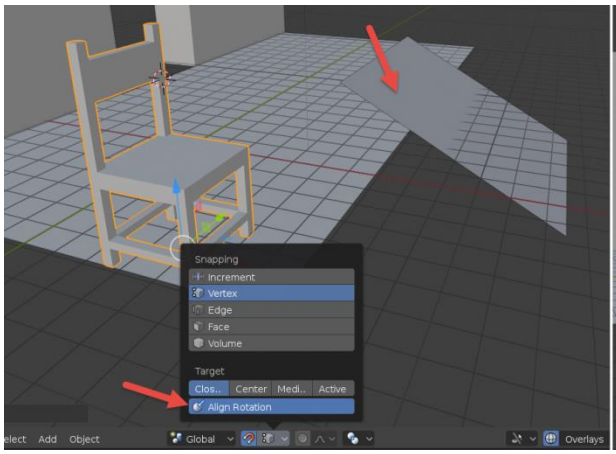


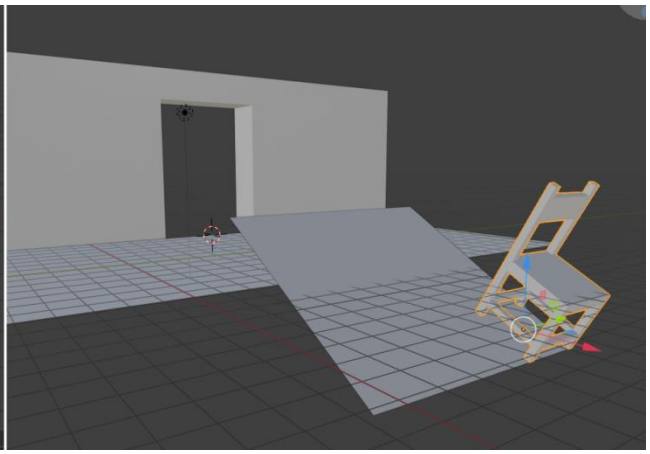

User Persp
(1) Plane.001
Plane.001
Add Modifier
Mirror
Apply
Copy
Axis:
X
Y
Z
Options:
Merge
Clipping
Vertex Groups
Textures:
Flip U
Flip V
U Offset:
0.0000
V Offset:
0.0000
Merge Limit:
0.001000
Mirror Object:


Snapping
Increment
Vertex
Edge
Face
Volume
Target
Clos..
Center
Medi..
Active
Align Rotation
ect
Add
Object

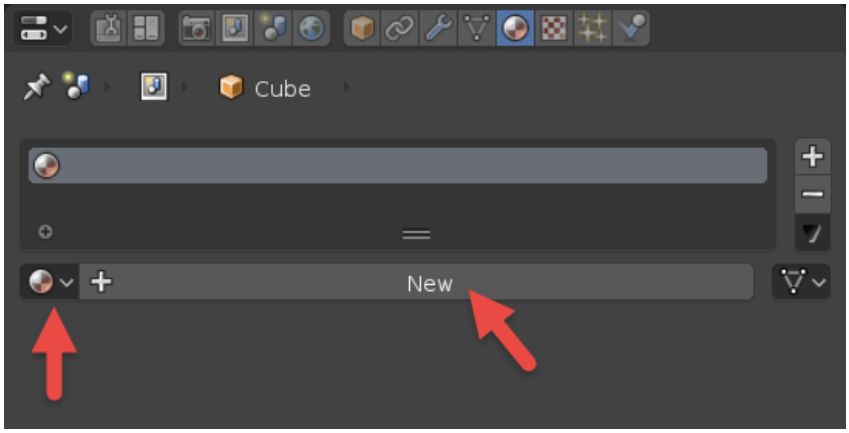

View
Select
Add
Object
Global
Overlays

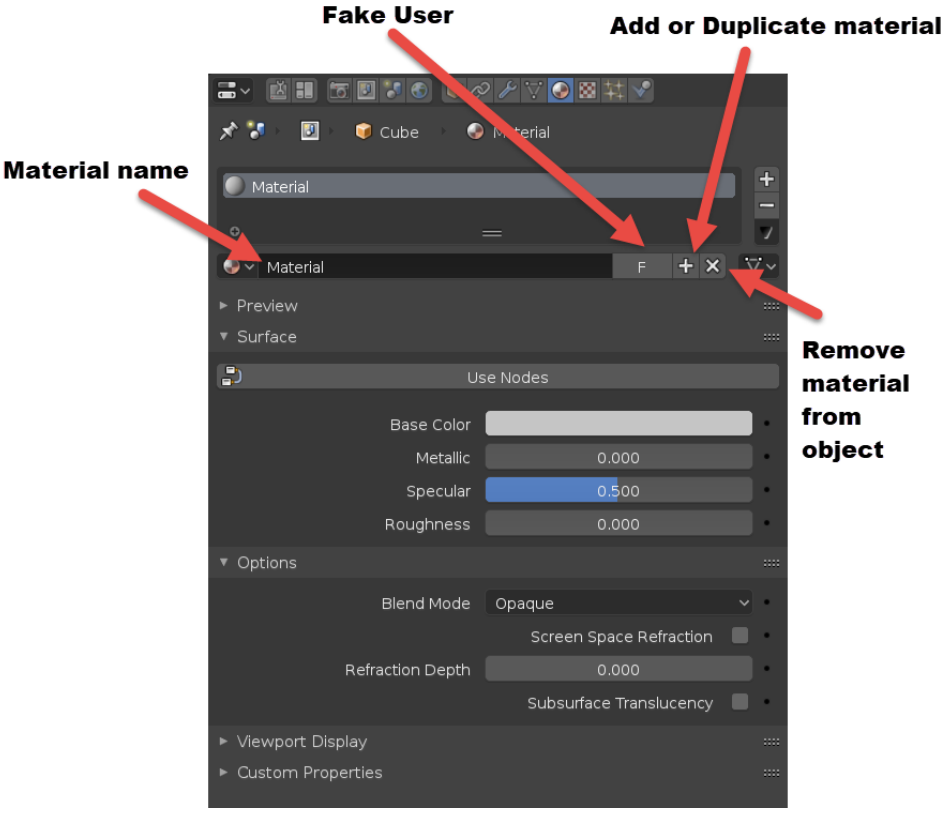


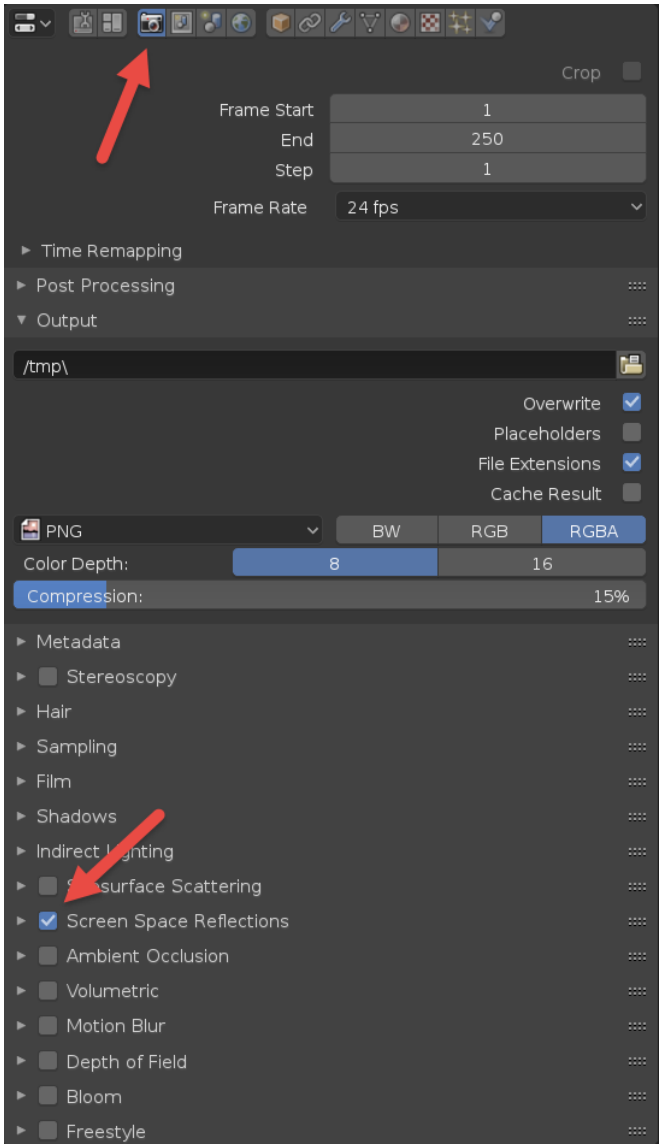

Snapping
Increment
Vertex
Edge
Face
Volume
Target
Clos..
Center
Medi..
Active
Align Rotation
Global
Overlays

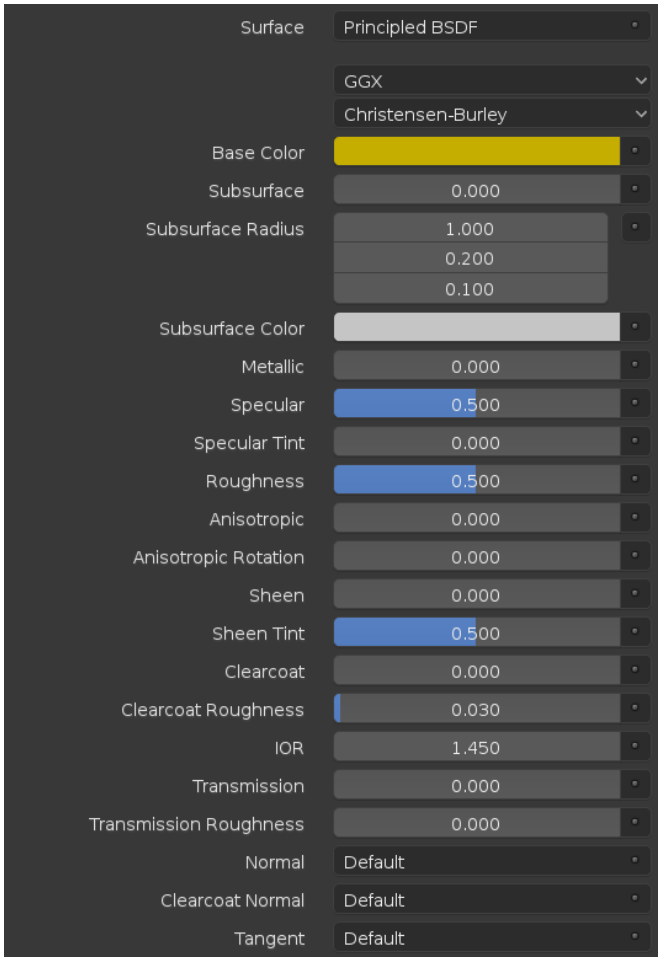


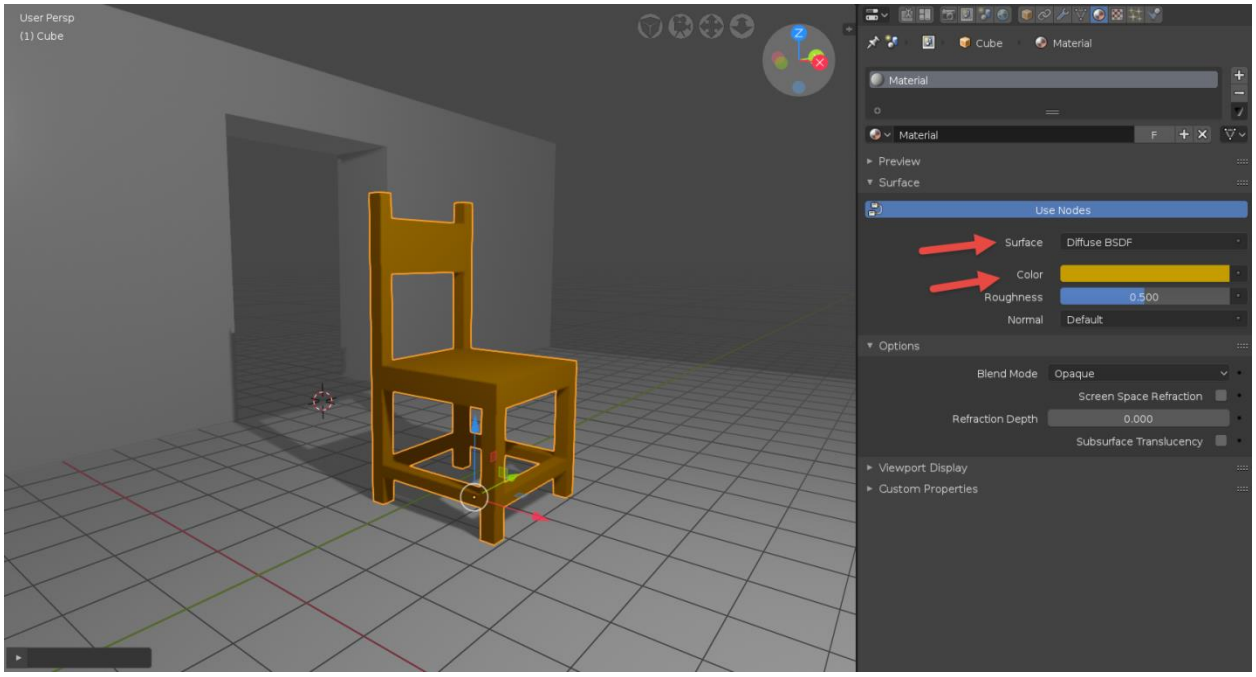
Chapter 4: Using Real-Time Materials in Eevee

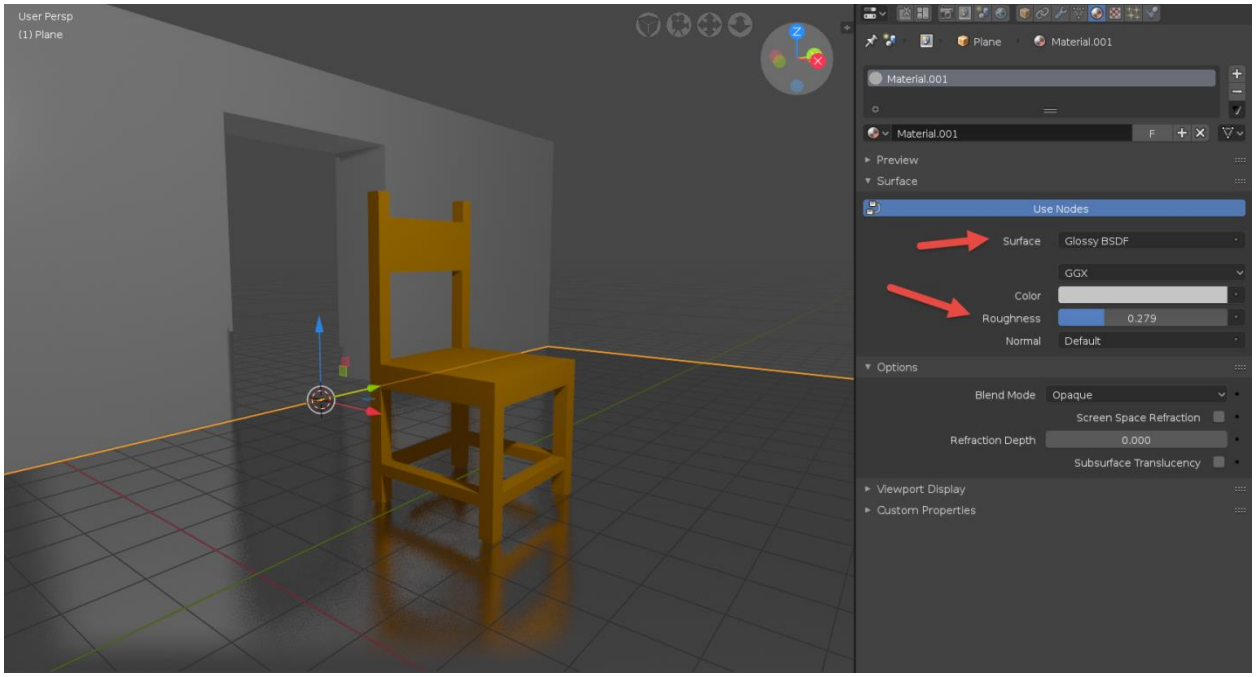


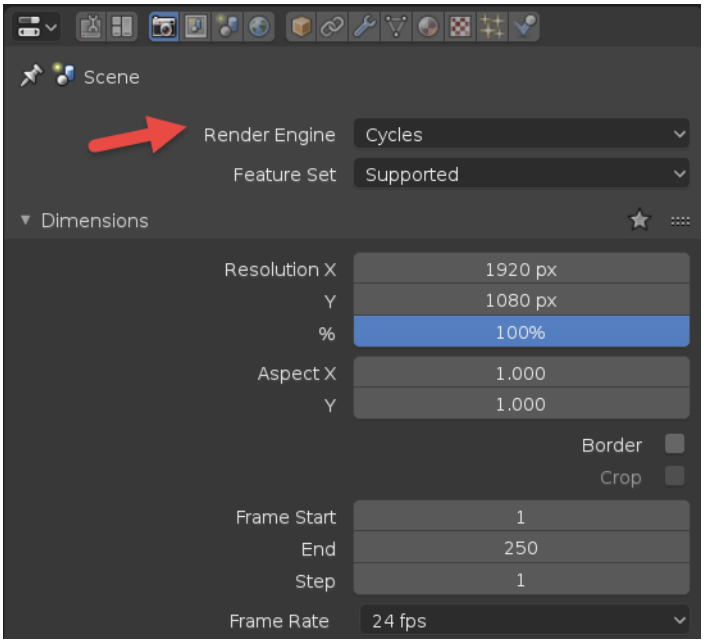


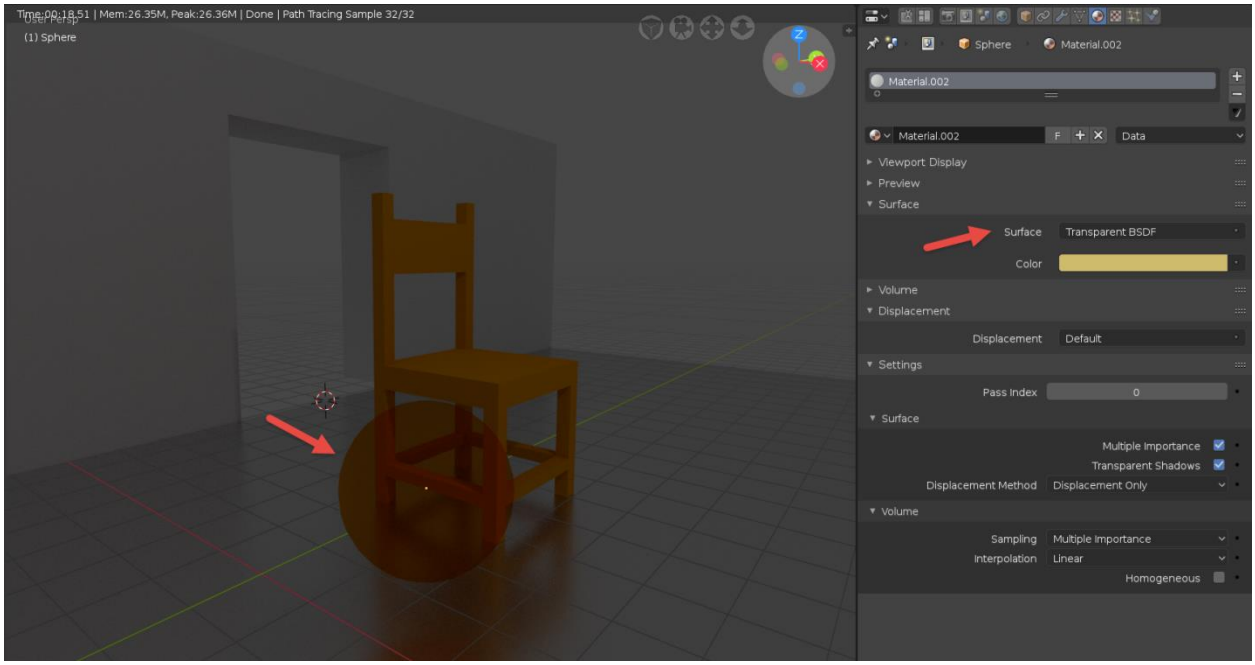

Crop
Frame Start
1
End
250
Step
1
Frame Rate
24 fps
Time Remapping
Post Processing
Output
/tmp\
Overwrite
Placeholders
File Extensions
Cache Result
PNG
BW
RGB
RGBA
Color Depth:
8
16
Compression:
15%
Metadata
Stereoscopy
Hair
Sampling
Film
Shadows
Indirect Lighting
Subsurface Scattering
Screen Space Reflections
Ambient Occlusion
Volumetric
Motion Blur
Depth of Field
Bloom
Freestyle

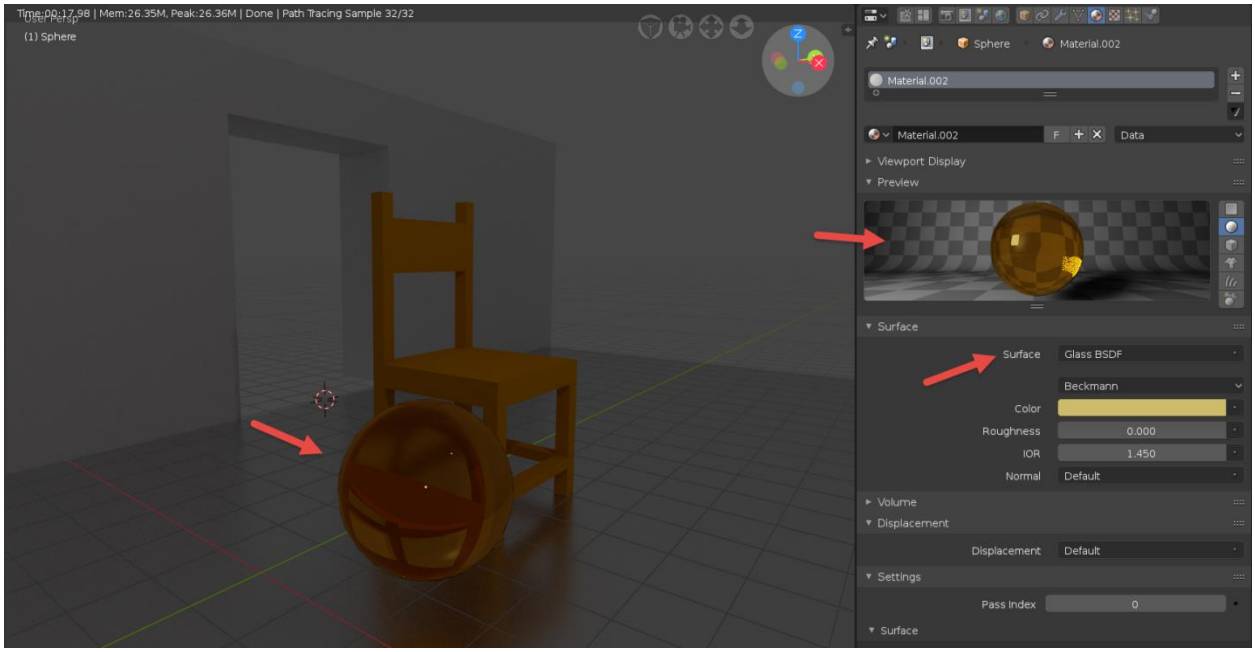

Surface
Principled BSDF
GGX
Christensen-Burley
Base Color
Subsurface
0.000
Subsurface Radius
1.000
0.200
0.100
Subsurface Color
Metallic
0.000
Specular
0.500
Specular Tint
0.000
Roughness
0.500
Anisotropic
0.000
Anisotropic Rotation
0.000
Sheen
0.000
Sheen Tint
0.500
Clearcoat
0.000
Clearcoat Roughness
0.030
IOR
1.450
Transmission
0.000
Transmission Roughness
0.000
Normal
Default
Clearcoat Normal
Default
Tangent
Default

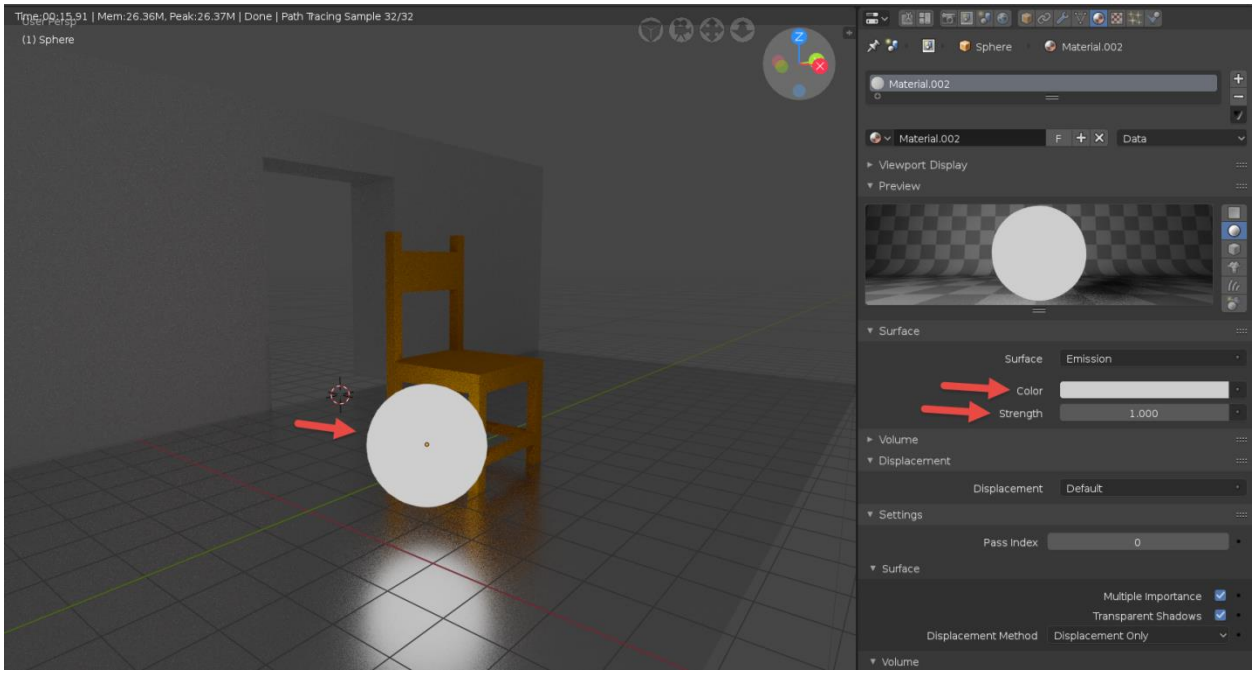

User Persp
(1) Cube
Cube
Material
Material
Material
Preview
Surface
Use Nodes
Surface
Diffuse BSDF
Color
Roughness
0.500
Normal
Default
Options
Blend Mode
Opaque
Screen Space Refraction
Refraction Depth
0.000
Subsurface Translucency
Viewport Display
Custom Properties

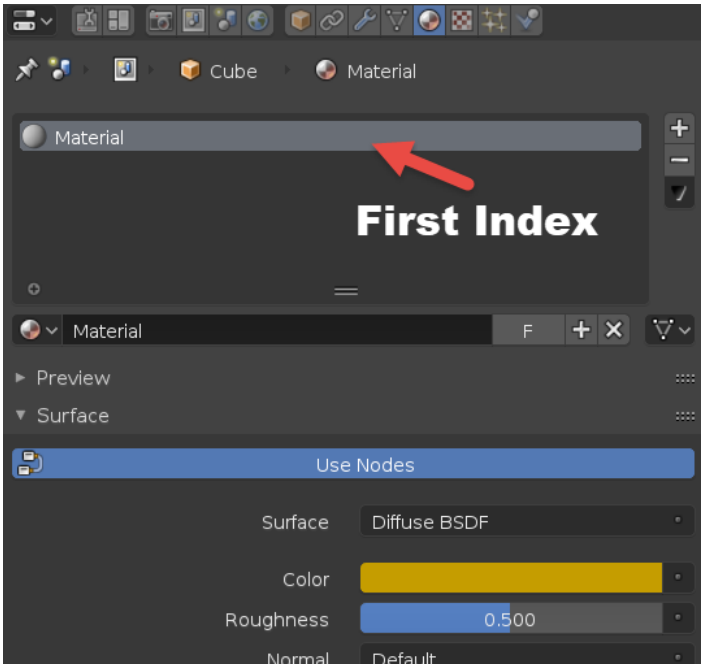

User Persp
(1) Plane
Plane
Material.001
Material.001
Material.001
Preview
Surface
Use Nodes
Surface
Glossy BSDF
GGX
Color
Roughness
0.279
Normal
Default
Options
Blend Mode
Opaque
Screen Space Refraction
Refraction Depth
0.000
Subsurface Translucency
Viewport Display
Custom Properties

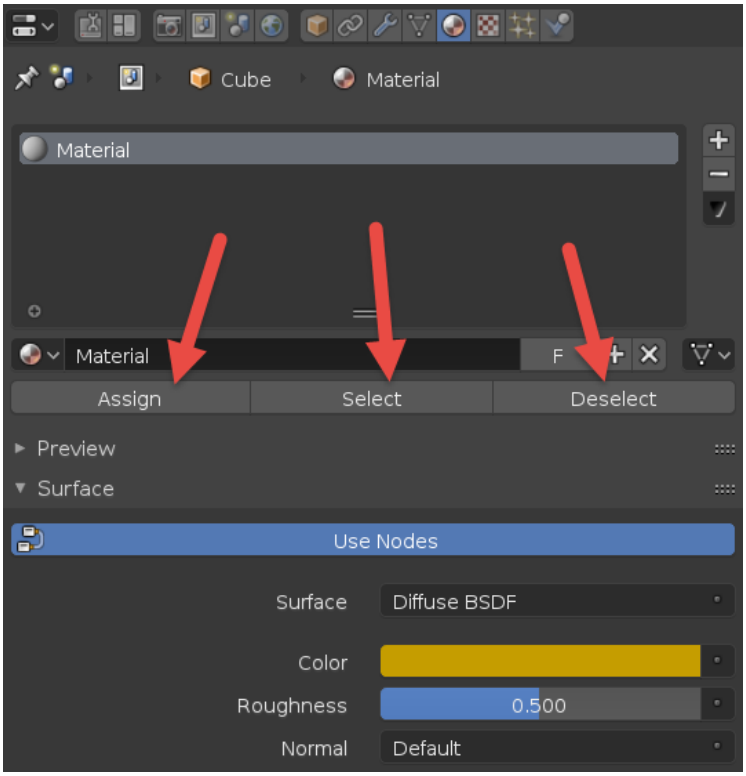

Scene
Render Engine
Cycles
Feature Set
Supported
Dimensions
Resolution X
1920 px
Y
1080 px
%
100%
Aspect X
1.000
Y
1.000
Border
Crop
Frame Start
1
End
250
Step
1
Frame Rate
24 fps

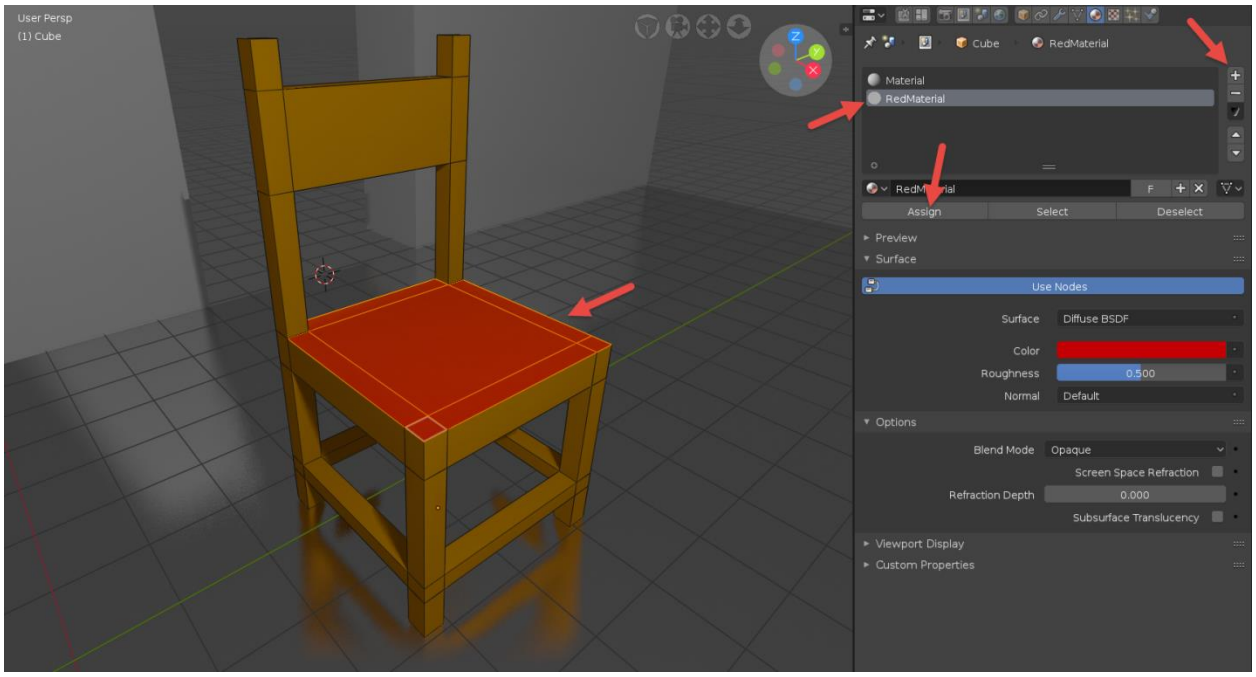

Time:00:18.51 | Mem:26.35M, Peak:26.36M | Done | Path Tracing Sample 32/32
User Persp
(1) Sphere
Sphere
Material.002
Material.002
Material.002
F
Data
Viewport Display
Preview
Surface
Surface
Transparent BSDF
Color
Volume
Displacement
Displacement
Default
Settings
Pass Index
0
Surface
Multiple Importance
Transparent Shadows
Displacement Method
Displacement Only
Volume
Sampling
Multiple Importance
Interpolation
Linear
Homogeneous


Time:00:17.98 | Mem:26.35M, Peak:26.36M | Done | Path Tracing Sample 32/32
User Persp
(1) Sphere
Sphere
Material.002
Material.002
Material.002
F
Data
Viewport Display
Preview
Surface
Surface
Glass BSDF
Beckmann
Color
Roughness
0.000
IOR
1.450
Normal
Default
Volume
Displacement
Displacement
Default
Settings
Pass Index
0
Surface

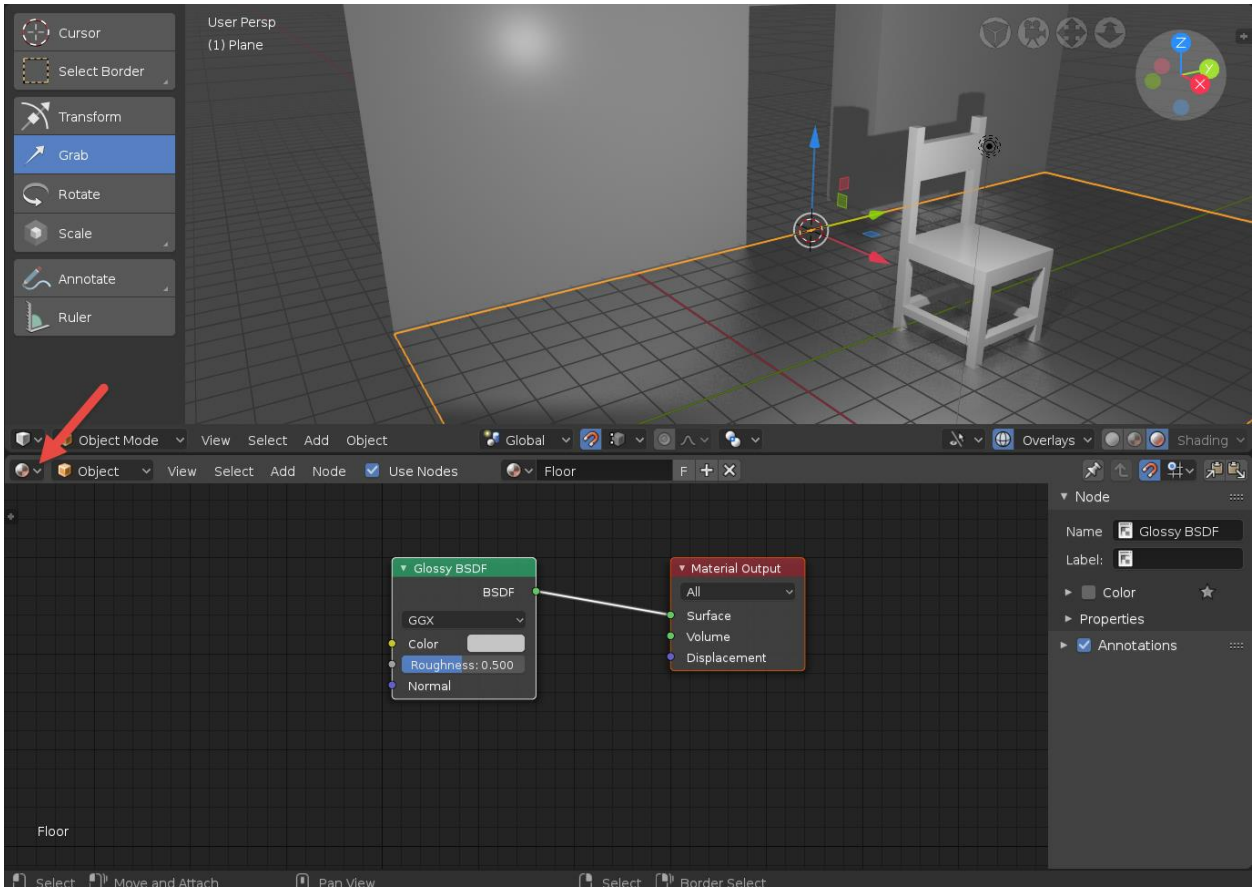

Time:00:15.91 | Mem:26.36M, Peak:26.37M | Done | Path Tracing Sample 32/32
User Persp
(1) Sphere
Sphere
Material.002
Material.002
Material.002
F
Data
Viewport Display
Preview
Surface
Surface
Emission
Color
Strength
1.000
Volume
Displacement
Displacement
Default
Settings
Pass Index
0
Surface
Multiple Importance
Transparent Shadows
Displacement Method
Displacement Only
Volume

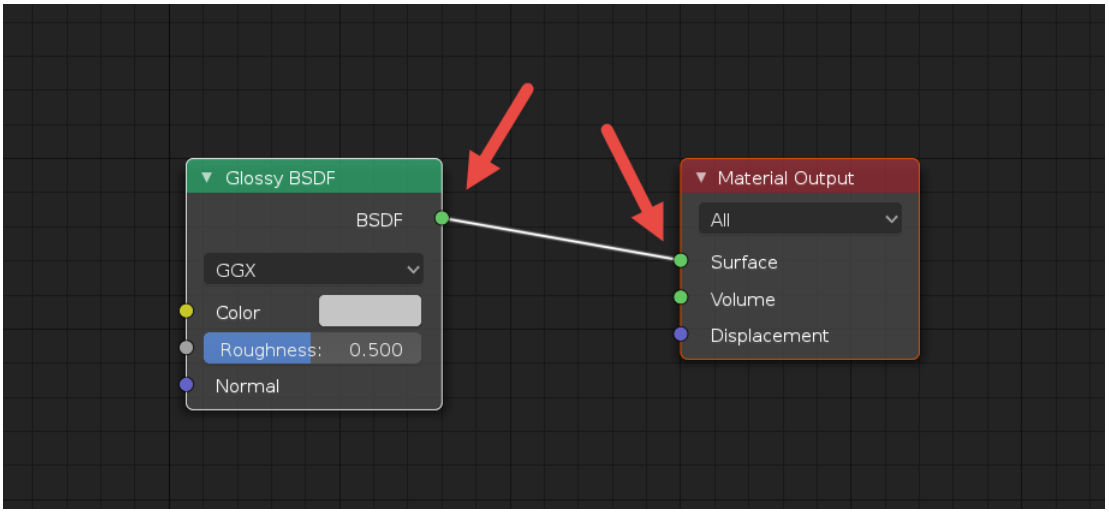

Cube
Material
Material
First Index
Material
F
Preview
Surface
Use Nodes
Surface
Diffuse BSDF
Color
Roughness
0.500
Normal
Default

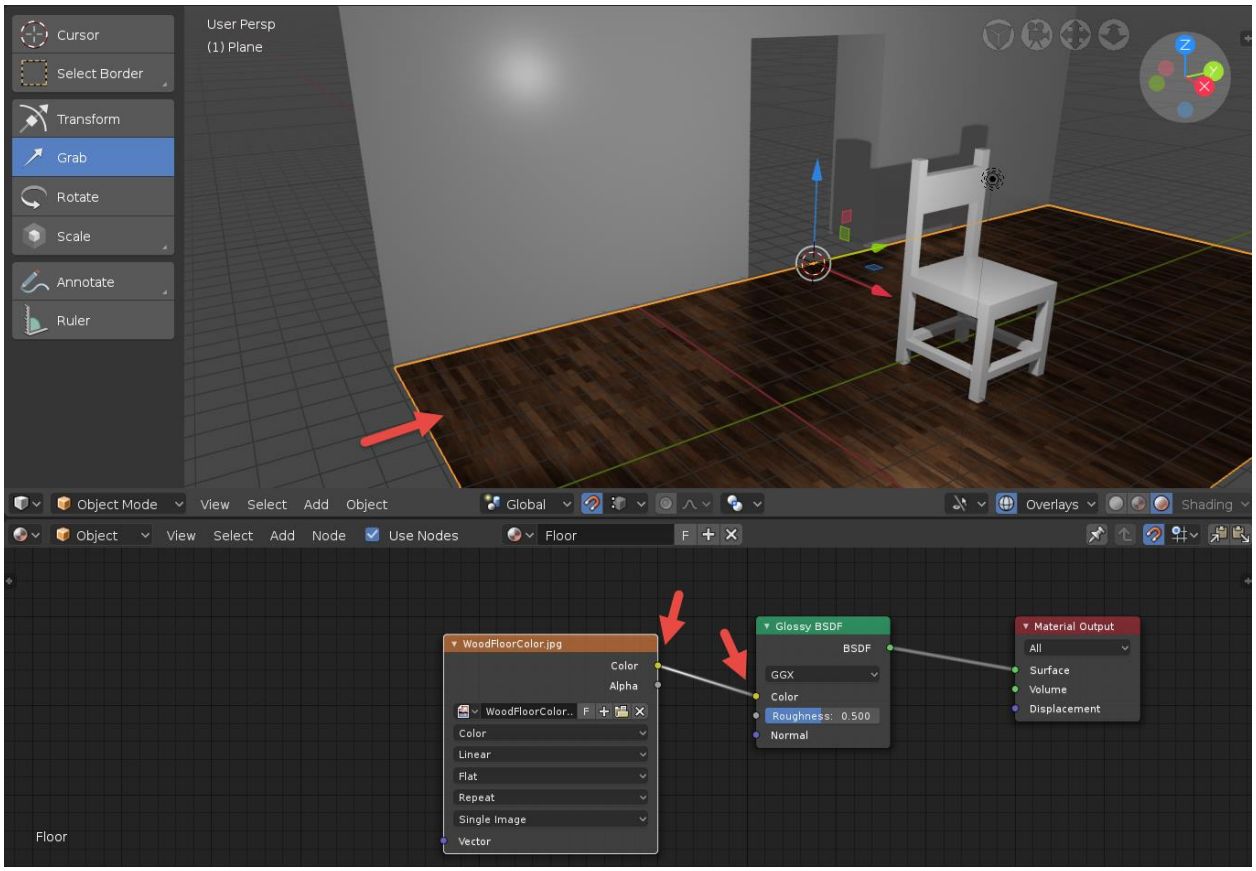

Cube
Material
Material
Material
F
Assign
Select
Deselect
Preview
Surface
Use Nodes
Surface
Diffuse BSDF
Color
Roughness
0.500
Normal
Default

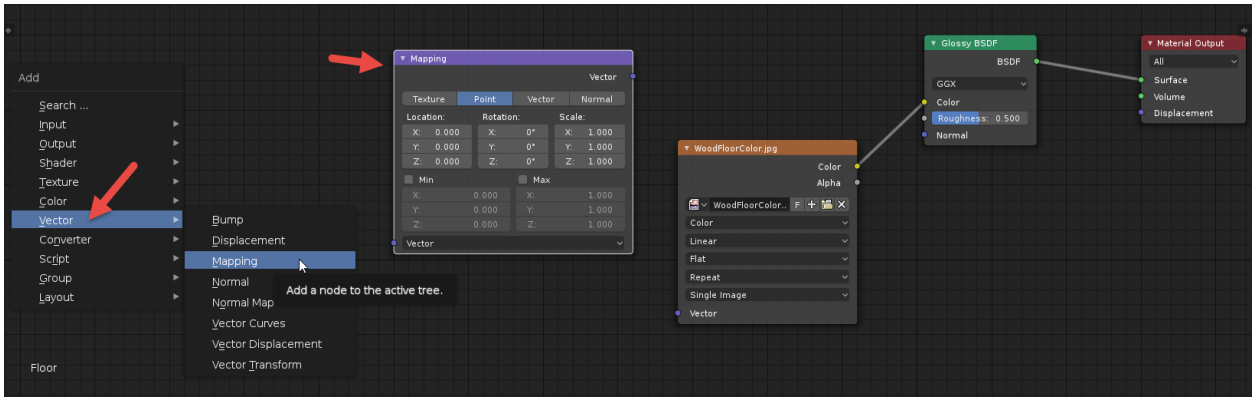

User Persp
(1) Cube
Cube
RedMaterial
Material
RedMaterial
Assign
Select
Deselect
Preview
Surface
Use Nodes
Surface
Diffuse BSDF
Color
Roughness
0.500
Normal
Default
Options
Blend Mode
Opaque
Screen Space Refraction
Refraction Depth
0.000
Subsurface Translucency
Viewport Display
Custom Properties

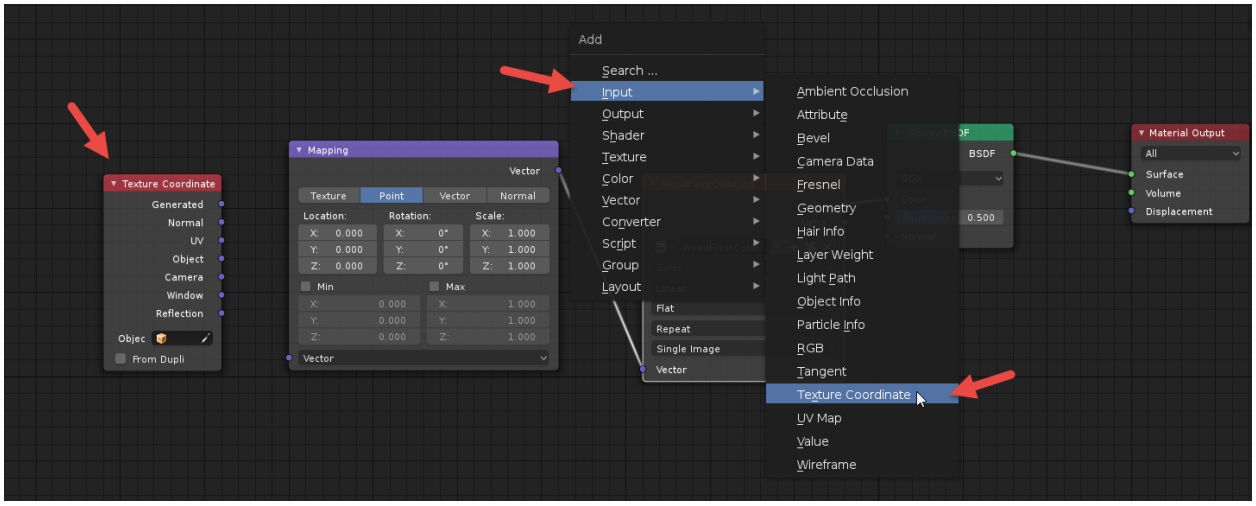
Chapter 5: Real-Time Textures for Eevee

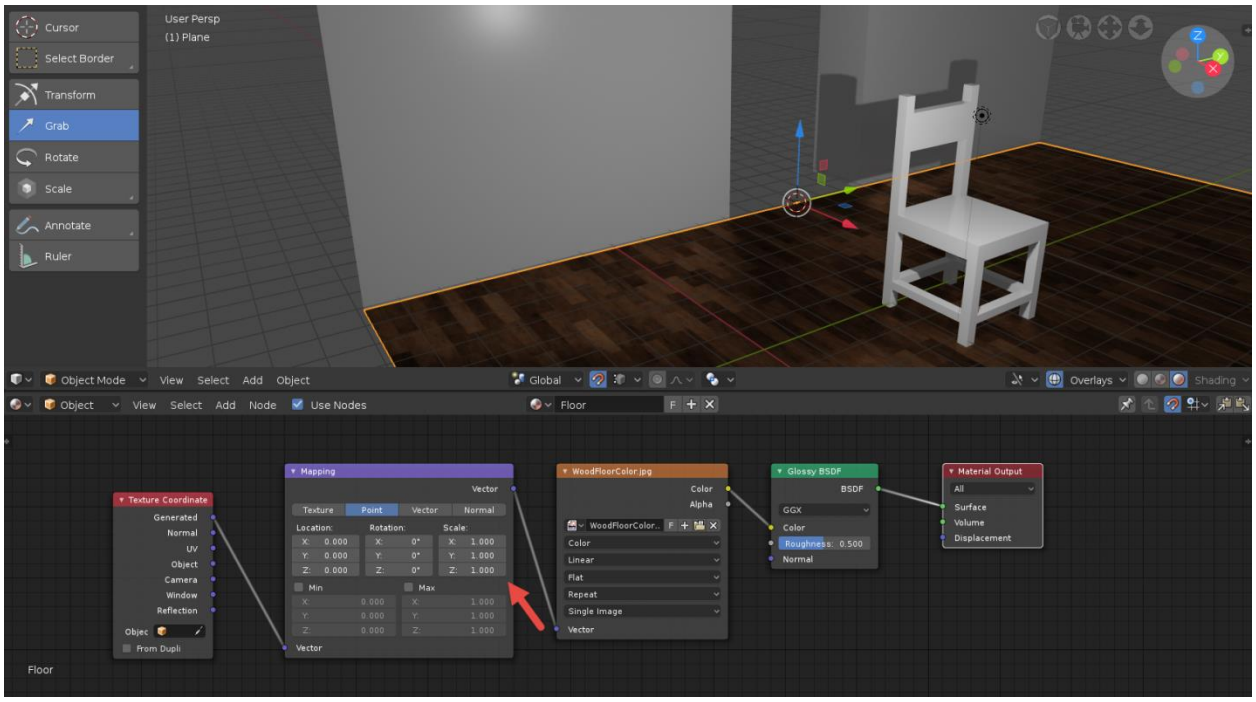


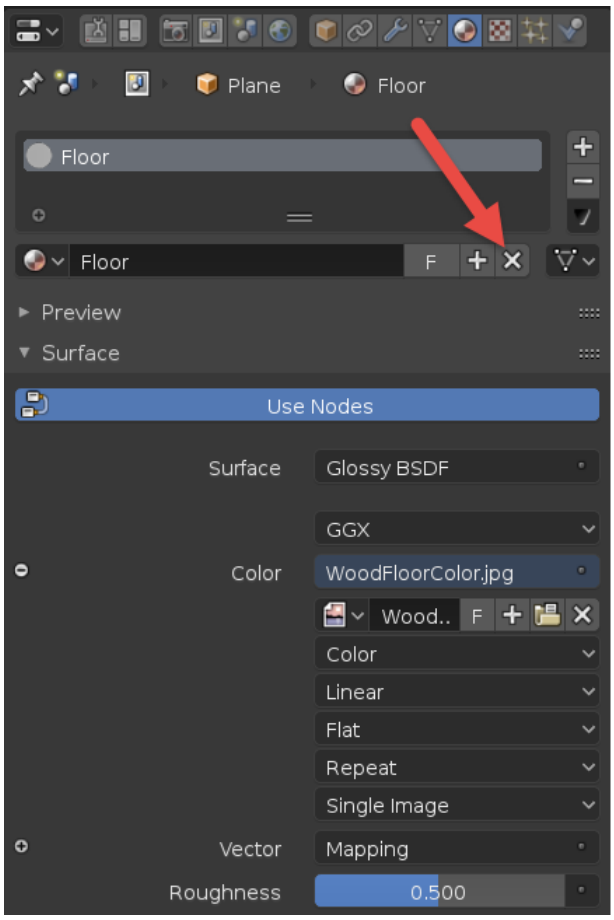


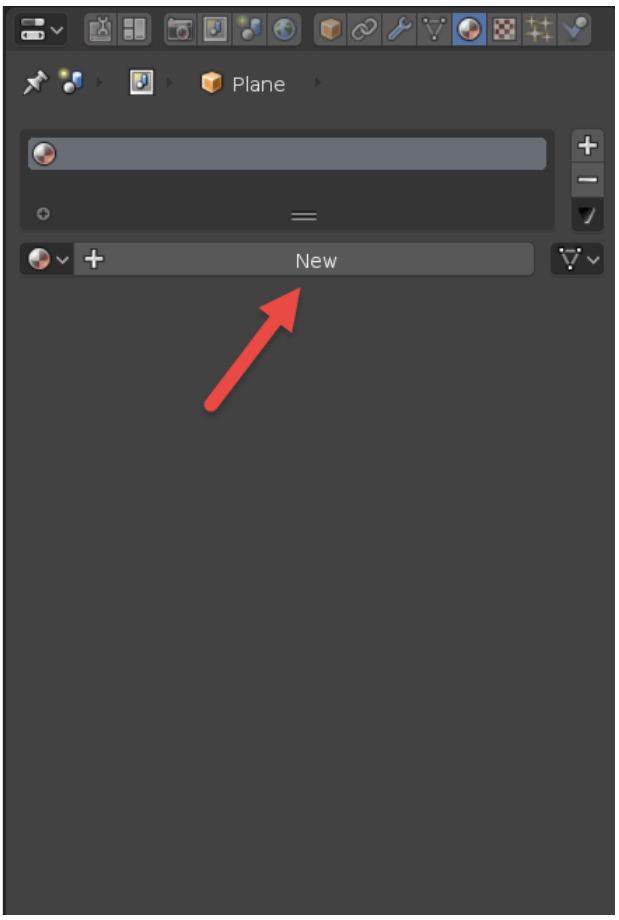

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Plane
Object Mode
View
Select
Add
Object
Global
Overlays
Shading
Object
View
Select
Add
Node
Use Nodes
Floor
WoodFloorColor.jpg
Color
Alpha
Color
Linear
Flat
Repeat
Single Image
Vector
Glossy BSDF
BSDF
GGX
Color
Roughness: 0.500
Normal
Material Output
All
Surface
Volume
Displacement
Floor

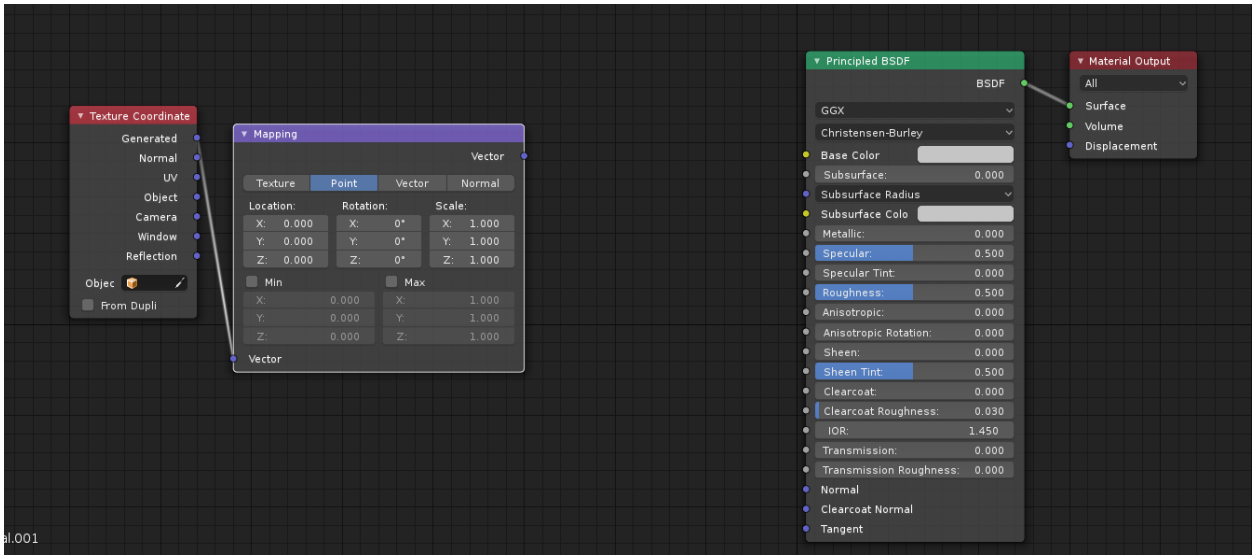

Add
Search ...
Input
Output
Shader
Texture
Color
Vector
Converter
Script
Group
Layout
Bump
Displacement
Mapping
Normal
Normal Map
Vector Curves
Vector Displacement
Vector Transform
Add a node to the active tree.
Floor
Mapping
Vector
Texture
Point
Vector
Normal
Location:
Rotation:
Scale:
Min
Max
Vector
WoodFloorColor.jpg
Color
Alpha
Linear
Flat
Repeat
Single Image
Glossy BSDF
BSDF
GGX
Roughness: 0.500
Normal
Material Output
All
Surface
Volume
Displacement

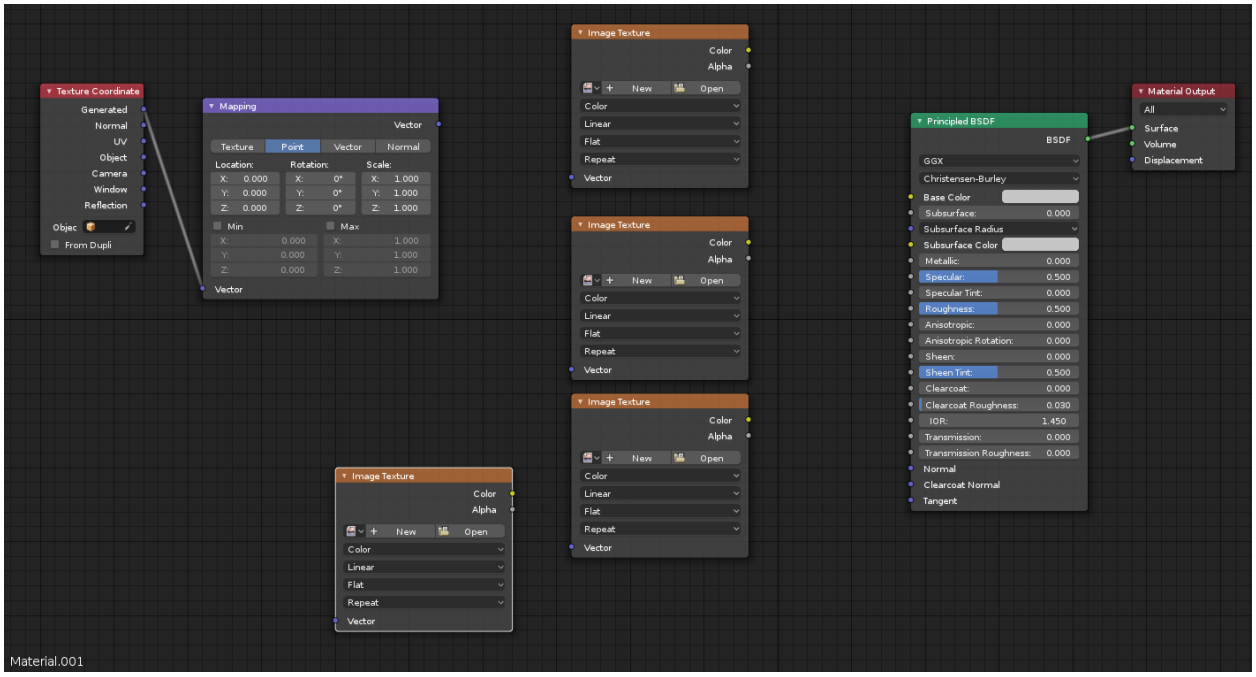

Add
Search ...
Input
Output
Shader
Texture
Color
Vector
Converter
Script
Group
Layout
Ambient Occlusion
Attribute
Bevel
Camera Data
Fresnel
Geometry
Hair Info
Layer Weight
Light Path
Object Info
Particle Info
RGB
Tangent
Texture Coordinate
UV Map
Value
Wireframe
Texture Coordinate
Generated
Normal
UV
Object
Camera
Window
Reflection
From Dupli
Mapping
Vector
Texture
Point
Vector
Normal
Location:
Rotation:
Scale:
Min
Max
Flat
Repeat
Single Image
BSDF
0.500
Material Output
All
Surface
Volume
Displacement

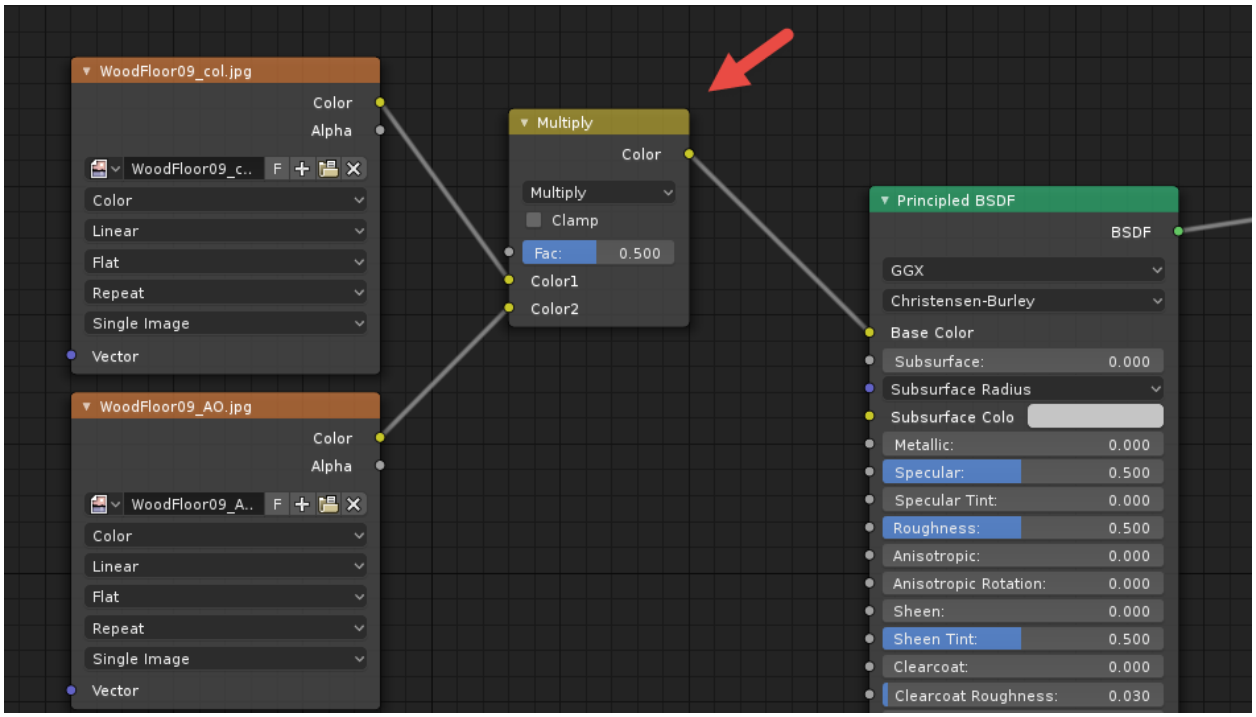

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
User Persp
(1) Plane
Object Mode
View
Select
Add
Object
Global
Overlays
Shading
Object
View
Select
Add
Node
Use Nodes
Floor
Texture Coordinate
Mapping
WoodFloorColor.jpg
Glossy BSDF
Material Output
Floor

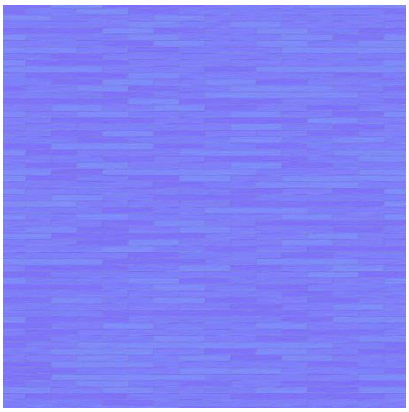

Plane
Floor
Floor
Floor
F
Preview
Surface
Use Nodes
Surface
Glossy BSDF
GGX
Color
WoodFloorColor.jpg
Wood..
F
Color
Linear
Flat
Repeat
Single Image
Vector
Mapping
Roughness
0.500

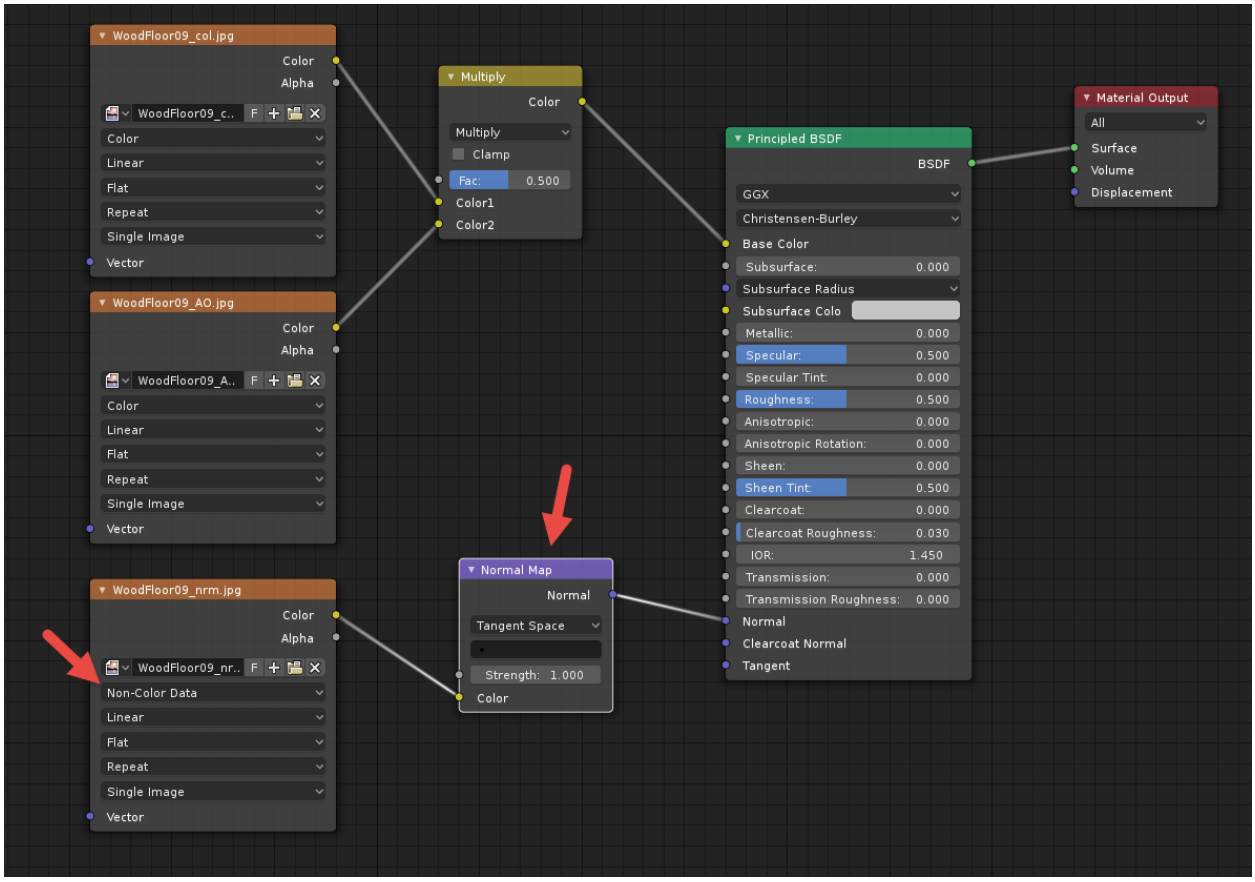

Plane
New


Texture Coordinate
Generated
Normal
UV
Object
Camera
Window
Reflection
Objec
From Dupli
Mapping
Vector
Texture
Point
Vector
Normal
Location:
Rotation:
Scale:
X: 0.000
Y: 0.000
Z: 0.000
X: 0°
Y: 0°
Z: 0°
X: 1.000
Y: 1.000
Z: 1.000
Min
Max
Vector
Principled BSDF
BSDF
GGX
Christensen-Burley
Base Color
Subsurface: 0.000
Subsurface Radius
Subsurface Colo
Metallic: 0.000
Specular: 0.500
Specular Tint: 0.000
Roughness: 0.500
Anisotropic: 0.000
Anisotropic Rotation: 0.000
Sheen: 0.000
Sheen Tint: 0.500
Clearcoat: 0.000
Clearcoat Roughness: 0.030
IOR: 1.450
Transmission: 0.000
Transmission Roughness: 0.000
Normal
Clearcoat Normal
Tangent
Material Output
All
Surface
Volume
Displacement

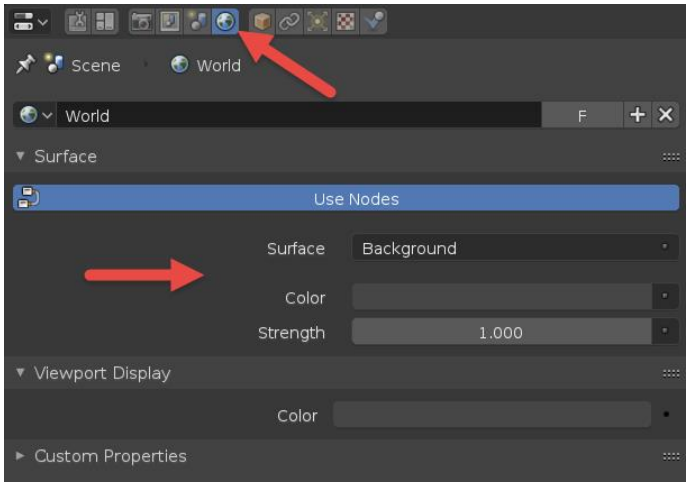

Texture Coordinate
Generated
Normal
UV
Object
Camera
Window
Reflection
Objec
From Dupli
Mapping
Vector
Texture
Point
Vector
Normal
Location:
Rotation:
Scale:
Min
Max
Vector
Image Texture
Color
Alpha
New
Open
Color
Linear
Flat
Repeat
Vector
Principled BSDF
BSDF
GGX
Christensen-Burley
Base Color
Subsurface: 0.000
Subsurface Radius
Subsurface Color
Metallic: 0.000
Specular: 0.500
Specular Tint: 0.000
Roughness: 0.500
Anisotropic: 0.000
Anisotropic Rotation: 0.000
Sheen: 0.000
Sheen Tint: 0.500
Clearcoat: 0.000
Clearcoat Roughness: 0.030
IOR: 1.450
Transmission: 0.000
Transmission Roughness: 0.000
Normal
Clearcoat Normal
Tangent
Material Output
All
Surface
Volume
Displacement
Material.001

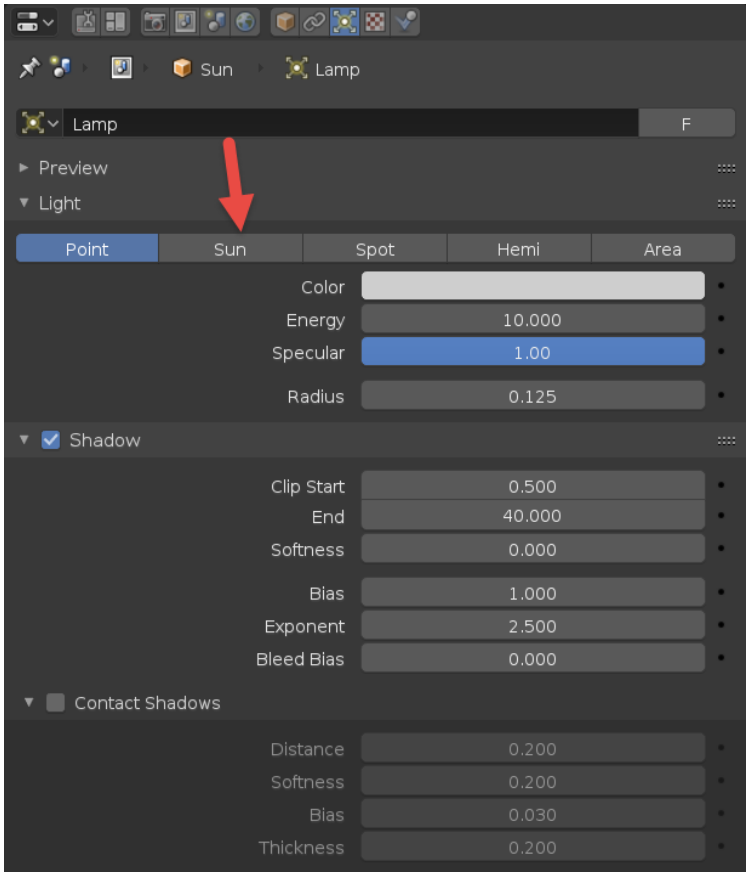

WoodFloor09_col.jpg
Color
Alpha
WoodFloor09_c..
F
Color
Linear
Flat
Repeat
Single Image
Vector
WoodFloor09_AO.jpg
Color
Alpha
WoodFloor09_A..
F
Color
Linear
Flat
Repeat
Single Image
Vector
Multiply
Color
Multiply
Clamp
Fac: 0.500
Color1
Color2
Principled BSDF
BSDF
GGX
Christensen-Burley
Base Color
Subsurface: 0.000
Subsurface Radius
Subsurface Colo
Metallic: 0.000
Specular: 0.500
Specular Tint: 0.000
Roughness: 0.500
Anisotropic: 0.000
Anisotropic Rotation: 0.000
Sheen: 0.000
Sheen Tint: 0.500
Clearcoat: 0.000
Clearcoat Roughness: 0.030

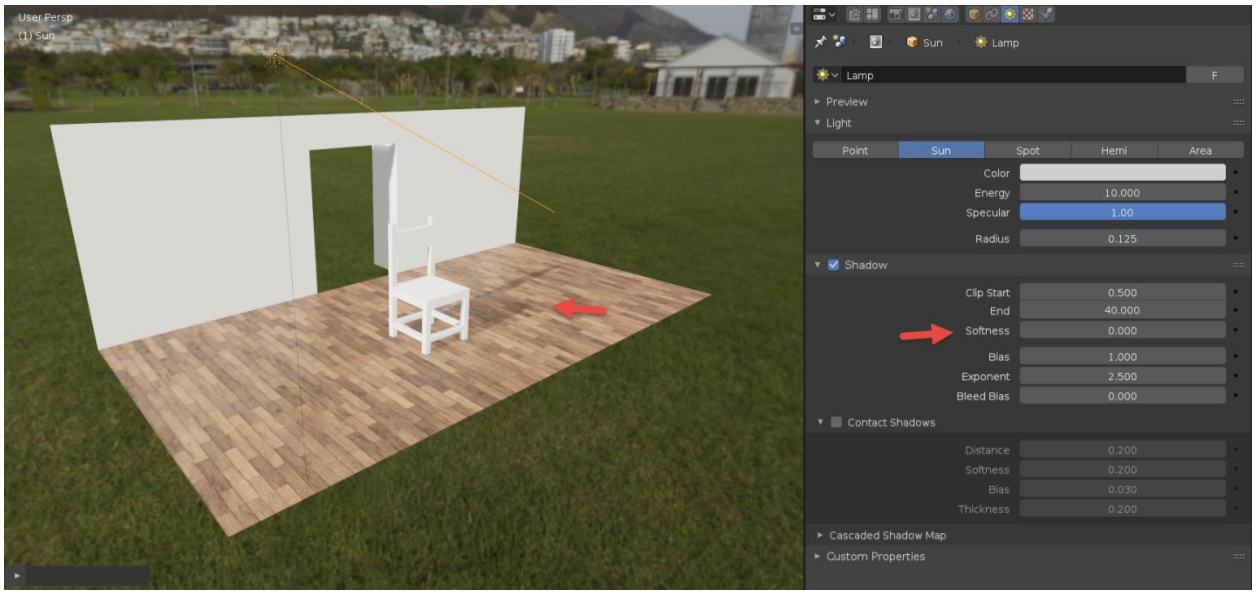


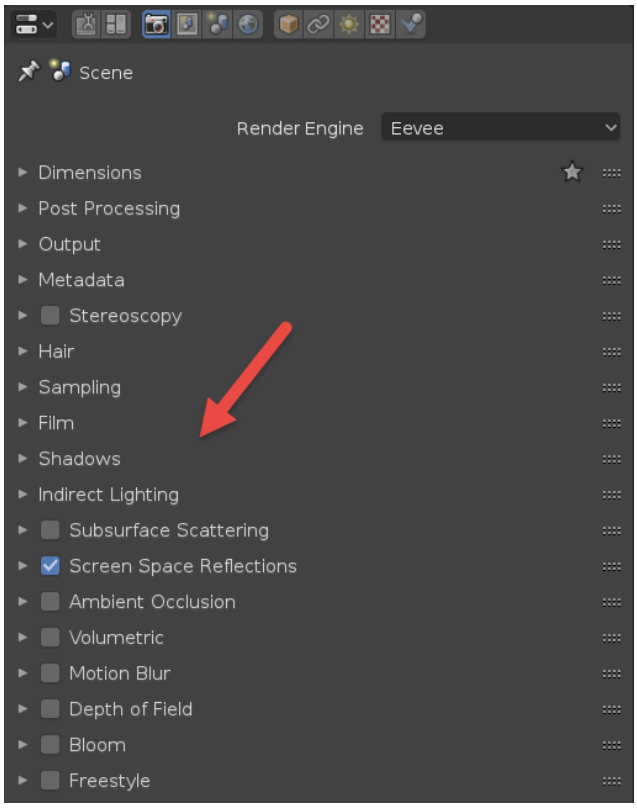

WoodFloor09_col.jpg
Color
Alpha
WoodFloor09_c..
F
Color
Linear
Flat
Repeat
Single Image
Vector
WoodFloor09_AO.jpg
Color
Alpha
WoodFloor09_A..
F
Color
Linear
Flat
Repeat
Single Image
Vector
WoodFloor09_nrm.jpg
Color
Alpha
WoodFloor09_nr..
F
Non-Color Data
Linear
Flat
Repeat
Single Image
Vector
Multiply
Color
Multiply
Clamp
Fac: 0.500
Color1
Color2
Normal Map
Normal
Tangent Space
Strength: 1.000
Color
Principled BSDF
BSDF
GGX
Christensen-Burley
Base Color
Subsurface: 0.000
Subsurface Radius
Subsurface Colo
Metallic: 0.000
Specular: 0.500
Specular Tint: 0.000
Roughness: 0.500
Anisotropic: 0.000
Anisotropic Rotation: 0.000
Sheen: 0.000
Sheen Tint: 0.500
Clearcoat: 0.000
Clearcoat Roughness: 0.030
IOR: 1.450
Transmission: 0.000
Transmission Roughness: 0.000
Normal
Clearcoat Normal
Tangent
Material Output
All
Surface
Volume
Displacement

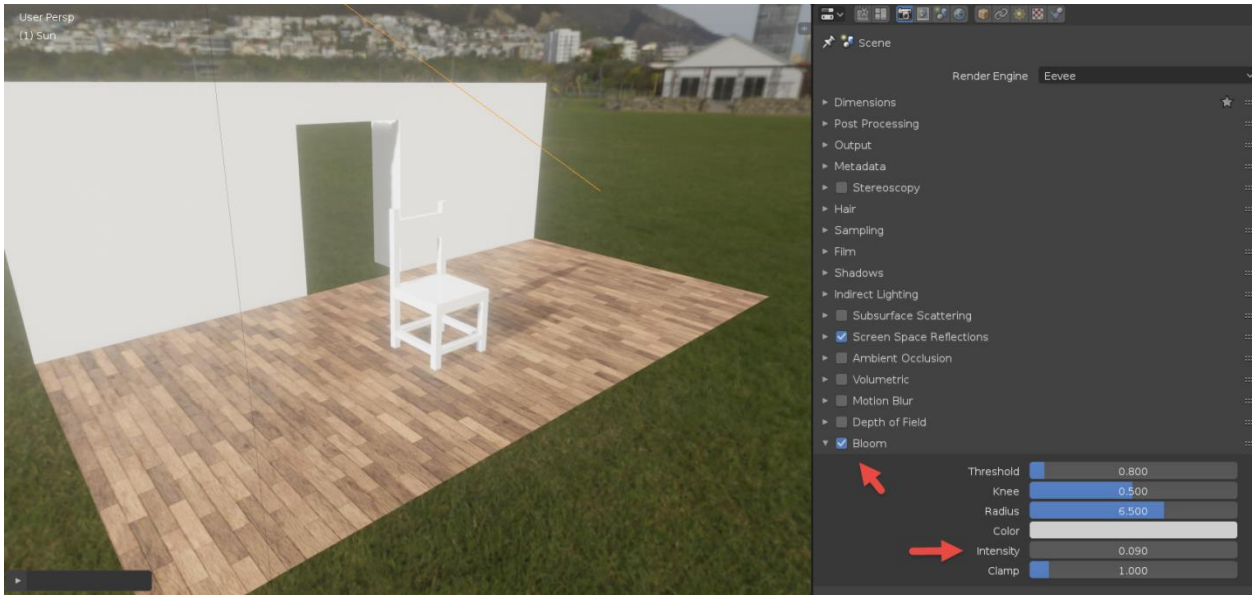
Chapter 6: Lights and Real-Time Rendering with Blender Eevee

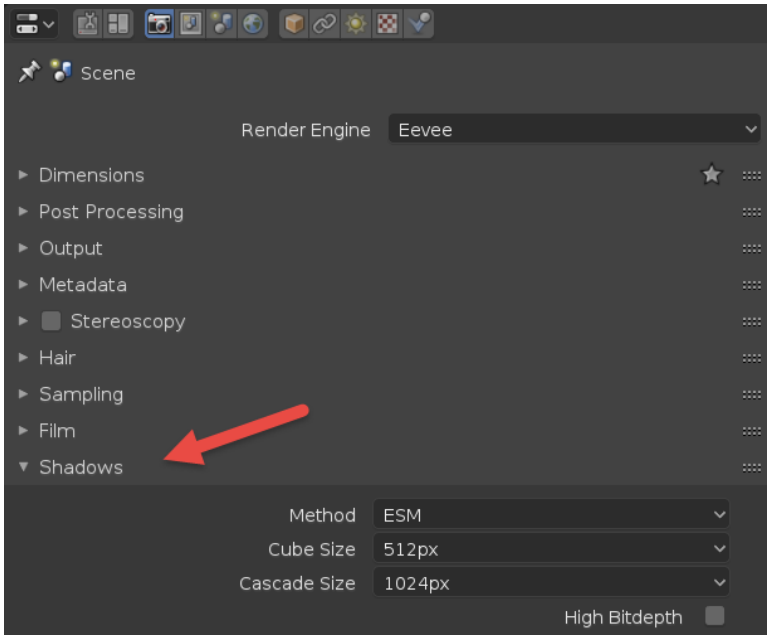



Sun
Lamp
Lamp
F
Preview
Light
Point
Sun
Spot
Hemi
Area
Color
Energy
10.000
Specular
1.00
Radius
0.125
Shadow
Clip Start
0.500
End
40.000
Softness
0.000
Bias
1.000
Exponent
2.500
Bleed Bias
0.000
Contact Shadows
Distance
0.200
Softness
0.200
Bias
0.030
Thickness
0.200


User Persp
(1) Sun
Sun
Lamp
Lamp
F
Preview
Light
Point
Sun
Spot
Hemi
Area
Color
Energy
10.000
Specular
1.00
Radius
0.125
Shadow
Clip Start
0.500
End
40.000
Softness
0.000
Bias
1.000
Exponent
2.500
Bleed Bias
0.000
Contact Shadows
Distance
0.200
Softness
0.200
Bias
0.030
Thickness
0.200
Cascaded Shadow Map
Custom Properties

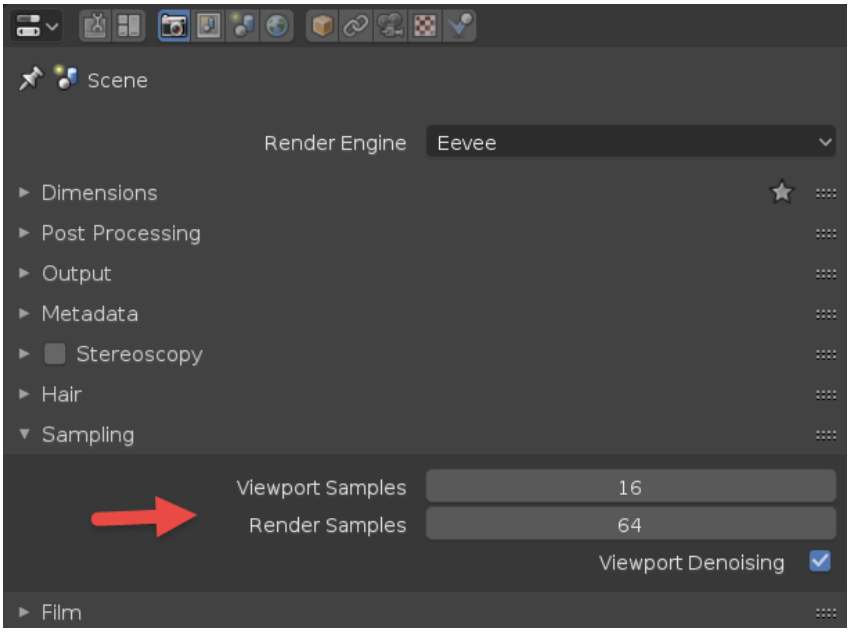

Scene
Render Engine
Eevee
Dimensions
Post Processing
Output
Metadata
Stereoscopy
Hair
Sampling
Film
Shadows
Indirect Lighting
Subsurface Scattering
Screen Space Reflections
Ambient Occlusion
Volumetric
Motion Blur
Depth of Field
Bloom
Freestyle

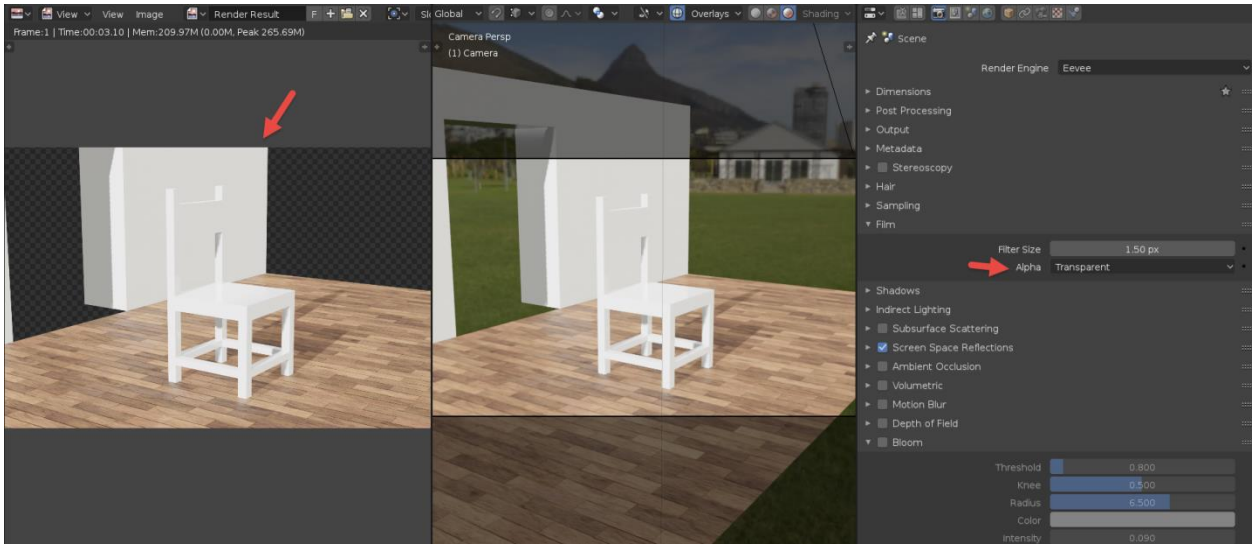

User Persp
(1) Sun
Scene
Render Engine
Eevee
Dimensions
Post Processing
Output
Metadata
Stereoscopy
Hair
Sampling
Film
Shadows
Indirect Lighting
Subsurface Scattering
Screen Space Reflections
Ambient Occlusion
Volumetric
Motion Blur
Depth of Field
Bloom
Threshold 0.800
Knee 0.500
Radius 6.500
Color
Intensity 0.090
Clamp 1.000

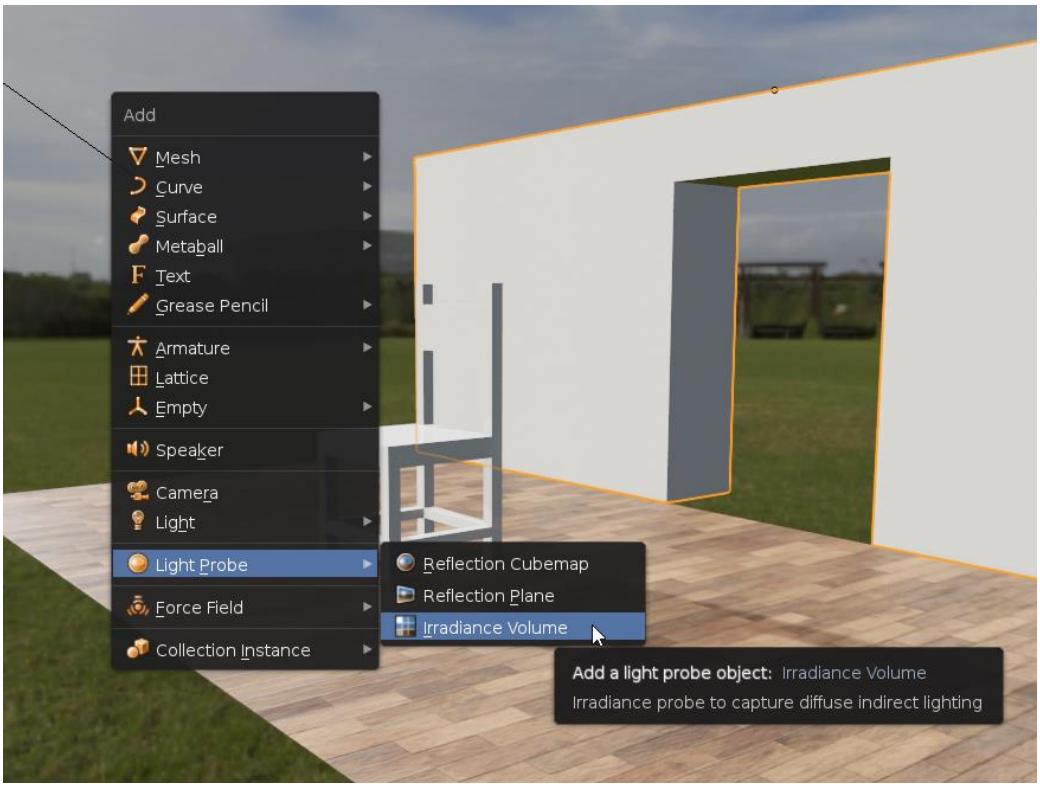

Scene
Render Engine
Eevee
Dimensions
Post Processing
Output
Metadata
Stereoscopy
Hair
Sampling
Film
Shadows
Method
ESM
Cube Size
512px
Cascade Size
1024px
High Bitdepth

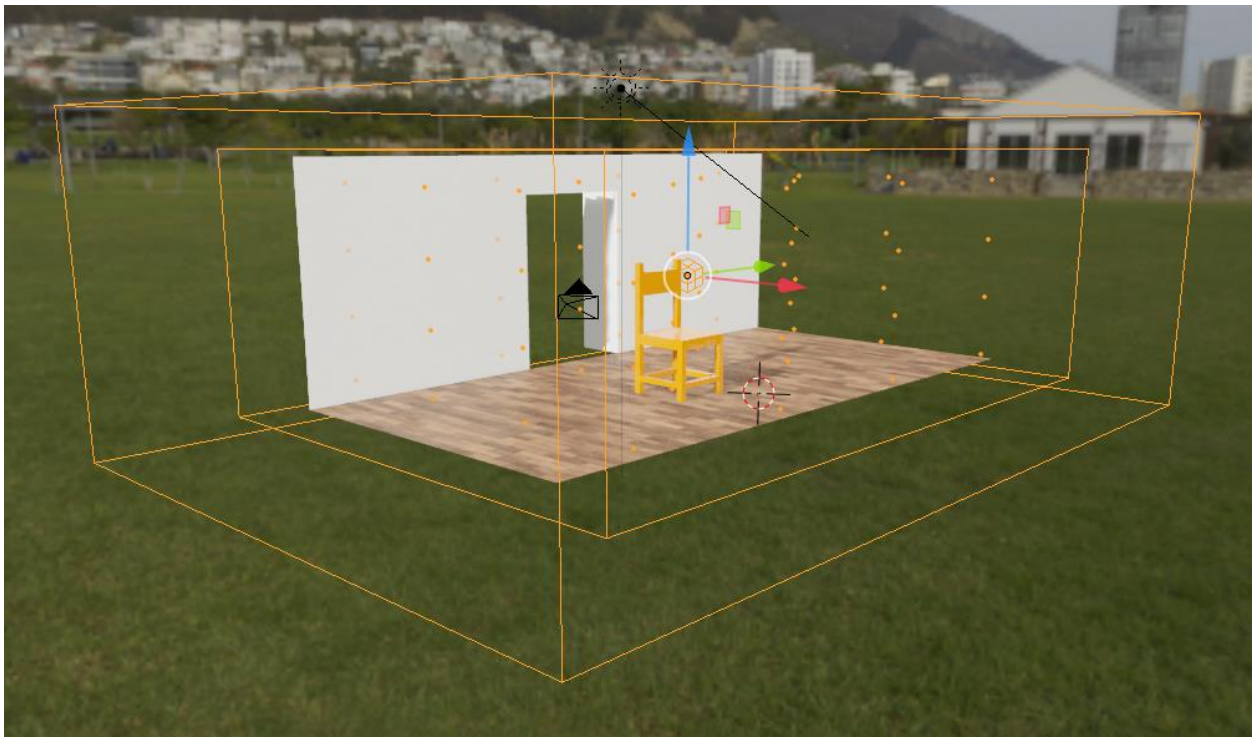
Hair
Sampling
Film
Shadows
Method
ESM
Cube Size
512px
Cascade Size
1024px
High Bitdepth
Indirect Lighting
Subsurface Scattering
Screen Space Reflections
Ambient Occlusion
Volumetric
Motion Blur
Depth of Field

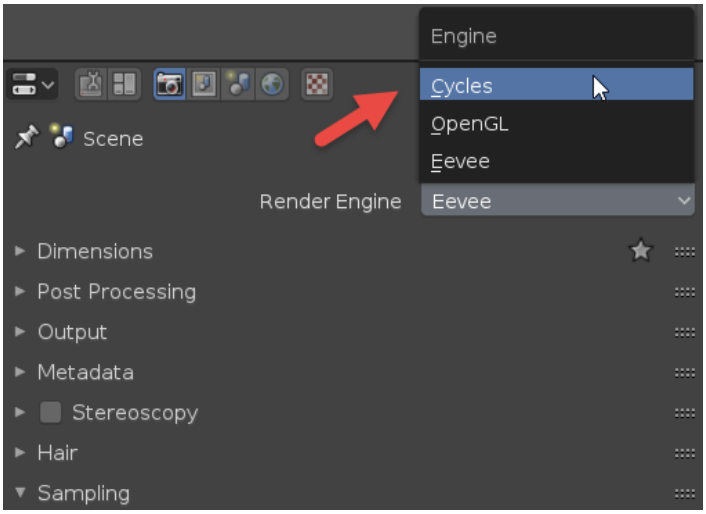
Stereoscopy
Hair
Sampling
Film
Shadows
Method
ESM
Cube Size
512px
Cascade Size
4096px
High Bitdepth
Indirect Lighting
Subsurface Scattering
Screen Space Reflections
Ambient Occlusion
Volumetric
Motion Blur

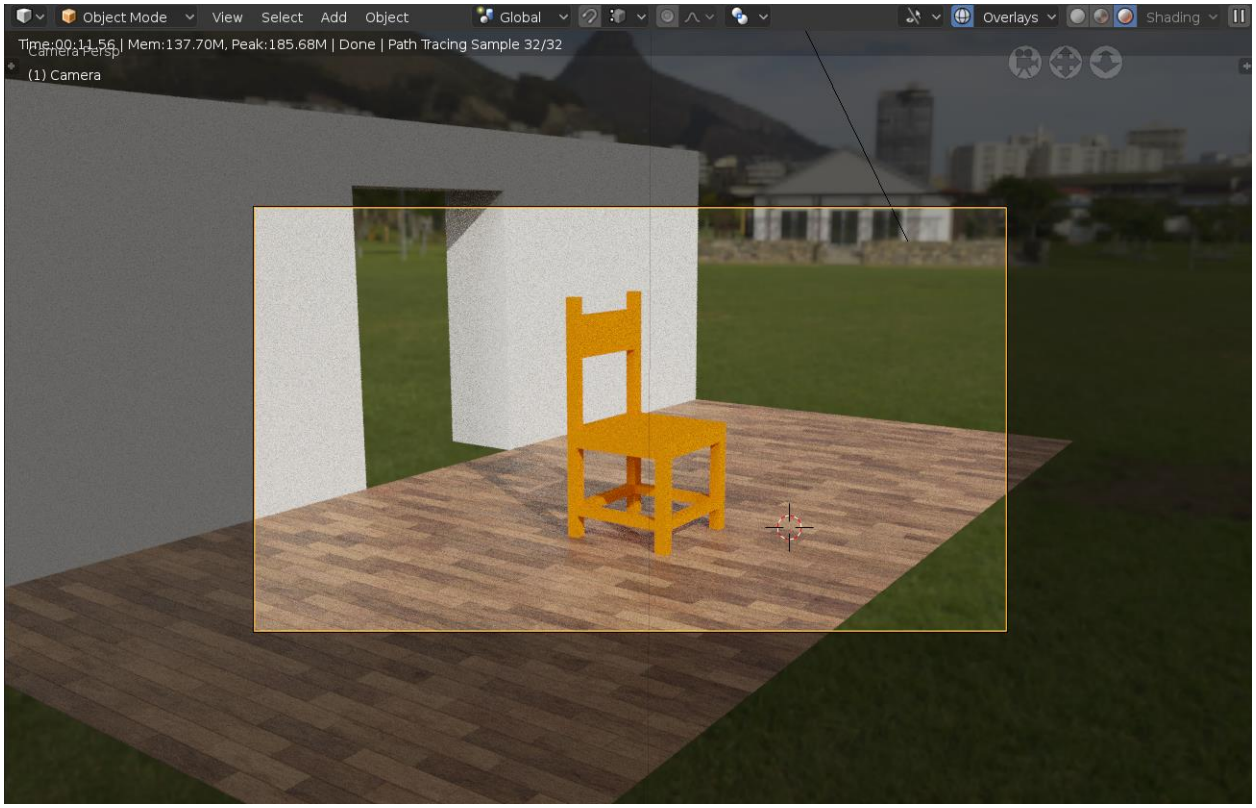

Scene
Render Engine
Eevee
Dimensions
Post Processing
Output
Metadata
Stereoscopy
Hair
Sampling
Viewport Samples
16
Render Samples
64
Viewport Denoising
Film

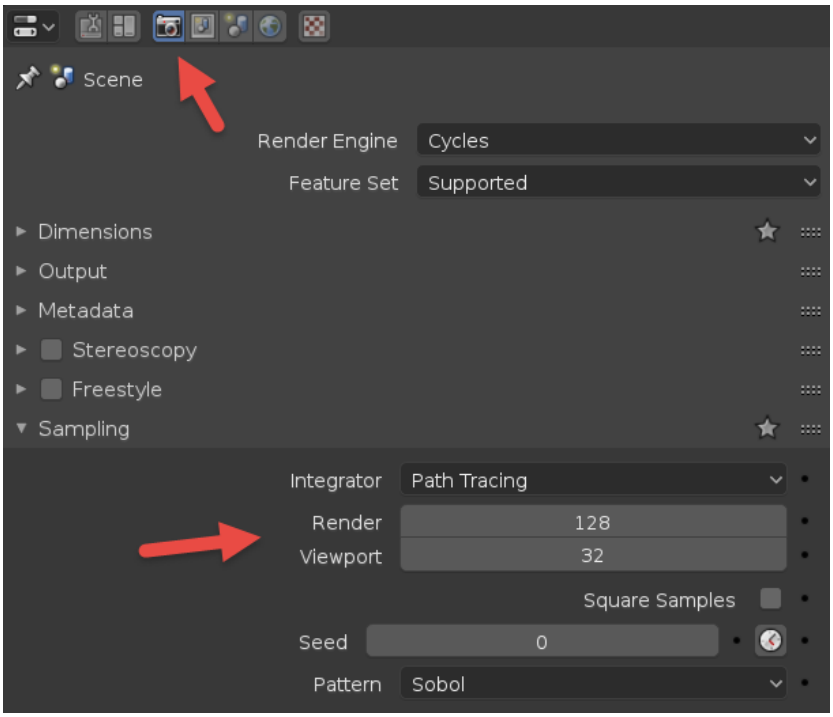

Frame:1 | Time:00:03.10 | Mem:209.97M (0.00M, Peak 265.69M)
Camera Persp
(1) Camera
Scene
Render Engine
Eevee
Dimensions
Post Processing
Output
Metadata
Stereoscopy
Hair
Sampling
Film
Filter Size
1.50 px
Alpha
Transparent
Shadows
Indirect Lighting
Subsurface Scattering
Screen Space Reflections
Ambient Occlusion
Volumetric
Motion Blur
Depth of Field
Bloom
Threshold
0.800
Knee
0.500
Radius
6.500
Color
Intensity
0.090

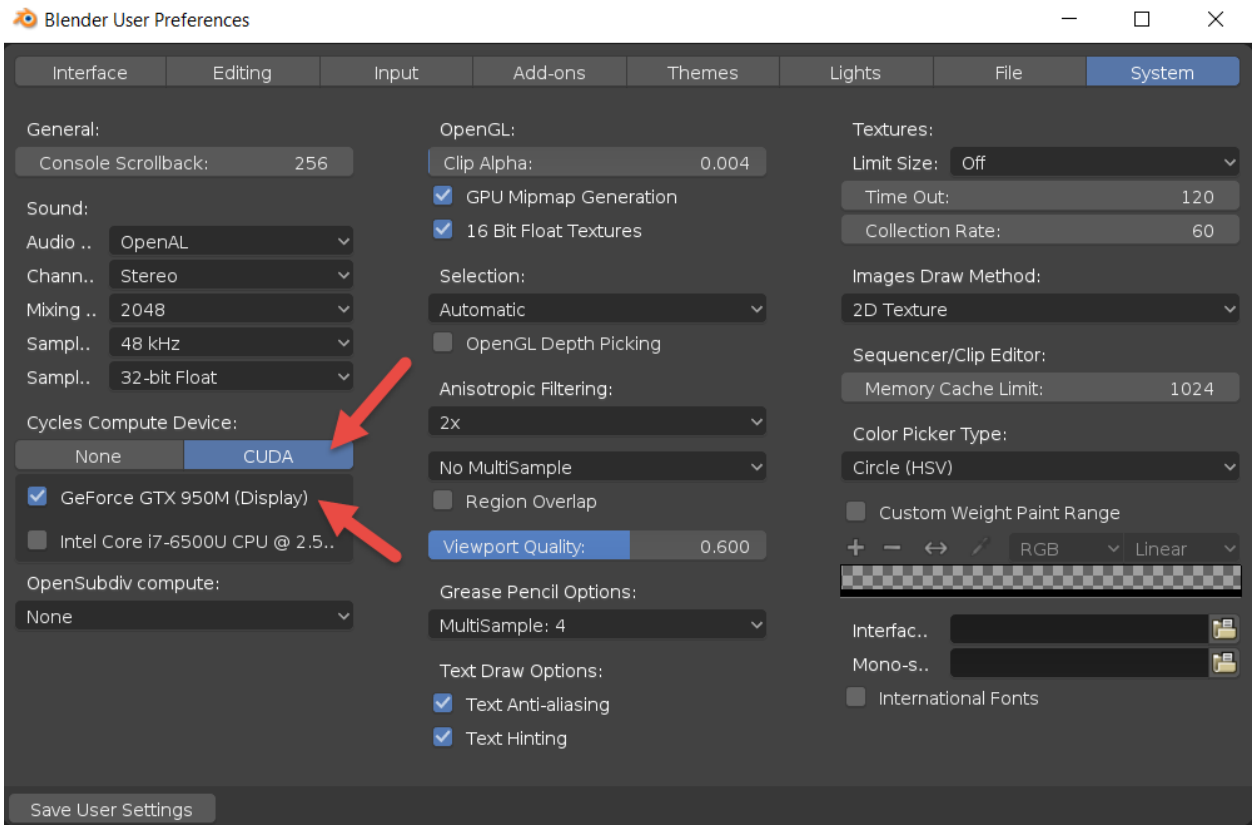

Add
Mesh
Curve
Surface
Metaball
Text
Grease Pencil
Armature
Lattice
Empty
Speaker
Camera
Light
Light Probe
Force Field
Collection Instance
Reflection Cubemap
Reflection Plane
Irradiance Volume
Add a light probe object: Irradiance Volume
Irradiance probe to capture diffuse indirect lighting

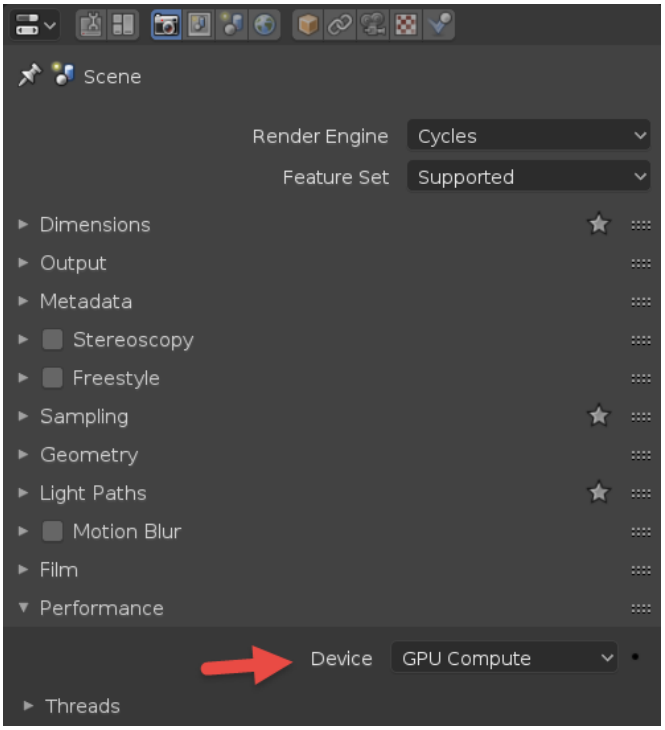


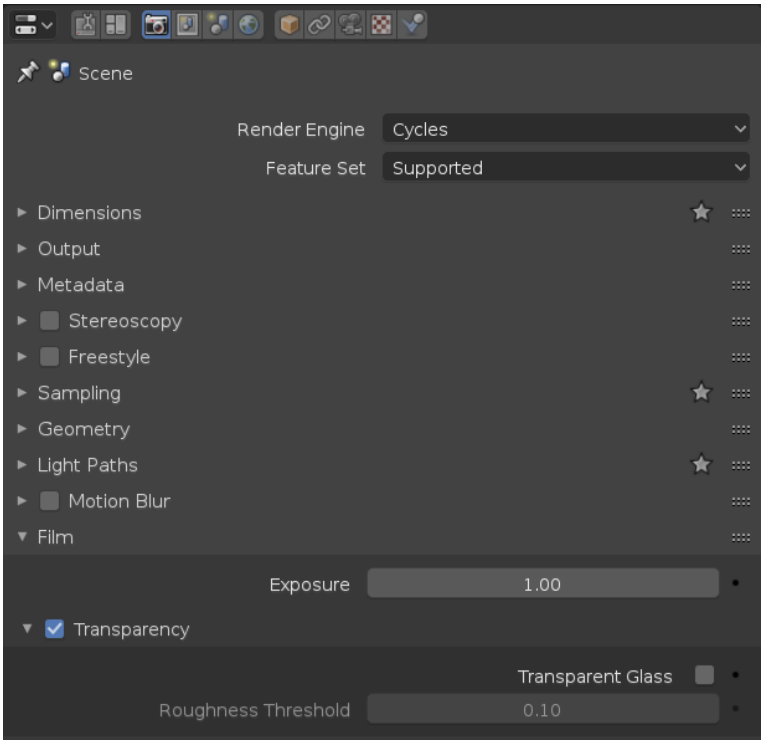

Engine
Cycles
OpenGL
Eevee
Scene
Render Engine
Eevee
Dimensions
Post Processing
Output
Metadata
Stereoscopy
Hair
Sampling

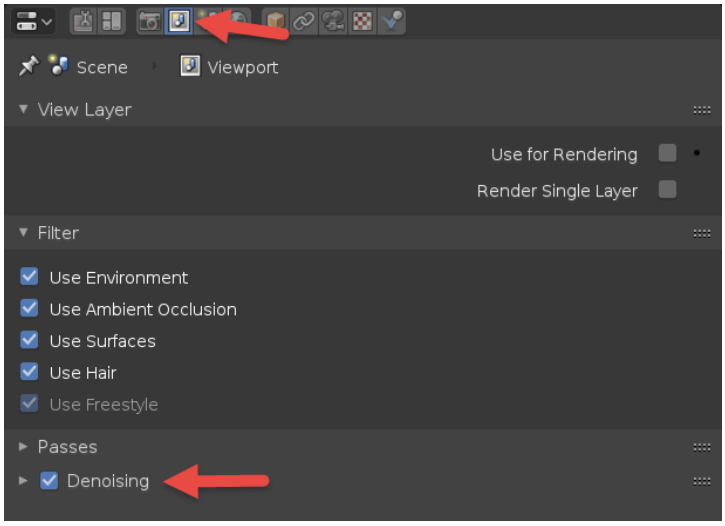

Object Mode
View
Select
Add
Object
Global
Overlays
Shading
Time:00:11.56 | Mem:137.70M, Peak:185.68M | Done | Path Tracing Sample 32/32
Camera Persp
(1) Camera

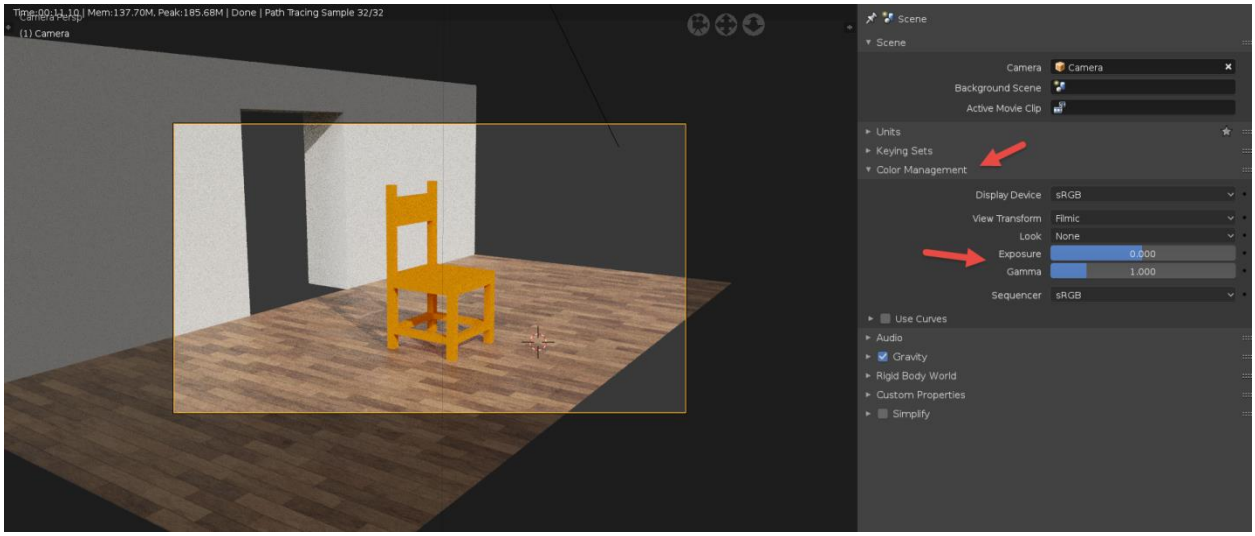

Scene
Render Engine
Cycles
Feature Set
Supported
Dimensions
Output
Metadata
Stereoscopy
Freestyle
Sampling
Integrator
Path Tracing
Render
128
Viewport
32
Square Samples
Seed
0
Pattern
Sobol


Blender User Preferences
Interface
Editing
Input
Add-ons
Themes
Lights
File
System
General:
Console Scrollback: 256
Sound:
Audio .. OpenAL
Chann.. Stereo
Mixing .. 2048
Sampl.. 48 kHz
Sampl.. 32-bit Float
Cycles Compute Device:
None
CUDA
GeForce GTX 950M (Display)
Intel Core i7-6500U CPU @ 2.5..
OpenSubdiv compute:
None
OpenGL:
Clip Alpha: 0.004
GPU Mipmap Generation
16 Bit Float Textures
Selection:
Automatic
OpenGL Depth Picking
Anisotropic Filtering:
2x
No MultiSample
Region Overlap
Viewport Quality: 0.600
Grease Pencil Options:
MultiSample: 4
Text Draw Options:
Text Anti-aliasing
Text Hinting
Textures:
Limit Size: Off
Time Out: 120
Collection Rate: 60
Images Draw Method:
2D Texture
Sequencer/Clip Editor:
Memory Cache Limit: 1024
Color Picker Type:
Circle (HSV)
Custom Weight Paint Range
RGB
Linear
Interfac..
Mono-s..
International Fonts
Save User Settings

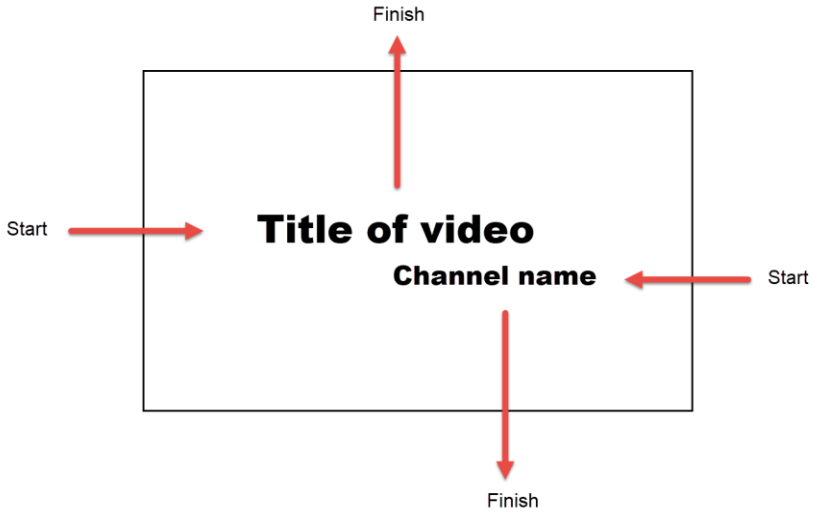

Scene
Render Engine Cycles
Feature Set Supported
Dimensions
Output
Metadata
Stereoscopy
Freestyle
Sampling
Geometry
Light Paths
Motion Blur
Film
Performance
Device GPU Compute
Threads

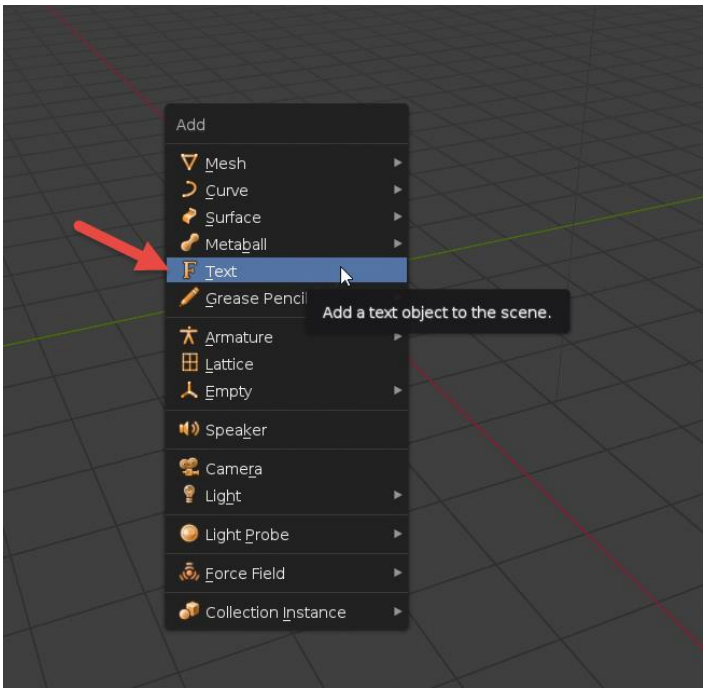

Scene
Render Engine
Cycles
Feature Set
Supported
Dimensions
Output
Metadata
Stereoscopy
Freestyle
Sampling
Geometry
Light Paths
Motion Blur
Film
Exposure
1.00
Transparency
Transparent Glass
Roughness Threshold
0.10


Scene
Viewport
View Layer
Use for Rendering
Render Single Layer
Filter
Use Environment
Use Ambient Occlusion
Use Surfaces
Use Hair
Use Freestyle
Passes
Denoising


Time:00:11.10 | Mem:137.70M, Peak:185.68M | Done | Path Tracing Sample 32/32
Camera Persp
(1) Camera
Scene
Scene
Camera
Camera
Background Scene
Active Movie Clip
Units
Keying Sets
Color Management
Display Device
sRGB
View Transform
Filmic
Look
None
Exposure
0.000
Gamma
1.000
Sequencer
sRGB
Use Curves
Audio
Gravity
Rigid Body World
Custom Properties
Simplify

Chapter 7: Animate Everything in Blender 2.8!

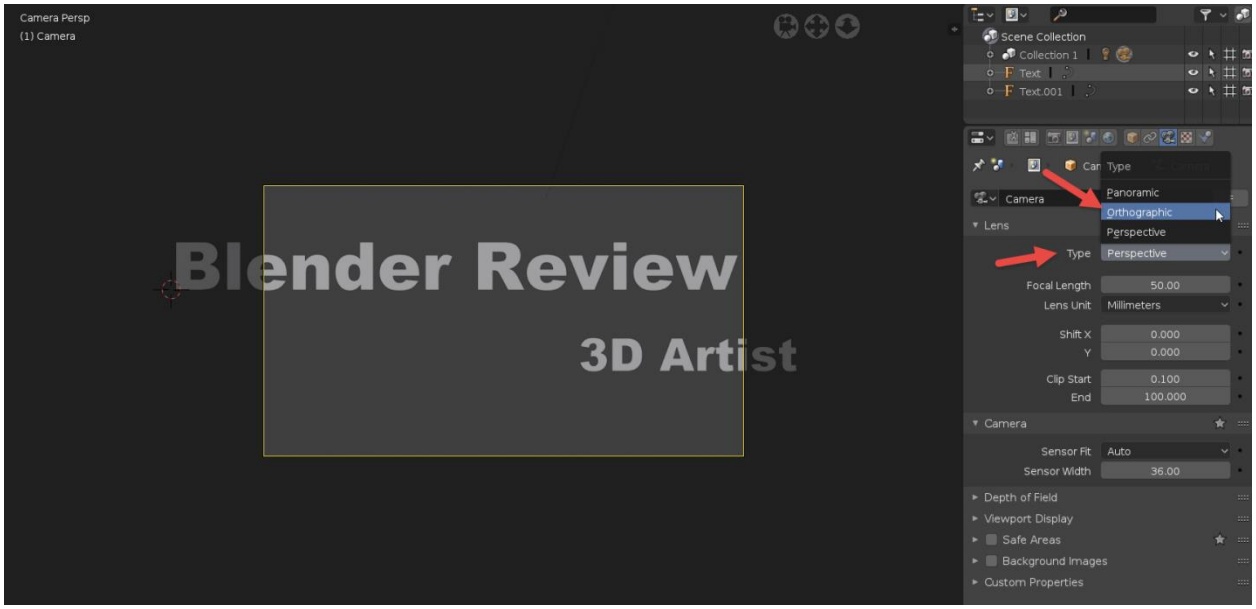


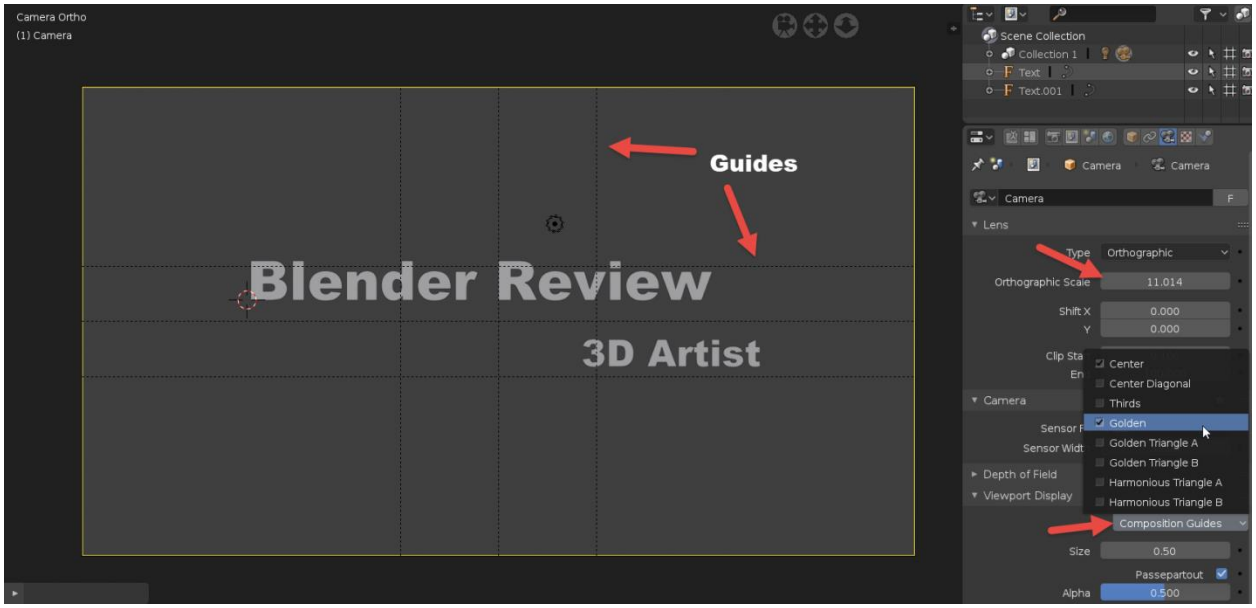

Add
Mesh
Curve
Surface
Metaball
Text
Grease Pencil
Add a text object to the scene.
Armature
Lattice
Empty
Speaker
Camera
Light
Light Probe
Force Field
Collection Instance

Cursor
User Persp
(1) Text
Blender Review
Edit Mode
View
Edit
Text
Global
Overlays
Shading

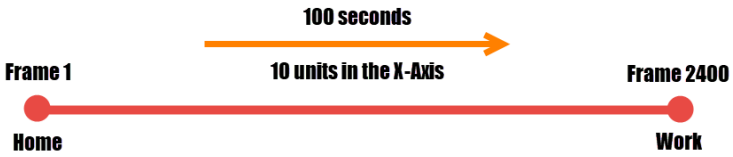
User Persp
(1) Text.001
Blender Review
3D Artist

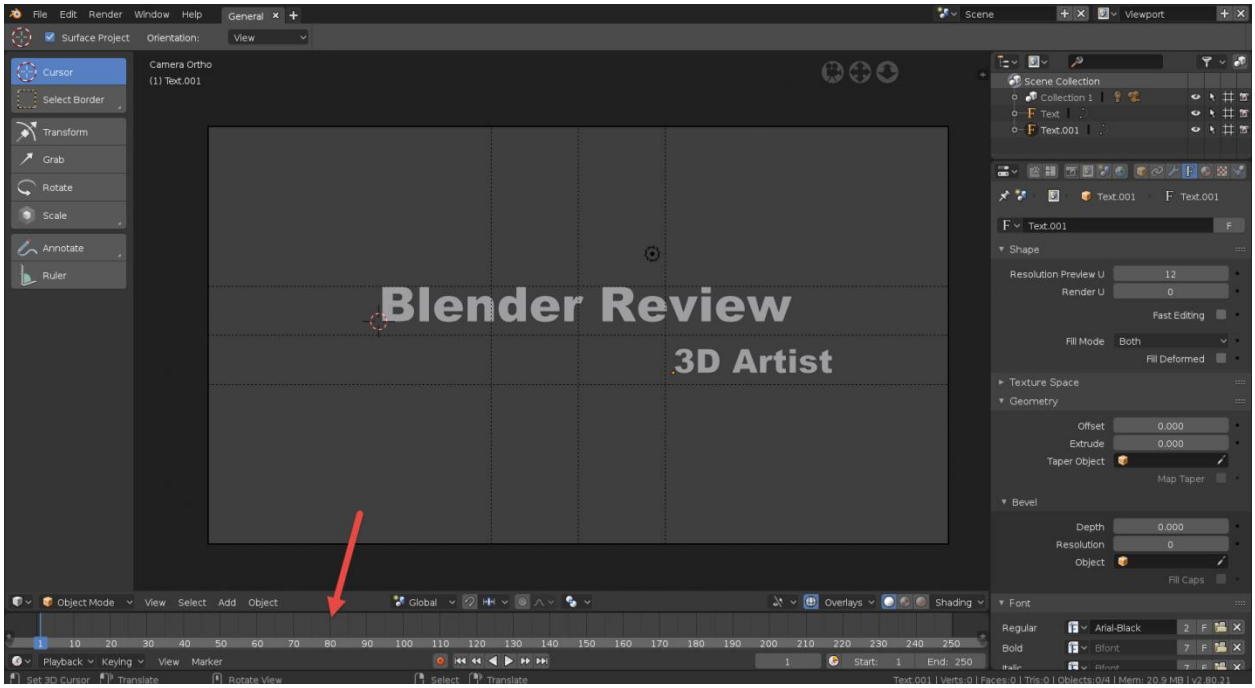
User Persp
(1) Text.001
Blender Review
3D Artist
Scene Collection
Collection 1
Text
Text.001
Texture Space
Geometry
Offset
0.000
Extrude
0.000
Taper Object
Map Taper
Bevel
Depth
0.000
Resolution
0
Object
Fill Caps
Font
Regular
Arial-Black
Bold
Bfont
Italic
Bfont
Bold & Italic
Bfont
Bold
Italic
Underline
Small Caps
Transform

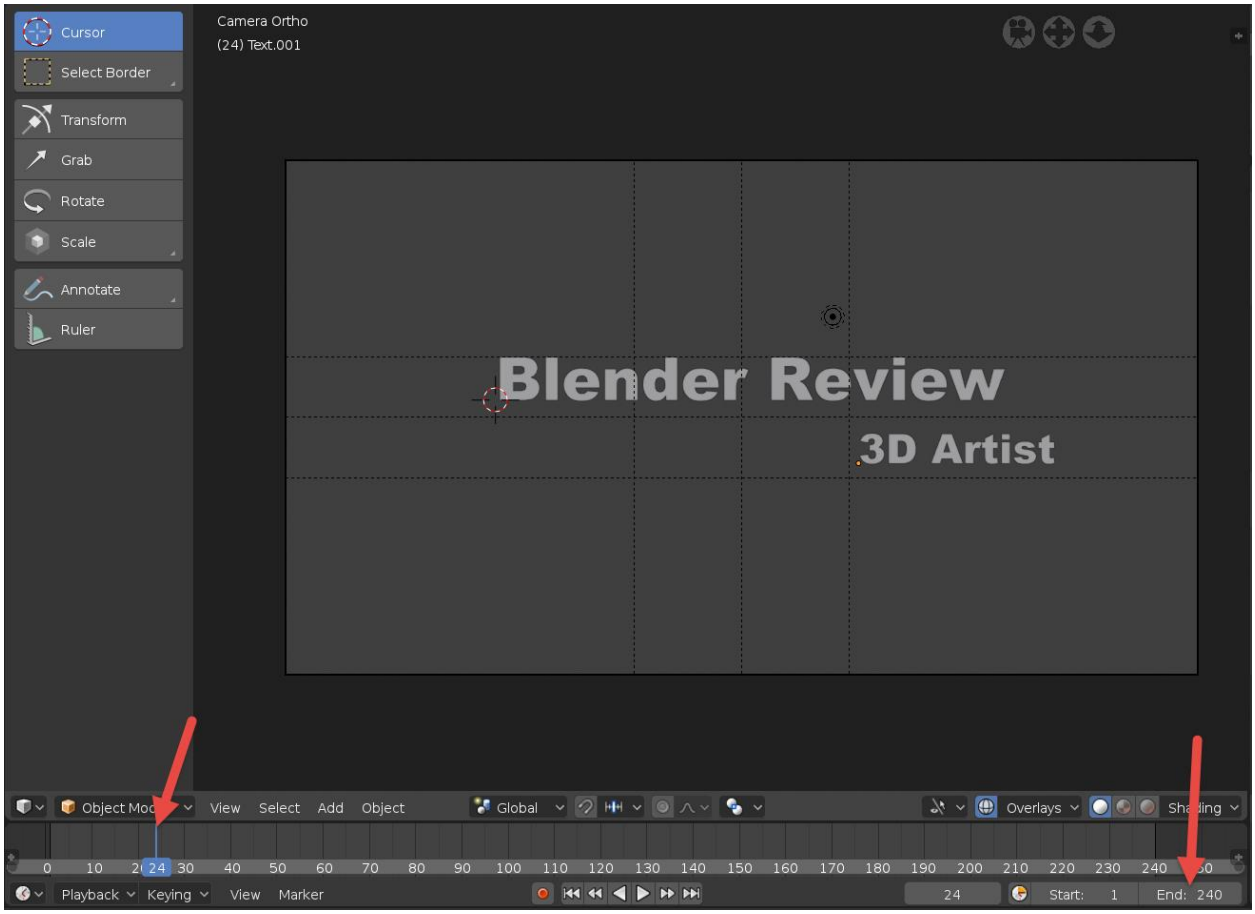

Camera Persp
(1) Camera
Blender Review
3D Artist
Scene Collection
Collection 1
Text
Text.001
Type
Panoramic
Orthographic
Perspective
Camera
Lens
Type
Perspective
Focal Length
50.00
Lens Unit
Millimeters
Shift X
0.000
Y
0.000
Clip Start
0.100
End
100.000
Camera
Sensor Fit
Auto
Sensor Width
36.00
Depth of Field
Viewport Display
Safe Areas
Background Images
Custom Properties

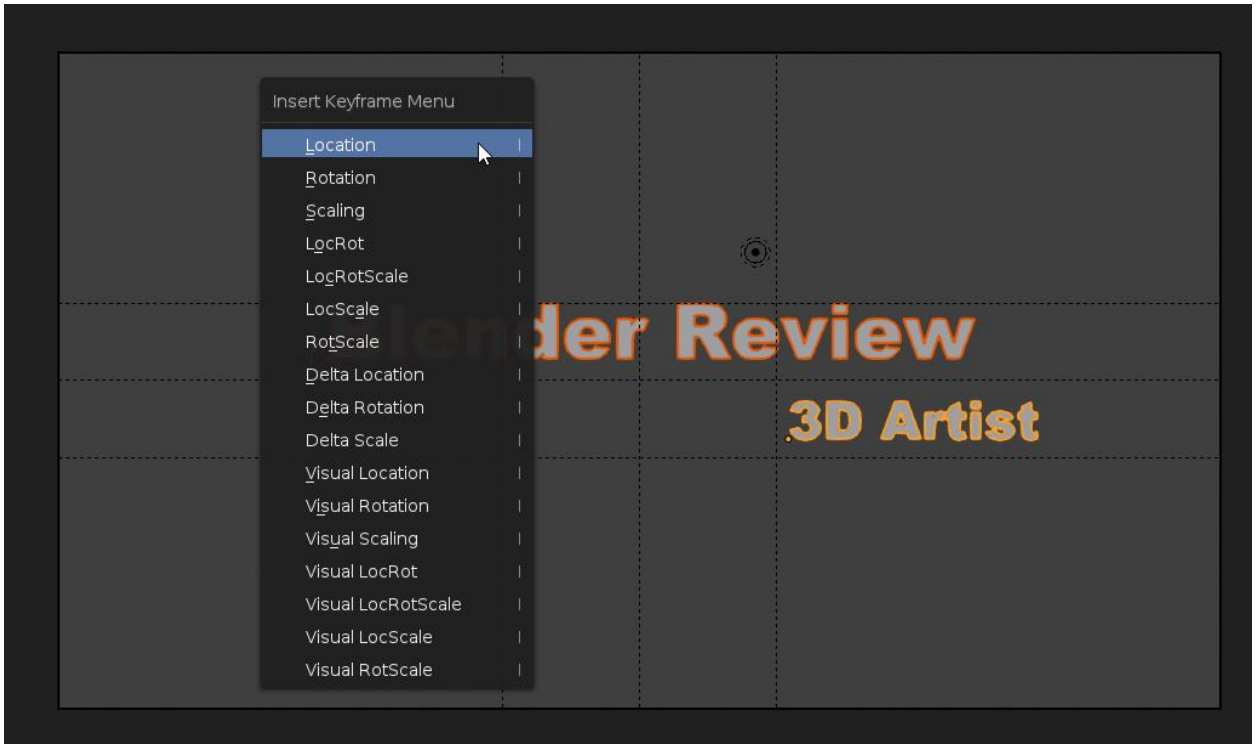

Camera Ortho
(1) Camera
Guides
Blender Review
3D Artist
Scene Collection
Collection 1
Text
Text.001
Camera
Camera
Lens
Type
Orthographic
Orthographic Scale
11.014
Shift X
0.000
Y
0.000
Center
Center Diagonal
Thirds
Golden
Golden Triangle A
Golden Triangle B
Harmonious Triangle A
Harmonious Triangle B
Depth of Field
Viewport Display
Composition Guides
Size
0.50
Passepartout
Alpha
0.500

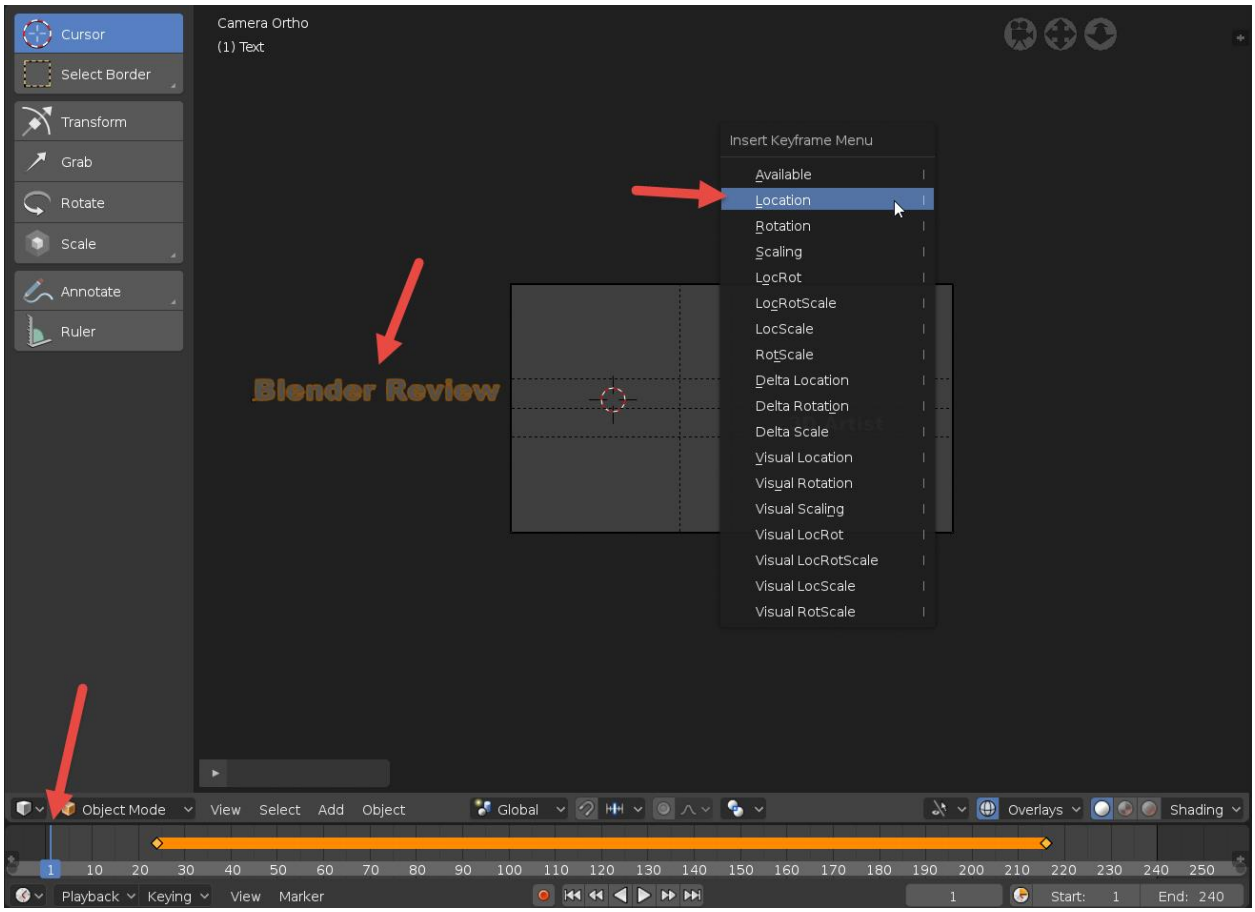
60 minutes
19.31 km | 12 miles
8:00
9:00
Home
Work

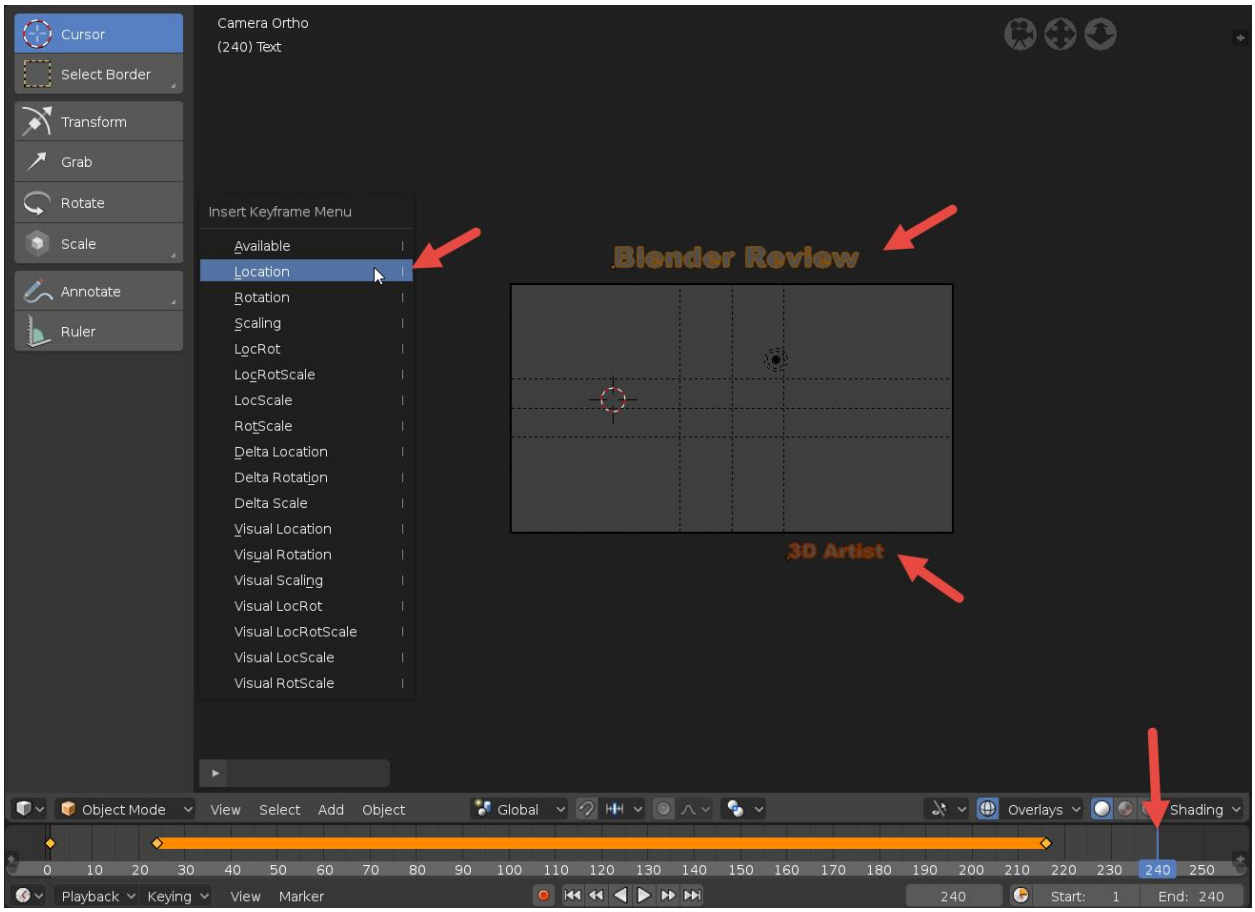

100 seconds
Frame 1
10 units in the X-Axis
Frame 2400
Home
Work

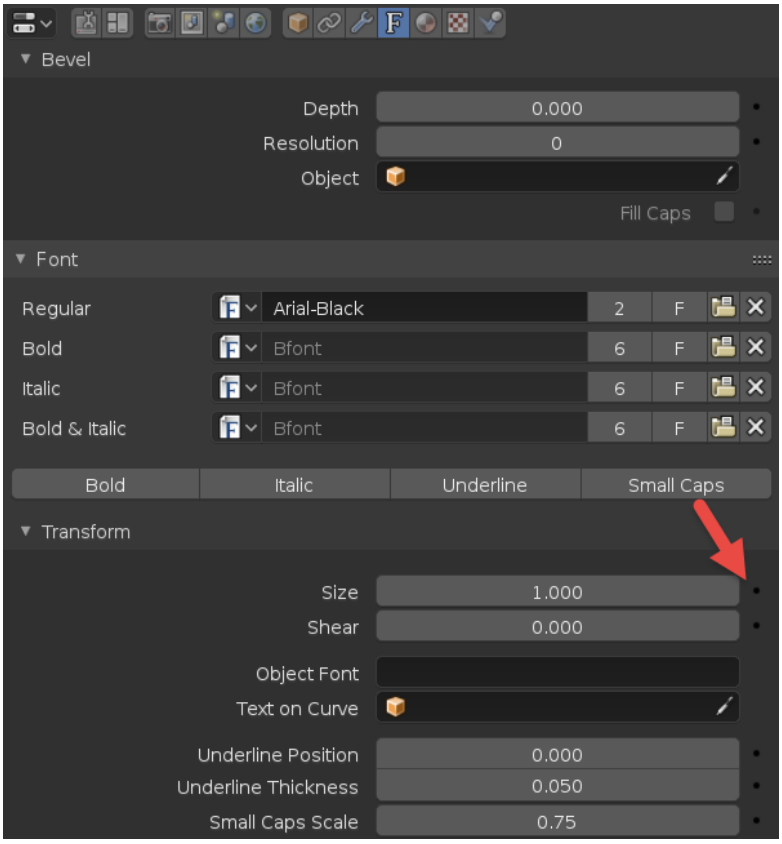

Blender Review
3D Artist

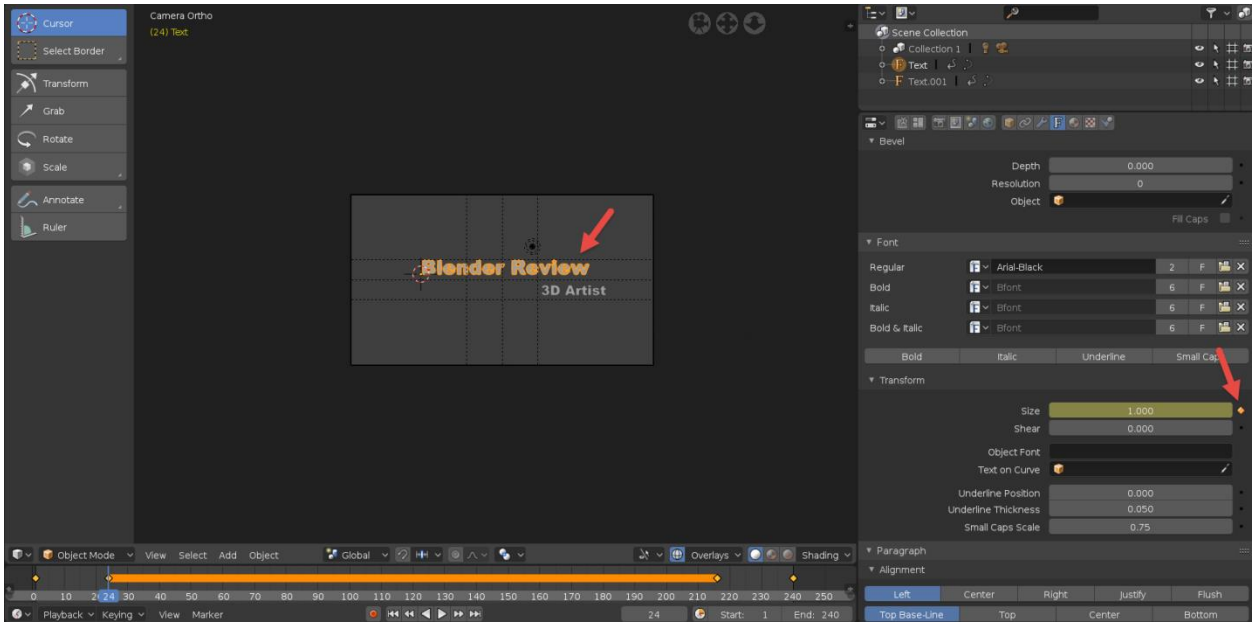

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
Camera Ortho
(24) Text.001
Blender Review
3D Artist
Object Mod
View
Select
Add
Object
Global
Overlays
0 10 20 24 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240
Playback
Keying
View
Marker
24
Start: 1
End: 240


Insert Keyframe Menu
Location
Rotation
Scaling
LocRot
LocRotScale
LocScale
RotScale
Delta Location
Delta Rotation
Delta Scale
Visual Location
Visual Rotation
Visual Scaling
Visual LocRot
Visual LocRotScale
Visual LocScale
Visual RotScale
der Review
3D Artist

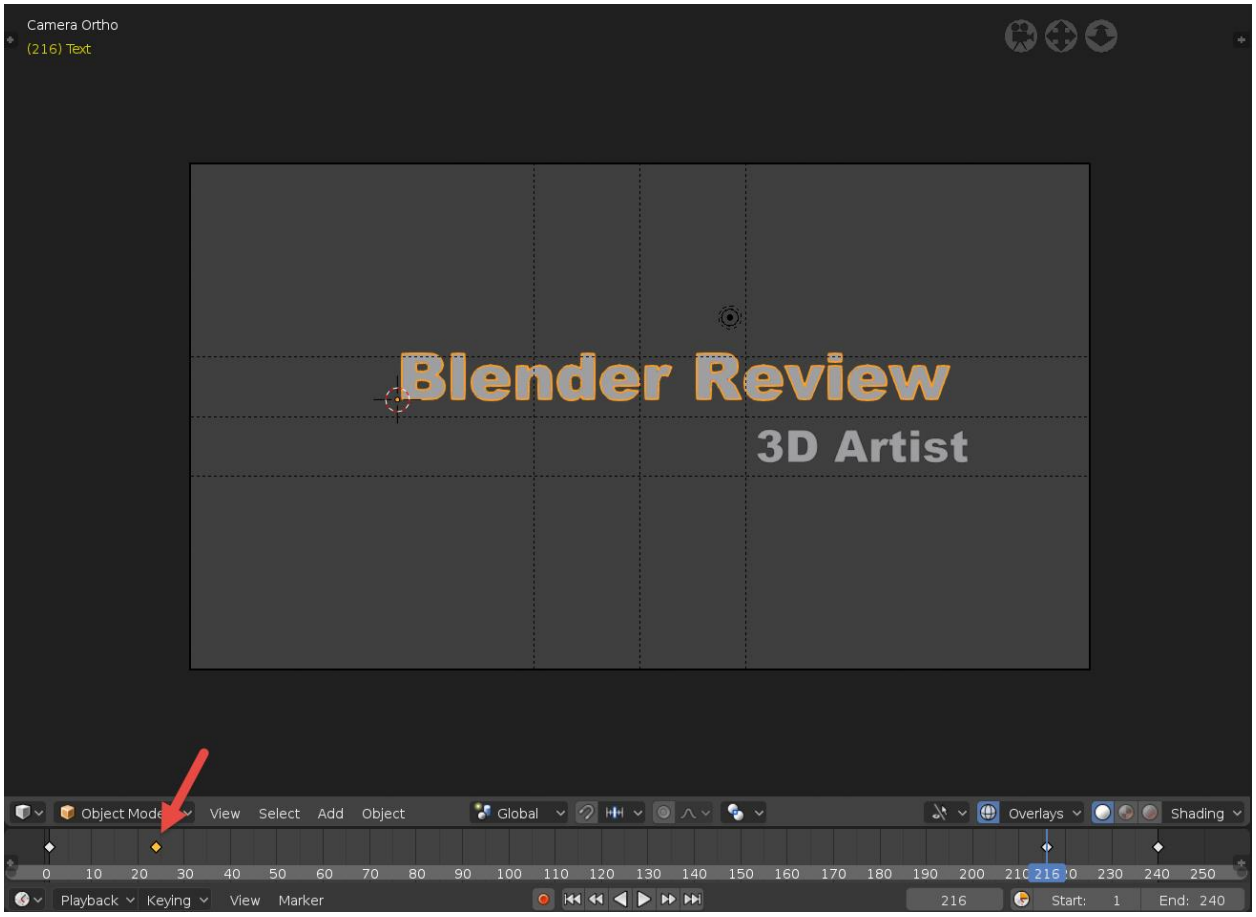

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
Camera Ortho
(1) Text
Insert Keyframe Menu
Available
Location
Rotation
Scaling
LocRot
LocRotScale
LocScale
RotScale
Delta Location
Delta Rotation
Delta Scale
Visual Location
Visual Rotation
Visual Scaling
Visual LocRot
Visual LocRotScale
Visual LocScale
Visual RotScale
Blender Review
Object Mode
View
Select
Add
Object
Global
Overlays
Shading
1 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250
Playback
Keying
View
Marker
1
Start: 1
End: 240

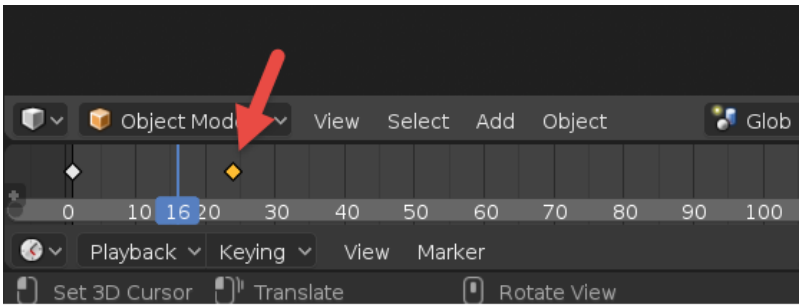

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
Camera Ortho
(240) Text
Insert Keyframe Menu
Available
Location
Rotation
Scaling
LocRot
LocRotScale
LocScale
RotScale
Delta Location
Delta Rotation
Delta Scale
Visual Location
Visual Rotation
Visual Scaling
Visual LocRot
Visual LocRotScale
Visual LocScale
Visual RotScale
Blender Review
3D Artist
Object Mode
View
Select
Add
Object
Global
Overlays
Shading
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250
Playback
Keying
View
Marker
240
Start: 1
End: 240

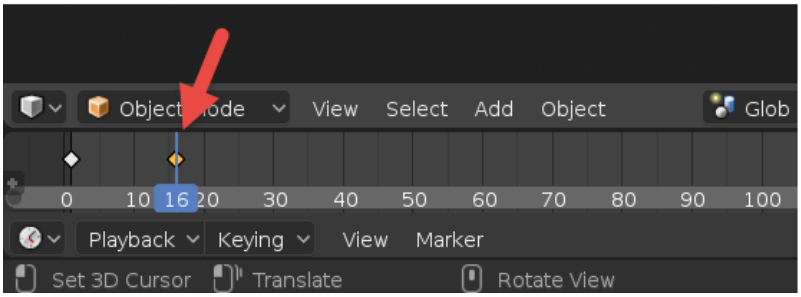

Bevel
Depth
0.000
Resolution
0
Object
Fill Caps
Font
Regular
Arial-Black
2
F
Bold
Bfont
6
F
Italic
Bfont
6
F
Bold & Italic
Bfont
6
F
Bold
Italic
Underline
Small Caps
Transform
Size
1.000
Shear
0.000
Object Font
Text on Curve
Underline Position
0.000
Underline Thickness
0.050
Small Caps Scale
0.75

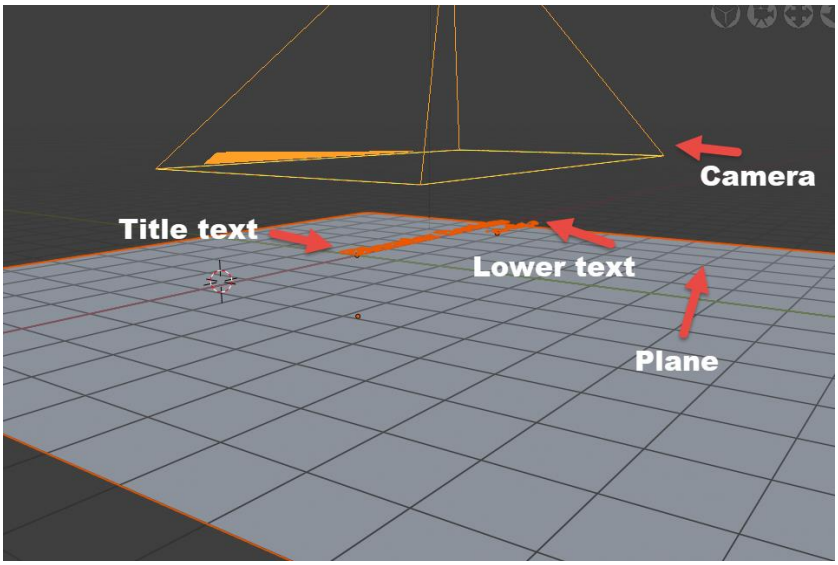

Cursor
Select Border
Transform
Grab
Rotate
Scale
Annotate
Ruler
Camera Ortho
(24) Text
Blender Review
3D Artist
Scene Collection
Collection 1
Text
Text.001
Bevel
Depth
0.000
Resolution
0
Object
Fill Caps
Font
Regular
Arial-Black
Bold
Italic
Bold & Italic
Transform
Size
1.000
Shear
0.000
Object Font
Text on Curve
Underline Position
0.000
Underline Thickness
0.050
Small Caps Scale
0.75
Paragraph
Alignment
Left
Center
Right
Justify
Flush
Top Base-Line
Top
Center
Bottom

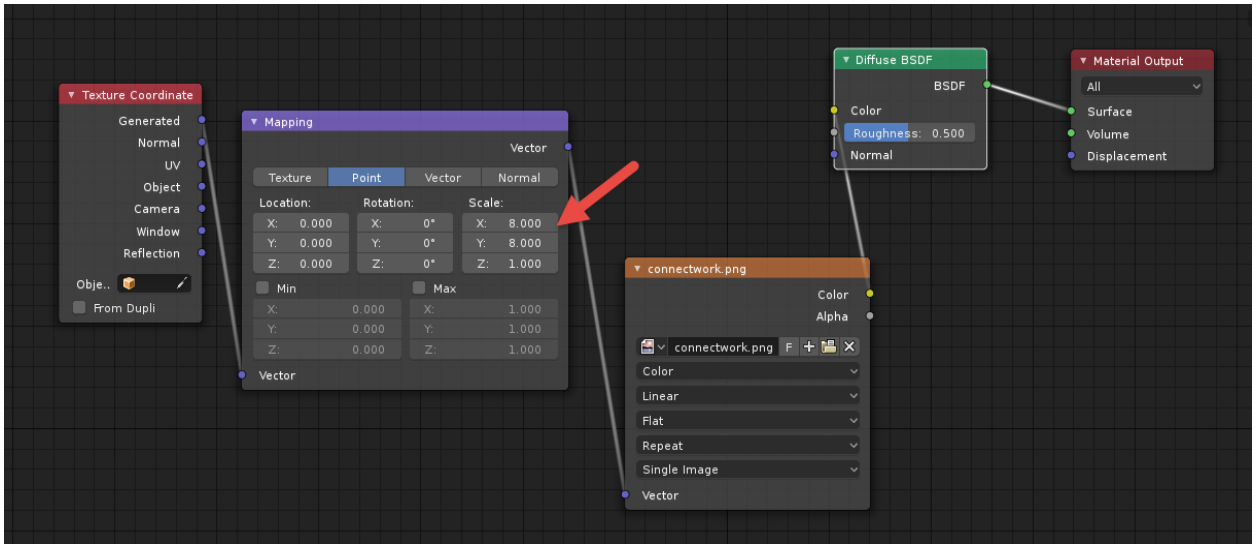
Chapter 8: Editing Animations in Blender 2.8



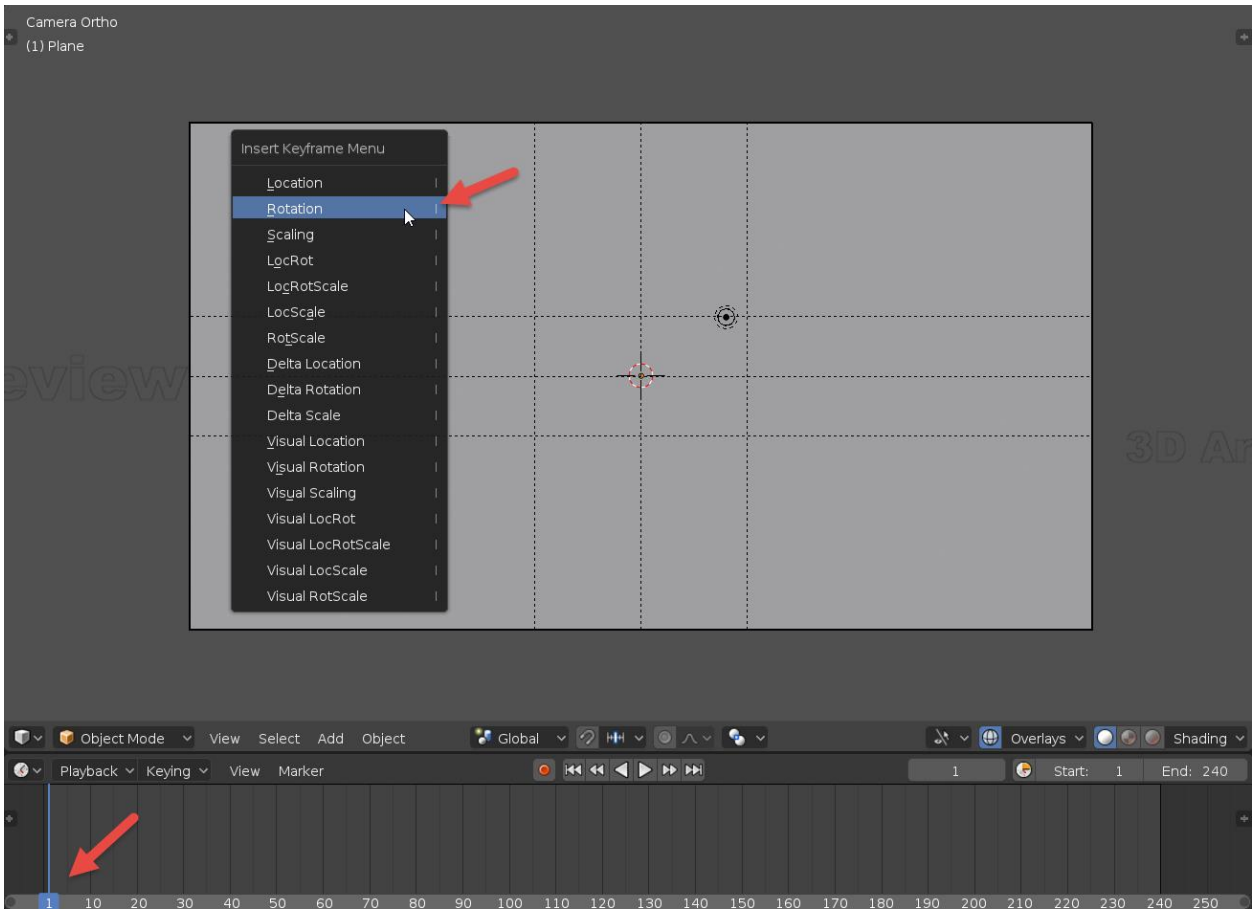

Object Mod
View
Select
Add
Object
Glob
0
10
16
20
30
40
50
60
70
80
90
100
Playback
Keying
View
Marker
Set 3D Cursor
Translate
Rotate View

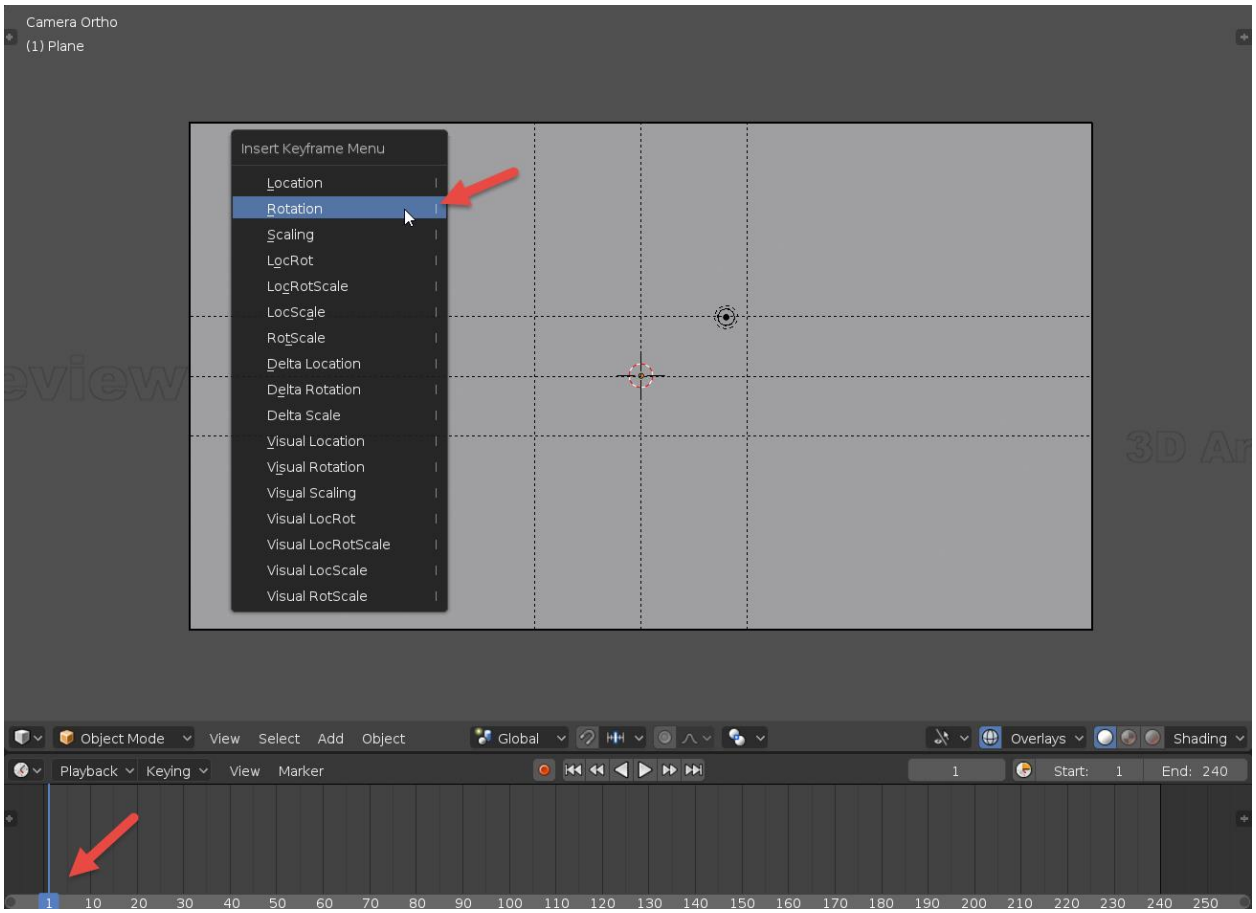

View
Select
Add
Object
Glob
0
10
16
20
30
40
50
60
70
80
90
100
Playback
Keying
View
Marker
Set 3D Cursor
Translate
Rotate View

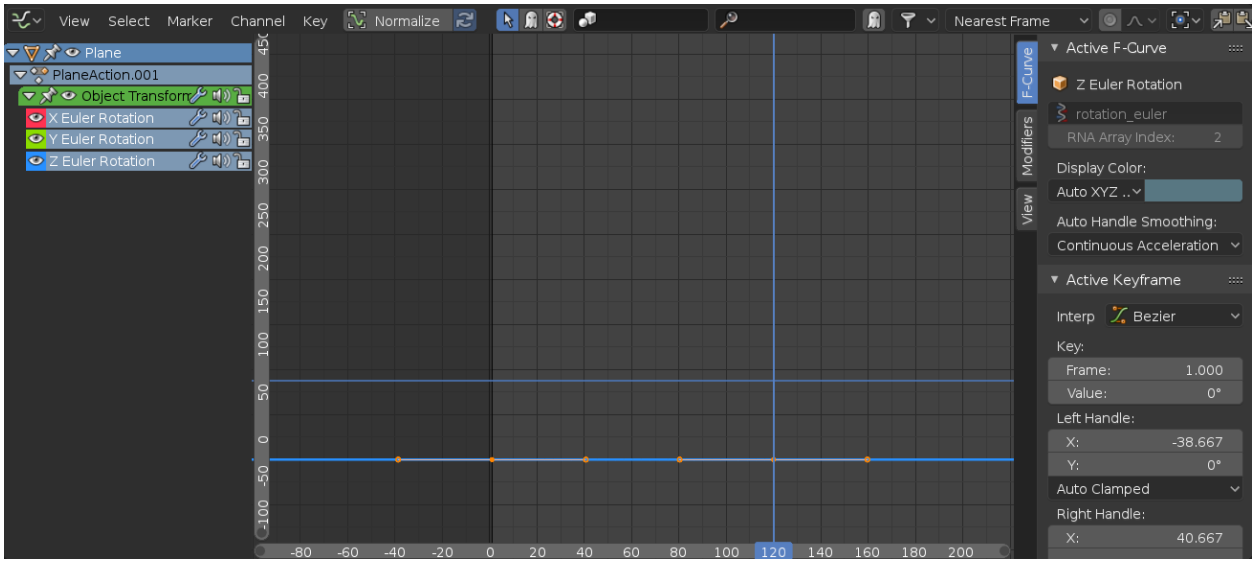

Camera
Title text
Lower text
Plane

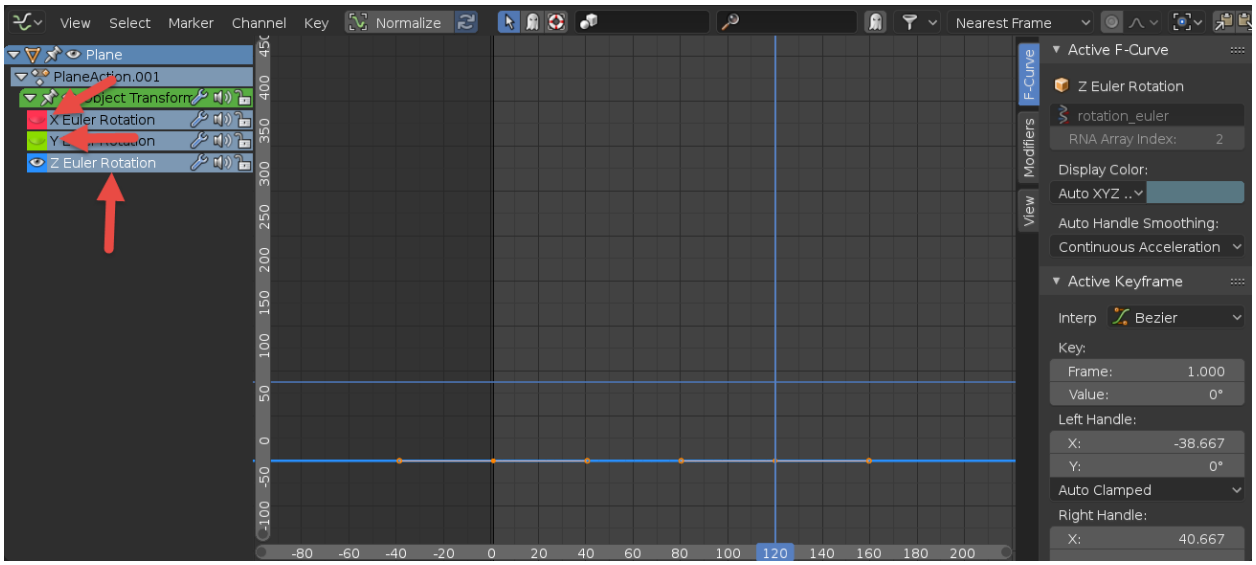

Texture Coordinate
Generated
Normal
UV
Object
Camera
Window
Reflection
Obje..
From Dupli
Mapping
Vector
Texture
Point
Vector
Normal
Location:
Rotation:
Scale:
X: 0.000
Y: 0.000
Z: 0.000
X: 0°
Y: 0°
Z: 0°
X: 8.000
Y: 8.000
Z: 1.000
Min
Max
X: 0.000
Y: 0.000
Z: 0.000
X: 1.000
Y: 1.000
Z: 1.000
Vector
Diffuse BSDF
BSDF
Color
Roughness: 0.500
Normal
Material Output
All
Surface
Volume
Displacement
connectwork.png
Color
Alpha
connectwork.png
F
Color
Linear
Flat
Repeat
Single Image
Vector

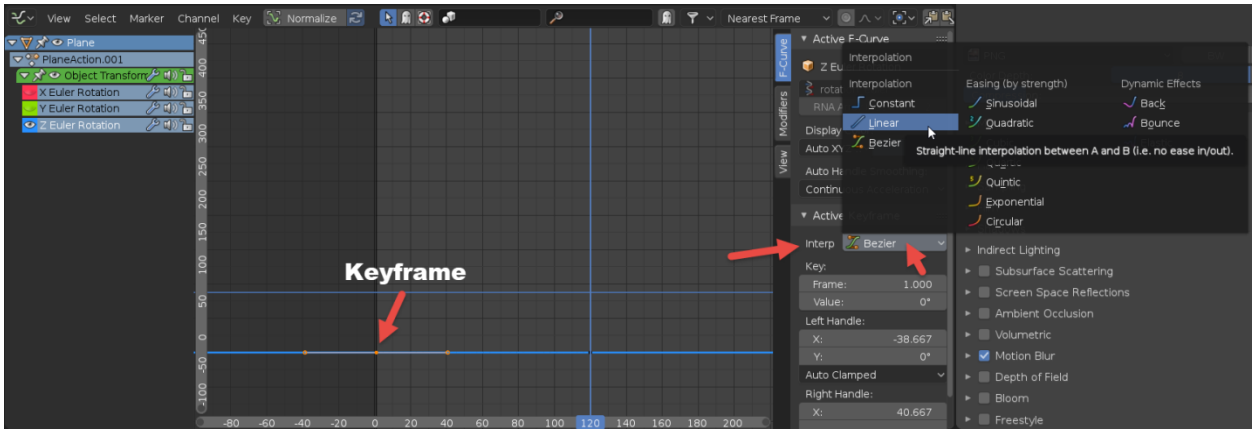
Blender Review
3D Artist

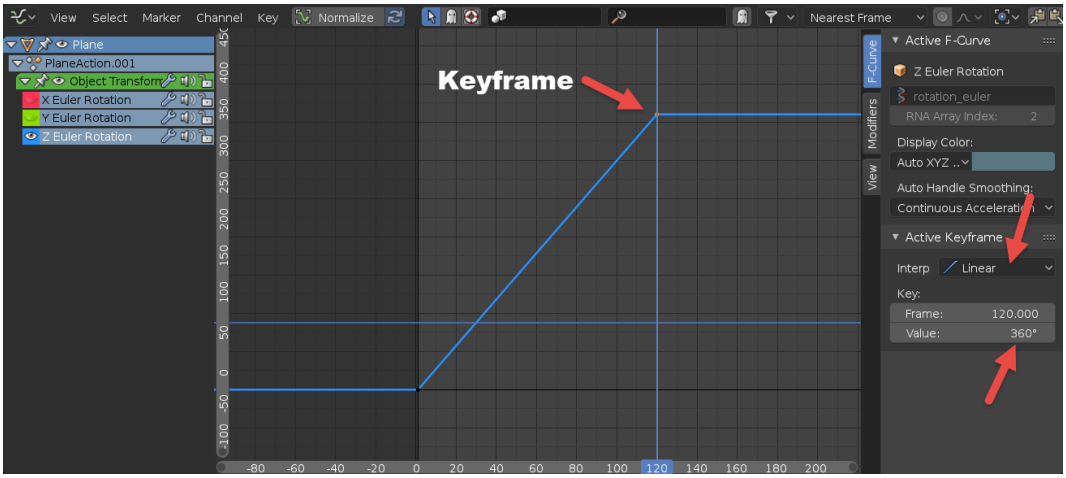

Camera Ortho
(1) Plane
Insert Keyframe Menu
Location
Rotation
Scaling
LocRot
LocRotScale
LocScale
RotScale
Delta Location
Delta Rotation
Delta Scale
Visual Location
Visual Rotation
Visual Scaling
Visual LocRot
Visual LocRotScale
Visual LocScale
Visual RotScale
Object Mode
View
Select
Add
Object
Global
Overlays
Shading
Playback
Keying
View
Marker
1
Start: 1
End: 240
1 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250

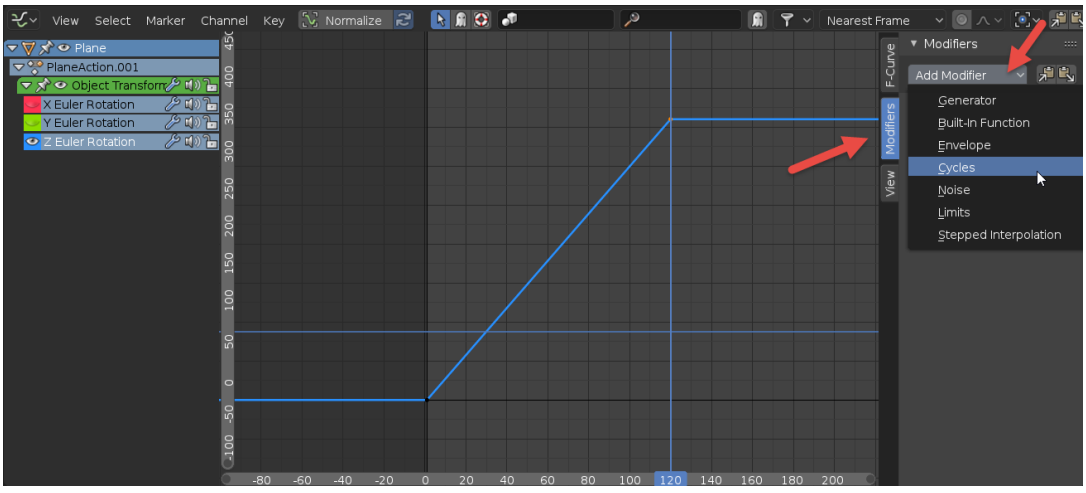

Camera Ortho
(1) Plane
Insert Keyframe Menu
Location
Rotation
Scaling
LocRot
LocRotScale
LocScale
RotScale
Delta Location
Delta Rotation
Delta Scale
Visual Location
Visual Rotation
Visual Scaling
Visual LocRot
Visual LocRotScale
Visual LocScale
Visual RotScale
Object Mode
View
Select
Add
Object
Global
Overlays
Shading
Playback
Keying
View
Marker
1
Start: 1
End: 240
1 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250

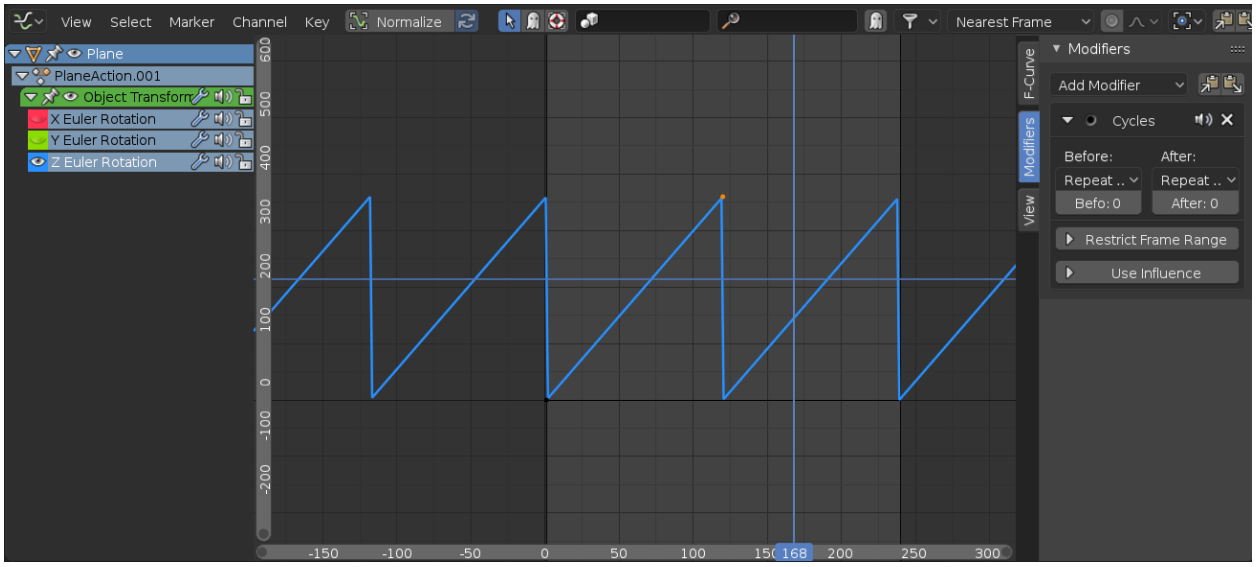

View
Select
Marker
Channel
Key
Normalize
Nearest Frame
Plane
PlaneAction.001
Object Transform
X Euler Rotation
Y Euler Rotation
Z Euler Rotation
F-Curve
Modifiers
View
Active F-Curve
Z Euler Rotation
rotation_euler
RNA Array Index: 2
Display Color:
Auto XYZ ..
Auto Handle Smoothing:
Continuous Acceleration
Active Keyframe
Interp
Bezier
Key:
Frame: 1.000
Value: 0°
Left Handle:
X: -38.667
Y: 0°
Auto Clamped
Right Handle:
X: 40.667
-80 -60 -40 -20 0 20 40 60 80 100 120 140 160 180 200
450 400 350 300 250 200 150 100 50 0 -50 -100

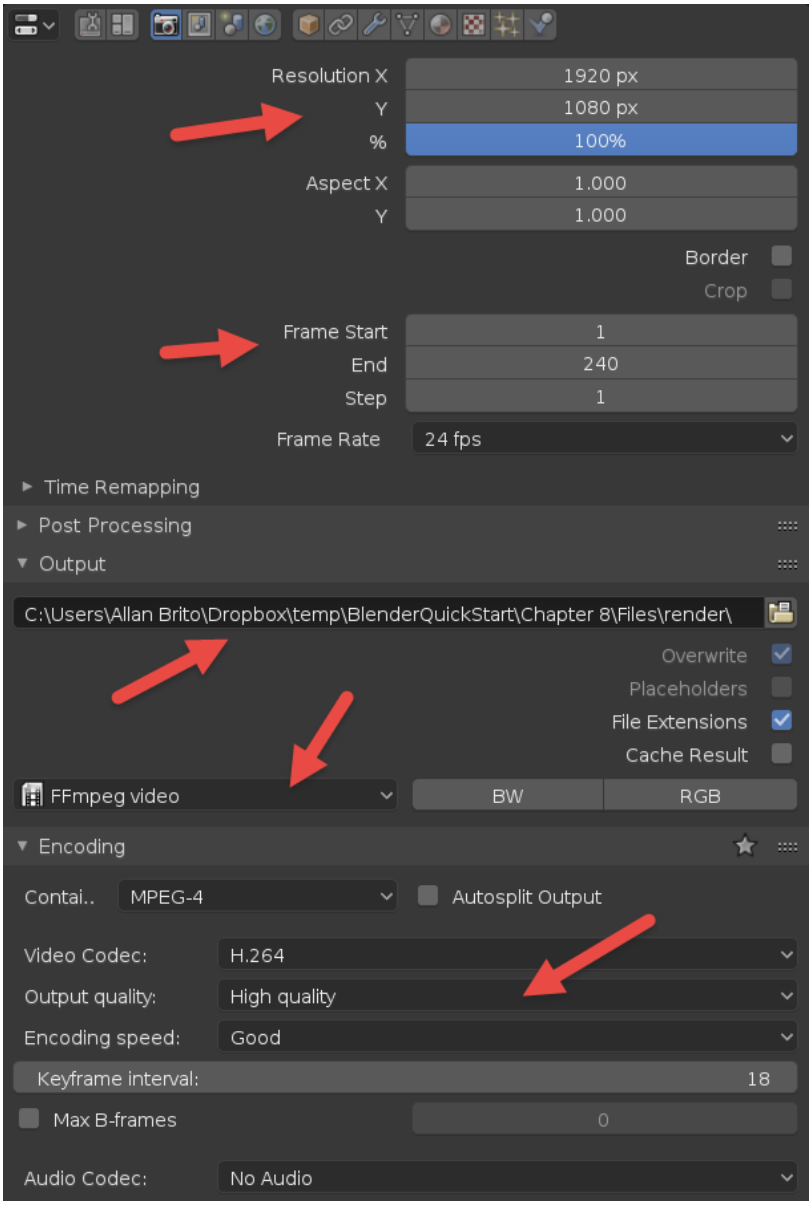

View
Select
Marker
Channel
Key
Normalize
Nearest Frame
Plane
PlaneAction.001
X Euler Rotation
Z Euler Rotation
F-Curve
Modifiers
View
Active F-Curve
Z Euler Rotation
rotation_euler
RNA Array Index: 2
Display Color:
Auto XYZ ..
Auto Handle Smoothing:
Continuous Acceleration
Active Keyframe
Interp
Bezier
Key:
Frame: 1.000
Value: 0°
Left Handle:
X: -38.667
Y: 0°
Auto Clamped
Right Handle:
X: 40.667
-80 -60 -40 -20 0 20 40 60 80 100 120 140 160 180 200
450 400 350 300 250 200 150 100 50 0 -50 -100

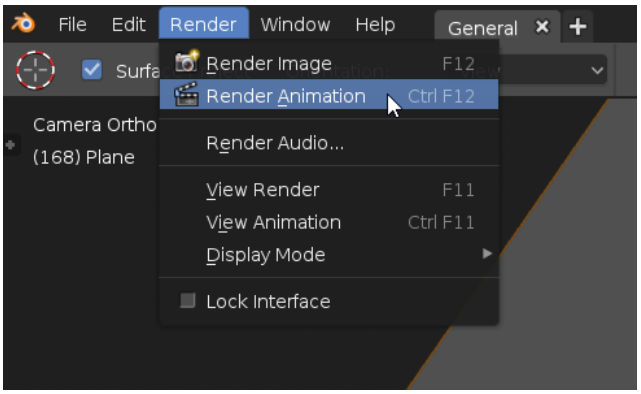

View
Select
Marker
Channel
Key
Normalize
Nearest Frame
Plane
PlaneAction.001
Object Transform
X Euler Rotation
Y Euler Rotation
Z Euler Rotation
Keyframe
Active F-Curve
Interpolation
Constant
Linear
Bezier
Straight-line interpolation between A and B (i.e. no ease in/out).
Easing (by strength)
Sinusoidal
Quadratic
Dynamic Effects
Back
Bounce
Quintic
Exponential
Circular
Interp
Bezier
Key:
Frame: 1.000
Value: 0°
Left Handle:
X: -38.667
Y: 0°
Auto Clamped
Right Handle:
X: 40.667
Indirect Lighting
Subsurface Scattering
Screen Space Reflections
Ambient Occlusion
Volumetric
Motion Blur
Depth of Field
Bloom
Freestyle

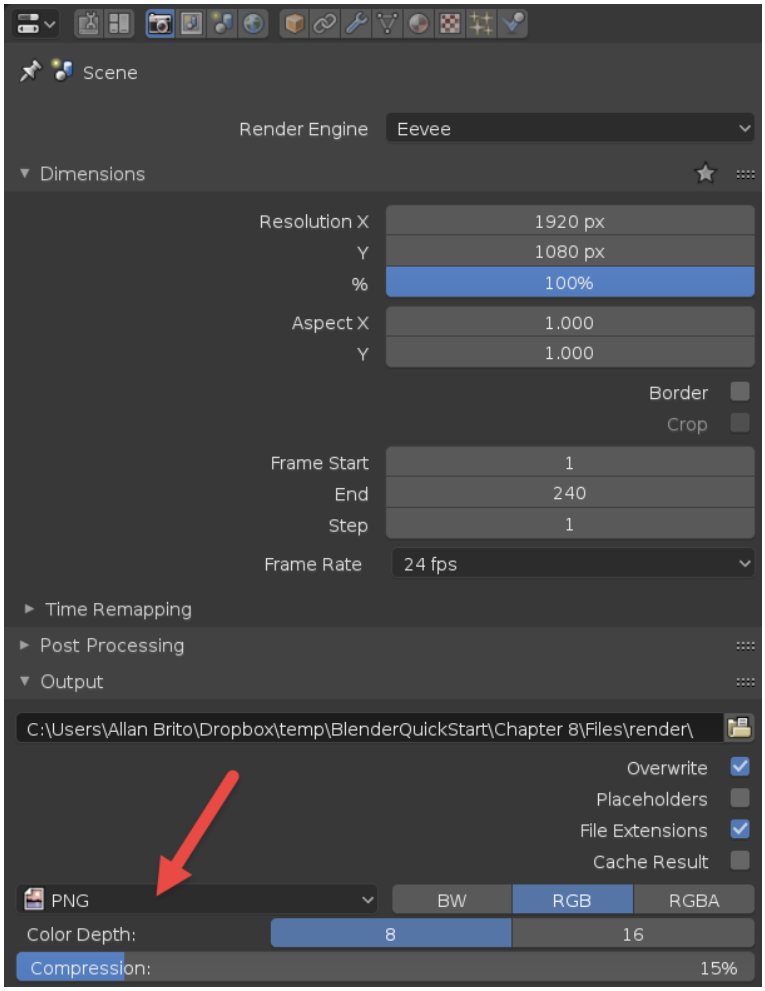

View
Select
Marker
Channel
Key
Normalize
Nearest Frame
Plane
PlaneAction.001
Object Transform
X Euler Rotation
Y Euler Rotation
Z Euler Rotation
Keyframe
Active F-Curve
Z Euler Rotation
rotation_euler
RNA Array Index: 2
Display Color:
Auto XYZ
Auto Handle Smoothing:
Continuous Acceleration
Active Keyframe
Interp
Linear
Key:
Frame: 120.000
Value: 360°

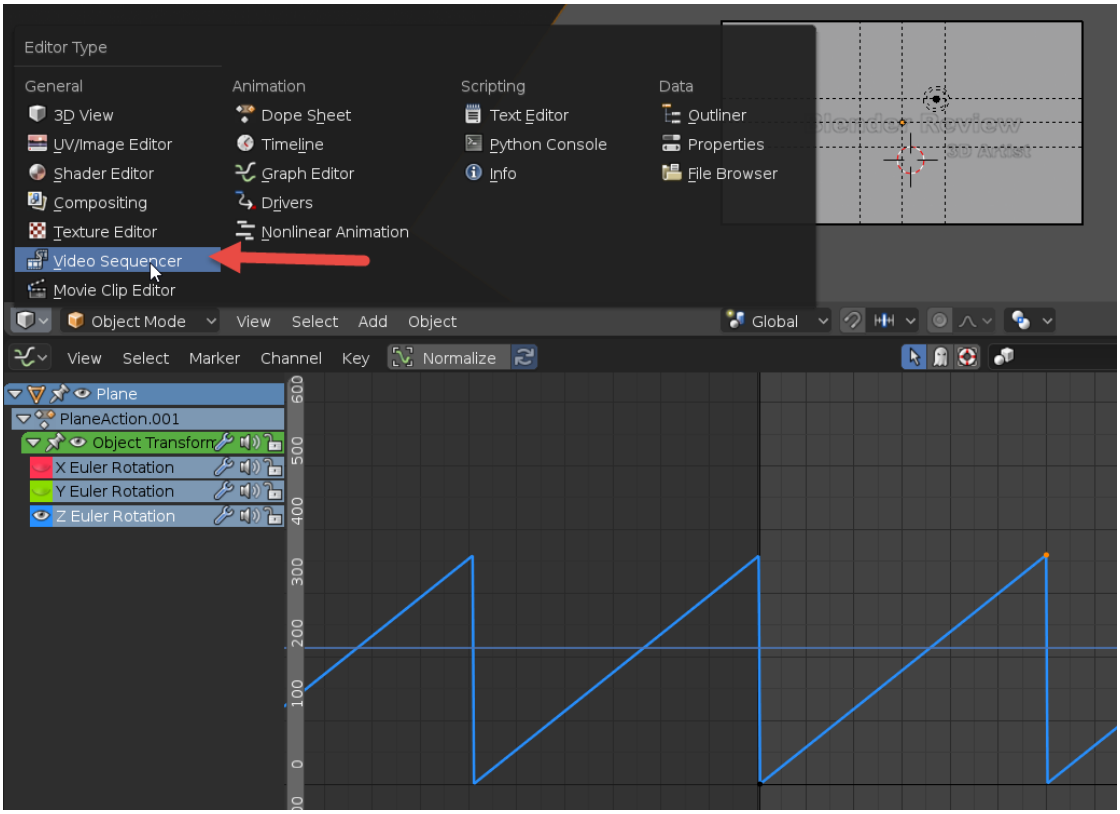

View
Select
Marker
Channel
Key
Normalize
Nearest Frame
Plane
PlaneAction.001
Object Transform
X Euler Rotation
Y Euler Rotation
Z Euler Rotation
Modifiers
Add Modifier
Generator
Built-in Function
Envelope
Cycles
Noise
Limits
Stepped Interpolation

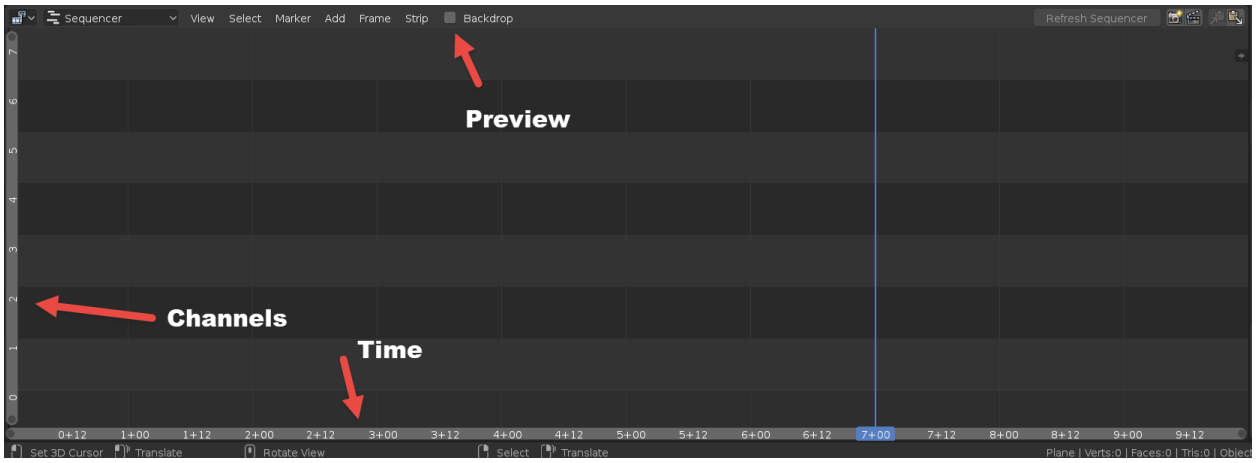

View
Select
Marker
Channel
Key
Normalize
Nearest Frame
Plane
PlaneAction.001
Object Transform
X Euler Rotation
Y Euler Rotation
Z Euler Rotation
600
500
400
300
200
100
0
-100
-200
-150
-100
-50
0
50
100
150
168
200
250
300
F-Curve
Modifiers
View
Modifiers
Add Modifier
Cycles
Before:
After:
Repeat ..
Repeat ..
Befo: 0
After: 0
Restrict Frame Range
Use Influence

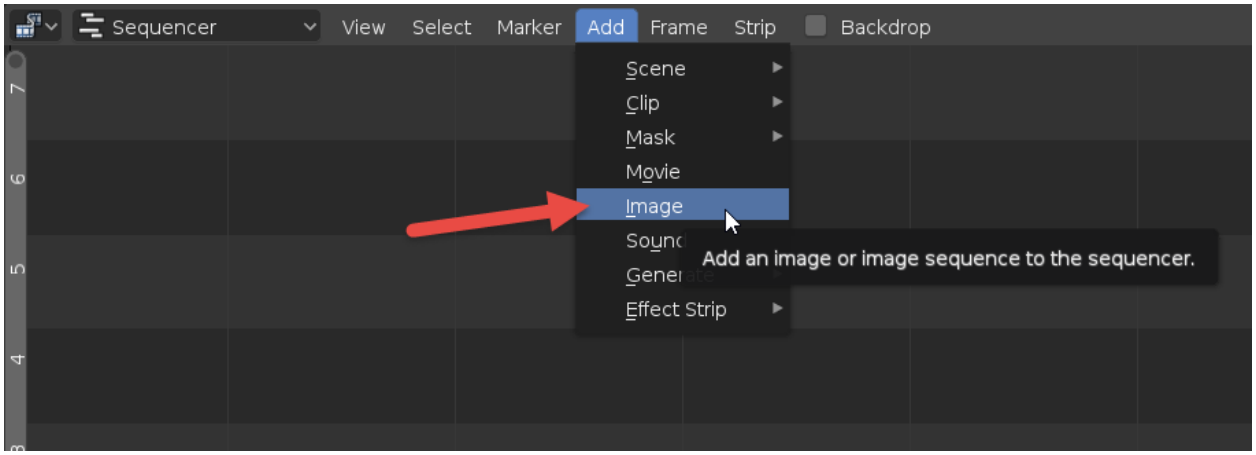

Resolution X
1920 px
Y
1080 px
%
100%
Aspect X
1.000
Y
1.000
Border
Crop
Frame Start
1
End
240
Step
1
Frame Rate
24 fps
Time Remapping
Post Processing
Output
C:\Users\Allan Brito\Dropbox\temp\BlenderQuickStart\Chapter 8\Files\render\
Overwrite
Placeholders
File Extensions
Cache Result
FFmpeg video
BW
RGB
Encoding
Contai..
MPEG-4
Autosplit Output
Video Codec:
H.264
Output quality:
High quality
Encoding speed:
Good
Keyframe interval:
18
Max B-frames
0
Audio Codec:
No Audio

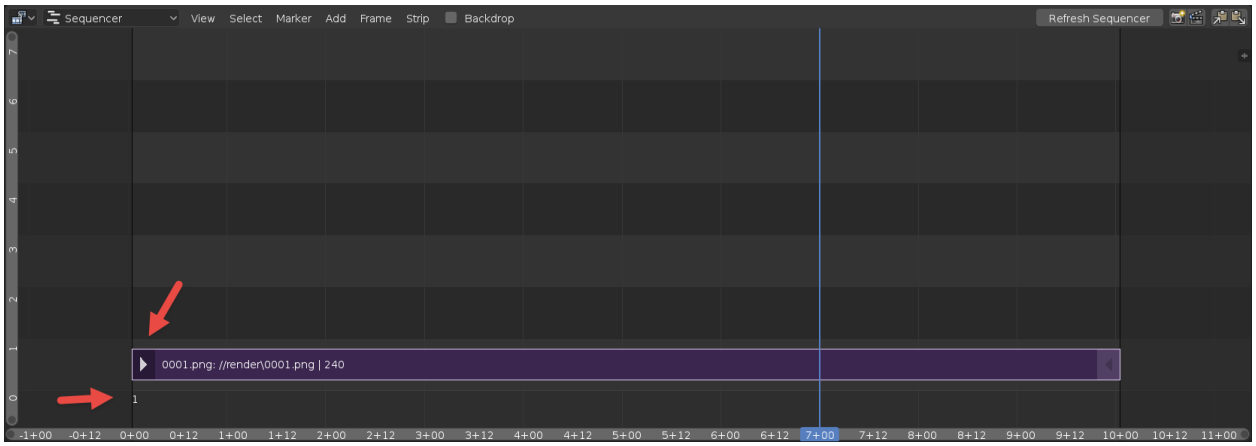

File
Edit
Render
Window
Help
General
Render Image
F12
Render Animation
Ctrl F12
Render Audio...
View Render
F11
View Animation
Ctrl F11
Display Mode
Lock Interface
Camera Ortho
(168) Plane

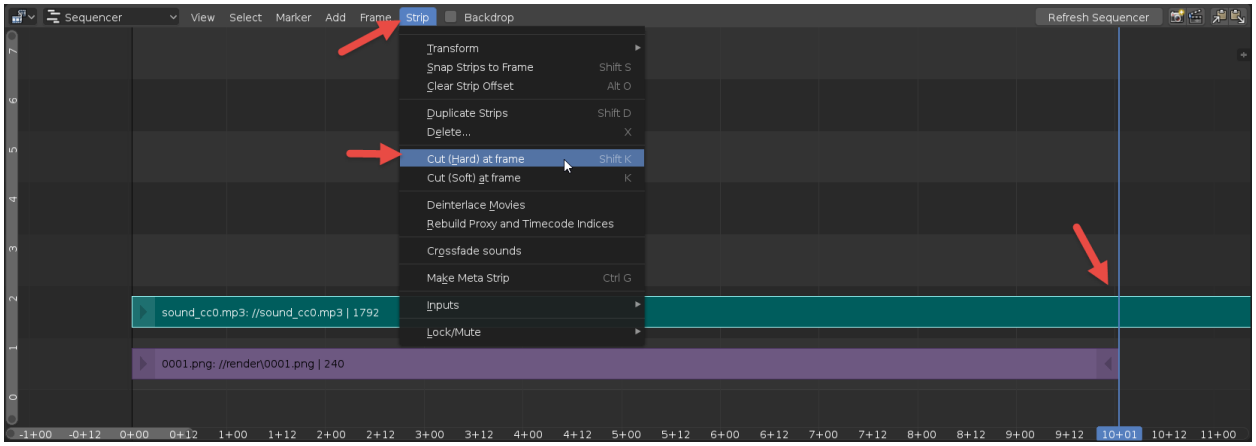

Scene
Render Engine
Eevee
Dimensions
Resolution X
1920 px
Y
1080 px
%
100%
Aspect X
1.000
Y
1.000
Border
Crop
Frame Start
1
End
240
Step
1
Frame Rate
24 fps
Time Remapping
Post Processing
Output
C:\Users\Allan Brito\Dropbox\temp\BlenderQuickStart\Chapter 8\Files\render\
Overwrite
Placeholders
File Extensions
Cache Result
PNG
BW
RGB
RGBA
Color Depth:
8
16
Compression:
15%


Editor Type
General
3D View
UV/Image Editor
Shader Editor
Compositing
Texture Editor
Video Sequencer
Movie Clip Editor
Animation
Dope Sheet
Timeline
Graph Editor
Drivers
Nonlinear Animation
Scripting
Text Editor
Python Console
Info
Data
Outliner
Properties
File Browser
Object Mode
View
Select
Add
Object
Global
View
Select
Marker
Channel
Key
Normalize
Plane
PlaneAction.001
Object Transform
X Euler Rotation
Y Euler Rotation
Z Euler Rotation
600
500
400
300
200
100
0

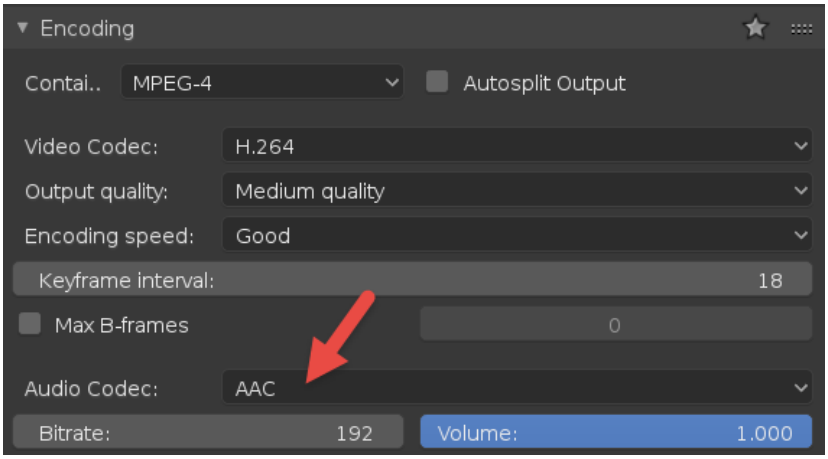

Sequencer
View
Select
Marker
Add
Frame
Strip
Backdrop
Refresh Sequencer
Preview
Channels
Time
0+12
1+00
1+12
2+00
2+12
3+00
3+12
4+00
4+12
5+00
5+12
6+00
6+12
7+00
7+12
8+00
8+12
9+00
9+12
Set 3D Cursor
Translate
Rotate View
Select
Translate

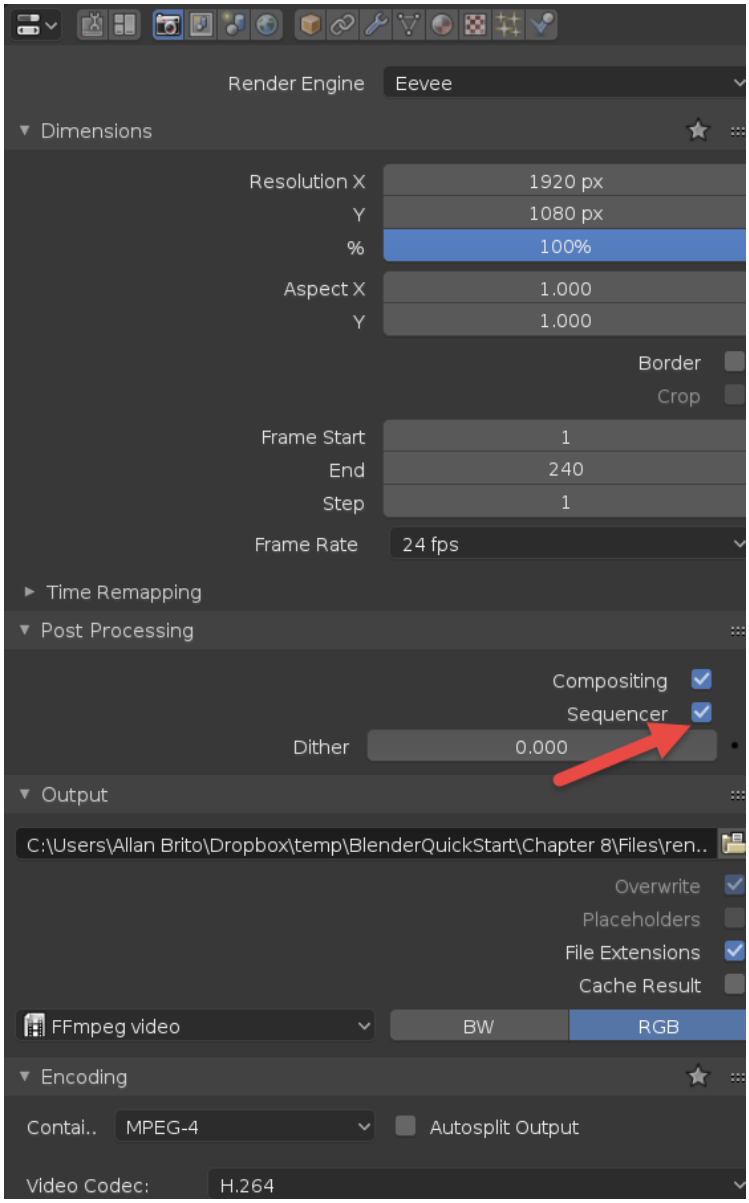

Sequencer
View
Select
Marker
Add
Frame
Strip
Backdrop
Scene
Clip
Mask
Movie
Image
Sound
Generate
Effect Strip
Add an image or image sequence to the sequencer.


Sequencer
View
Select
Marker
Add
Frame
Strip
Backdrop
Refresh Sequencer
0001.png: //render\0001.png | 240
1


Sequencer
View
Select
Marker
Add
Frame
Strip
Backdrop
Refresh Sequencer
Transform
Snap Strips to Frame Shift S
Clear Strip Offset Alt O
Duplicate Strips Shift D
Delete... X
Cut (Hard) at frame Shift K
Cut (Soft) at frame K
Deinterlace Movies
Rebuild Proxy and Timecode Indices
Crossfade sounds
Make Meta Strip Ctrl G
Inputs
Lock/Mute
sound_cc0.mp3: //sound_cc0.mp3 | 1792
0001.png: //render\0001.png | 240

Sequencer
View
Select
Marker
Add
Frame
Strip
Backdrop
Refresh Sequencer
sound_cc0.001: //sound_cc0.mp3 | 240
sound_cc0.mp3: //s
0001.png: //render\0001.png | 240
-1+00
-0+12
0+00
0+12
1+00
1+12
2+00
2+12
3+00
3+12
4+00
4+12
5+00
5+12
6+00
6+12
7+00
7+12
8+00
8+12
9+00
9+12
10+01
10+12
11+00


Encoding
Contai..
MPEG-4
Autosplit Output
Video Codec:
H.264
Output quality:
Medium quality
Encoding speed:
Good
Keyframe interval:
18
Max B-frames
0
Audio Codec:
AAC
Bitrate:
192
Volume:
1.000


Render Engine
Eevee
Dimensions
Resolution X
1920 px
Y
1080 px
%
100%
Aspect X
1.000
Y
1.000
Border
Crop
Frame Start
1
End
240
Step
1
Frame Rate
24 fps
Time Remapping
Post Processing
Compositing
Sequencer
Dither
0.000
Output
C:\Users\Allan Brito\Dropbox\temp\BlenderQuickStart\Chapter 8\Files\ren..
Overwrite
Placeholders
File Extensions
Cache Result
FFmpeg video
BW
RGB
Encoding
Contai..
MPEG-4
Autosplit Output
Video Codec:
H.264