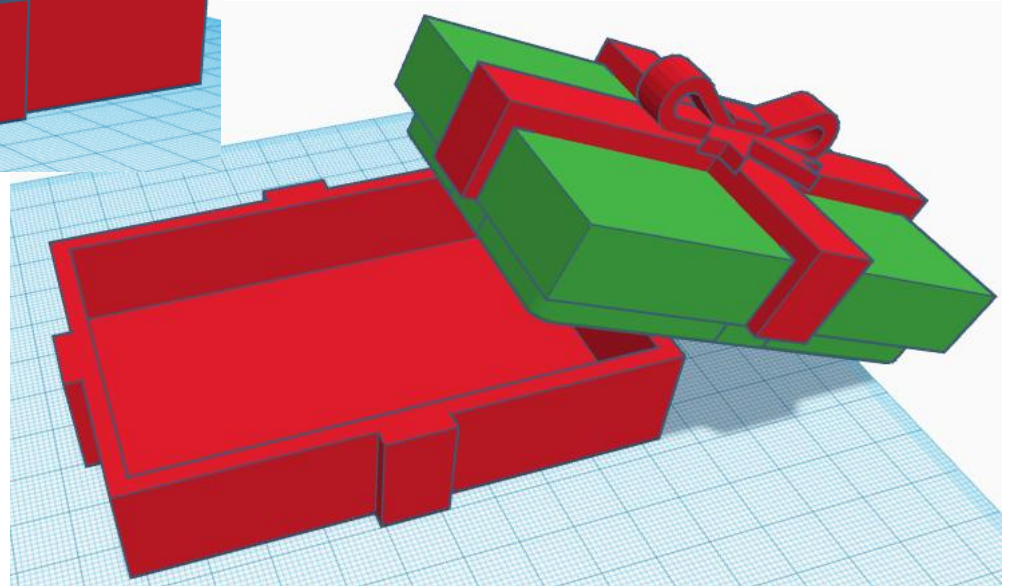
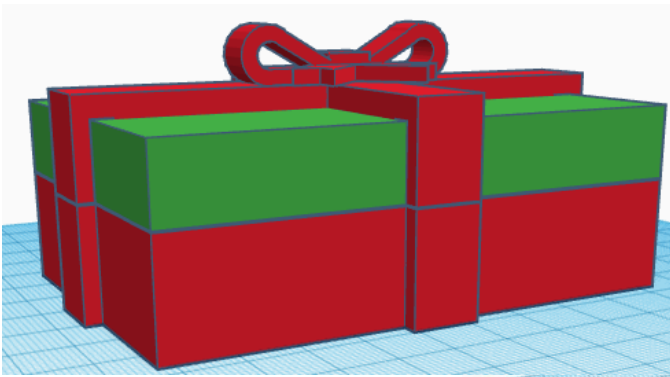




# Gift Box for Christmas and Birthdays Project



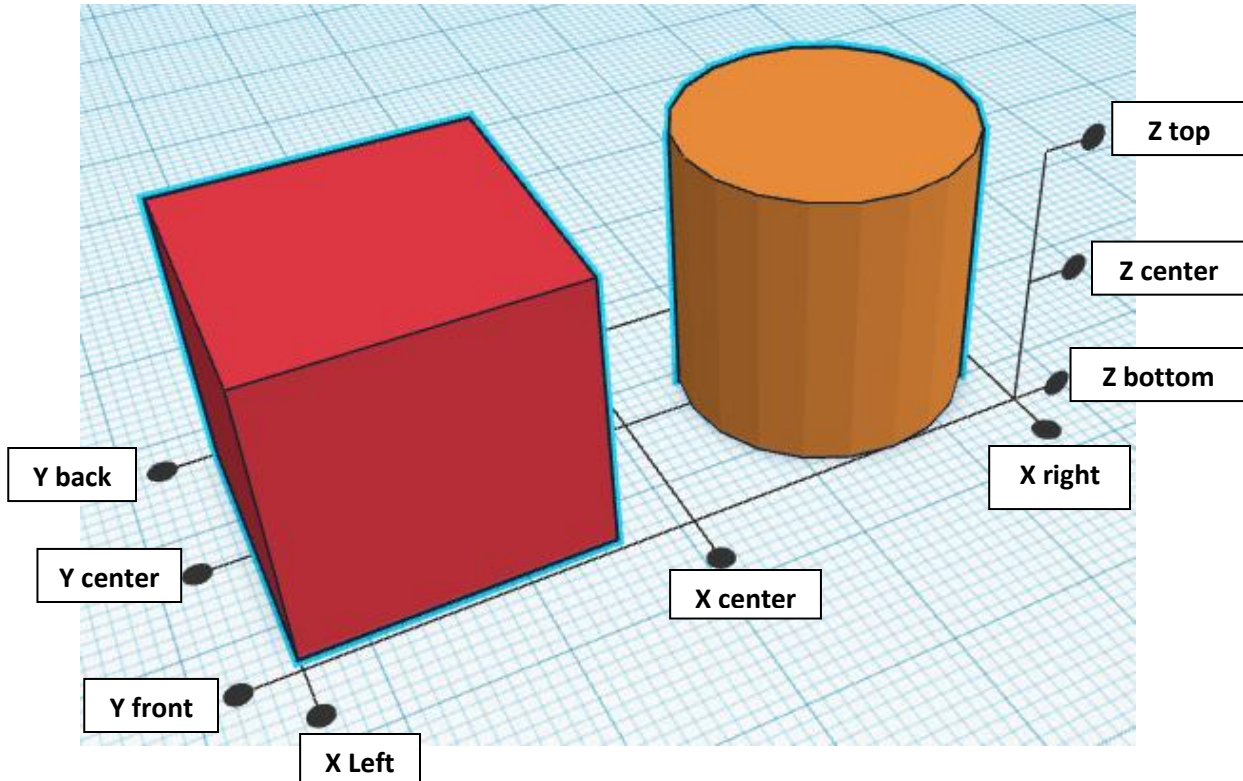
Reference to Aligning, Flip direction, Move direction, and Rotate direction.

Always be in the "home view"

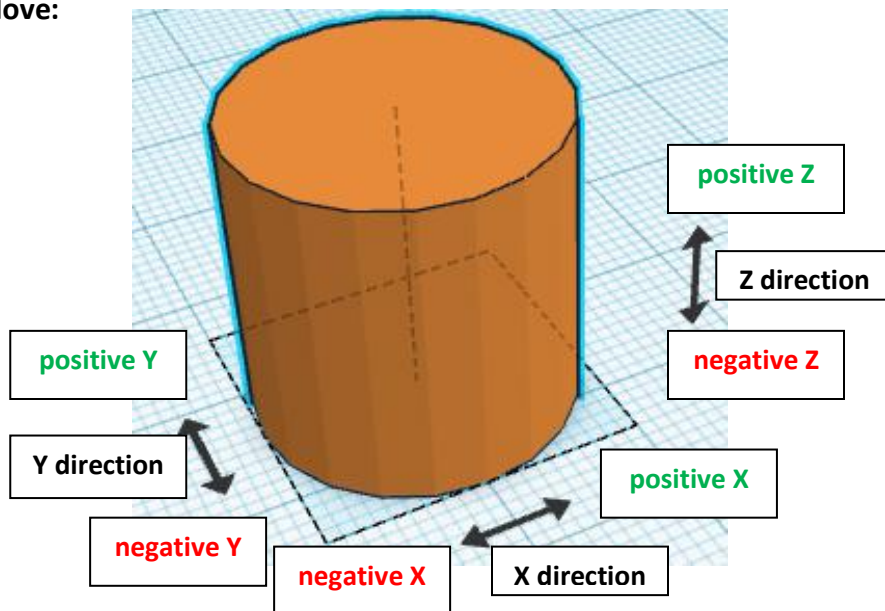


when doing any of these!!!

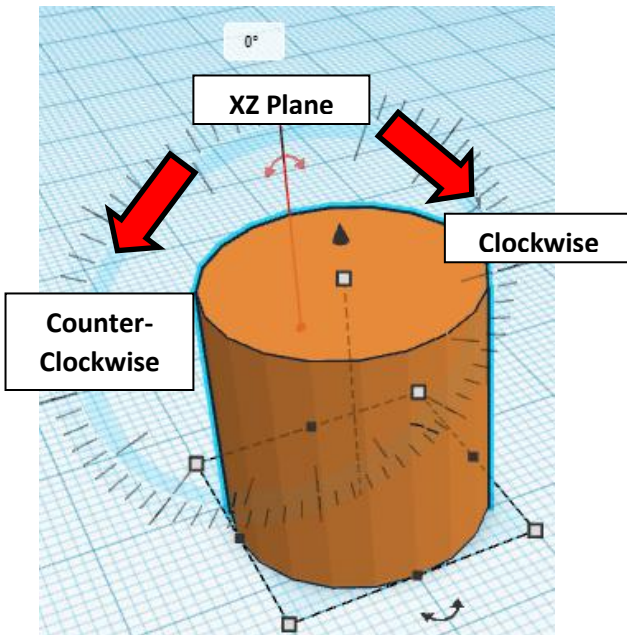
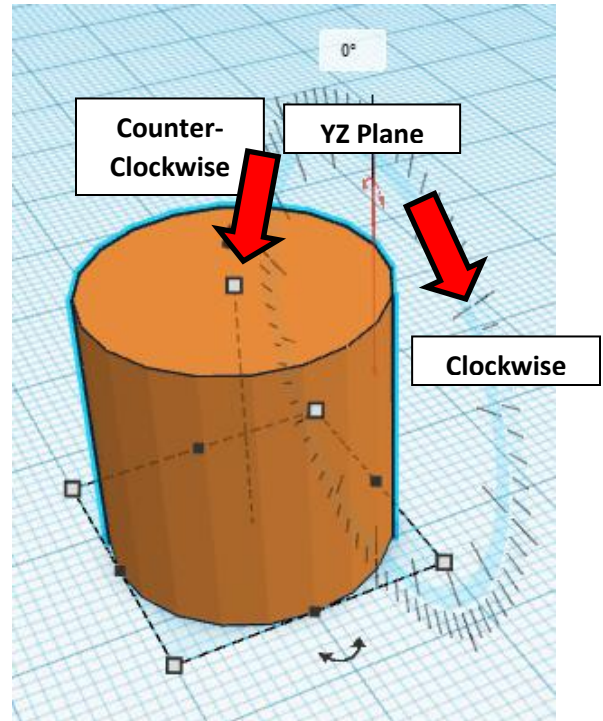
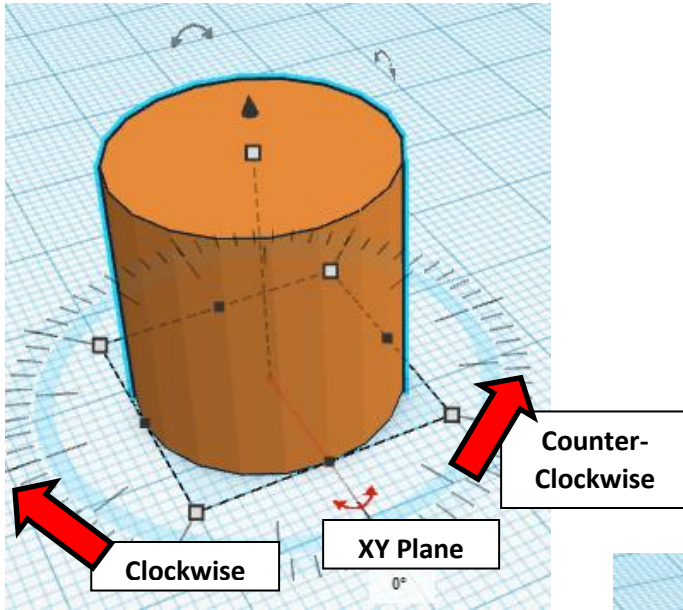
Aligning:



Flip or Mirror and Move:



Rotate:





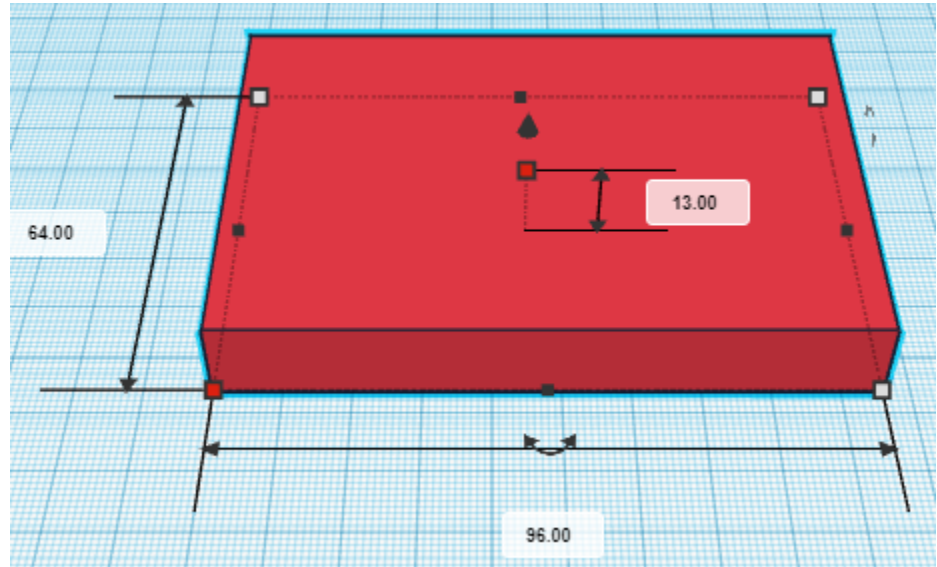
# Gift Box for Christmas and Birthdays:

## Box Top:

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

### Change the dimensions to:

96mm X direction,  
64mm Y direction, and  
13mm Z direction.



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

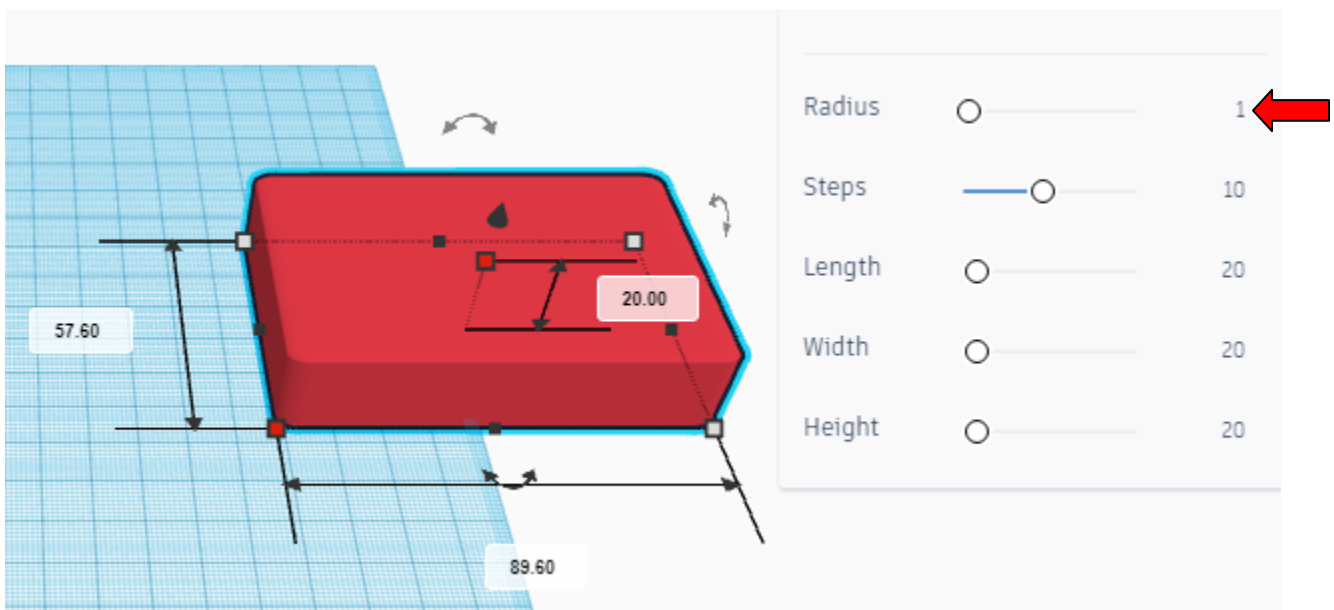
### Change the dimensions to:

89.60mm X direction,  
57.60mm Y direction, and  
20mm Z direction.

Change Radius in controls to:

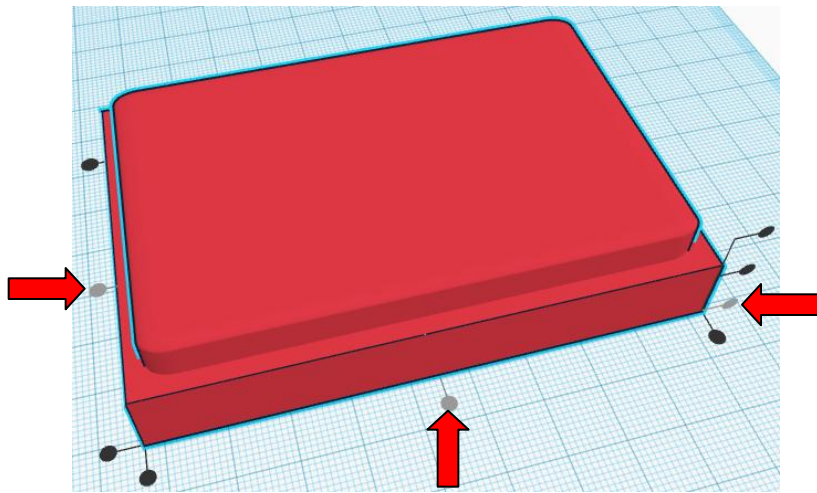
Radius 1

(This will round the edges and make it easier to fit together with the Box Bottom)



**Align** Box Top and Box Inside

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

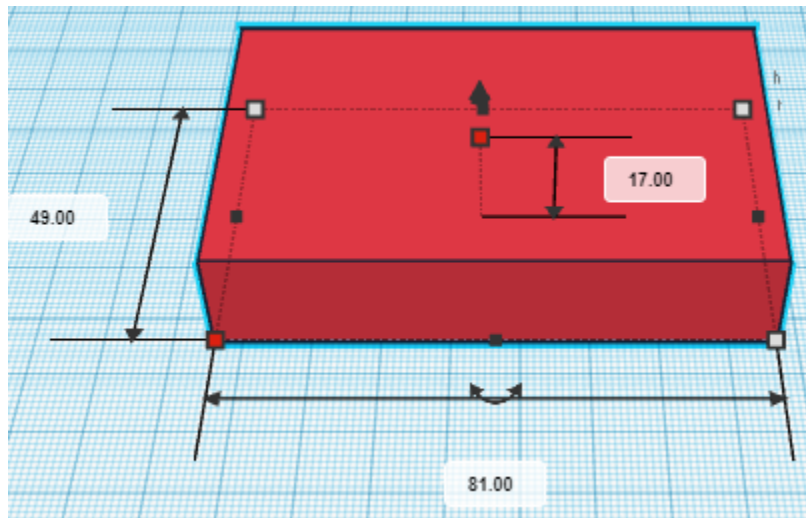


**Group** Box Top and Box Inside

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

**Change the dimensions to:**

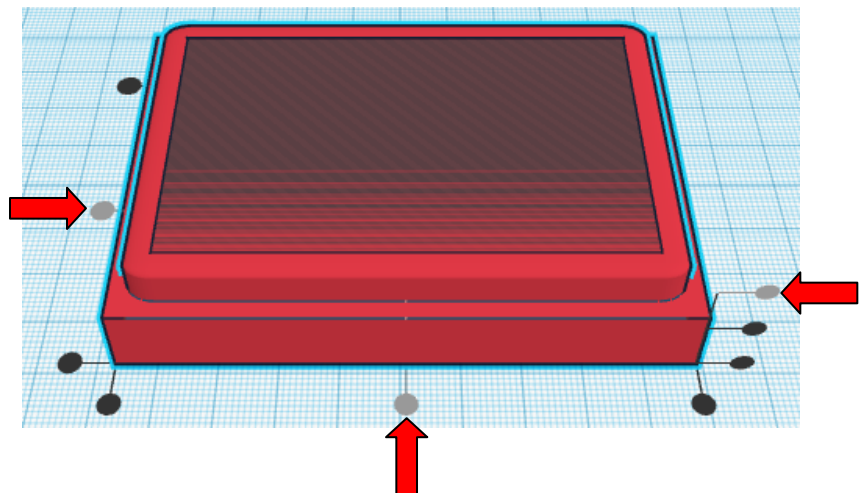
81mm X direction,  
49mm Y direction, and  
17mm Z direction.



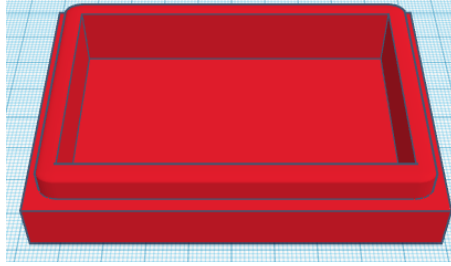
**Change** Box Top Hole to **Hole** by selecting Box Top Hole and typing "h".

**Align** Box Top and Box Inside

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



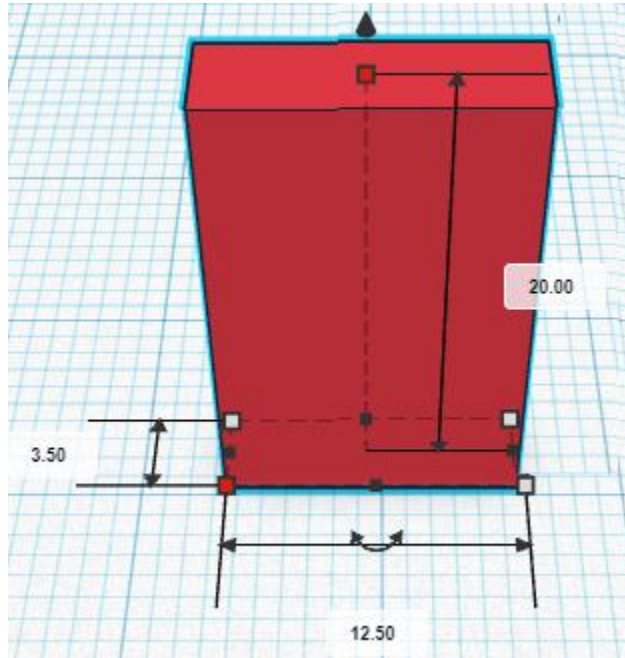
**Group Box Top and Box Top Hole**



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

**Change the dimensions to:**

12.50mm X direction,  
3.50mm Y direction, and  
20.00mm Z direction.



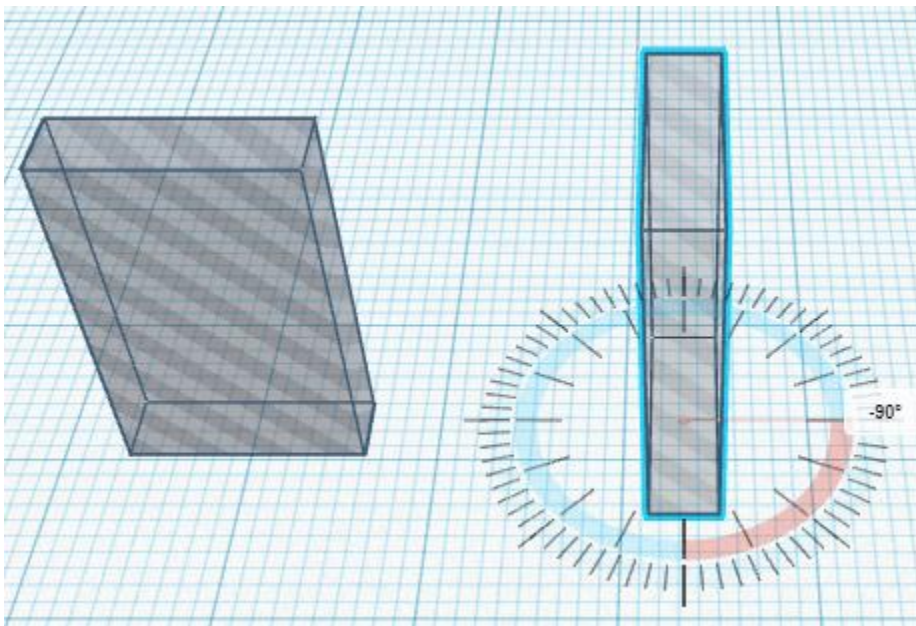
**Change Side Hole to Hole** by selecting Side Hole and typing "h".

**Duplicate Side Hole** 2 times.

Move 1 Side Hole off to the side to be rotated.

**Rotate:**

Side Hole 90 degrees clockwise in XY plane.

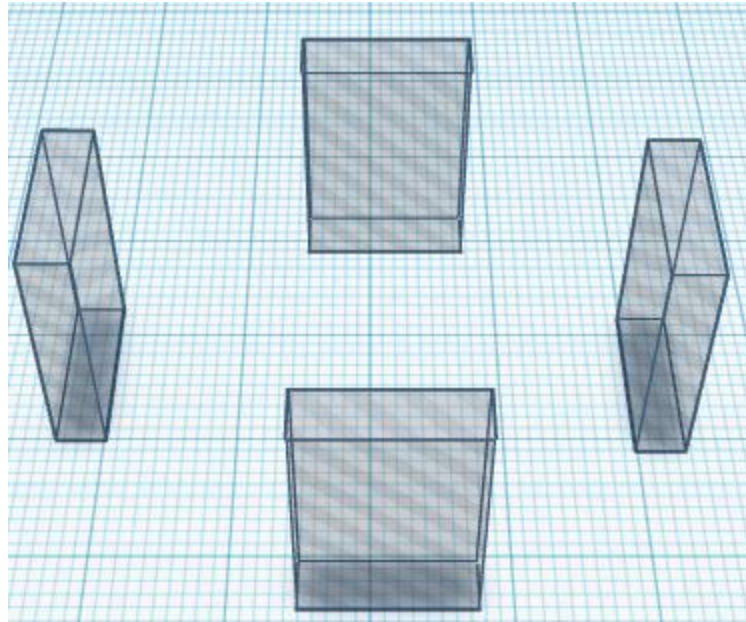




**Duplicate** rotated Side Hole 1 times.

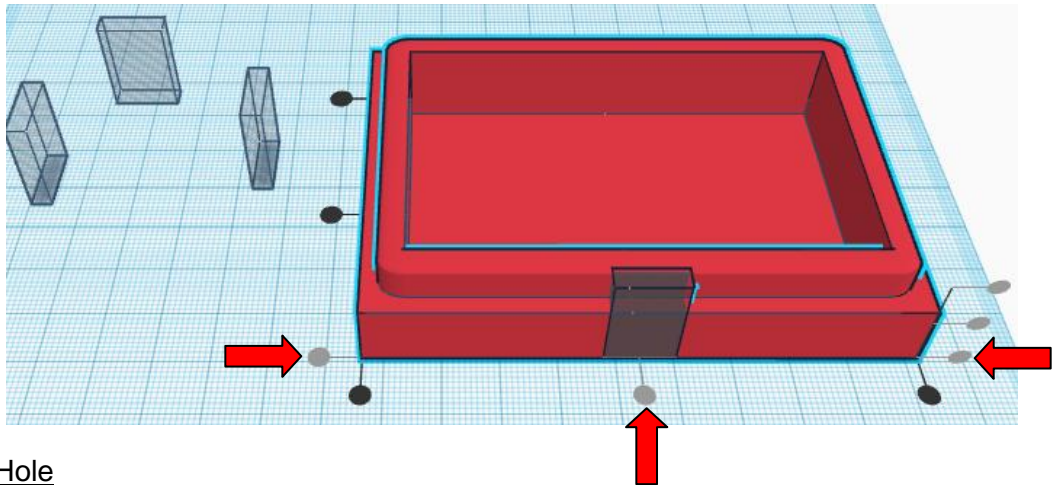
You should have 4 total Side holes

2 horizontal  
and  
2 vertical

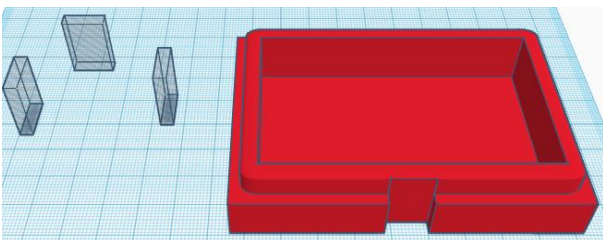


**Align** Box Top and Side Hole  
(Select the non-rotated Side Hole)

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

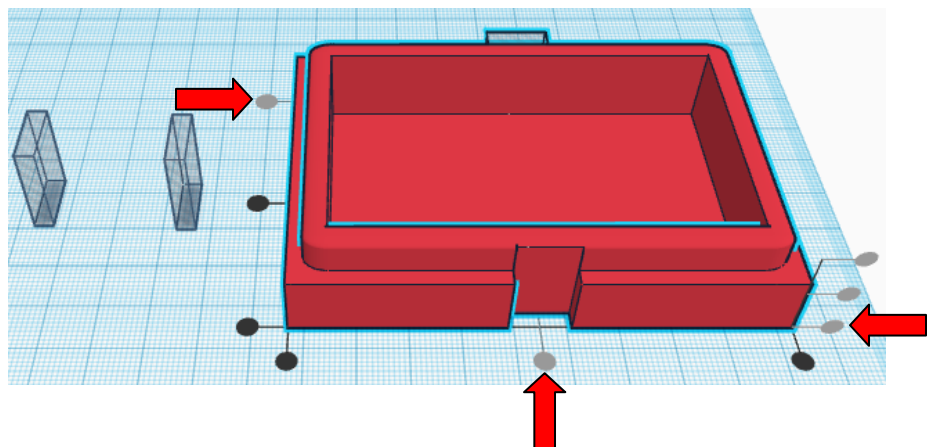


**Group** Box Top and Side Hole

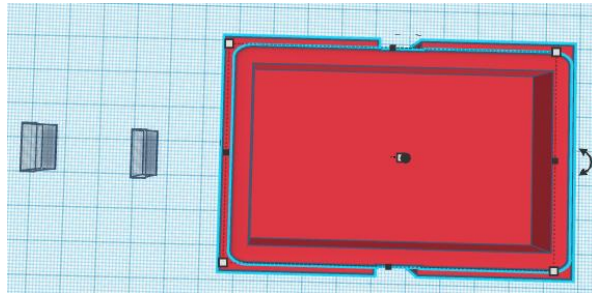


**Align** Box Top and Side Hole  
(Select the non-rotated Side Hole)

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

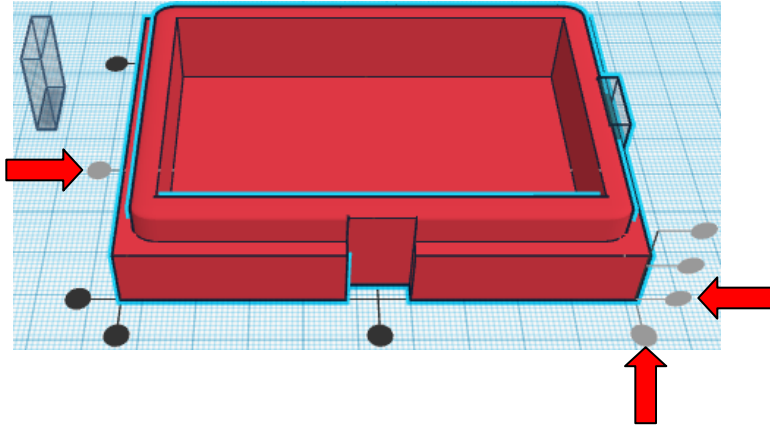


**Group** Box Top and Side Hole

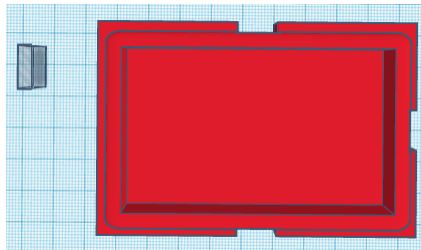


**Align** Box Top and rotated Side Hole

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

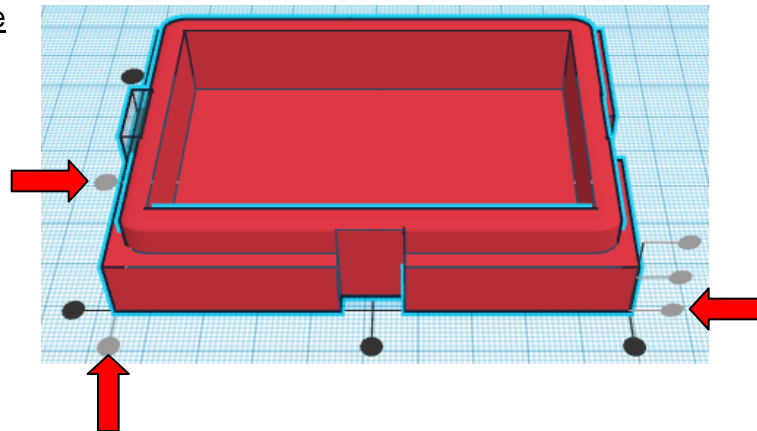


**Group** Box Top and rotated Side Hole



**Align** Box Top and rotated Side Hole

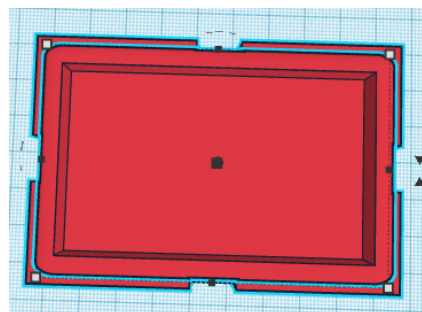
right in X direction,  
centered in Y direction, and  
bottom of Z direction



**Group** Box Top and rotated Side Hole

You are done with the Box Top.  
Print this as a different color than the Box Bottom.

Save drawing.





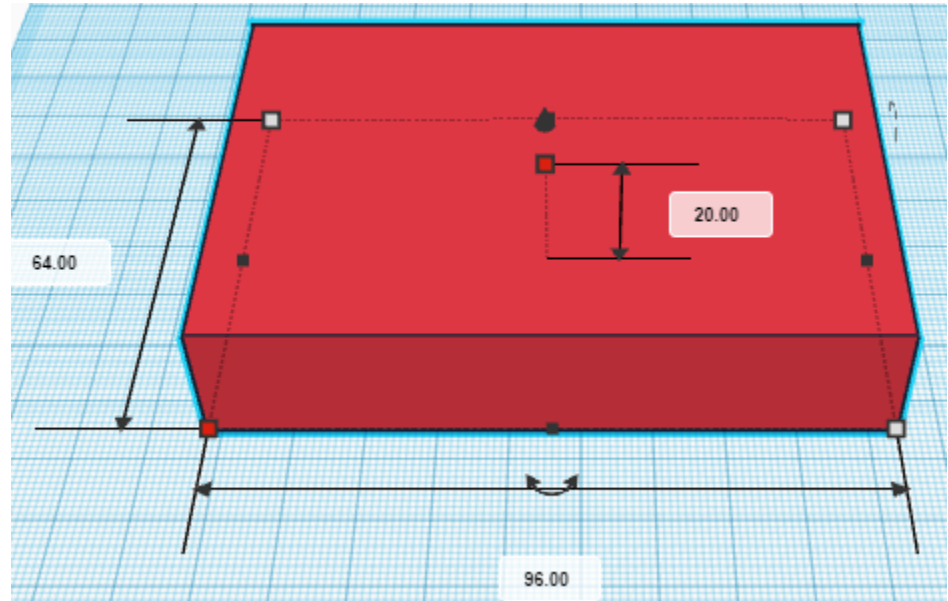
## Create new design

### Box Bottom:

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

#### Change the dimensions to:

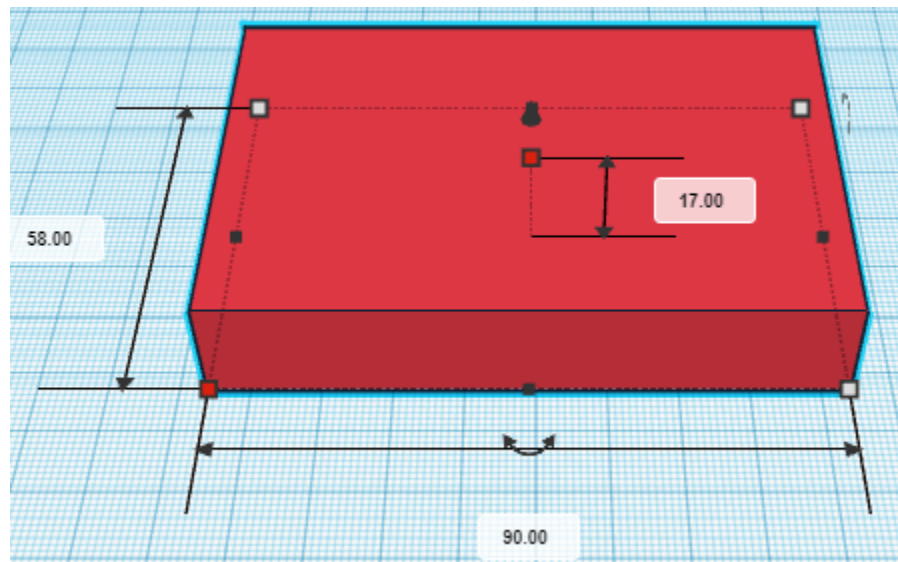
96mm X direction,  
64mm Y direction, and  
20mm Z direction.



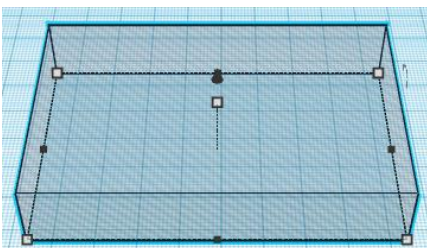
Bring in a **Box**, located in Basic Shapes on the left 2 shapes down.  
From now on this will be called the **Box Bottom Hole**.

#### Change the dimensions to:

90mm X direction,  
58mm Y direction, and  
17mm Z direction.

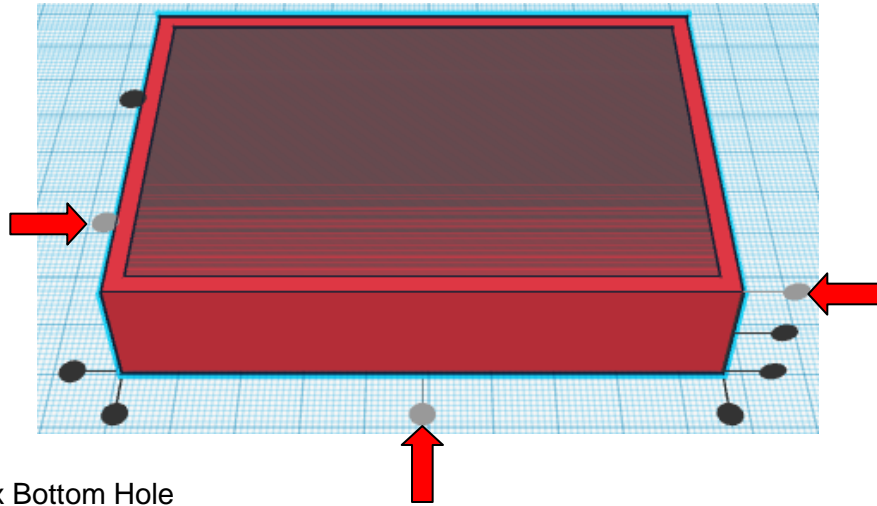


Change Box Bottom Hole to **Hole** by selecting Box Bottom Hole and typing "h".



**Align** Box Bottom and Box Bottom Hole

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



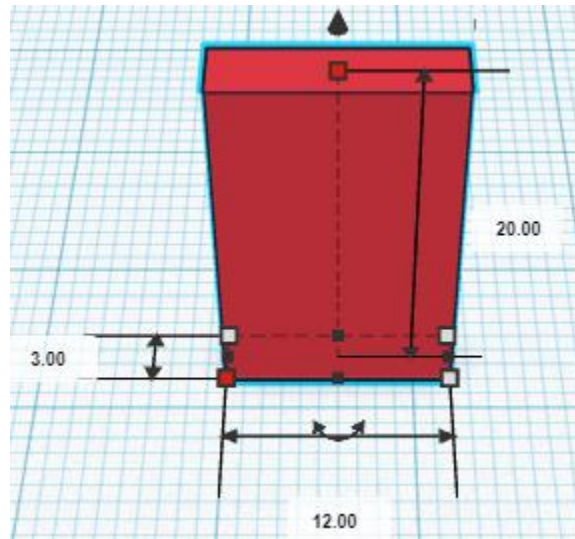
**Group** Box Bottom and Box Bottom Hole



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

**Change the dimensions to:**

12mm X direction,  
3mm Y direction, and  
20mm Z direction.

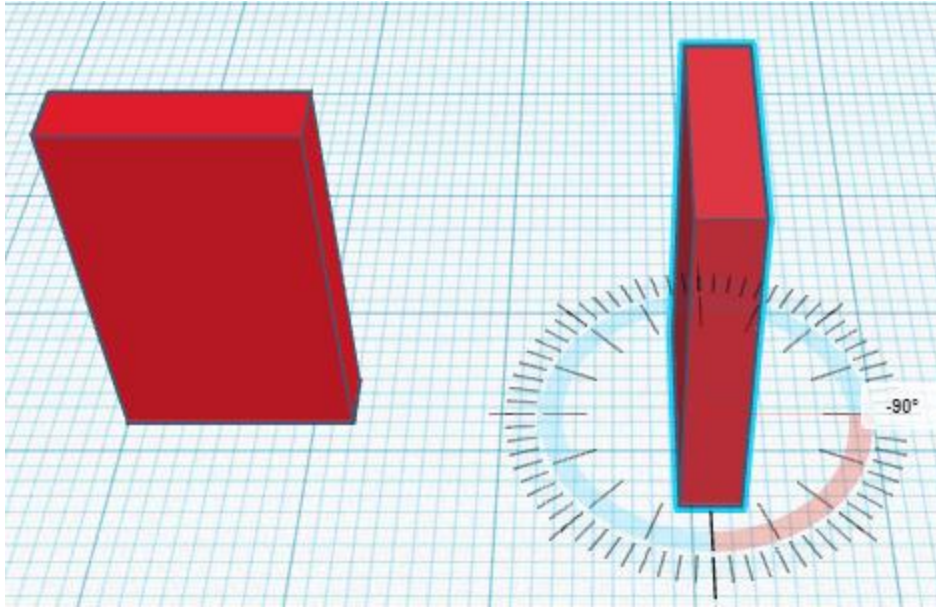


**Duplicate** Side Ribbon 2 times.

Move 1 Side Ribbon off to the side to be rotated.

**Rotate:**

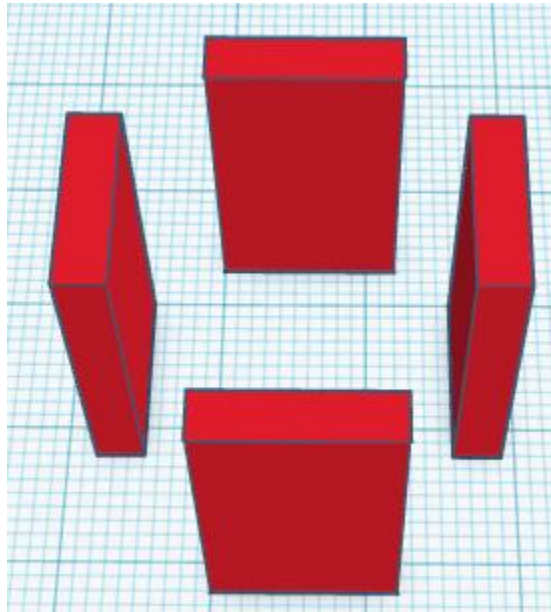
Side Ribbon 90 degrees clockwise in XY plane.



**Duplicate** rotated Side Ribbon 1 time.

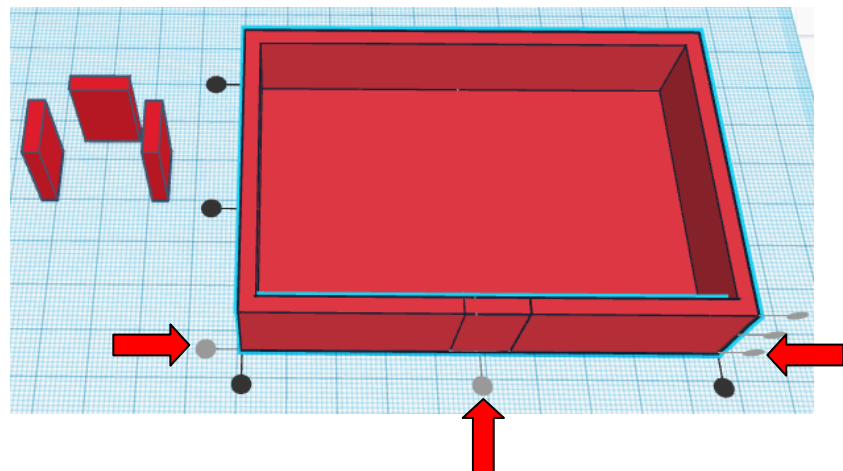
You should have 4 total Side Ribbons

2 horizontal  
and  
2 vertical



**Align** Box Bottom and Side Ribbon  
(Select the non-rotated Side Ribbon)

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

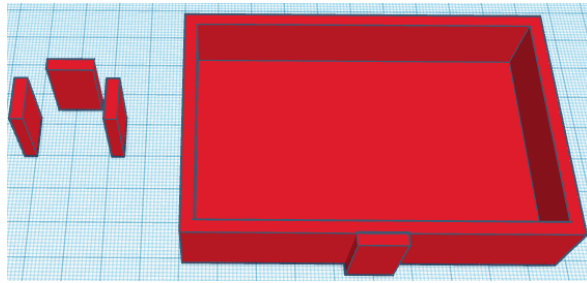




**Move Box Bottom**

back 3mm in the positive Y direction.

(select Box Bottom & push up arrow key 3 times)

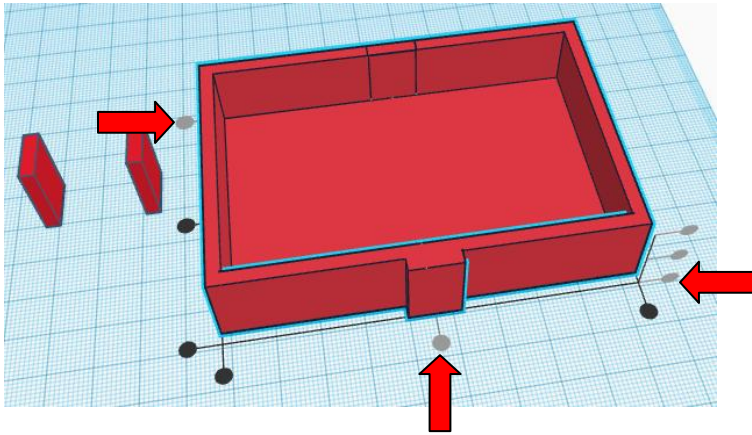


**Group Box Bottom and Side Ribbon**

**Align Box Bottom and Side Ribbon**

(Select the non-rotated Side Ribbon)

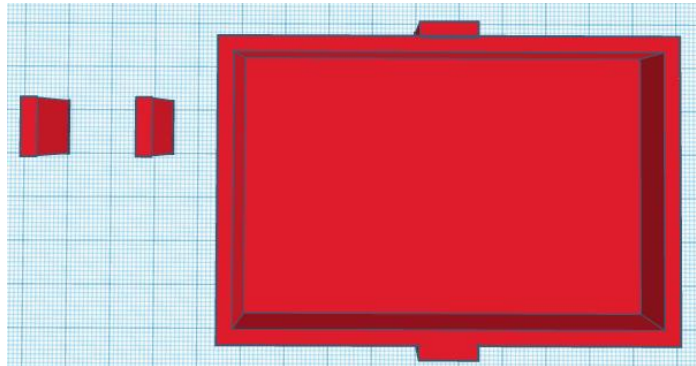
centered in X direction,  
back in Y direction, and  
bottom of Z direction



**Move Box Bottom**

forward 3mm in the negative Y direction.

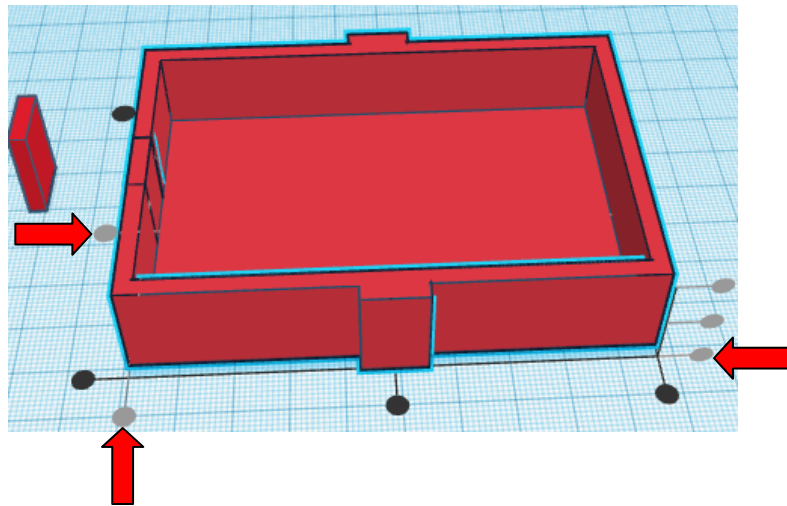
(select Box Bottom & push down arrow key 3 times)



**Group Box Bottom and Side Ribbon**

**Align Box Bottom and rotated Side Ribbon**

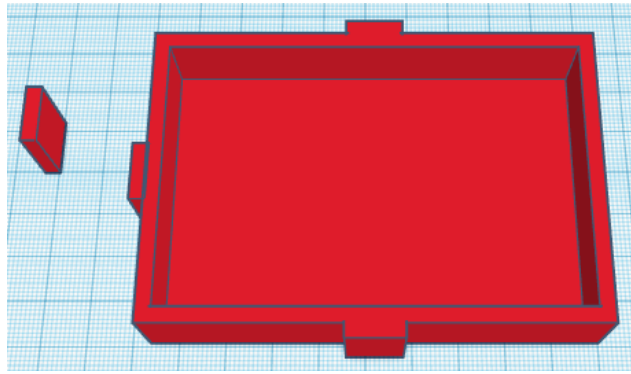
left in X direction,  
centered in Y direction, and  
bottom of Z direction



**Move Box Bottom**

right 3mm in the positive X direction.

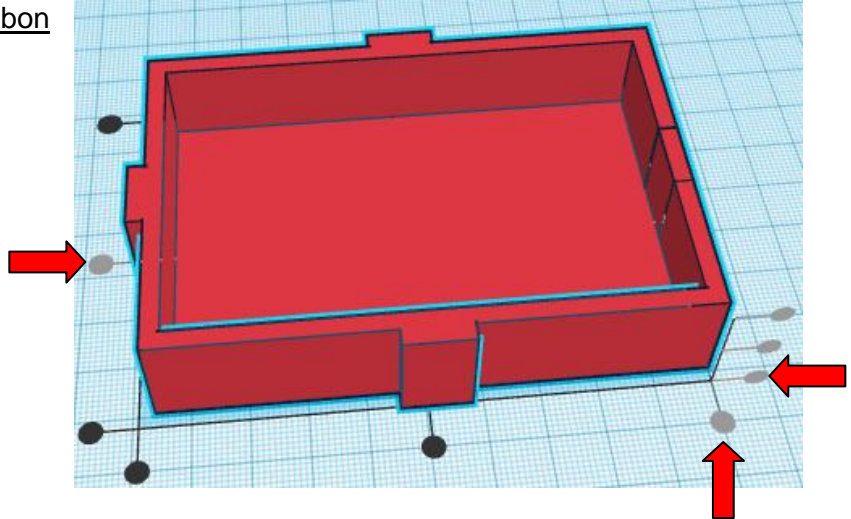
(select Box Bottom & push right arrow key 3 times)



**Group Box Bottom and rotated Side Ribbon**

**Align Box Bottom and rotated Side Ribbon**

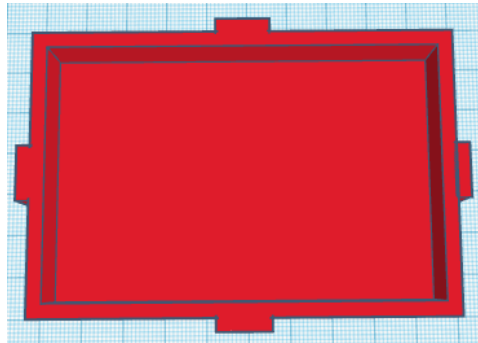
right in X direction,  
centered in Y direction, and  
bottom of Z direction



**Move Box Bottom**

left 3mm in the negative X direction.

(select Box Bottom & push left arrow key 3 times)



**Group Box Bottom and rotated Side Ribbon**

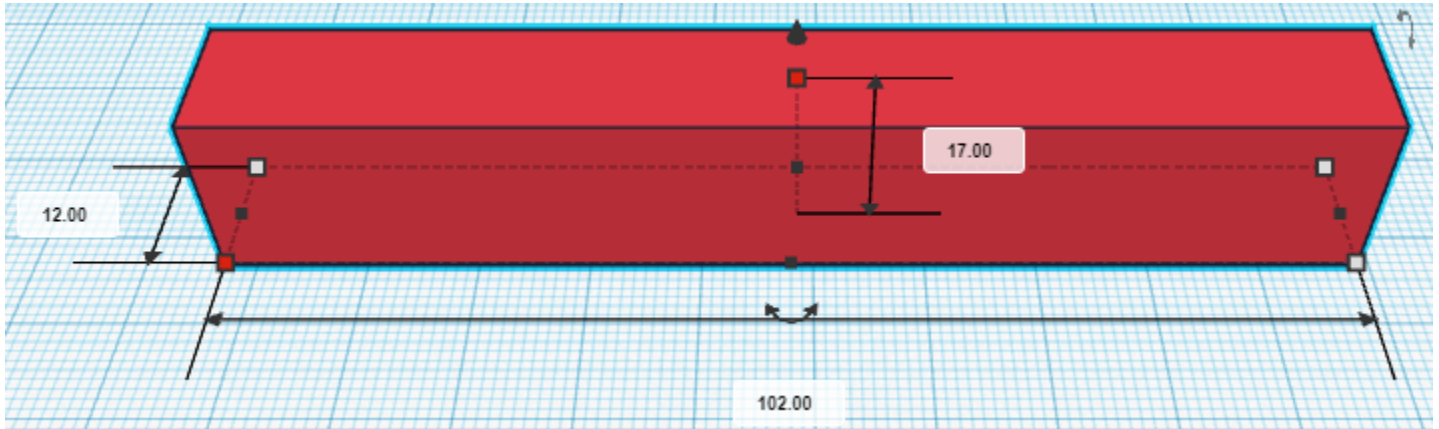
You are done with Box bottom, set this off to the side for later.

## Ribbon:

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

### Change the dimensions to:

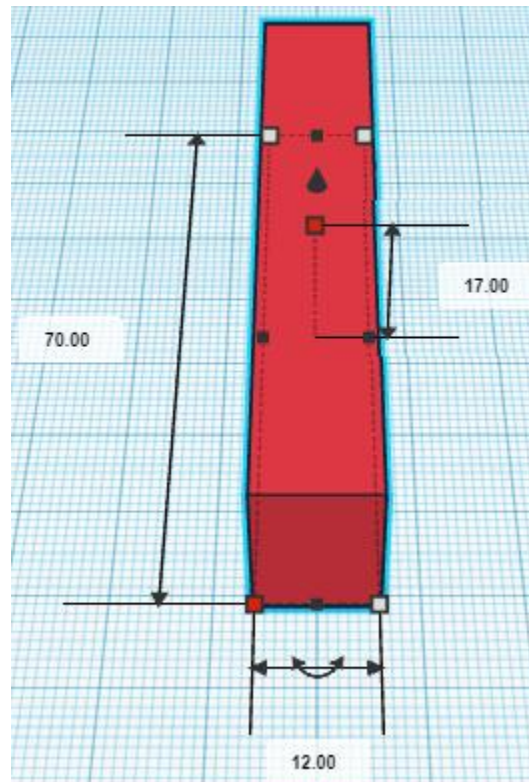
102mm X direction,  
12mm Y direction, and  
17mm Z direction.



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

### Change the dimensions to:

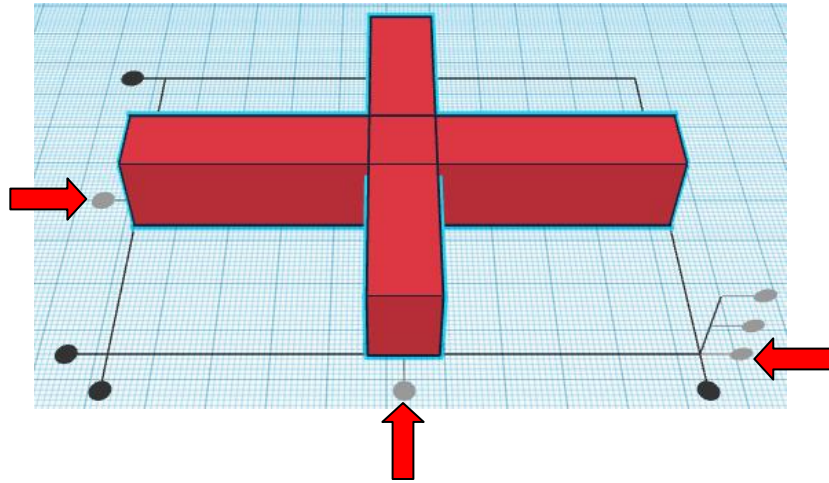
12mm X direction,  
70mm Y direction, and  
17mm Z direction.





**Align** Horizontal Ribbon and Vertical Ribbon

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



**Group** Horizontal Ribbon and Vertical Ribbon

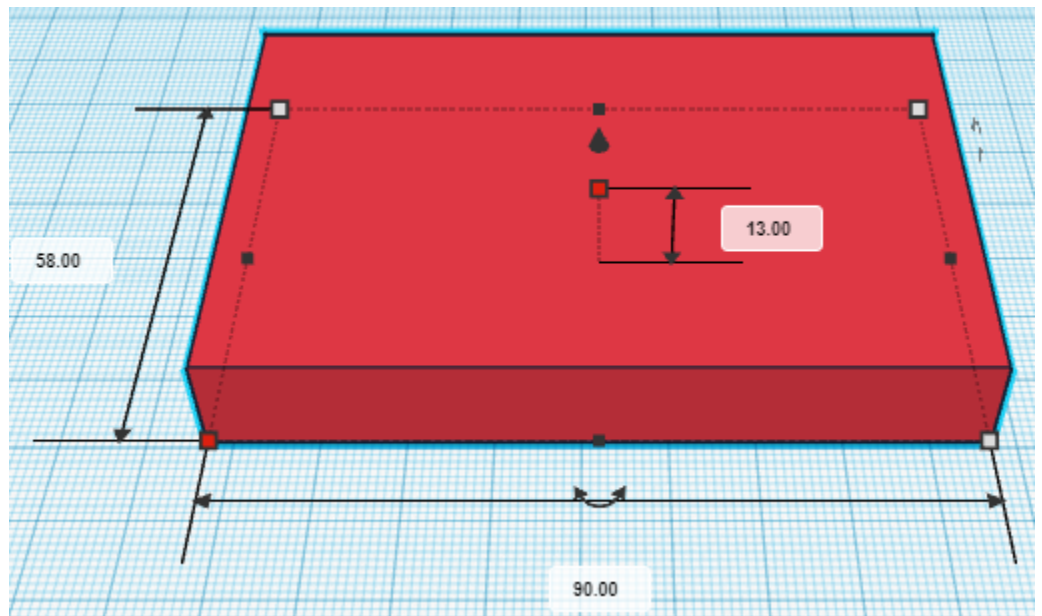
From now on this will be called the **Ribbon**.

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

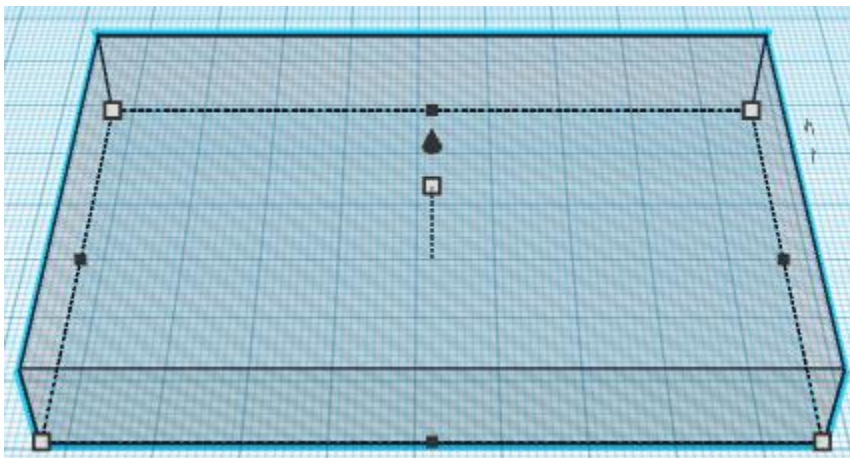
From now on this will be called the **Ribbon Cutout**.

**Change the dimensions to:**

90mm X direction,  
58mm Y direction, and  
13mm Z direction.

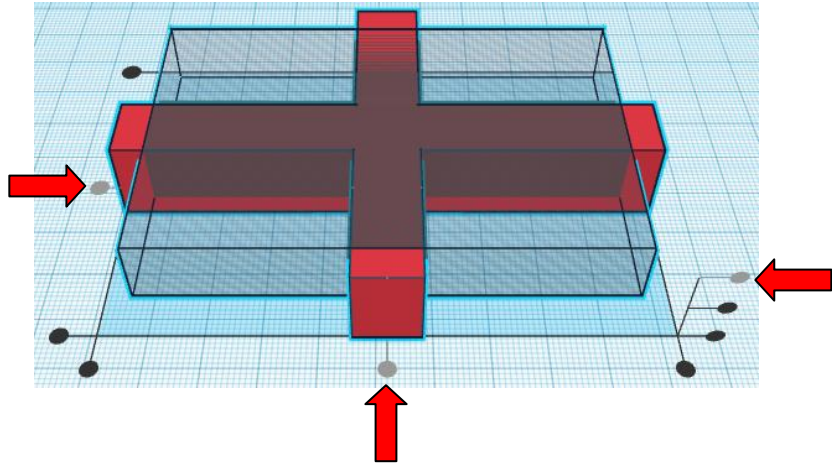


**Change** Ribbon Cutout to **Hole** by selecting Ribbon Cutout and typing "h".

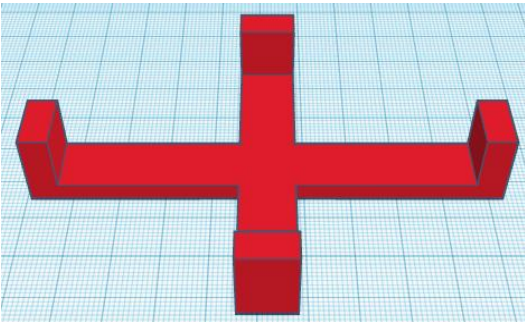


**Align** Ribbon and Ribbon Cutout

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



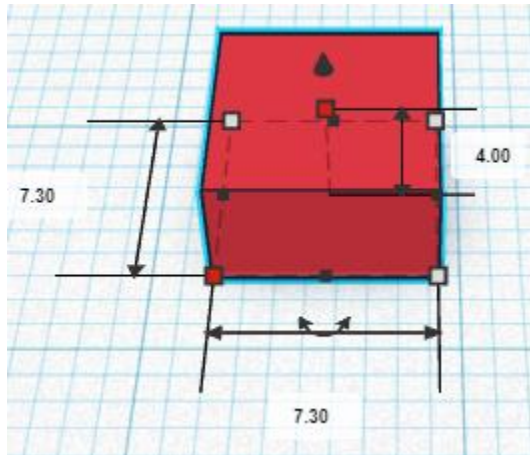
**Group** Ribbon and Ribbon Cutout



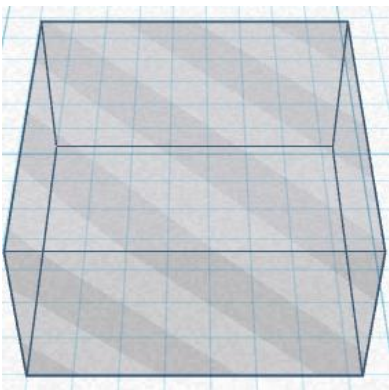
Bring in a **Box**, located in Basic Shapes on the left 2 shapes down.  
From now on this will be called the **Bow Cutout**.

**Change the dimensions to:**

7.30mm X direction,  
7.30mm Y direction, and  
4mm Z direction.

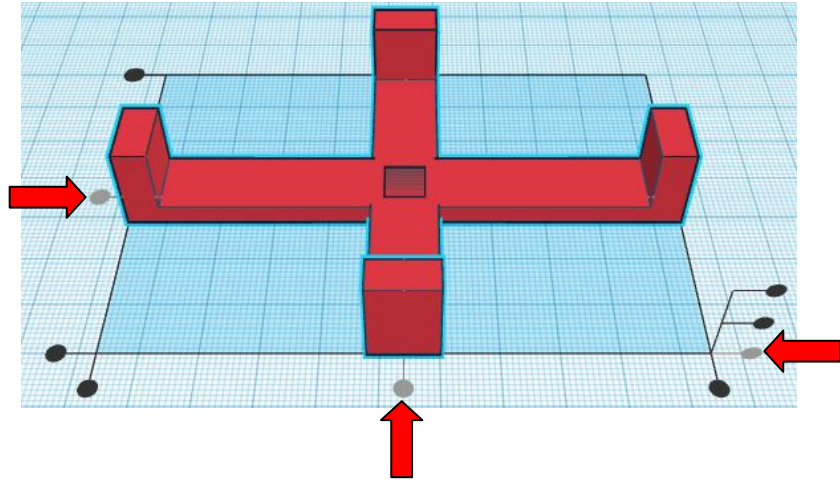


**Change** Bow Cutout to **Hole** by selecting Bow Cutout and typing "h".

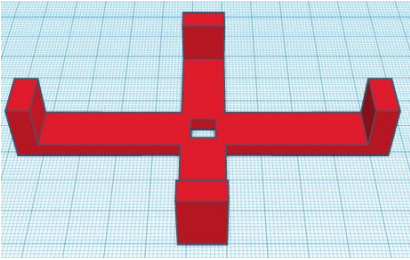


**Align** Ribbon and Bow Cutout

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



**Group** Ribbon and Bow Cutout



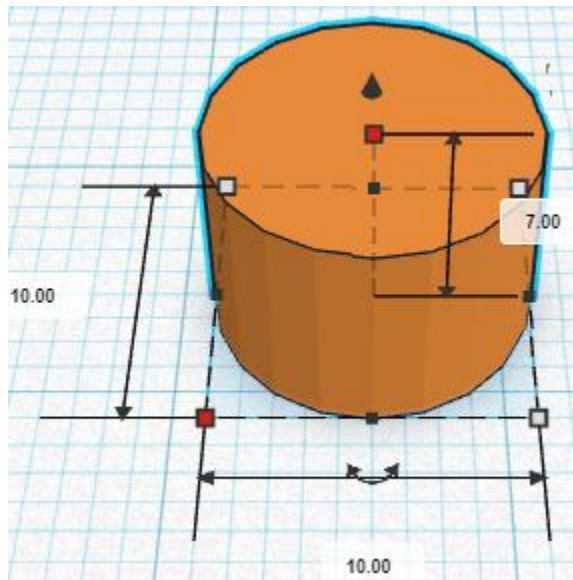
You are done with Ribbon, set this off to the side for later.

**Bow:**

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

**Change the dimensions to:**

10mm X direction,  
10mm Y direction, and  
7mm Z direction.

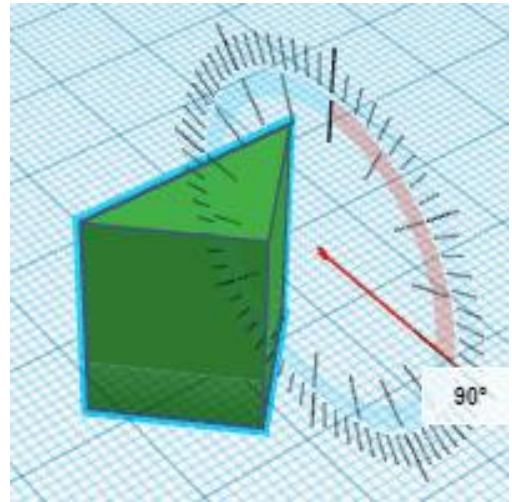




Bring in a **Roof**, located in Basic Shapes on the left 4 shapes down.

**Rotate:**

Roof 90 degrees clockwise in YZ plane.



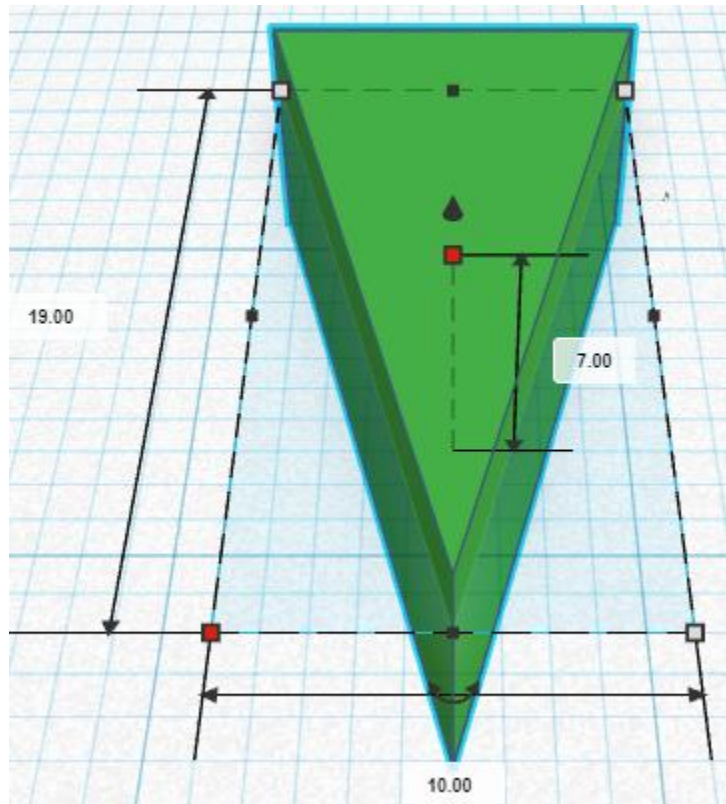
**Important:**

Select roof and type "d"

(This moves the roof to the work plane.)

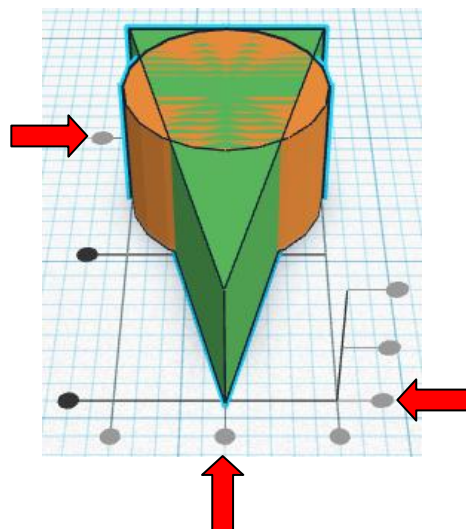
**Change the dimensions to:**

10mm X direction,  
19mm Y direction, and  
7mm Z direction.



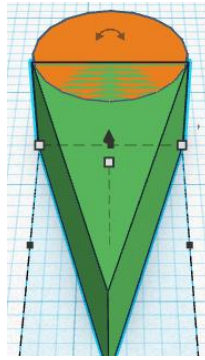
**Align** Cylinder and Roof

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



**Move Roof**

forward 6mm in the negative Y direction.  
(select Roof & push down arrow key 6 times)



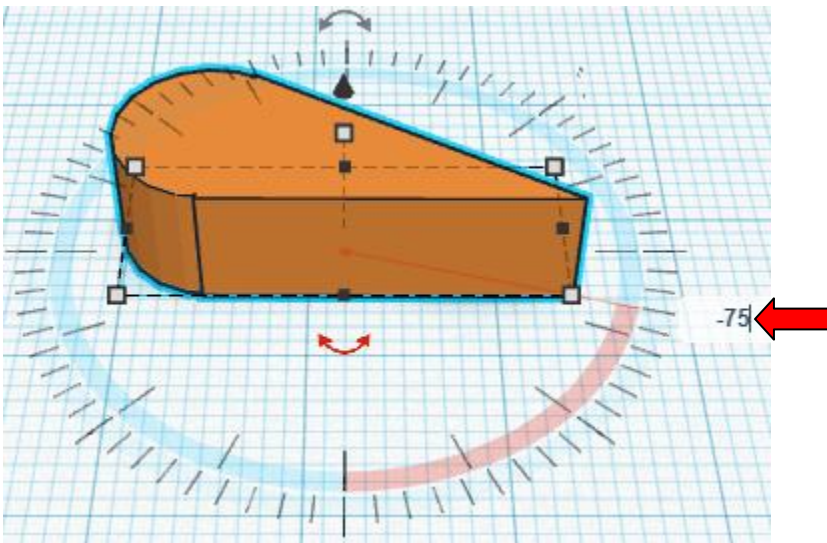
**Group Cylinder and Roof**

From now on this will be called the **Left Bow**.

**Rotate:**

Left Bow 75 degrees counter-clockwise in XY plane.

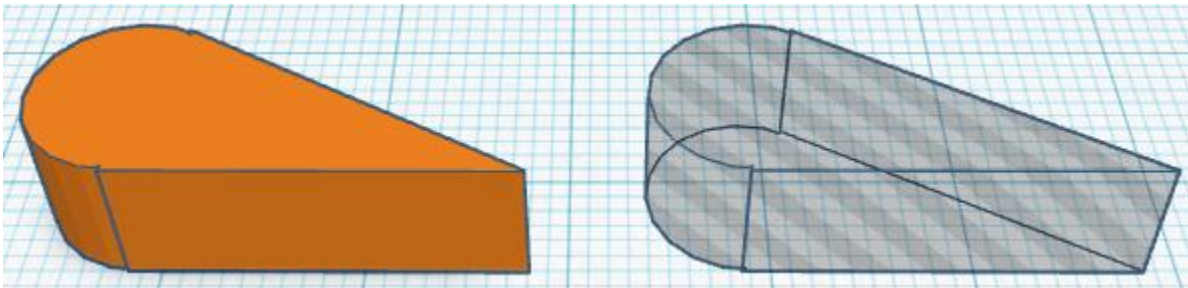
(click on the XY rotate arrow, click in text box and type "-75" and enter)



**Duplicate Left Bow** 1 time.

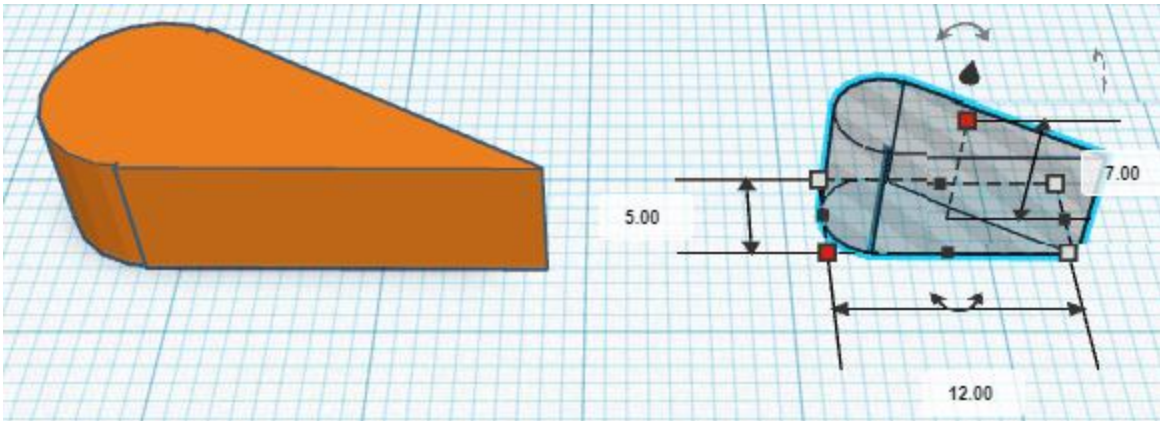
Move 1 Left Bow to the side and now call this the Left Bow Cutout.

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



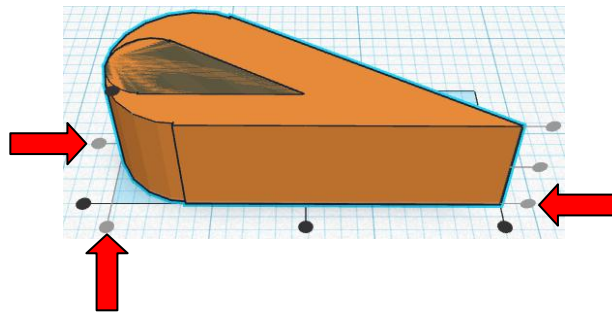
**Change the dimensions to Left Bow Cutout:**

12mm X direction,  
5mm Y direction, and  
7mm Z direction.



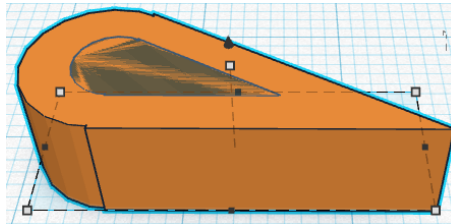
**Align Left Bow and Left Bow Cutout**

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

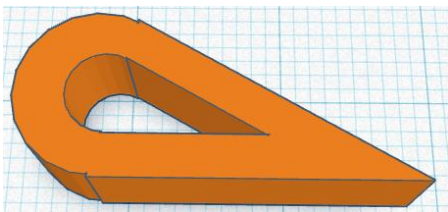


**Move Left Bow**

left 3mm in the negative X direction.  
(select Left Bow & push left arrow key 3 times)



**Group Left Bow and Left Bow Cutout**

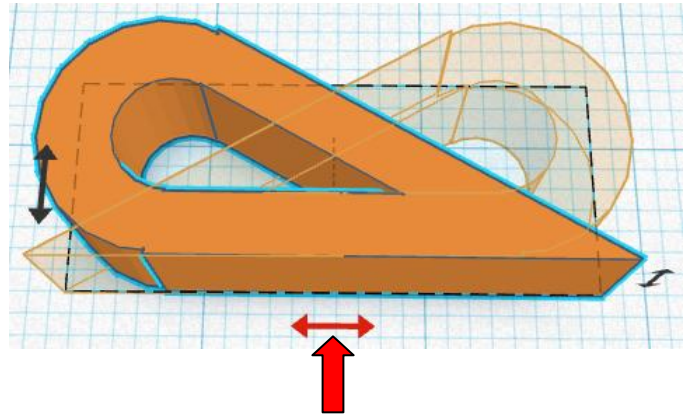




**Duplicate** Left Bow 1 time.

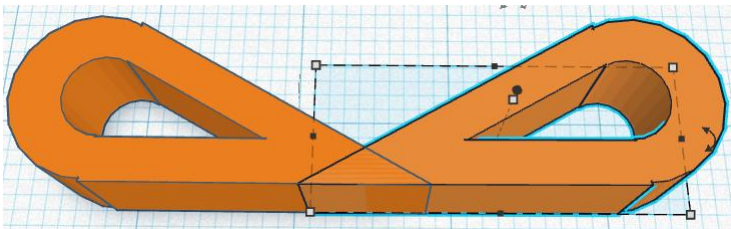
**Flip** Left Bow in X direction.

From now on this will be called the **Right Bow**.



**Move** Right Bow

move right in positive X direction 17mm,  
(select Right Bow and push right arrow 17 times)



**Group** Left Bow and Right Bow

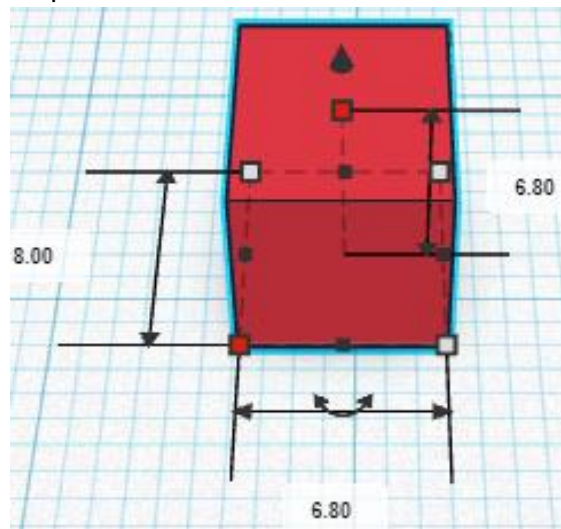
From now on this will be called the **Bow**.

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

From now on this will be called the **Bow Connector**.

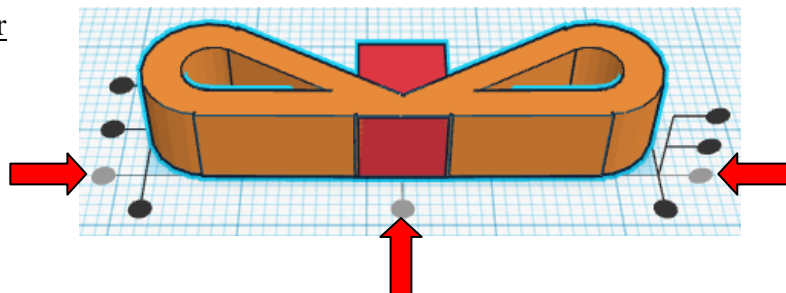
**Change the dimensions to:**

6.80mm X direction,  
8mm Y direction, and  
6.80mm Z direction.



**Align** Bow and Bow Connector

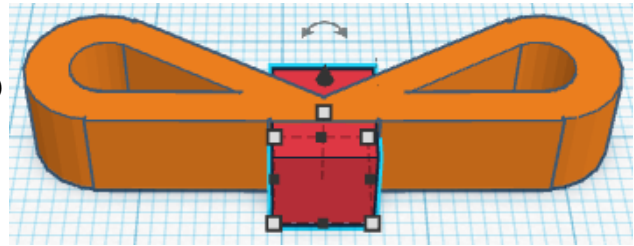
centered in X direction,  
front in Y direction, and  
bottom of Z direction



**Move Bow Connector**

forward 3mm in the negative Y direction.

(select Bow Connector & push down arrow key 3 times)



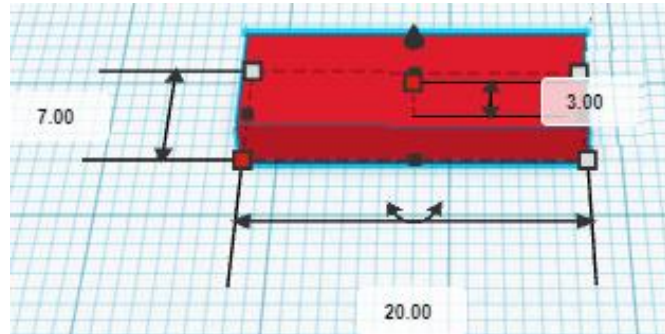
**Group Bow and Bow Connector**

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

From now on this will be called the **Bow End**.

**Change the dimensions to:**

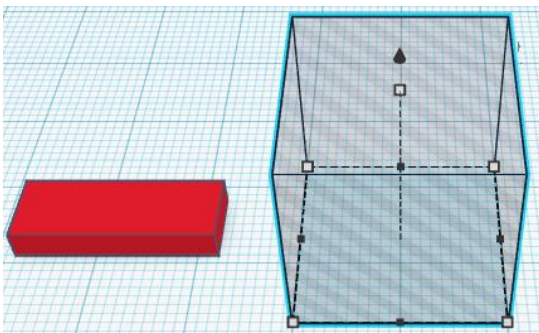
20mm X direction,  
7mm Y direction, and  
3mm Z direction.



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

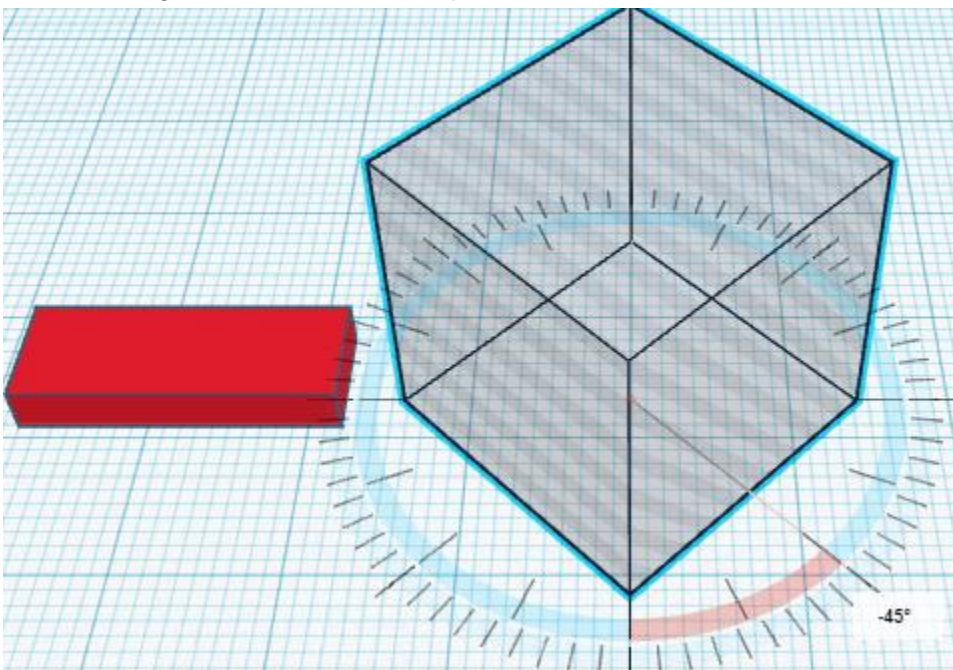
From now on this will be called the **Bow End Cutout**.

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



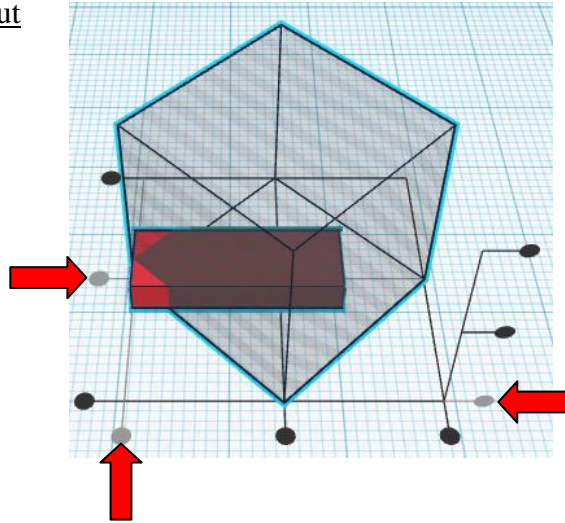
**Rotate:**

Bow End Cutout 45 degrees clockwise in XY plane.



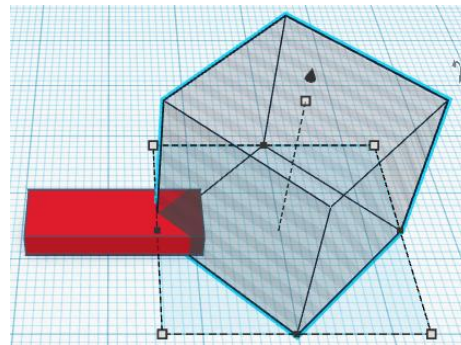
**Align** Bow End and Bow End Cutout

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

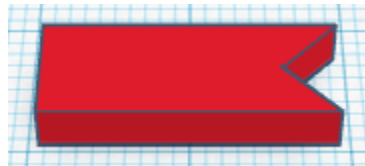


**Move** Bow End Cutout

right 15mm in the positive X direction.  
(select Bow End Cutout & push right arrow key 15 times)

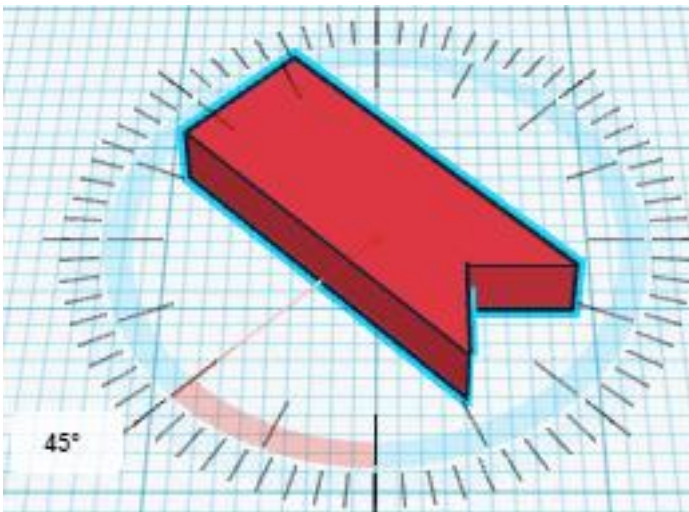


**Group** Bow End and Bow End Cutout



**Rotate:**

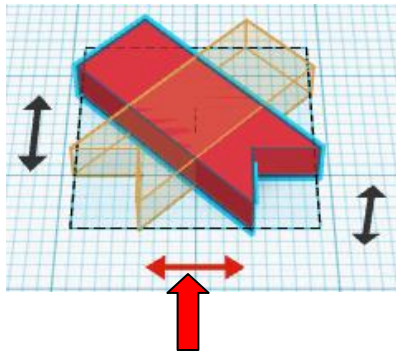
Bow End Cutout 45 degrees clockwise in XY plane.



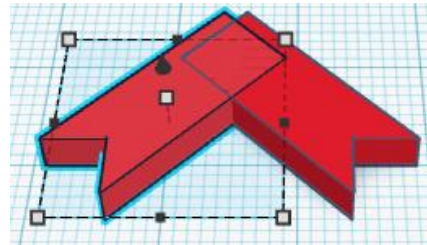


**Duplicate** Bow End 1 time.

**Flip** Bow End in X direction.



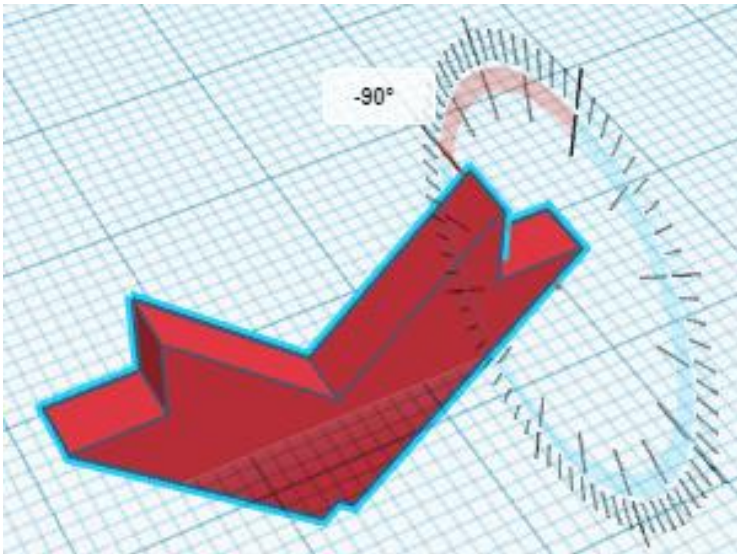
**Move** the flipped Bow End left 10mm in the negative X direction.  
(select the flipped Bow End & push left arrow key 10 times)



**Group** Bow End and flipped Bow End

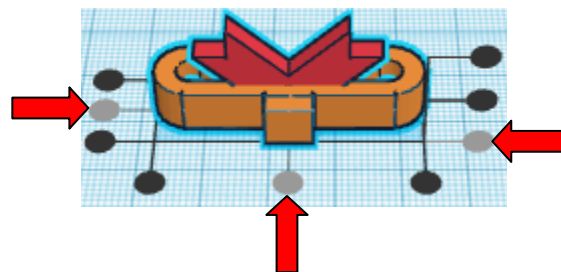
**Rotate:**

Bow End 90 degrees counter-clockwise in YZ plane.



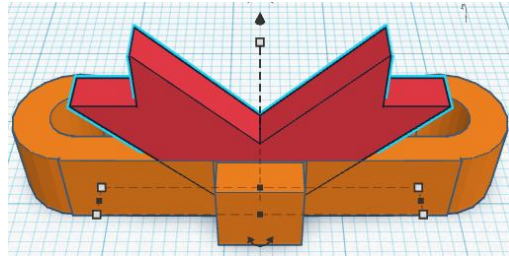
**Align** Bow End and Bow

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



**Move Bow End**

forward 2mm in the negative Y direction.  
(select Bow End & push down arrow key 2 times)



**Group Bow End and Bow**

**Important:**

Select Bow and type "d"  
(This moves the Bow to the work plane.)

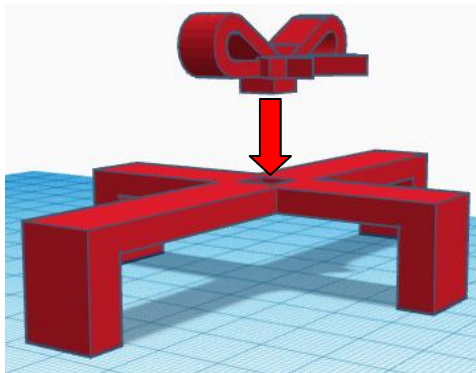
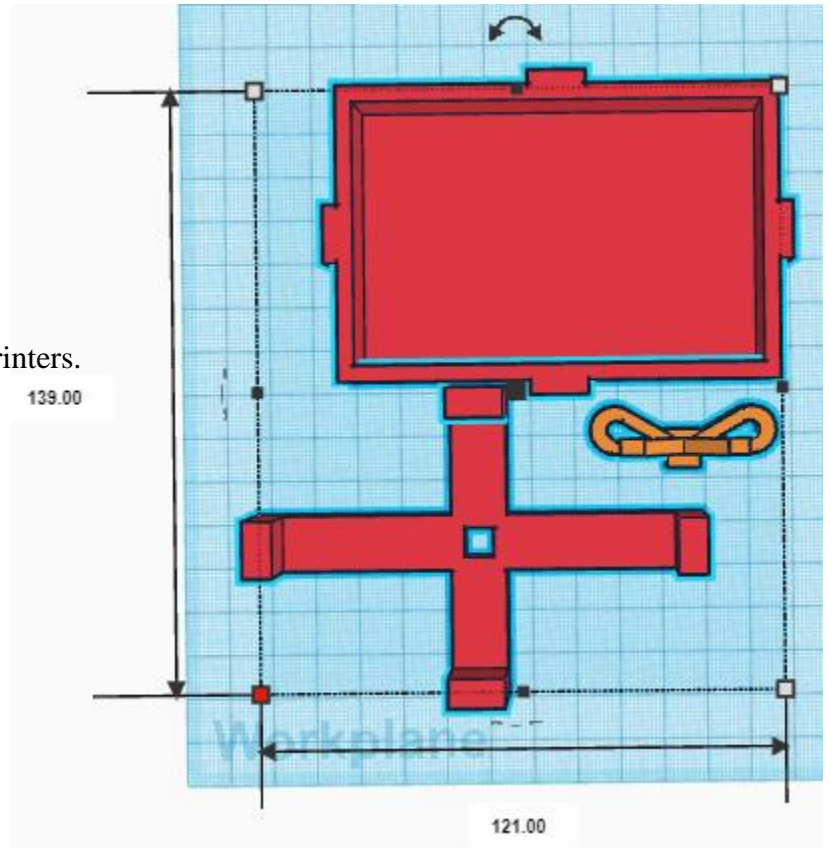
Move all pieces close together so that they fit within 140mm X 140mm.

This is the printing size for most smaller 3D printers.

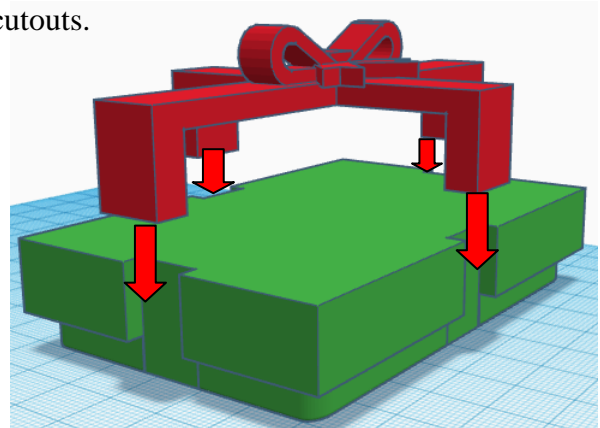
This will print without supports.

Print the Bottom Box, Ribbon, and Bow all one color and the Box Top another color.

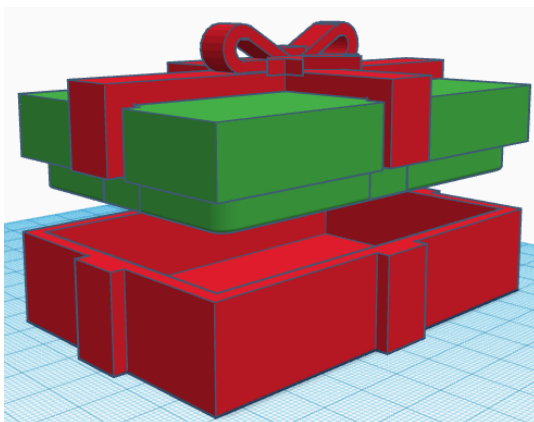
After printing push bow into ribbon cutout.  
You may need to use pliers.



Slide Ribbon onto Box Top through the cutouts.



Place top onto bottom box.



**You are done!  
Enjoy your Gift Box!**