



 **blender** โครงการพัฒนาทักษะการออกแบบ
3D Modeling
for beginners

ผู้ช่วยศาสตราจารย์จารุต บุศราทิว
อ.จ.ส.อ.หญิง จุฑาภรณ์ ชาทินฤมาณ

IT@PBRU

๑๘ , ๑๙ , ๒๐ มีนาคม ๒๕๖๖



Blender

- แอนิเมชันเบื้องต้น (Animation)
- การจำลองทางฟิสิกส์ (Physics Simulation)



แอนิเมชันเบื้องต้น



Animation zu Blender

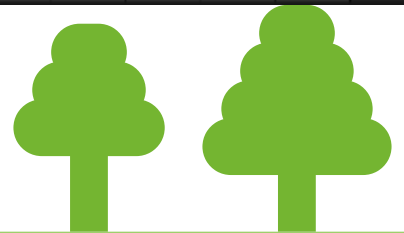
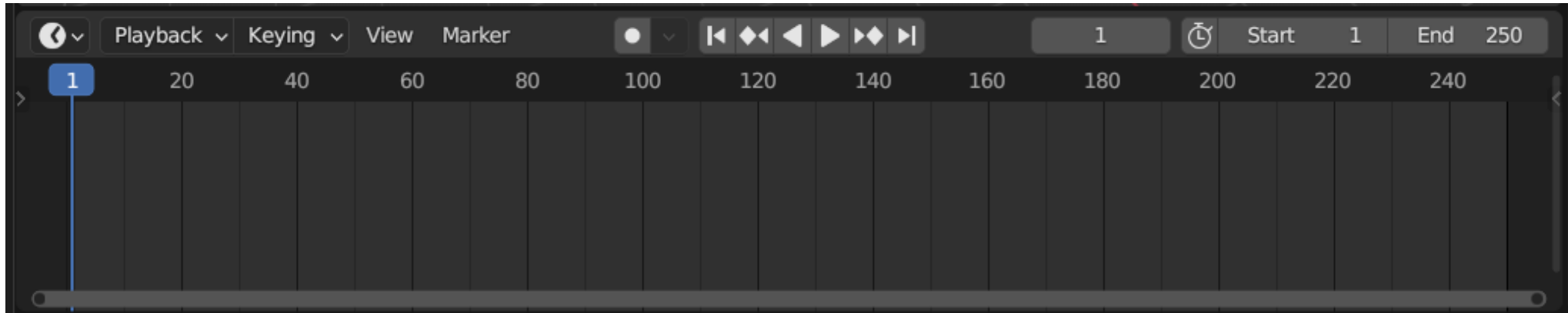
1. Time Line

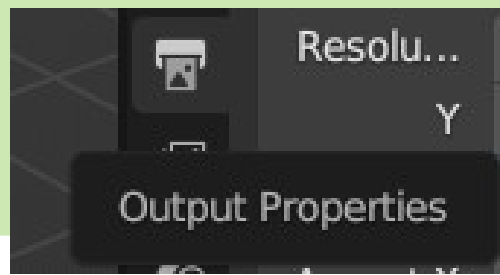
2. Key Frame

3. Bone



Time Line





Scene

Format

Resolution X	1920 px
Y	1080 px
%	100%
Aspect X	1.000
Y	1.000

Render Region
 Crop to Render ...

Frame Rate: 24 fps

Frame Range

Frame Start	1
End	250
Step	1

> Time Stretching

Stereoscopy

Stereoscopy

Stereo 3D | Multi-View

<input checked="" type="checkbox"/> left	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> right	<input checked="" type="checkbox"/>

File Suffix: _L



Output

Output: /tmp/

Saving File Extensions
 Cache Result

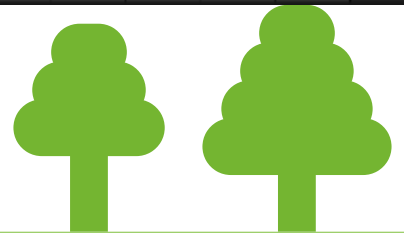
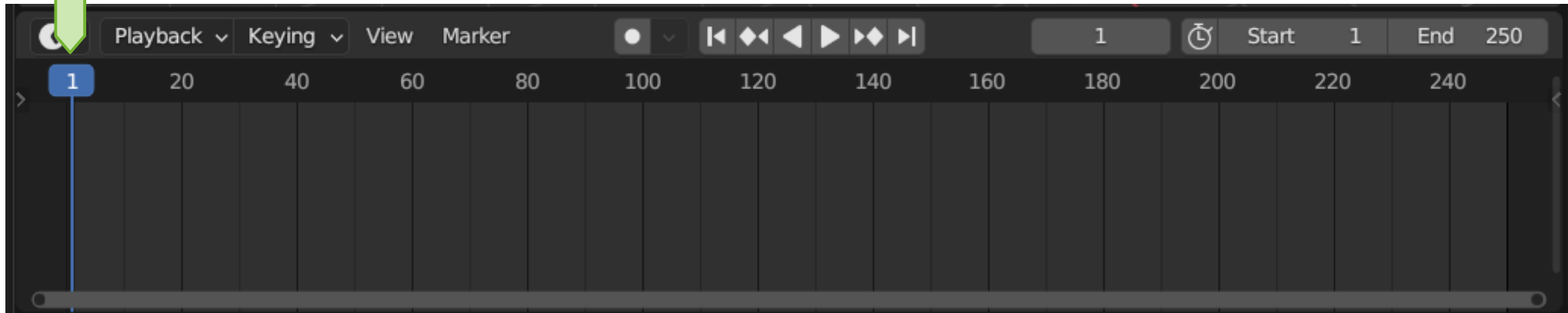
File Format: PNG
Color: BW | RGB | **RGBA**

Color Depth: 8 | 16
Compression: 15%

Image Sequ... Overwrite
 Placeholders

> Color Management
> Metadata
> Post Processing

Key Frame





Insert Keyframe Menu

Available

Location

Rotation

Scale

Location & Rotation

Location, Rotation & Scale

Location, Rotation, Scale & Custom Properties

Location & Scale

Rotation & Scale

Delta Location

Delta Rotation

Delta Scale

Visual Location

Visual Rotation

Visual Scale

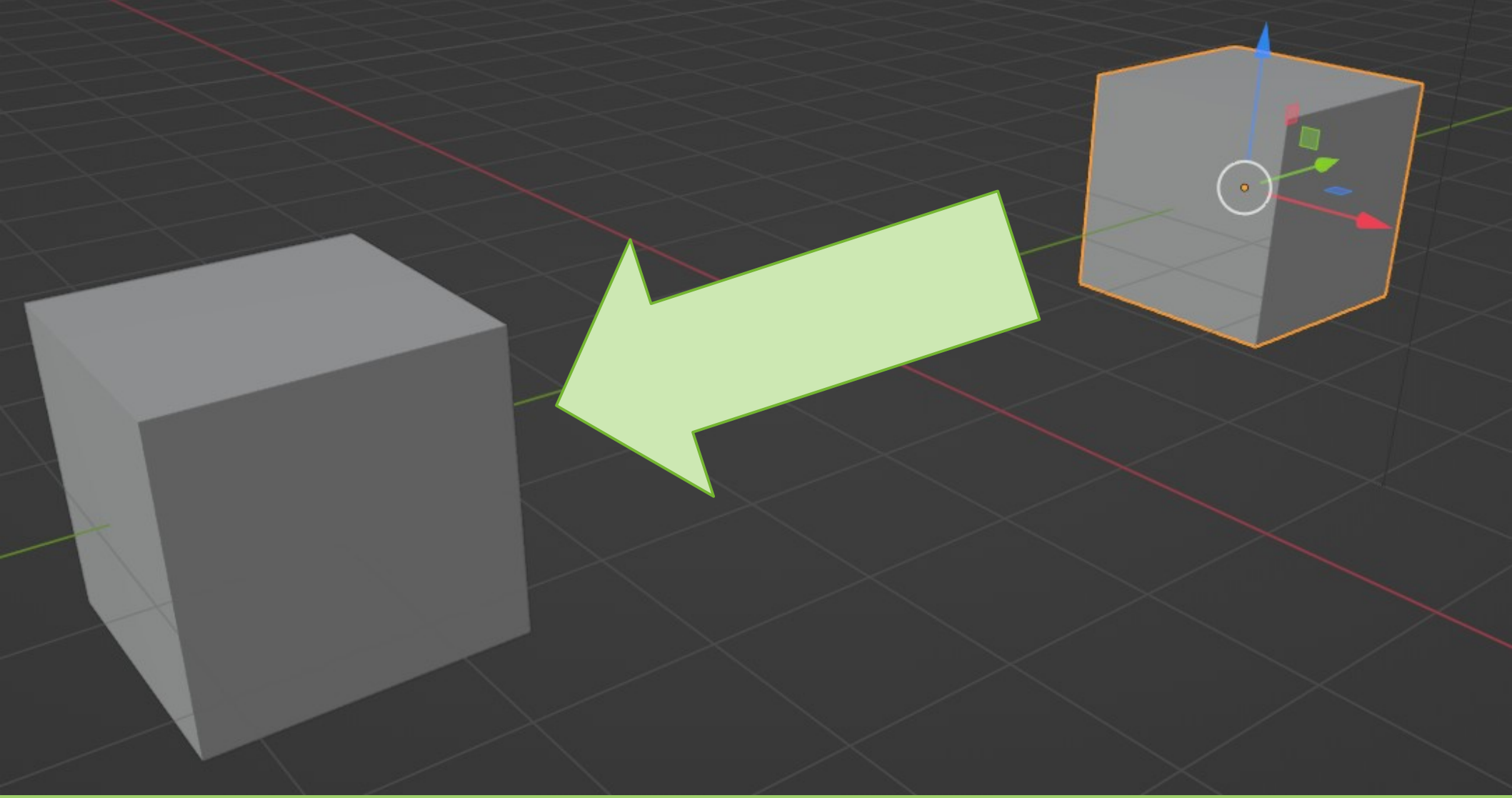
Visual Location & Rotation

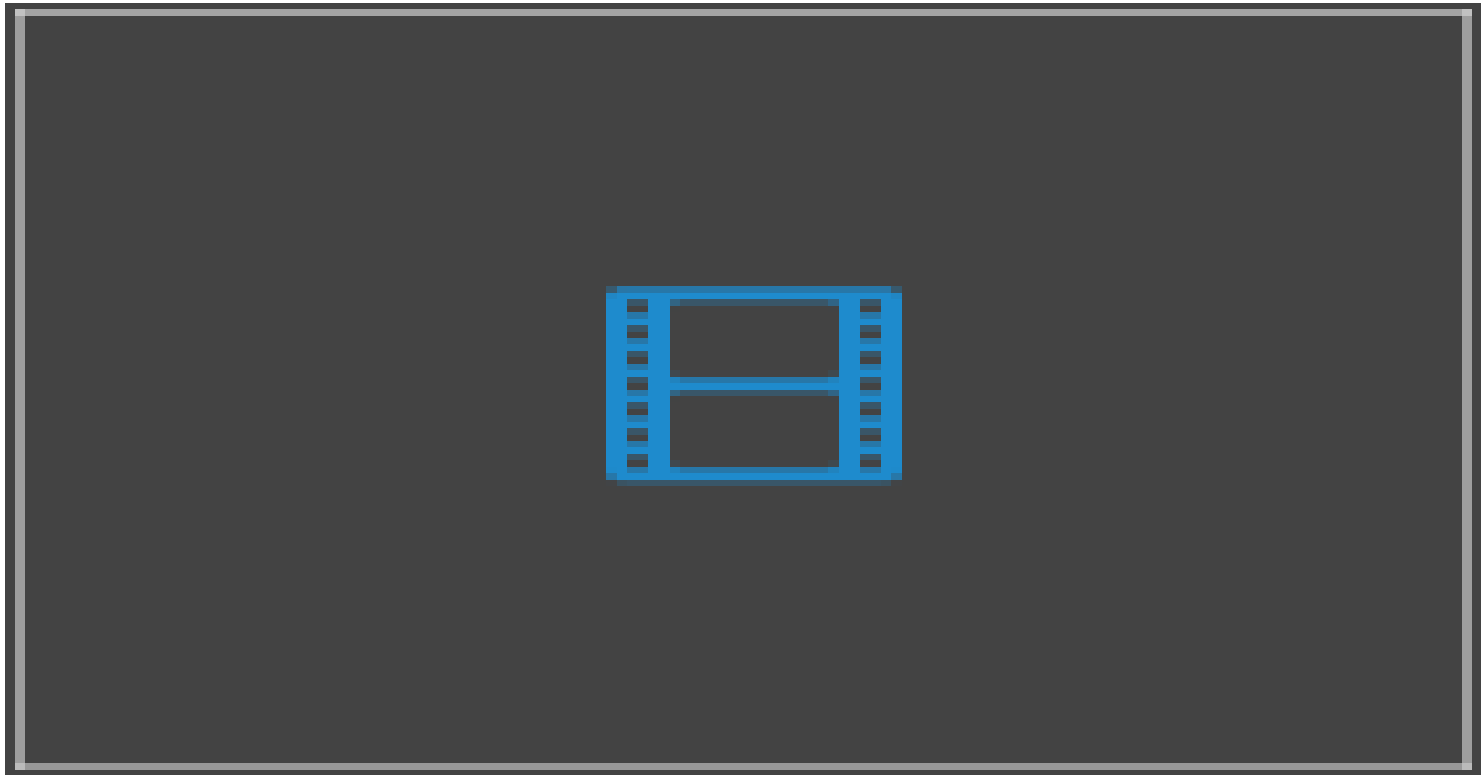
Visual Location, Rotation & Scale

Visual Location & Scale

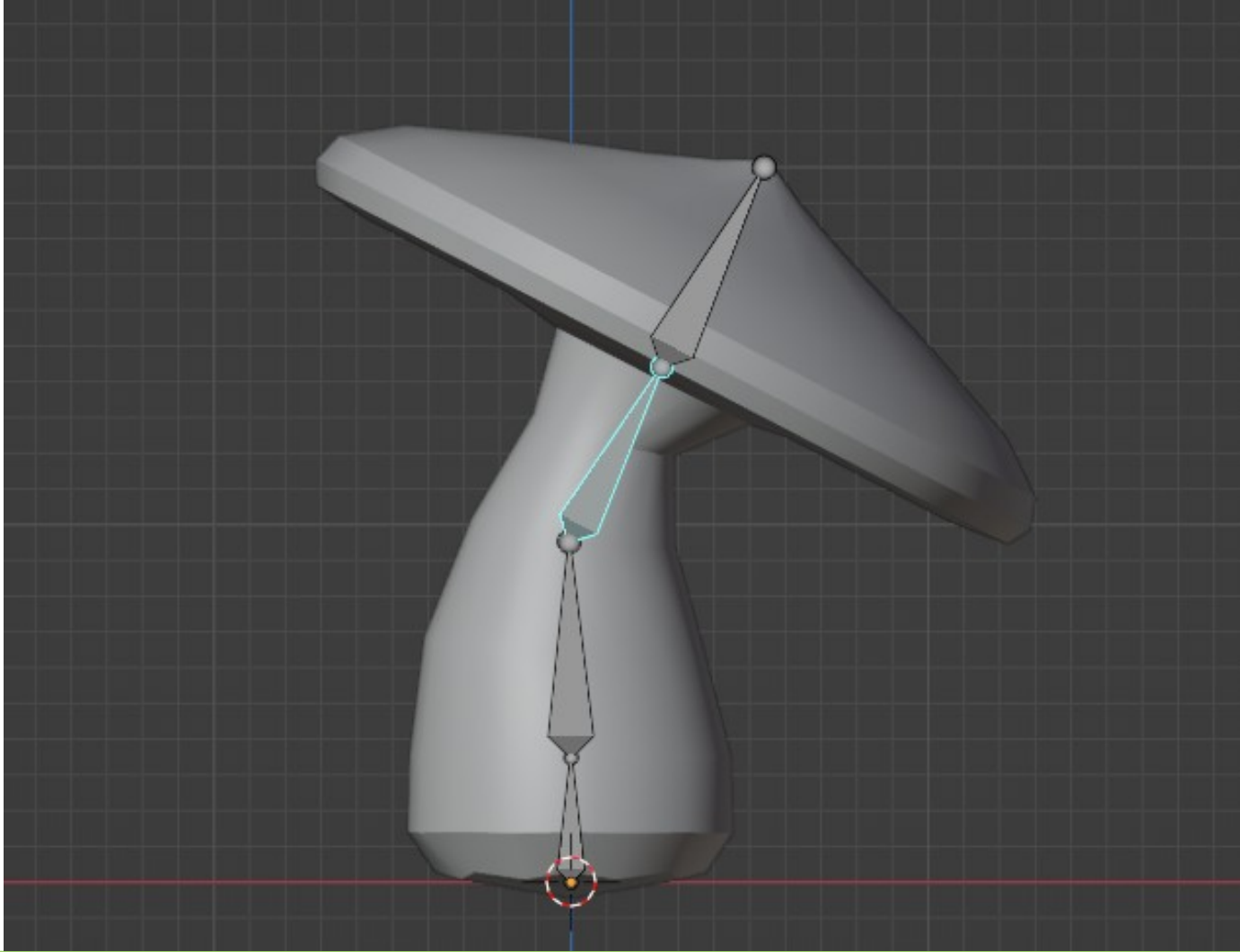
Visual Rotation & Scale

Alternate access to 'Insert Keyframe' for keymaps to use.












Bone



- Interface
- Themes
- Viewport
- Lights
- Editing
- Animation
- Add-ons**
- Input
- Navigation
- Keymap
- System
- Save & Load
- File Paths

Official Community Testing  Install...  Refresh

Enabled Add-ons Only All  

- Animation: Corrective Shape Keys 
- Camera: Add Camera Rigs 
- Object: Skinify Rig  
- Rigging: Rigify 



Description: Automatic rigging from building-block components

Location: Armature properties, Bone properties, View3d tools panel, Armature Add m...

File: C:\Program Files\Blender Foundation\Blender 3.4\3.4\scripts\addons\rigify_i...


Author: Nathan Vegdahl, Lucio Rossi, Ivan Cappiello, Alexander Gavrilov

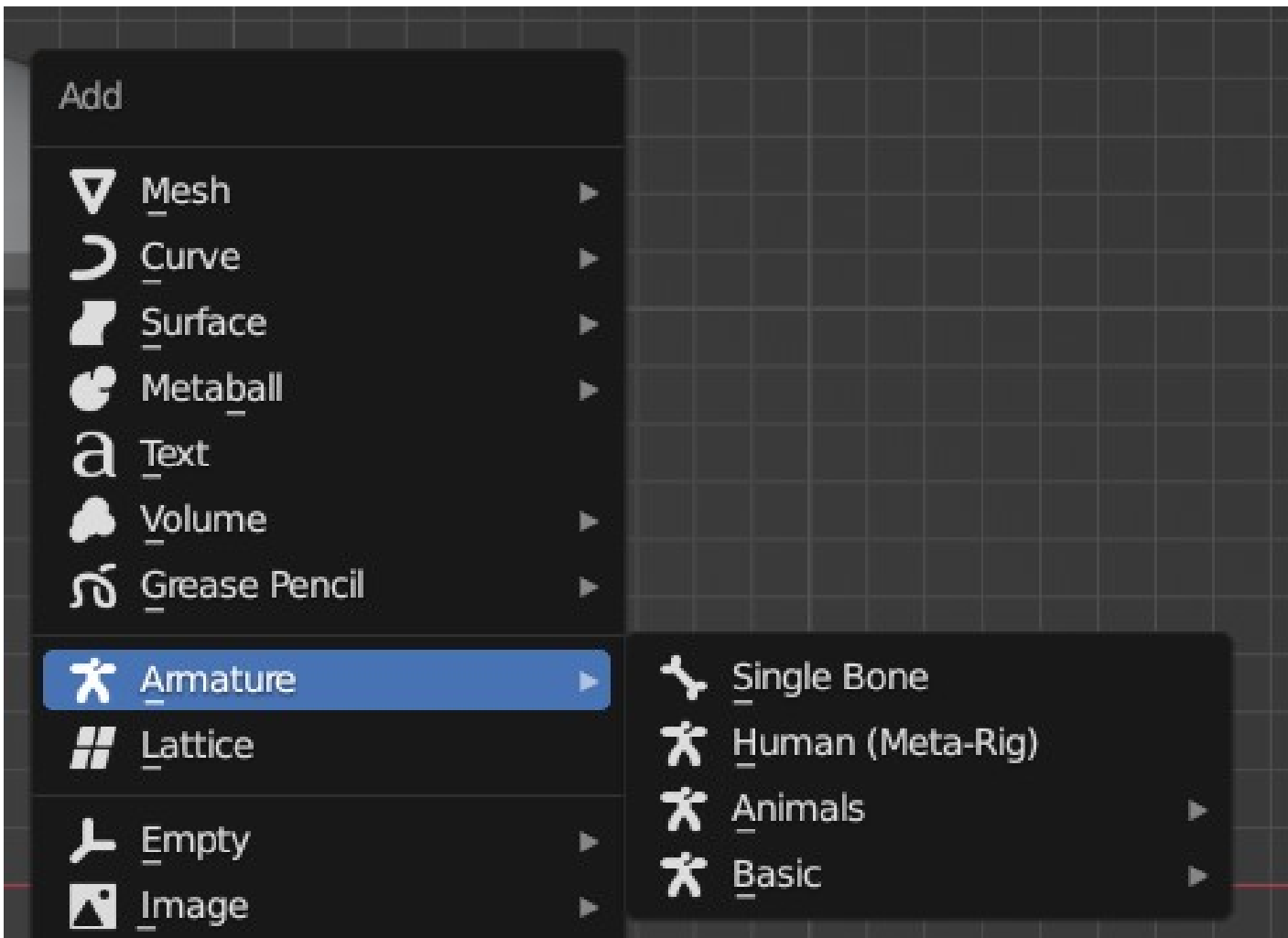
Version: 0.6.6

Internet:  Documentation  Report a Bug

Preferences:

Feature Sets:

 Install Feature Set from File...



 Rendered 8


 Wireframe 4

Shading



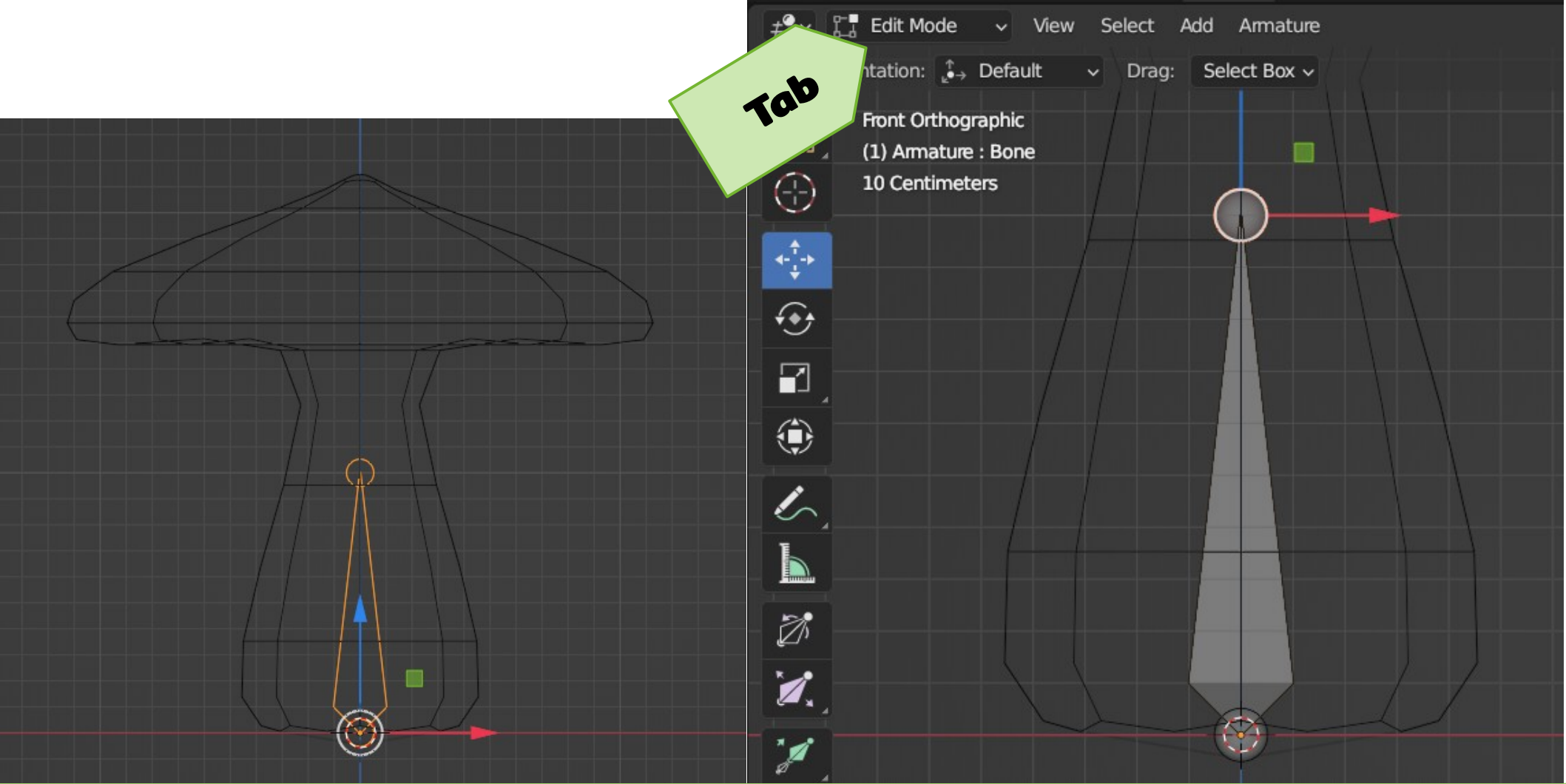
 Solid 6

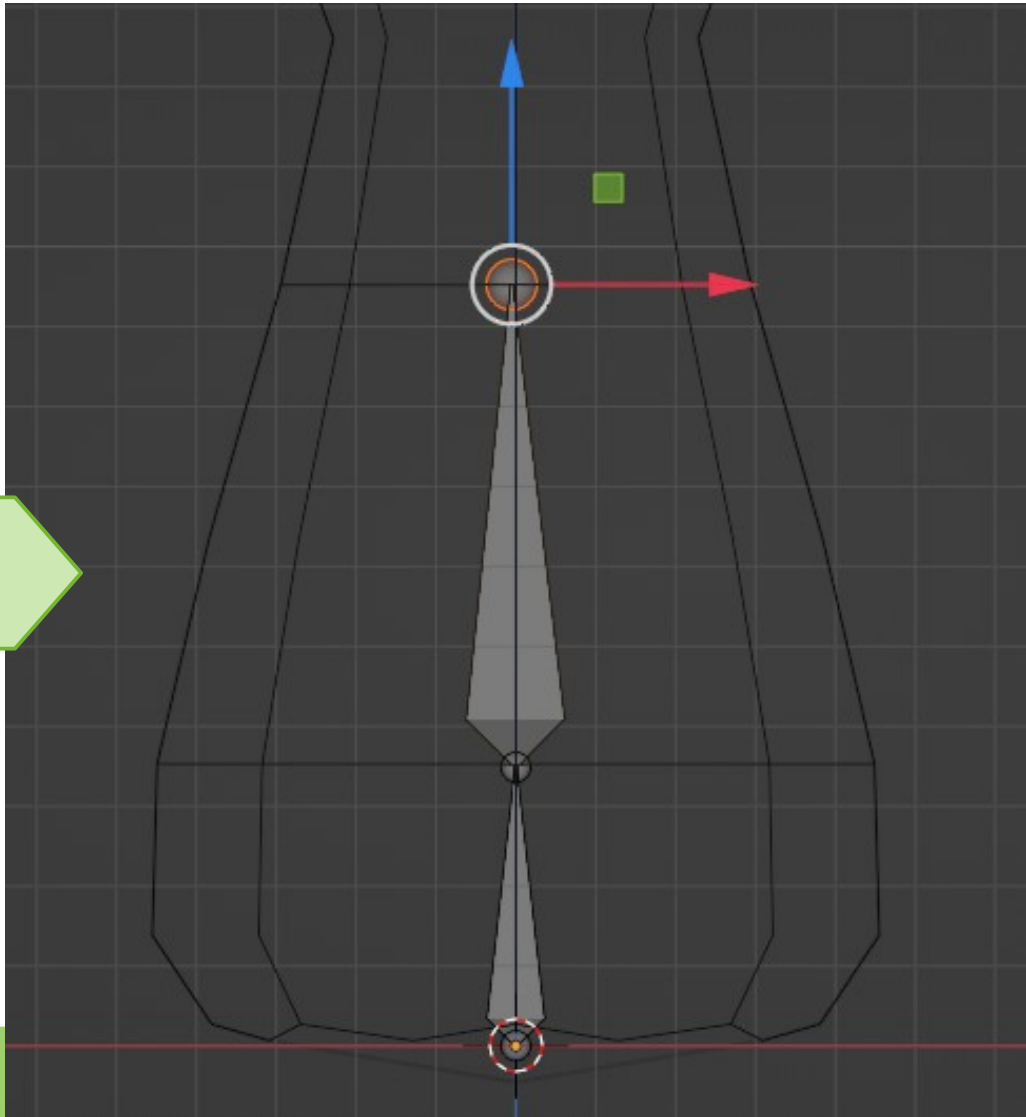
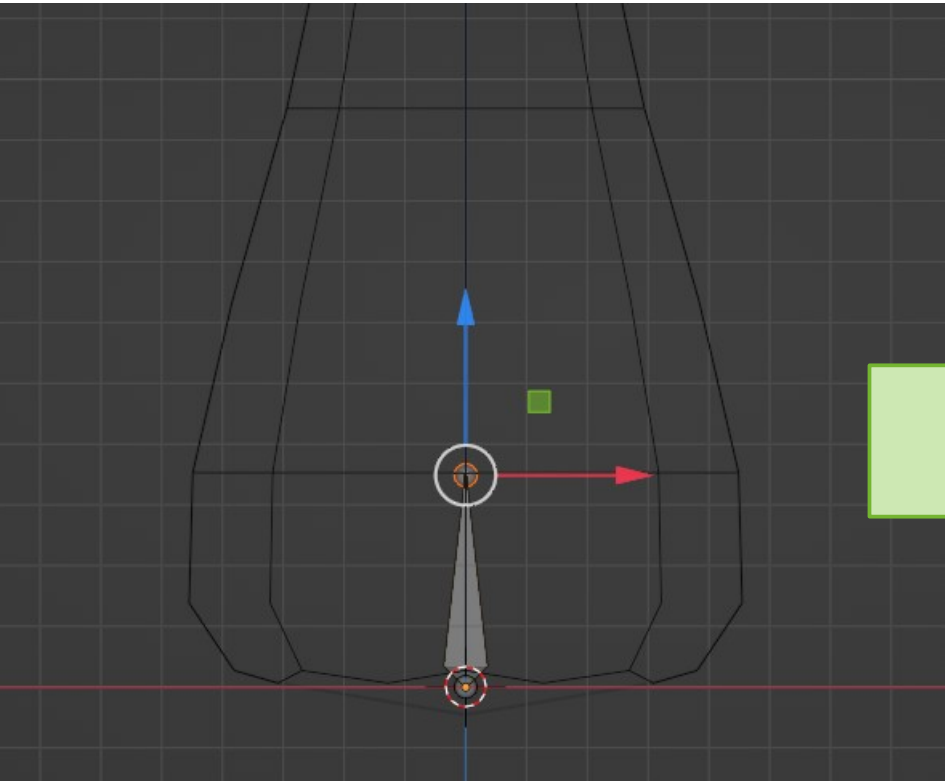
Method to display/shade objects in the 3D View: Wireframe
Display the object as wire edges

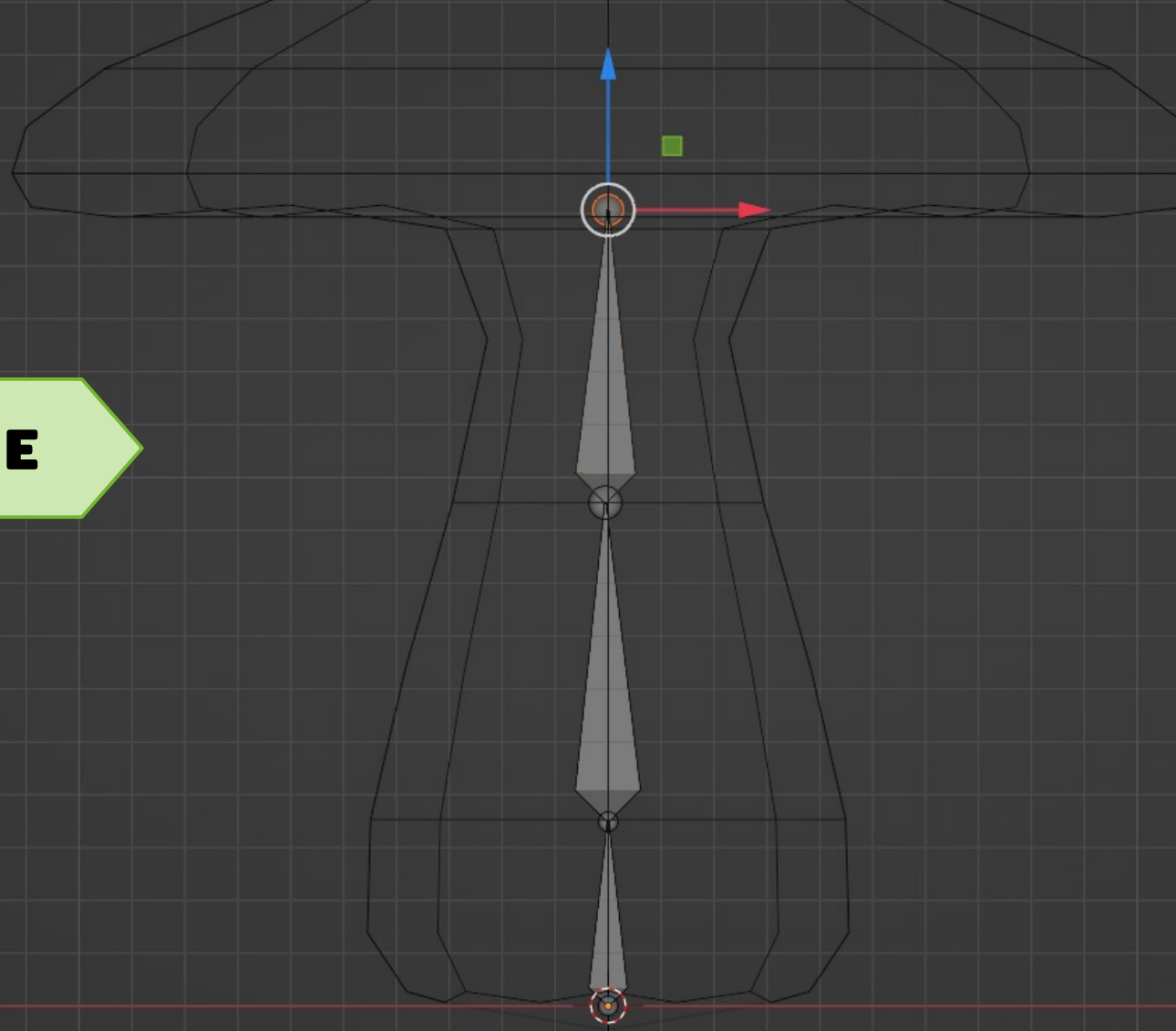
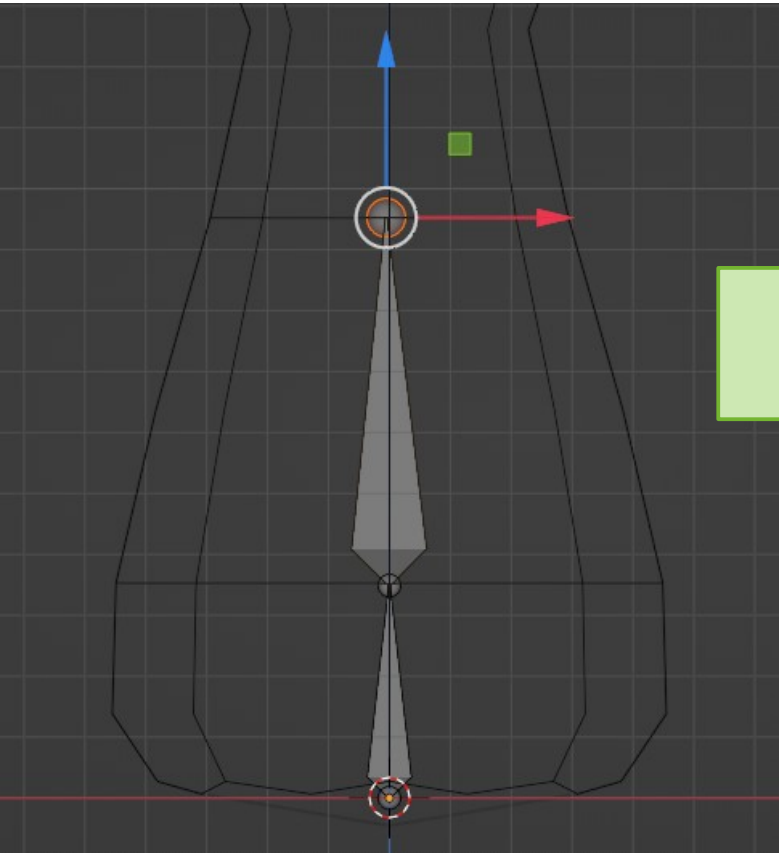
 Material Preview 2

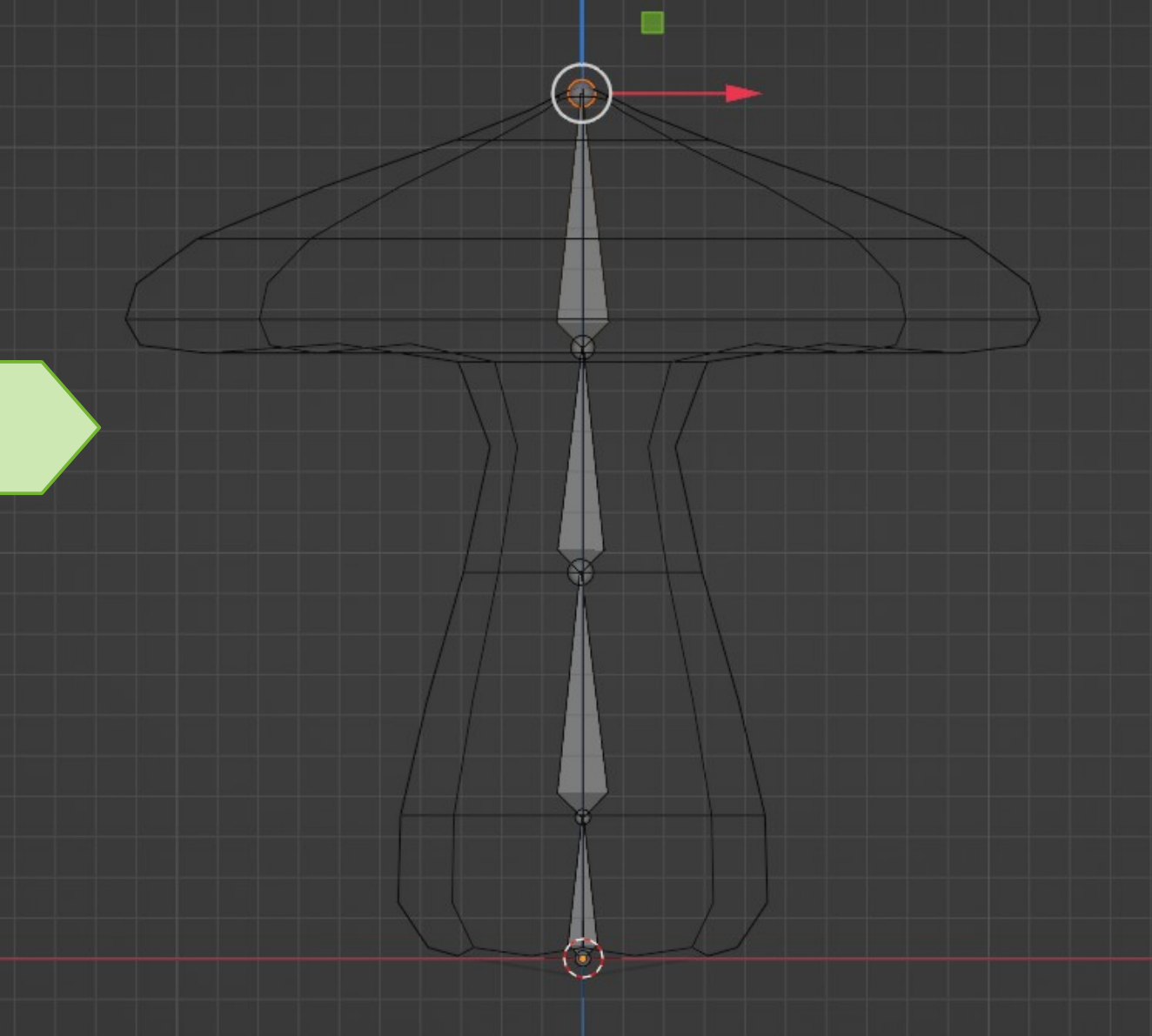
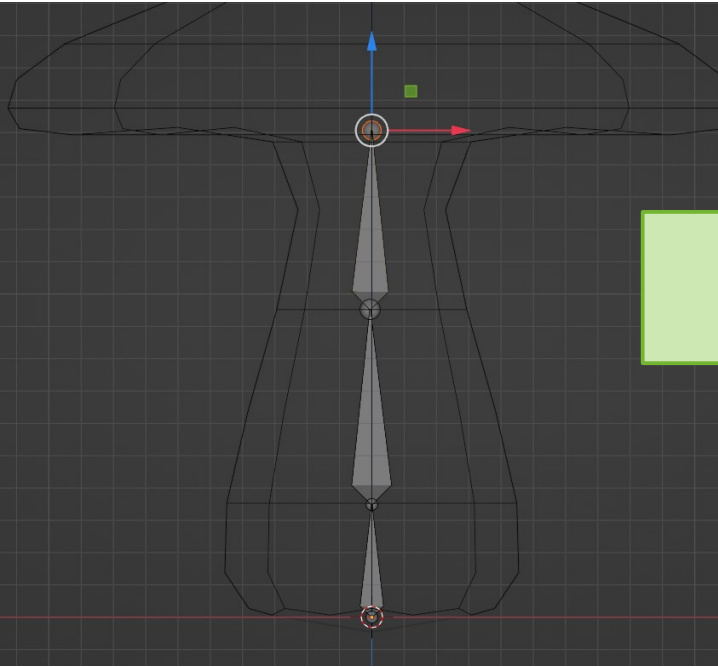


Tab



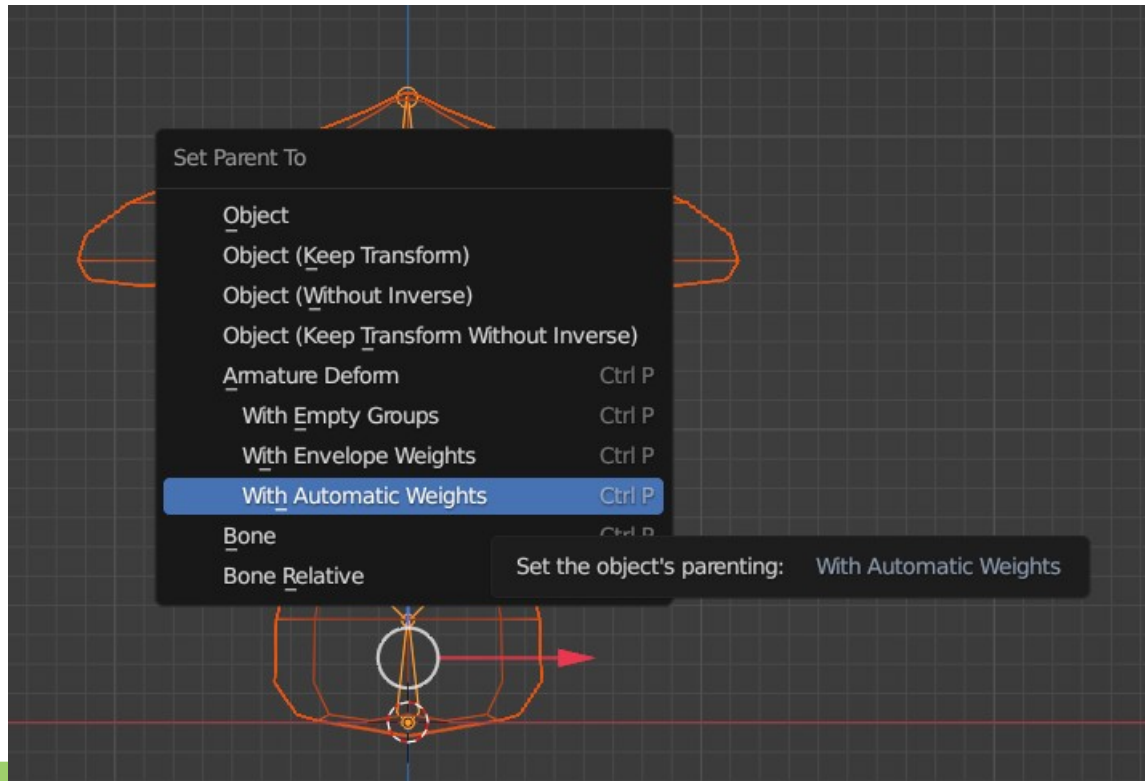


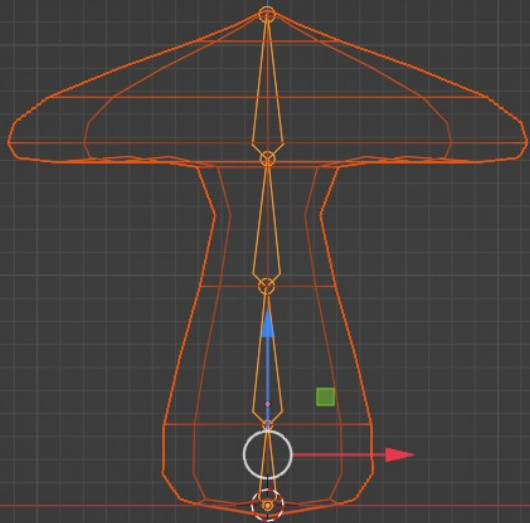
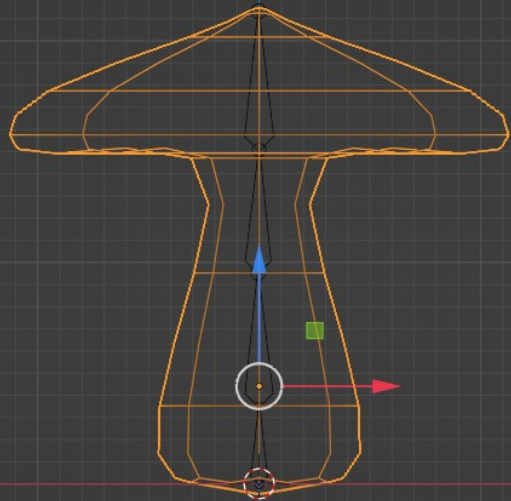




เชื่อมวัตถุกับกระดูก

1. เลือกวัตถุ
2. กด Shift ค้าง
3. เลือก Bone
4. กด Ctrl+P
5. เลือกรูปแบบการเชื่อม



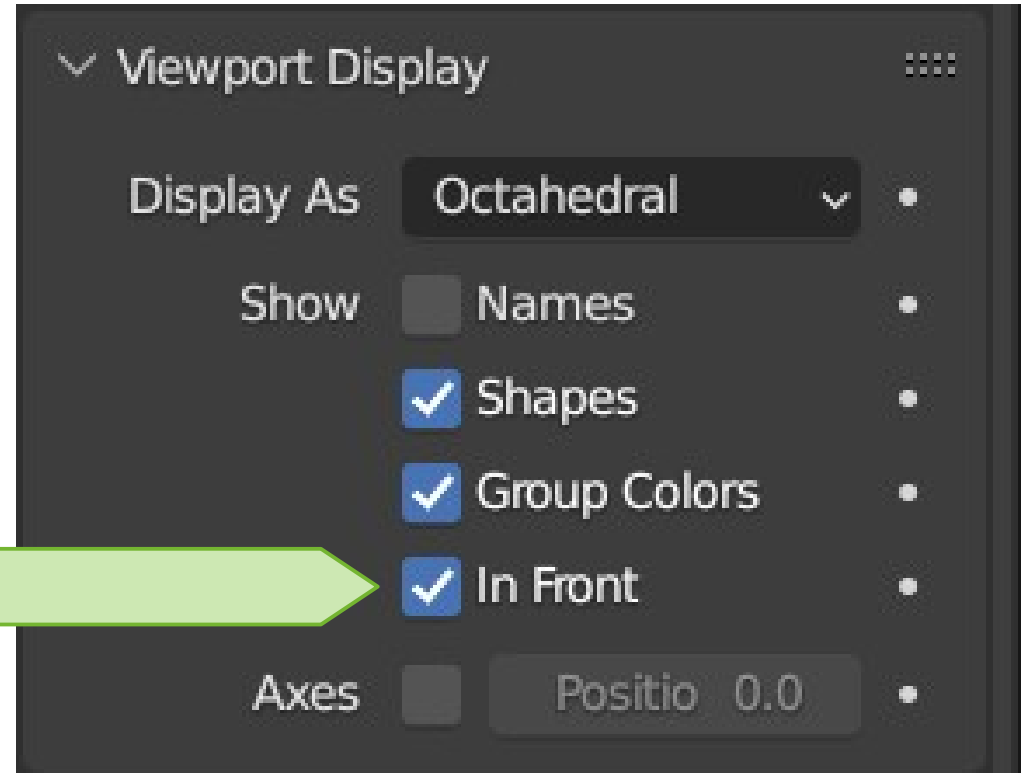


Set Parent To

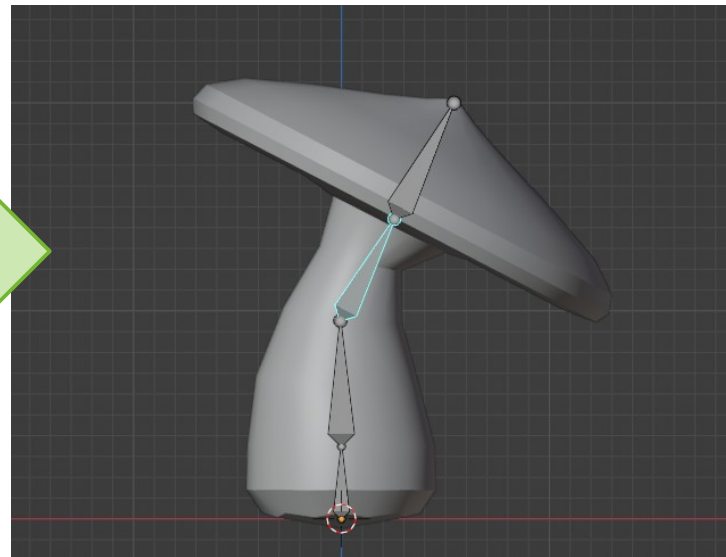
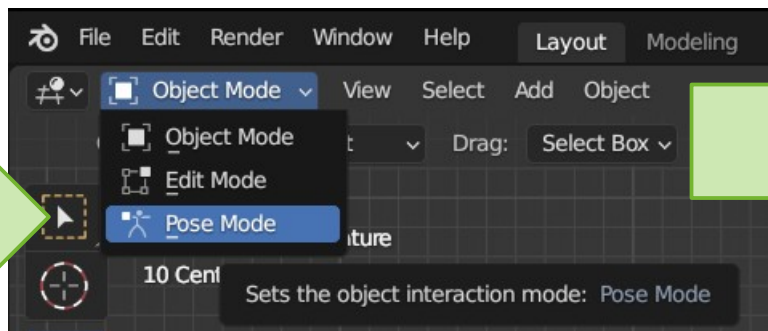
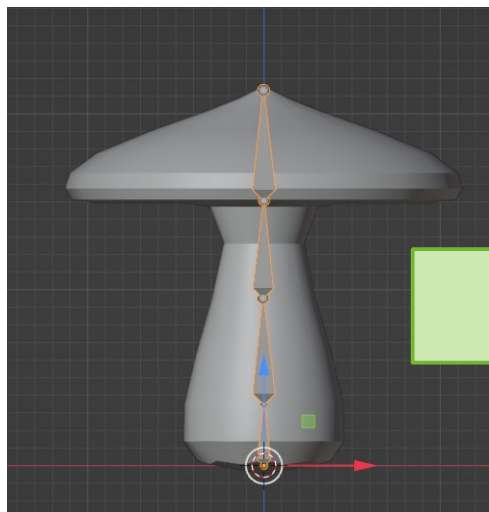
- Object
- Object (Keep Transform)
- Object (Without Inverse)
- Object (Keep Transform Without Inverse)
- Armature Deform Ctrl P
- With Empty Groups Ctrl P
- With Envelope Weights Ctrl P
- With Automatic Weights Ctrl P**
- Bone Ctrl P
- Bone Relative

Set the object's parenting: With Automatic Weights

เปิดให้แสดงกระดูกไว้ด้านหน้าวัตถุ



จัดท่าทาง



แบบฝึกหัด



Physics



Physics ?u Blender

1. Active

2. Passive





Physics Properties



Force Field



Collision



Cloth



Dynamic Paint



Soft Body



Fluid



Rigid Body



Rigid Body Constraint

✕ Rigid Body

🔗 Rigid Body Constraint

∨ Rigid Body ⋮

Type **Active** ∨


∨ Settings

Mass •

Dynamic •

Animated •

∨ Collisions

Shape  Convex Hull ∨

Source **Deform** ∨

> Surface Response

> Sensitivity

> Collections

> Dynamics



✕ Rigid Body

🔗 Rigid Body Constraint


∨ Rigid Body ⋮

Type **Passive** ∨

∨ Settings

Animated •

∨ Collisions

Shape  **Convex Hull** ∨

Source **Deform** ∨

> Surface Response

> Sensitivity

> Collections



Collision Shape

 Compound Parent

 Mesh

 Convex Hull

 Cone

 Cylinder

 Capsule

 Sphere

 Box

Shape  Convex Hull ▾

Source Deform ▾



