

Session 04

Youth Create: Creating 3D Worlds (04)

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The Learning Space



Agenda

Practise Blender Skills

- Review hard surface modelling basic skills
- Create a ceiling fan

Project - New Topics

- 3D animation basic skills
- Animate the ceiling fan

Learn to animate a 3D Object

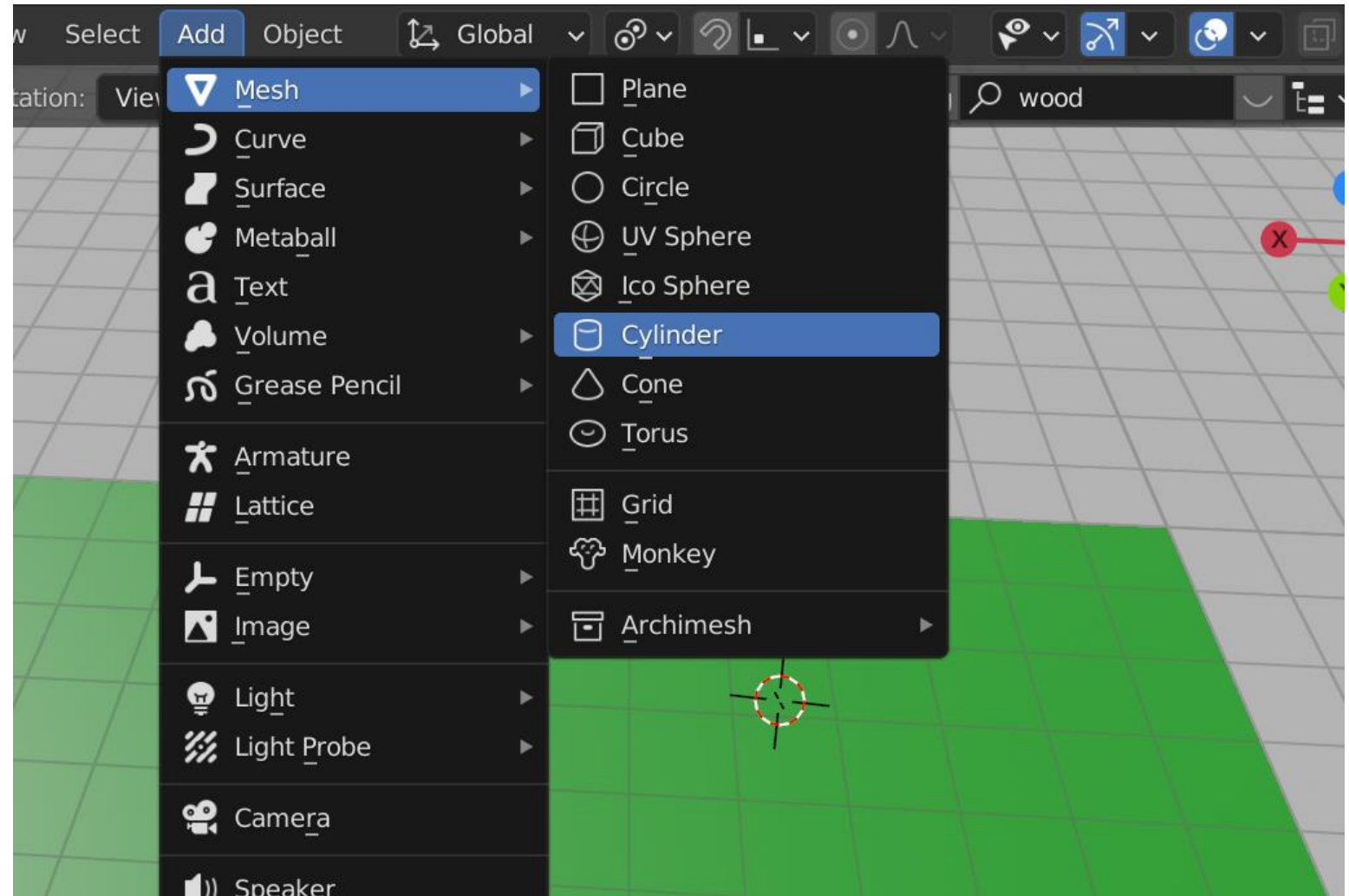


Step 01:

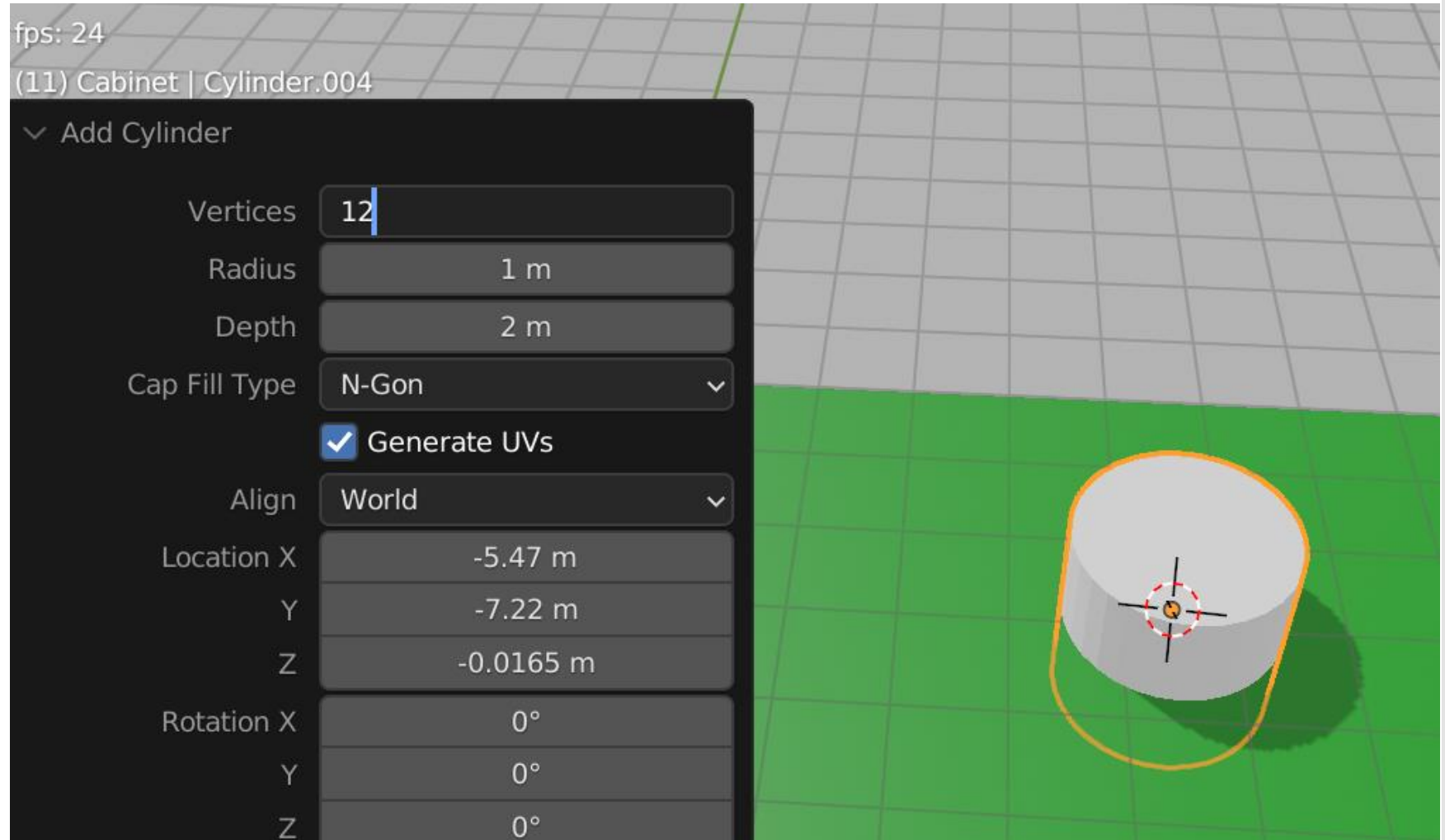
3D Model a Ceiling Fan

Let's start with
a Cylinder

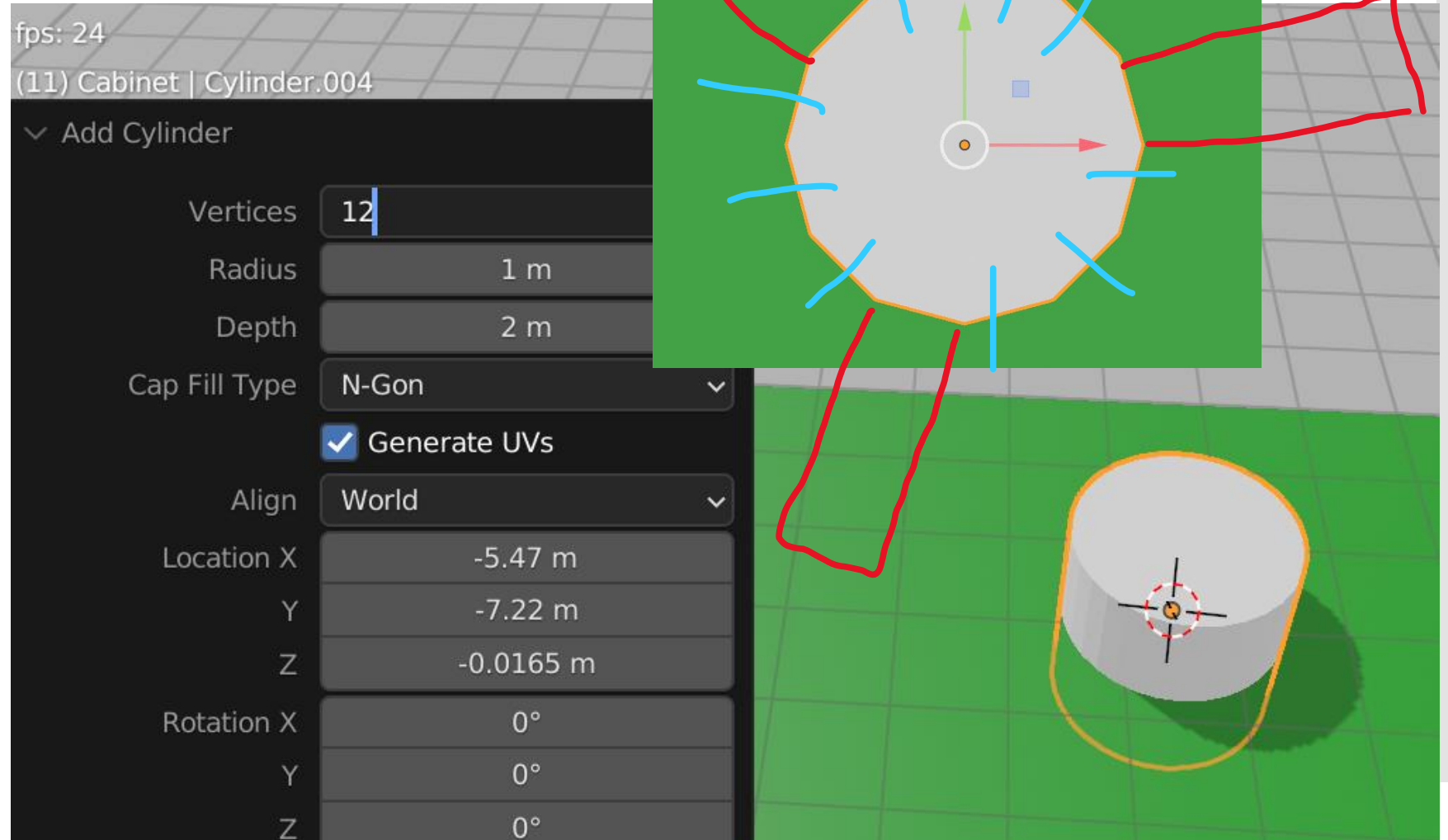
Shortcut:
Shift + 'A'



Reduce Vertices to 12



Reduce Vertices to 12 - Why?

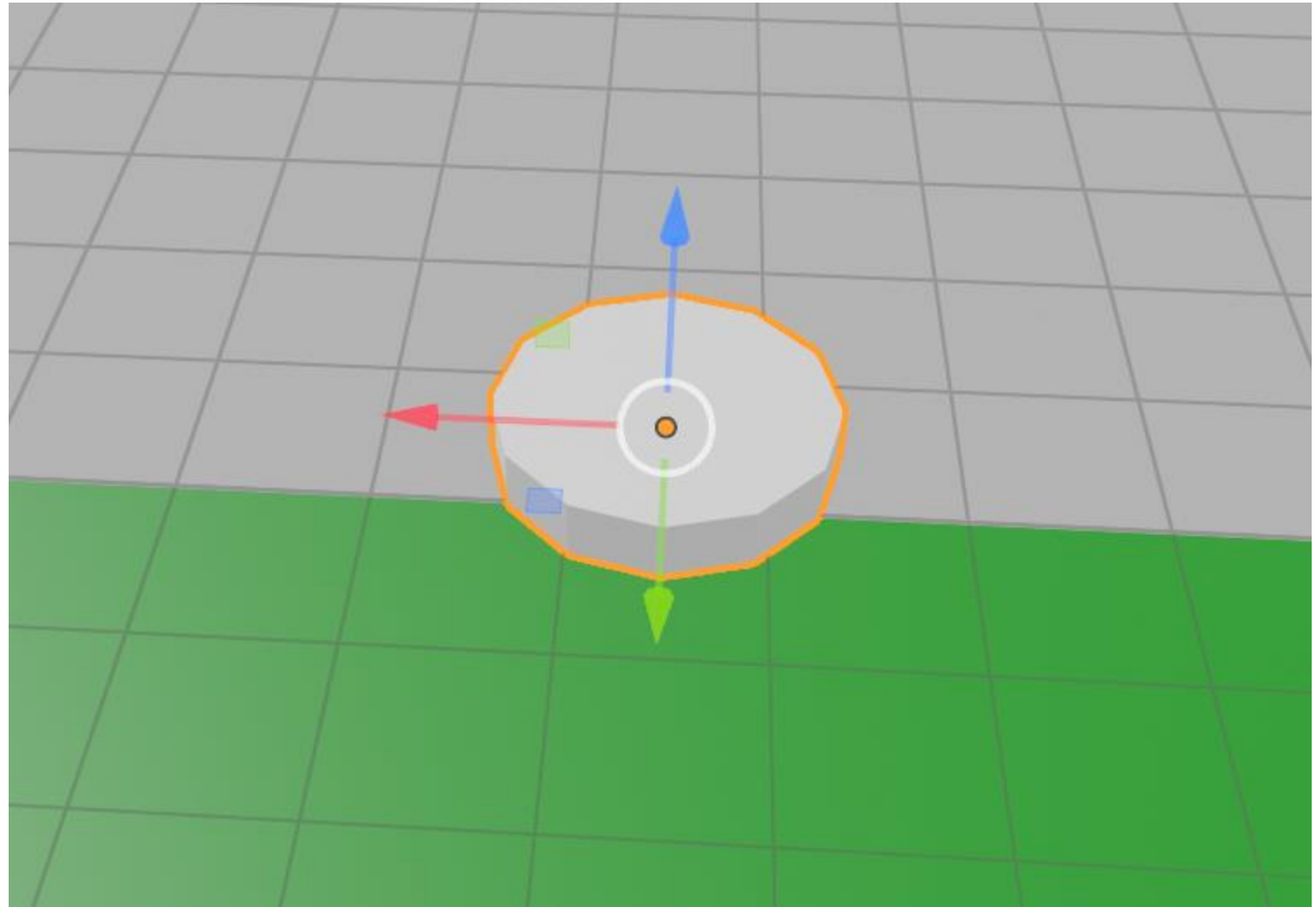


Make the
Cylinder into a
fan base

Shortcut:

'G' + 'Z' to move

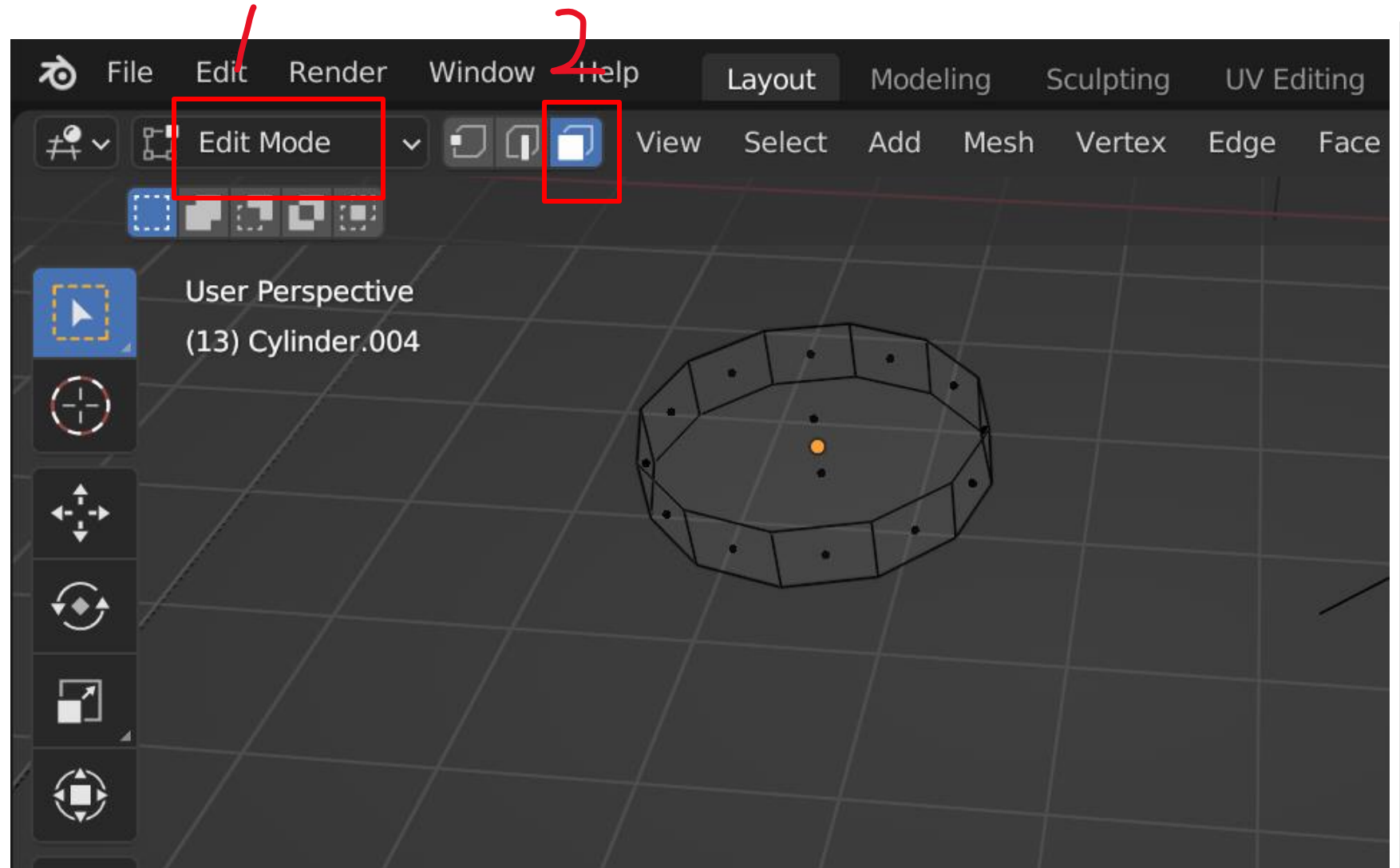
'S' + 'Z' to scale



Review

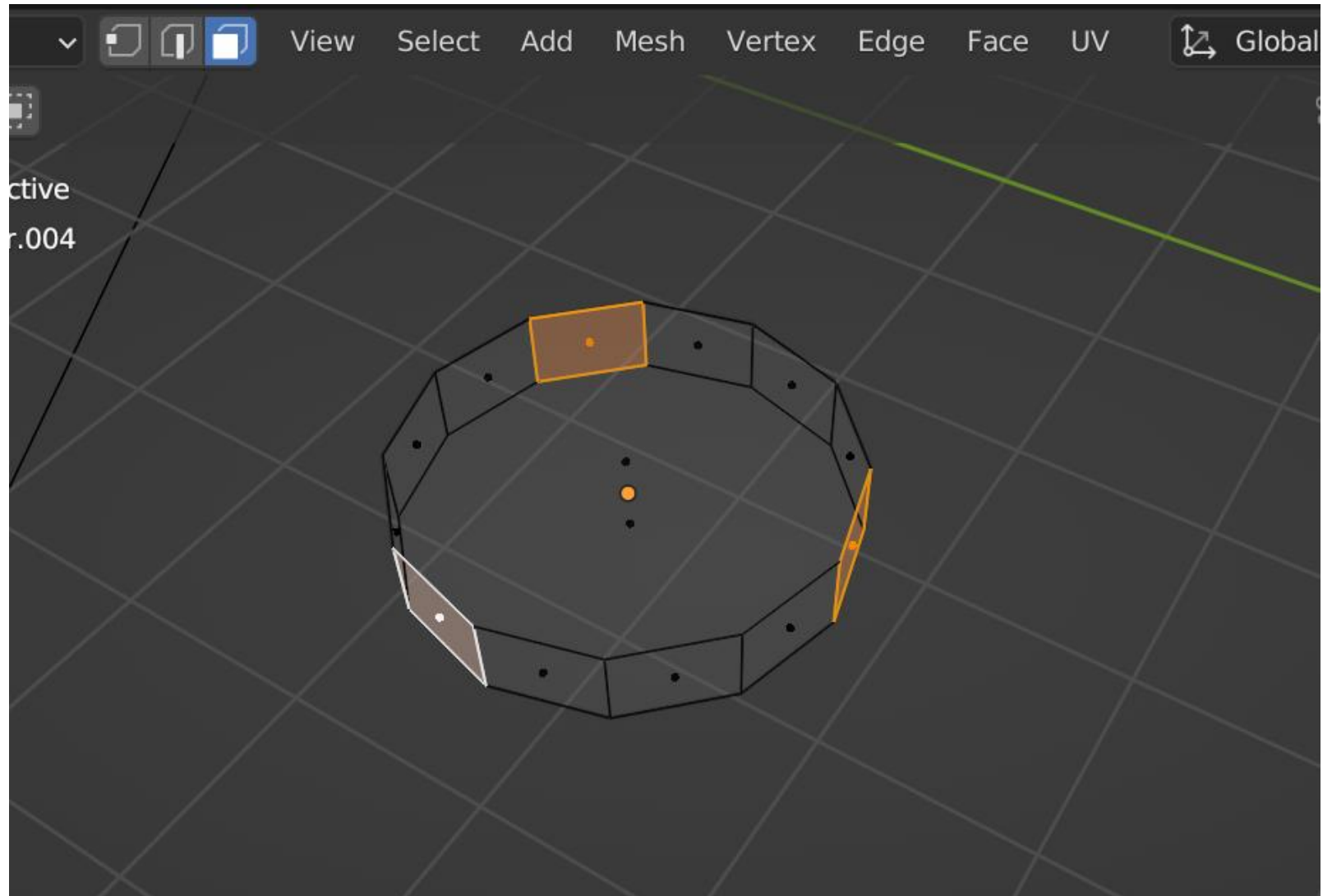
Switch to **Edit Mode** & then choose **Face**

Shortcut:
'Tab' key



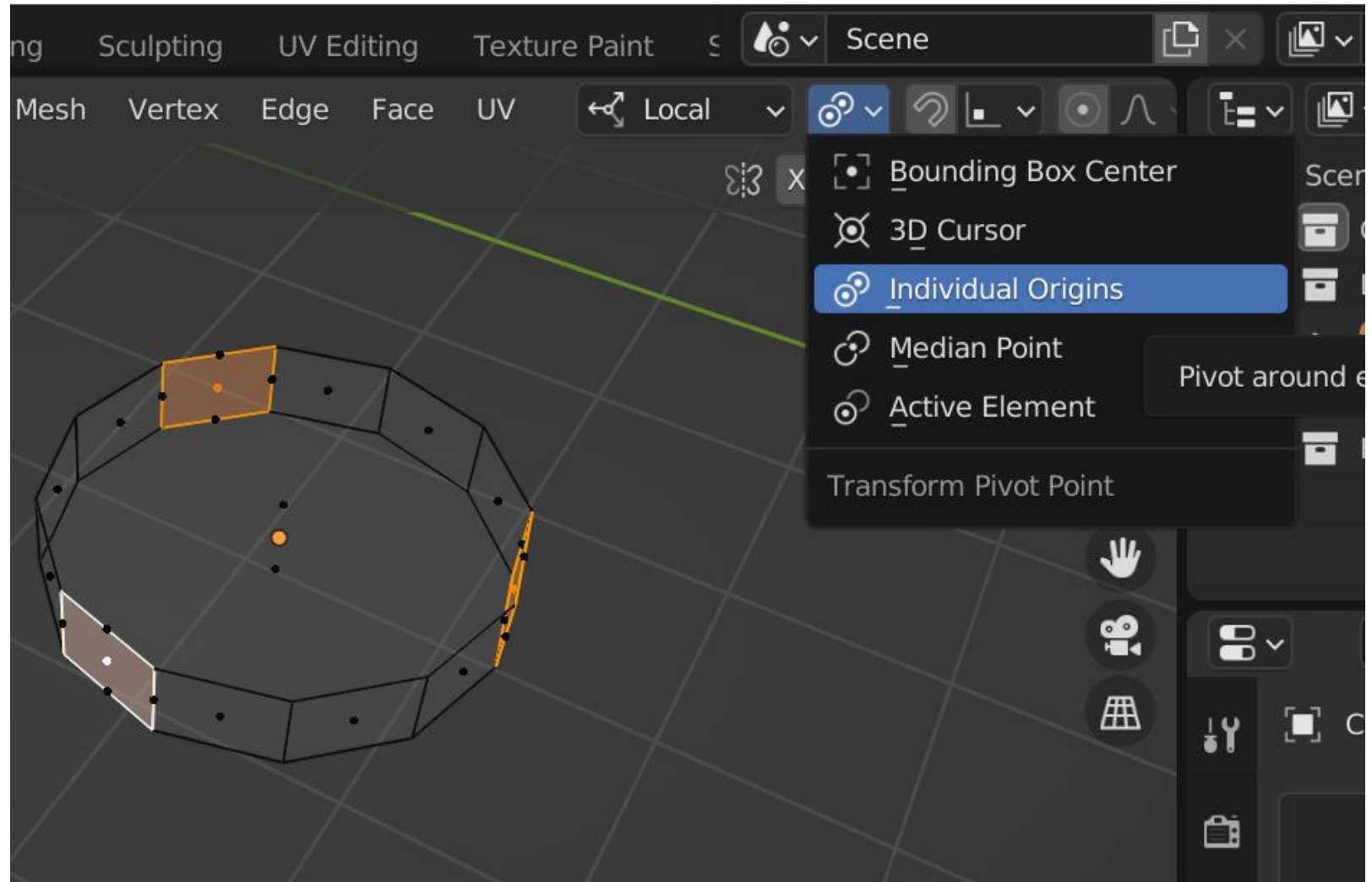
Now let's
select
& extrude the
three faces

Multi-select by
holding 'shift'
key



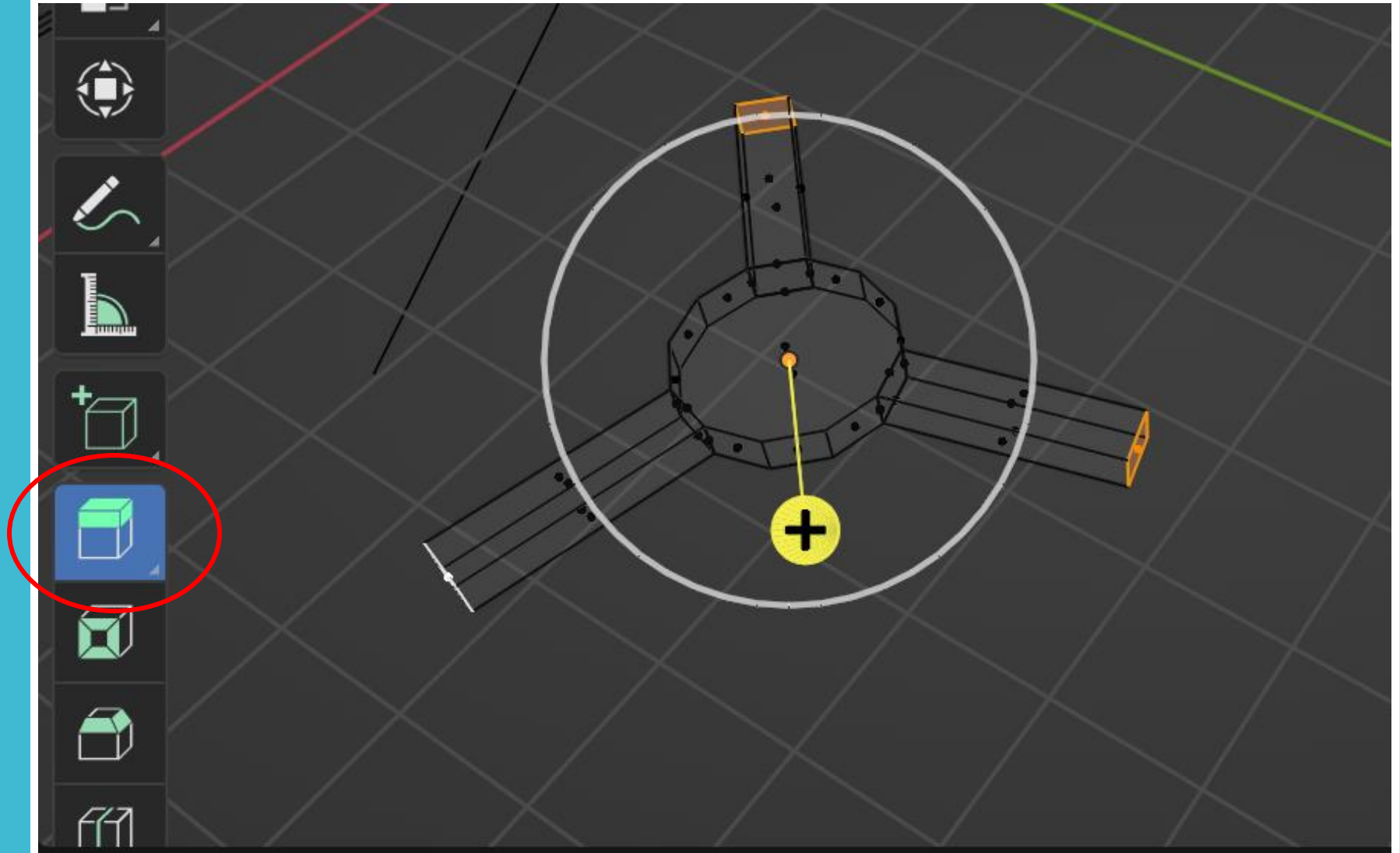
Set the
'Transform
Pivot Point' for
each face

Choose
'Individual
Origins'



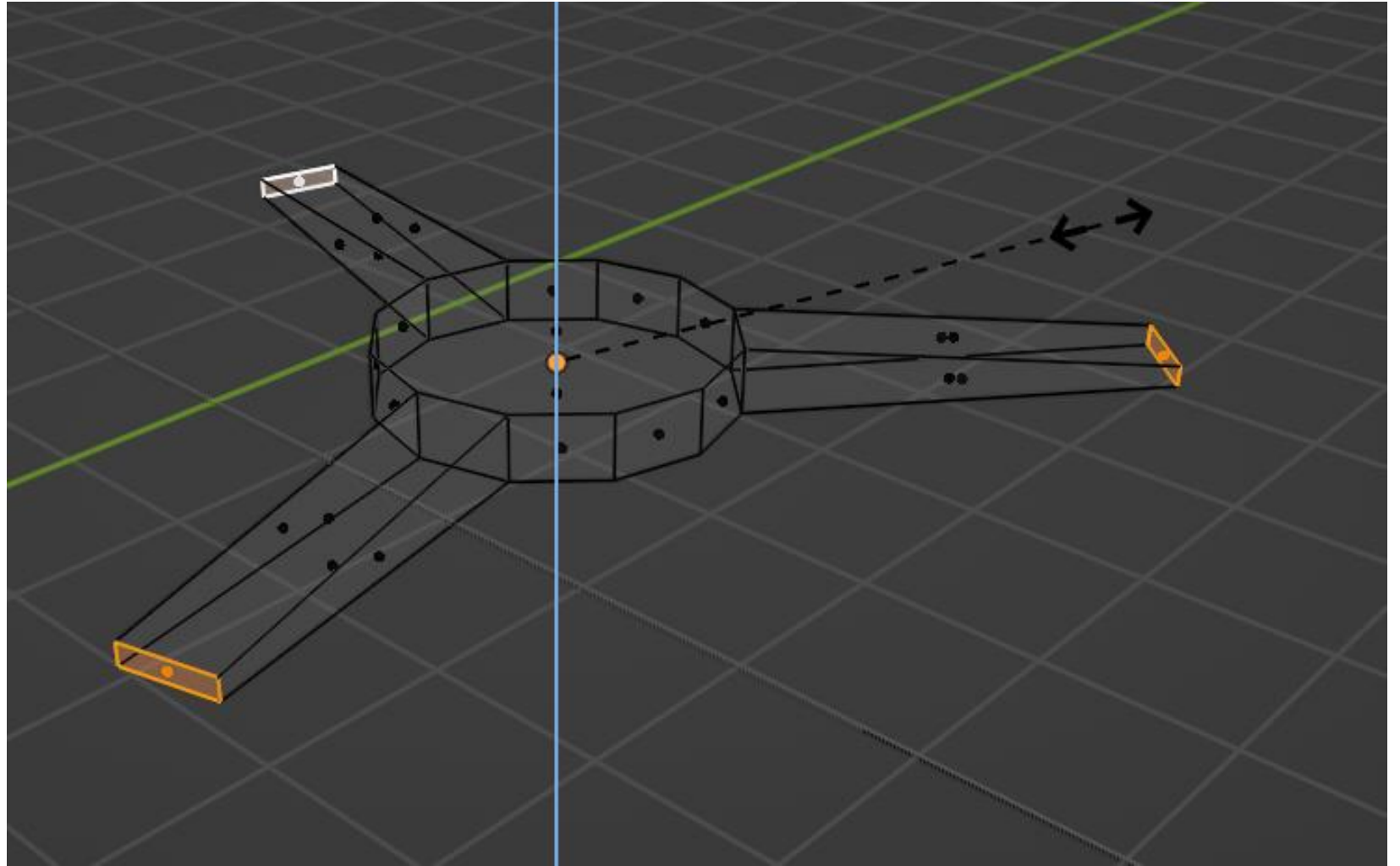
Extrude the
faces

Shortcut:
'e' key



Adjust the fans
tip, e.g., squeeze
them along 'z' axis

Shortcut:
's' then 'z' key

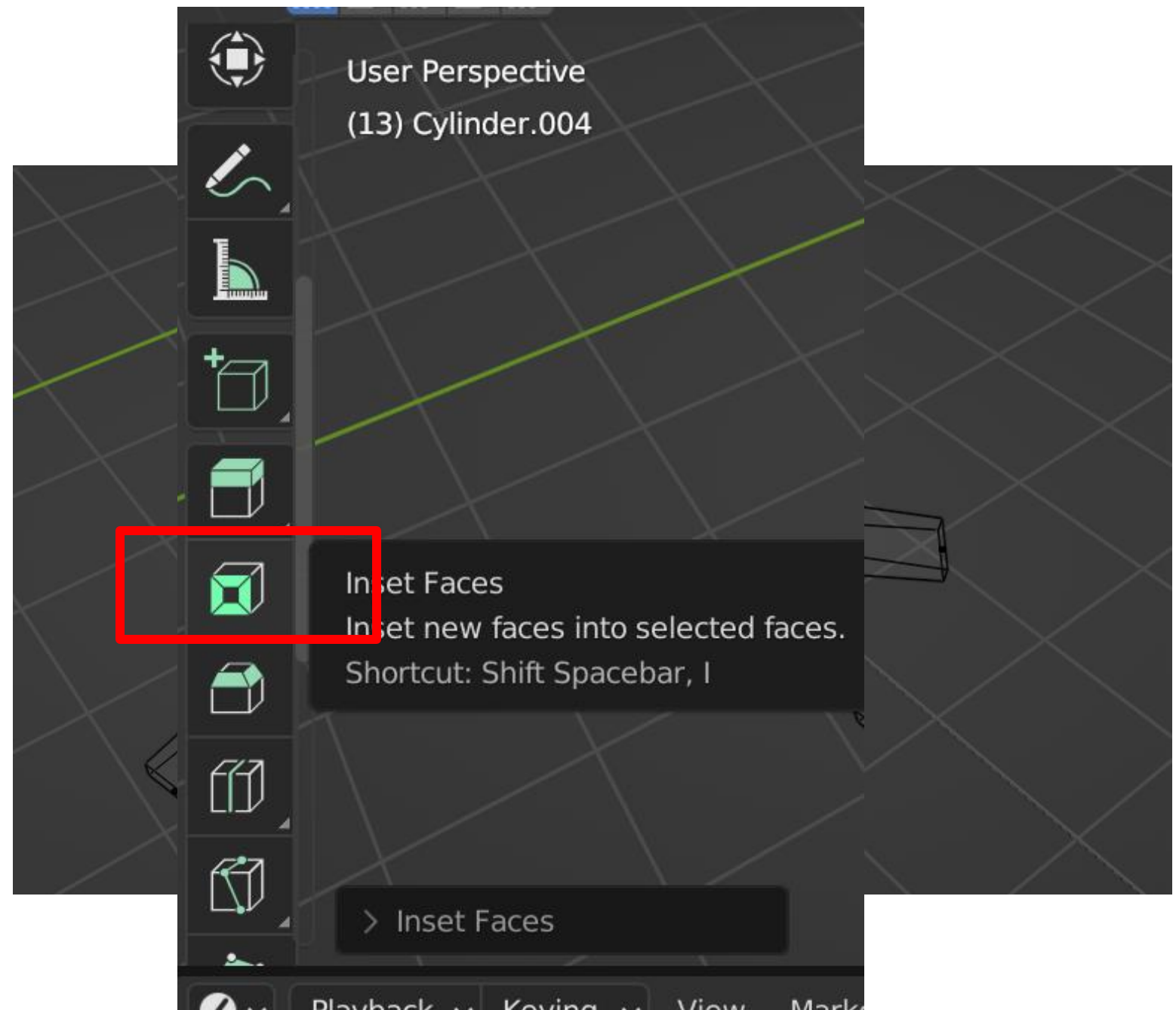


It's not just a
cylinder ... let's
adjust the fan
base further



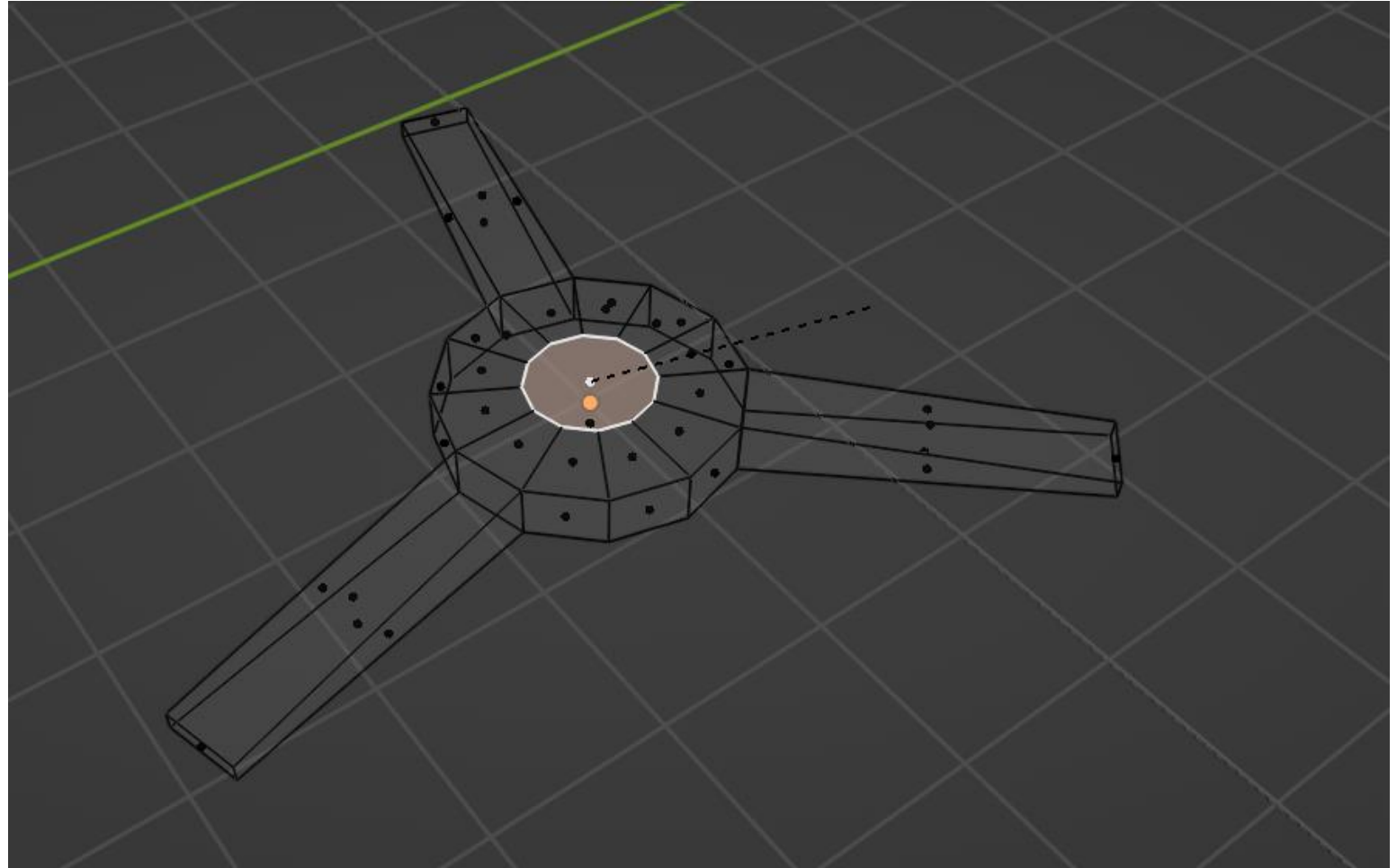
Let's see
another Basic
3D modelling
operator:
=> Insert

Shortcut:
'i' key



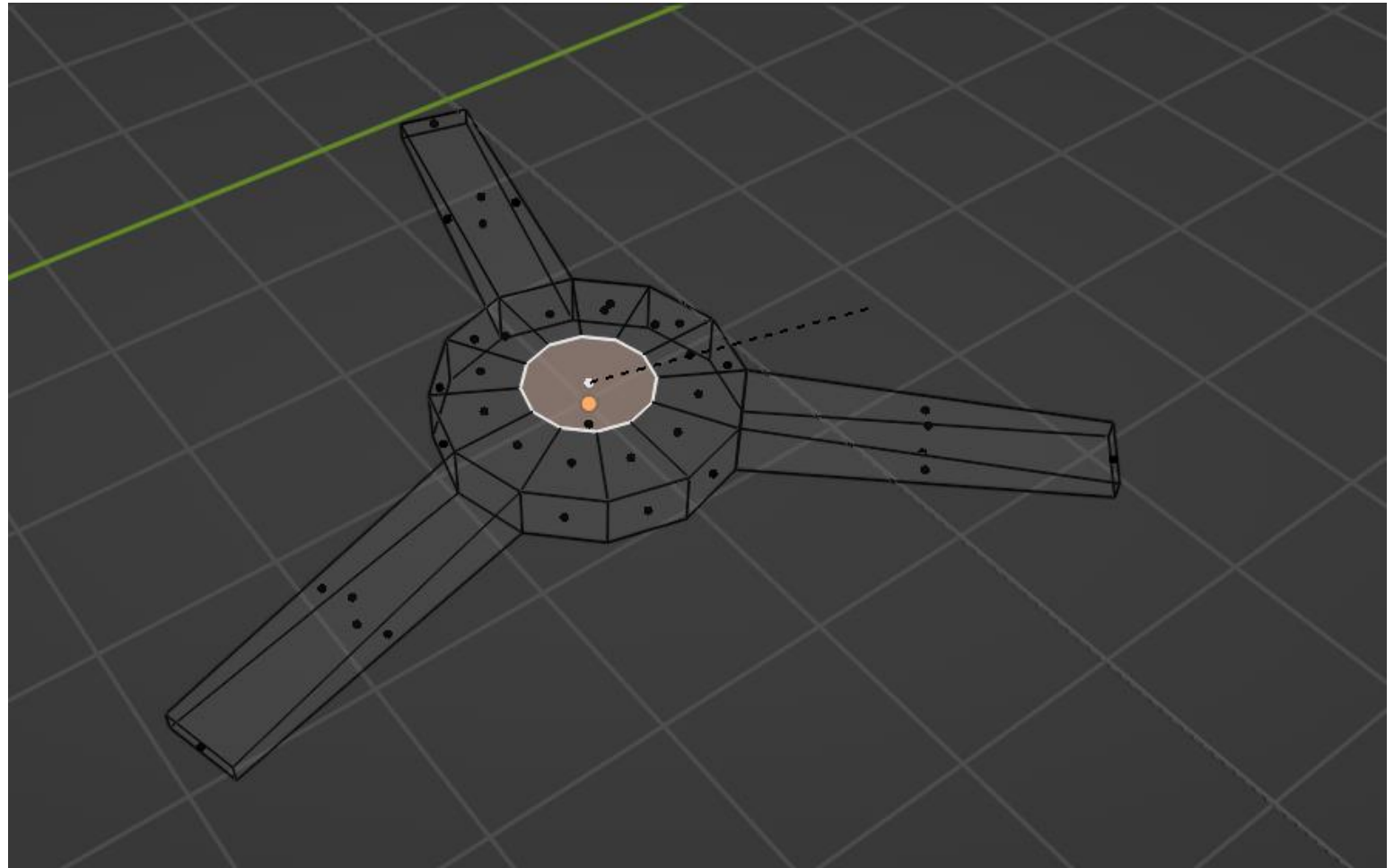
Let's see
another Basic
3D modelling
operator:
=> Insert

Shortcut:
'i' key



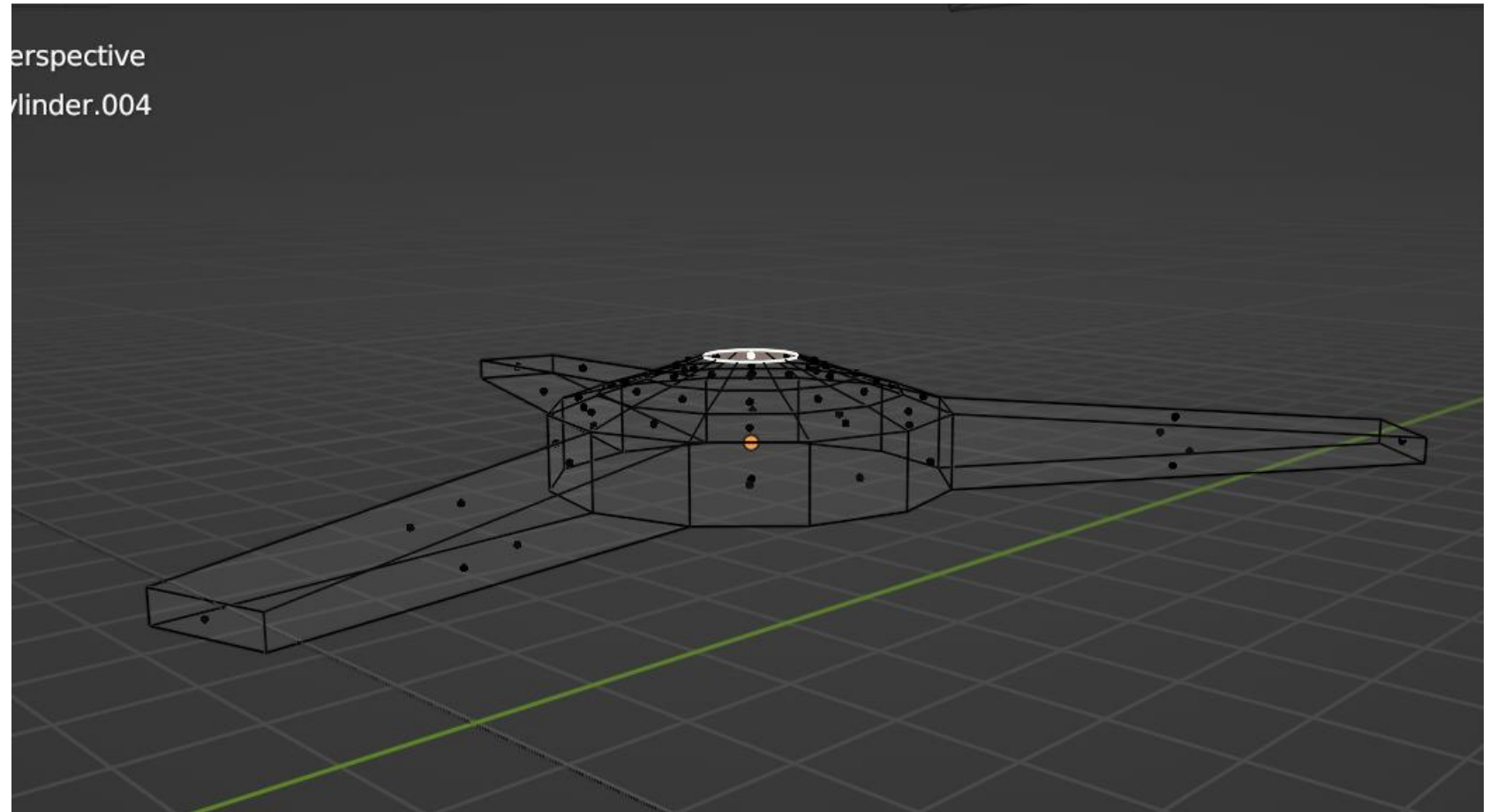
Now move this
face up a bit

Shortcut:
'g' then 'z' key
move up

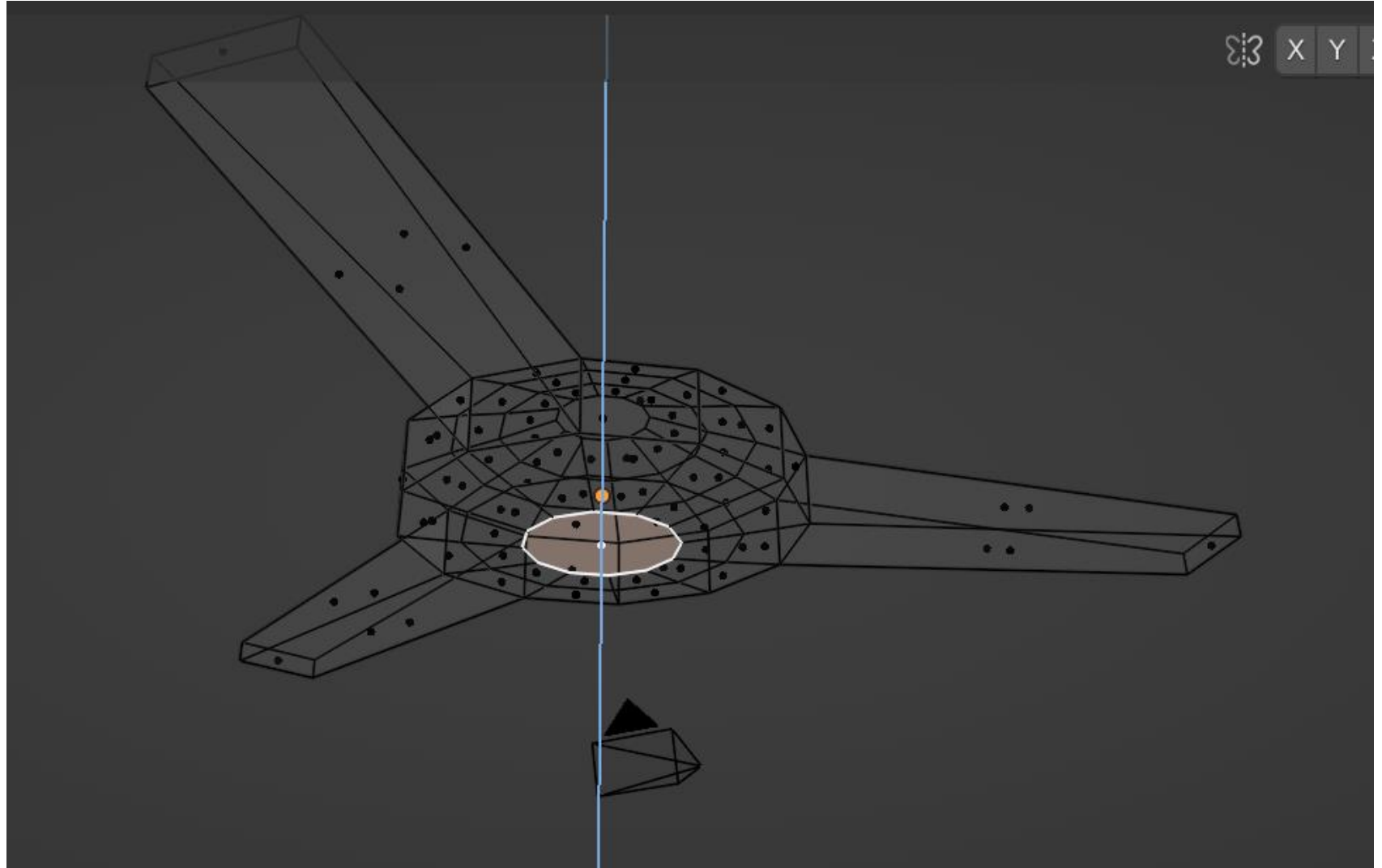


Let's repeat
these two
steps to
reshape the
base

Insert => Move
up => Insert =>
Move up ...

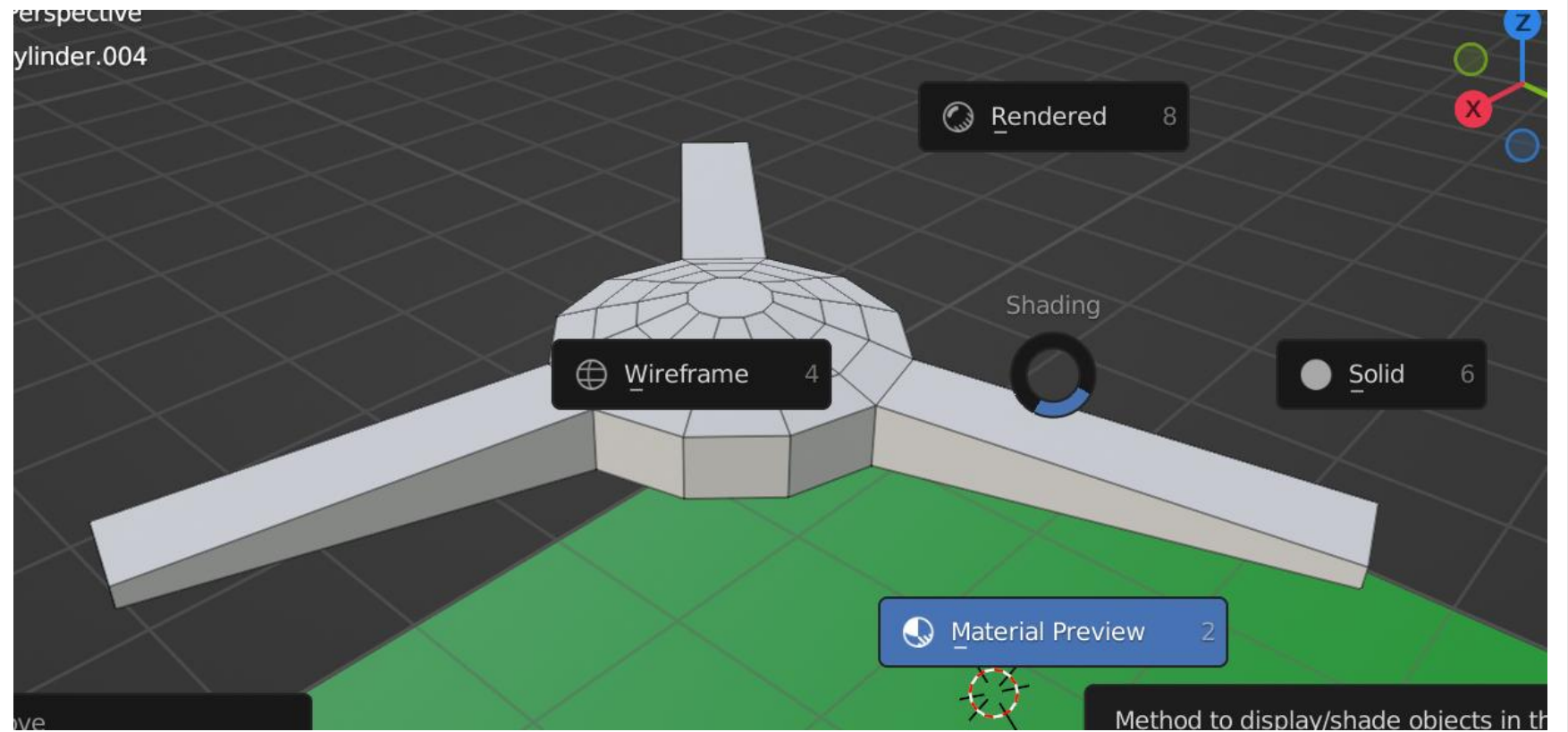


You can do the
same for the
bottom face



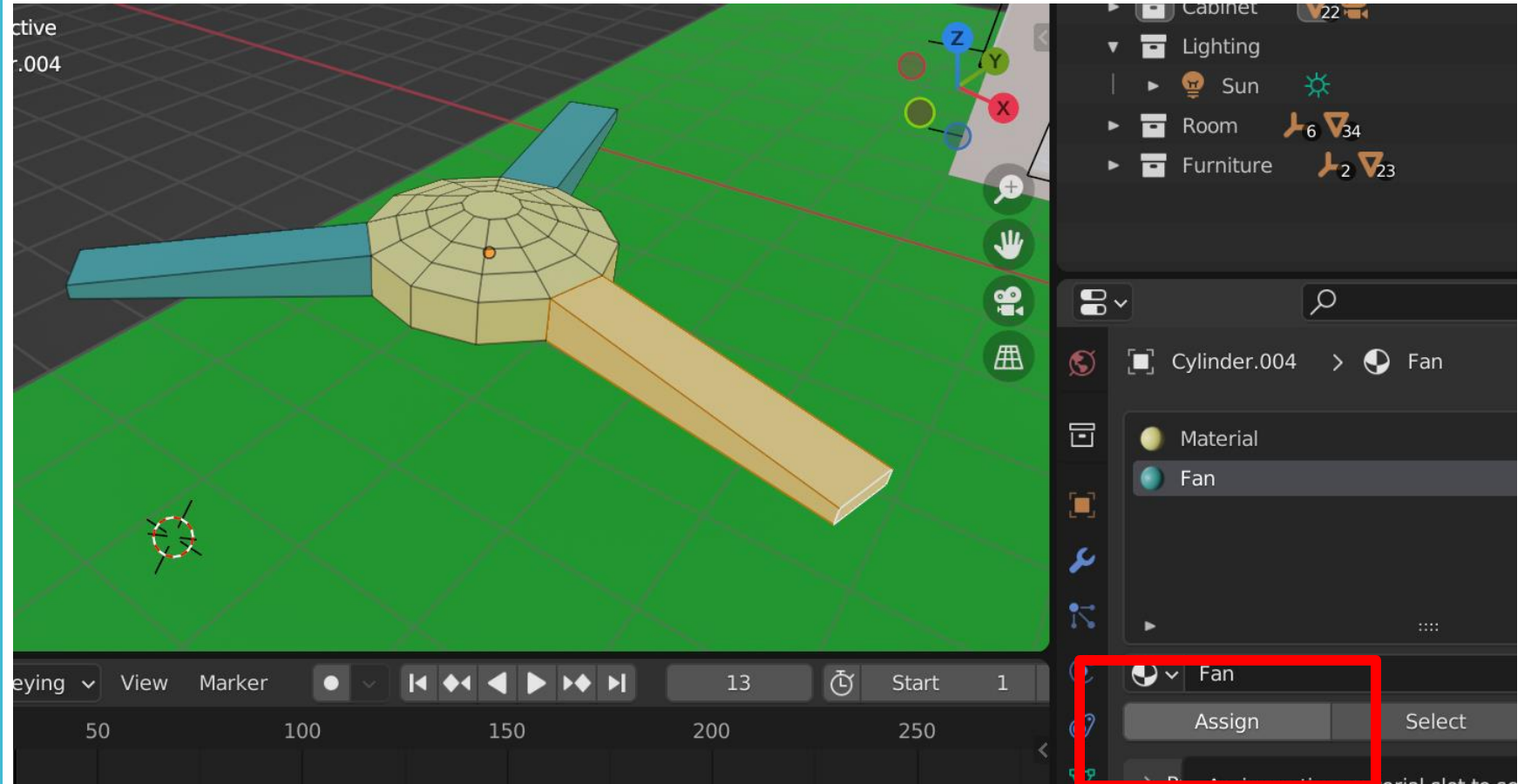
Review exercise

Now let's add
some
materials to
the fan



Exercise

Can you make
2 different
materials for
the base and
blades?



Step 02:

Key-frame animation in Blender

Now let's
animate it

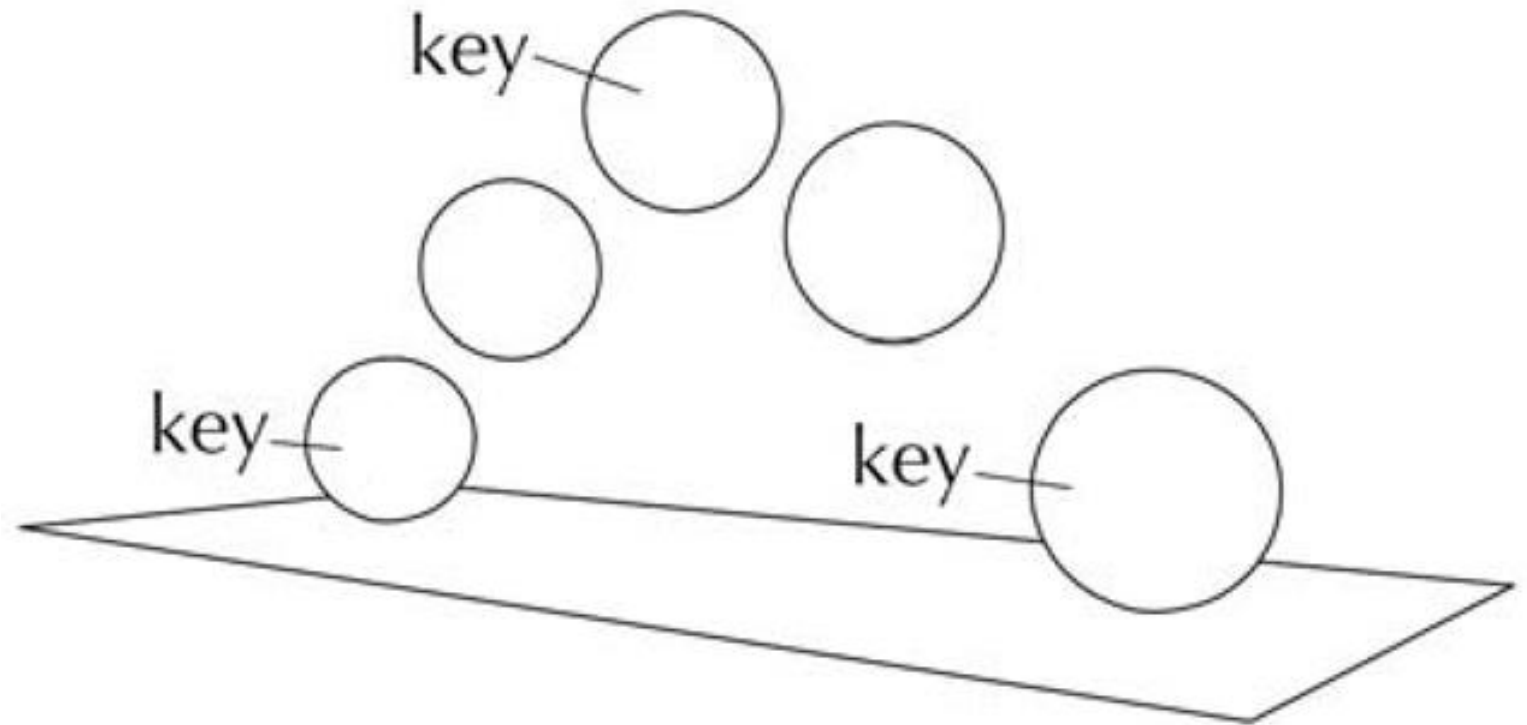
.....

Wait, how
about the
extension rod?



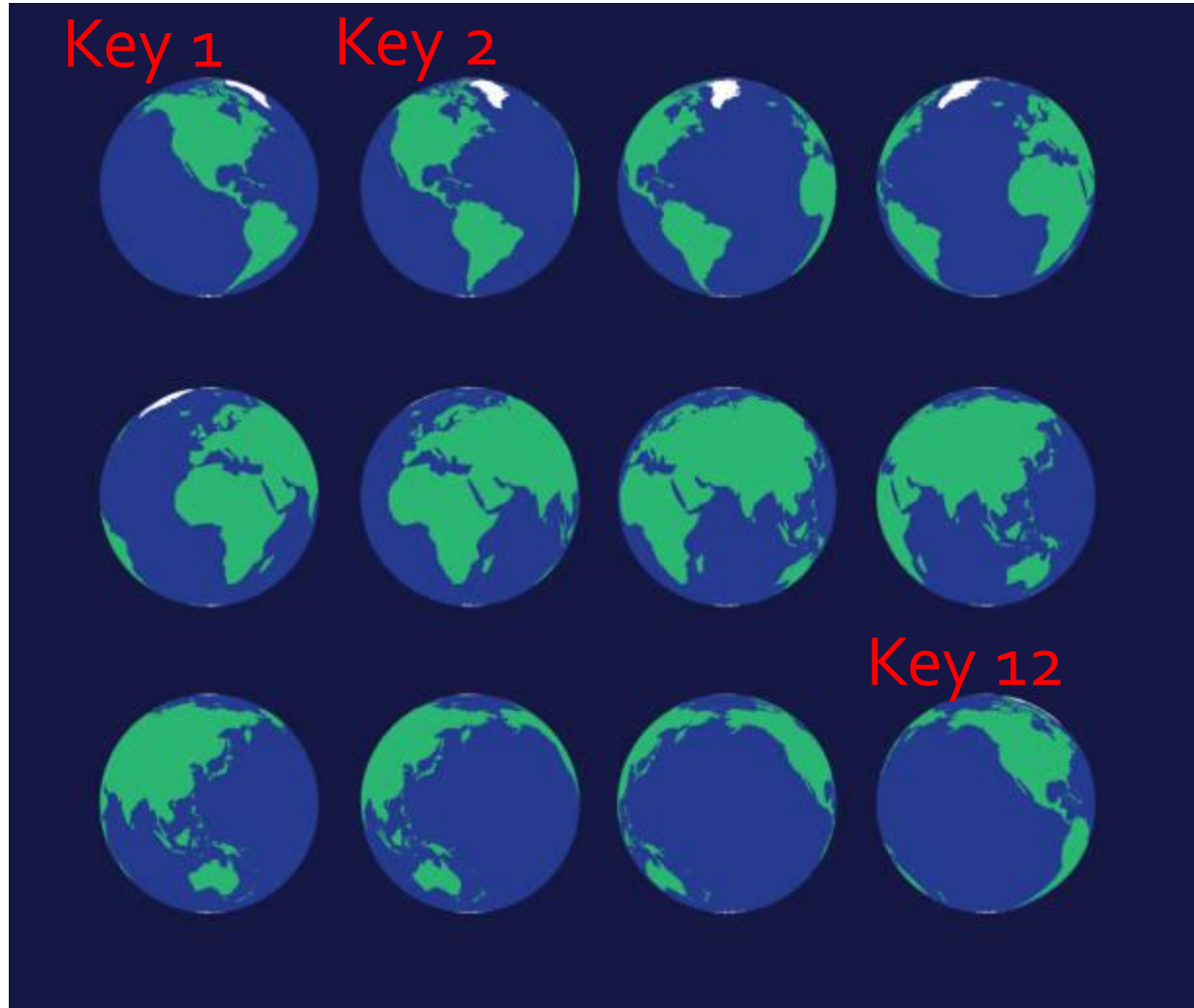
Example 01

How it works
- put keys on
an object's
positions



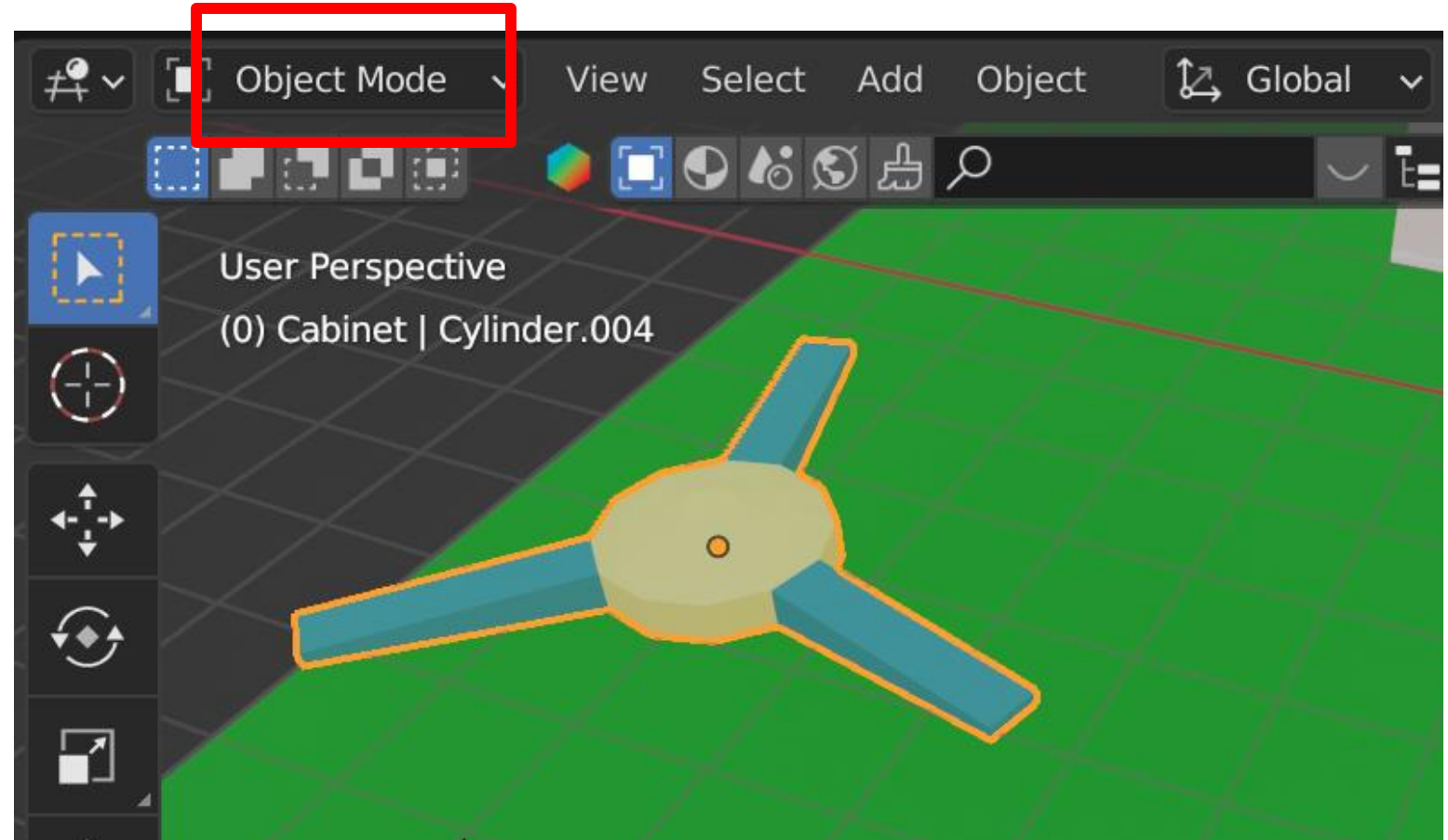
Example 02

Put keys on an object's rotation (e.g., degree)



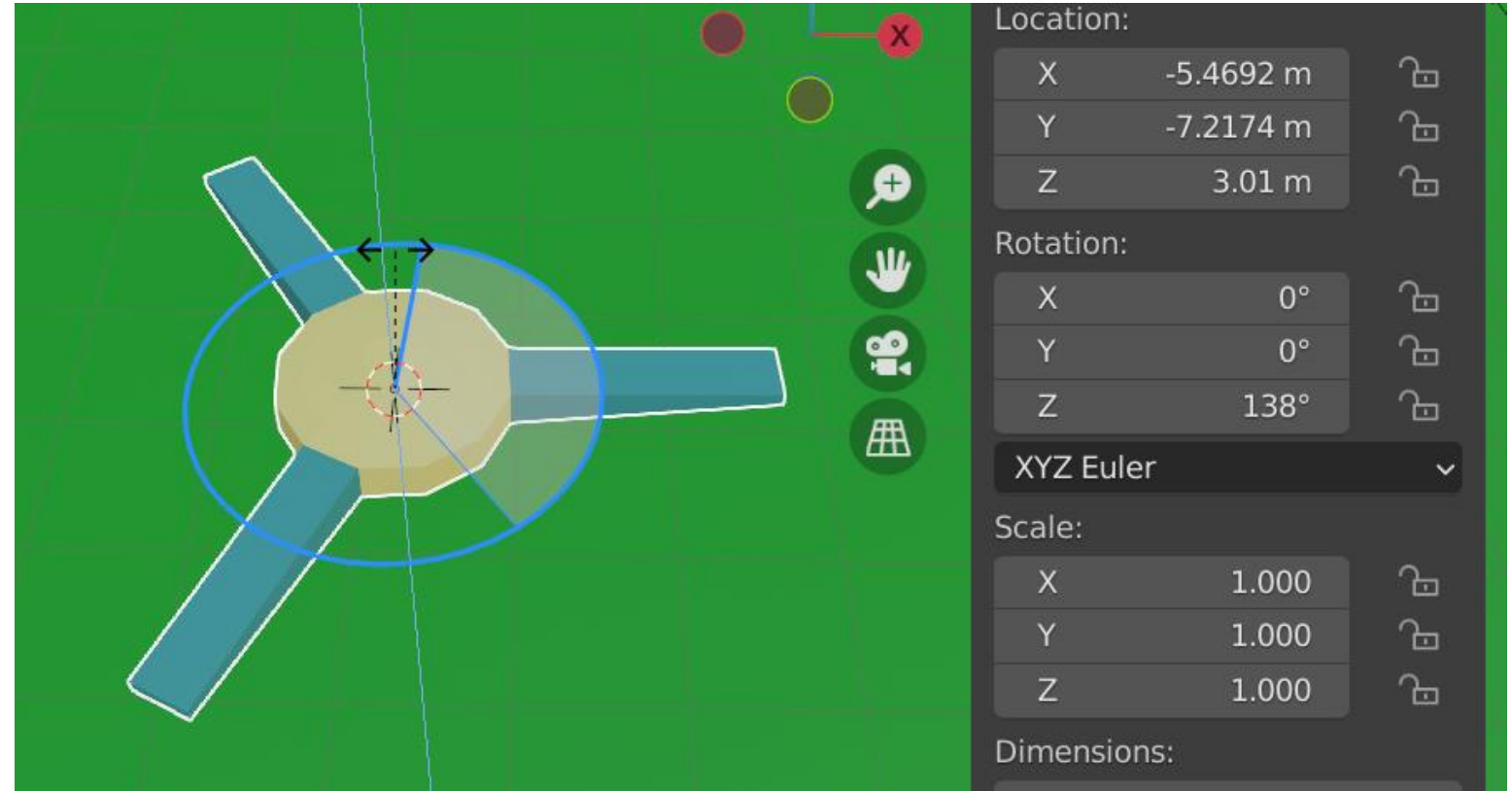
Let's animate
the whole
object => back
to Object
Mode

Shortcut:
'tab' key



Step 01

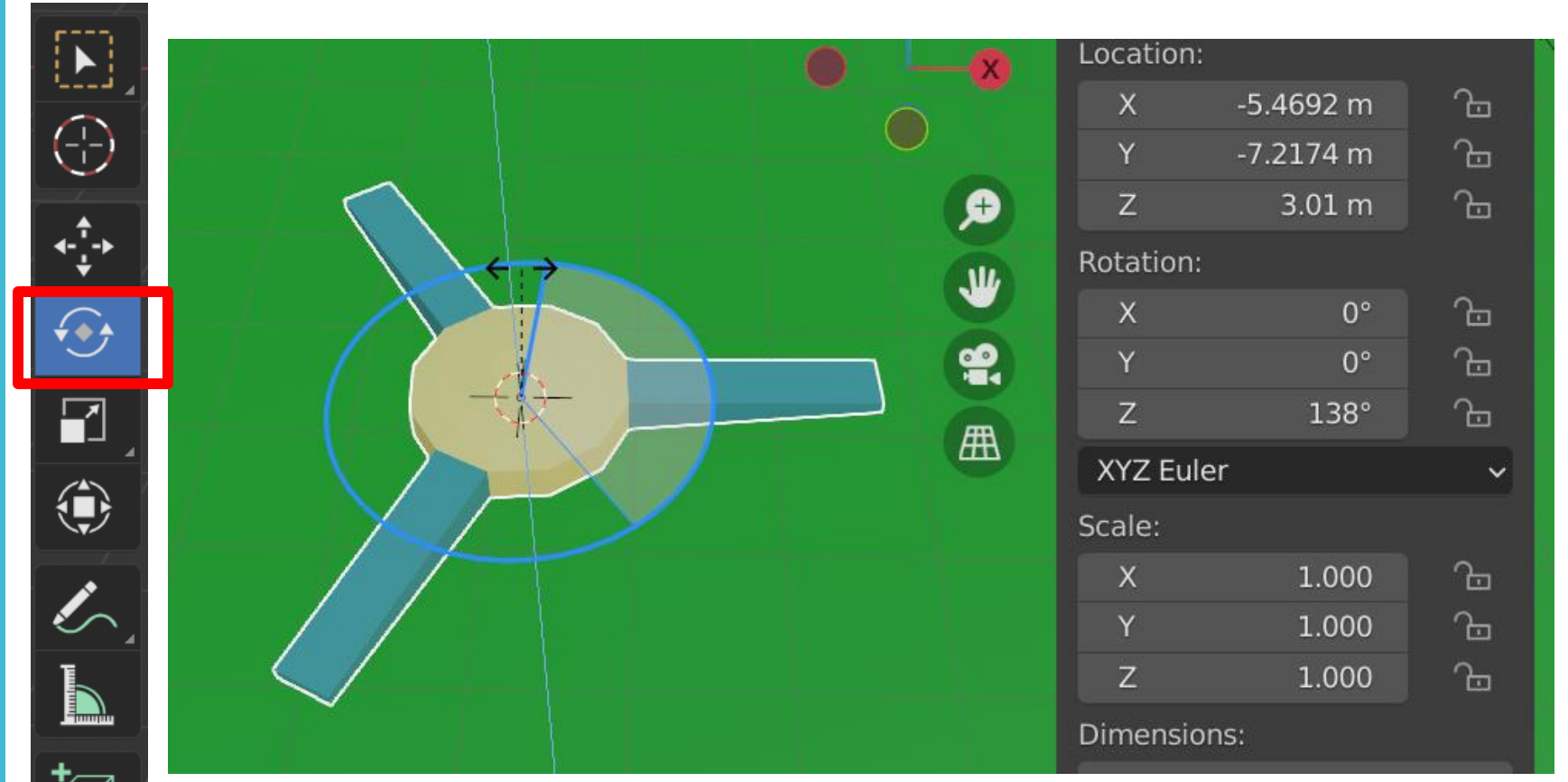
Review: how to manually rotation it along 'Z' axis?



Step 01

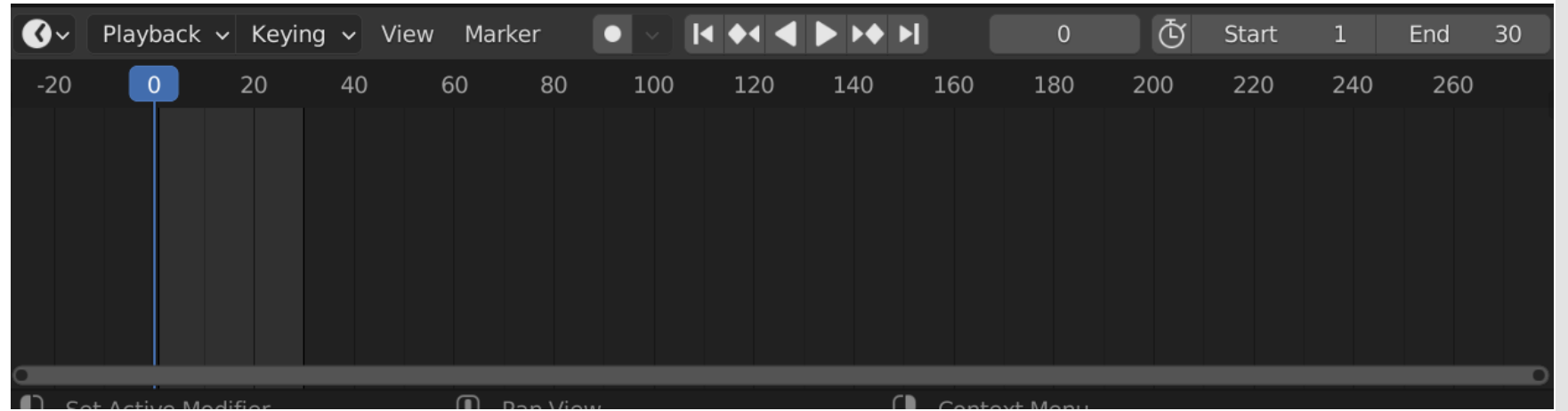
How to manually rotation it along 'Z' axis?

Shortcut:
'r' then 'z' key



Step 02

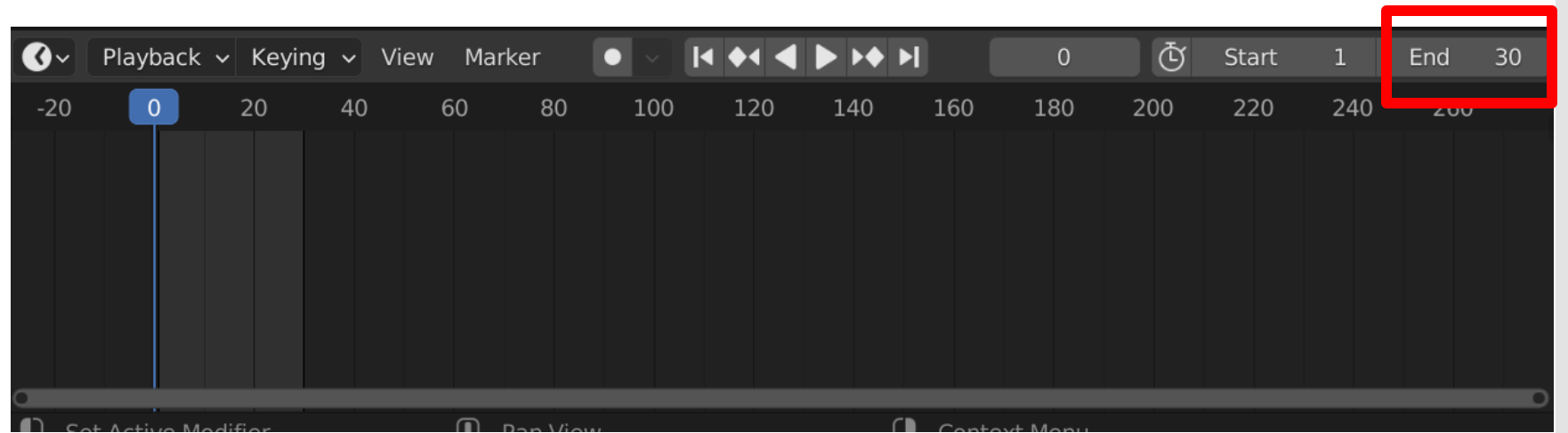
Work with the timeline



Step 02

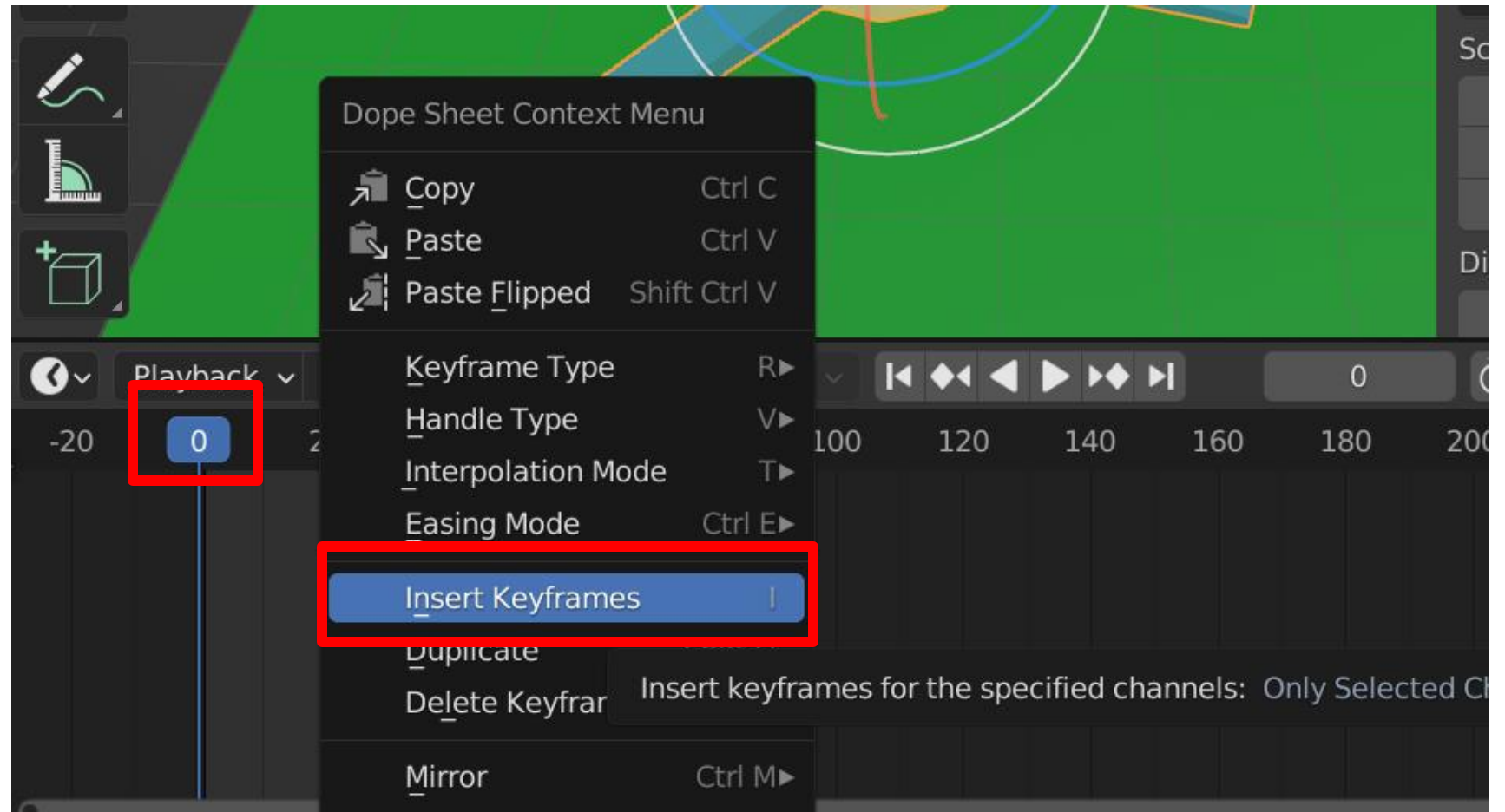
Work with the timeline

Decide the duration – End frame number, e.g., set to 60 (1 min)



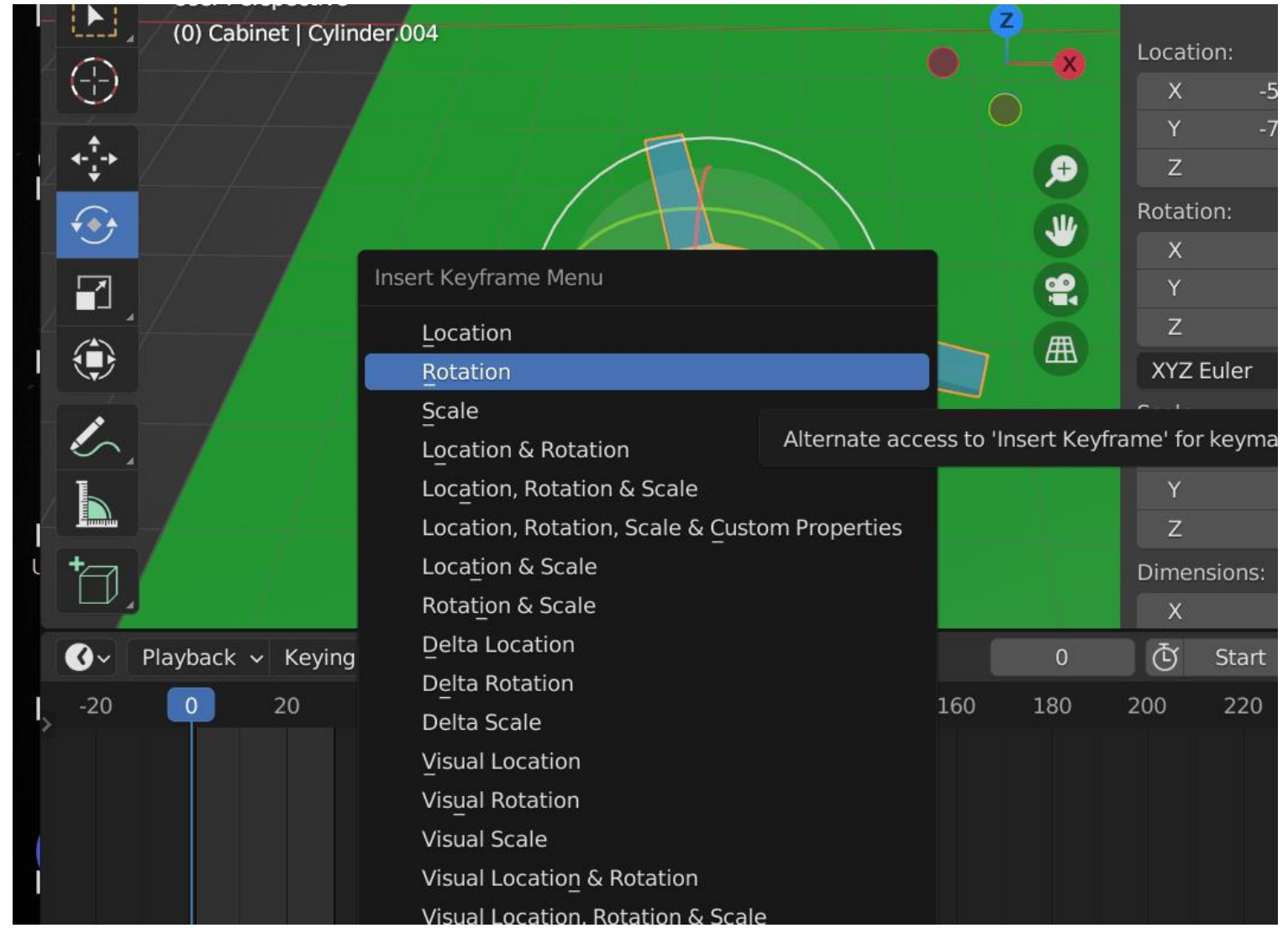
Step 02

Add a key for the Start Rotation i.e., '0' degree at the '0' frame with 'I' key



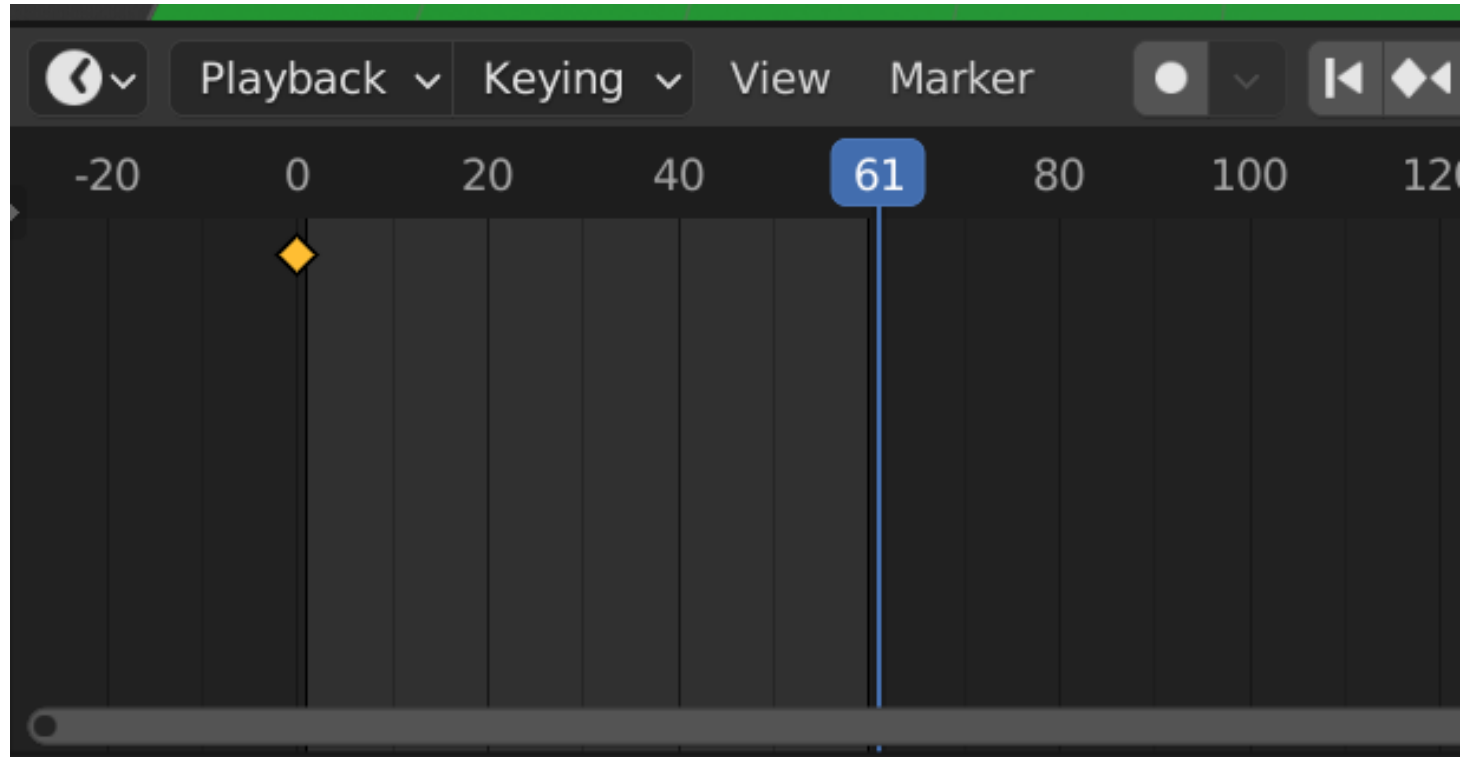
Step 02

Select the object & press 'I' key to insert a key with 'Rotation'



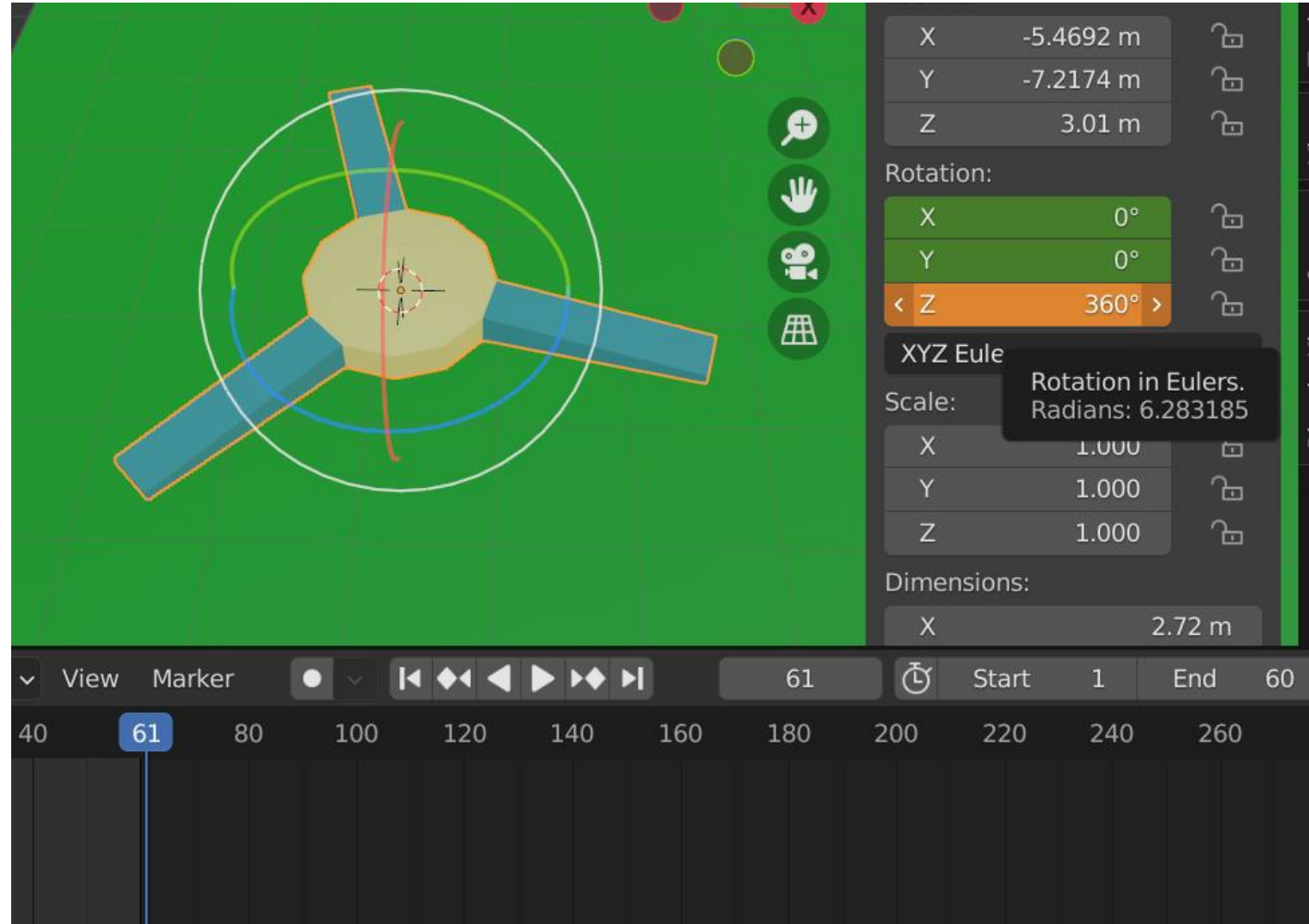
Step 02

Move the
Timeline
Handle to the
end e.g., '61',
to add another
key



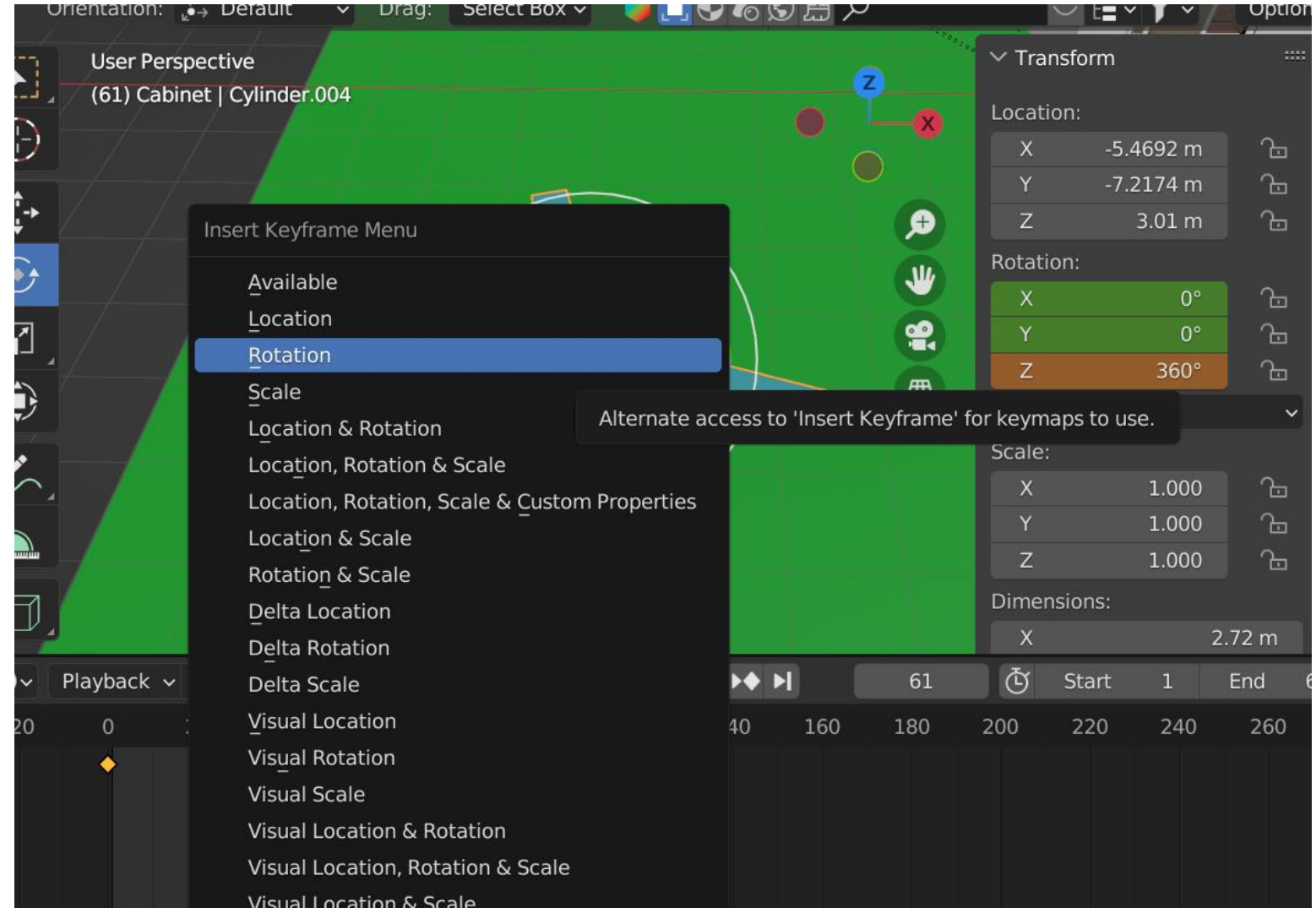
Step 02

Change the
Rotation along
'Z' to '360'
degree



Step 02

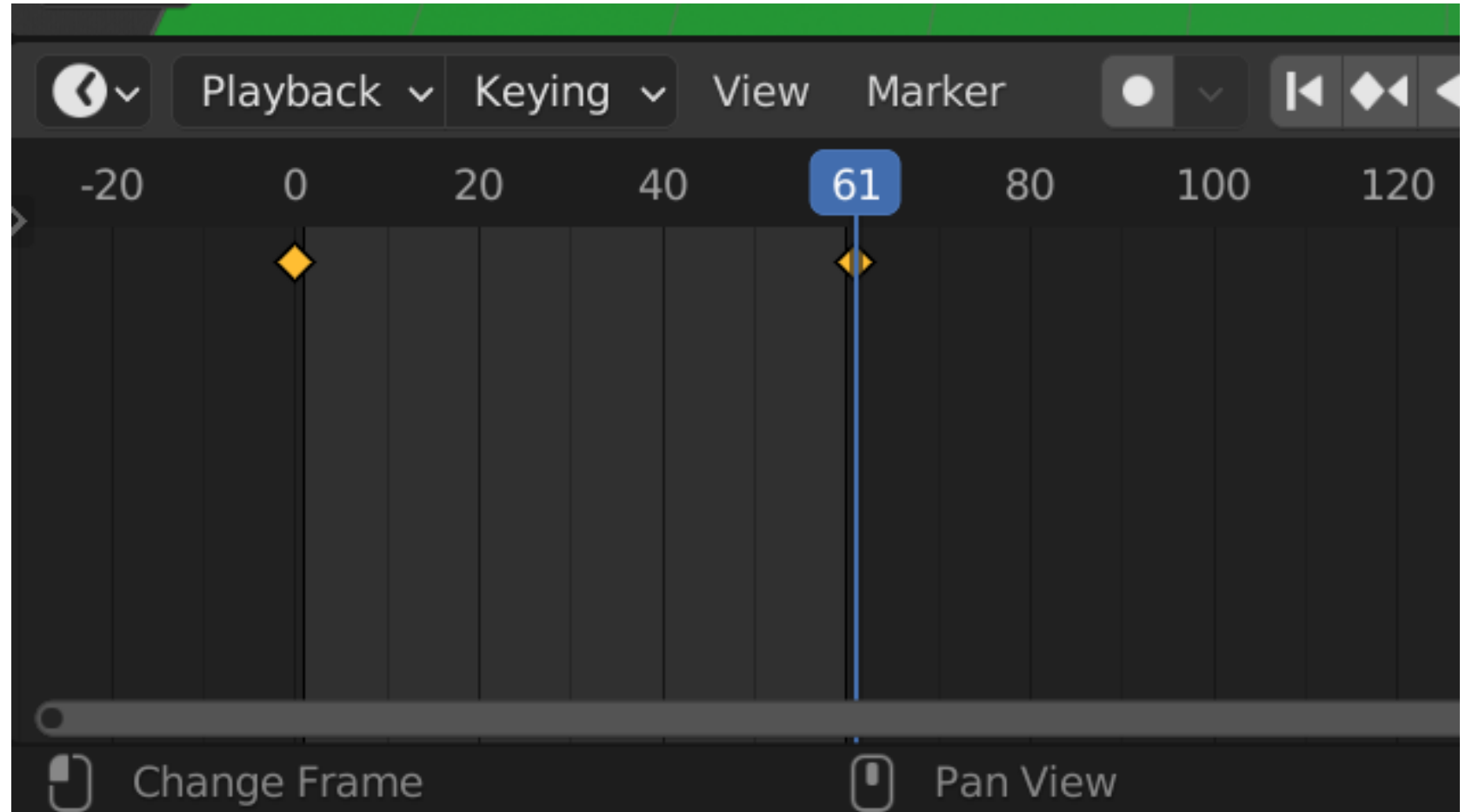
Now add
another key by
press 'I'



Step 02

Now we have
two keys on
the timeline

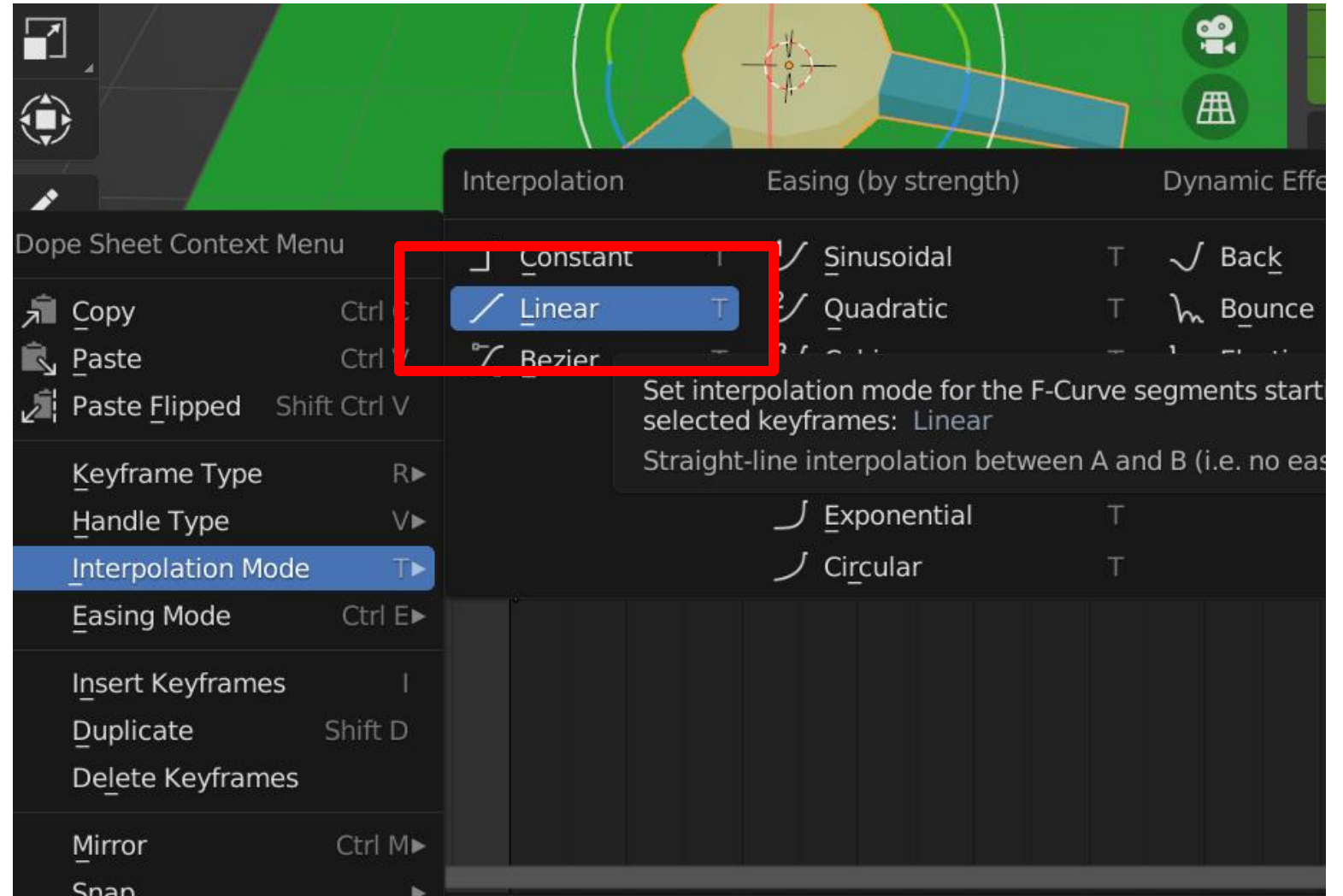
=> next preview
the animation
by 'play'



Step 03

Set the
Interpolation
Mode to
'Linear'

Right click
context menu in
the timeline



Question & Exercise

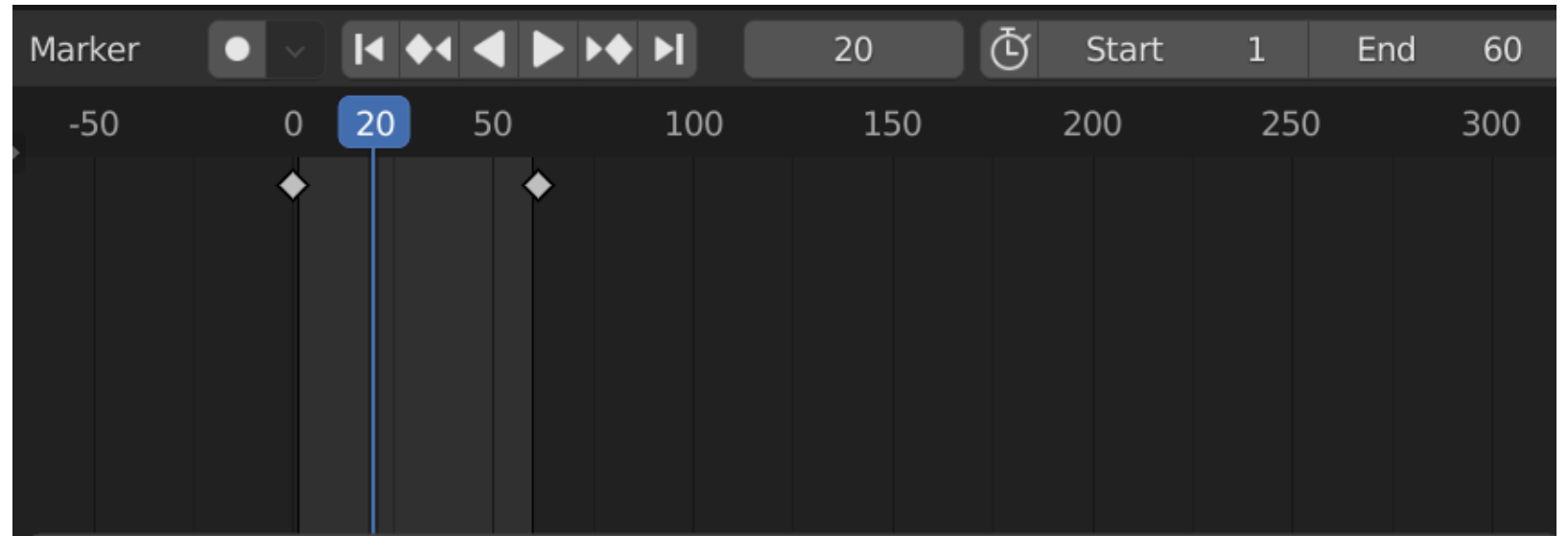
How to make the fan spin 2 times faster?

Rotational Speed



$$\text{speed} = \frac{\text{distance traveled}}{\text{time it took}}$$

Hint: work with the timeline frame count

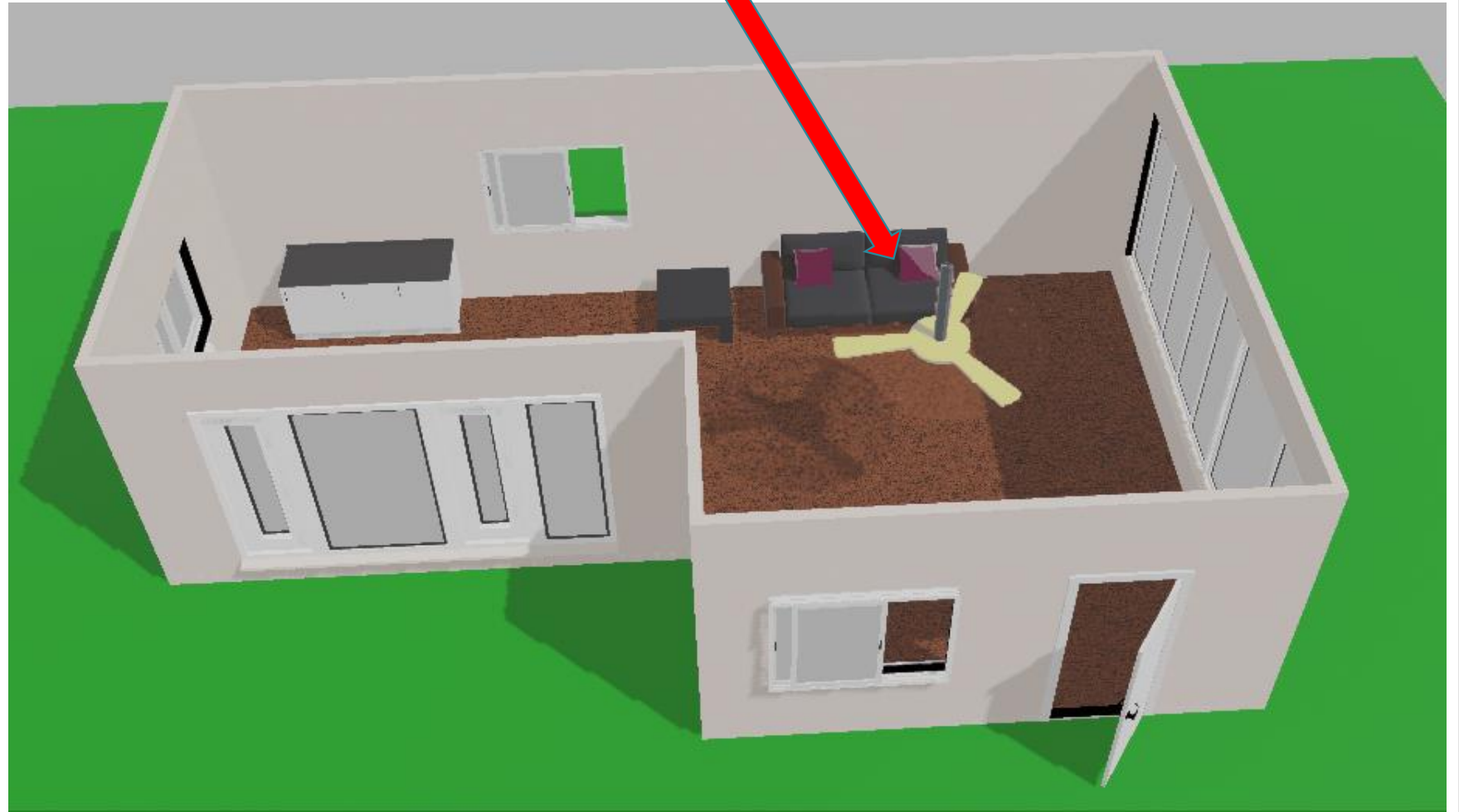


Some Exercises

How to create
an extension
rod?

How to
reposition
them in the
rooms?

Hint: try another cylinder

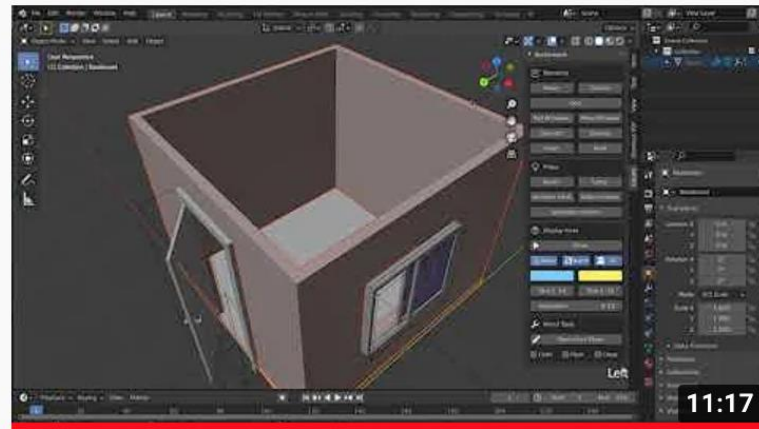


Play time:

- add furniture
- change materials
- add or change lighting
- render new images
- work on your own house



Some Good Learning Resource



Blender 2.9 3D Architecture 1- Build a Simple House

82K views • 1 year ago

A Applied Adaptive Learning

We built a simple house model using the Archimesh package in blender, which al

<https://youtu.be/LaUVDQ8eFSY>



Part 3-Blender Beginner Tutorial (Modelling the House)

21K views • 1 year ago

Ryan King Art

Welcome to part 3 of my Complete Blender Beginner Tutorial Series. In this part, we wi



A: Select All Objects | X: Delete Selected Objects | Shift + A: Add Menu | Sc

<https://youtu.be/gyPHCDPvkoI>



Blender 3.0 Beginner Donut Tutorial

Blender Guru ✓

Blender 3.0 Beginner Tutorial - Part 1 • 16:43

Blender 3.0 Beginner Object Editing Tutorial (Donut part 2) • 21:17

[VIEW FULL PLAYLIST](#)

<https://youtu.be/nIoXOpIUvAw>

Thank you 😊

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Feedback
Welcome!