

T I N  
K E R  
C A D

MOM WOW

Project for  
Mother's Day

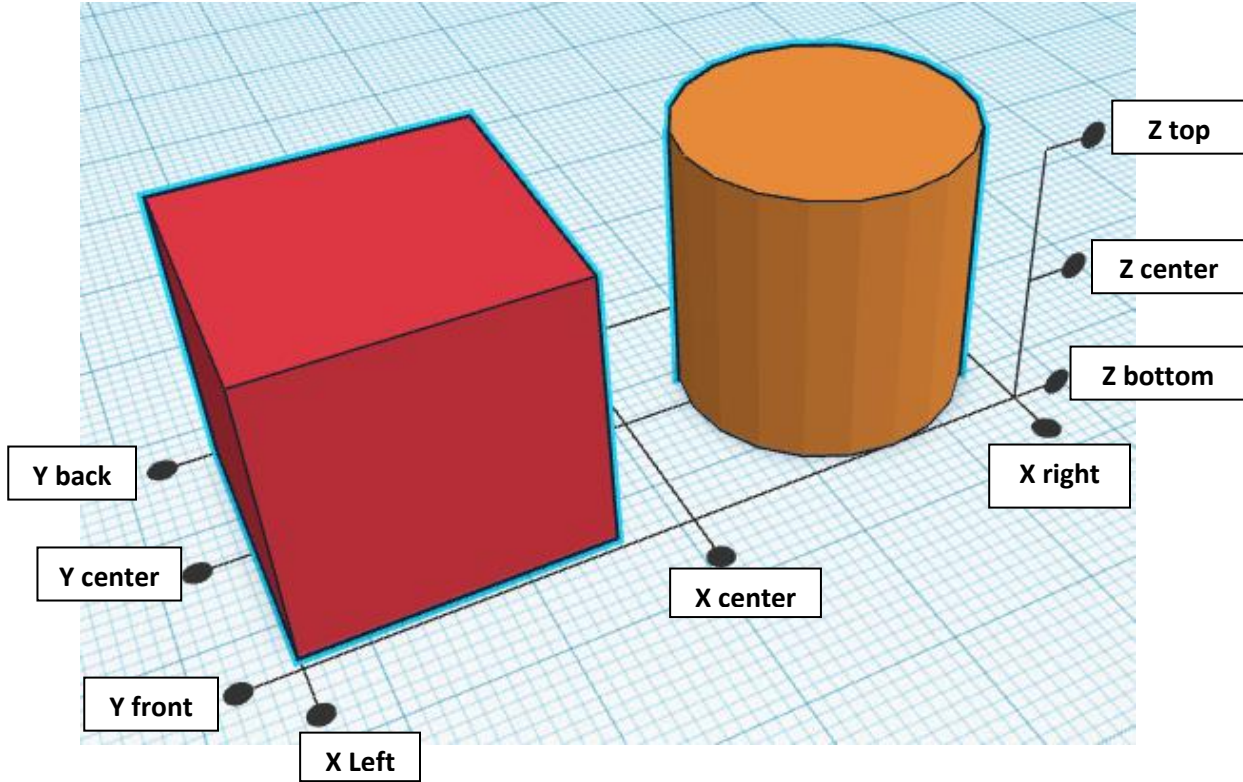


Reference to Aligning, Flip direction, Move direction, and Rotate direction.

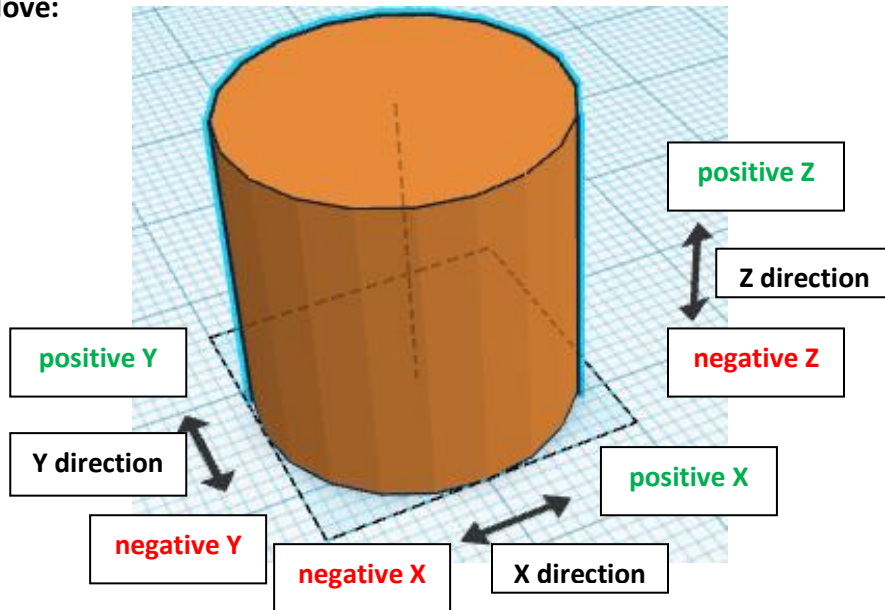
Always be in the "home view"  
when doing any of these!!!



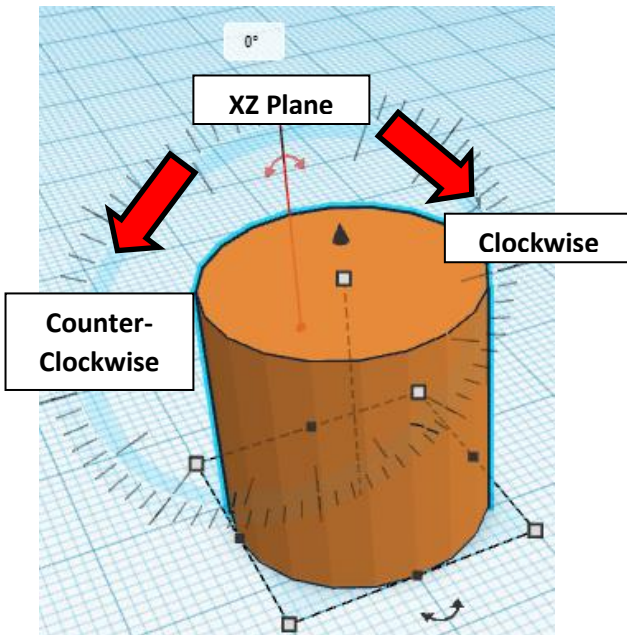
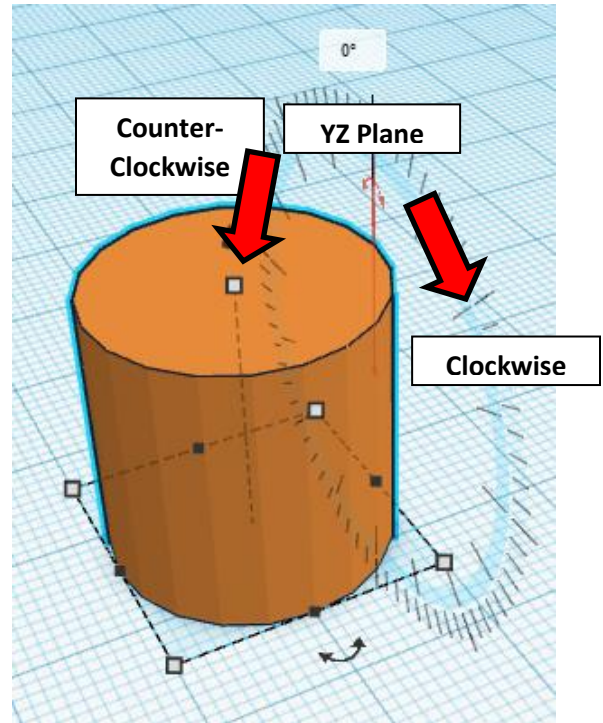
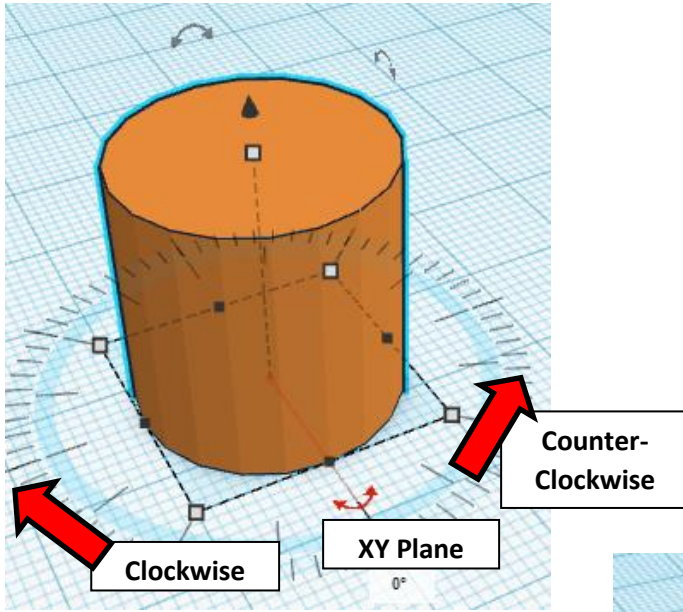
Aligning:



Flip or Mirror and Move:



Rotate:



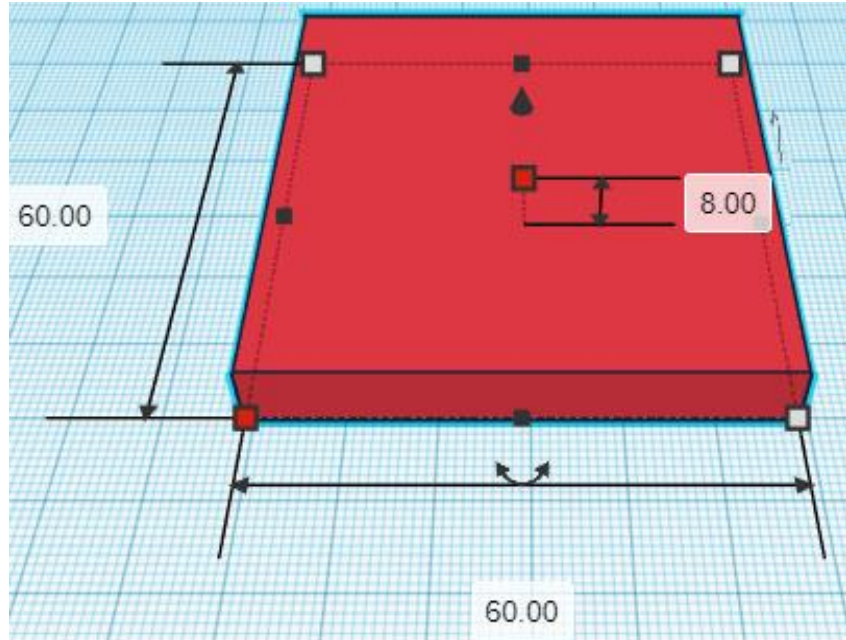


# MOM WOW for Mothers Day:

## Base:

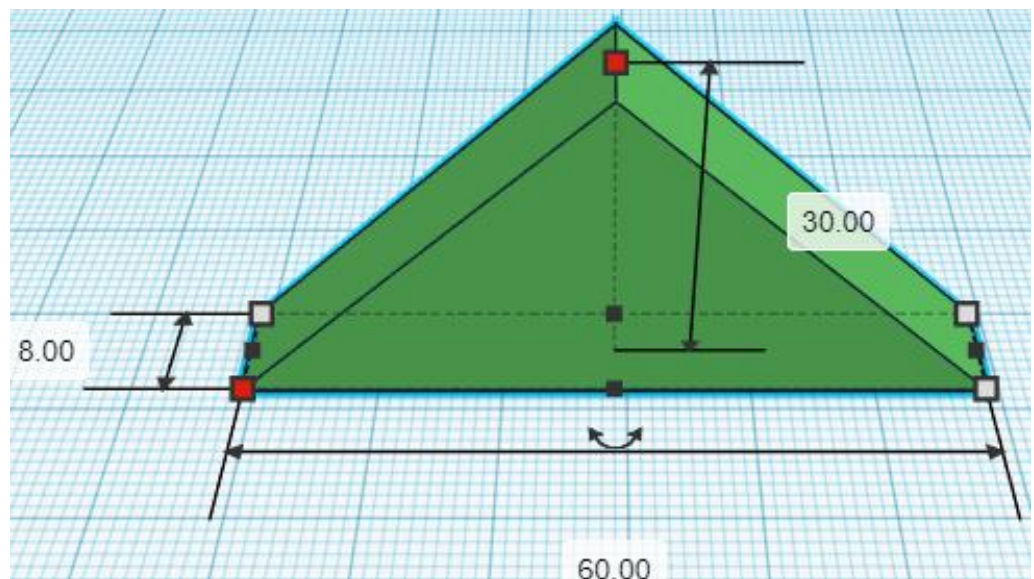
Bring in a Box, located in Basic Shapes on the left 2 shapes down.  
From now on this will be called the **Base**.

Change the dimensions to  
60mm X direction,  
60mm Y direction, and  
8mm Z direction.

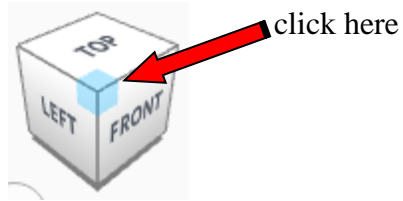


Bring in a Roof, located in Basic Shapes on the right 4 shapes down.  
From now on this will be called the **Base Top**.

Change the dimensions to  
60mm X direction,  
8mm Y direction, and  
30mm Z direction.

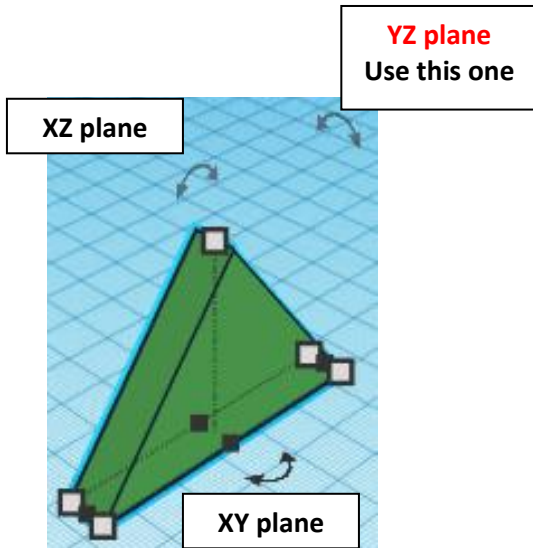


Go to TOP LEFT FRONT view for rotations

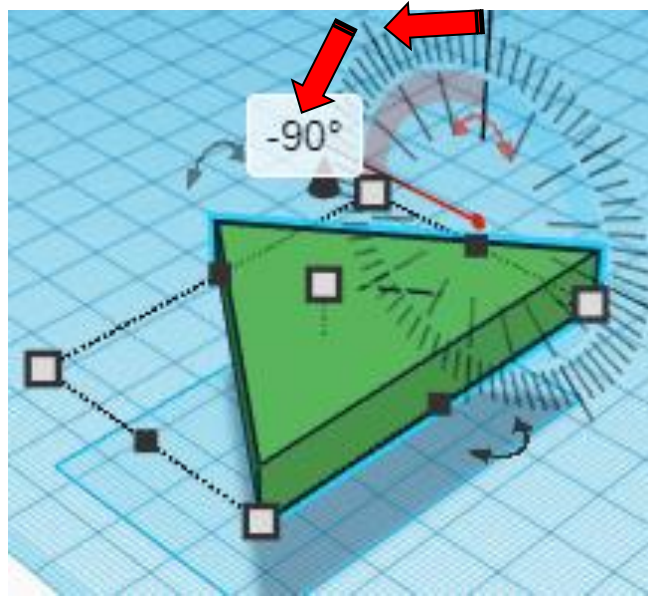


**Rotate** the Base Top counter-clockwise 90 degrees in YZ plane.

Before



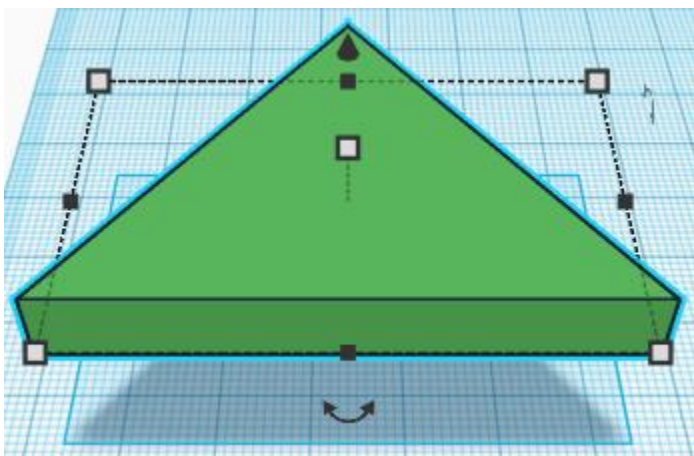
After



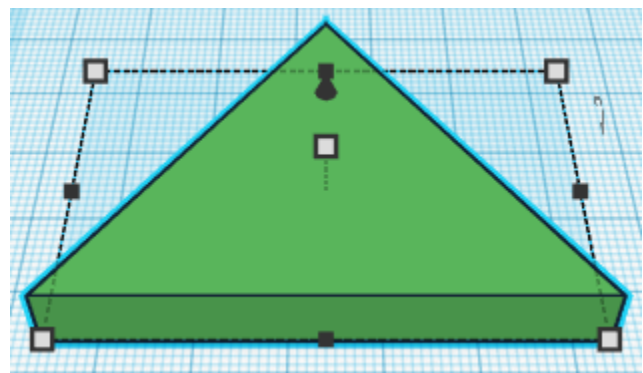
**Set on Workplane:**

Select the Base Top and type "d" to set the Base Top on the work plane.

Before

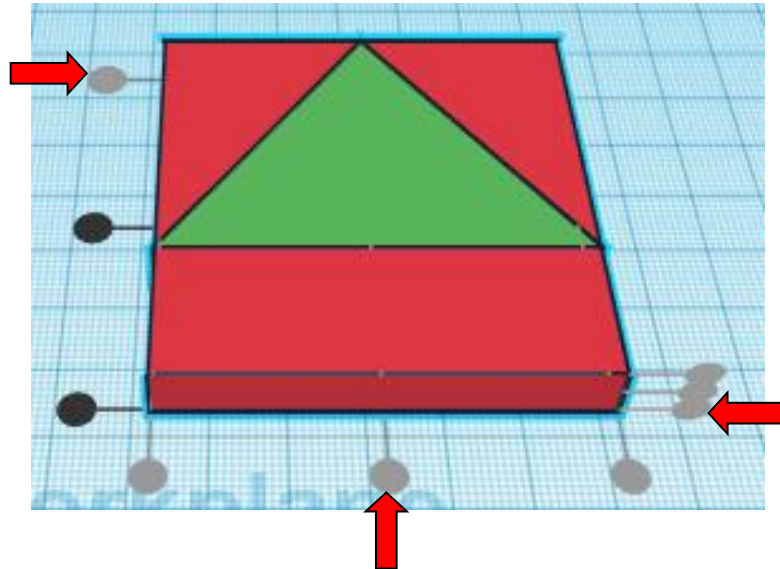


After



### Align Base and Base Top

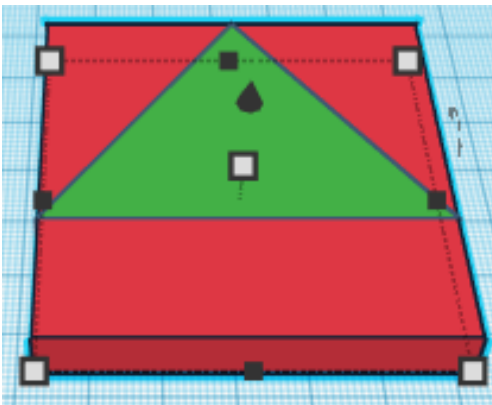
centered in X direction,  
back of Y direction, and  
bottom of Z direction.



**Move Base** (Must be in home view for this to work!)  
move forward in negative Y direction 30mm

**Hint:** Select Base and push down arrow key 30 times.  
Or  
Select Base and hold shift and push down arrow key 3 times.

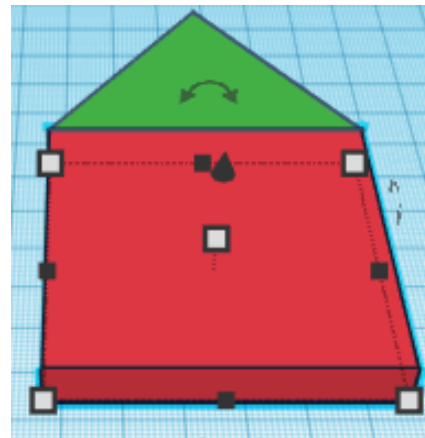
Before



30mm  
down



After



### **Group Base and Base Top**

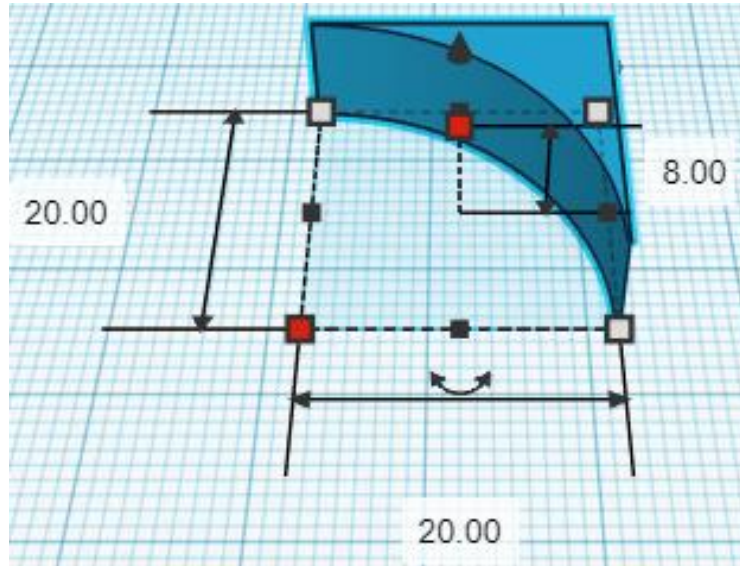
From now on this will be called the **Base**



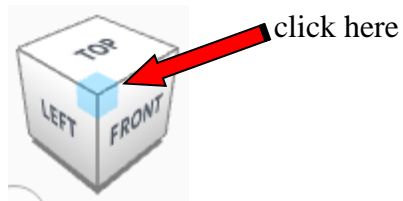
Bring in a MetaFillet, located in All, (things in All move each time that TinkerCad adds items to All), this was last seen on page 11, on the bottom left.

From now on this will be called the **Base Cutout**.

Change the dimensions to 20mm X direction, 20mm Y direction, and 8mm Z direction.



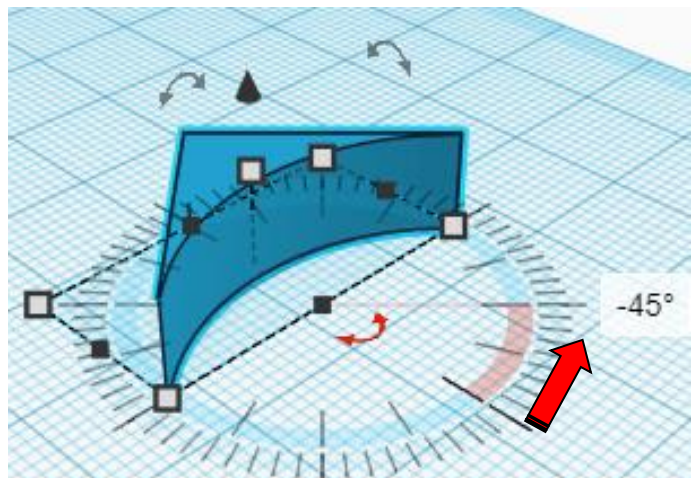
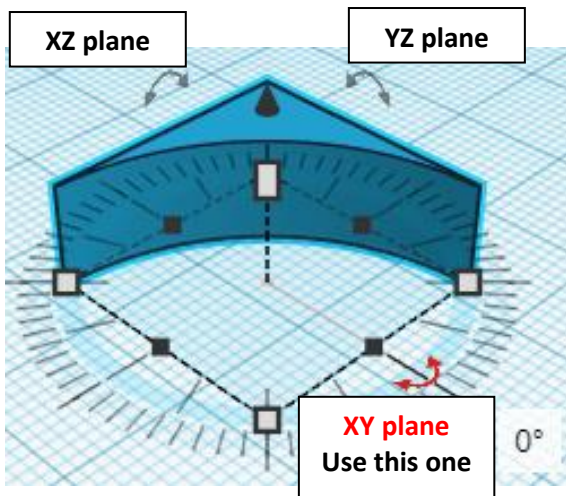
Go to TOP LEFT FRONT view for rotations



**Rotate** the Base Cutout counter-clockwise 45 degrees in XY plane.

Before

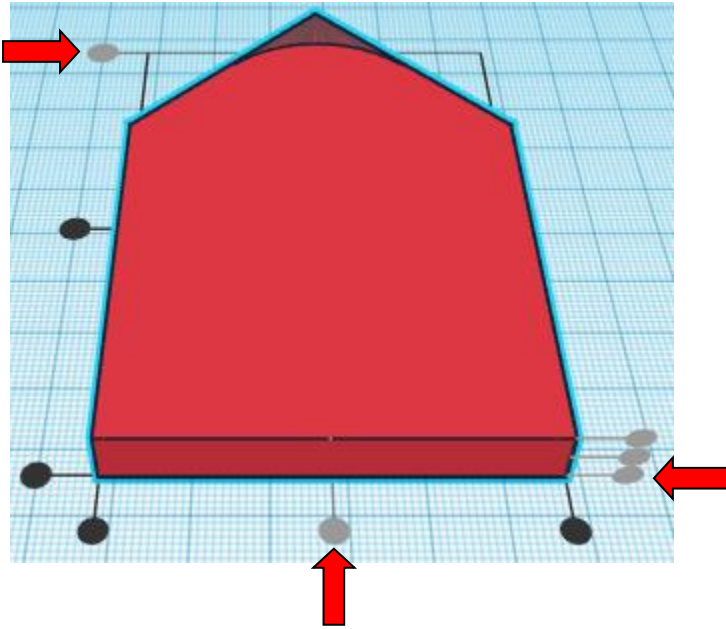
After



**Change** Base Cutout to **Hole** by selecting Base Cutout and typing "h".

**Align Base and Base Cutout**

centered in X direction,  
back of Y direction, and  
bottom of Z direction.



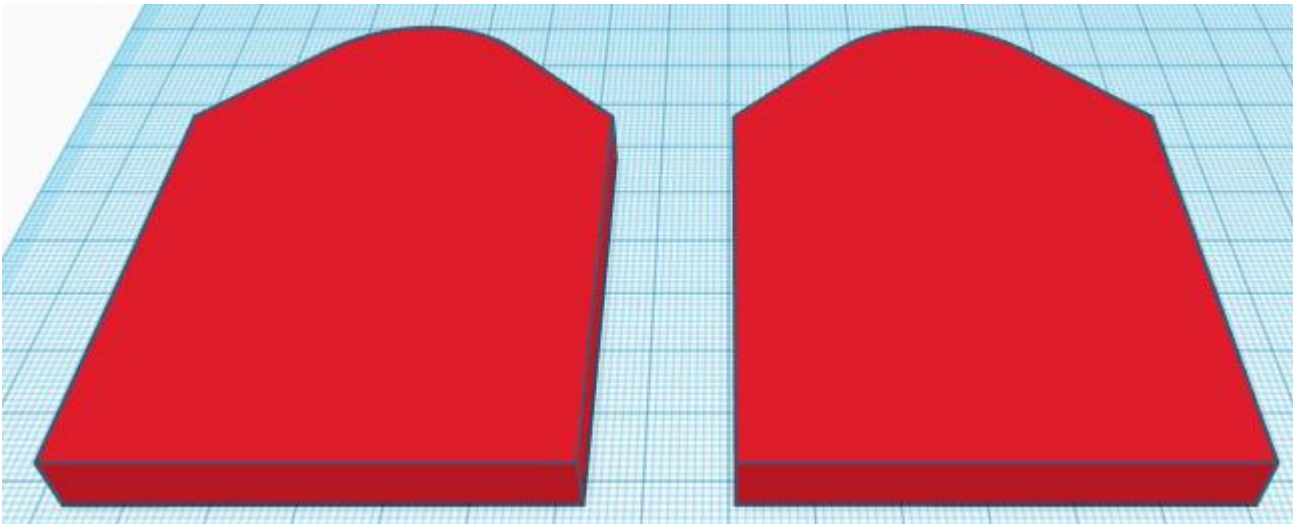
**Group Base and Base Cutout**

From now on this will be called the **Left Base**

**Duplicate Left Base 1 time**

From now on this will be called the **Right Base**

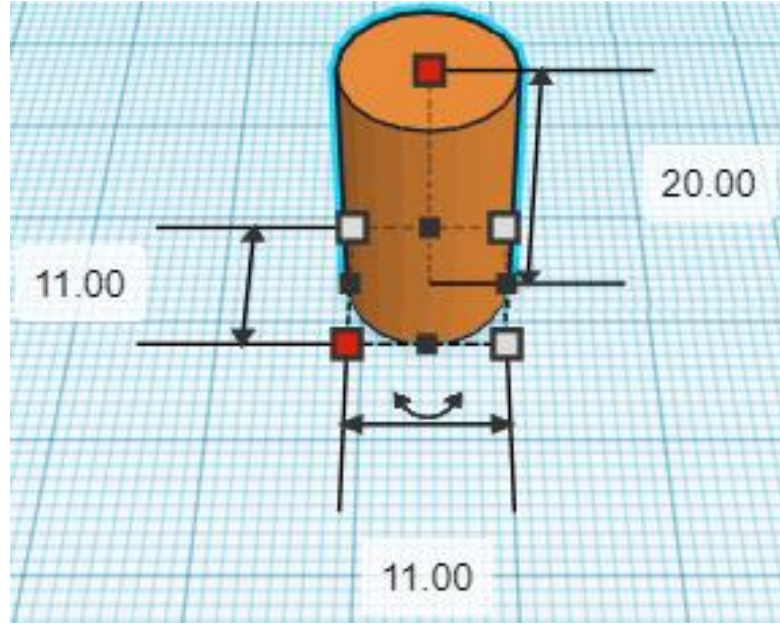
Move the Right Base over to the right for now.





Bring in a Cylinder, located in Basic Shapes on the right 2 shapes down.  
From now on this will be called the **Small Hole**.

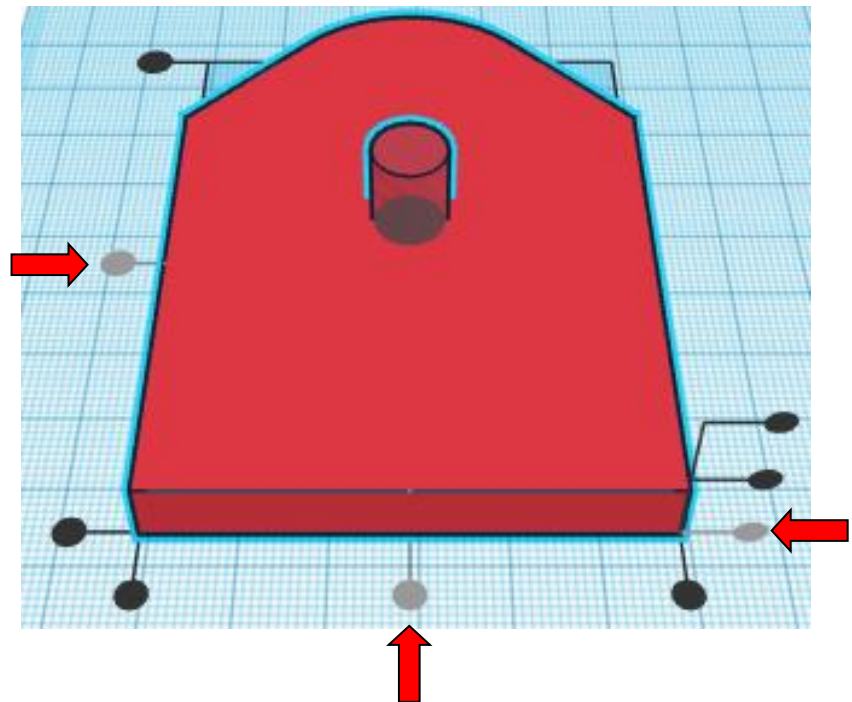
Change the dimensions to  
11mm X direction,  
11mm Y direction, and  
20mm Z direction.



**Change Small Hole to **Hole**** by selecting Small Hole and typing "h".

**Align Left Base and Small Hole**

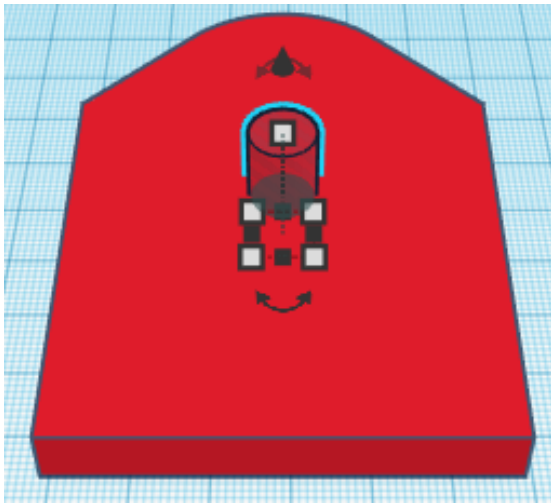
centered in X direction,  
centered of Y direction, and  
bottom of Z direction.



**Move Small Hole** (Must be in home view for this to work!)  
move forward in negative Y direction 10mm

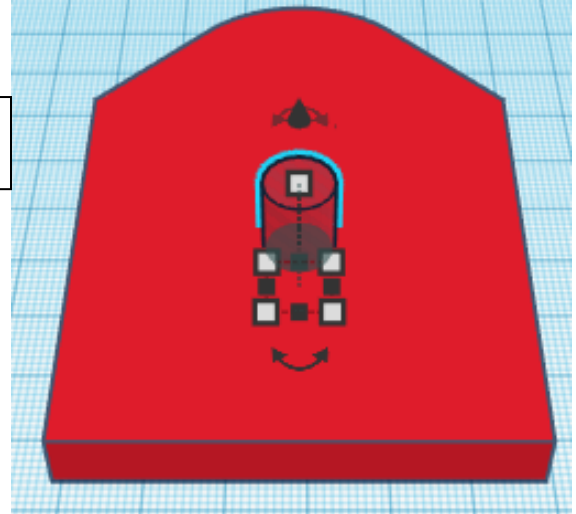
**Hint:** Select Small Hole and push down arrow key 10 times.  
Or  
Select Small Hole and hold shift and push down arrow key 1 time.

Before



10mm  
down

After

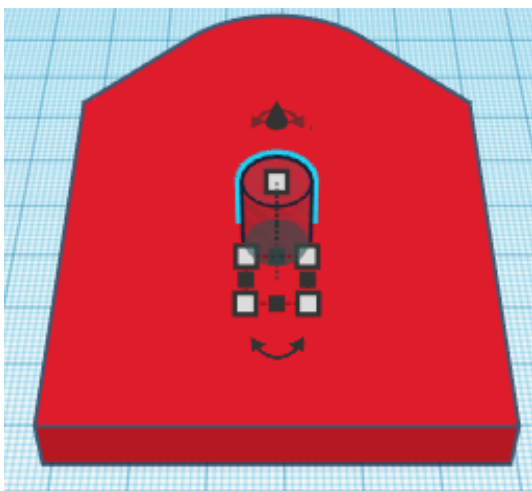


**Duplicate Small Hole** 1 time  
From now on this will be called the Top Small Hole

**Move Top Small Hole** (Must be in home view for this to work!)  
move back in negative Y direction 38mm

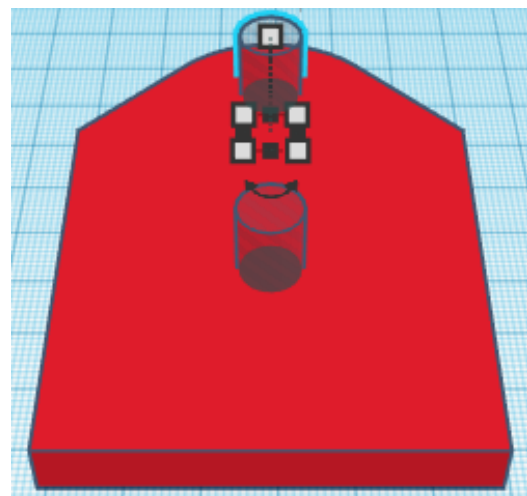
**Hint:** Select Top Small Hole and push up arrow key 38 times.  
Or  
Select Top Small Hole and hold shift and push up arrow key 3 times,  
Then release shift and push up arrow key 8 times.

Before



38mm  
up

After



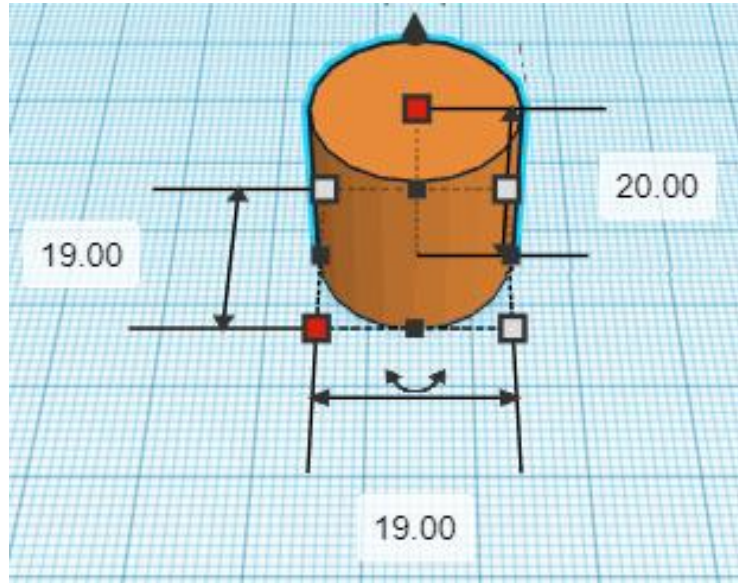
**Group Left Base and Small Hole and Top Small Hole**

From now on this will be called the **Left Base**

Bring in a Cylinder, located in Basic Shapes on the right 2 shapes down.

From now on this will be called the **Large Hole**.

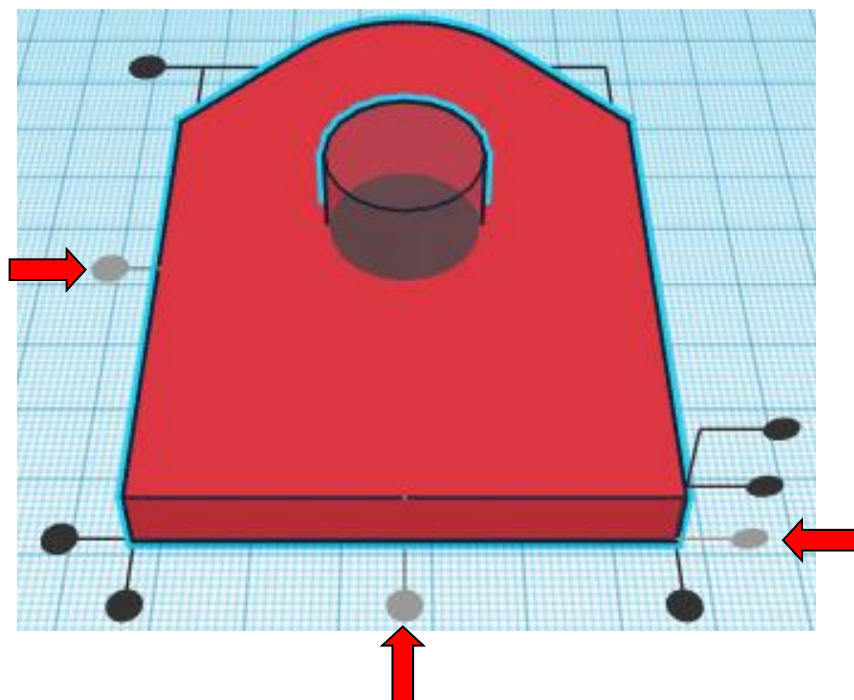
Change the dimensions to  
19mm X direction,  
19mm Y direction, and  
20mm Z direction.



**Change Large Hole to **Hole**** by selecting Large Hole and typing "h".

**Align Right Base and Large Hole**

centered in X direction,  
centered of Y direction, and  
bottom of Z direction.

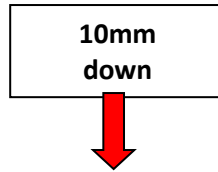
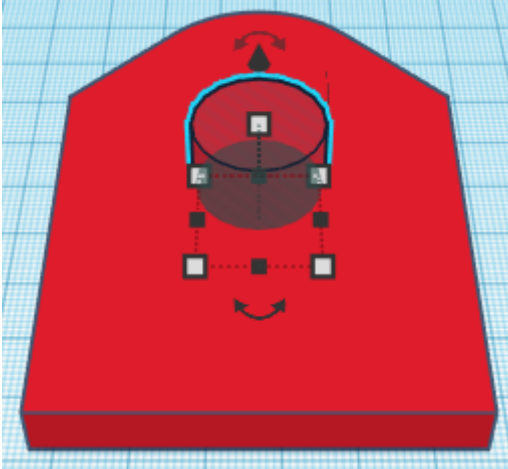




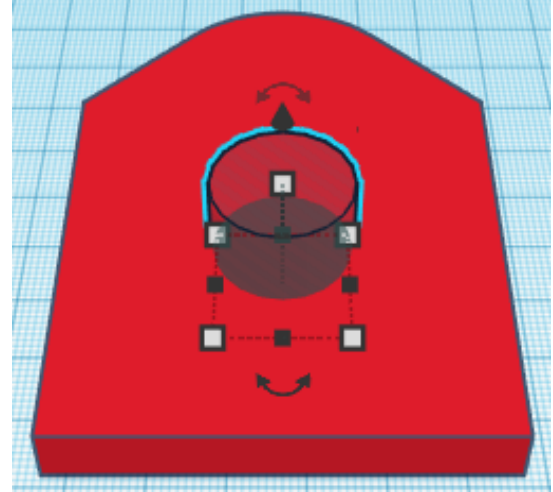
**Move Large Hole** (Must be in home view for this to work!)  
move forward in negative Y direction 10mm

**Hint:** Select Large Hole and push down arrow key 10 times.  
Or  
Select Large Hole and hold shift and push down arrow key 1 time.

Before



After

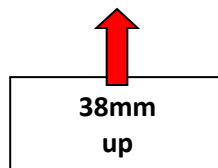
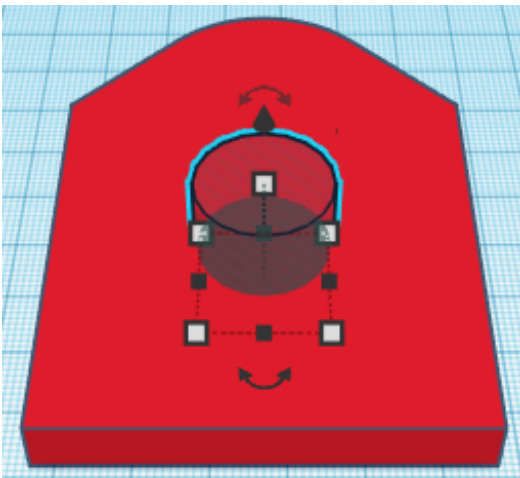


**Duplicate Large Hole** 1 time  
From now on this will be called the Top Large Hole

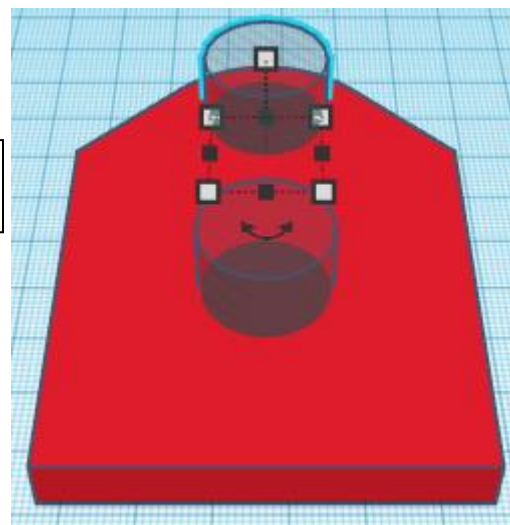
**Move Top Large Hole** (Must be in home view for this to work!)  
move back in negative Y direction 38mm

**Hint:** Select Top Large Hole and push up arrow key 38 times.  
Or  
Select Top Large Hole and hold shift and push up arrow key 3 times,  
Then release shift and push up arrow key 8 times.

Before



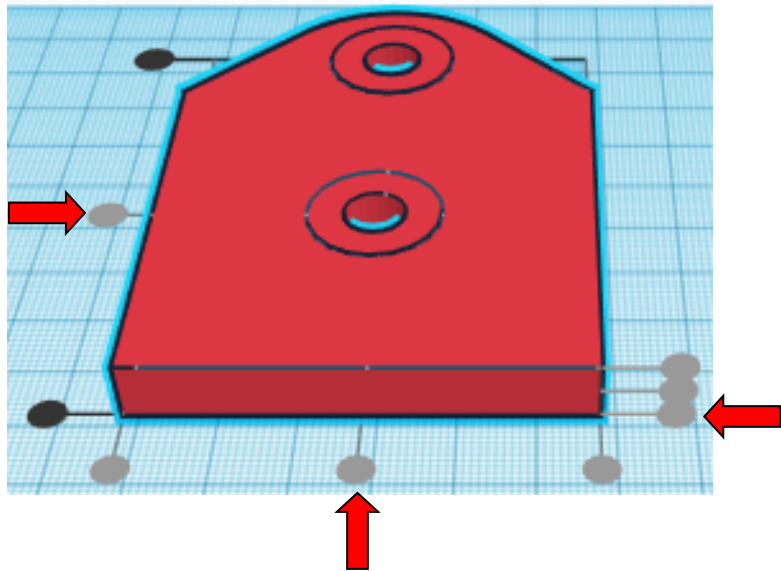
After



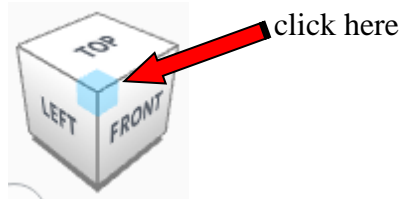
**Group** Right Base and Large Hole and Top Large Hole  
From now on this will be called the **Right Base**

**Align** Right Base and Left Base

centered in X direction,  
centered of Y direction, and  
bottom of Z direction.



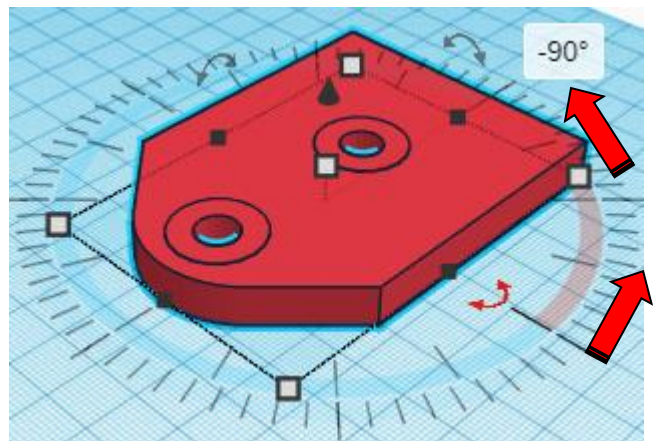
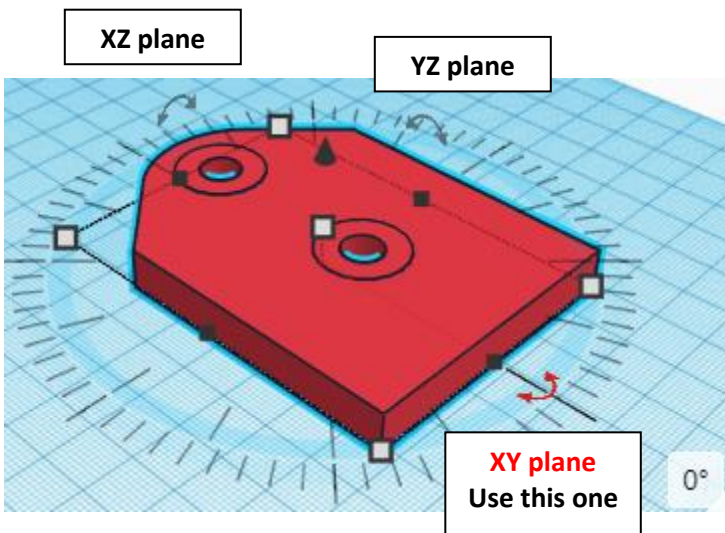
Go to TOP LEFT FRONT view for rotations



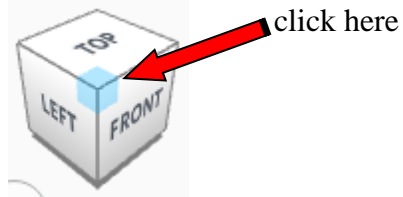
**Rotate** the Right Base and Left Base counter-clockwise 90 degrees in XY plane.

Before

After



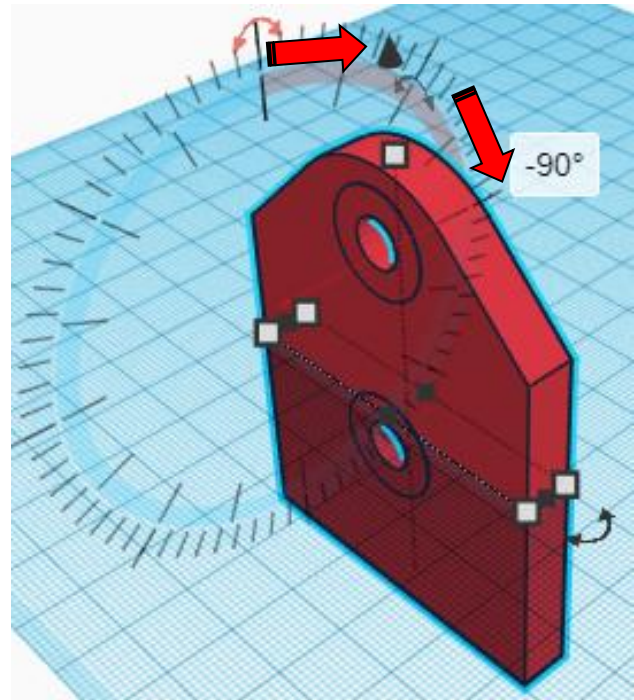
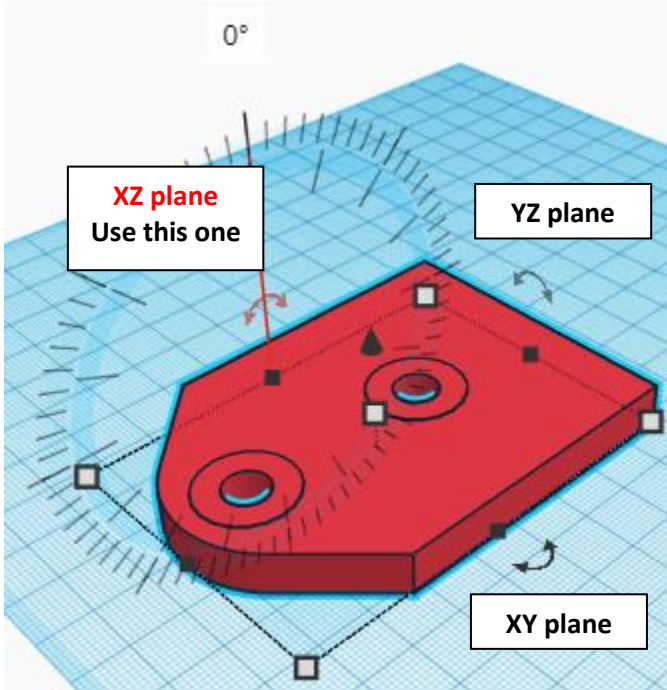
Go to TOP LEFT FRONT view for rotations



**Rotate** the Right Base and Left Base clockwise 90 degrees in XZ plane.

Before

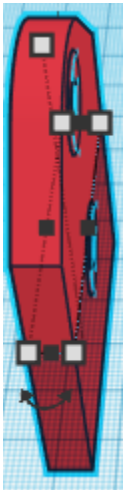
After



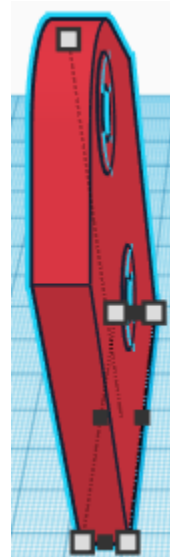
**Set on Workplane:**

Select the Right Base and Left Base and type "d" to set the Right Base and Left Base on the work plane.

Before



After

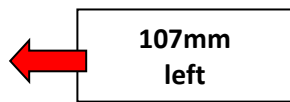
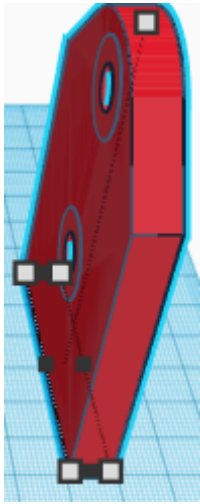




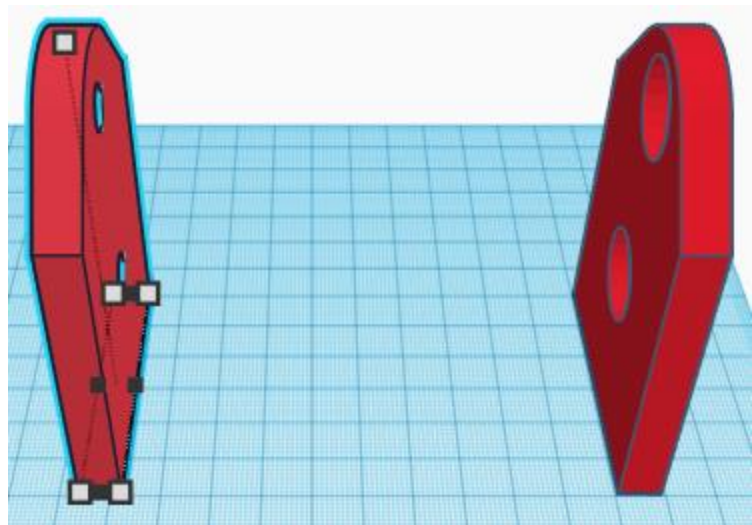
**Move Left Base** (Must be in home view for this to work!)  
move left in negative X direction 107mm

**Hint:** Select Left Base and push left arrow key 107 times.  
Or  
Select Left Base and hold shift and push left arrow key 10 times,  
Then release shift and push left arrow key 7 times.

Before



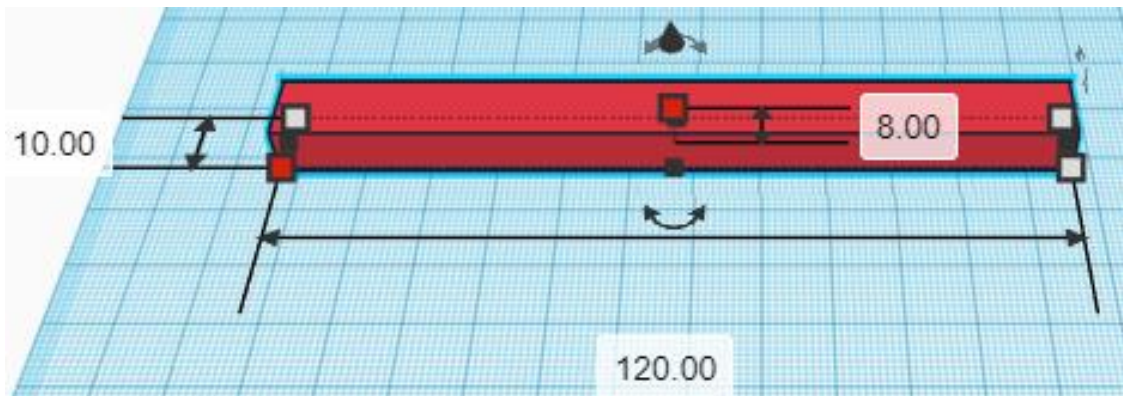
After



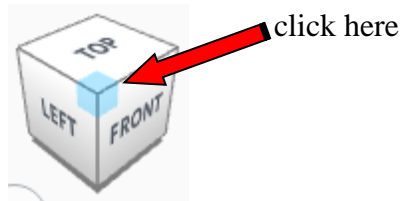
**Group Right Base and Left Base**  
From now on this will be called the **Base**

Bring in a Box, located in Basic Shapes on the left 2 shapes down.  
From now on this will be called the **Base Leg**.

Change the dimensions to  
120mm X direction,  
10mm Y direction, and  
8mm Z direction.



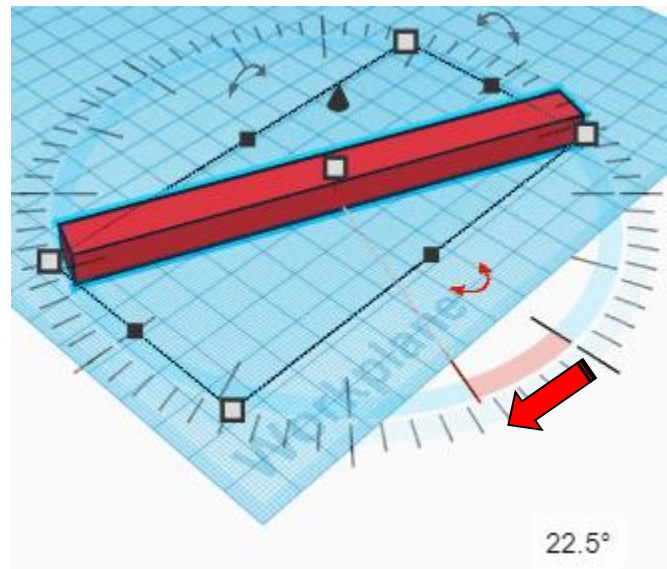
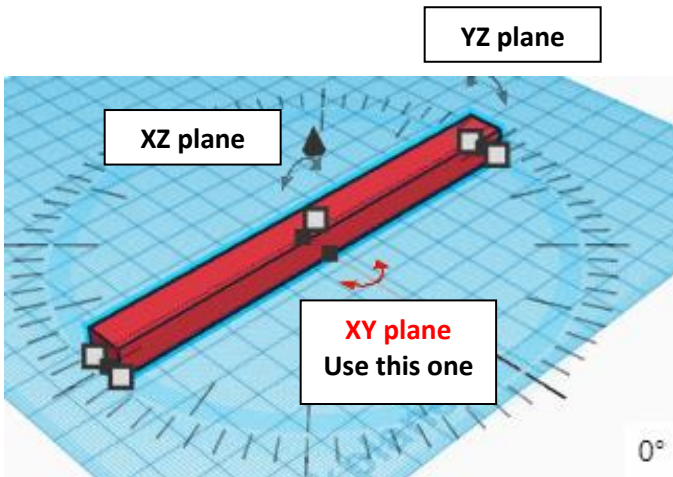
Go to TOP LEFT FRONT view for rotations



**Rotate** the Base Leg clockwise 22.5 degrees in XY plane.

Before

After

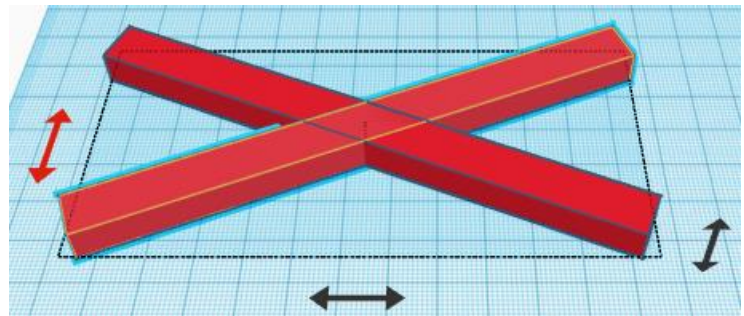
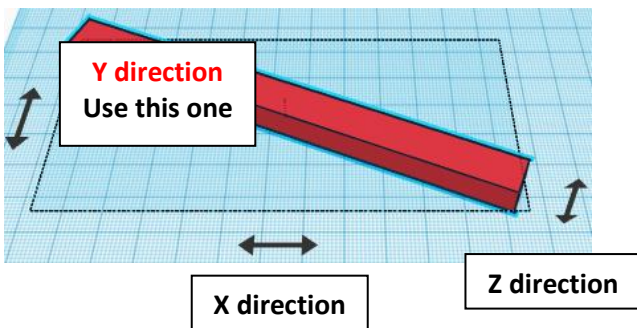


**Duplicate** Base Leg 1 time

**Flip** Base Leg in Y direction.

Before

After

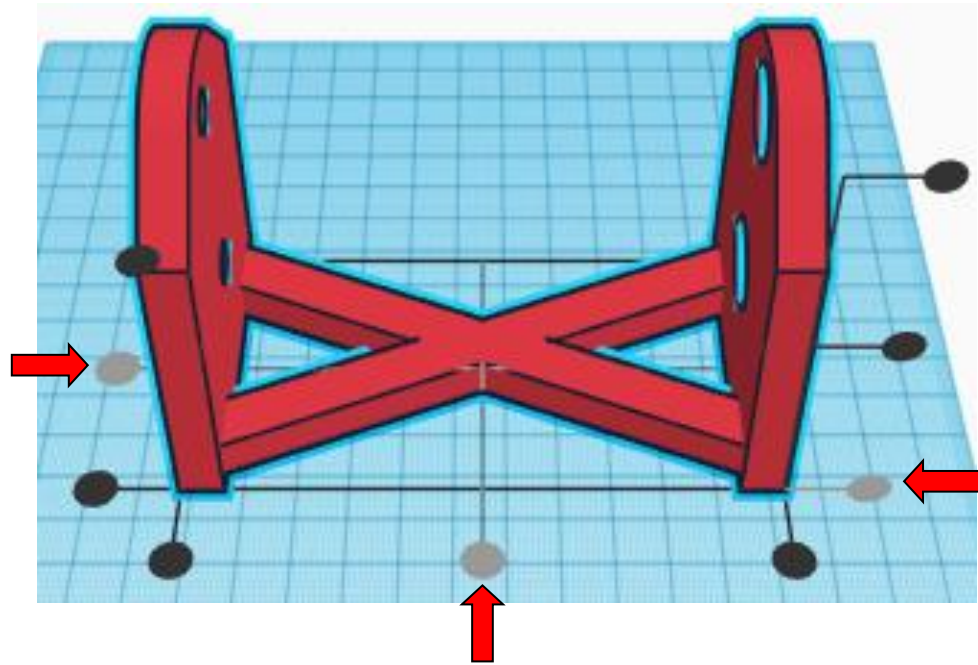


**Group** Both Base Legs

From now on this will be called the **Base Legs**

### Align Base and Base Legs

centered in X direction,  
centered of Y direction, and  
bottom of Z direction.



### Group Base and Base Legs

From now on this will be called the **Base**

**The Base is done. Set this aside to print later or get it printing now while you finish making all the other parts.**

Bring in a Useful gear, located in All, (things in All move each time that TinkerCad adds items to All), this was last seen on page 3, on the mid-left.

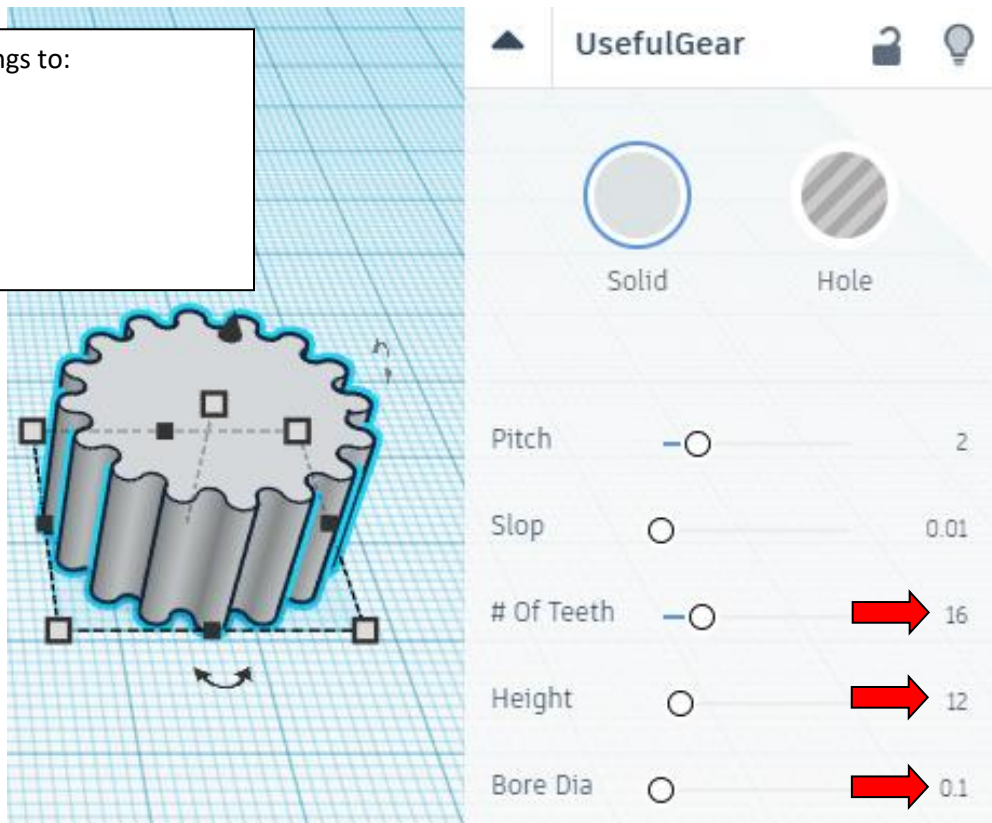
From now on this will be called the **End Gear**

Change UsefulGear settings to:

# of teeth from 20 to 16

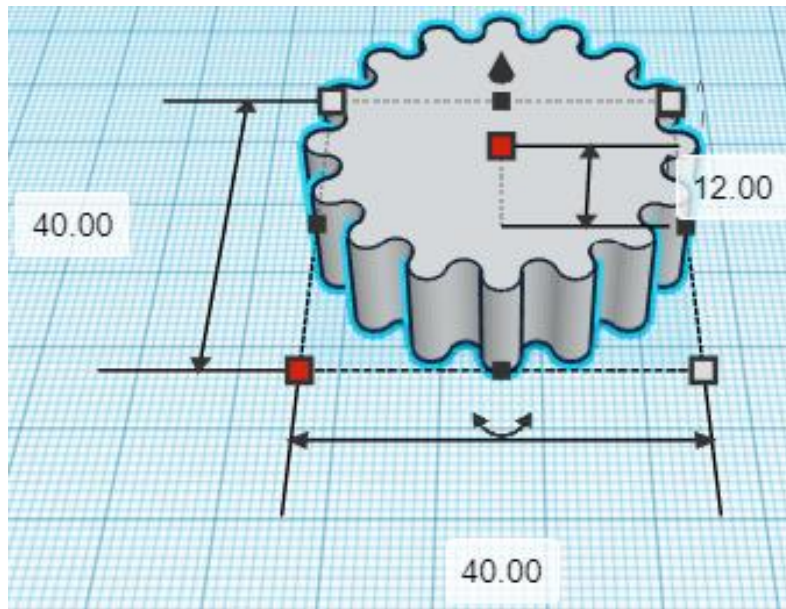
Height from 20 to 12

Bore Dia from 6 to 0.1



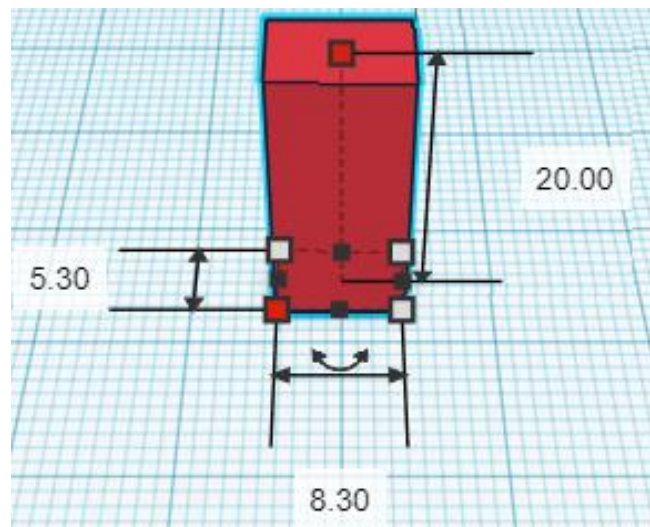


Change the dimensions to 40mm X direction, 40mm Y direction, and 12mm Z direction.



Bring in a Box, located in Basic Shapes on the left 2 shapes down. From now on this will be called the **End Gear Cutout A**.

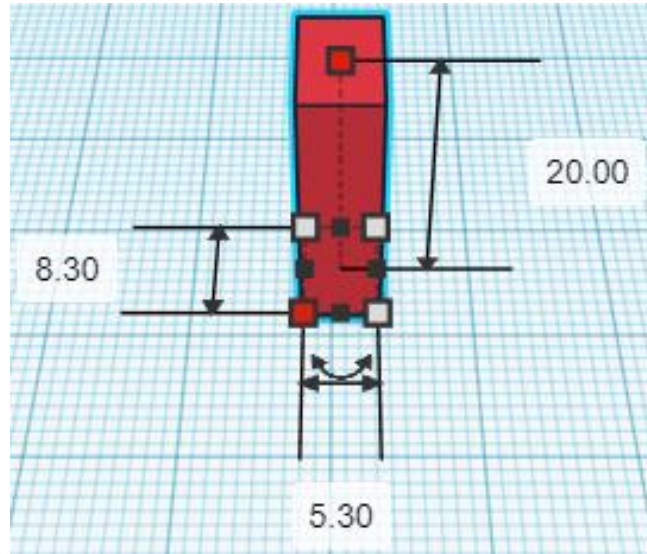
Change the dimensions to 8.30mm X direction, 5.30mm Y direction, and 20mm Z direction.



**Change** End Gear Cutout A to **Hole** by selecting End Gear Cutout A and typing "h".

Bring in a Box, located in Basic Shapes on the left 2 shapes down.  
From now on this will be called the **End Gear Cutout B**.

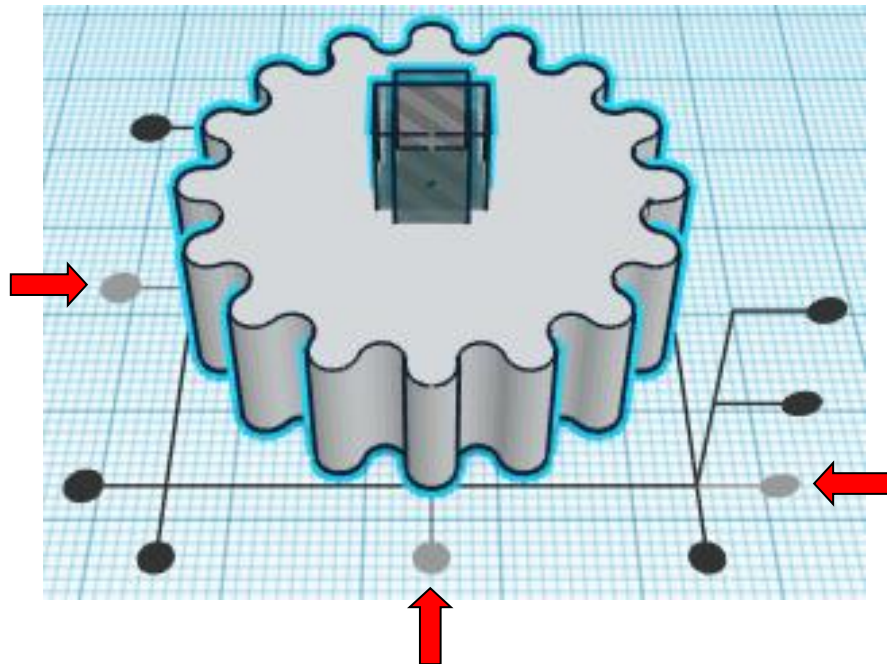
Change the dimensions to  
5.30mm X direction,  
8.30mm Y direction, and  
20mm Z direction.



**Change** End Gear Cutout B to **Hole** by selecting End Gear Cutout B and typing "h".

**Align** End Gear and End Gear Cutout A and End Gear Cutout B

centered in X direction,  
centered of Y direction, and  
bottom of Z direction.

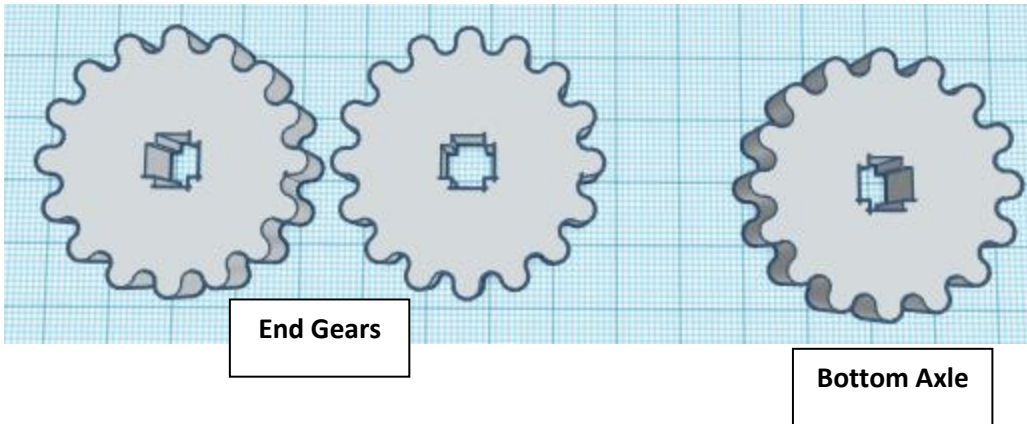


**Group** End Gear and End Gear Cutout A and End Gear Cutout B  
From now on this will be called the **End Gear**

Duplicate End Gear 2 times

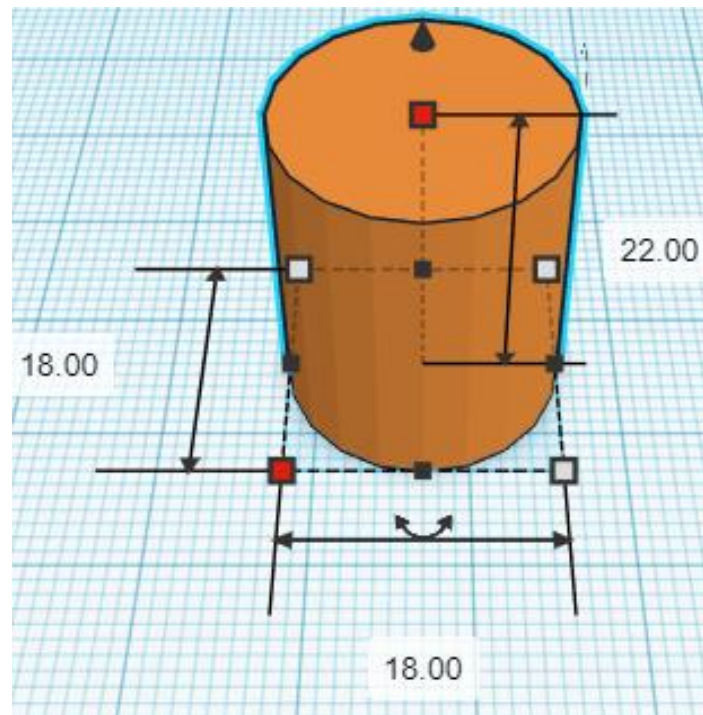
Set 2 End Gears off to the side for printing.

The 3rd gear will now be called Bottom Axle



Bring in a Cylinder, located in Basic Shapes on the right 2 shapes down.  
From now on this will be called the **Bottom Cylinder**

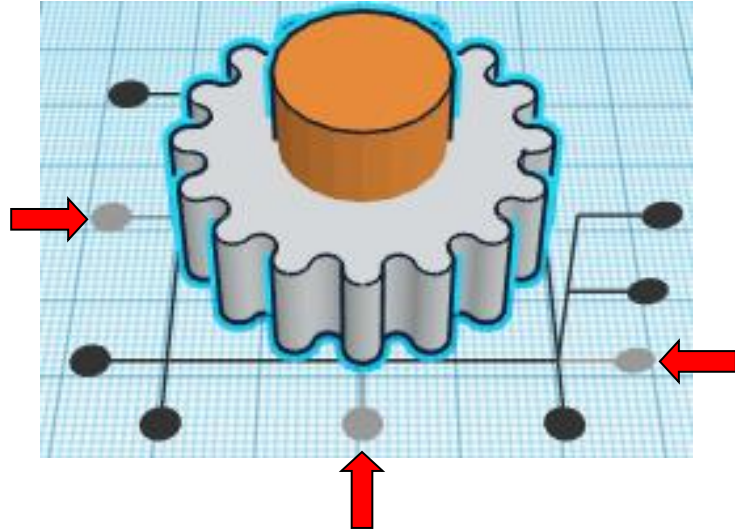
Change the dimensions to  
18mm X direction,  
18mm Y direction, and  
22mm Z direction.





### **Align Bottom Axle and Bottom Cylinder**

centered in X direction,  
centered of Y direction, and  
bottom of Z direction.



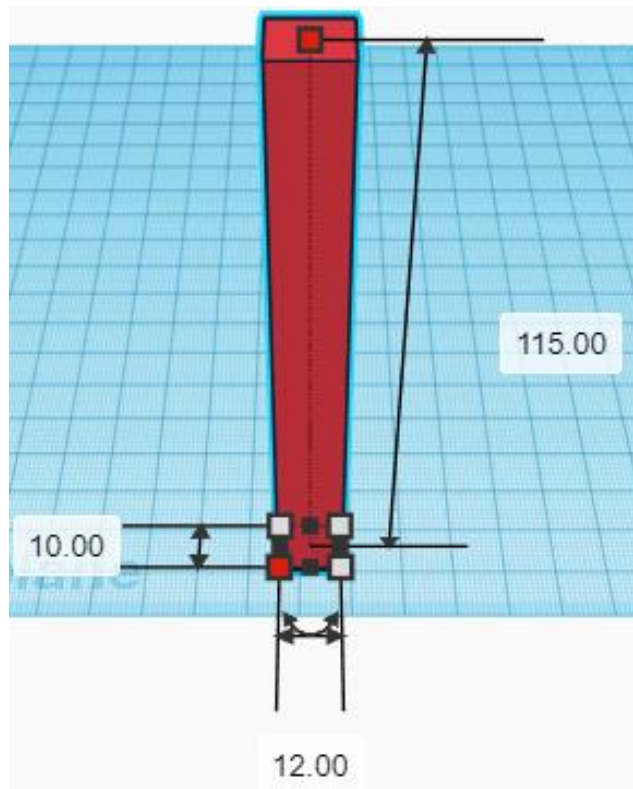
### **Group Bottom Axle and Bottom Cylinder**

From now on this will be called the **Bottom Axle**

Bring in a Box, located in Basic Shapes on the left 2 shapes down.

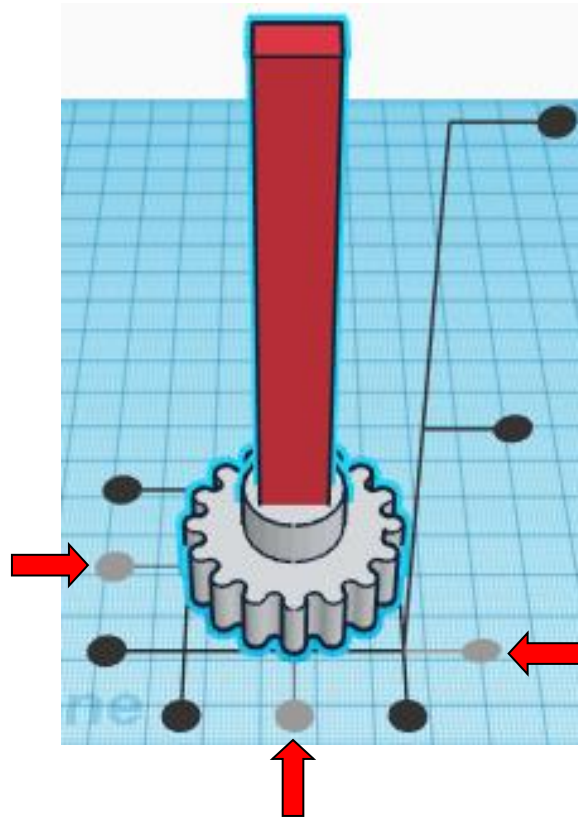
From now on this will be called the **Rectangle Axle**

Change the dimensions to  
12mm X direction,  
10mm Y direction, and  
115mm Z direction.



**Align Bottom Axle and Rectangle Axle**

centered in X direction,  
centered of Y direction, and  
bottom of Z direction.



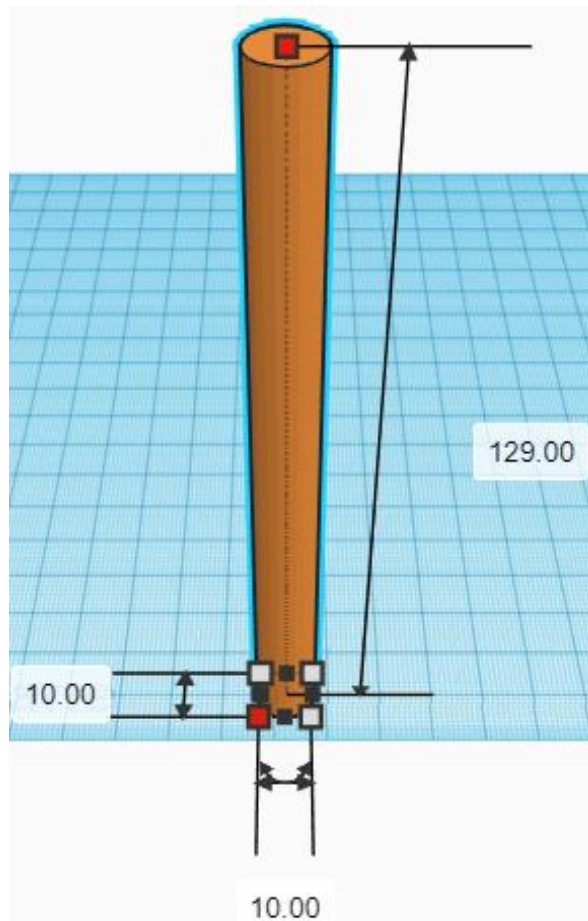
**Group Bottom Axle and Rectangle Axle**

From now on this will be called the **Bottom Axle**

Bring in a Cylinder, located in Basic Shapes on the right 2 shapes down.

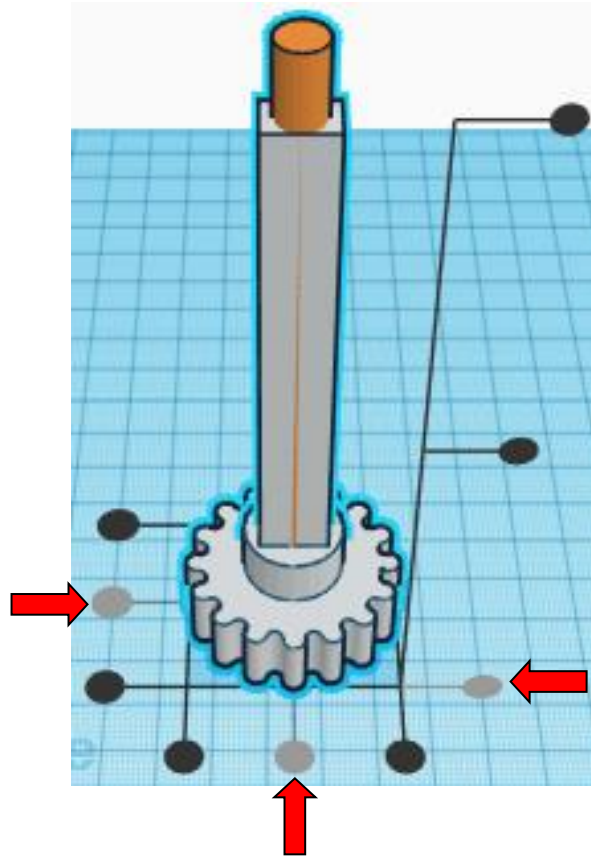
From now on this will be called the **Top Cylinder**

Change the dimensions to  
10mm X direction,  
10mm Y direction, and  
129mm Z direction.



**Align** Bottom Axle and Top Cylinder

centered in X direction,  
centered of Y direction, and  
bottom of Z direction.



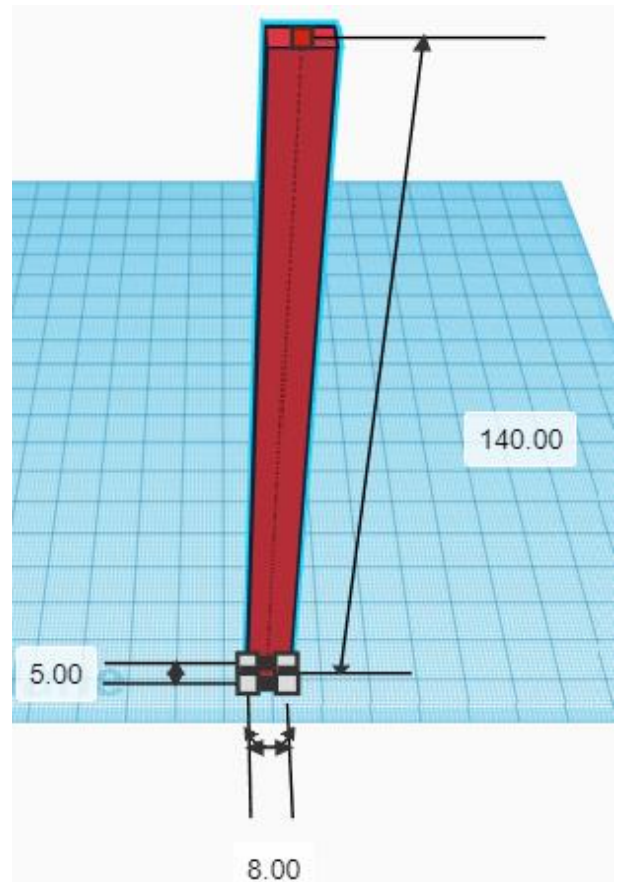
**Group** Bottom Axle and Top Cylinder

From now on this will be called the **Bottom Axle**



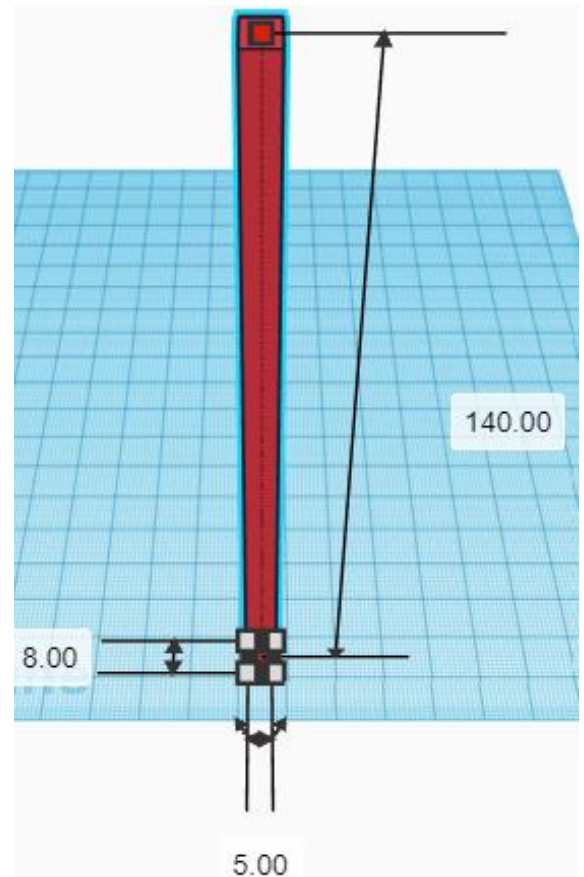
Bring in a Box, located in Basic Shapes on the left 2 shapes down.  
From now on this will be called the **Bottom Axle End A**.

Change the dimensions to  
8mm X direction,  
5mm Y direction, and  
140mm Z direction.



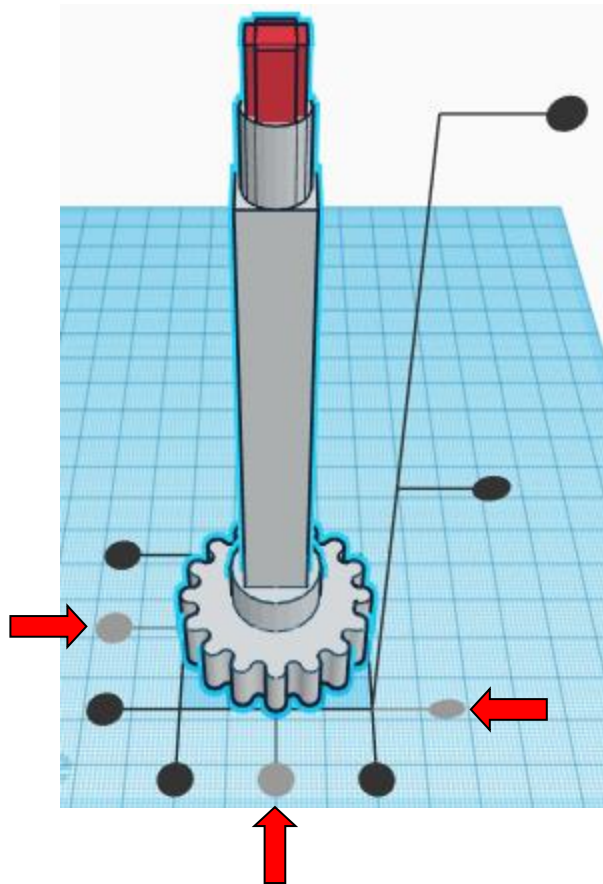
Bring in a Box, located in Basic Shapes on the left 2 shapes down.  
From now on this will be called the **Bottom Axle End B**.

Change the dimensions to  
5mm X direction,  
8mm Y direction, and  
140mm Z direction.



**Align** Bottom Axle and Bottom Axle End A and Bottom Axle End B

centered in X direction,  
centered of Y direction, and  
bottom of Z direction.



**Group** Bottom Axle and Bottom Axle End A and Bottom Axle End B  
From now on this will be called the **Bottom Axle**

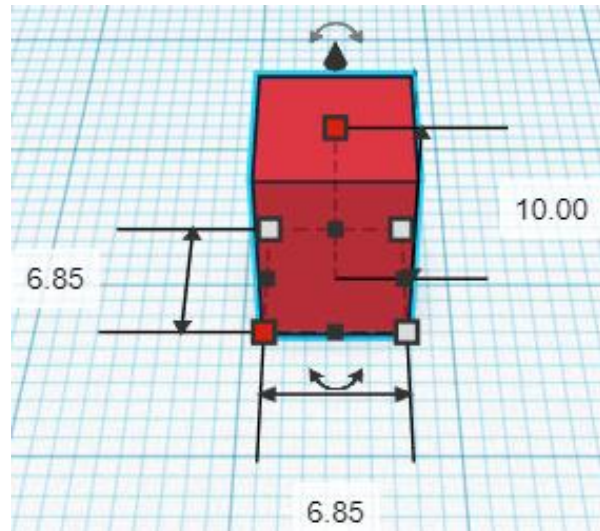
**Duplicate** Bottom Axle 1 time

**Set the Bottom Axle to the side for printing**

The other axle will now be called Top Axle

Bring in a Box, located in Basic Shapes on the left 2 shapes down.  
From now on this will be called the **Handle Hole**.

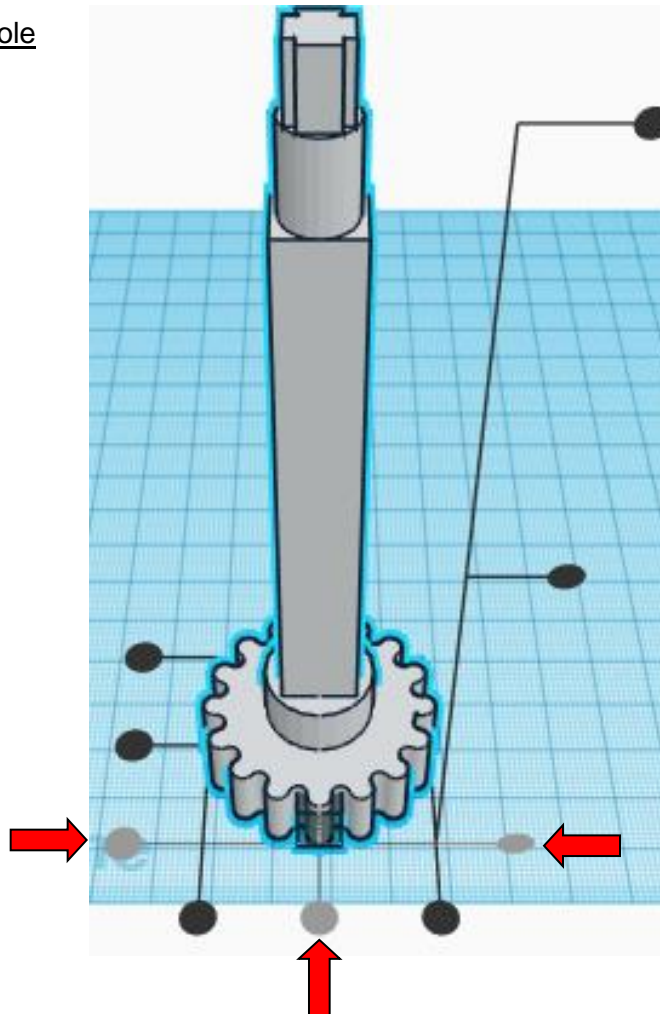
Change the dimensions to  
6.85mm X direction,  
6.85mm Y direction, and  
10mm Z direction.



**Change Handle Hole to **Hole**** by selecting Handle Hole and typing “h”.

**Align Top Axle and Handle Hole**

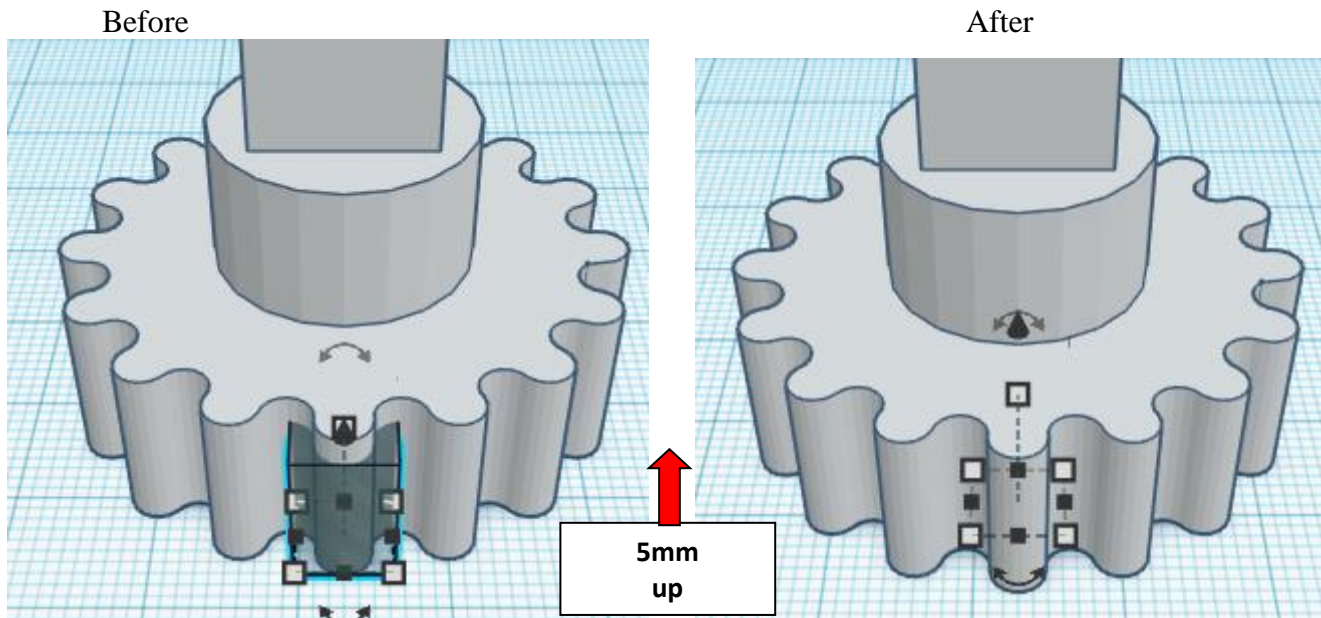
centered in X direction,  
front of Y direction, and  
bottom of Z direction.





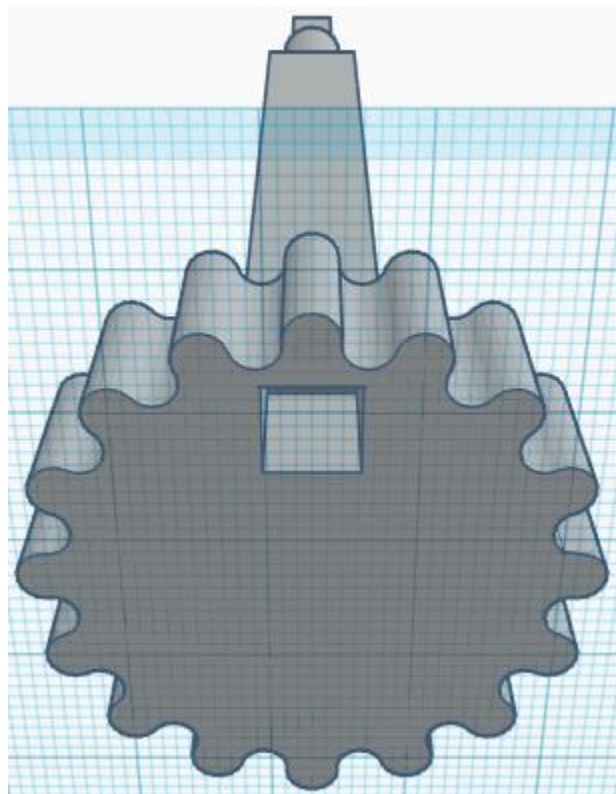
**Move Handle Hole** (Must be in home view for this to work!)  
move back in positive Y direction 5mm

**Hint:** Select Handle Hole and push up arrow key 5 times.



**Group Top Axle and Handle Hole**  
From now on this will be called the **Top Axle**

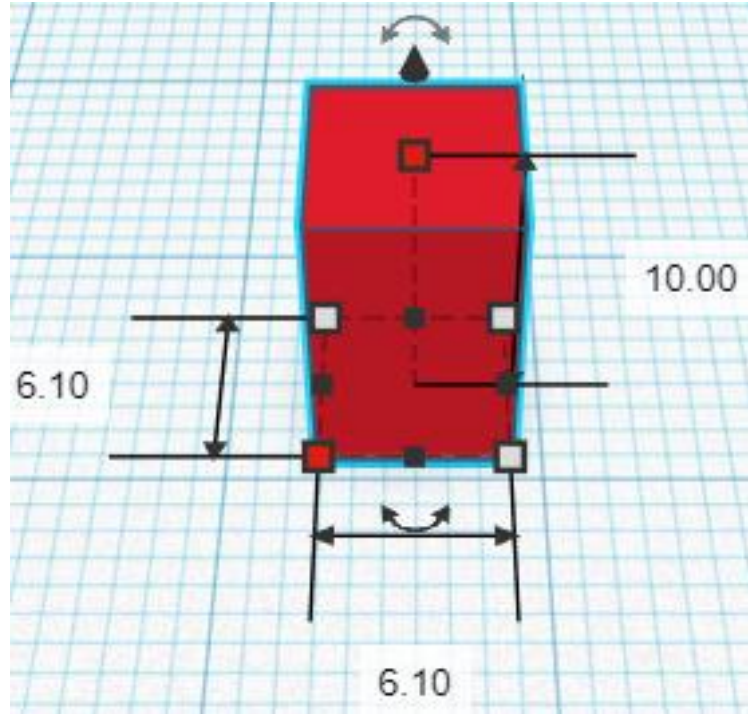
**The Top Axle is done and ready for printing.**



Bottom view

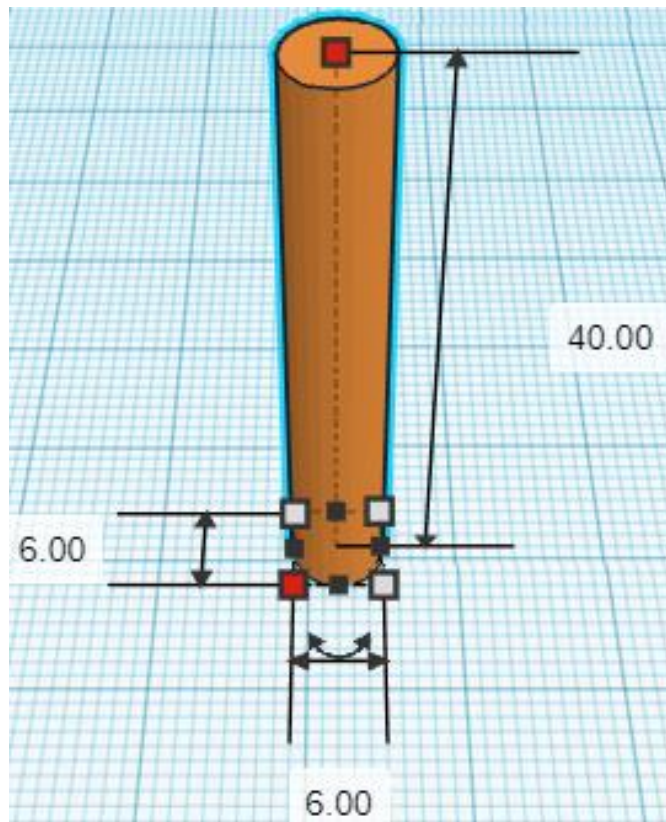
Bring in a Box, located in Basic Shapes on the left 2 shapes down.  
From now on this will be called the **Handle Bottom**.

Change the dimensions to  
6.10mm X direction,  
6.10mm Y direction, and  
10mm Z direction.



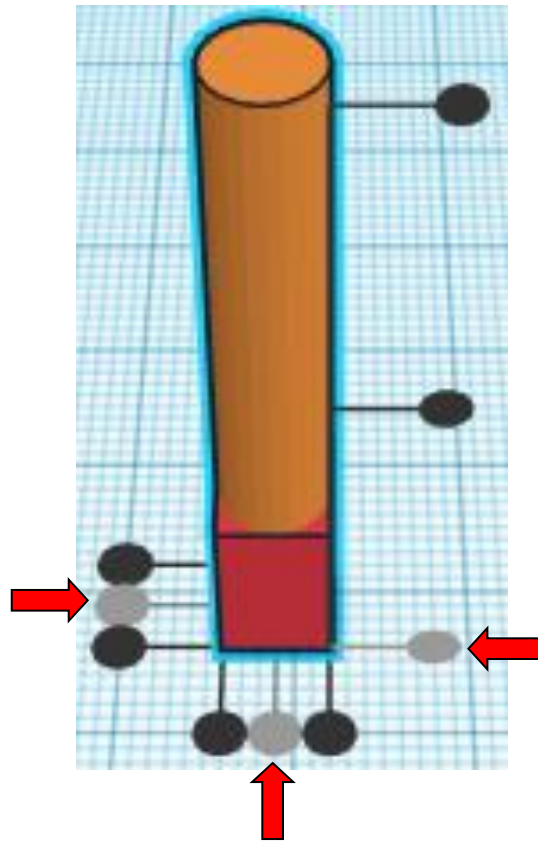
Bring in a Cylinder, located in Basic Shapes on the right 2 shapes down.  
From now on this will be called the **Handle Top**.

Change the dimensions to  
6mm X direction,  
6mm Y direction, and  
40mm Z direction.



**Align Handle Bottom and Handle Top**

centered in X direction,  
centered of Y direction, and  
bottom of Z direction.



**Group Handle Bottom and Handle Top**

From now on this will be called the **Handle**

**The Handle is done, set it to the side for printing.**



Bring in a Text, located in Basic Shapes on the right 5 shapes down.  
From now on this will be called the **WOW**

Change Text settings to:

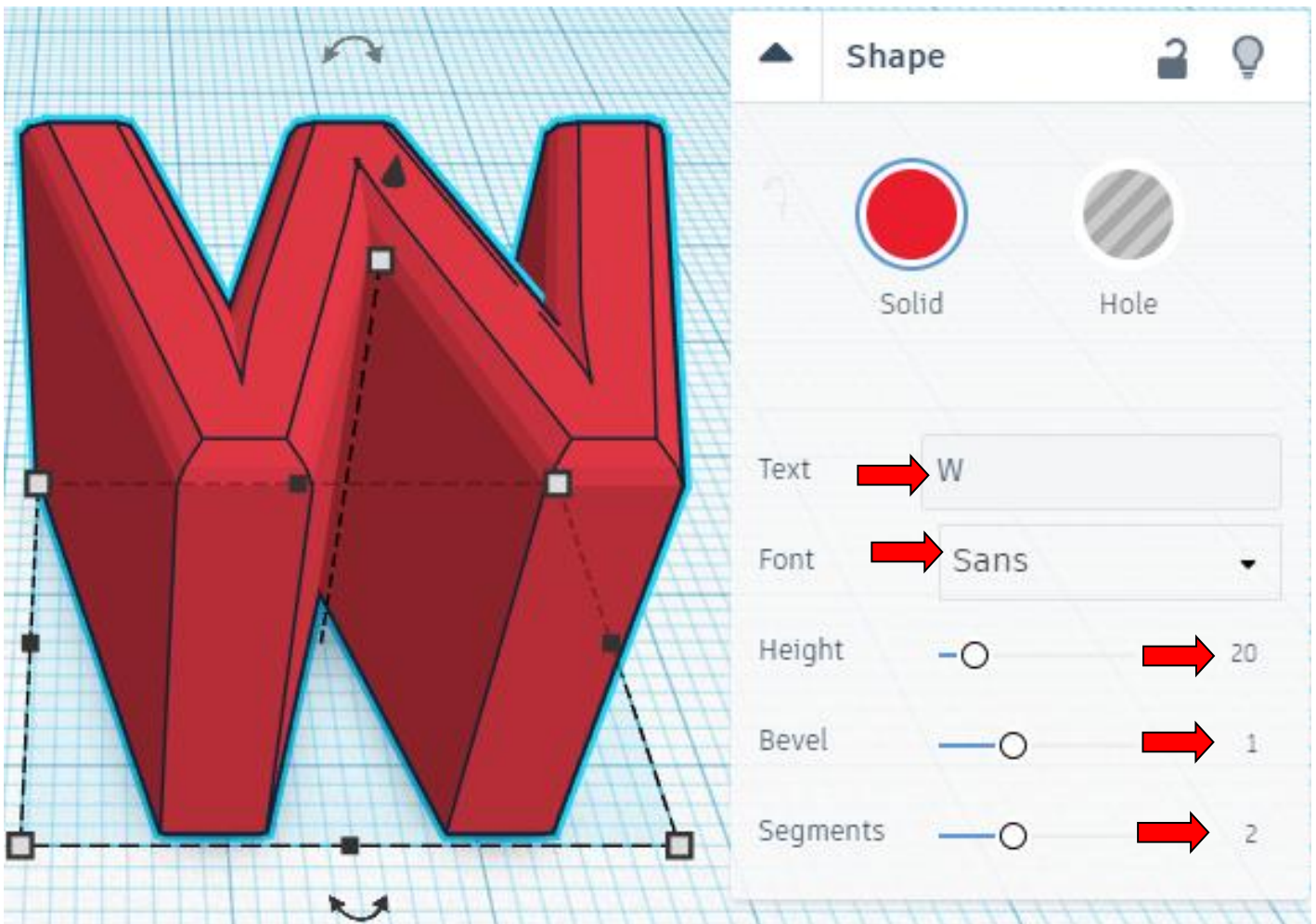
**Text** from text to W

**Font** from Multilanguage to Sans

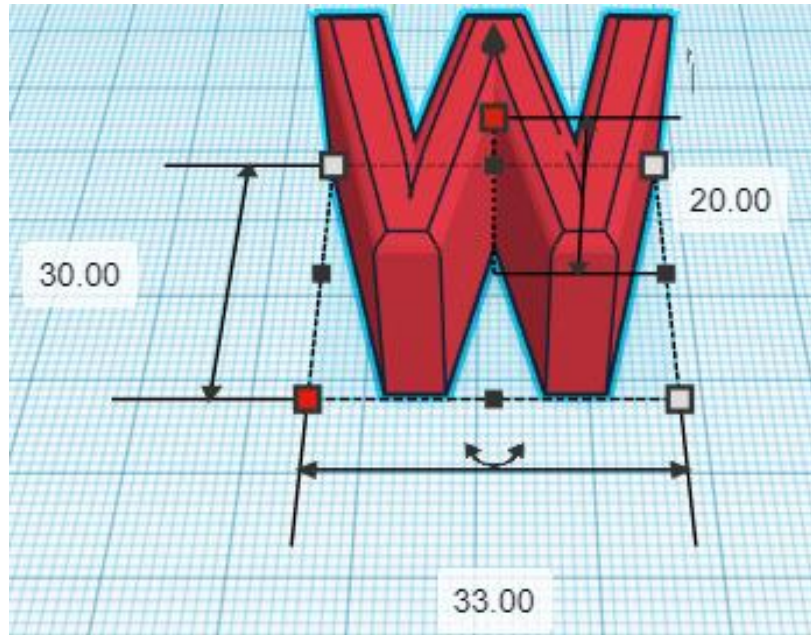
**Height** from 10 to 20

**Bevel** from 0 to 1

**Segments** from 0 to 2



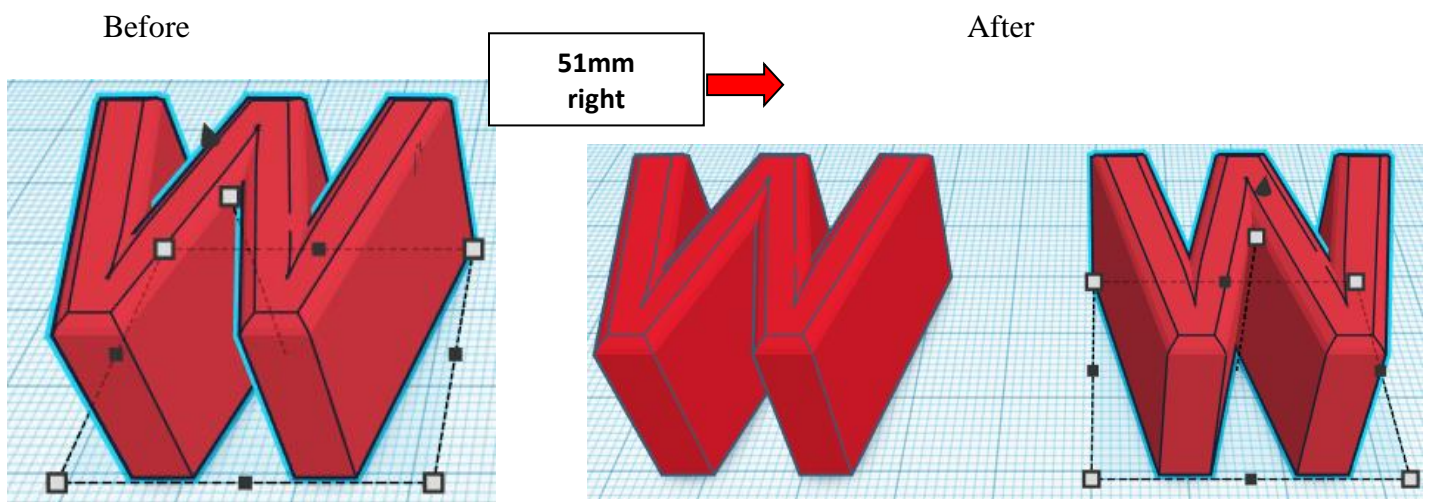
Change the dimensions to 33mm X direction, 30mm Y direction, and 20mm Z direction.



**Duplicate** WOW 1 time

**Move** WOW (Must be in home view for this to work!)  
move right in positive X direction 51mm

**Hint:** Select WOW and push right arrow key 51 times.  
Or  
Select WOW and hold shift and push right arrow key 5 times,  
Then release shift and push right arrow key 1 time.



**Group** WOW and WOW  
From now on this will be called the **WOW**

Bring in a Text, located in Basic Shapes on the right 5 shapes down.  
From now on this will be called the **O**

Change Text settings to:

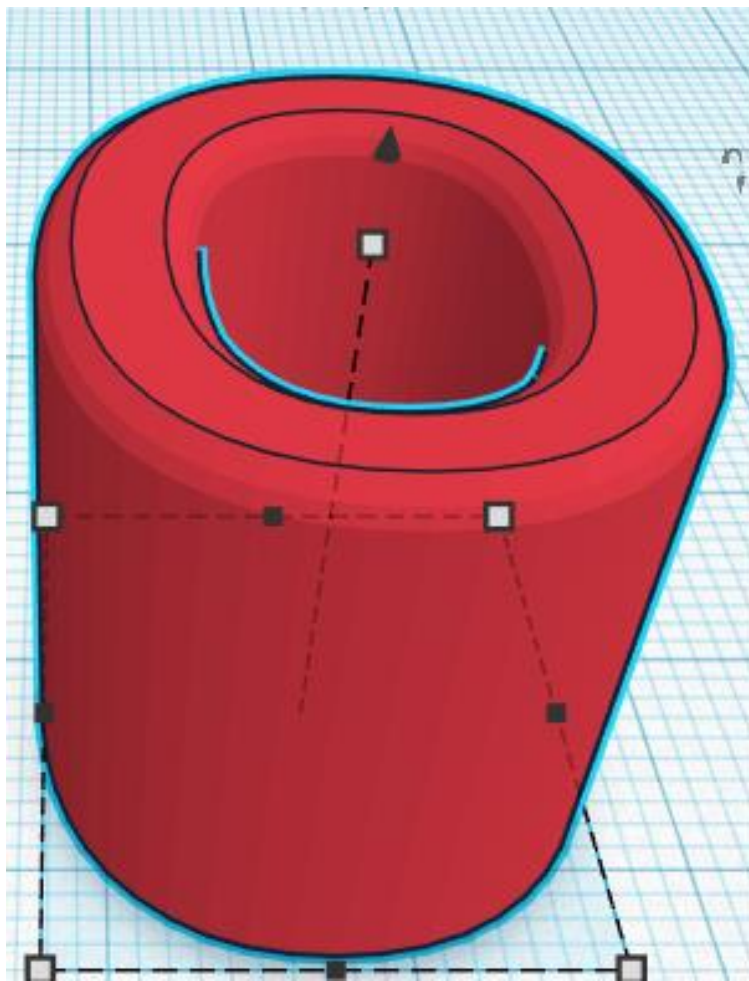
**Text** from text to O

**Font** from Multilanguage to Sans

**Height** from 10 to 20

**Bevel** from 0 to 1

**Segments** from 0 to 2



Shape

Solid Hole

Text **→** O

Font **→** Sans

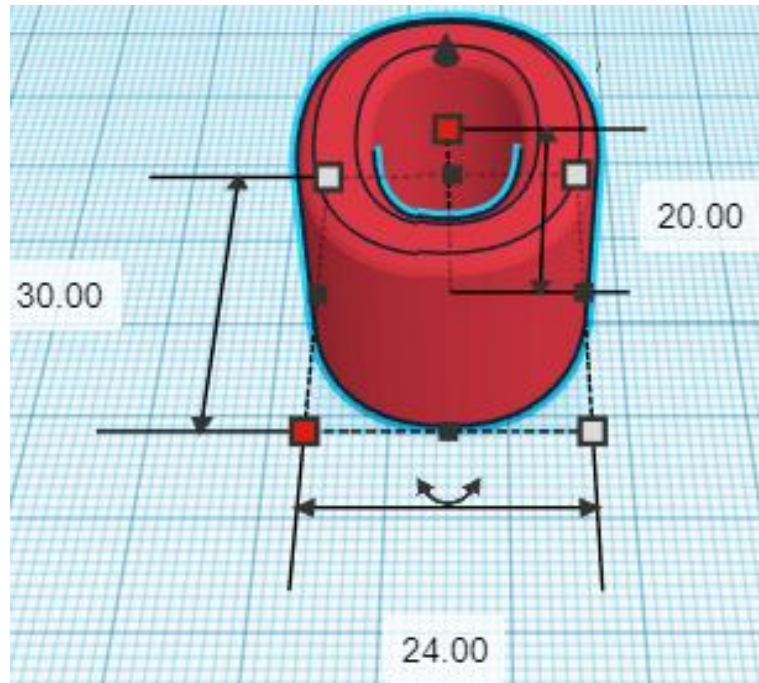
Height **→** 20

Bevel **→** 1

Segments **→** 2

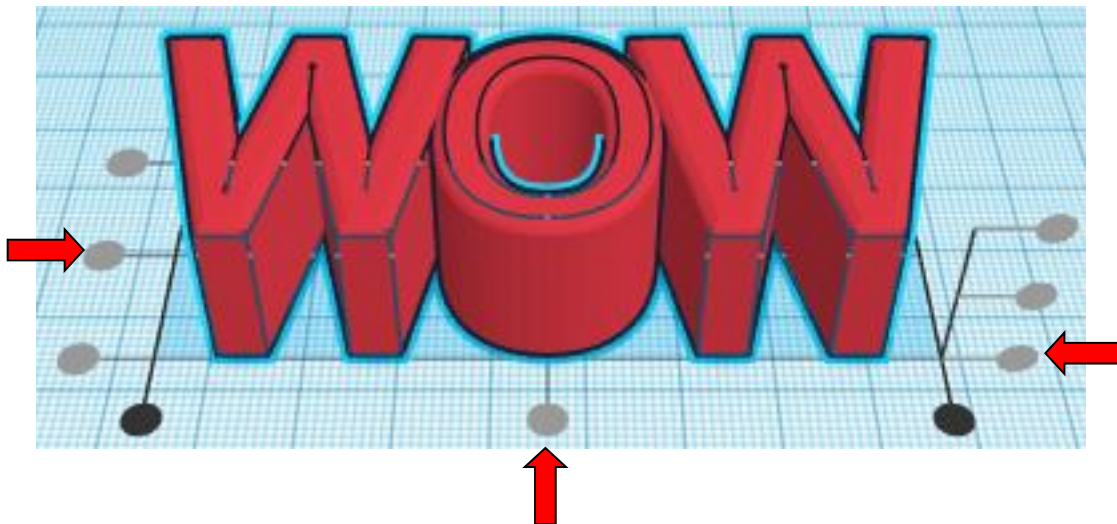


Change the dimensions to  
24mm X direction,  
30mm Y direction, and  
20mm Z direction.



**Align** WOW and Q

centered in X direction,  
centered of Y direction, and  
bottom of Z direction.

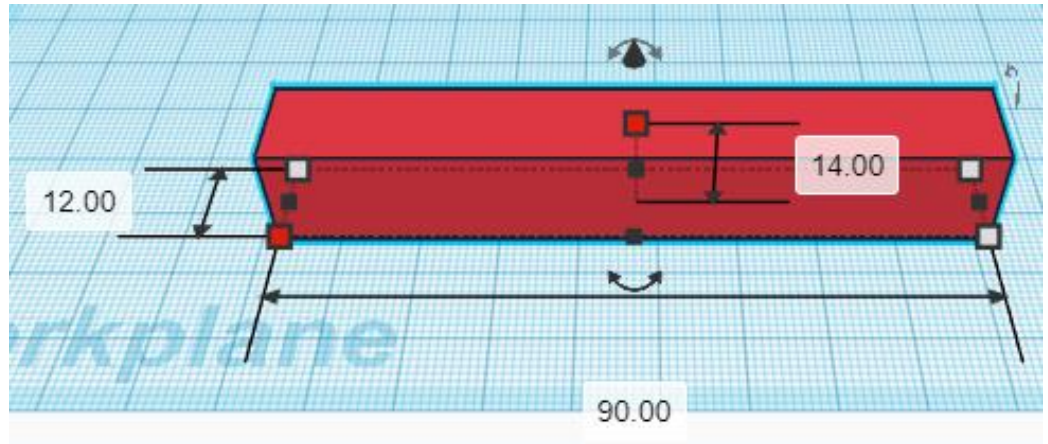


**Group** WOW and Q

From now on this will be called the **WOW**

Bring in a Box, located in Basic Shapes on the left 2 shapes down.  
From now on this will be called the **Text Cutout**

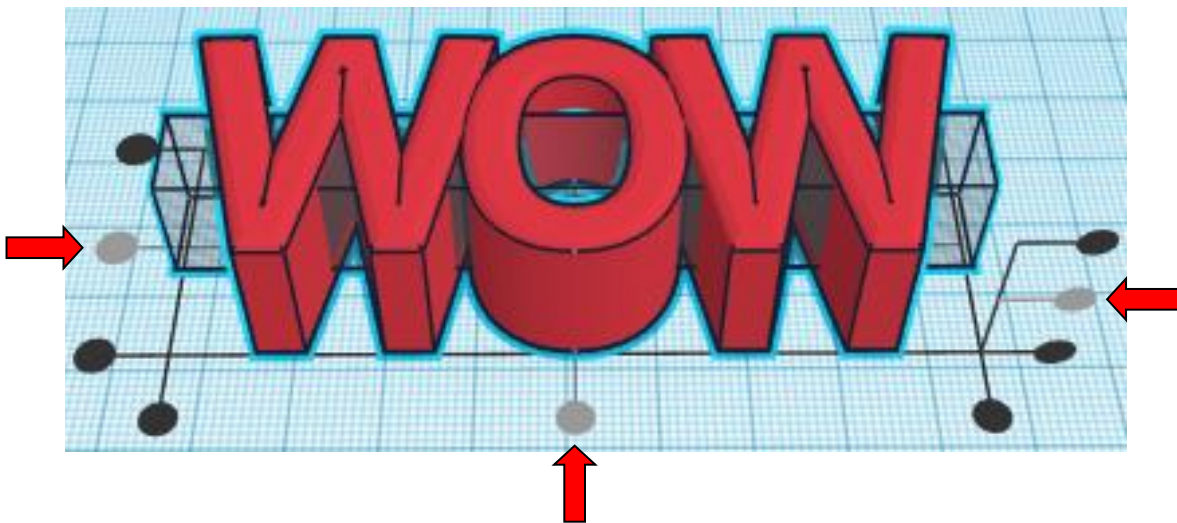
Change the dimensions to  
90mm X direction,  
12mm Y direction, and  
14mm Z direction.



**Change Text Cutout to Hole** by selecting Text Cutout to and typing "h".

**Align WOW and Text Cutout** to

centered in X direction,  
centered of Y direction, and  
centered of Z direction.



**Group WOW and Text Cutout**  
From now on this will be called the **WOW**

**Duplicate WOW** 1 time

**Move WOW to side.**

The drawing is done. Print all the parts.

Then follow the directions below for assembly.