

POWER OF AR AND VR

ANIMATION BASICS

KEYFRAMES - SLALOM



**Co-funded by
the European Union**



2024-1-PL01-KA220-VET-000243150

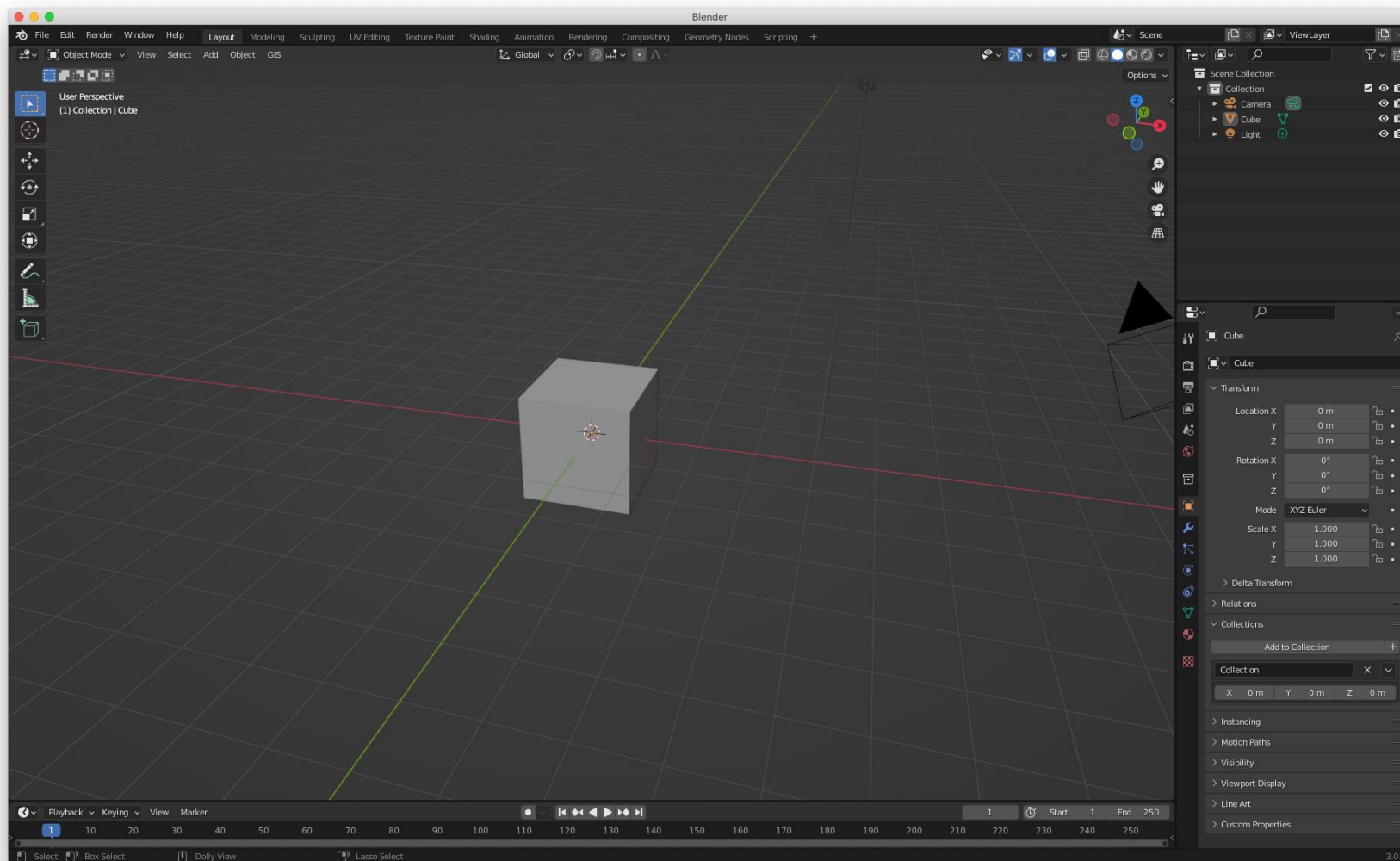
JACEK KAWAŁEK



POWER OF AR AND VR



START **THE BLENDER** PROGRAM

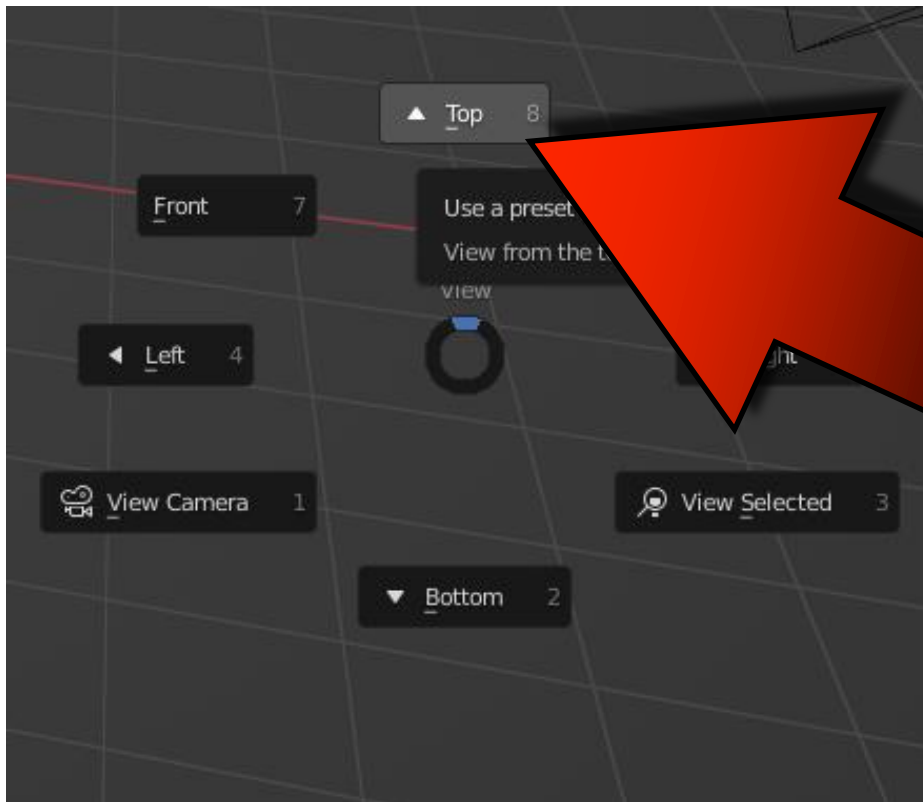


ANIMATION BASICS KEYFRAMES - SLALOM

POWER OF AR AND VR

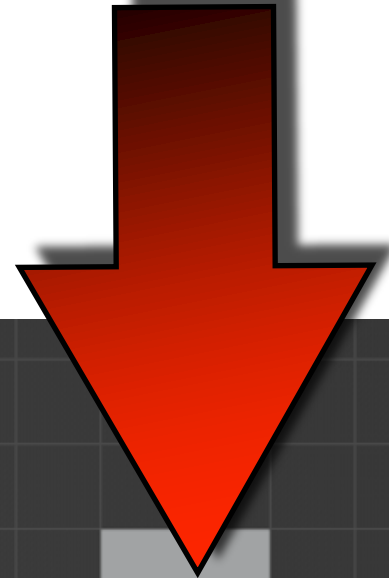
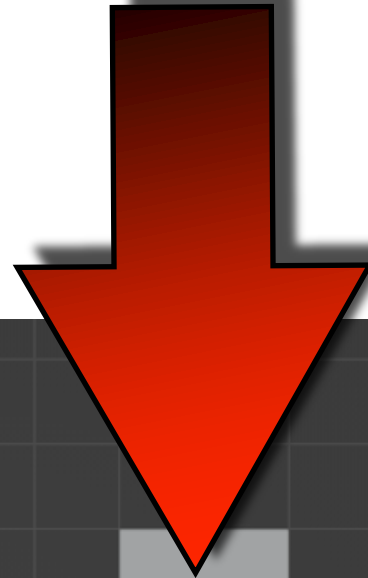
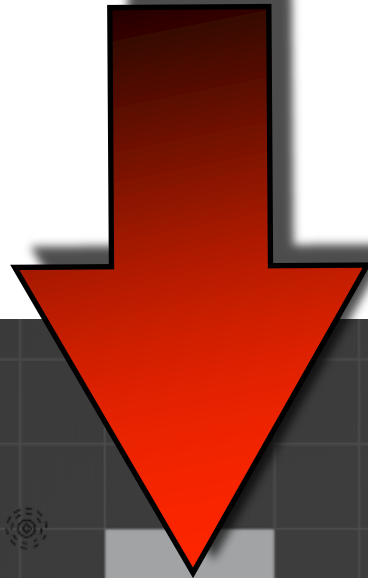
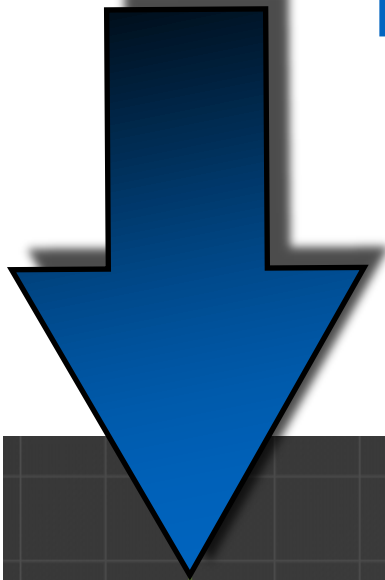
GO TO TOP VIEW

Z-KEY

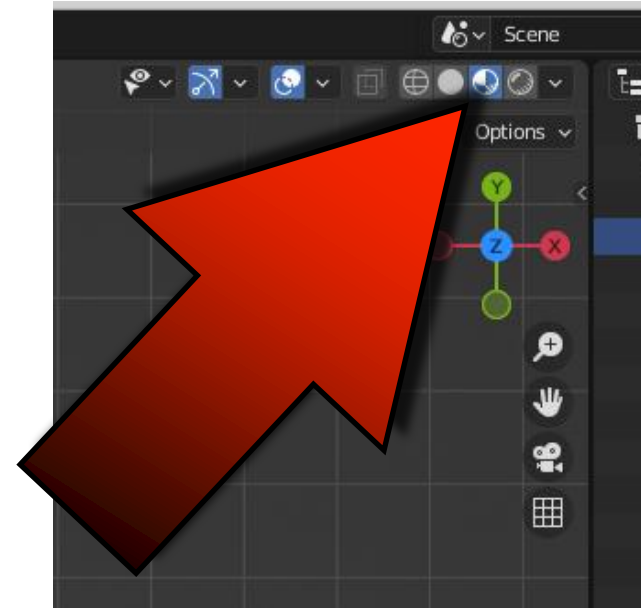
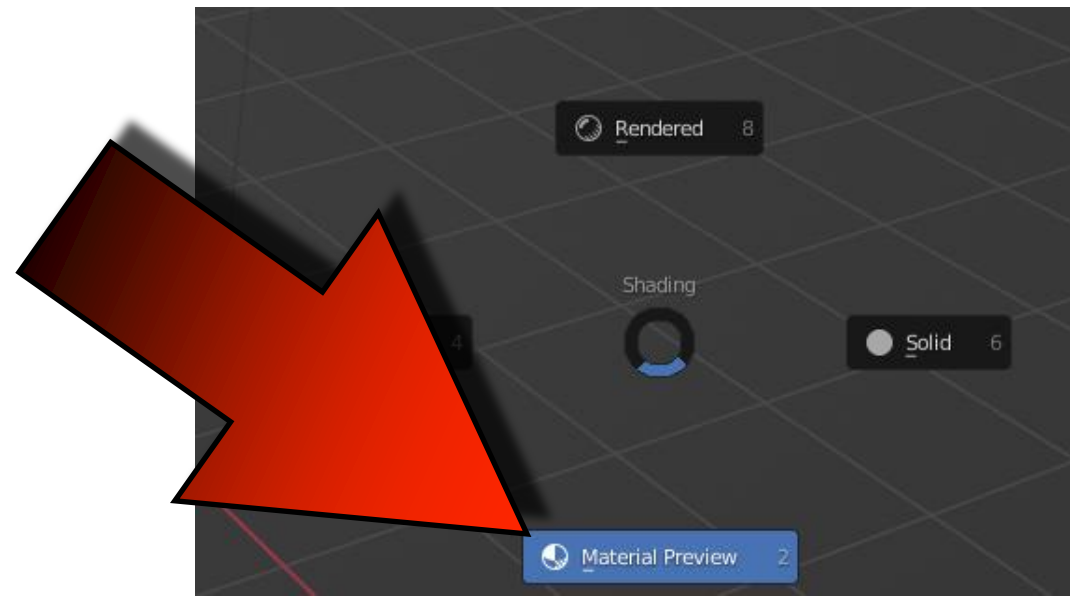


POWER OF AR AND VR

**PLACE CUBES AS ON SCREEN
SPHERE IN
THE COORDINATE CENTER**



GO TO THE MATERIAL PREVIEW Z-KEY

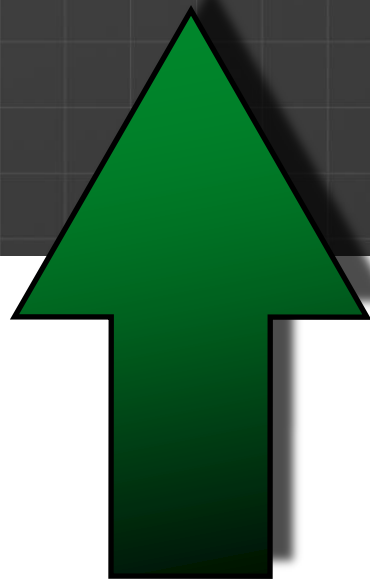
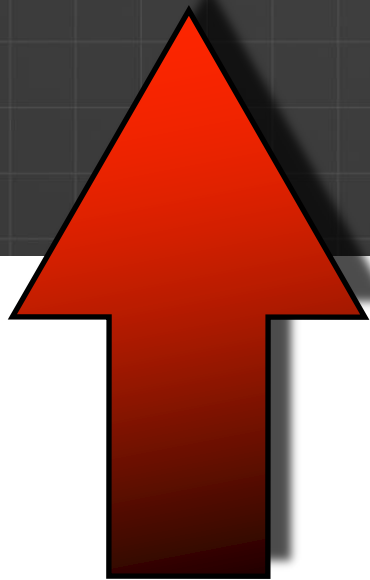
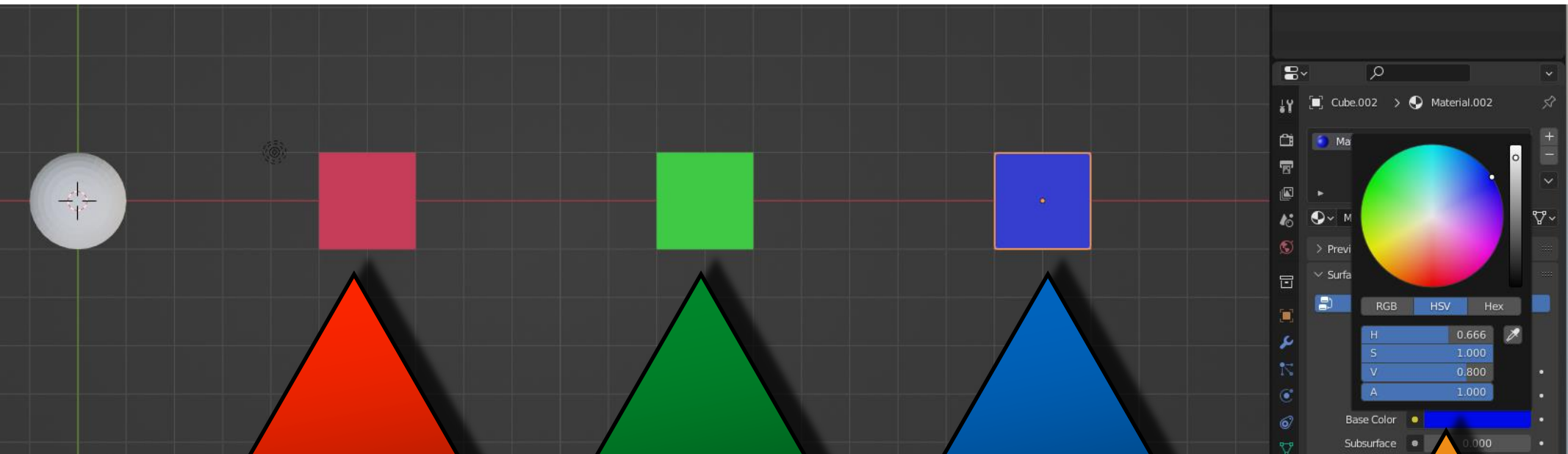




POWER OF AR AND VR



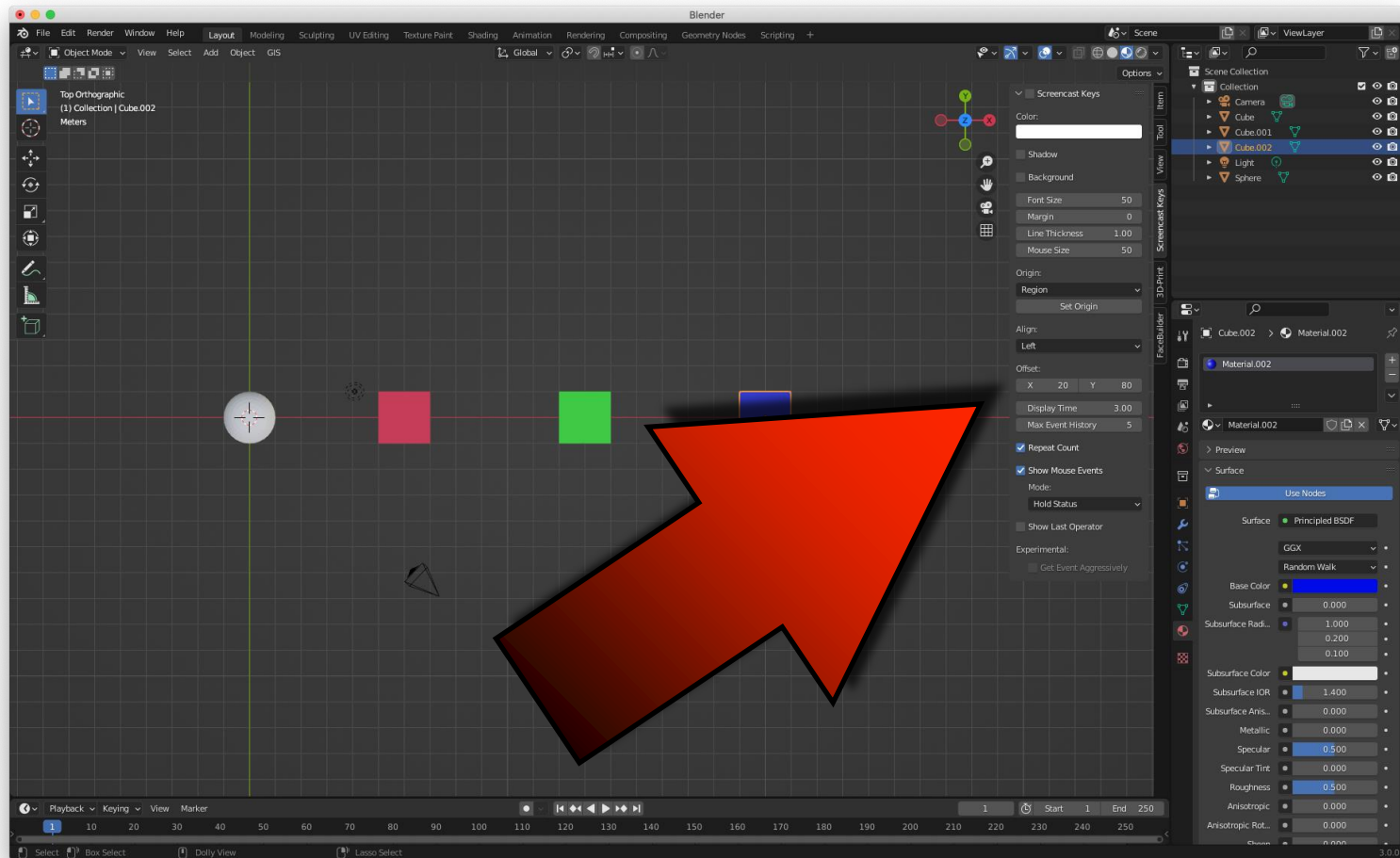
SET DIFFERENT COLORS FOR EACH CUBE IN THE BASE COLOR



ANIMATION BASICS

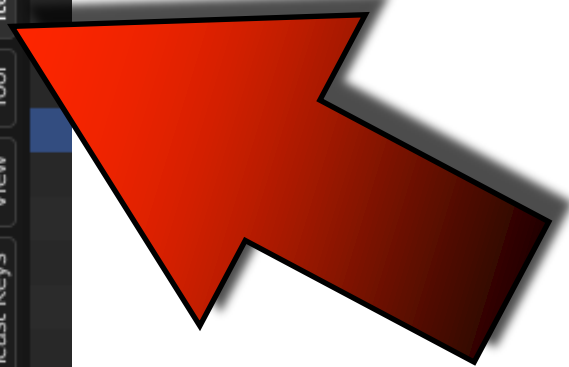
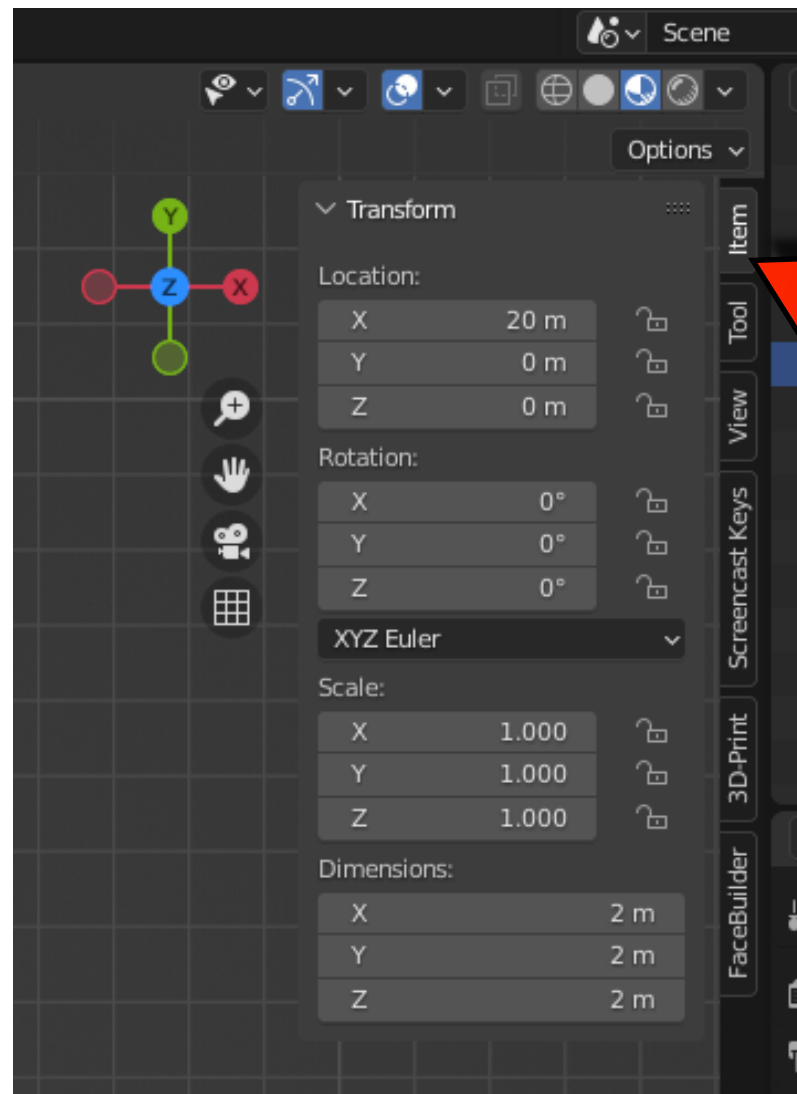
KEYFRAMES - SLALOM

PRESS THE N KEY TO SEE THE WINDOW ON THE RIGHT SIDE

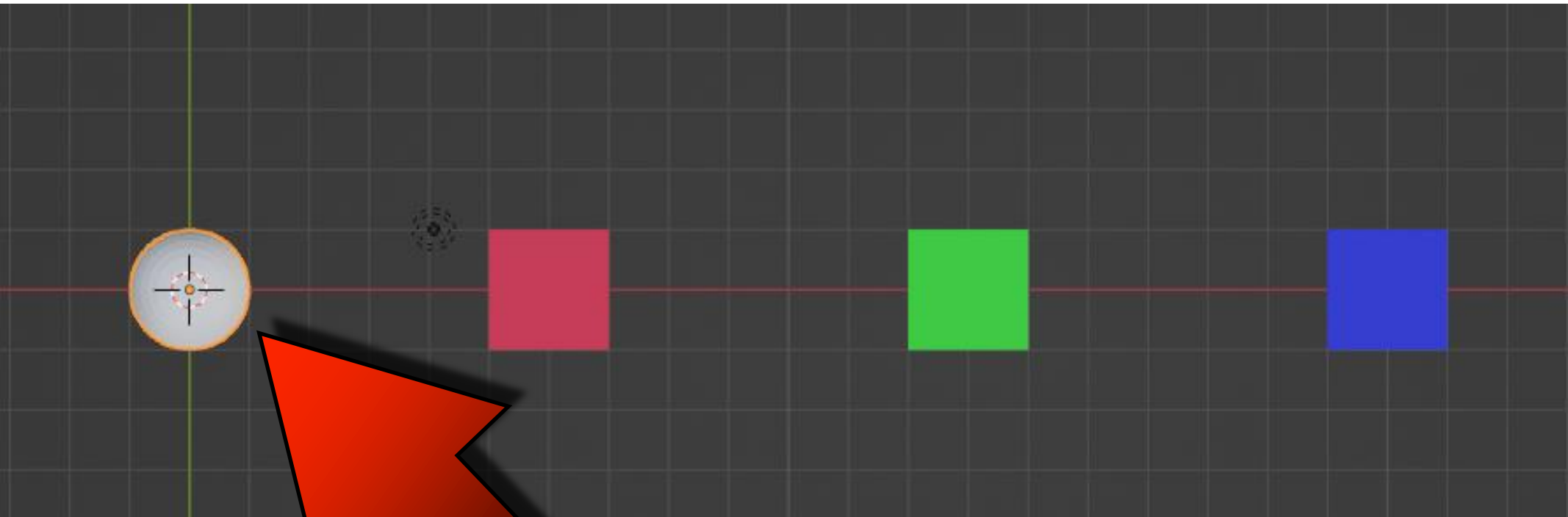


POWER OF AR AND VR

GO TO ITEM



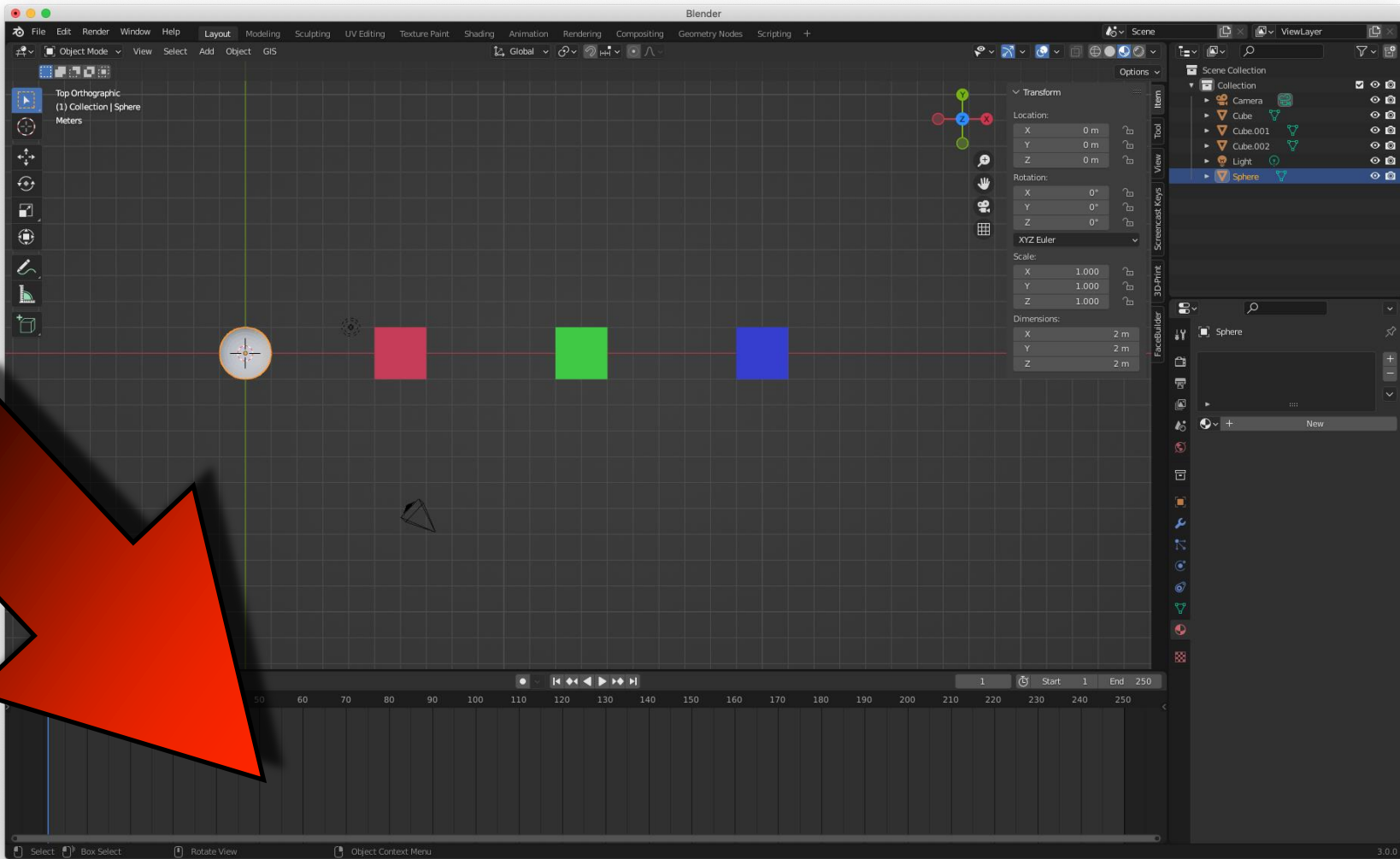
SELECT **SPHERE**





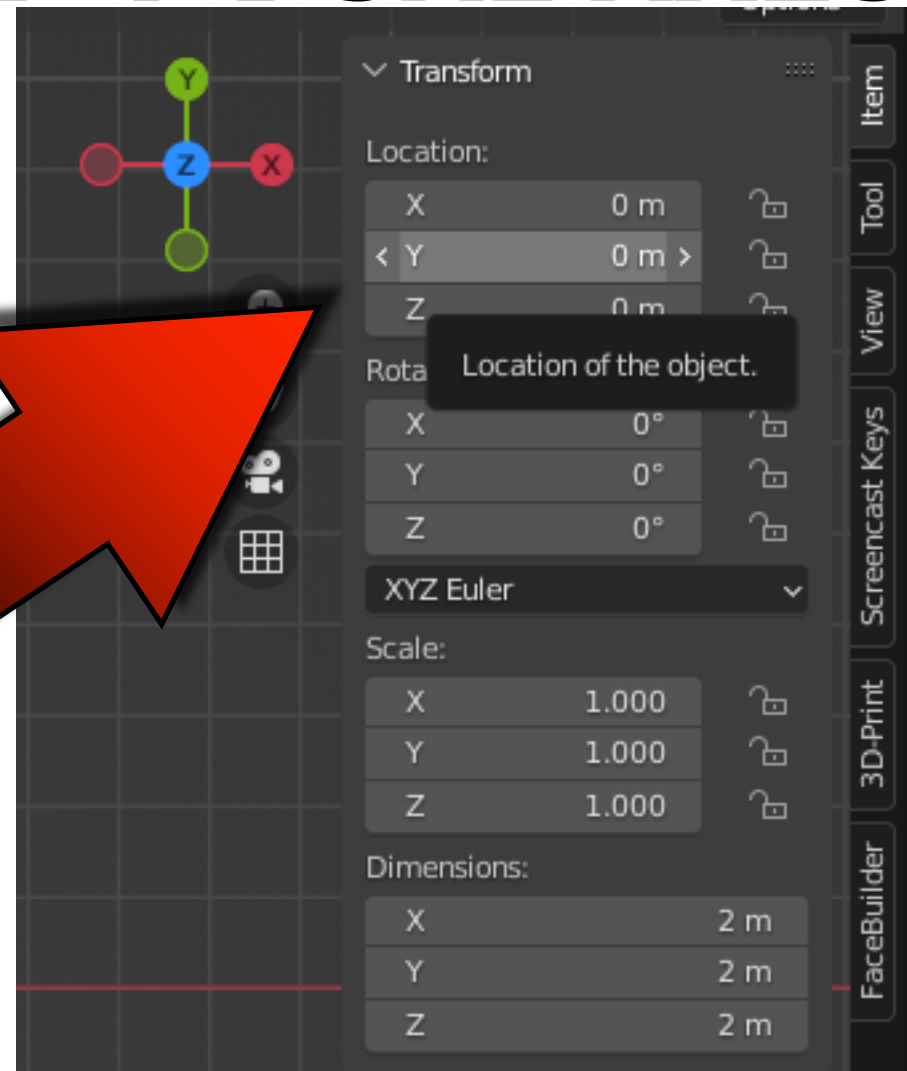
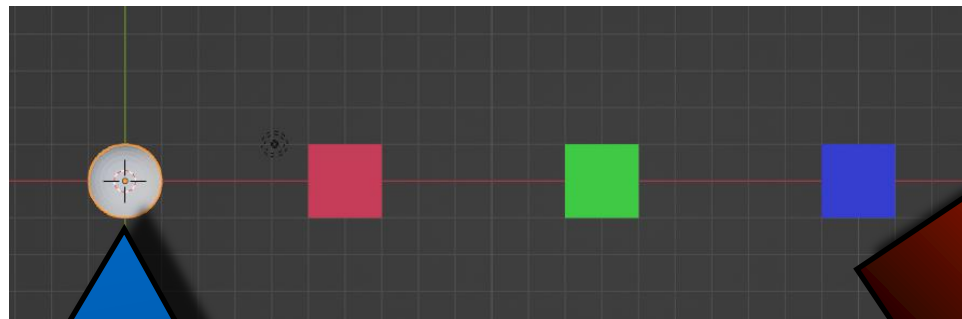
POWER OF AR AND VR

ENLARGE TIMELINE WINDOWS



ANIMATION BASICS KEYFRAMES - SLALOM

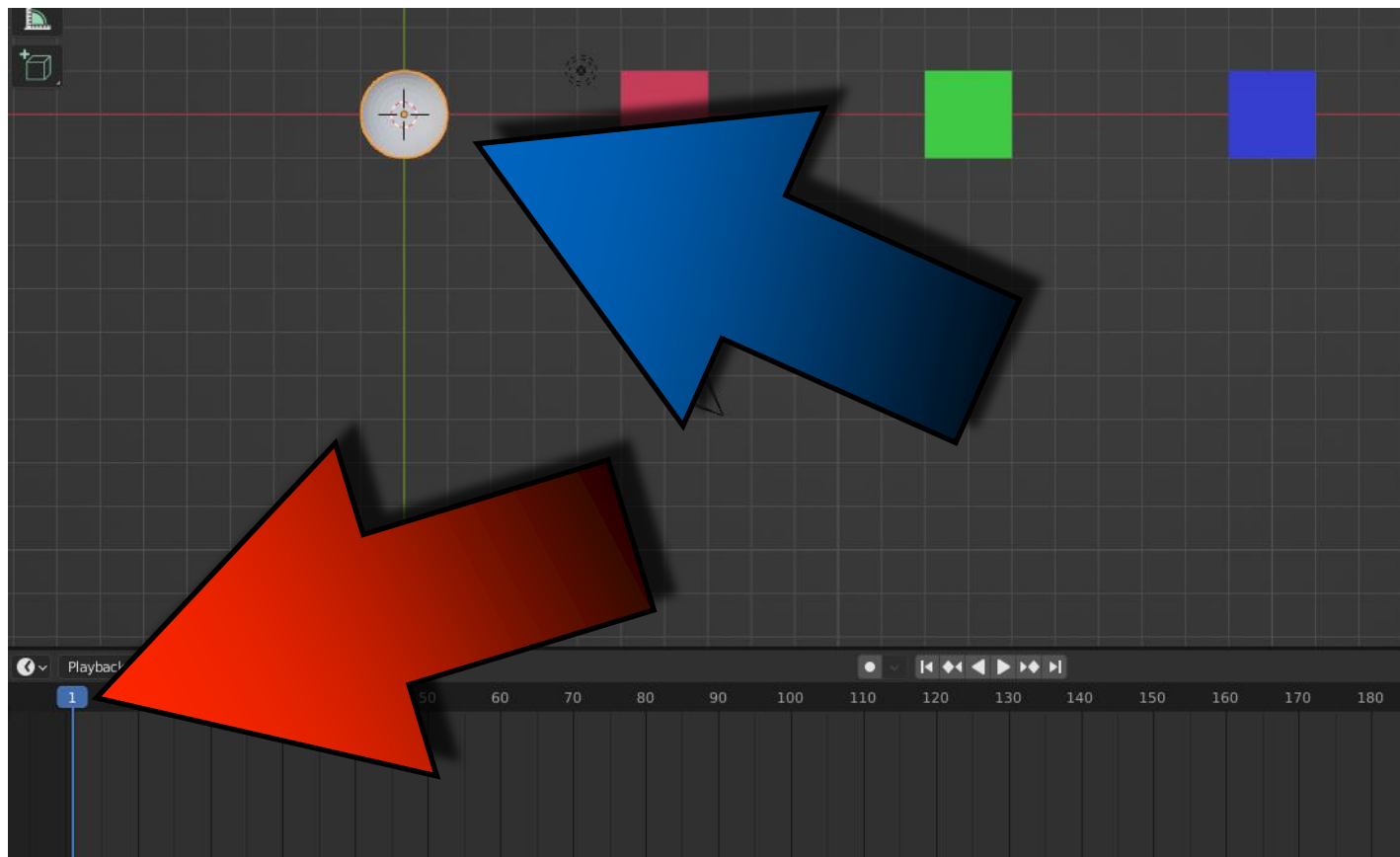
HERE WE SEE THE POSITION OF SPHERE IN INDIVIDUAL AXES



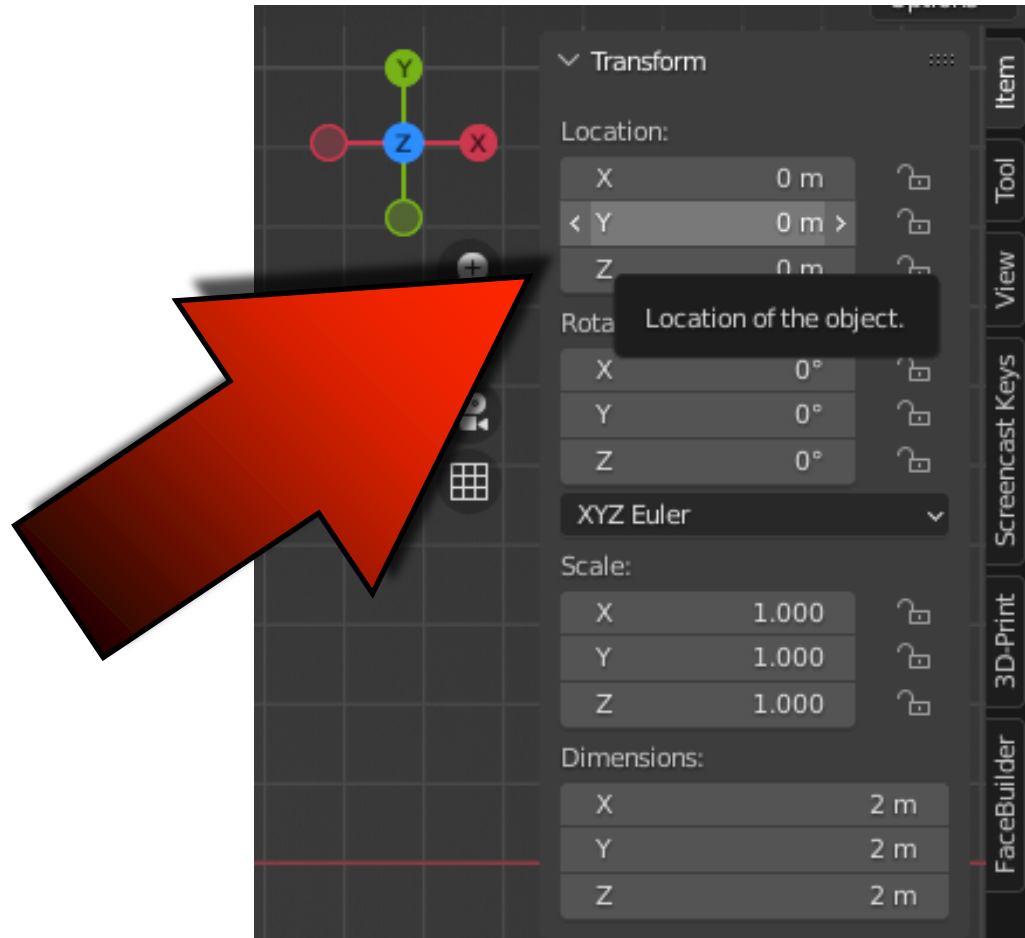
The screenshot shows a 3D coordinate system with X, Y, and Z axes. The X-axis is red, the Y-axis is green, and the Z-axis is blue. A sphere is positioned at the origin. To the right, a properties panel is visible, showing the following data:

Transform		
Location:		
X	0 m	🔒
< Y	0 m	> 🔒
Z	0 m	🔒
Rotation: Location of the object.		
X	0°	🔒
Y	0°	🔒
Z	0°	🔒
XYZ Euler		
Scale:		
X	1.000	🔒
Y	1.000	🔒
Z	1.000	🔒
Dimensions:		
X	2 m	
Y	2 m	
Z	2 m	

WE WANT TO SAVE THE LOCATION OF **SPHERE** IN **THE FIRST FRAME** OF ANIMATION



YOU JUST PLACE THE MOUSE ON **LOCATION WINDOWS**

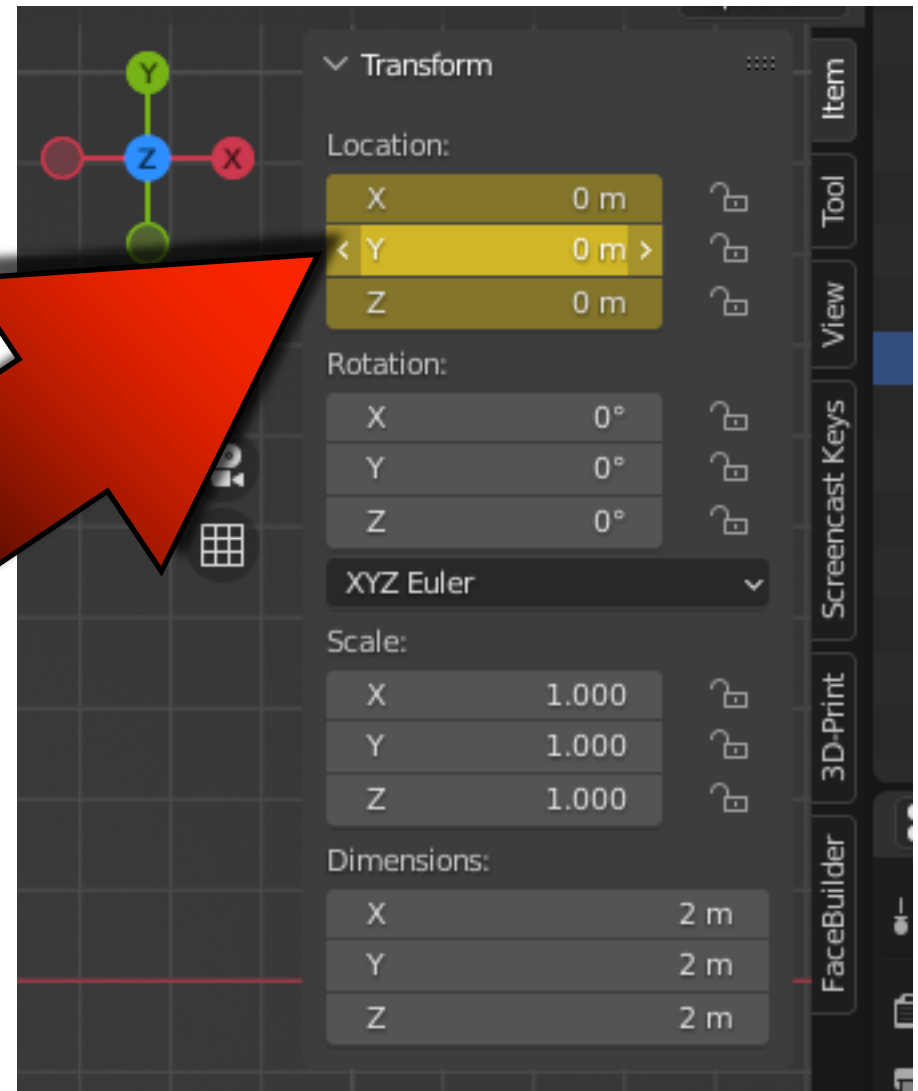




POWER OF AR AND VR

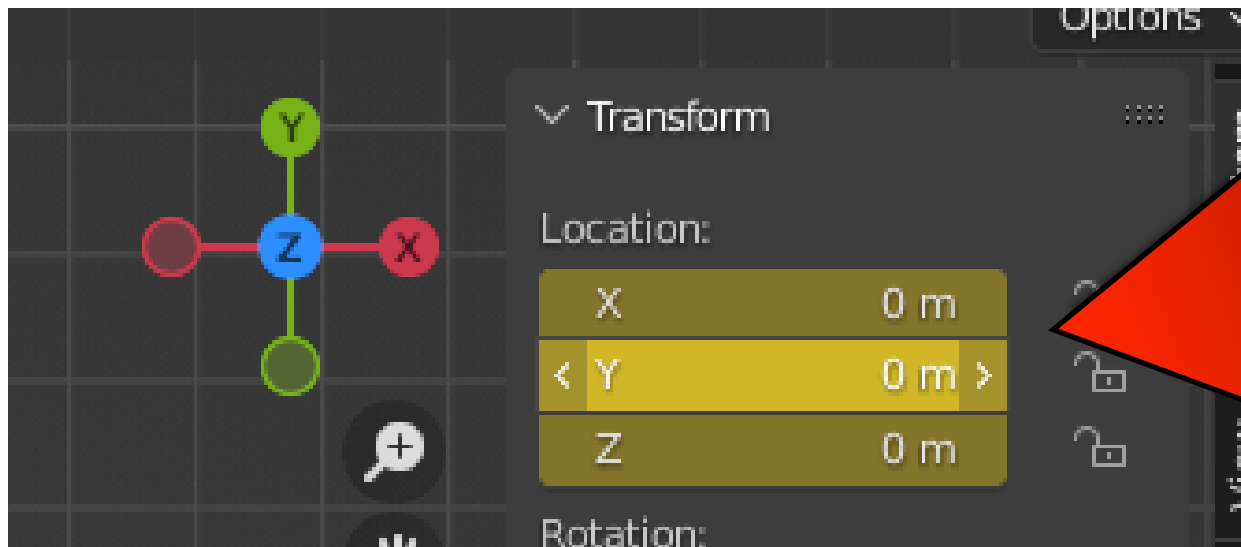


AND PRESS THE I KEY



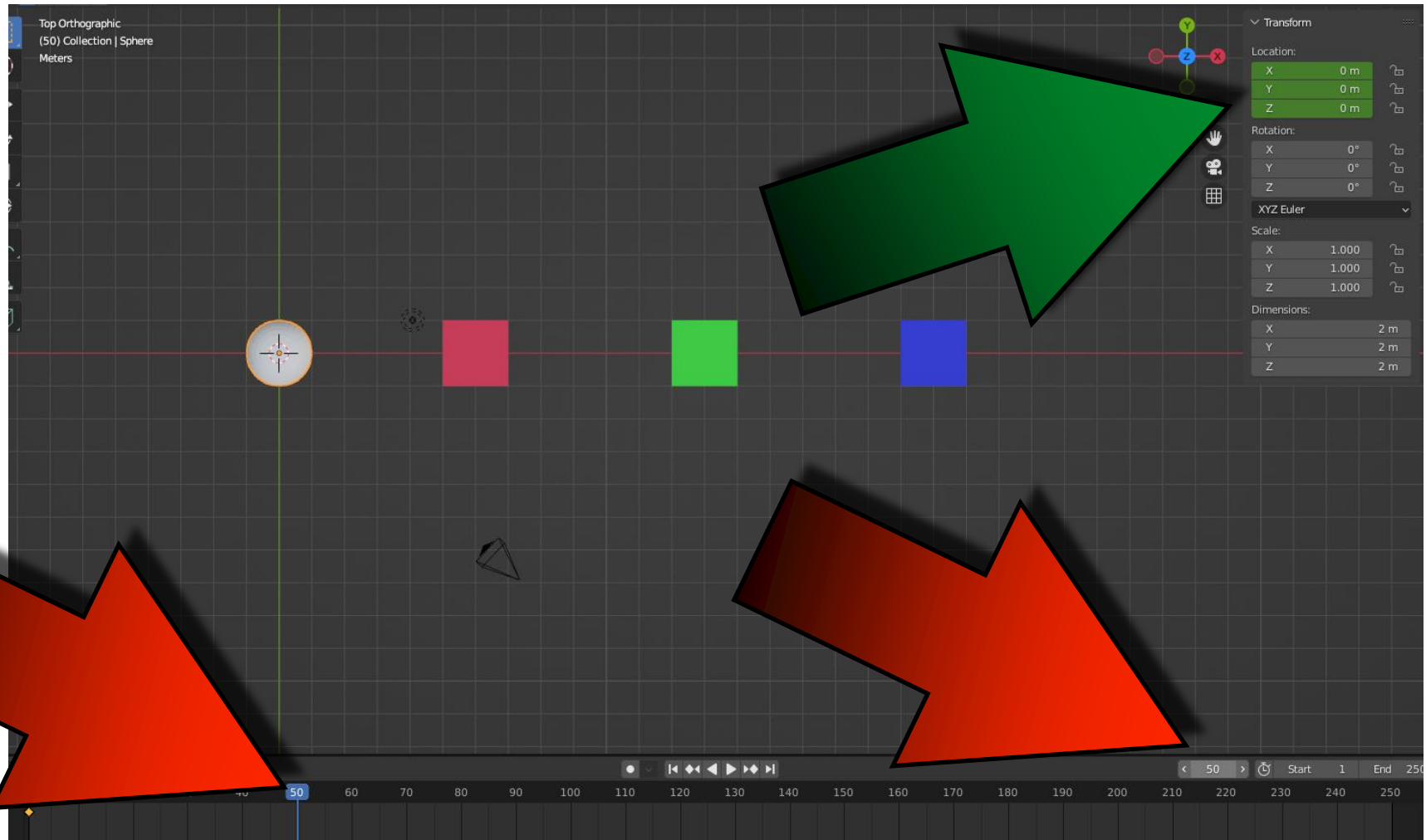
ANIMATION BASICS KEYFRAMES - SLALOM

**THIS COLOR MEANS
TO SAVE POSITIONS
IN THE X, Y AND Z AXIS**



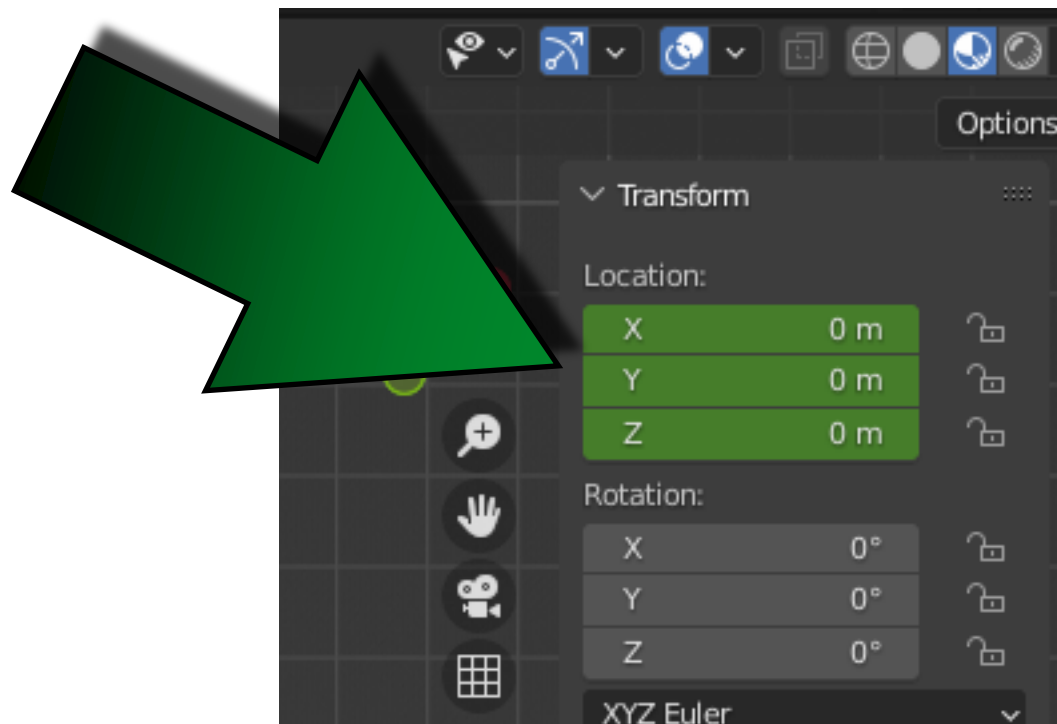
POWER OF AR AND VR

GO TO 50 FRAME

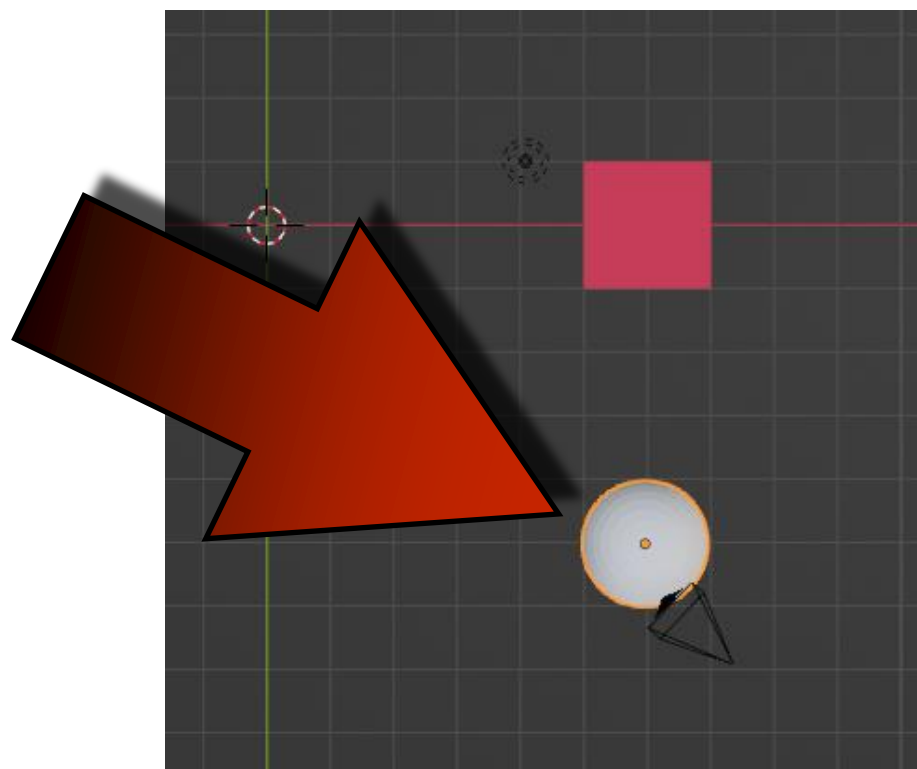


ANIMATION BASICS KEYFRAMES - SLALOM

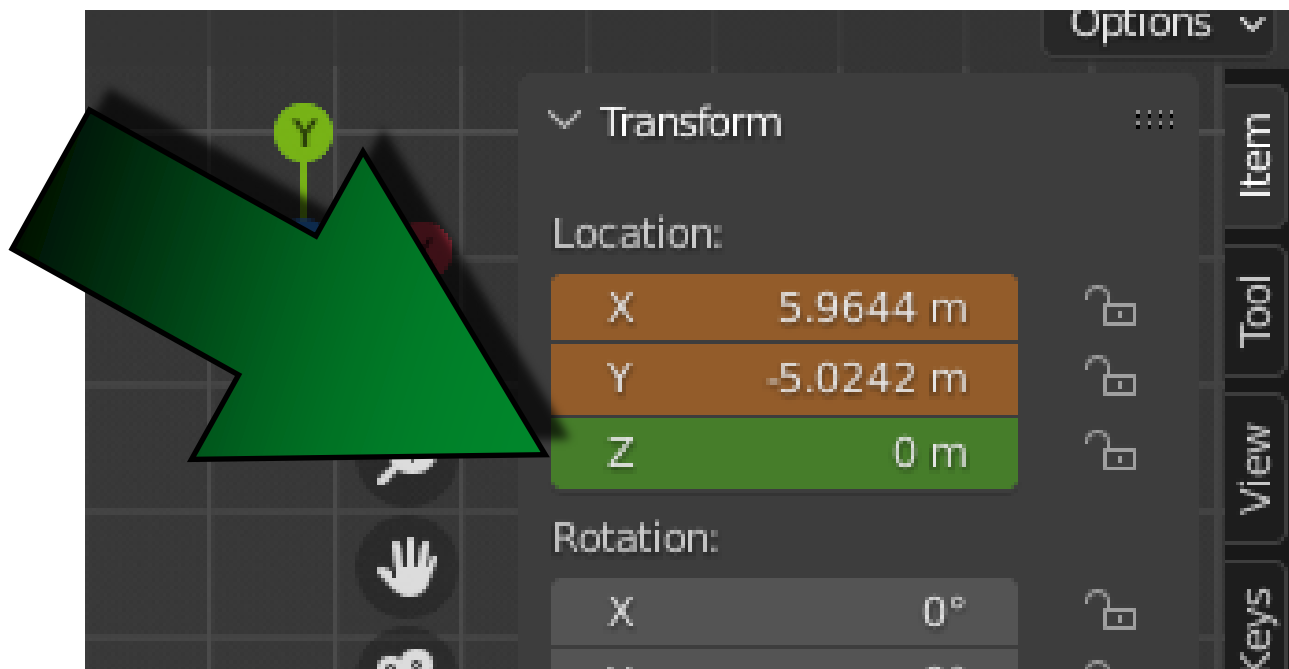
**THIS COLOR MEANS THAT
SPHERE HAS A SAVE
FRAME IN ANOTHER PLACE**



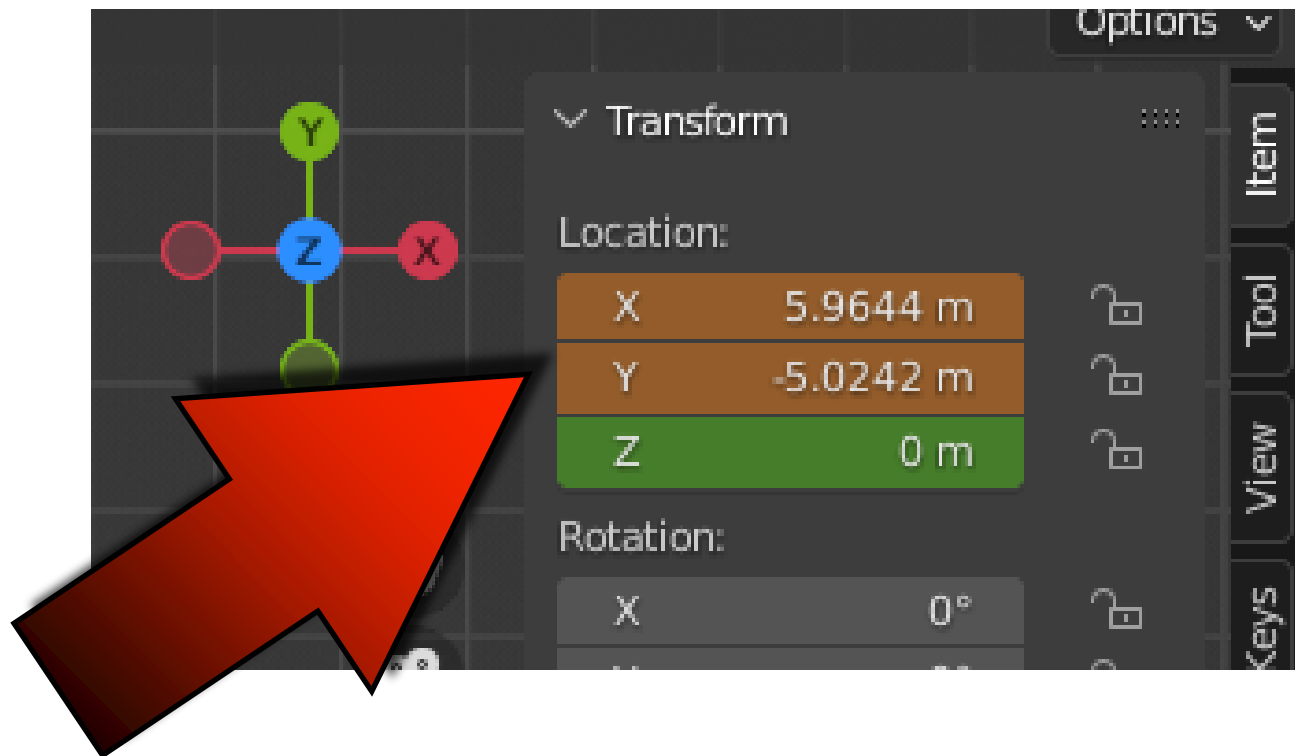
USING **THE G KEY**, **MOVE SHERE** AS ON THE SCREEN



**WE DIDN'T CHANGE THE
POSITION IN **THE Z AXIS**
SO **THE COLOR DIDN'T CHANGE****

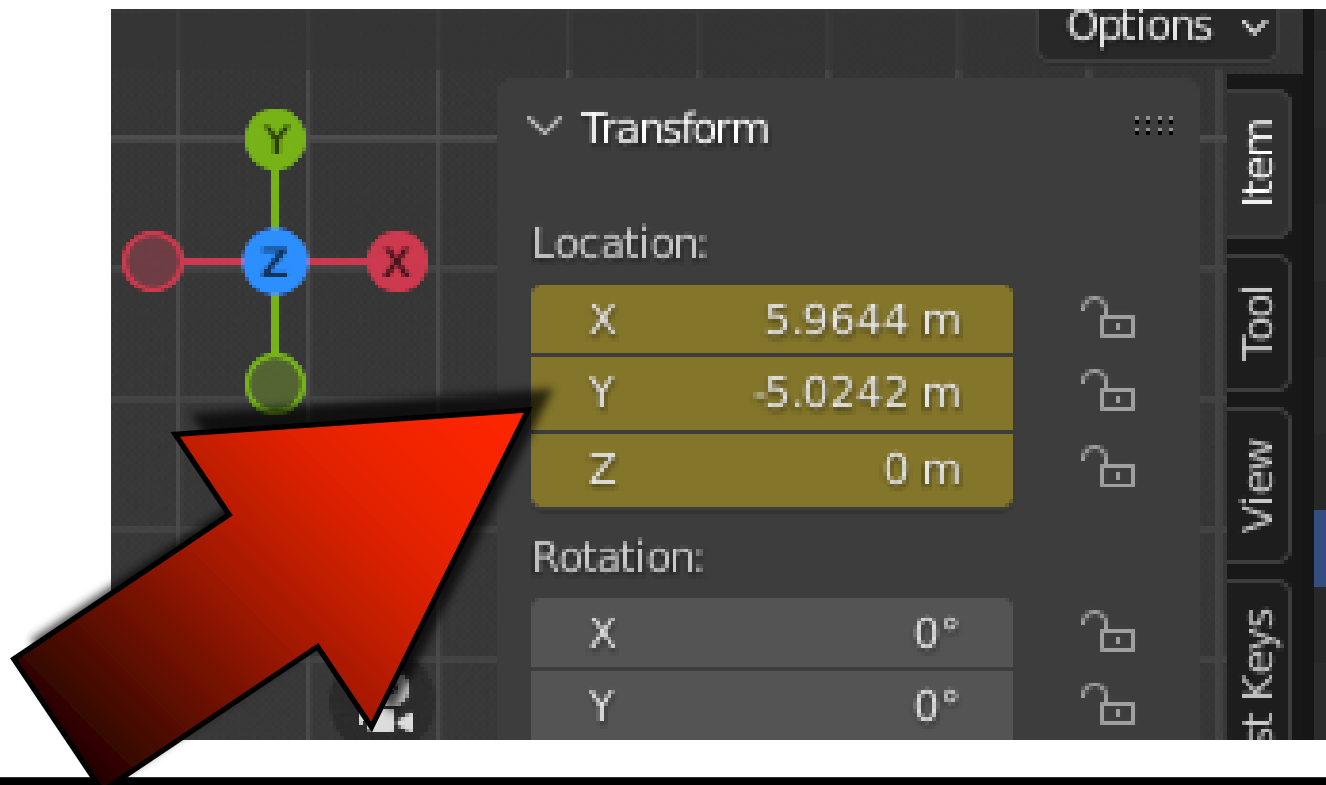


YOU JUST PLACE THE MOUSE ON LOCATION WINDOWS



POWER OF AR AND VR

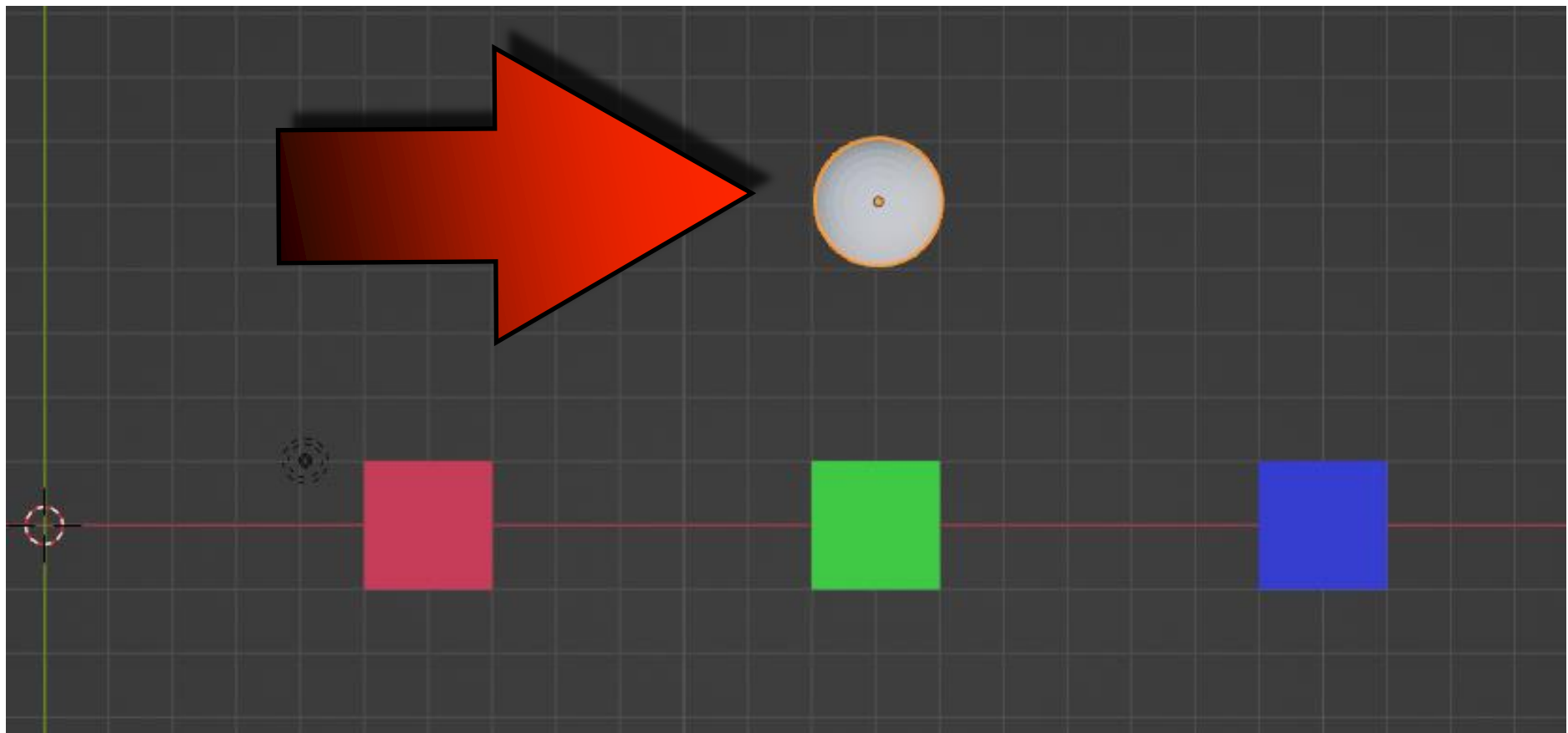
AFTER SAVING WITH THE I KEY ALL COLORS CHANGE



POWER OF AR AND VR

REPEAT THE SAME STEPS FOR THE FOLLOWING FRAMES

100



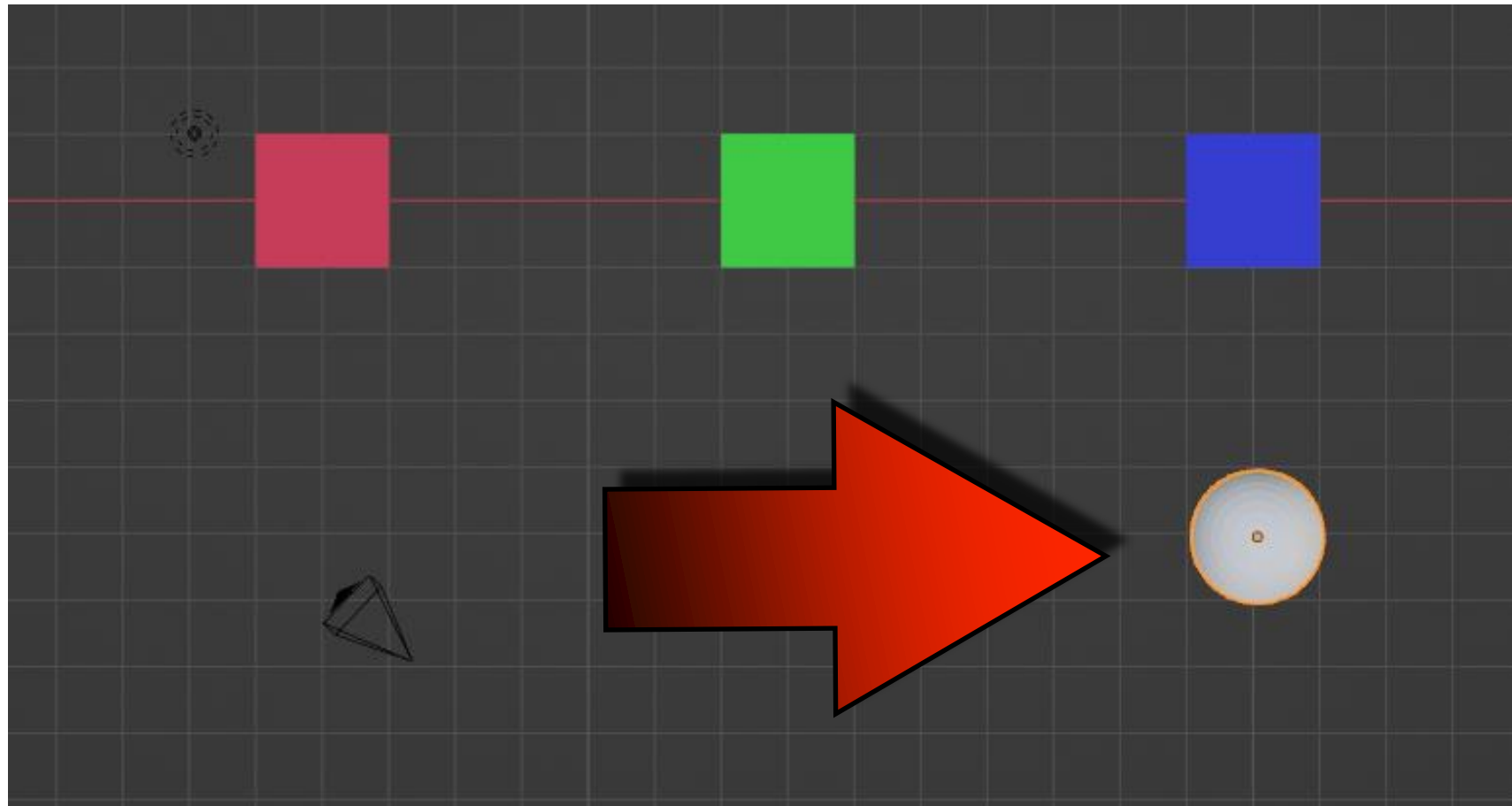
ANIMATION BASICS

KEYFRAMES - SLALOM

POWER OF AR AND VR

REPEAT THE SAME STEPS FOR THE FOLLOWING FRAMES

150

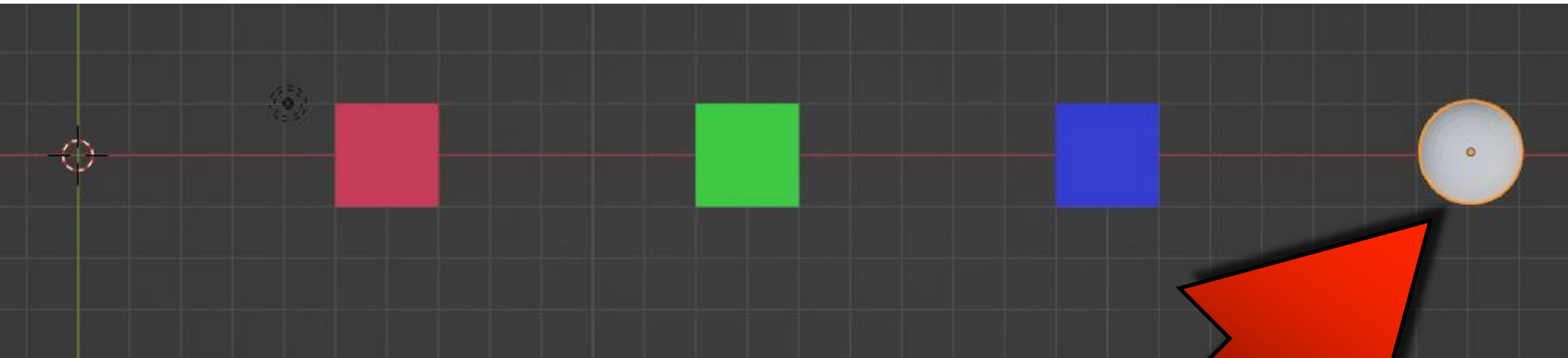


ANIMATION BASICS KEYFRAMES - SLALOM

POWER OF AR AND VR

REPEAT THE SAME STEPS FOR THE FOLLOWING FRAMES

200





POWER OF AR AND VR



**PRESS THE SPACEBAR
AND SEE THE ANIMATION**



<https://youtu.be/NmQZt8r2Mzs>

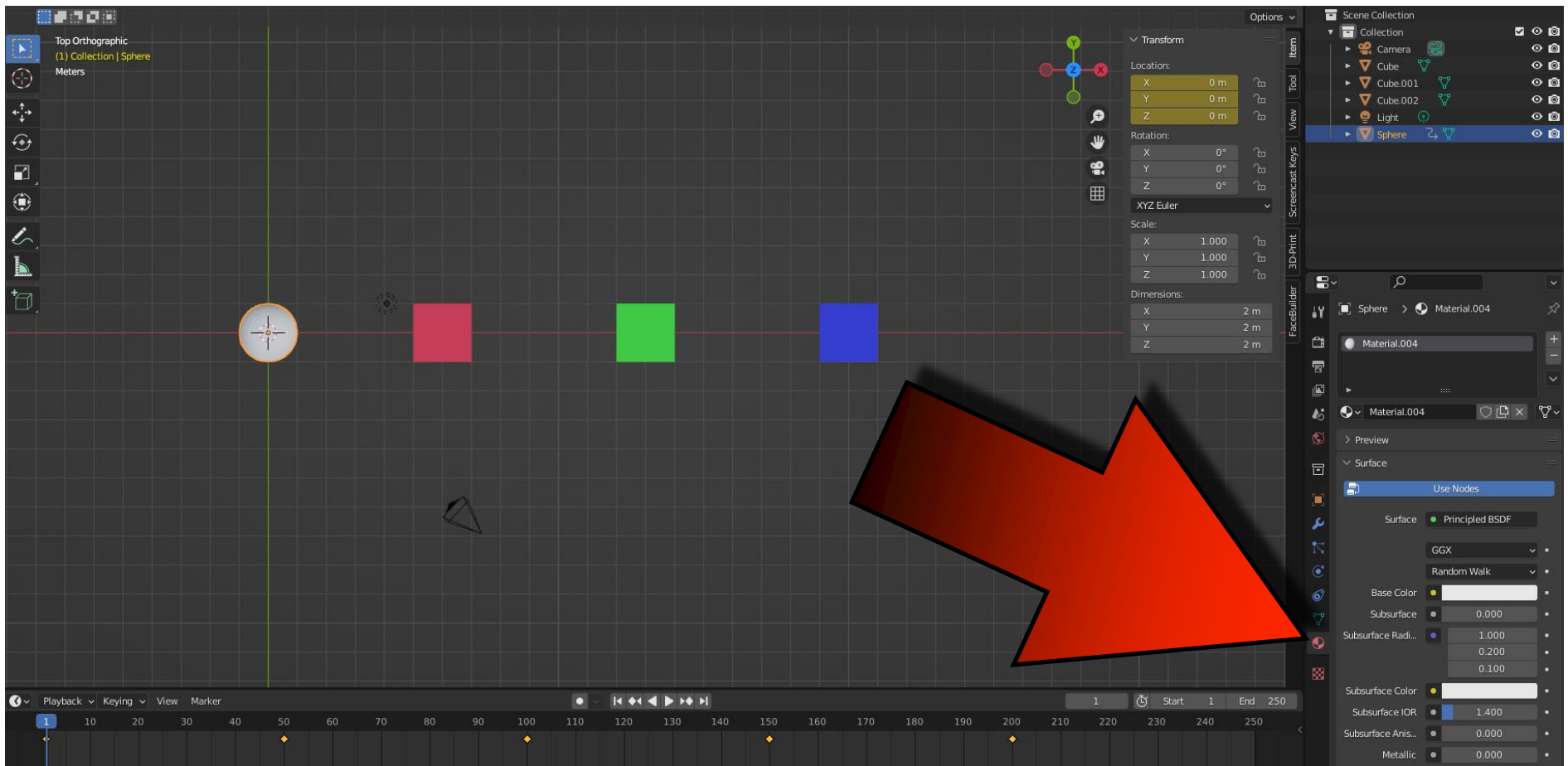
ANIMATION BASICS KEYFRAMES - SLALOM



POWER OF AR AND VR



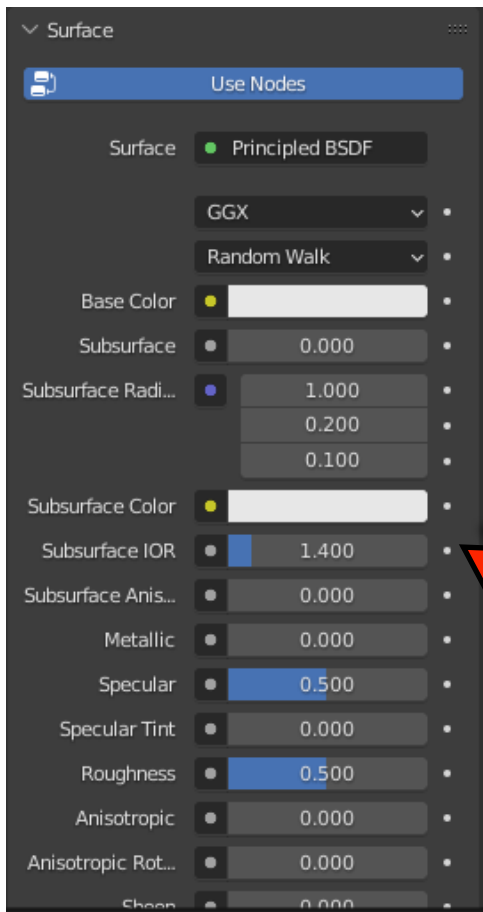
GO TO MATERIAL PROPERTIES



ANIMATION BASICS

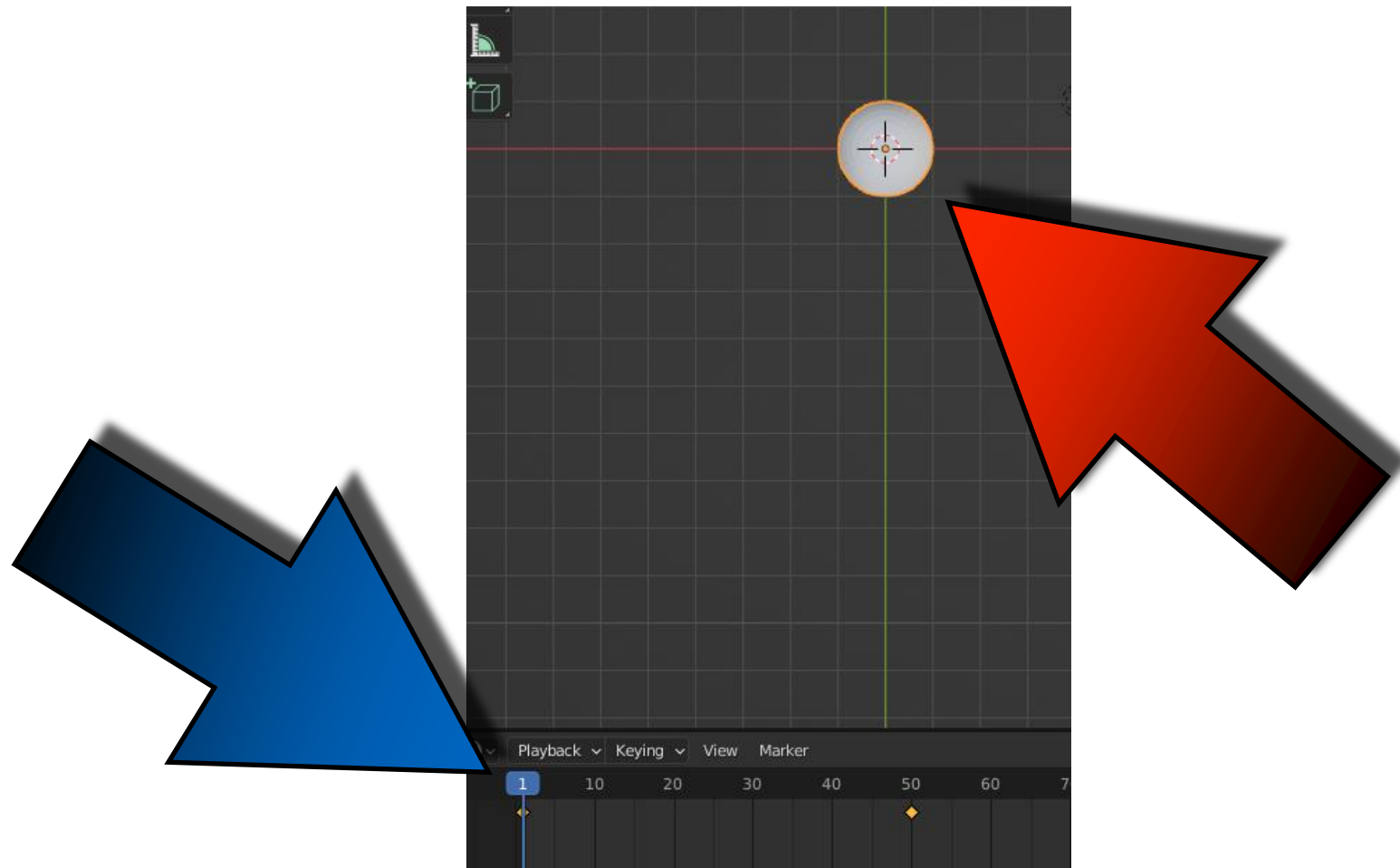
KEYFRAMES - SLALOM

**THE DOTS MEAN
THAT THE GIVEN
PARAMETER
CAN BE ANIMATED**



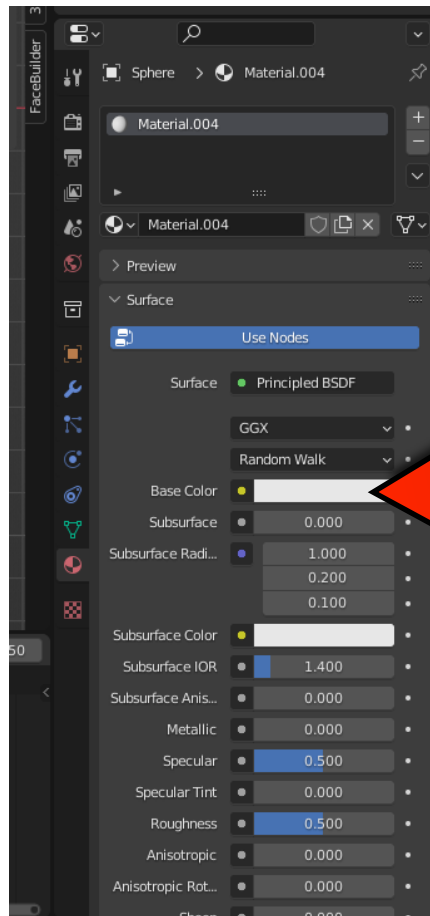
POWER OF AR AND VR

SPHERE IS IN THE FIRST FRAME



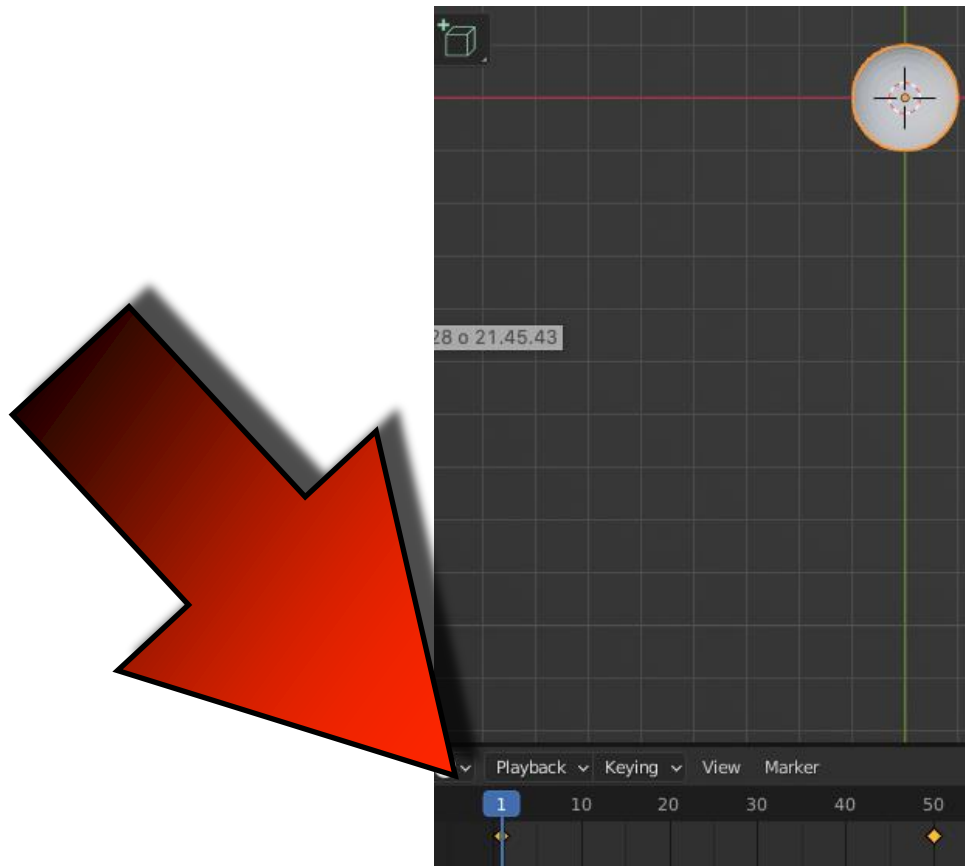
ANIMATION BASICS KEYFRAMES - SLALOM

SET THE MOUSE CURSOR TO **BASE COLOR**



POWER OF AR AND VR

**PRESS THE I KEY TO SAVE
THE COLOR
IN THE FIRST FRAME**



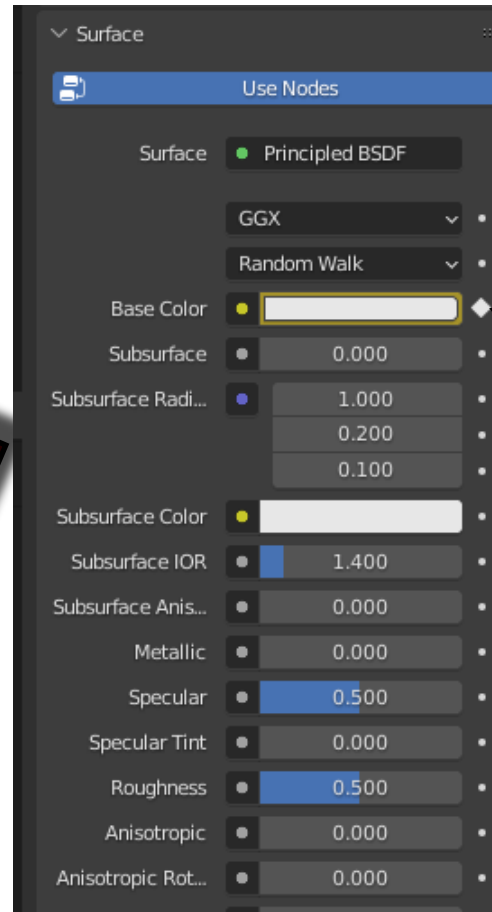
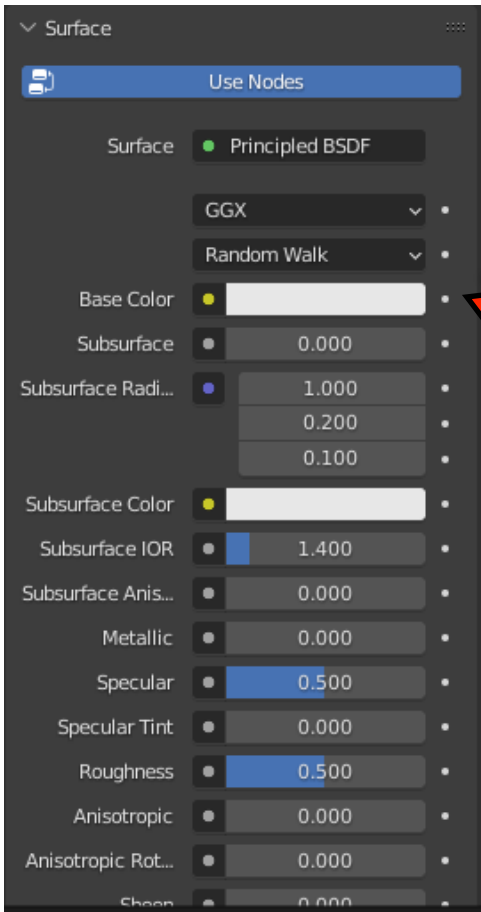
ANIMATION BASICS KEYFRAMES - SLALOM



POWER OF AR AND VR



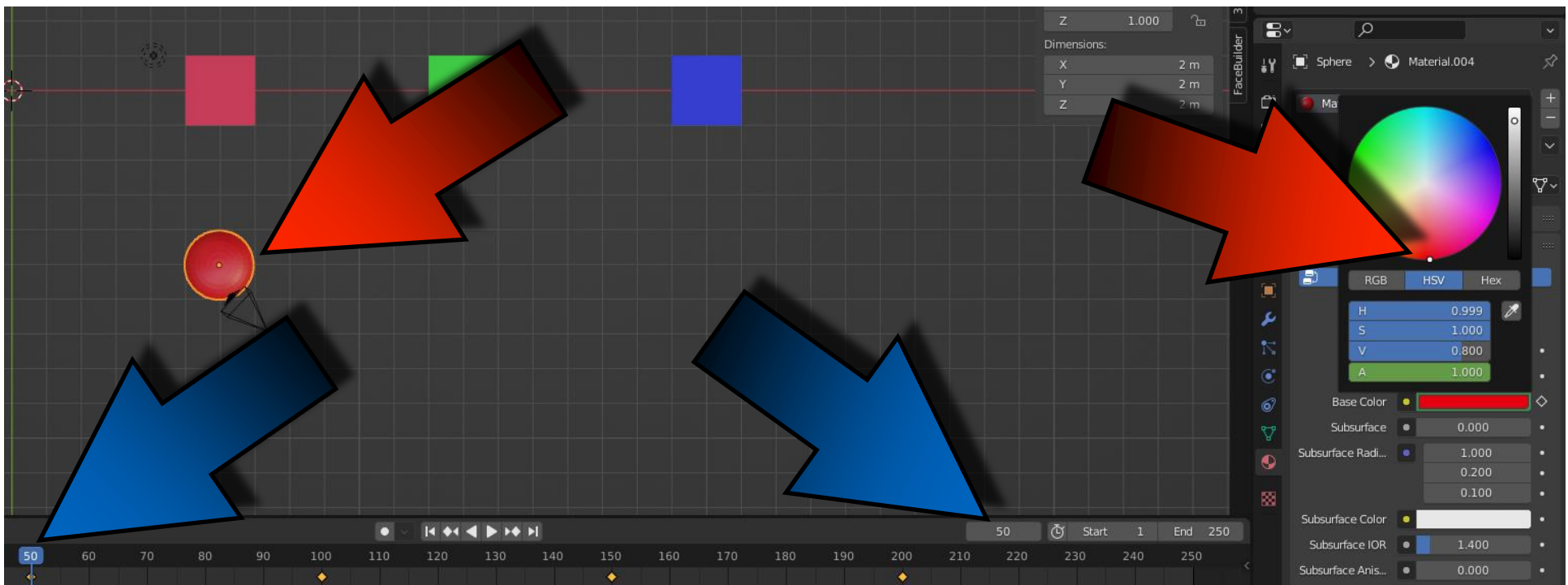
THE COLOR OF THE FRAME WILL CHANGE



ANIMATION BASICS

KEYFRAMES - SLALOM

GO TO FRAME 50 AND CHANGE COLOR

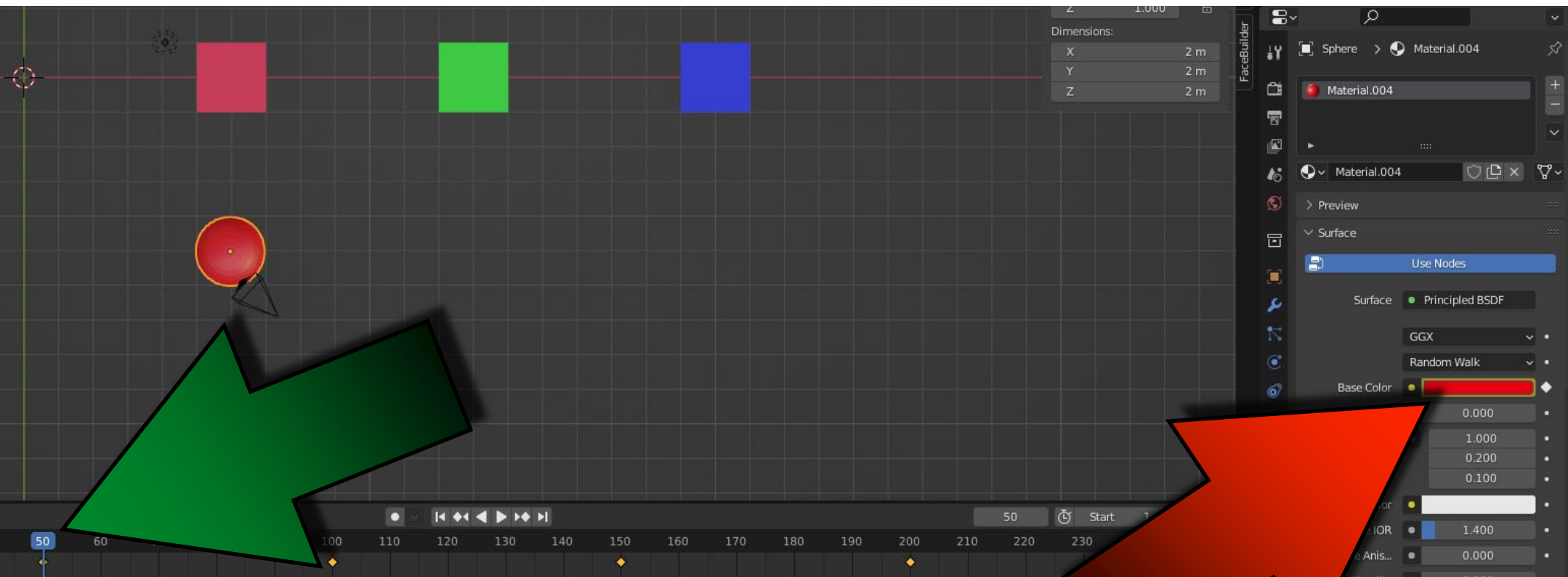




POWER OF AR AND VR



USING THE I KEY AND SAVE THE COLOR IN THE 50 FRAME



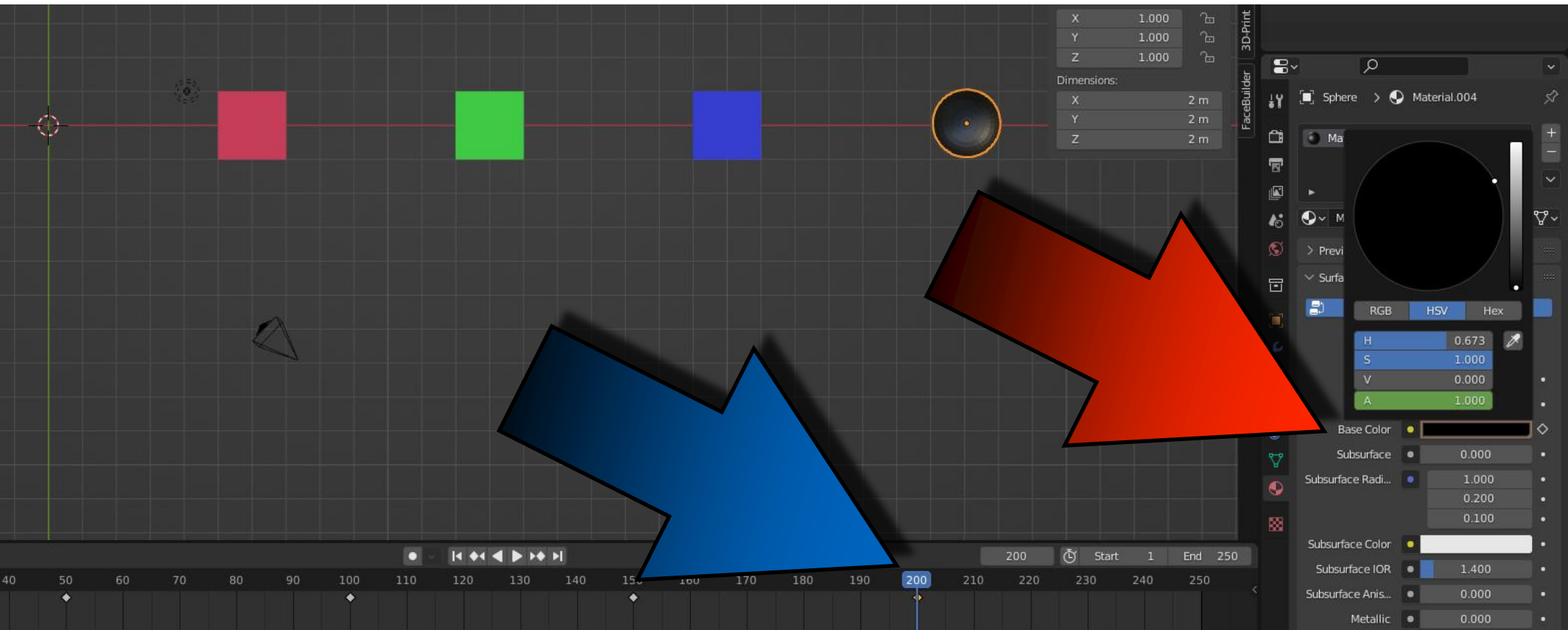
ANIMATION BASICS KEYFRAMES - SLALOM



POWER OF AR AND VR



**DO THE SAME FOR THE NEXT FRAMES
IN 200 SAVE BLACK**



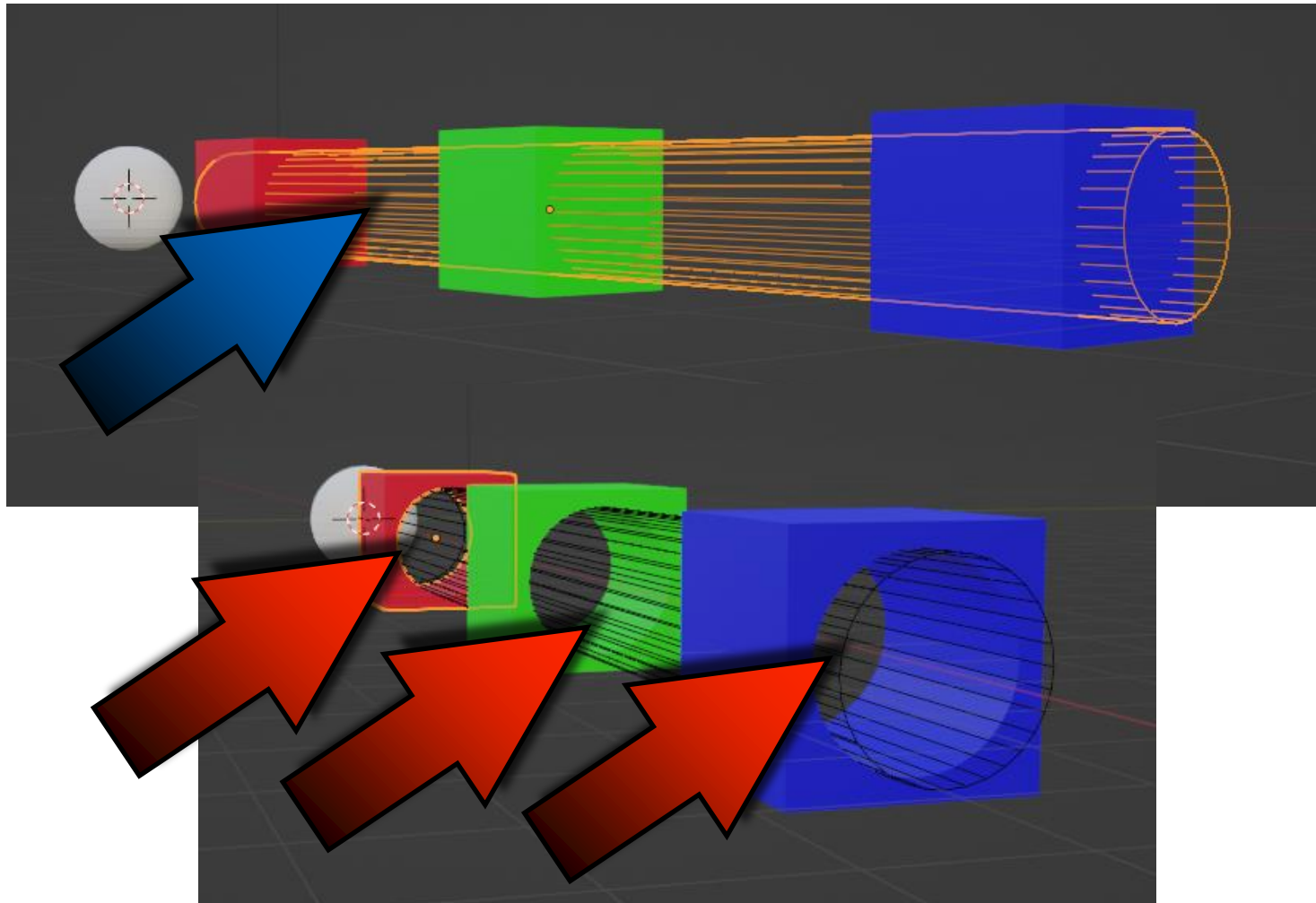
ANIMATION BASICS KEYFRAMES - SLALOM

SEE ANIMATION

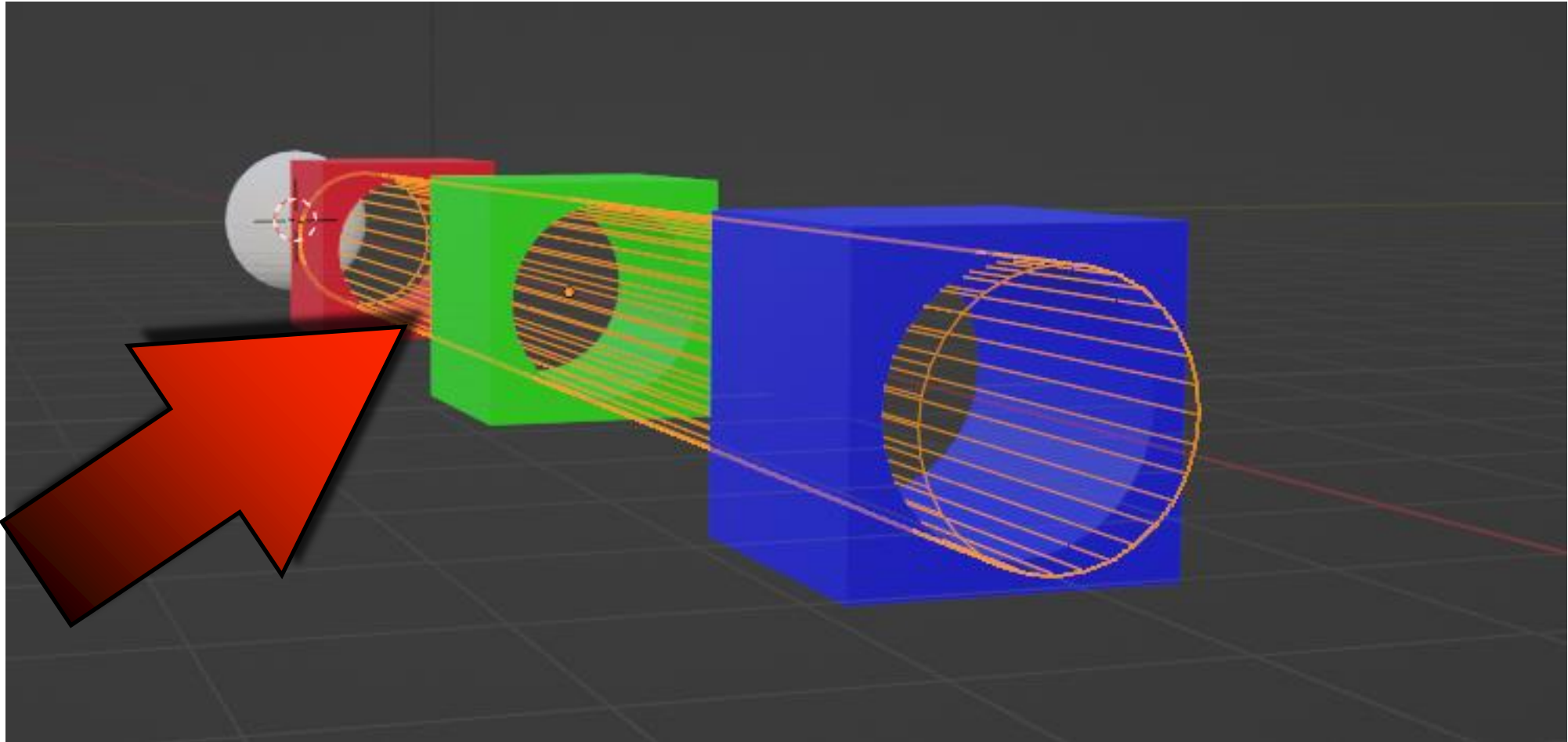


<https://youtu.be/3NSyNYQnGk4>

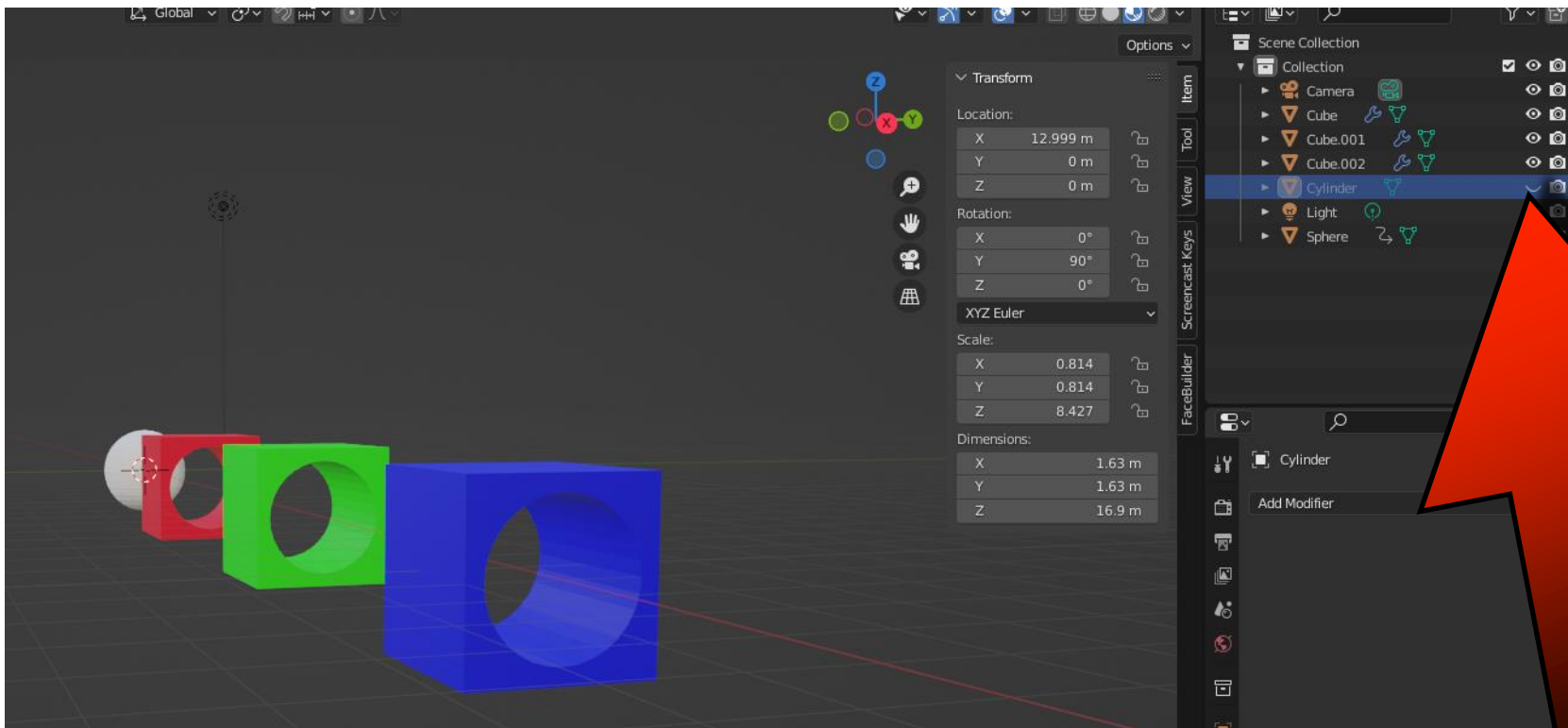
INSERT **CYLINDER** AND CUT **HOLES** AS ON SCREEN



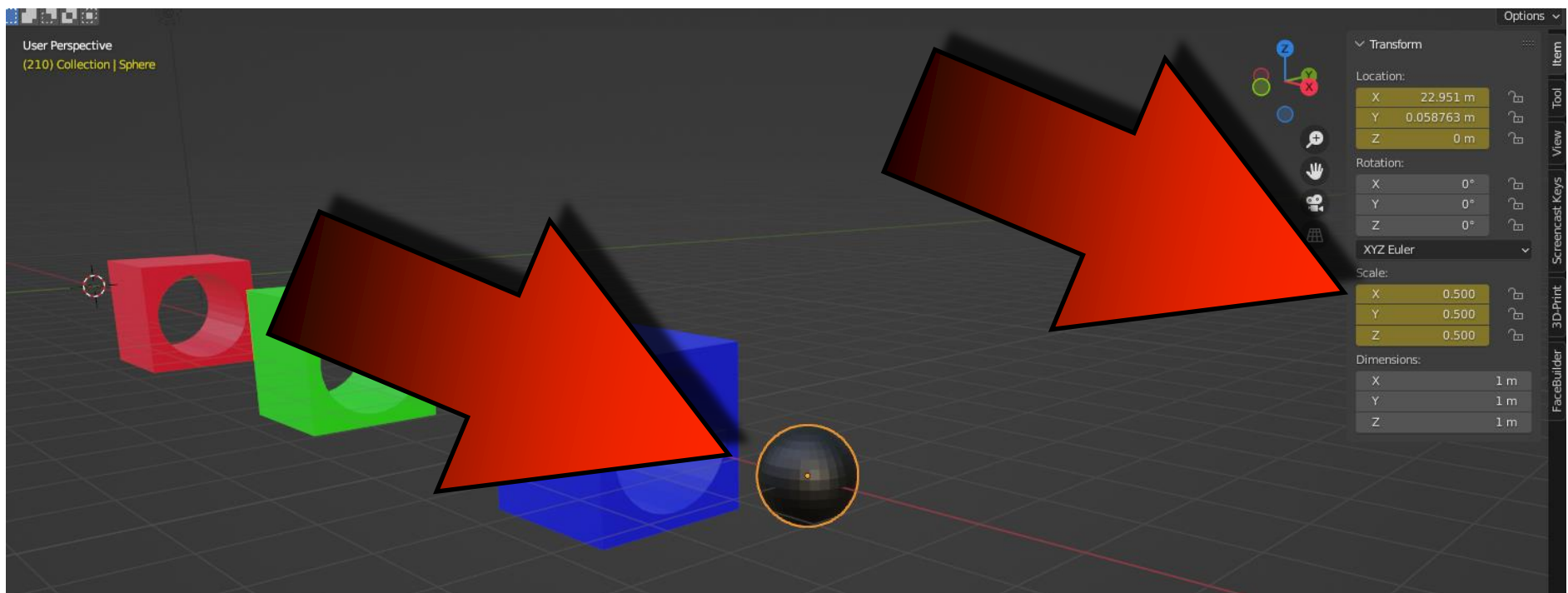
SELECT CYLINDER



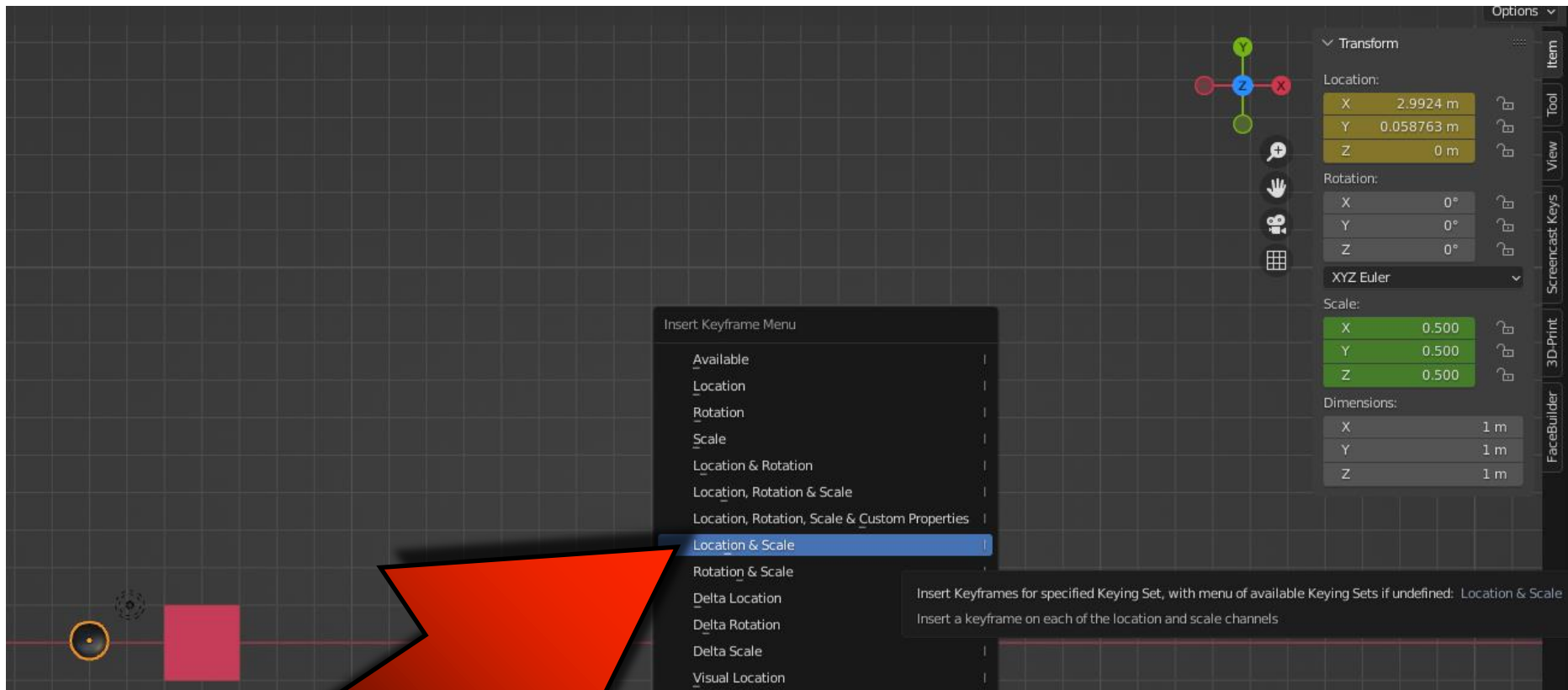
HIDE IT BY CLICKING ON THE H KEY



IN A SIMILAR WAY, YOU CAN CHANGE THE SCALE OF AN OBJECT



**IF YOU WANT TO CHANGE
TWO PARAMETERS AT THE SAME TIME
PRESS THE I KEY AND CHOOSE THE RIGHT OPTION**

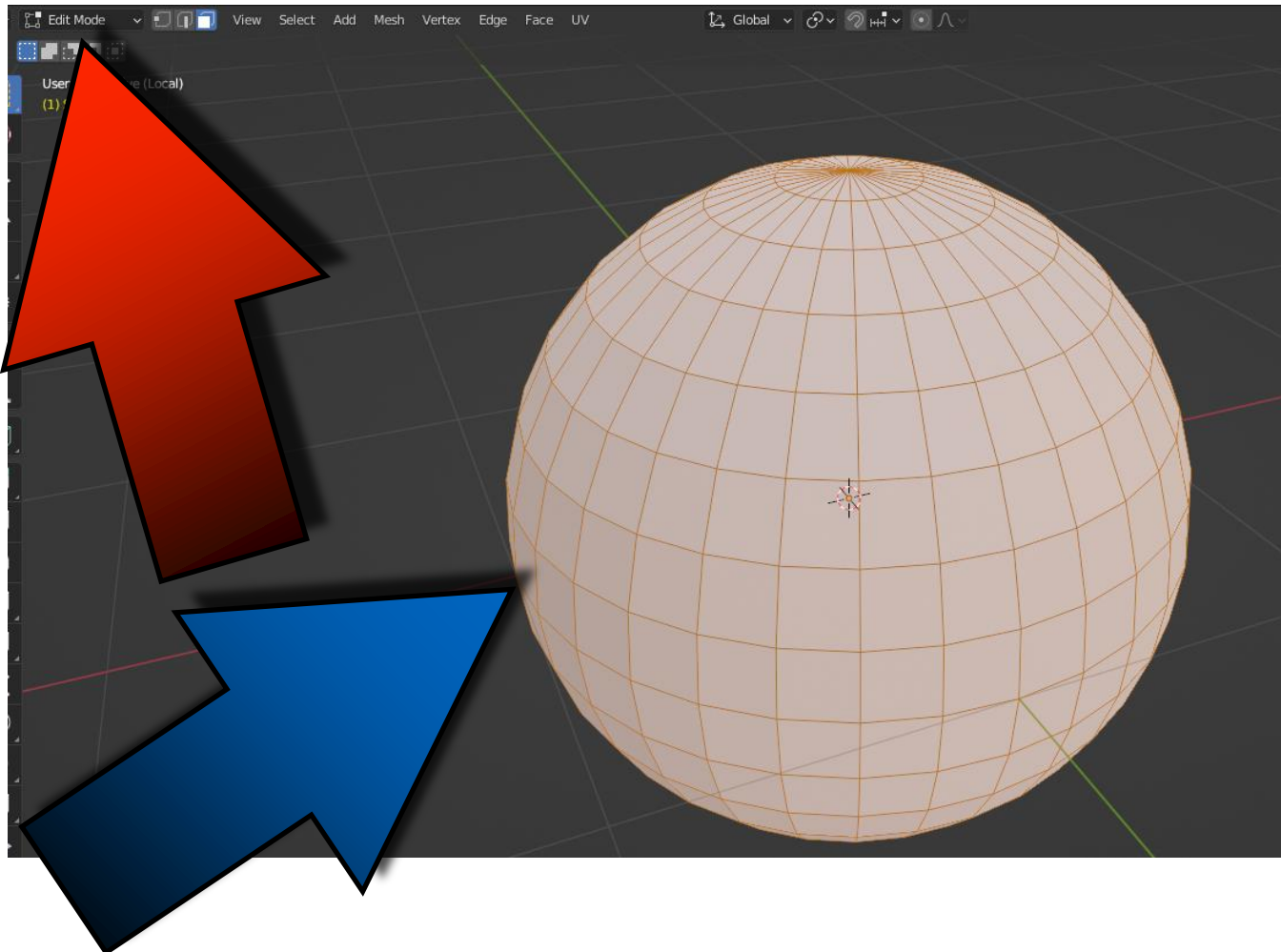


MAKE SUCH ANIMATION

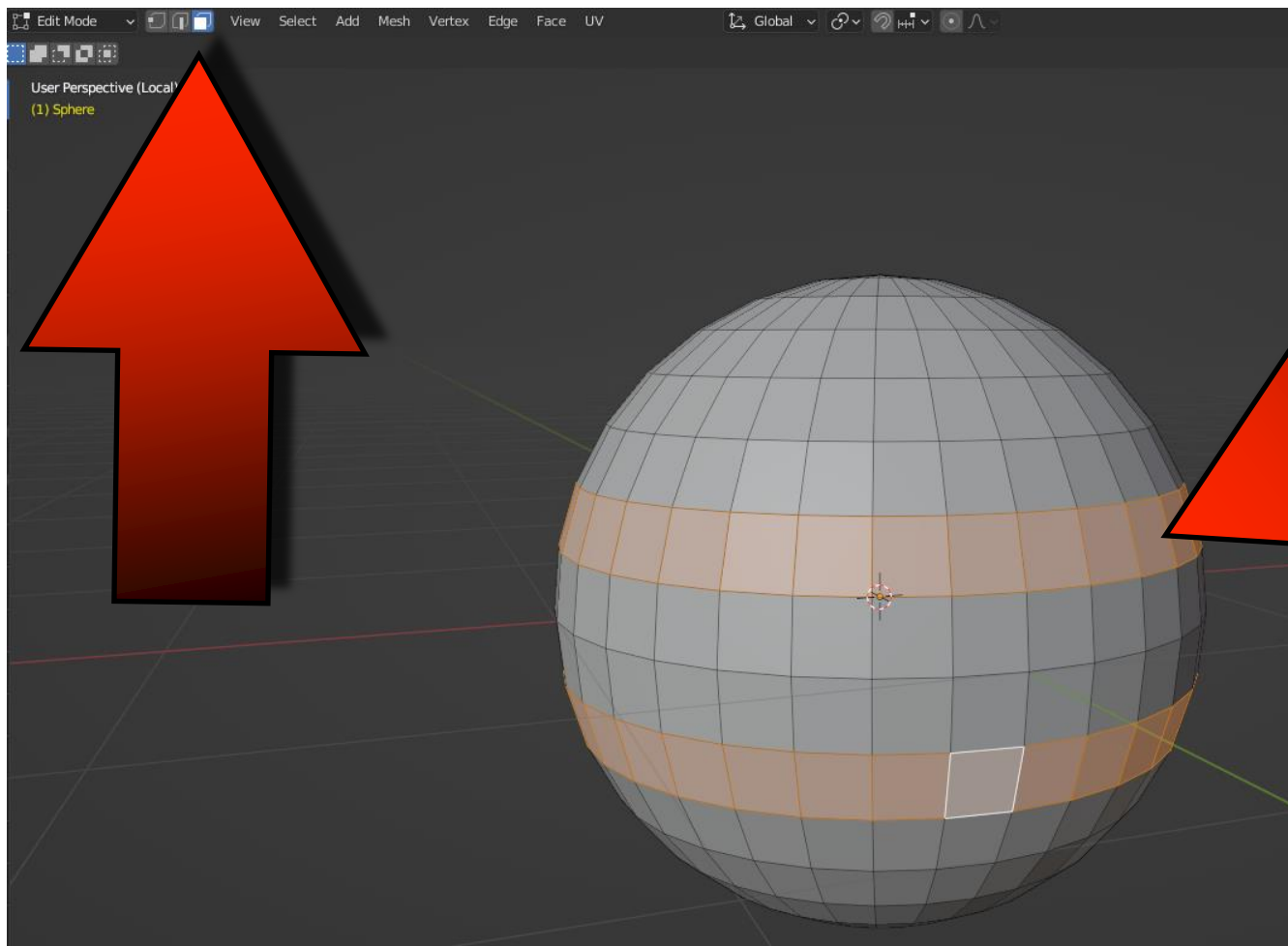


<https://youtu.be/bWLdAEyyceA>

TO VIEW THE ROTATION
ENTER THE SPHERE EDIT MODE



SELECT ANY WALLS

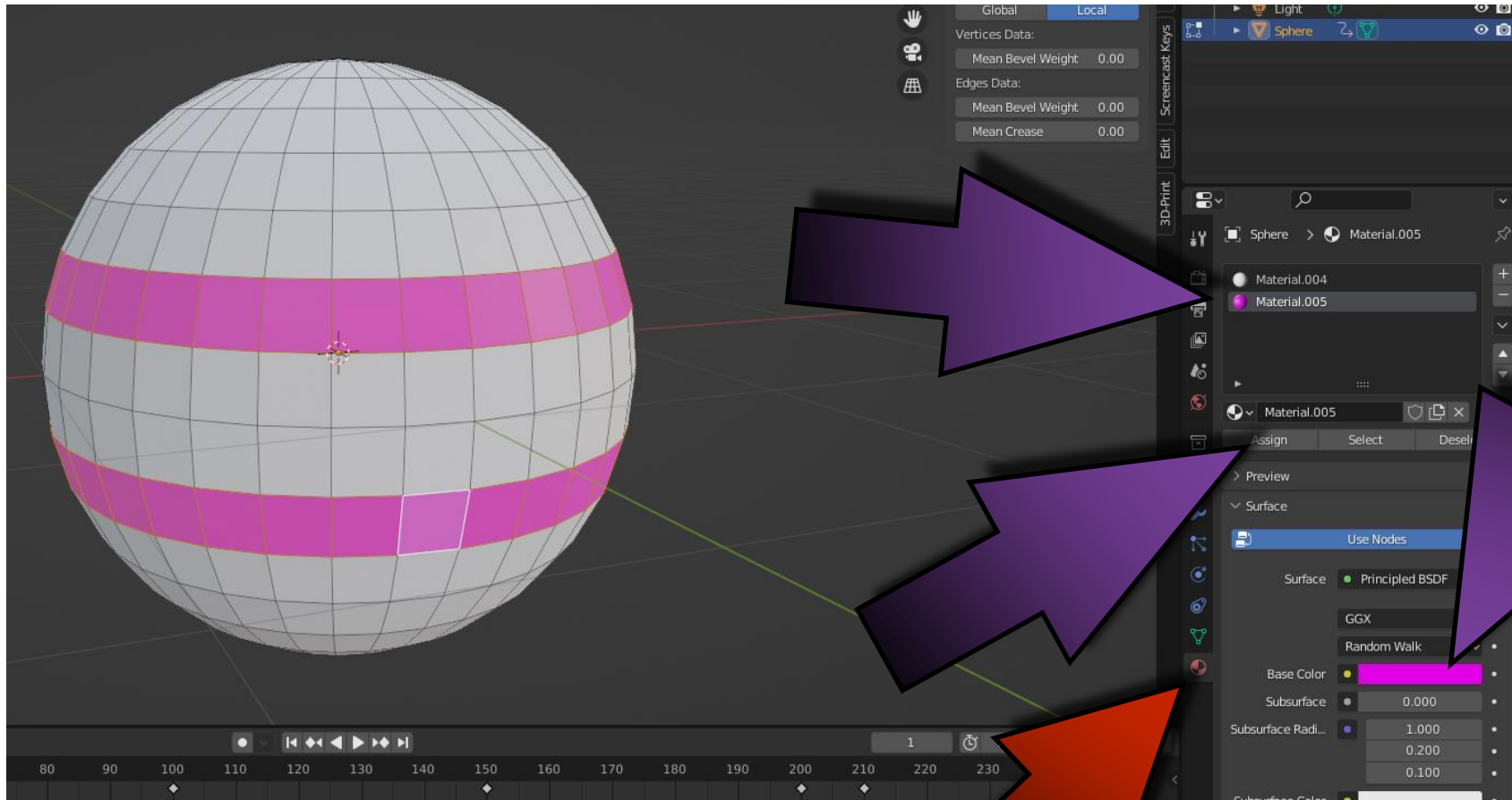




POWER OF AR AND VR

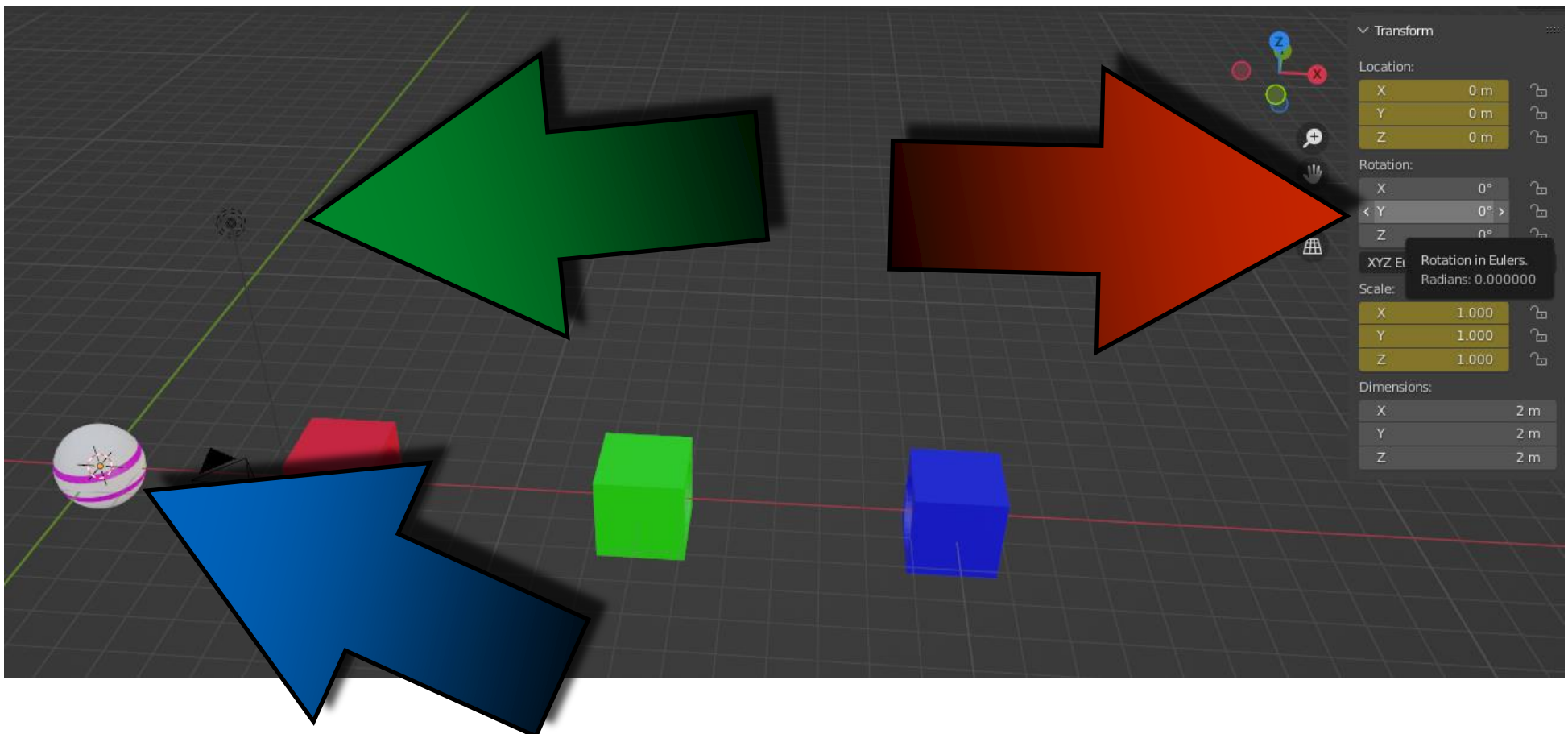


ADD A NEW MATERIAL AND CHANGE THEIR COLOR

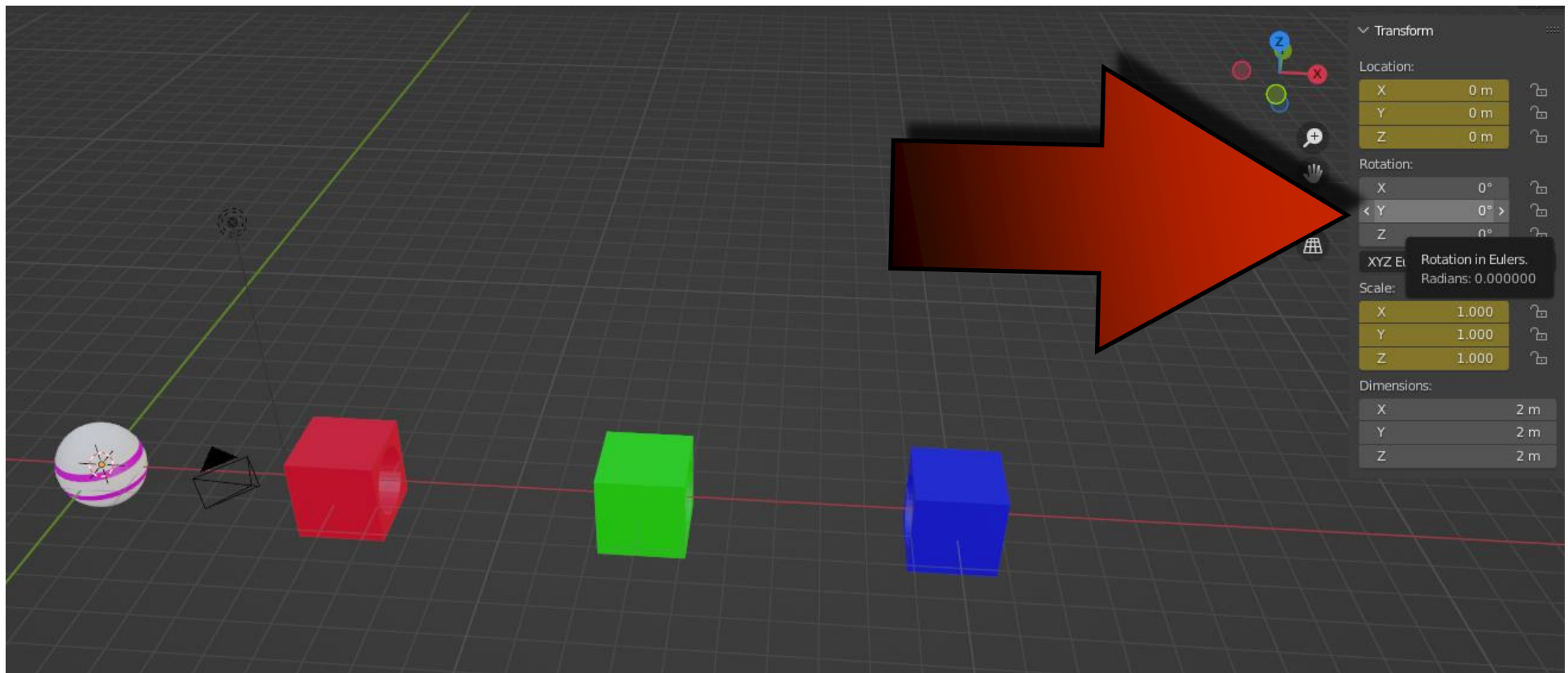


ANIMATION BASICS KEYFRAMES - SLALOM

WE WANT TO ROTATE THE SPHERE ONLY ABOUT THE Y-AXIS

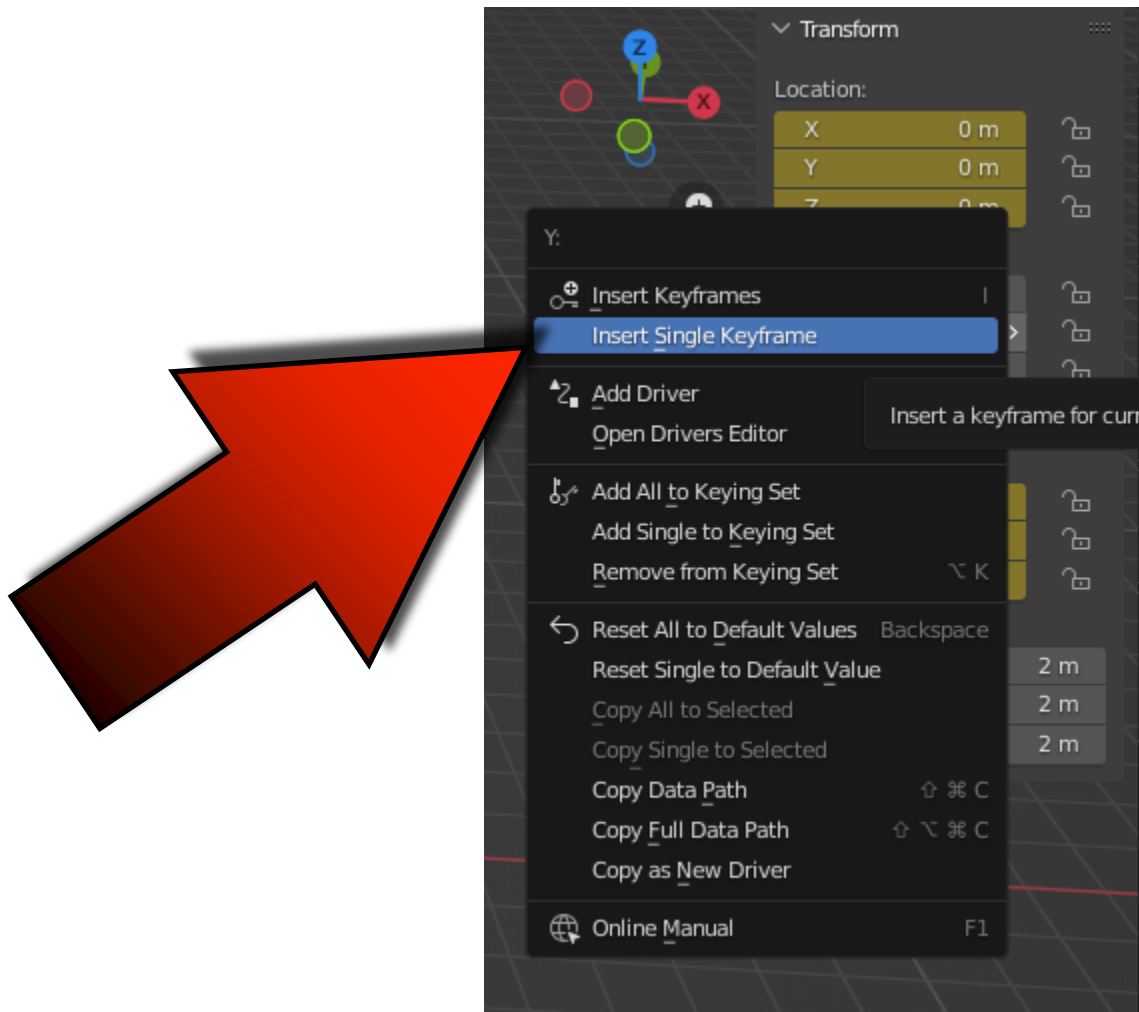


**CLICK WITH THE RIGHT MOUSE KEY
ON THE Y-AXIS WINDOW**

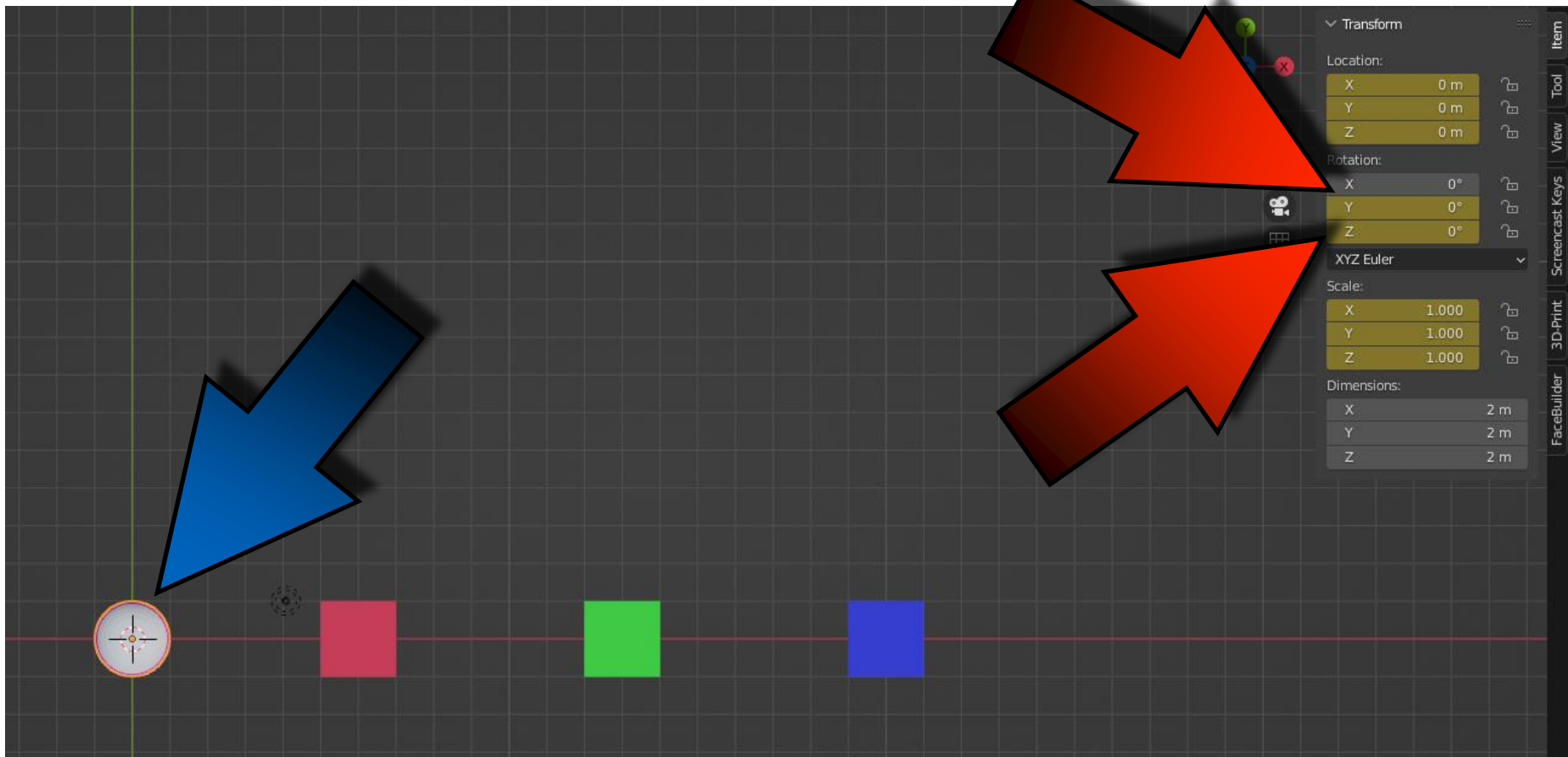


CHOOSE

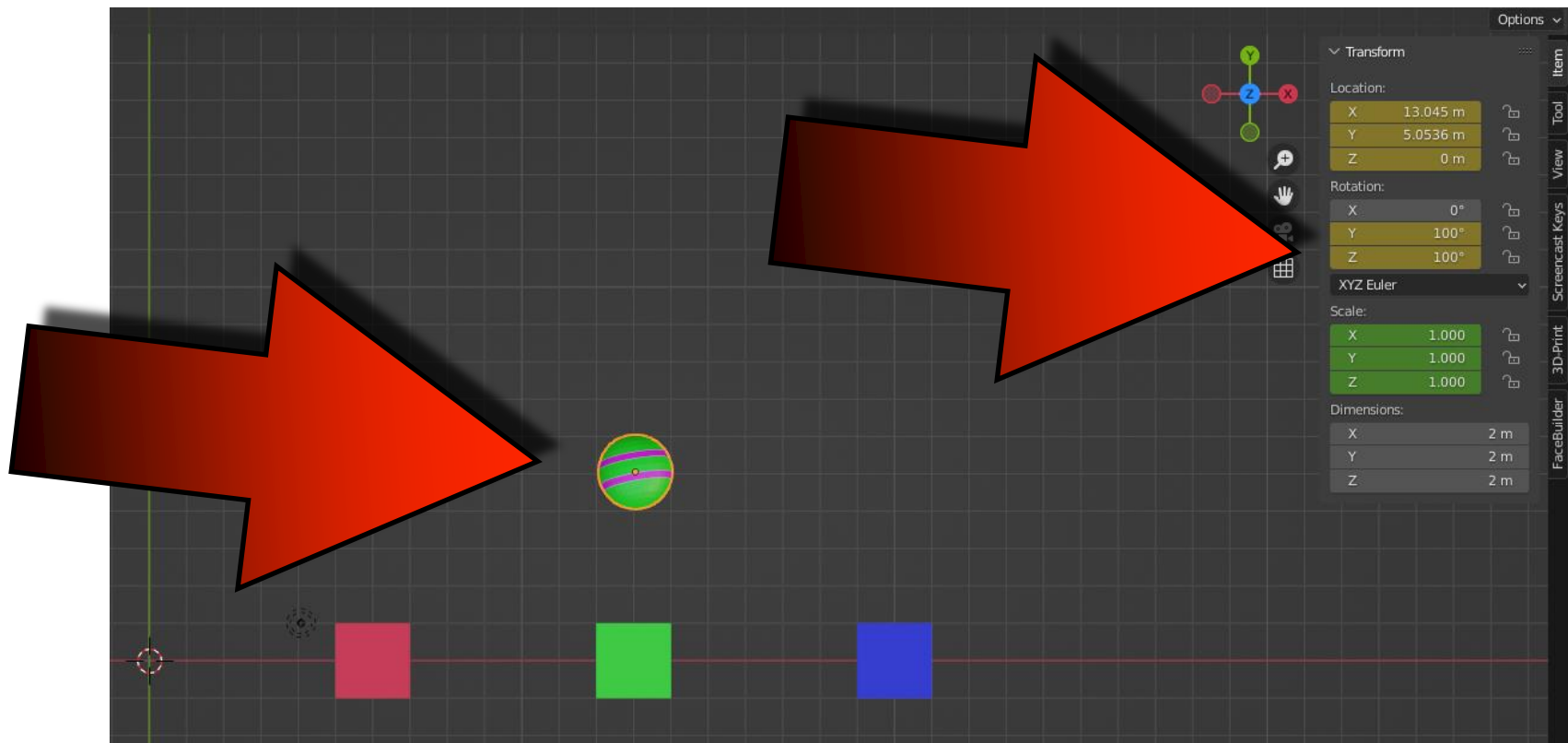
A INSERT SINGLE KEYFRAME



FOR **FIRST FRAME** SAVE **ZERO** **POSITION FOR Y AND Z AXIS**



SAVE THE NEXT ROTATION ITEMS YOURSELF



SEE ANIMATION

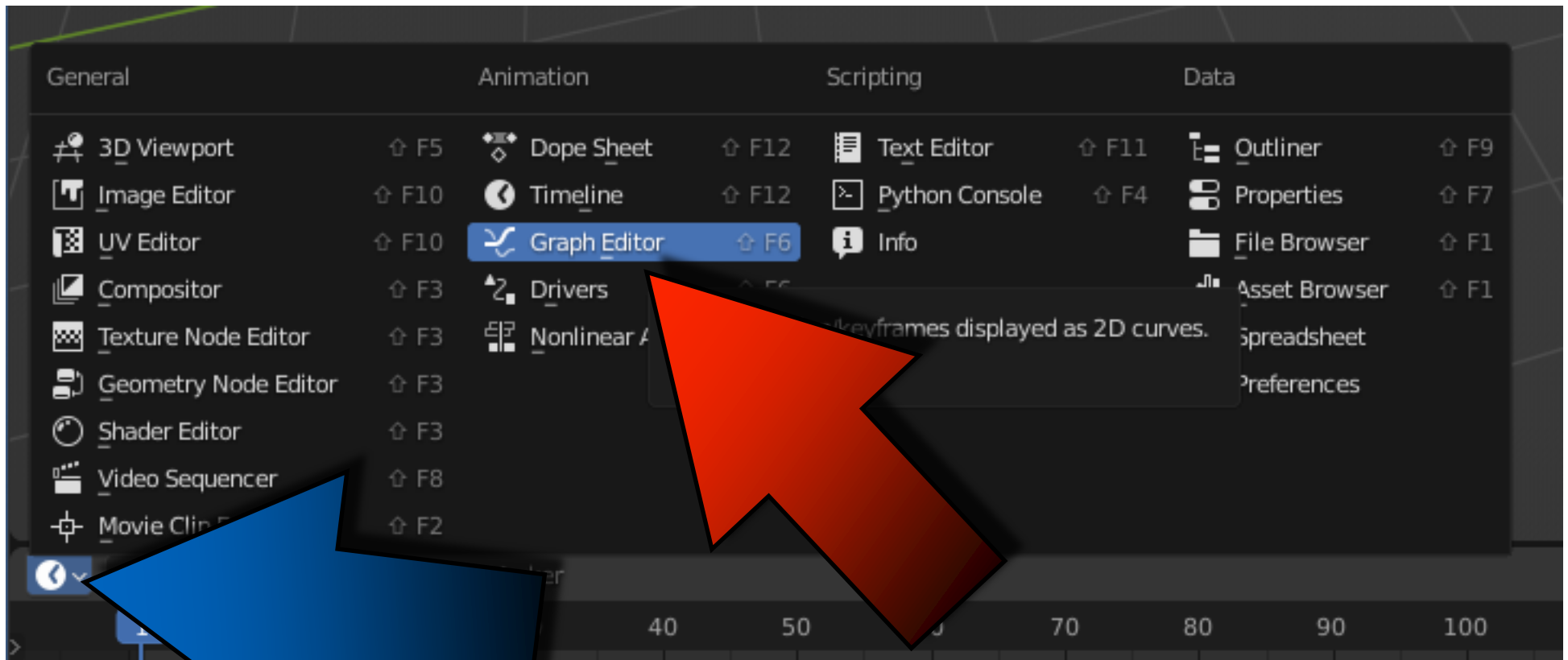
WE WILL CORRECT IT IN A MOMENT



<https://youtu.be/kATu3HBKnNs>

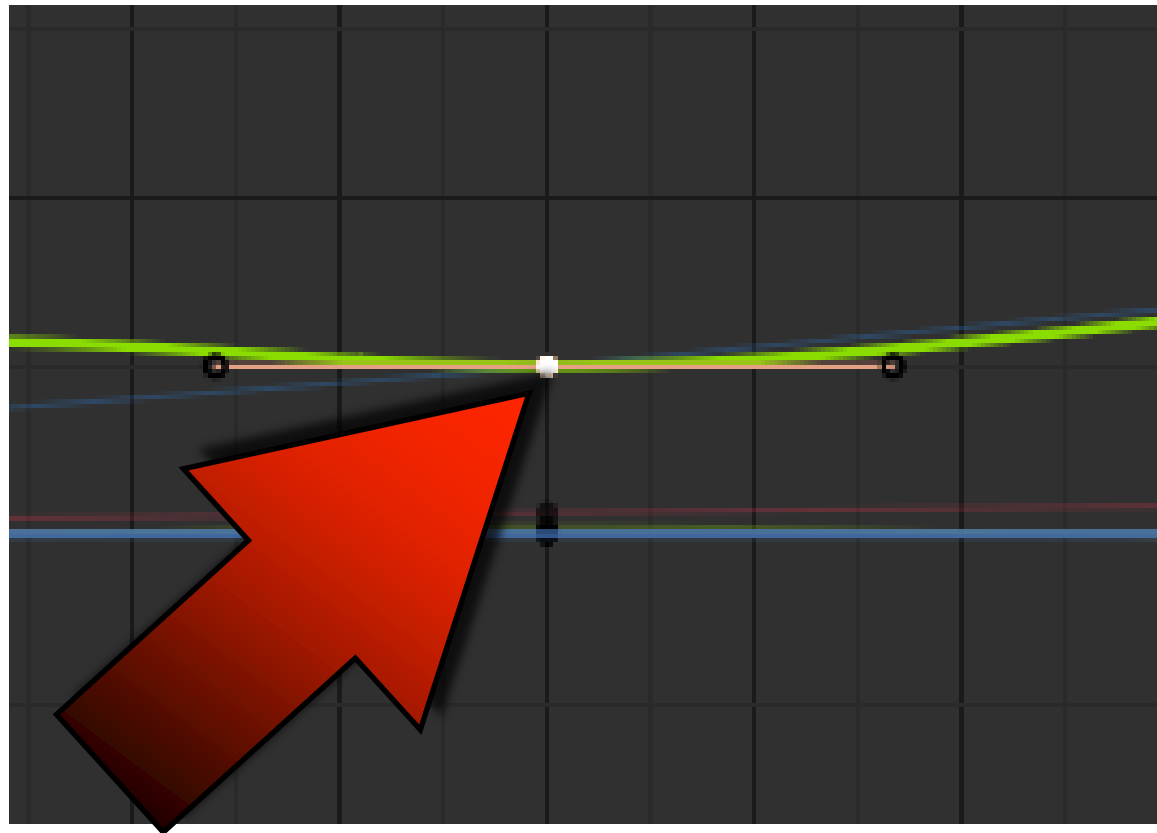
POWER OF AR AND VR

CHANGE TIMELINE TO GRAPH EDITOR

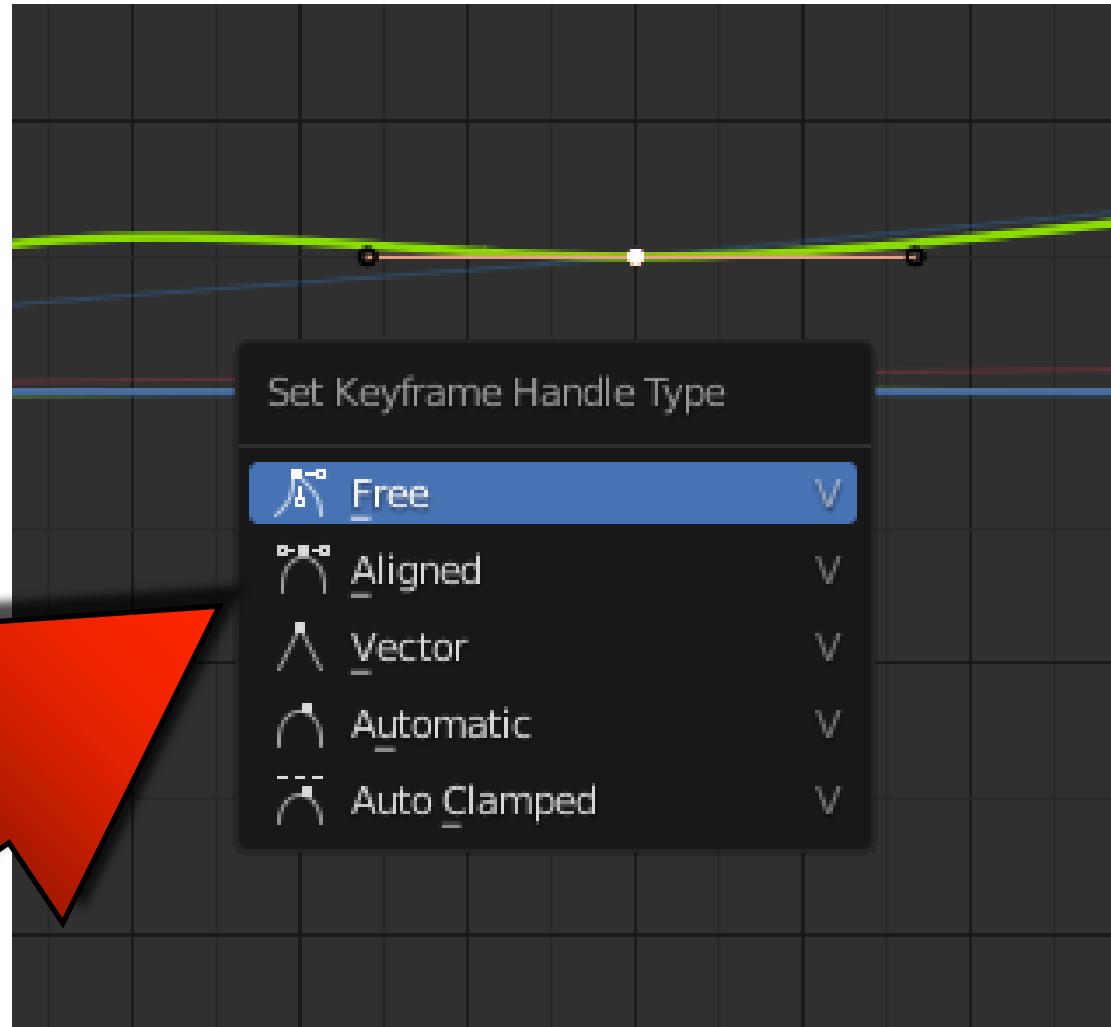


MARK THE KNOT

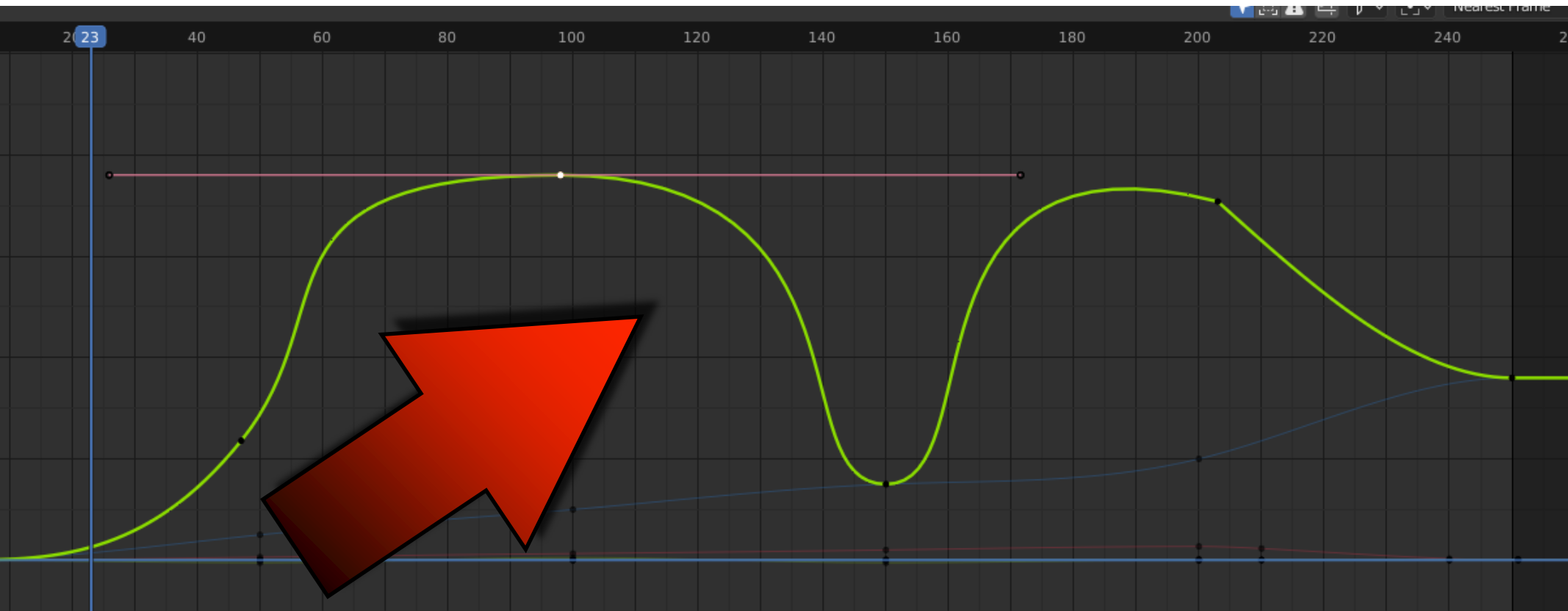
WE CHANGE THE SAME AS CURVES



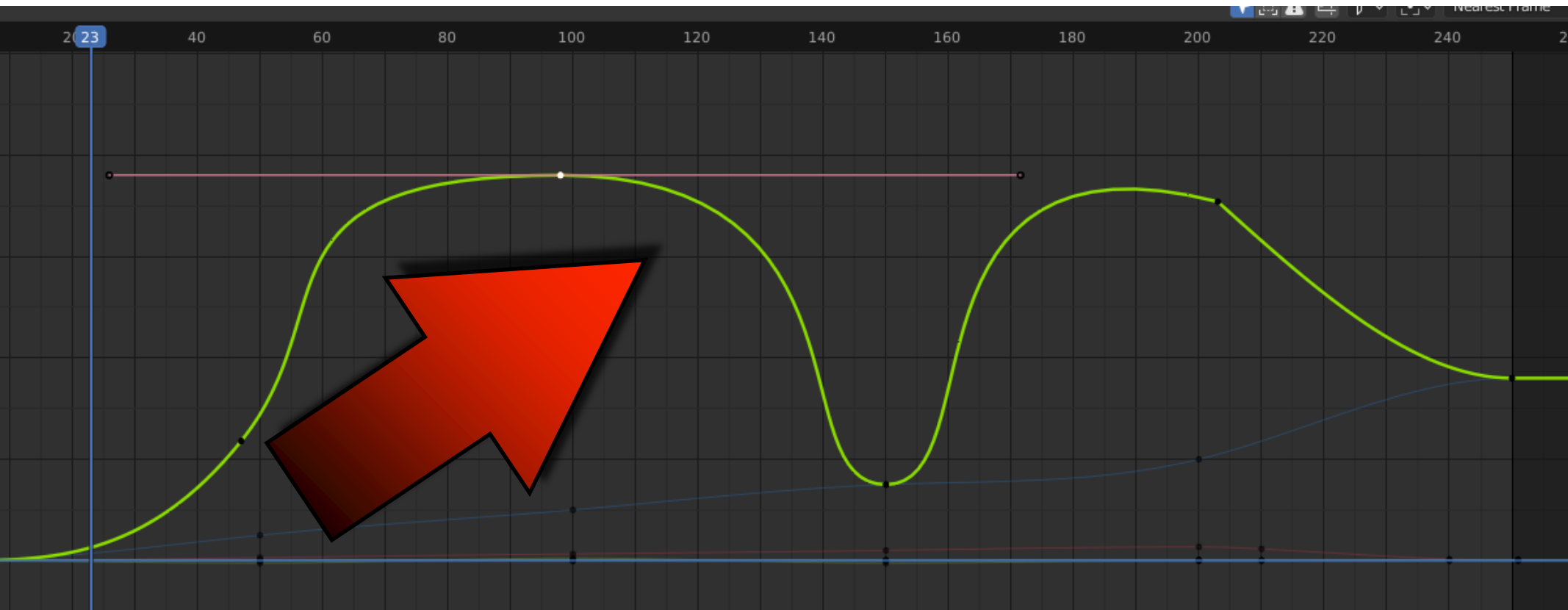
WITH **THE V KEY** YOU CAN CHANGE **THE KEYFRAME HANDLE TYPE**



EXPERIMENT WITH SETTINGS



TRY TO GET THE MOST NATURAL ROTATION AS POSSIBLE

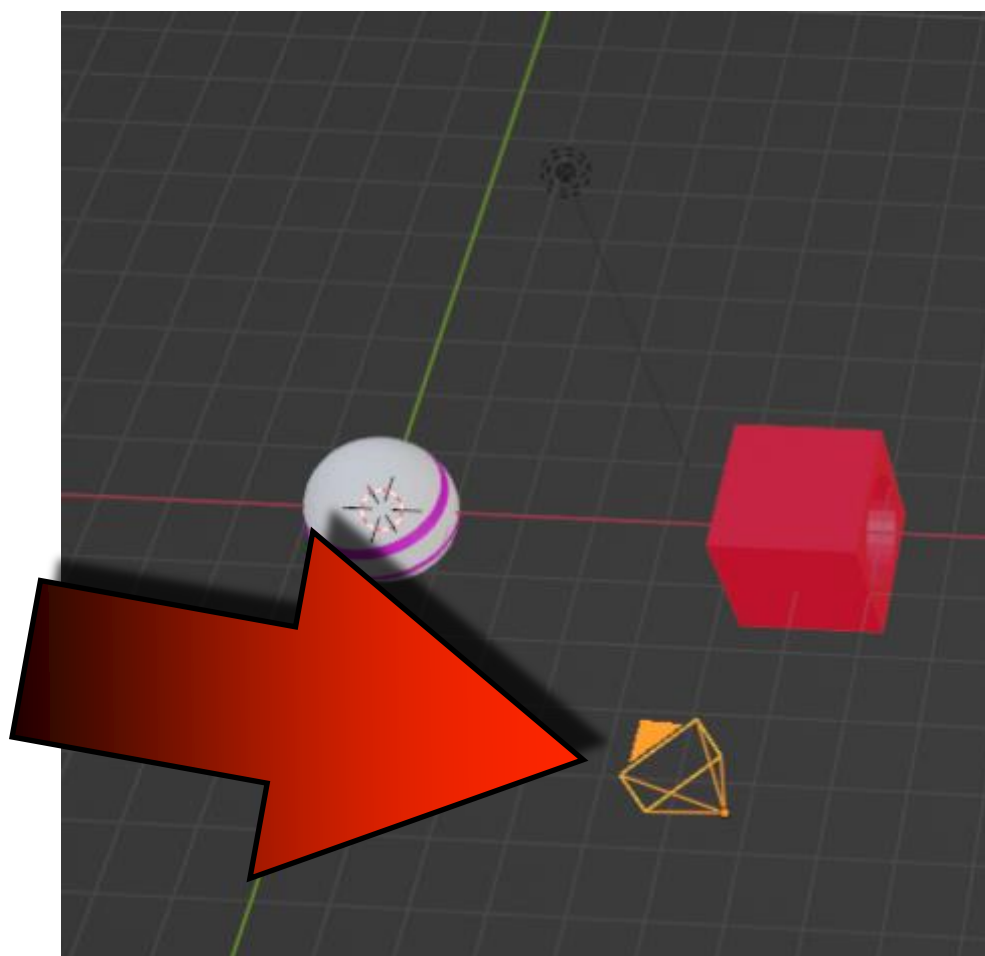


**YOU CAN DO IT WHILE
ANIMATION IS STARTED**

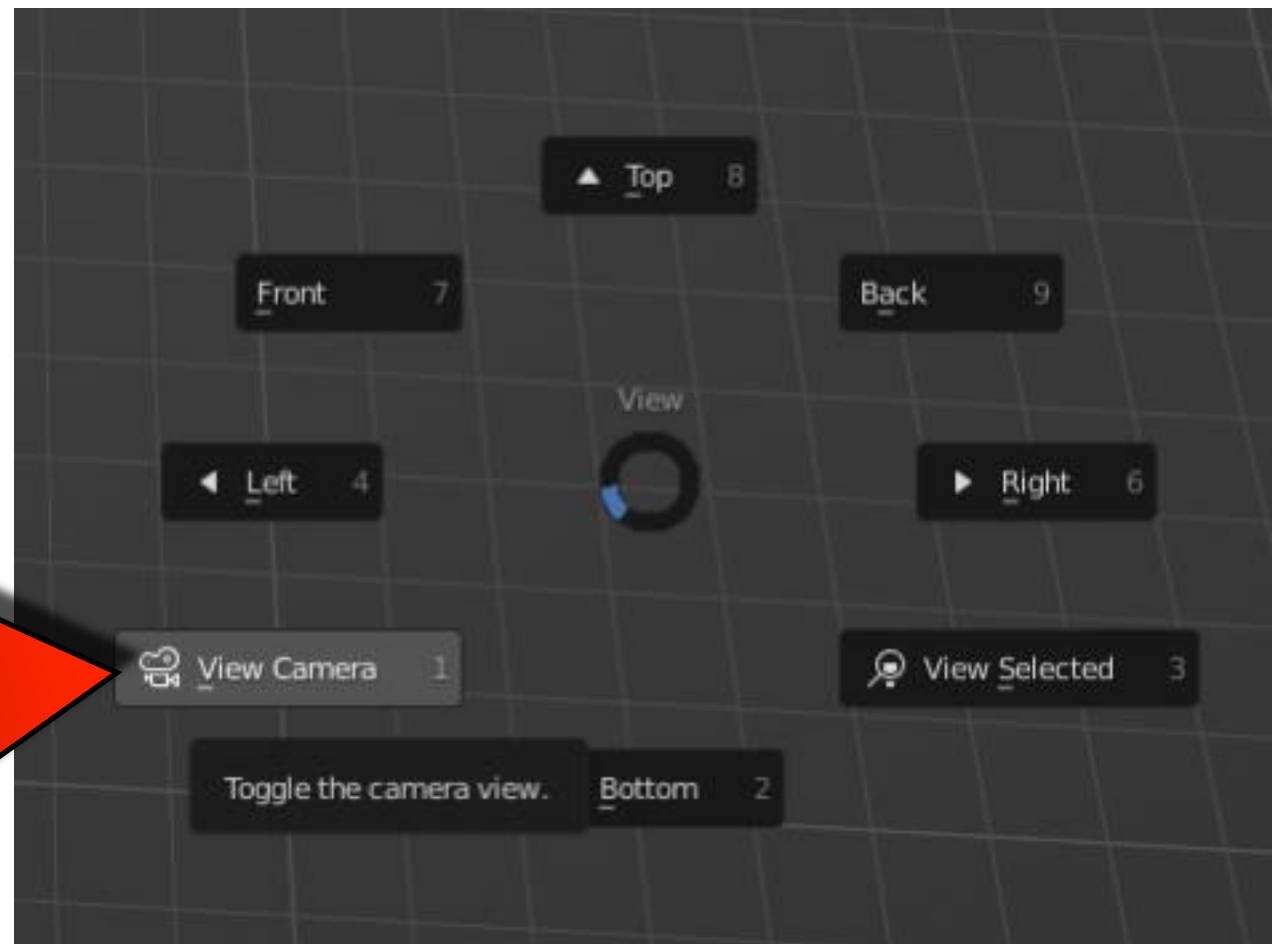


<https://youtu.be/563SQCbS0s>

LET'S SEE THE VIEW FROM **THE CAMERA**



LET'S CHOOSE A VIEW FROM THE CAMERA



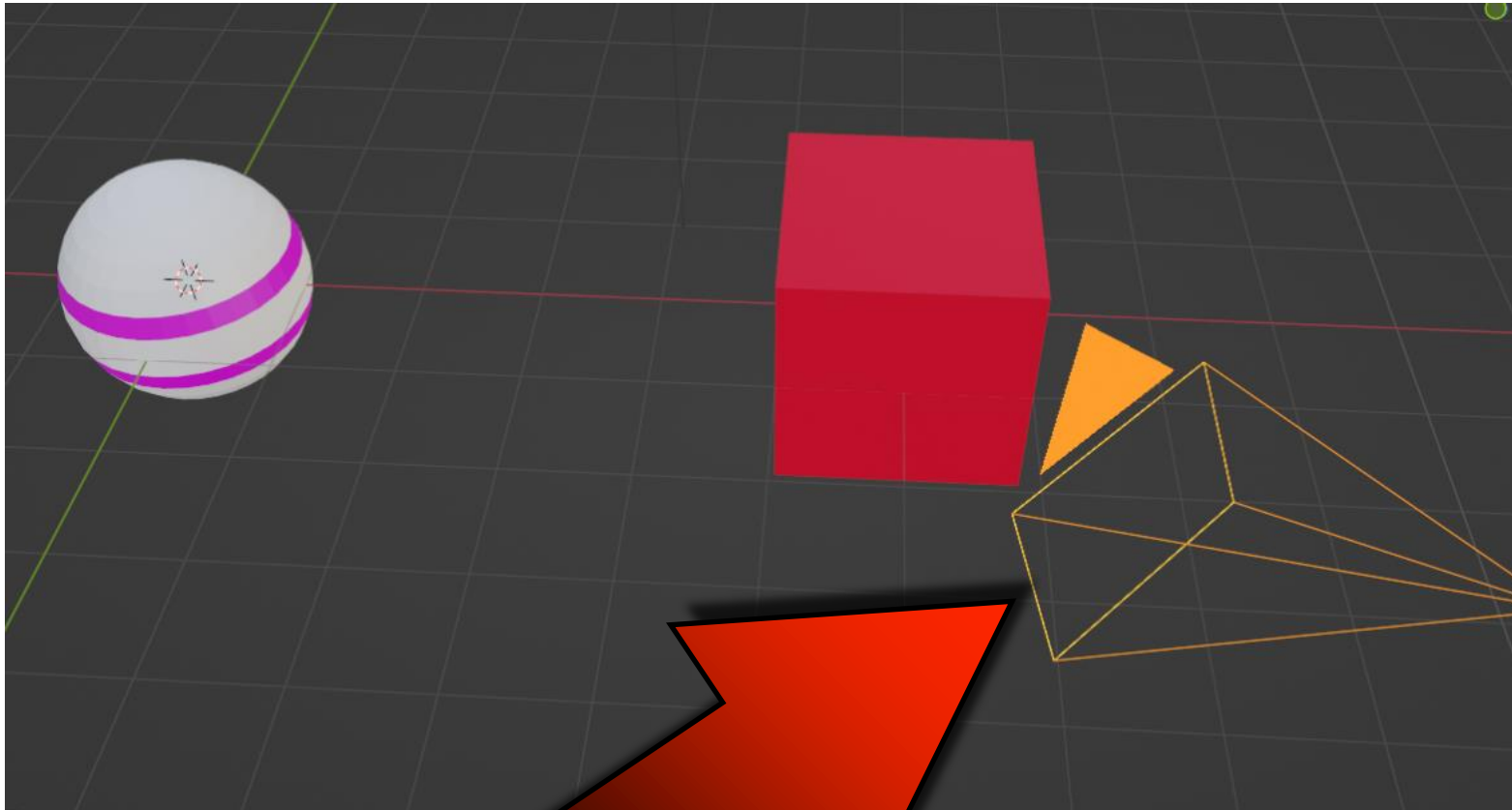
START ANIMATION

THE CAMERA DOES NOT FOLLOW THE SPHERE



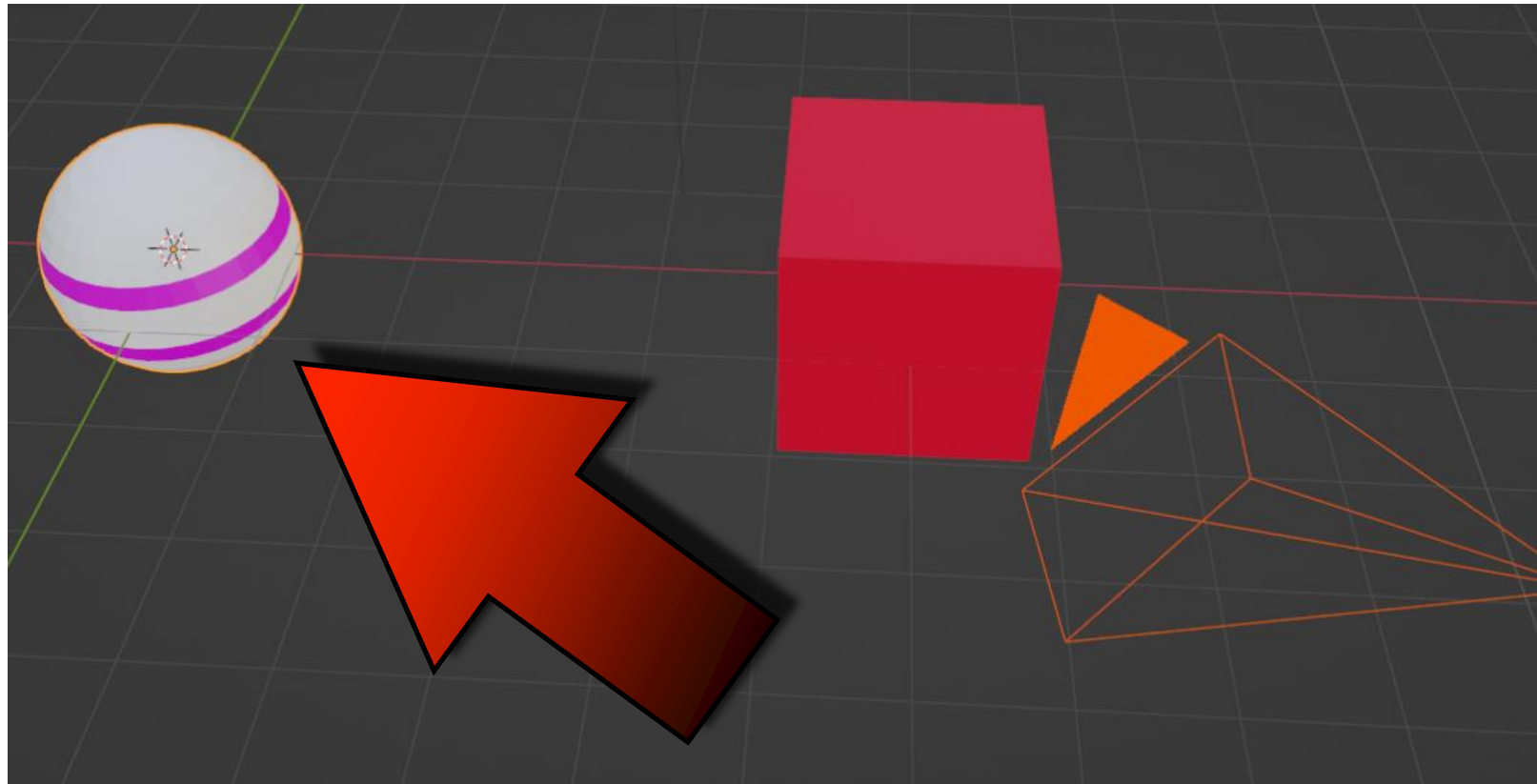
<https://youtu.be/6DBfEklrLFM>

SELECT CAMERA



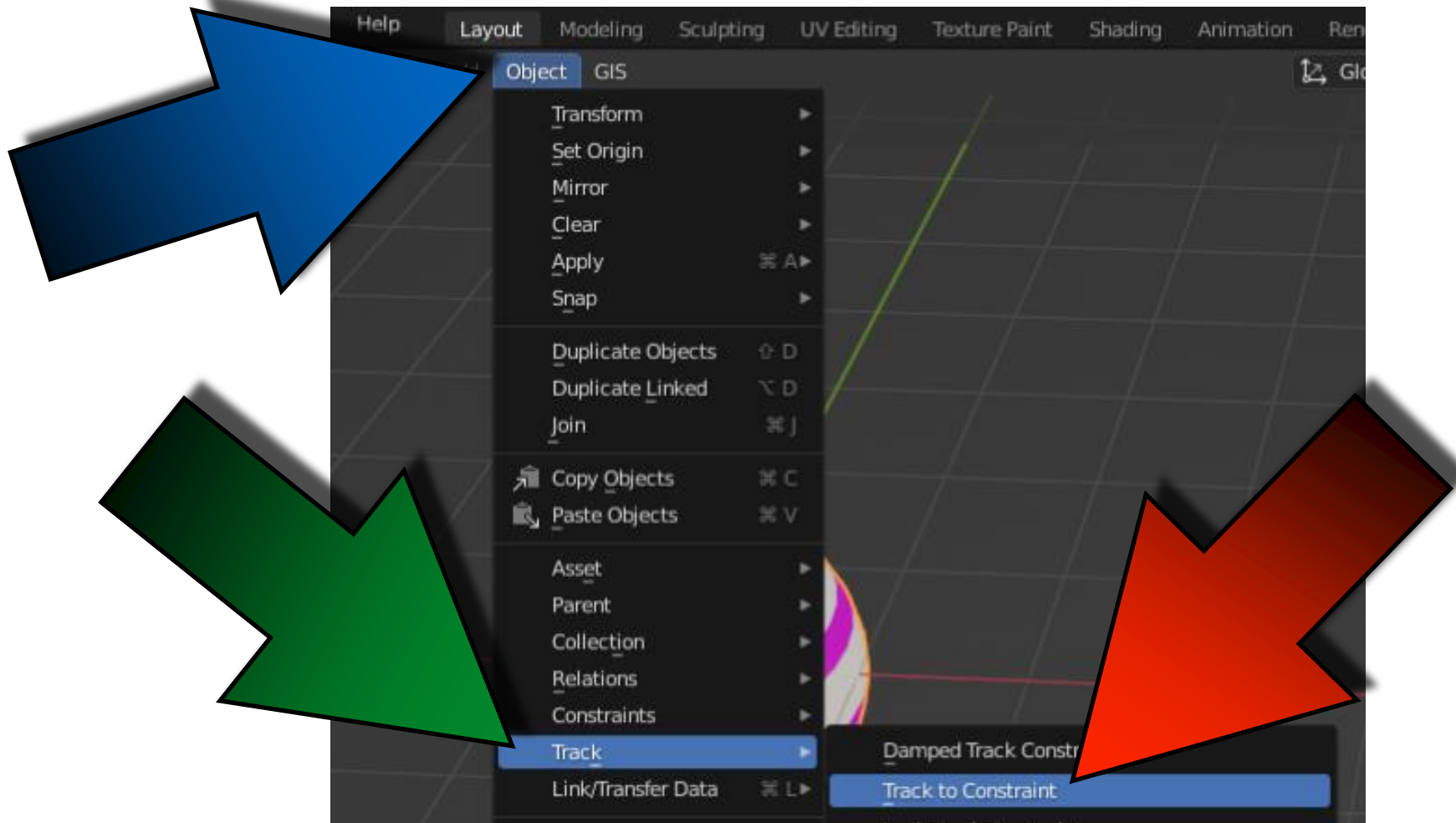
POWER OF AR AND VR

HOLDING THE SHIFT KEY SELECT SPHERE



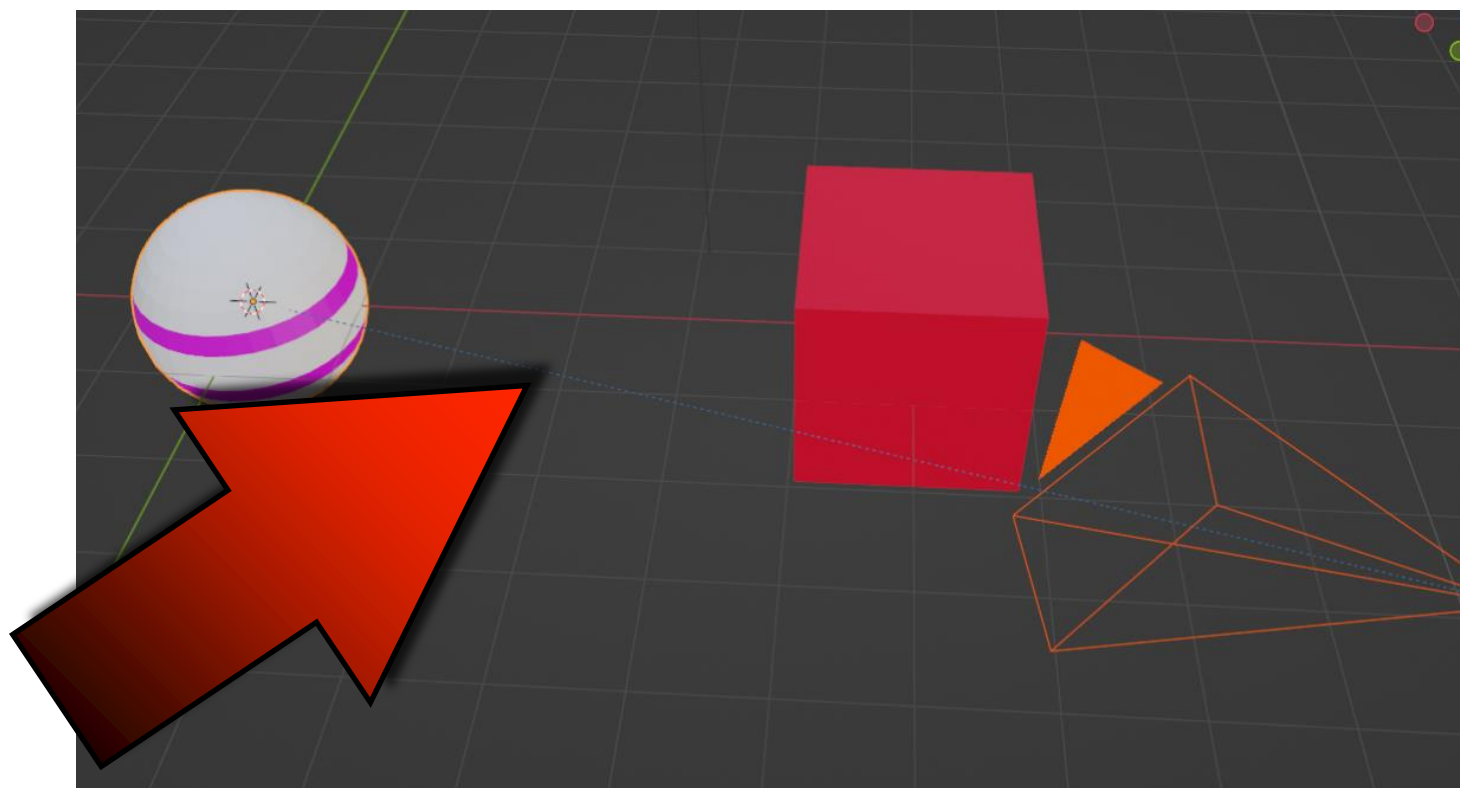
CHOOSE

OBJECT/TRACK/TRACK TO CONSTRAINT

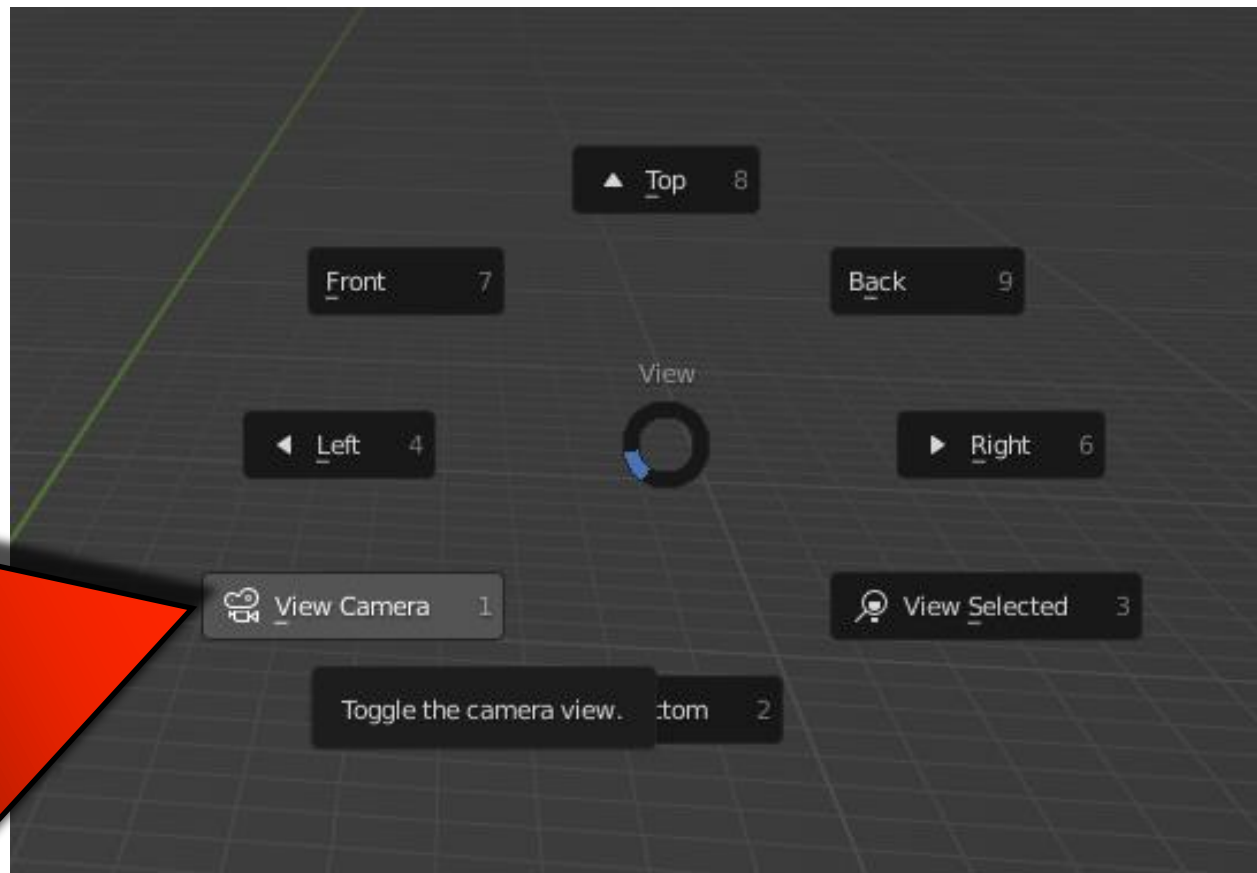


ANIMATION BASICS KEYFRAMES - SLALOM

YOU WILL SEE **A LINE** CONNECTING THE CAMERA WITH SPHERE



GO TO VIEW FROM CAMERA

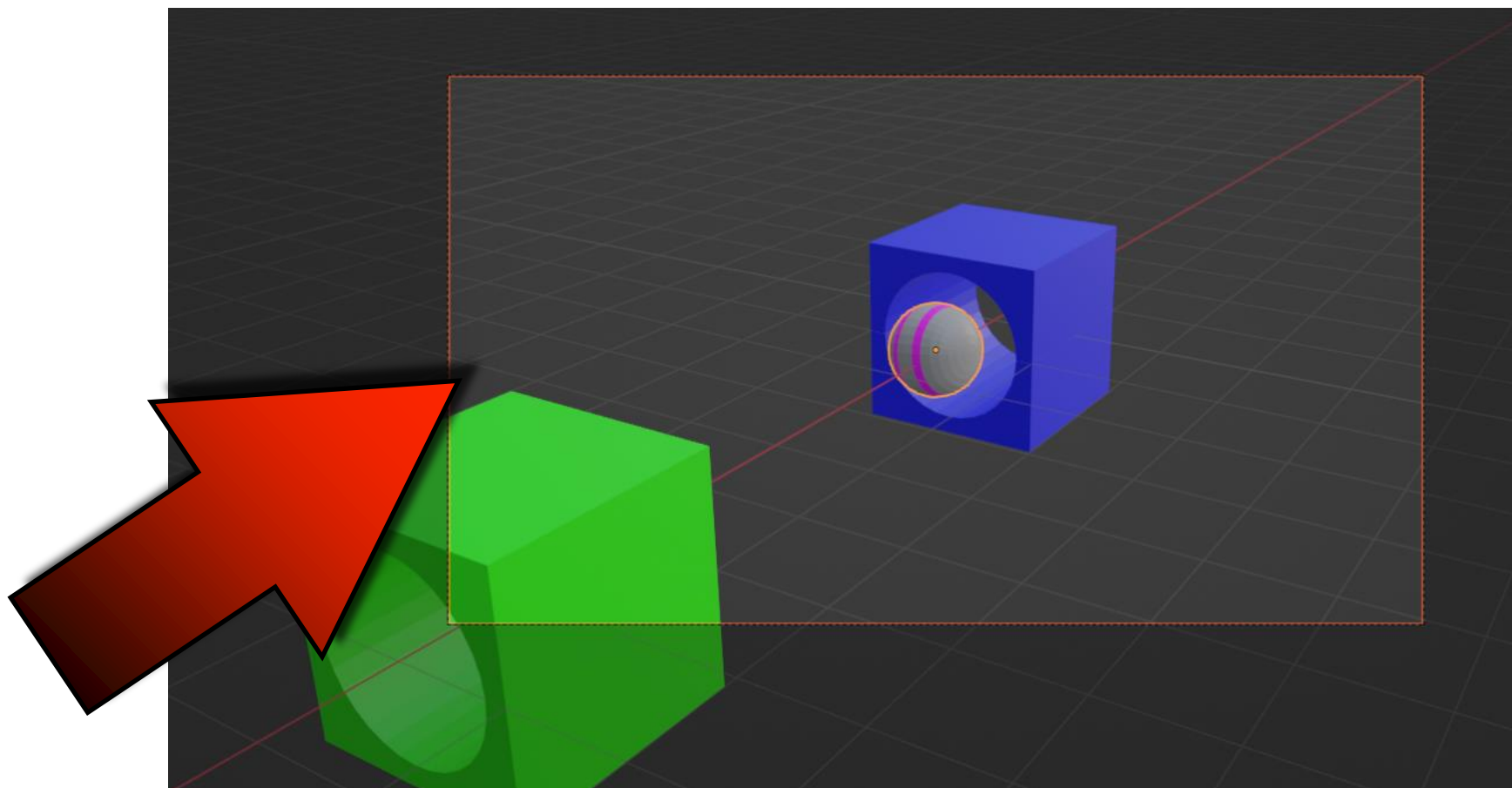


THE CAMERA WILL FOLLOW SPHERE

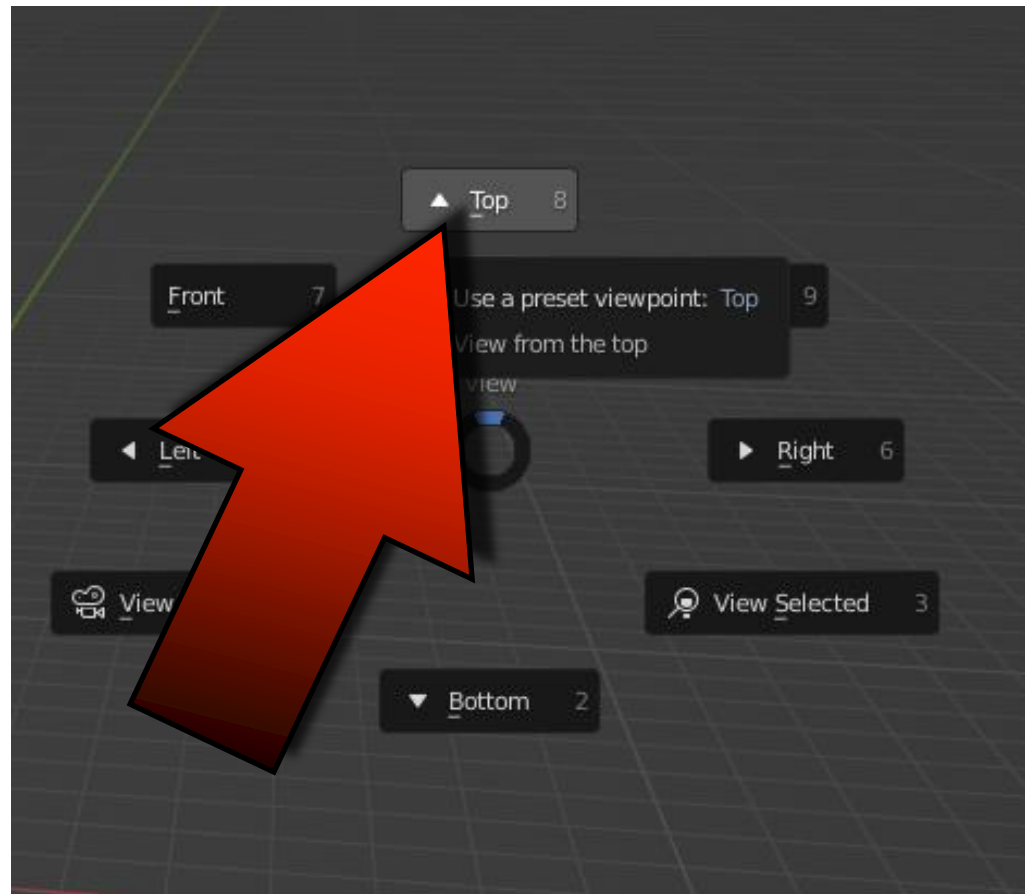
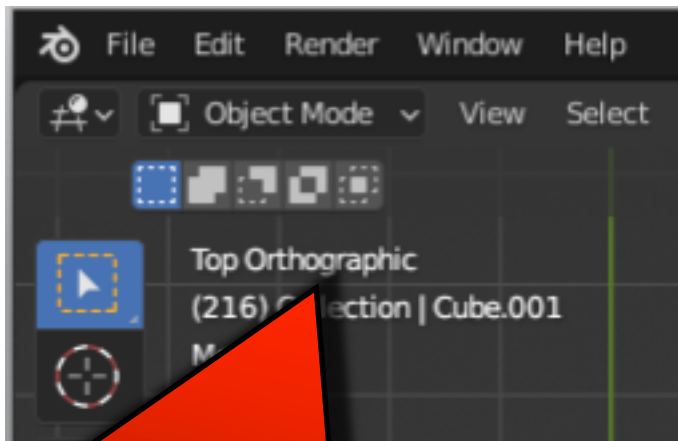


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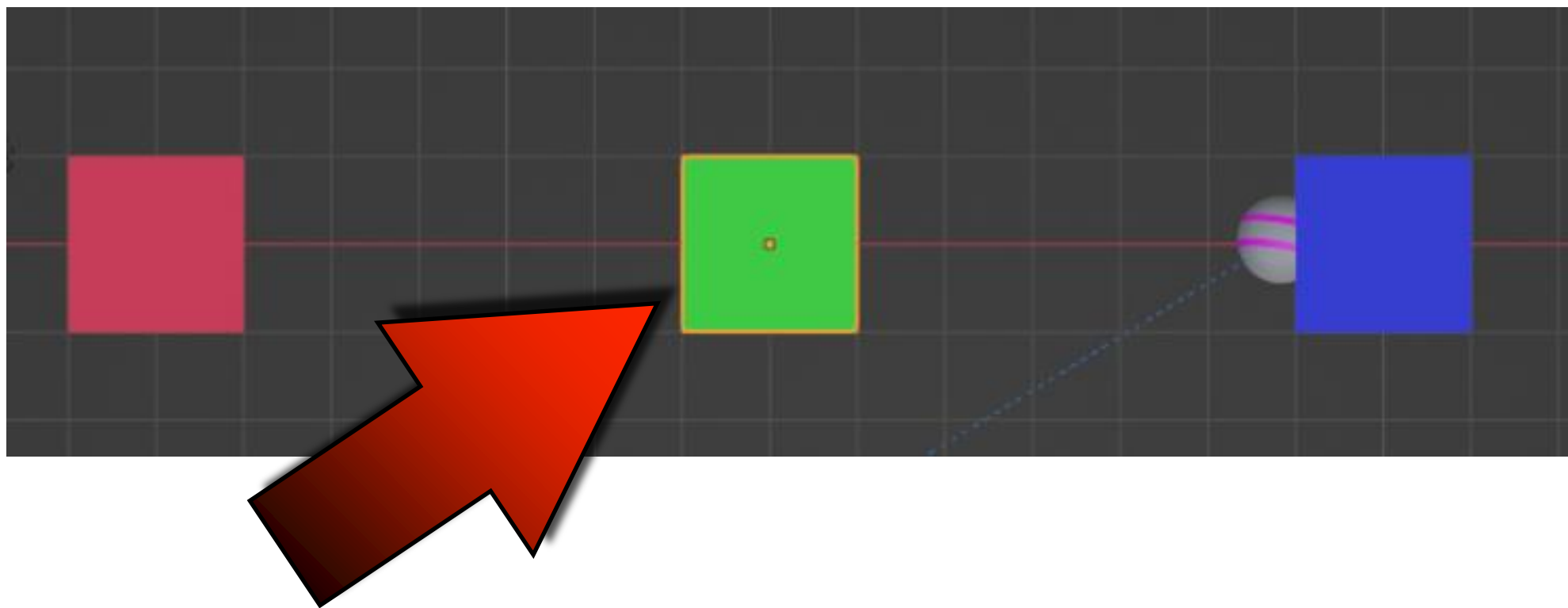
WE WILL KEEP THE CAMERA IN MOTION



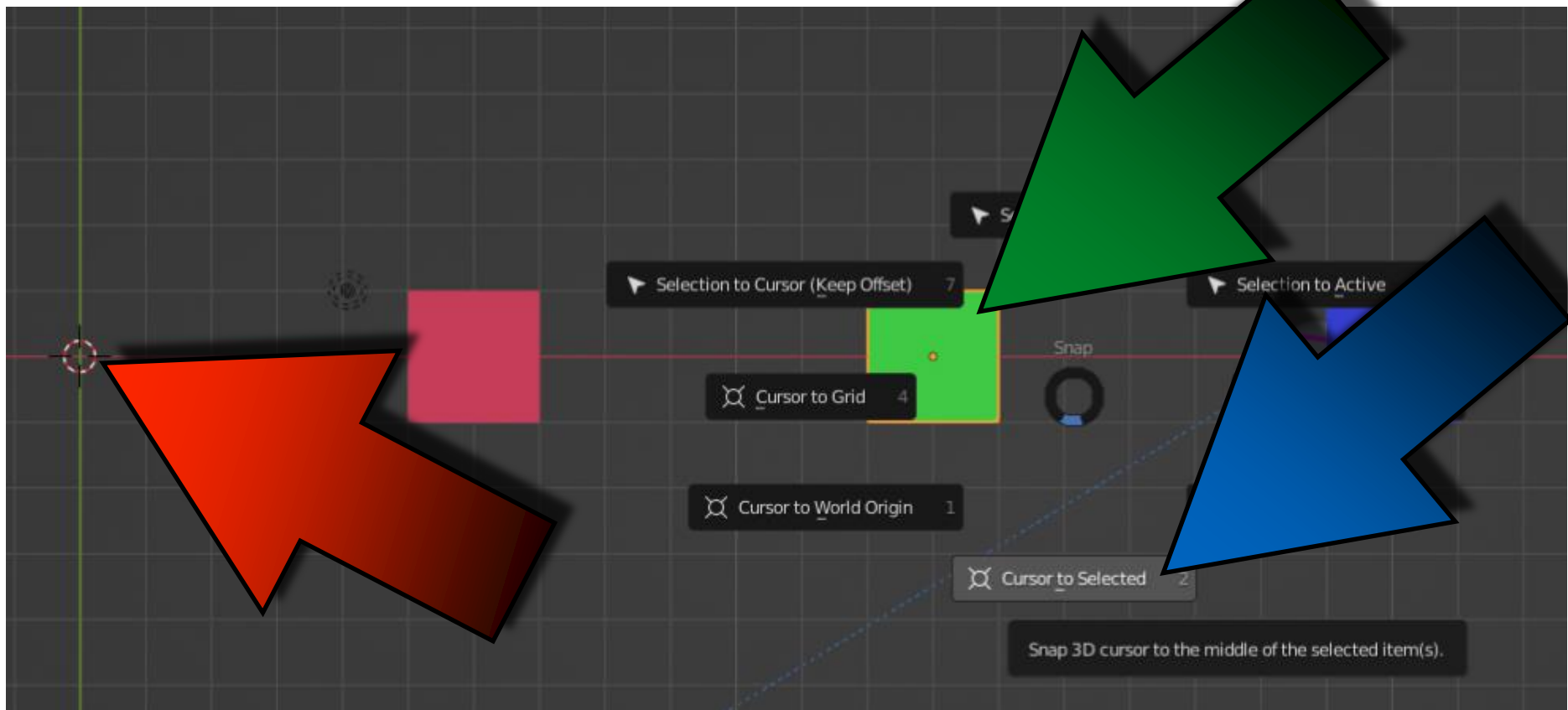
GO TO **TOP ORTHOGRAPHIC**



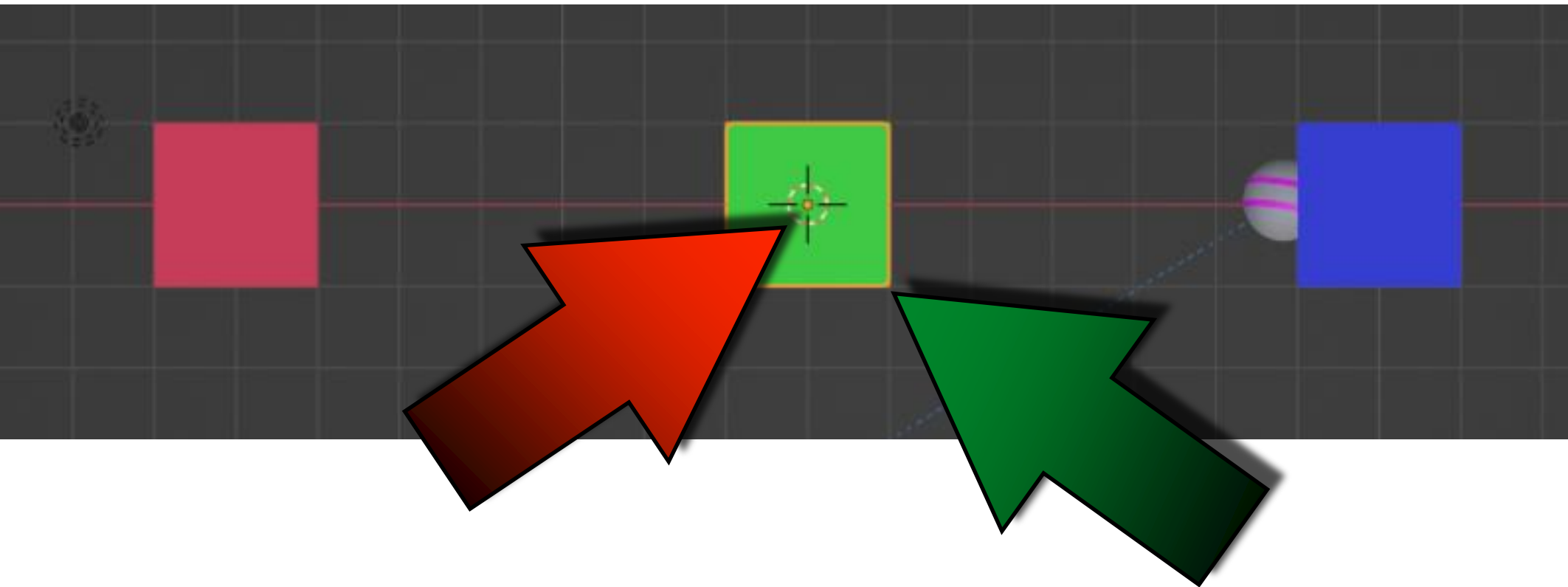
SELECT THE MIDDLE CUBE



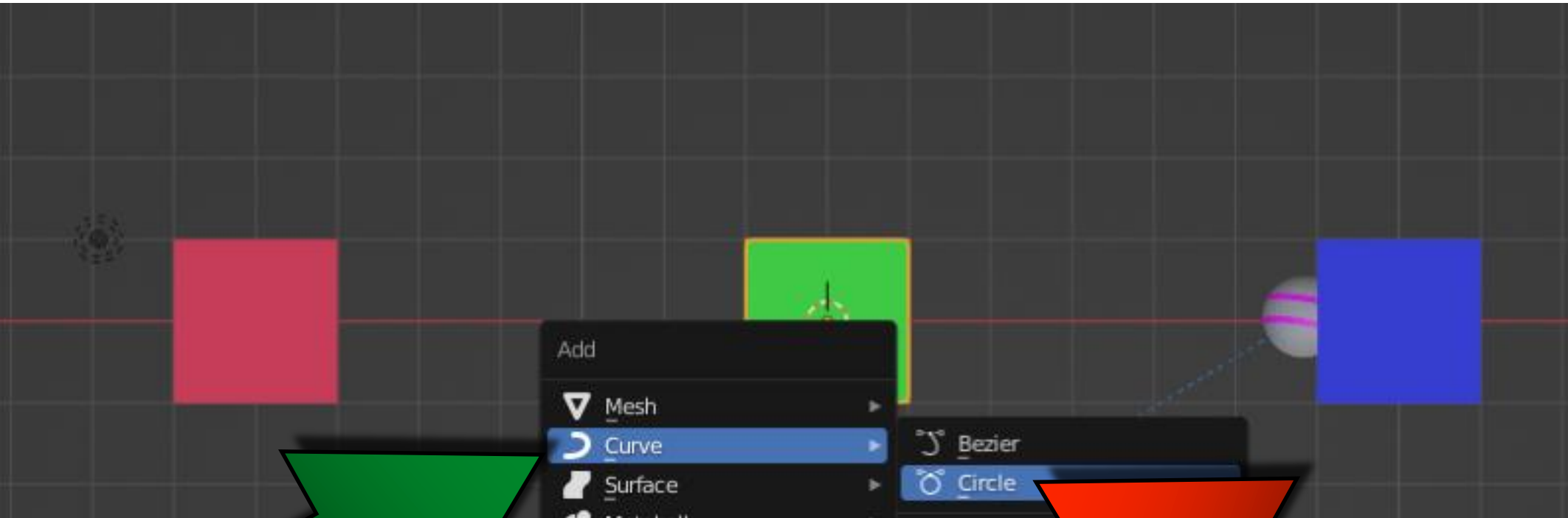
PRESS **SHIFT + S** AND **CHOOSE** **CURSOR TO SELECTED**



THE 3D CURSOR WILL BE CENTER OF THE SELECTED OBJECT

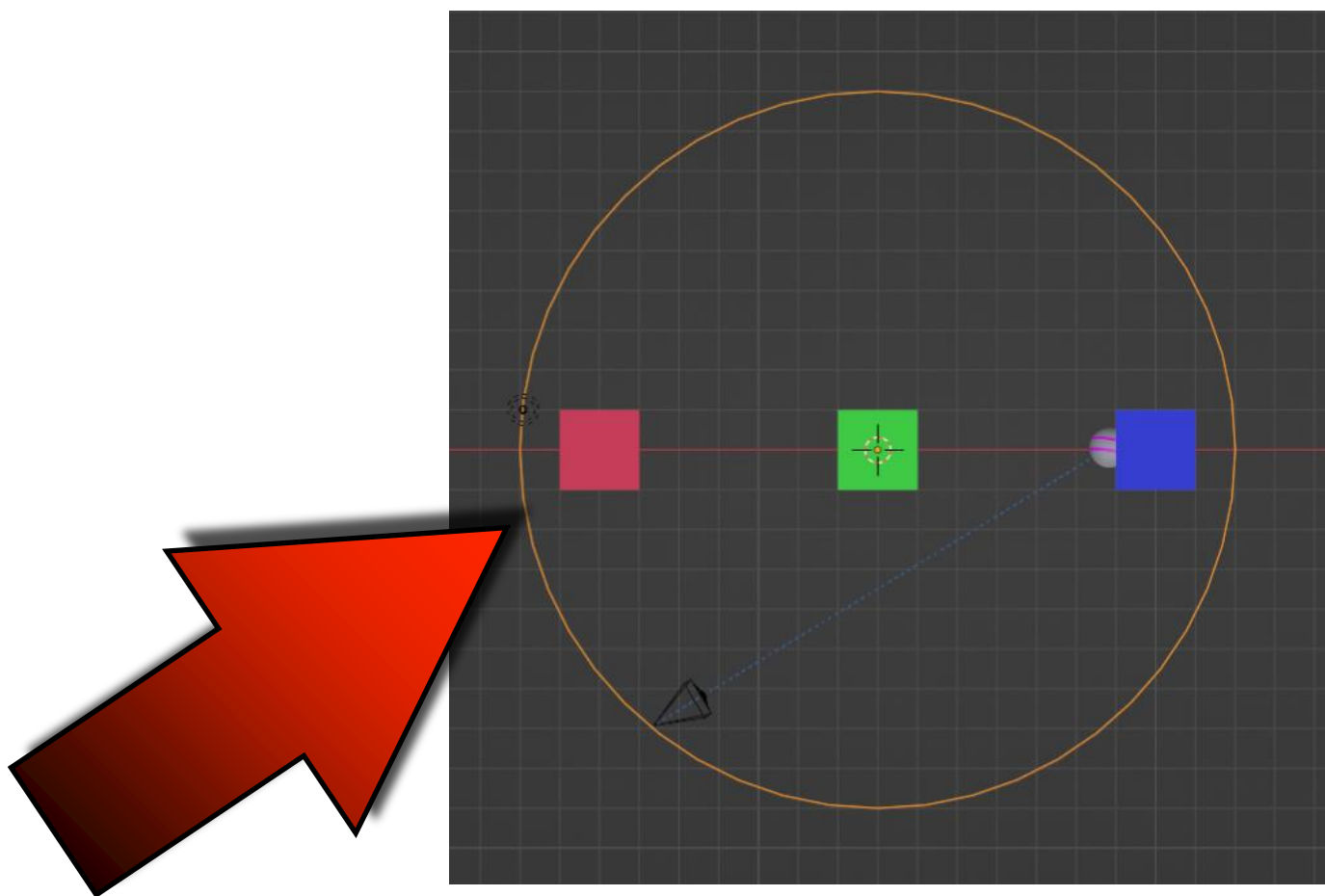


PRESS **SHIFT + A** AND ADD WITH **CIRCLE CURVE**

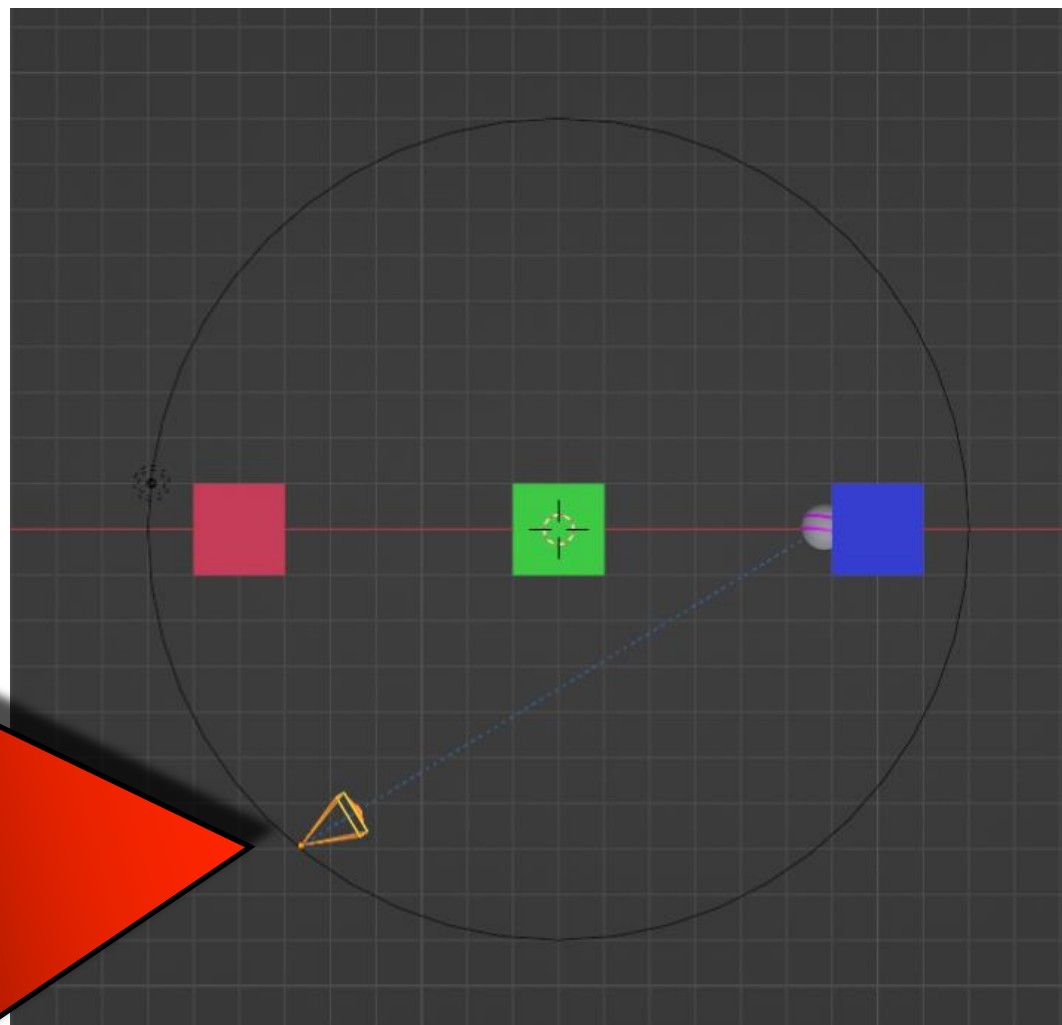


INCREASE IT

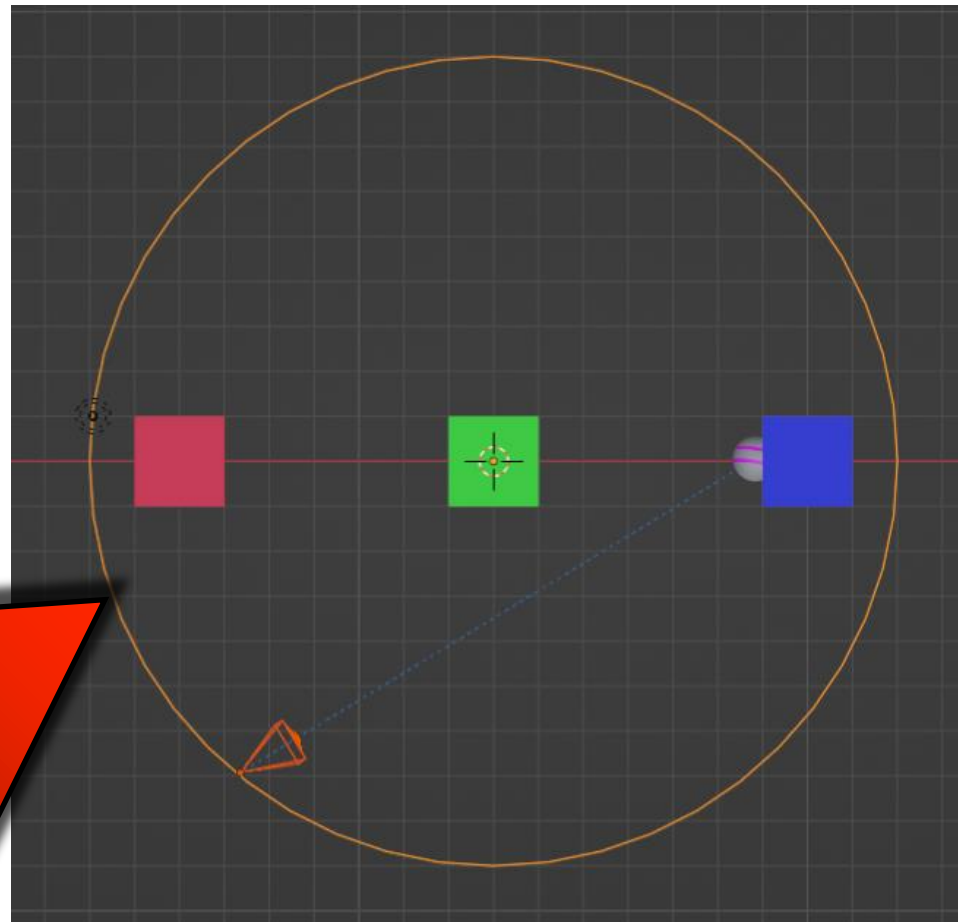
LIKE ON THE SCREEN



SELECT CAMERA

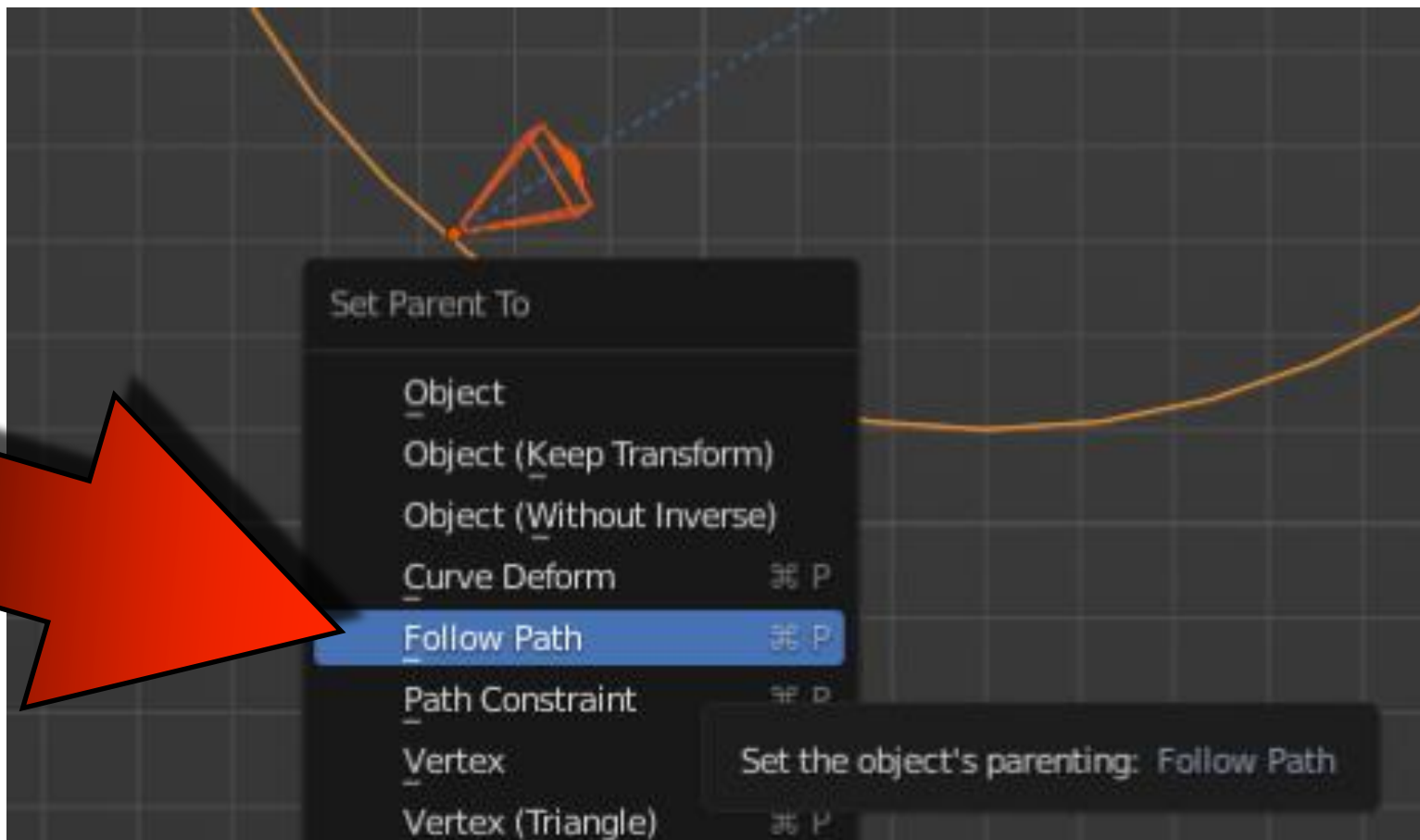


HOLDING **THE SHIFT KEY** SELECT WITH **CURVE**



PRESS **CTRL + P**

AND CHOOSE **FOLLOW PATH**

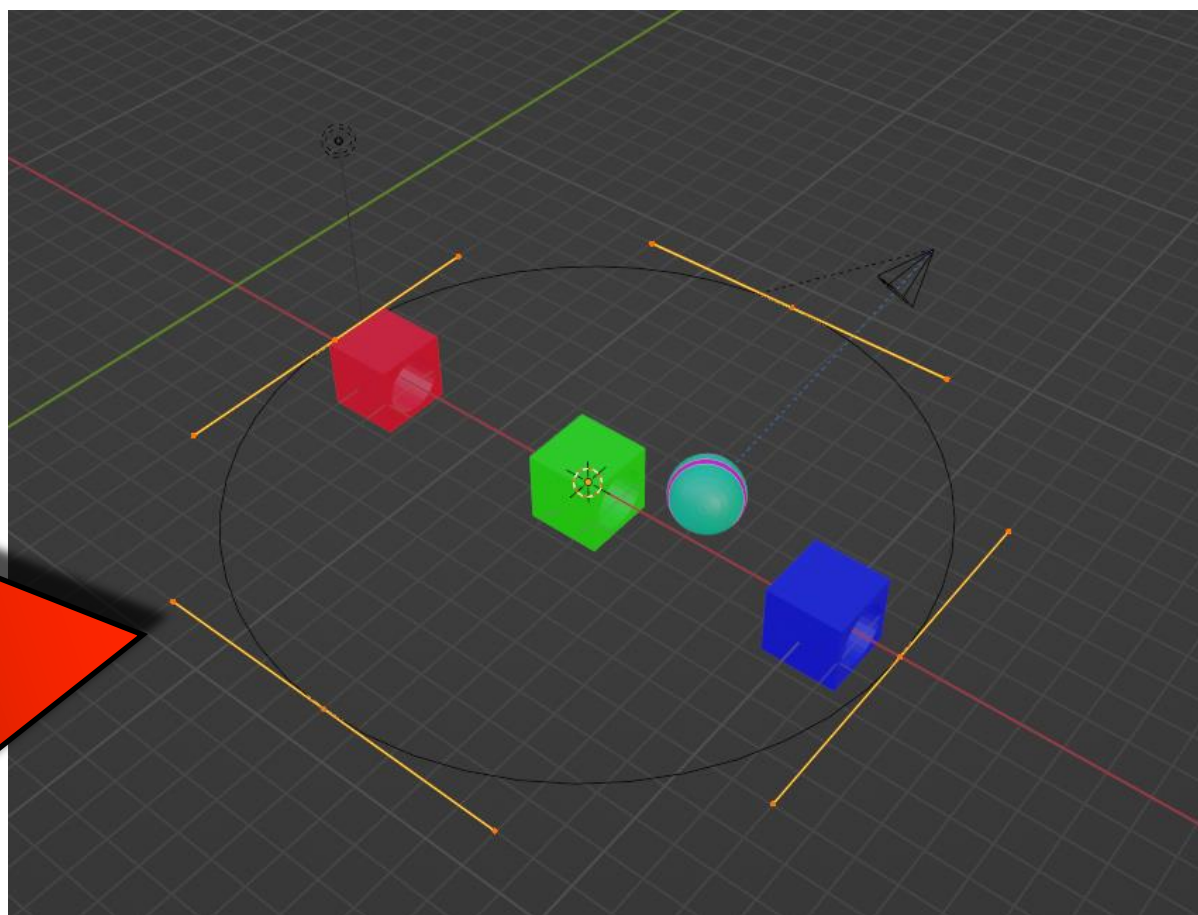


START ANIMATION

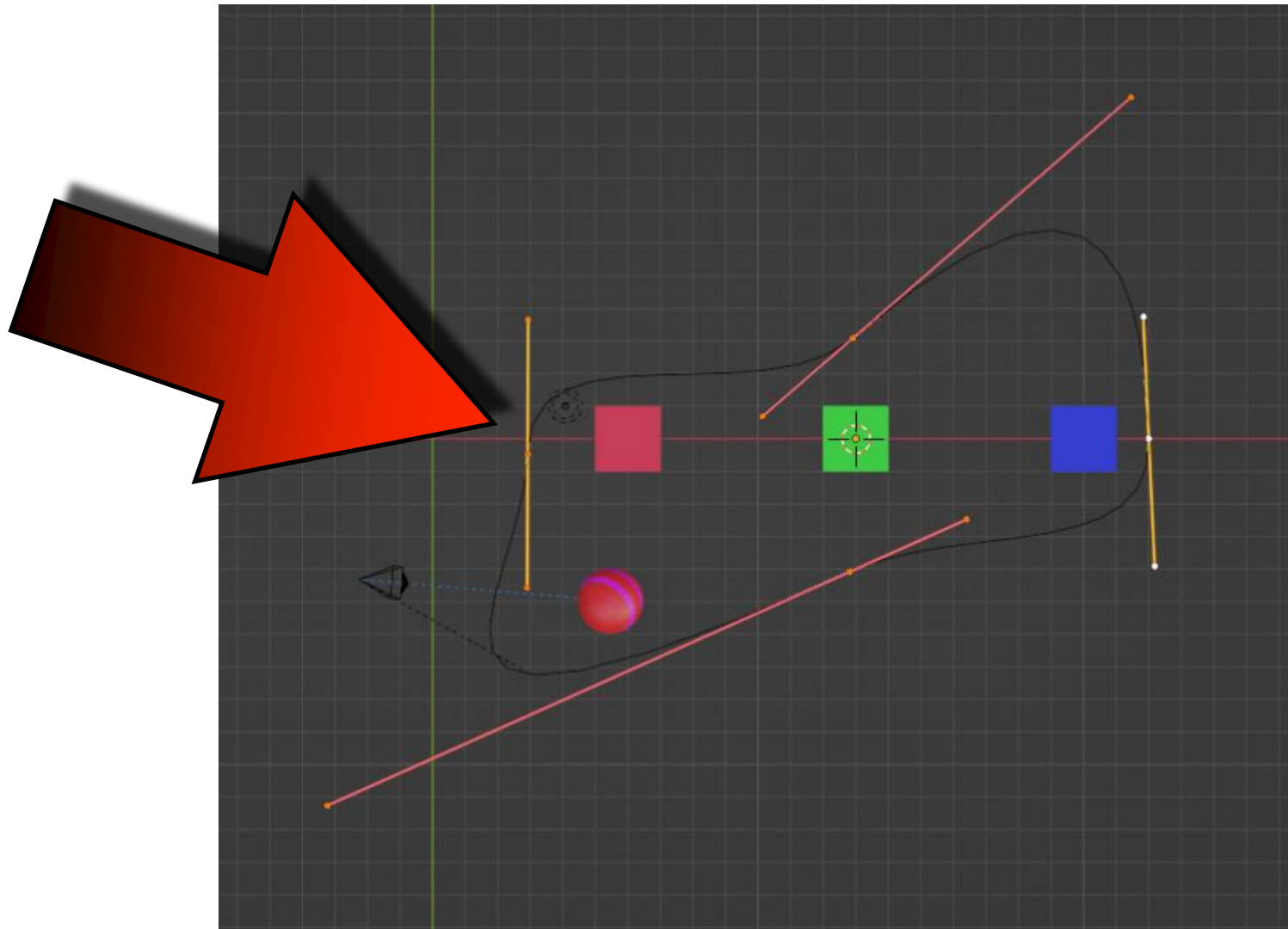


<https://youtu.be/tZbTloKJLGg>

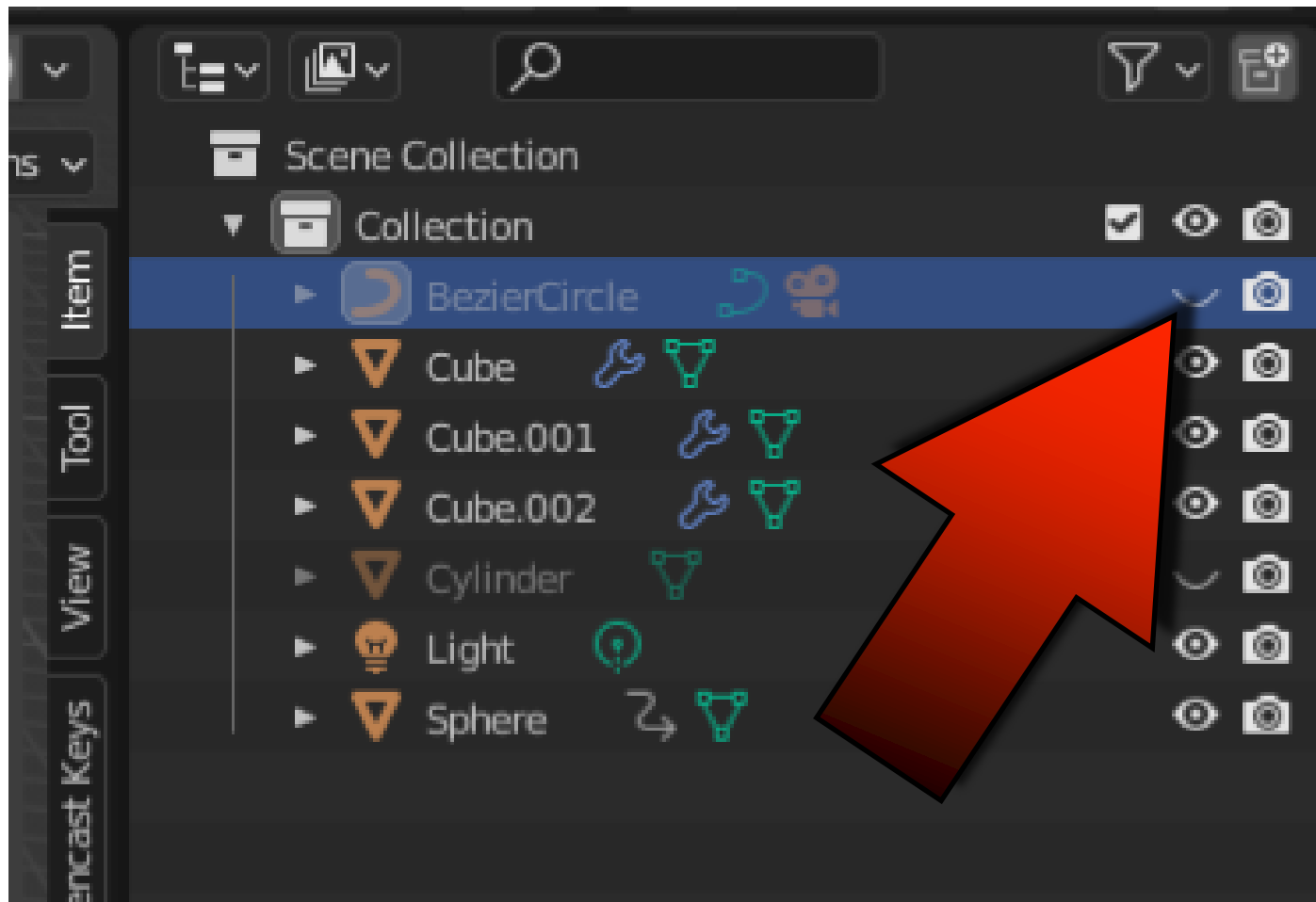
MARK WITH THE CURVE AND ENTER ITS **EDIT MODE**



CHANGE CURVE PARAMETERS



WITH **THE H KEY** YOU CAN **HIDE THE CURVE**



YOU CAN CHANGE **CURVE PARAMETERS** **DURING ANIMATION RUN**



<https://youtu.be/3oN9ze51Trw>

**THIS ANIMATION WAS MADE WITH
KEYFRAMES**



<https://youtu.be/lao6WV6YMKU>

POWER OF AR AND VR

**THANK YOU FOR YOUR
ATTENTION**



**Co-funded by
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JACEK KAWAŁEK