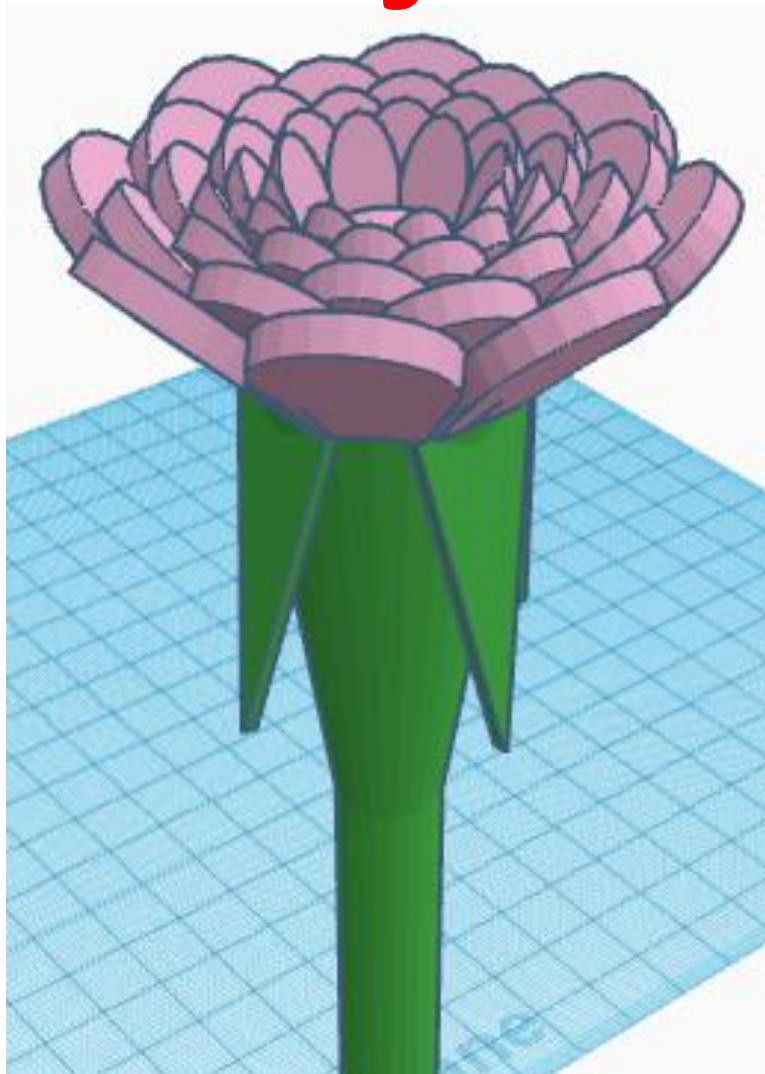




Flower Project

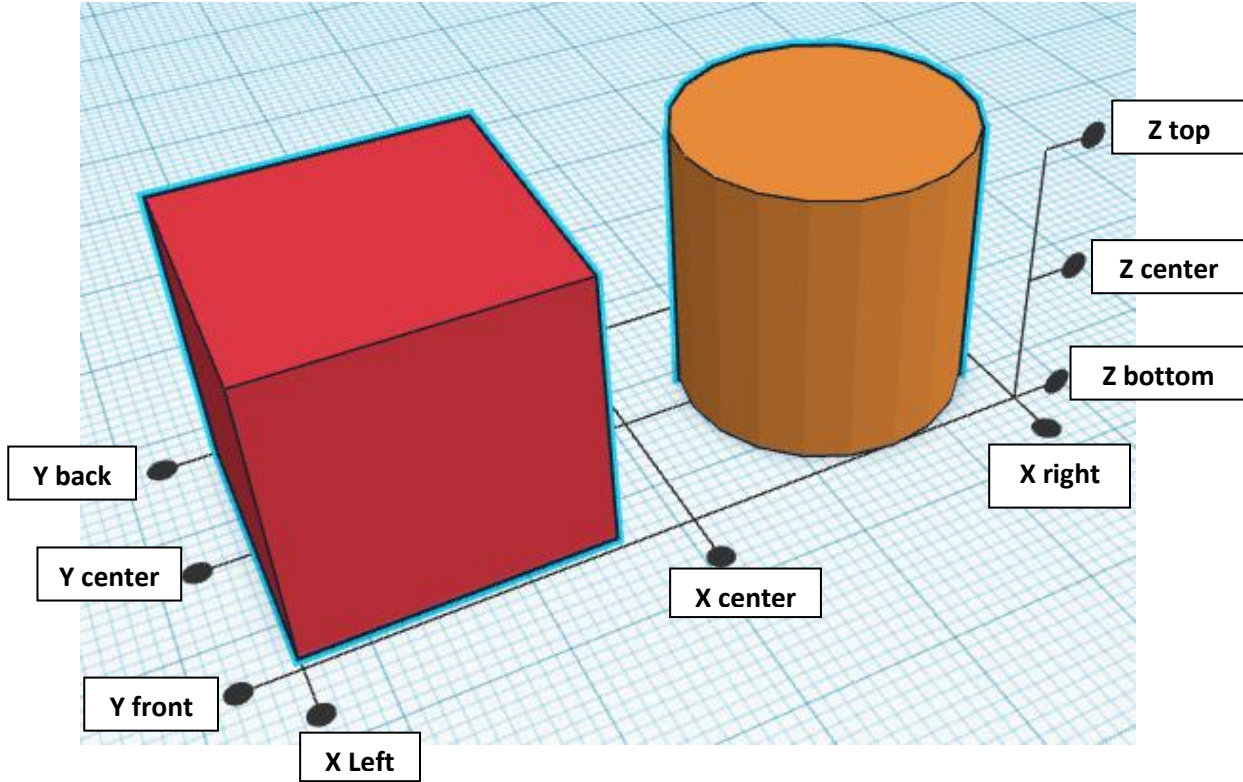


Reference to Aligning, Flip direction, Move direction, and Rotate direction.

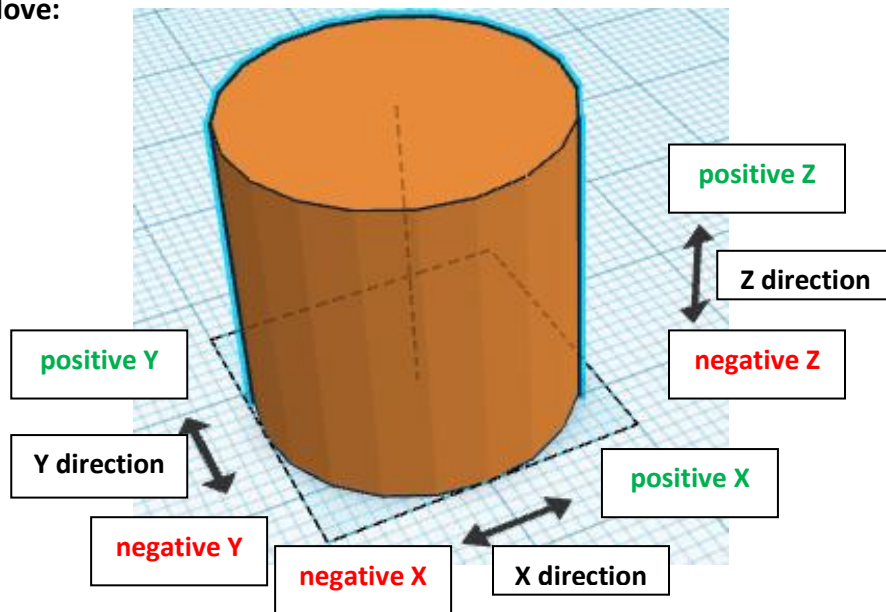
Always be in the "home view" when doing any of these!!!



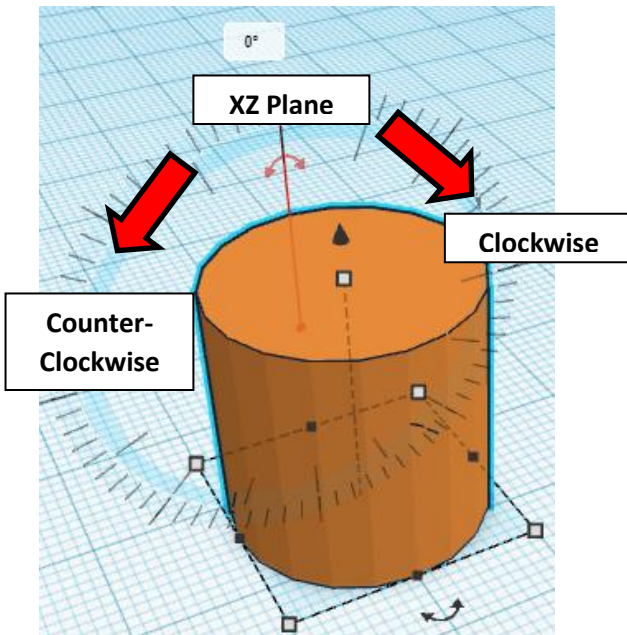
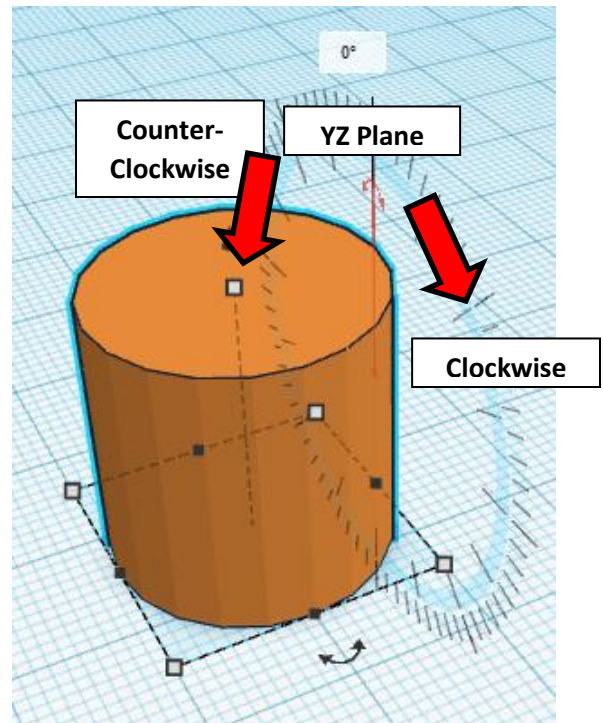
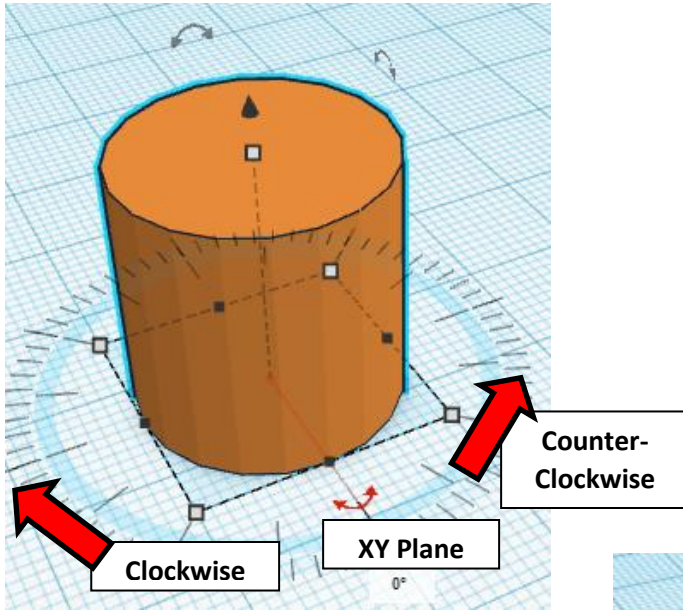
Aligning:



Flip or Mirror and Move:



Rotate:

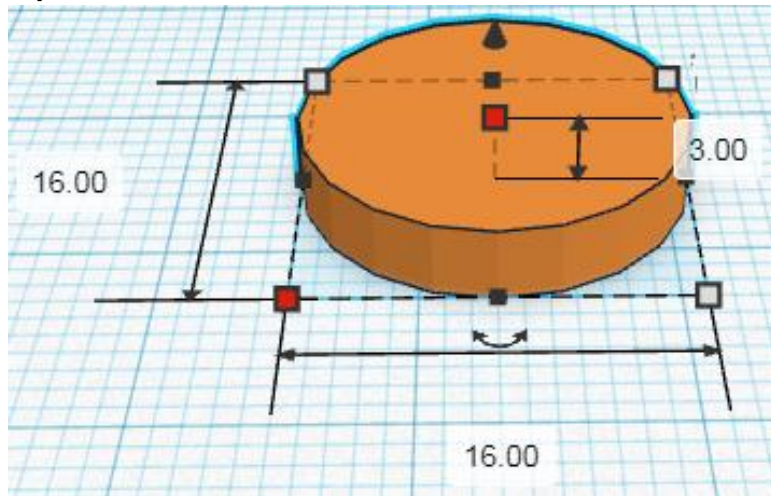


Flower Top:

Flower:

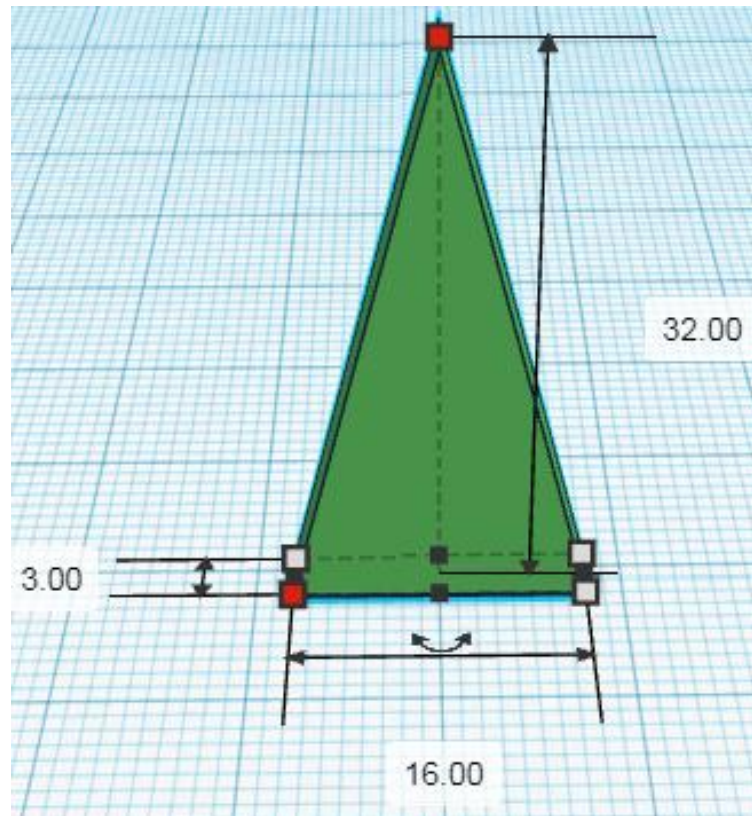
Bring in a Cylinder, located in Basic Shapes on the right 2 shapes down.
From now on this will be called the **Petal Top**.

Change the dimensions to
16mm X direction,
16mm Y direction, and
3mm Z direction.

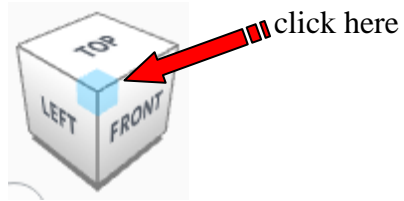


Bring in a Roof, located in Basic Shapes on the left 4 shapes down.
From now on this will be called the **Petal Bottom**.

Change the dimensions to
16mm X direction,
3mm Y direction, and
32mm Z direction.

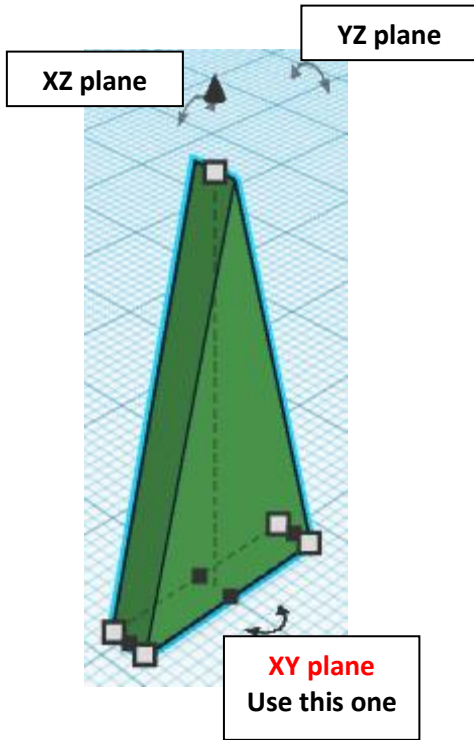


Go to TOP LEFT FRONT view for rotations

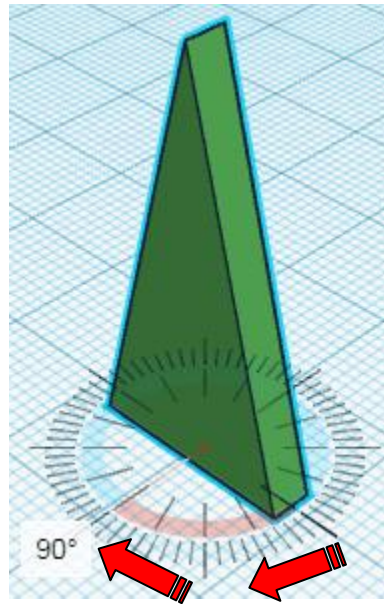


Rotate the Petal Bottom clockwise 90 degrees in XY plane.

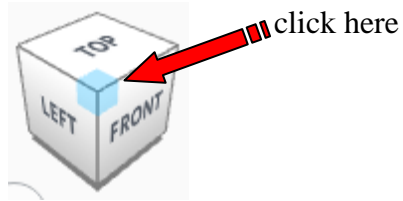
Before



After



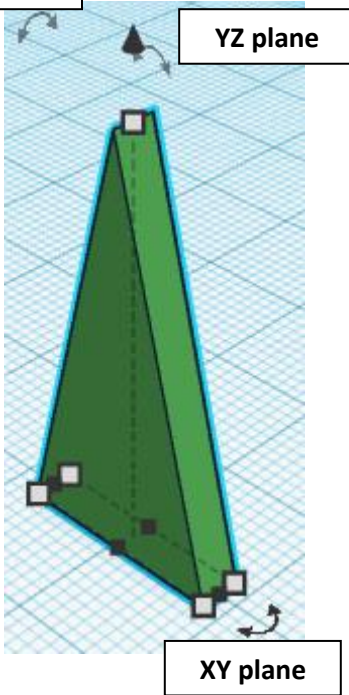
Go to TOP LEFT FRONT view for rotations



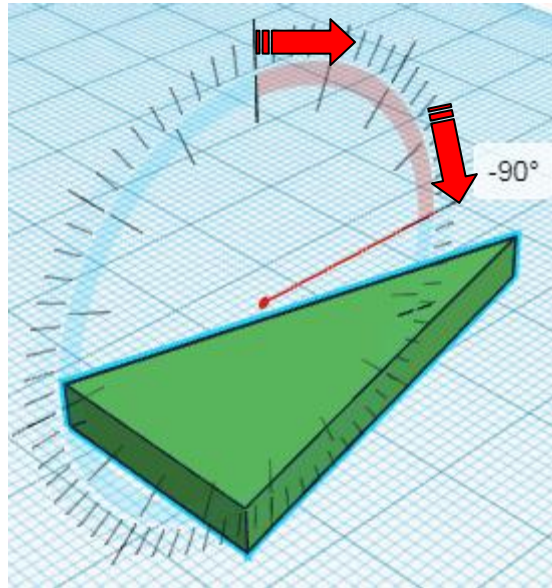
Rotate the Petal Bottom clockwise 90 degrees in XZ plane.

Before

XZ plane
Use this one



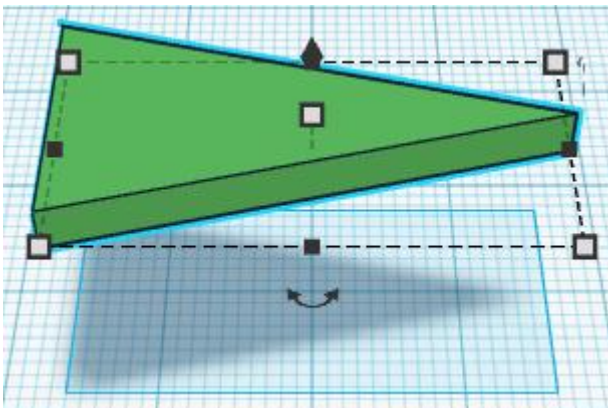
After



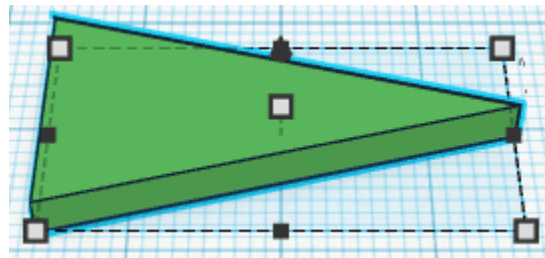
Set on Workplane:

Select the Petal Bottom and type "d" to set the body on the work plane.

Before

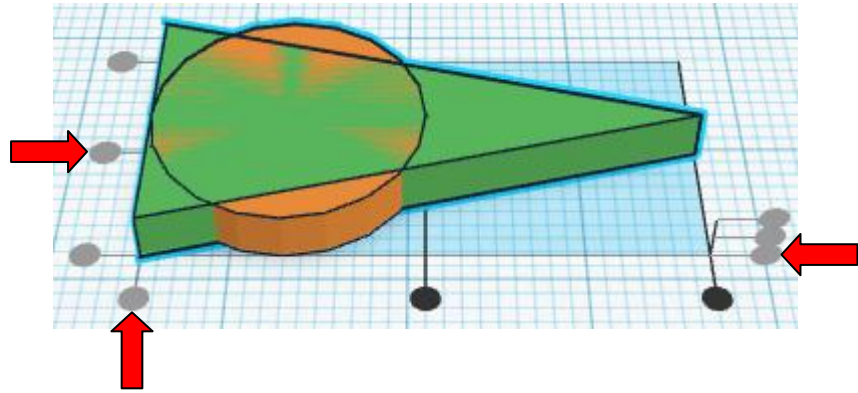


After



Align Petal Bottom and Petal Top

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

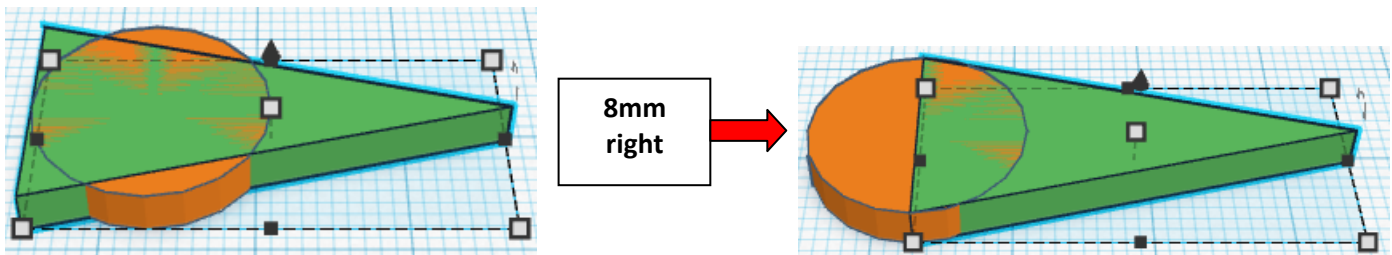


Move Petal Bottom (Must be in home view for this to work!)
move right in positive X direction 8mm

Hint: Select Petal Bottom and push right arrow key 8 times

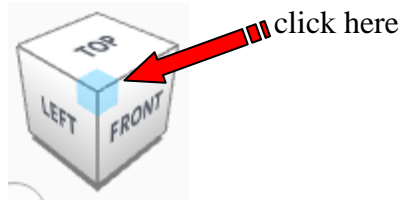
Before

After



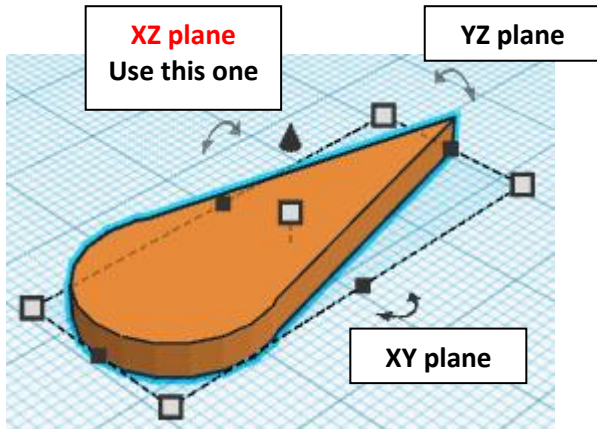
Group Petal Bottom and Petal Top
From now on this will be called the **Petal**.

Go to TOP LEFT FRONT view for rotations

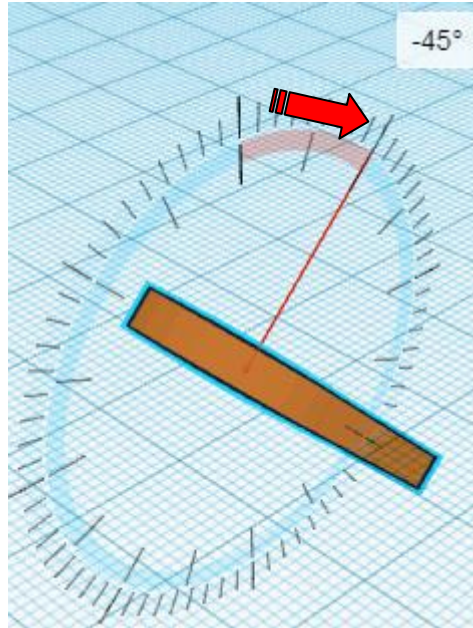


Rotate the Petal clockwise 45 degrees in XZ plane.

Before



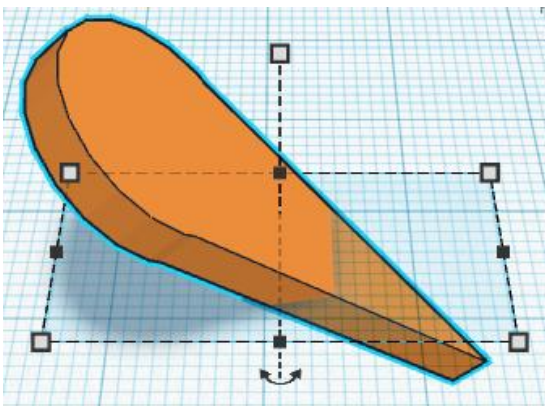
After



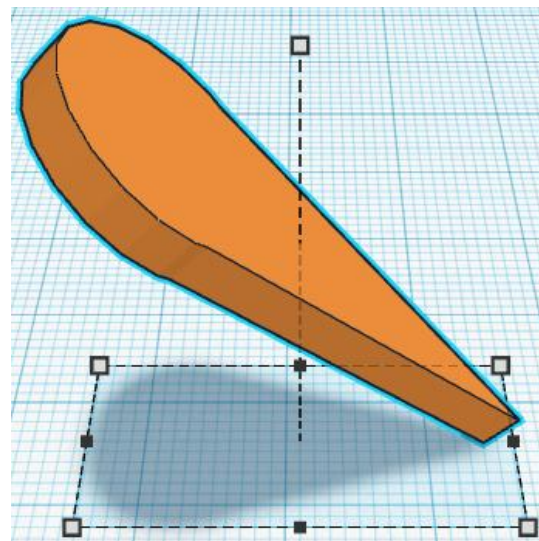
Set on Workplane:

Select the Petal and type "d" to set the body on the work plane.

Before



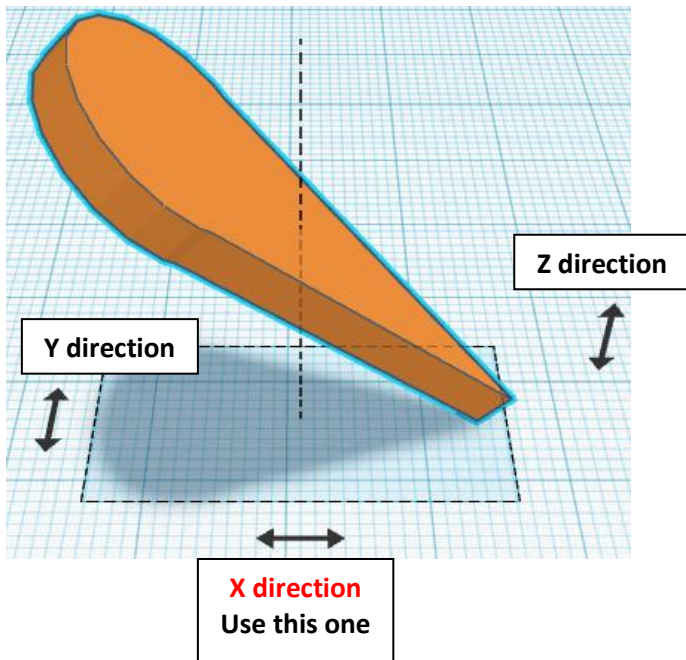
After



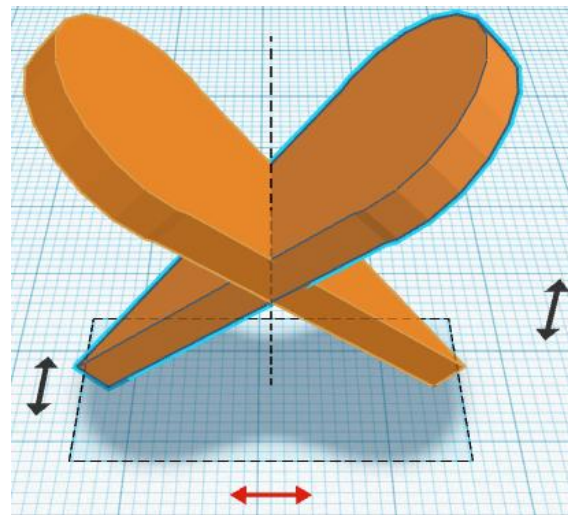
Duplicate Petal 1 time

Flip Petal in X direction.

Before



After

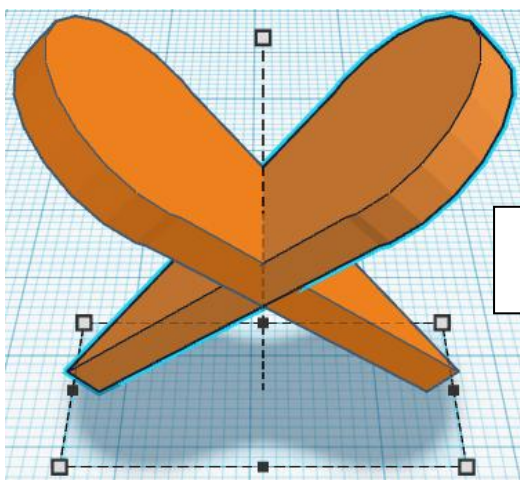


From now on this new flipped part will be called the **Right Petal**
while
the original part will be called the **Left Petal**

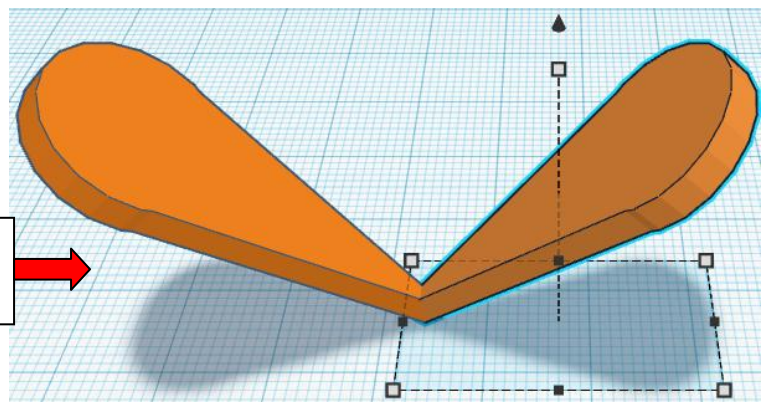
Move Right Petal (Must be in home view for this to work!)
move right in positive X direction 26mm

Hint: Select Right Petal and push right arrow key 26 times

Before



After

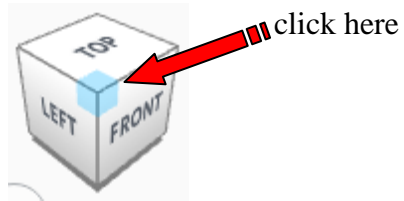


Group Right Petal and Left Petal

From now on this will be called the **Grouped Petals**.

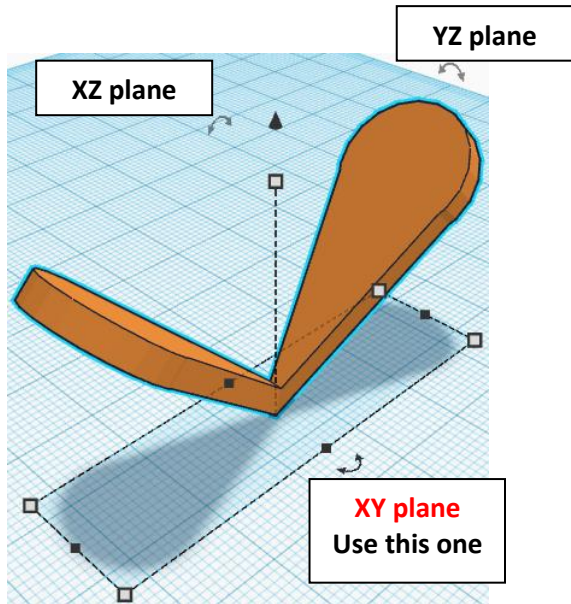
Duplicate Grouped Petals 3 times

Go to TOP LEFT FRONT view for rotations

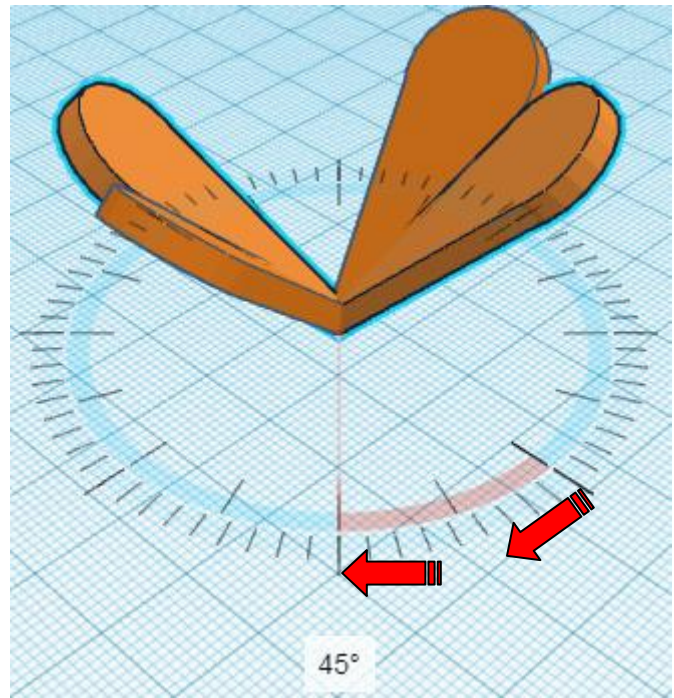


Rotate the Grouped Petals clockwise 45 degrees in XY plane.

Before

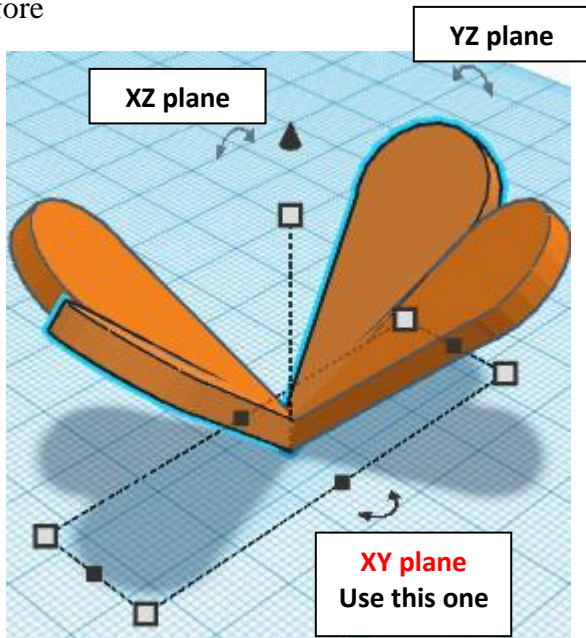


After

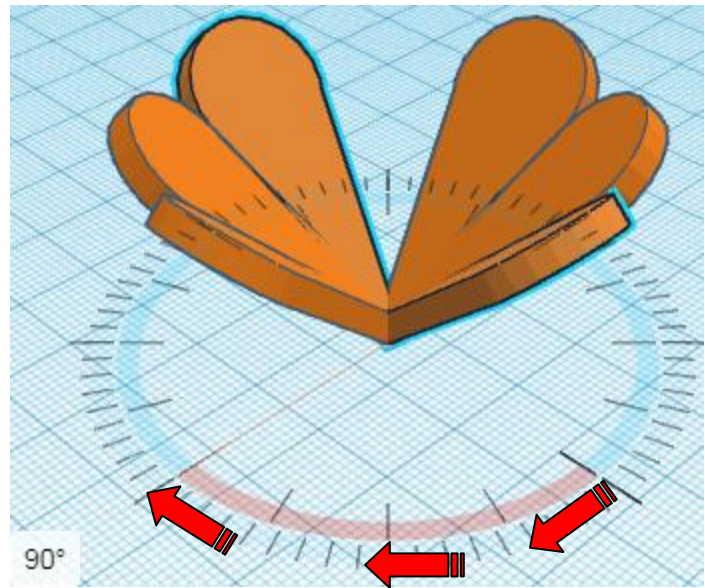


Rotate the Grouped Petals clockwise 90 degrees in XY plane.

Before

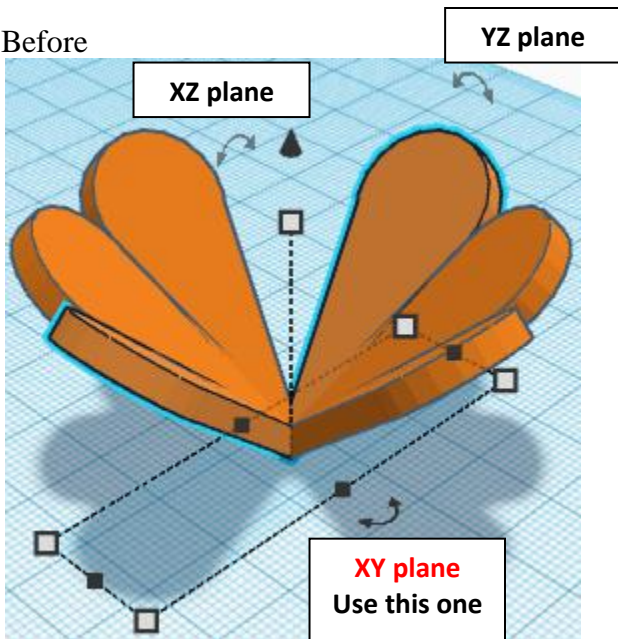


After

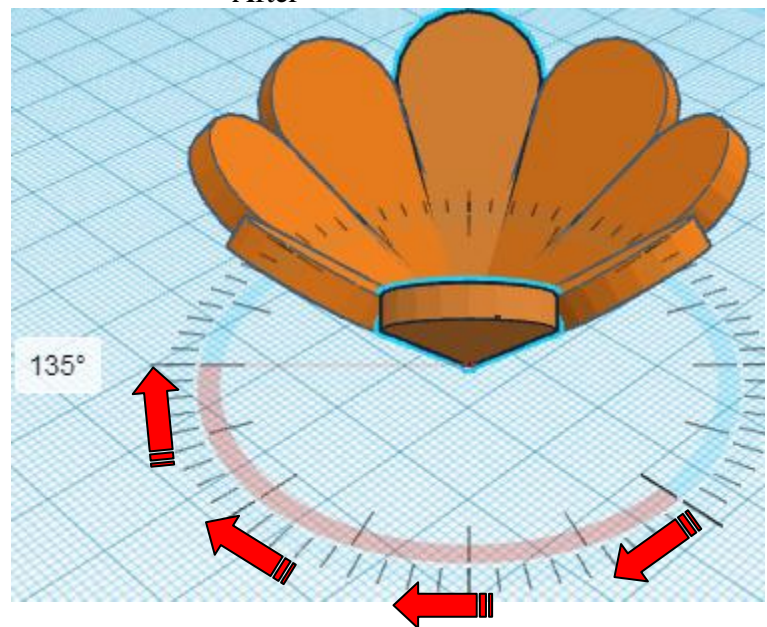


Rotate the Grouped Petals clockwise 135 degrees in XY plane.

Before



After



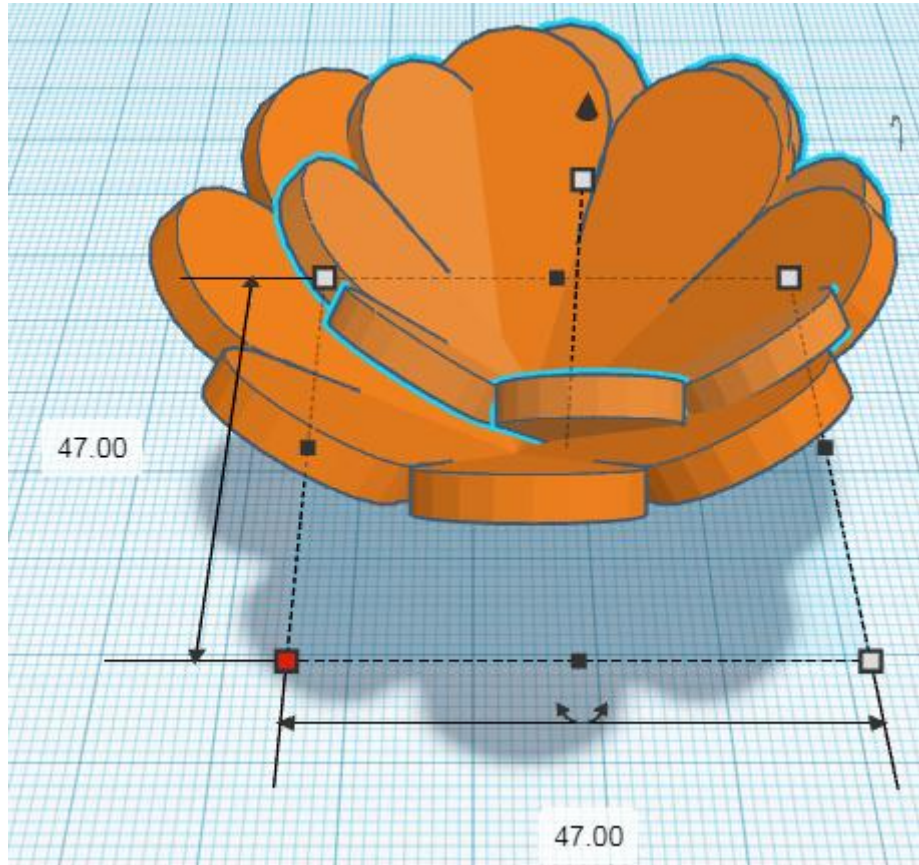
Group all sets of Grouped Petals

From now on this will be called the **1st ring of Petals**.

Duplicate 1st ring of Petals 1 time

Resize 1 set of the 1st ring of Petals

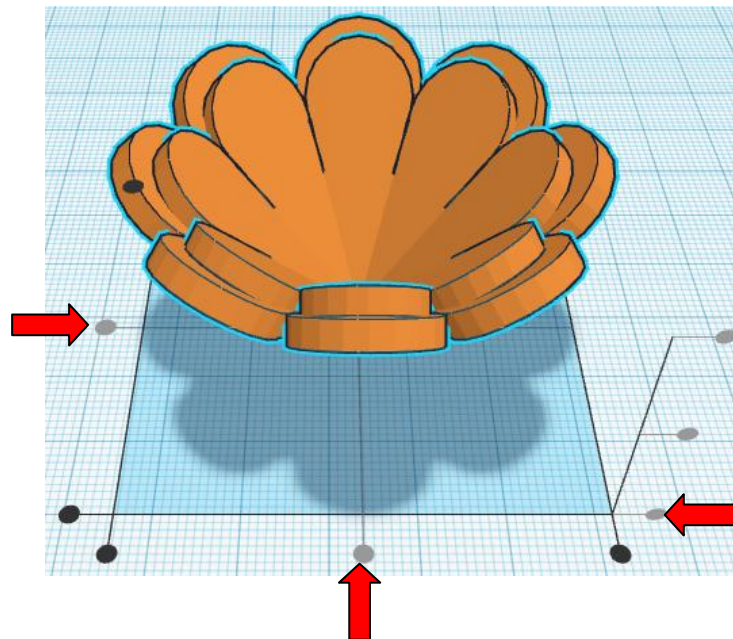
Change the dimensions to
47mm X direction,
47mm Y direction, and
leave Z direction as is



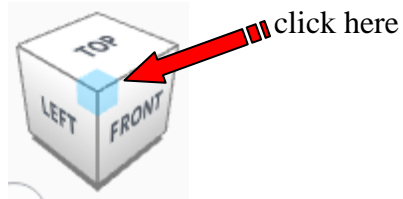
From now on this will be called the **2nd ring of Petals**.

Align 1st ring of Petals and 2nd ring of Petals

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

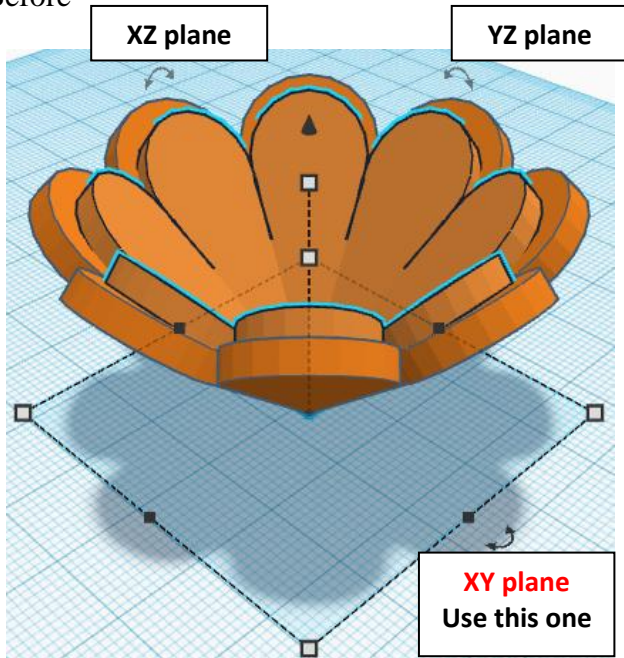


Go to TOP LEFT FRONT view for rotations

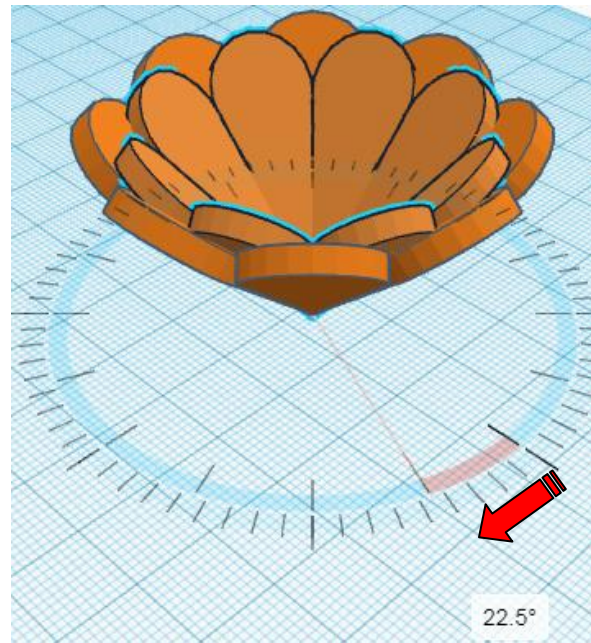


Rotate the 2nd set of Petals clockwise 22.5 degrees in XY plane.

Before



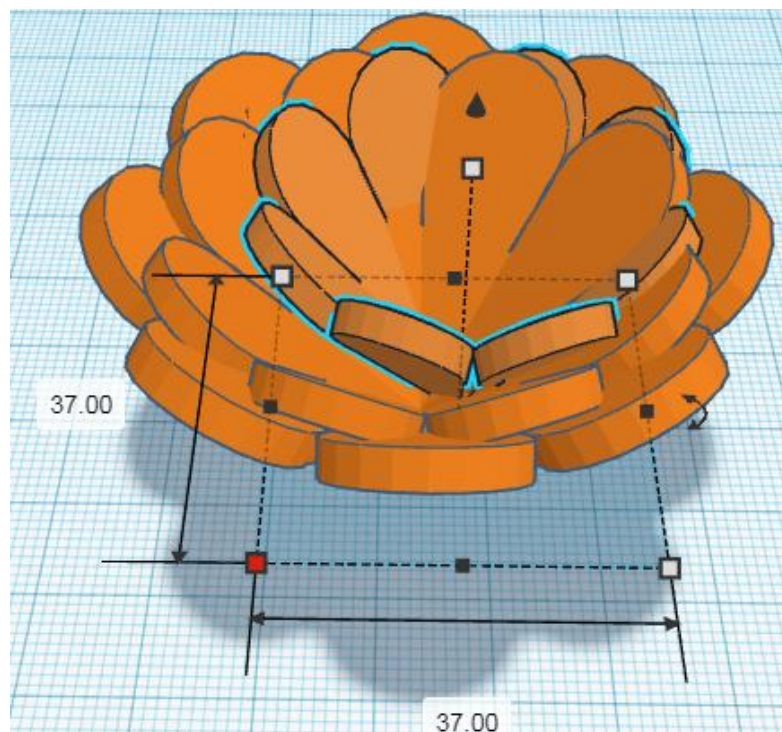
After



Duplicate 2nd ring of Petals 1 time

Resize 1 set of the 2nd ring of Petals

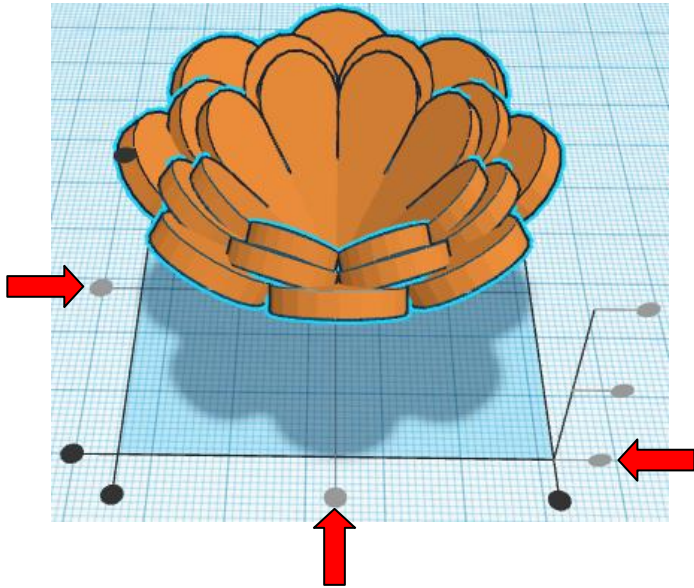
Change the dimensions to 37mm X direction, 37mm Y direction, and leave Z direction as is



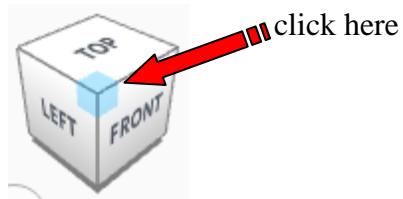
From now on this will be called the **3rd ring of Petals**.

Align 1st ring of Petals and 2nd ring of Petals and 3rd ring of Petals

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

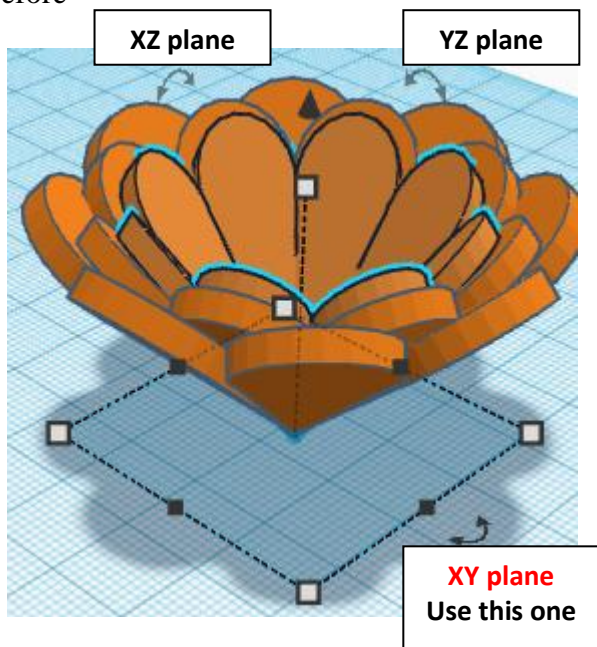


Go to TOP LEFT FRONT view for rotations

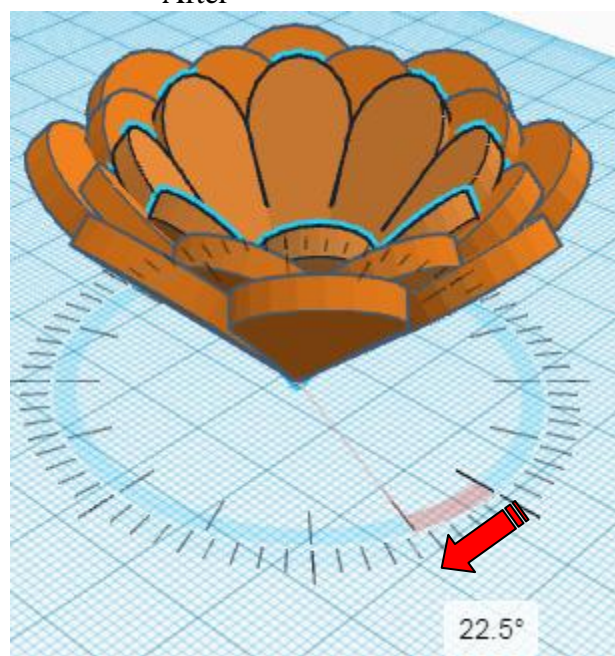


Rotate the 3rd set of Petals clockwise 22.5 degrees in XY plane.

Before



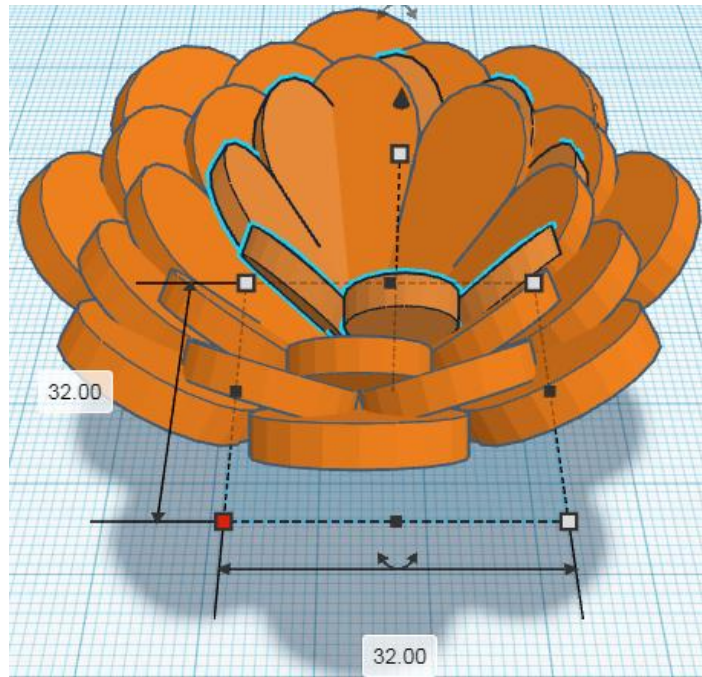
After



Duplicate 3rd ring of Petals 1 time

Resize 1 set of the 3rd ring of Petals

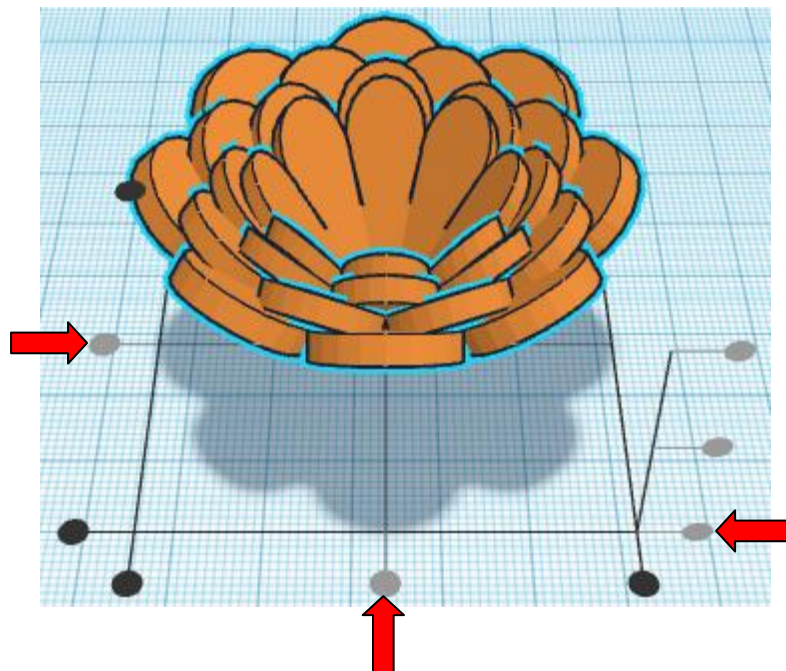
Change the dimensions to
32mm X direction,
32mm Y direction, and
leave Z direction as is



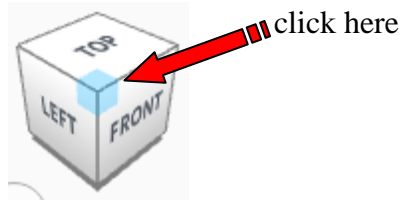
From now on this will be called the **4th ring of Petals**.

Align 1st ring of Petals and 2nd ring of Petals and 3rd ring of Petals and 4th ring of Petals

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

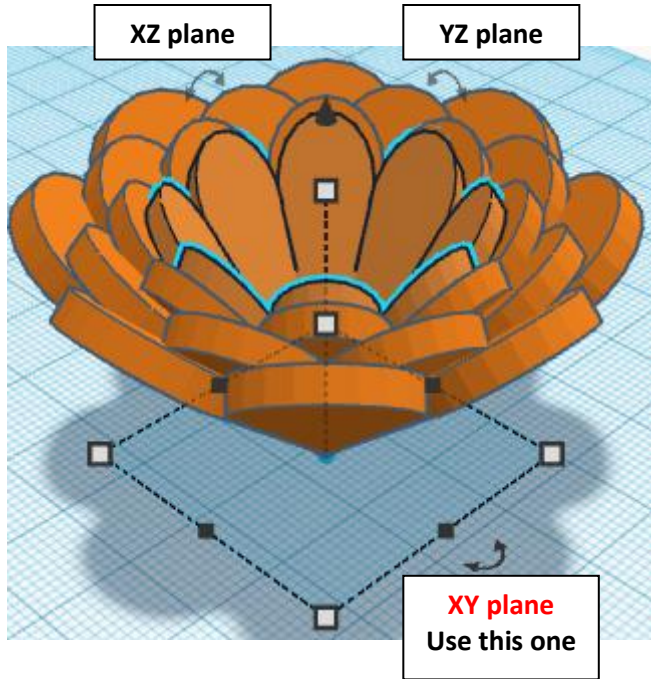


Go to TOP LEFT FRONT view for rotations

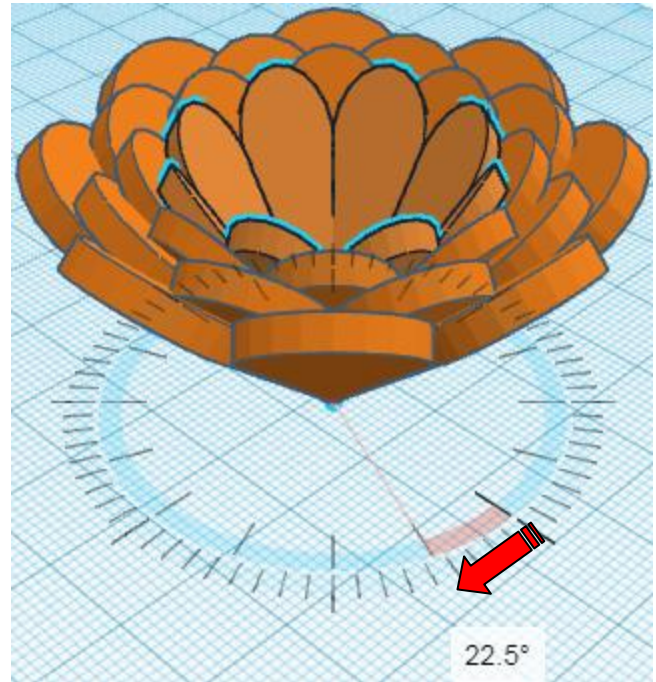


Rotate the 4th set of Petals clockwise 22.5 degrees in XY plane.

Before



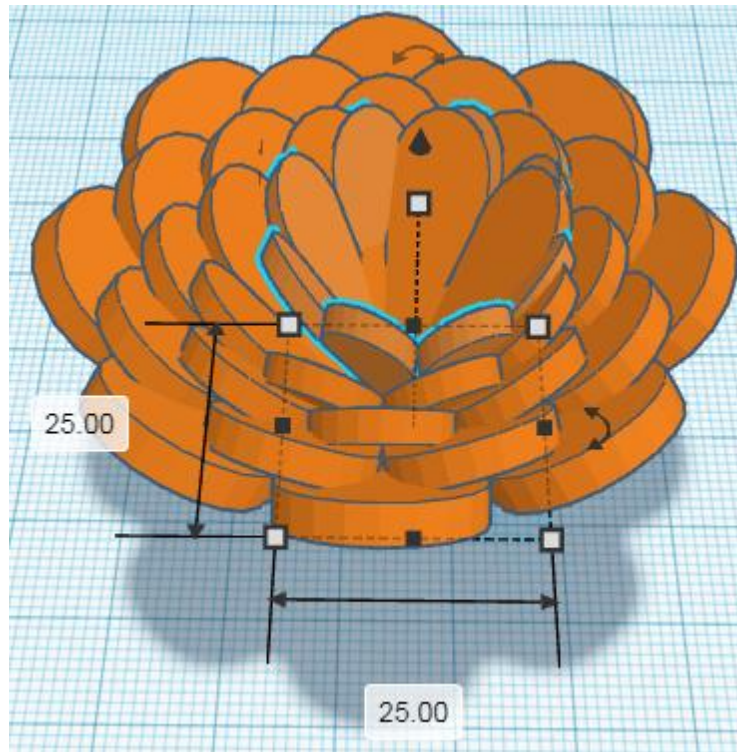
After



Duplicate 4th ring of Petals 1 time

Resize 1 set of the 4th ring of Petals

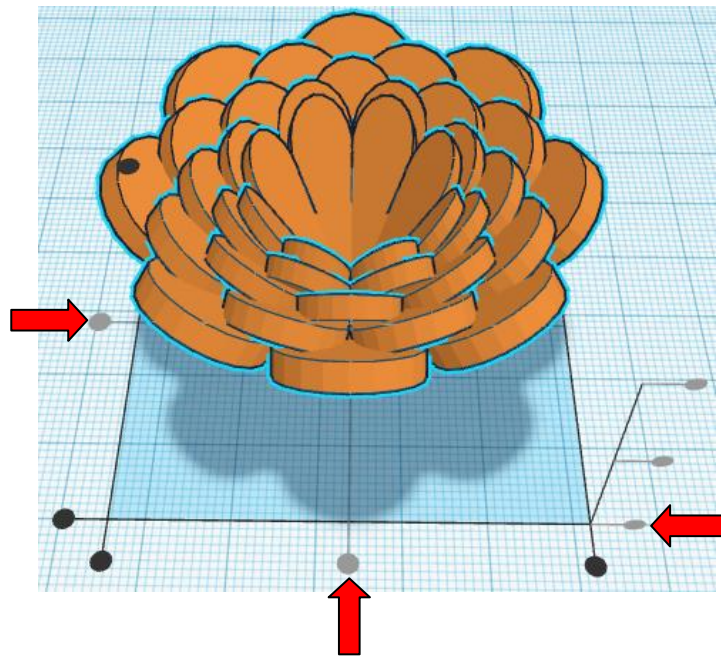
Change the dimensions to
25mm X direction,
25mm Y direction, and
leave Z direction as is



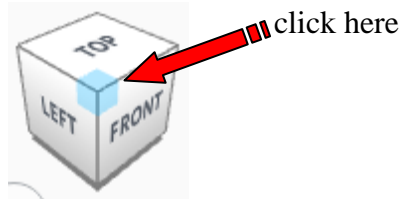
From now on this will be called the **5th ring of Petals**.

Align 1st ring of Petals and 2nd ring of Petals and 3rd ring of Petals and 4th ring of Petals and 5th ring of Petals

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

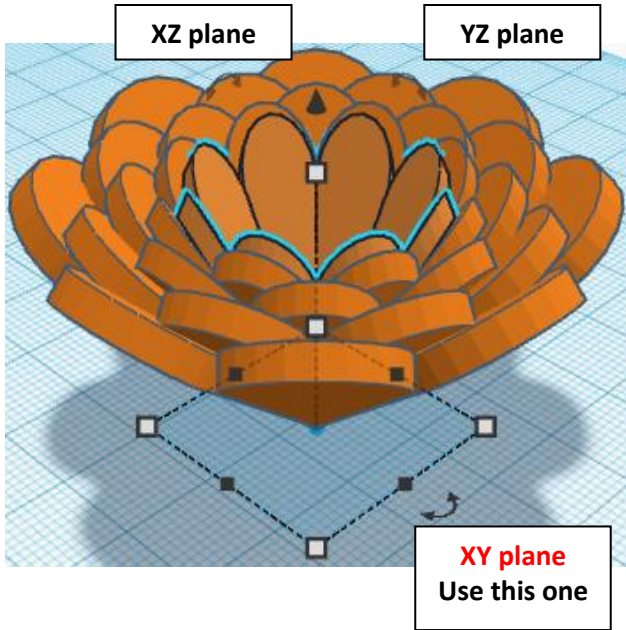


Go to TOP LEFT FRONT view for rotations

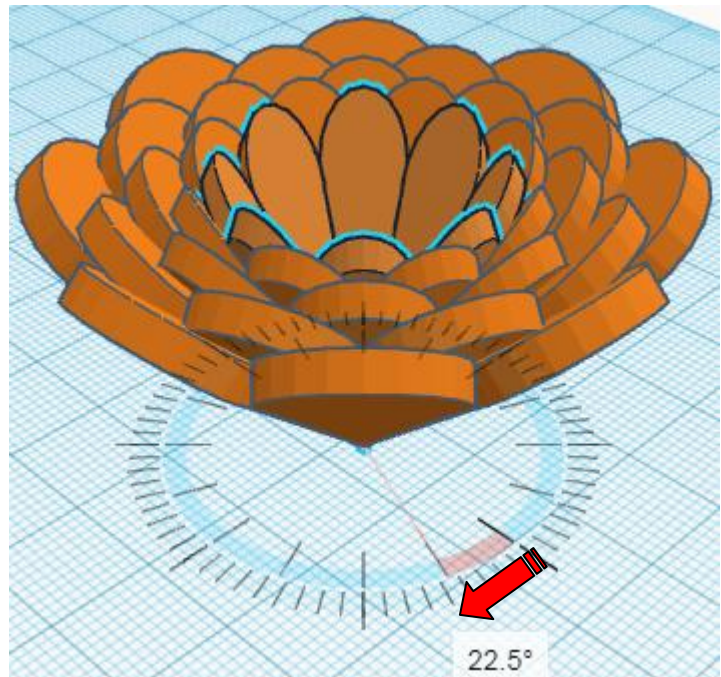


Rotate the 5th set of Petals clockwise 22.5 degrees in XY plane.

Before



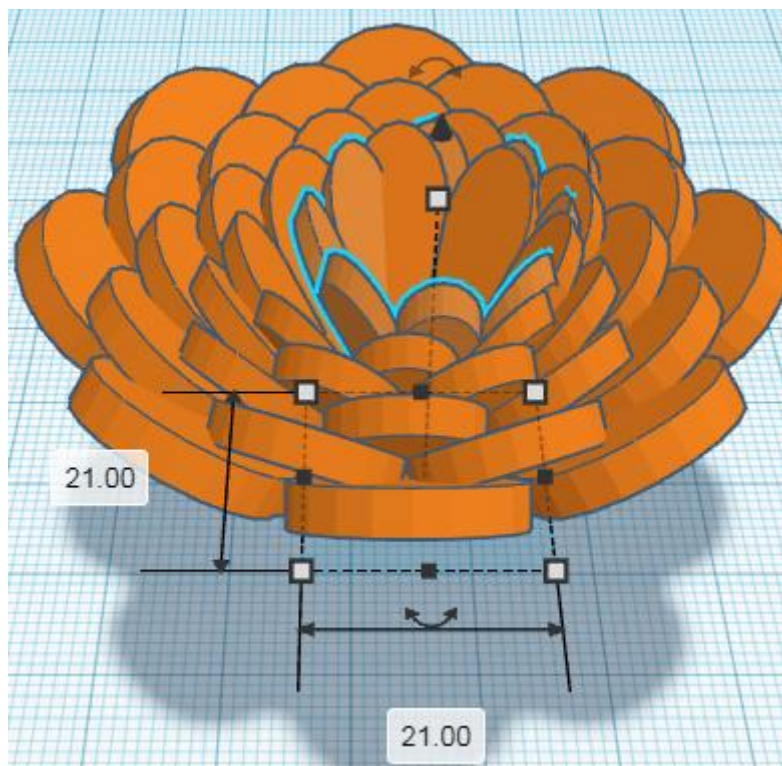
After



Duplicate 5th ring of Petals 1 time

Resize 1 set of the 5th ring of Petals

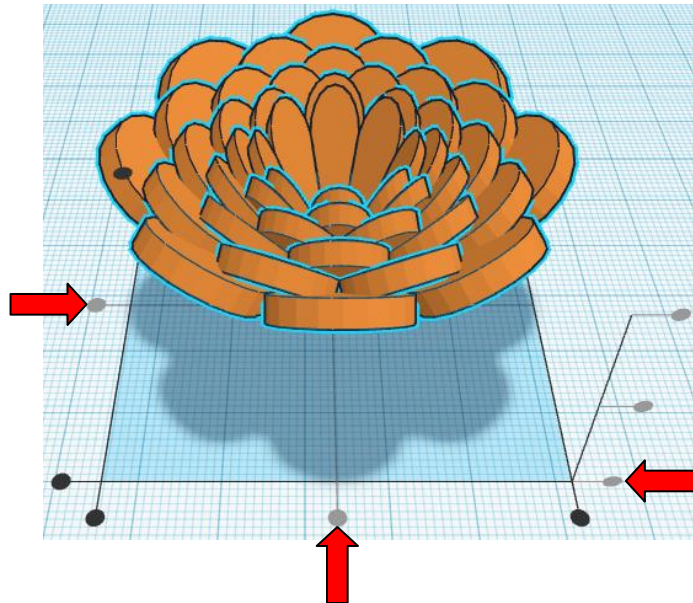
Change the dimensions to 21mm X direction, 21mm Y direction, and leave Z direction as is



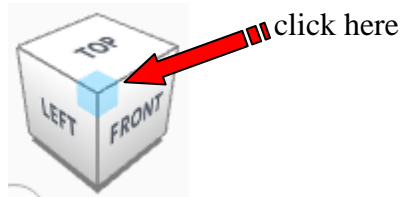
From now on this will be called the **6th ring of Petals**.

Align 1st ring of Petals and 2nd ring of Petals and 3rd ring of Petals and 4th ring of Petals and 5th ring of Petals and 6th ring of Petals

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



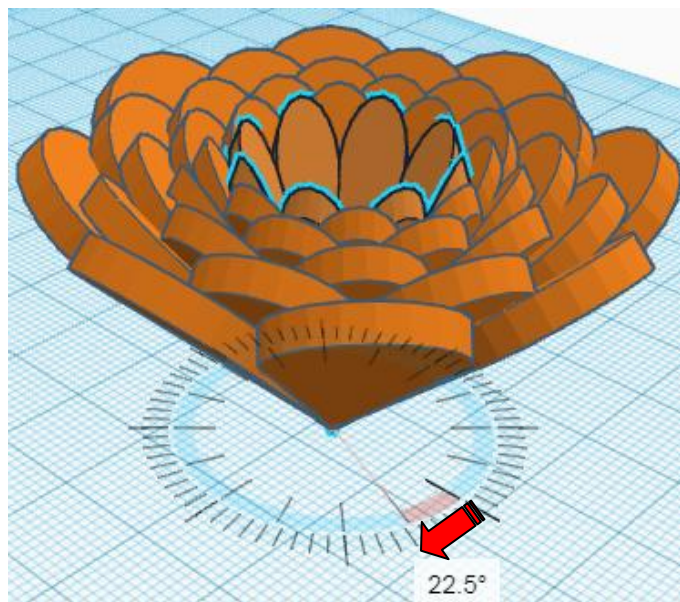
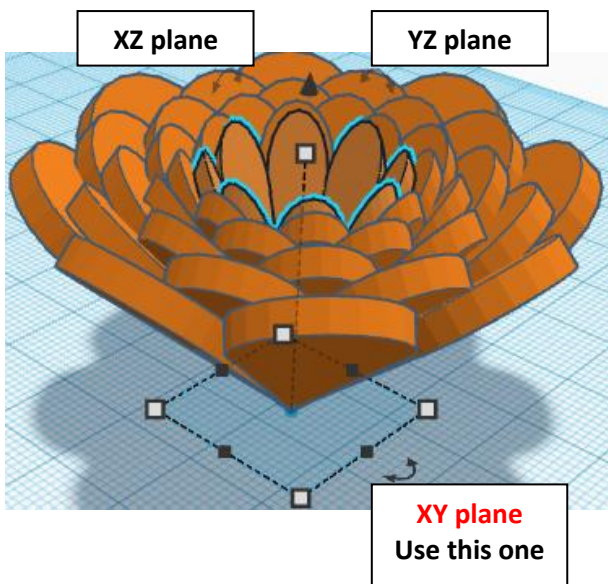
Go to TOP LEFT FRONT view for rotations



Rotate the 6th set of Petals clockwise 22.5 degrees in XY plane.

Before

After



Group 1st ring of Petals and 2nd ring of Petals and 3rd ring of Petals and 4th ring of Petals and 5th ring of Petals and 6th ring of Petals

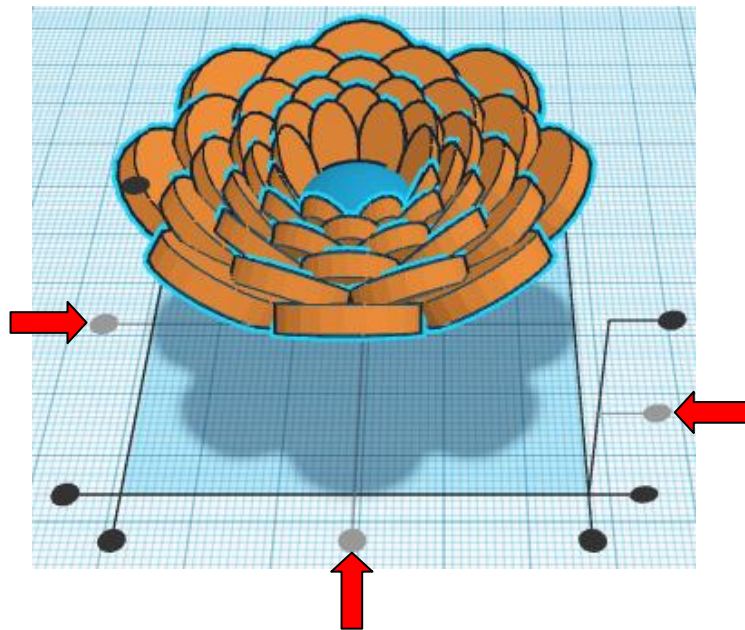
From now on this will be called the **Flower Top**

Bring in a Sphere, located in Basic Shapes on the left 3 shapes down.
From now on this will be called the **Flower Center**.

Leave the dimensions as
20mm X direction,
20mm Y direction, and
20mm Z direction.

Align Flower Top and Flower Center

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

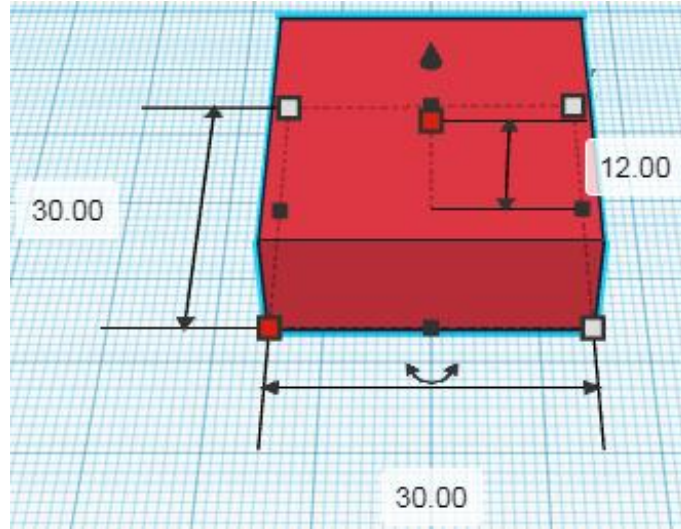


Group Flower Top and Flower Center

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

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

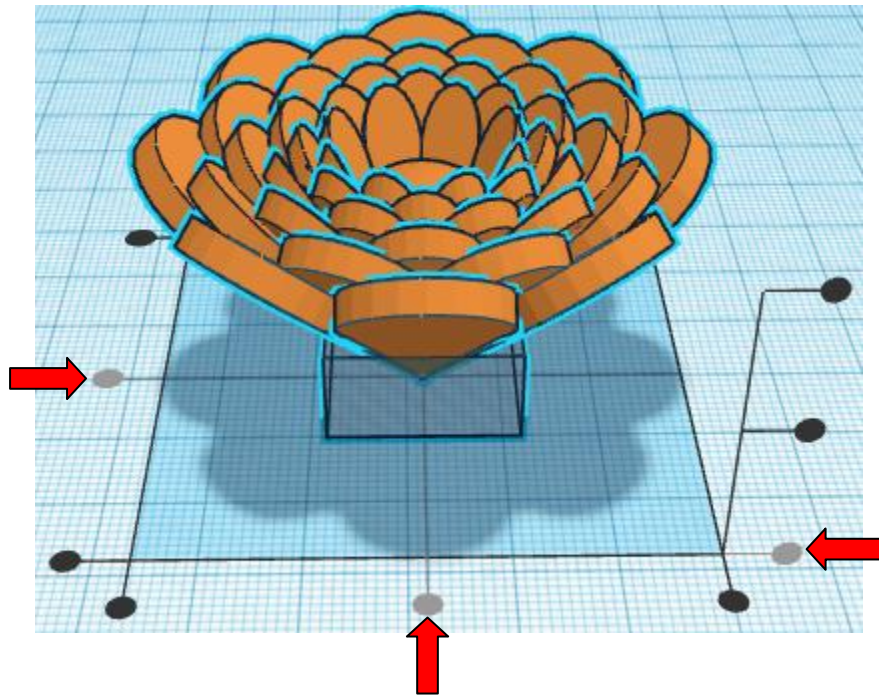
Leave the dimensions as
30mm X direction,
30mm Y direction, and
12mm Z direction.



Change Flower Bottom Cutoff to **Hole** by selecting Flower Bottom Cutoff and typing “h”.

Align Flower Top and Flower Bottom Cutoff

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

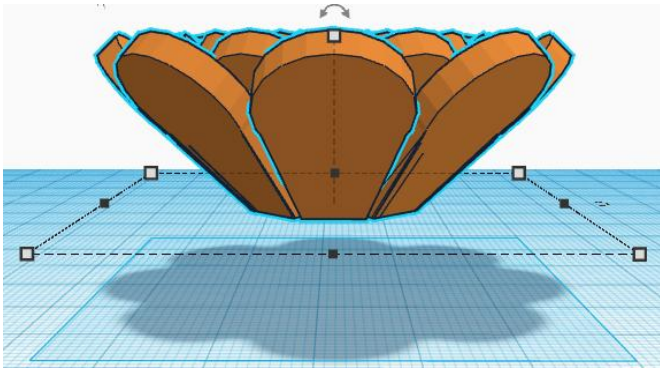


Group Flower Top and Flower Bottom Cutoff
From now on this will be called the **Flower Top**

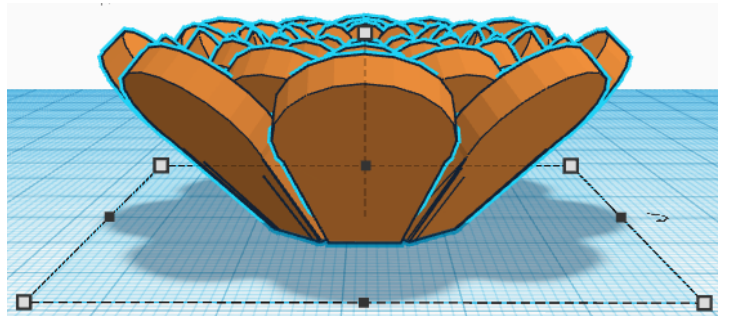
Set on Workplane:

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

Before



After



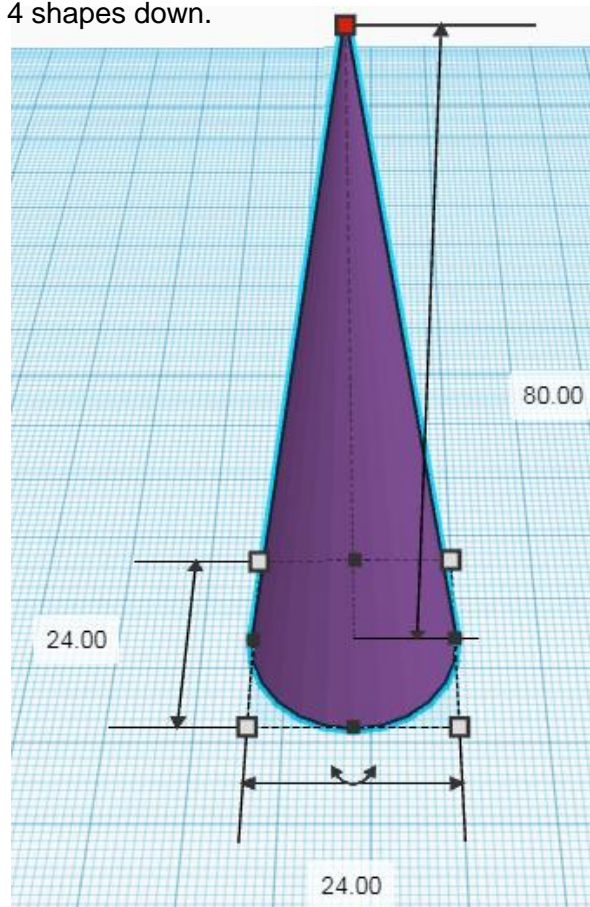
The Flower Top is done!

This will print separately from the Stem and then Super Glued together.

Stem:

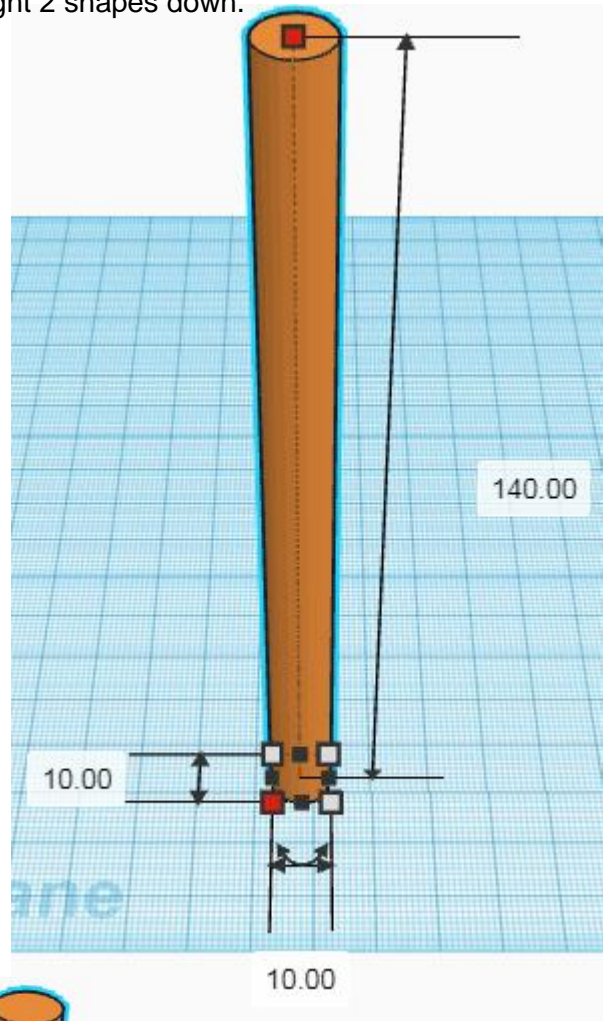
Bring in a Cone, located in Basic Shapes on the right 4 shapes down.
From now on this will be called the **Stem Bottom**.

Change the dimensions to
24mm X direction,
24mm Y direction, and
80mm Z direction.



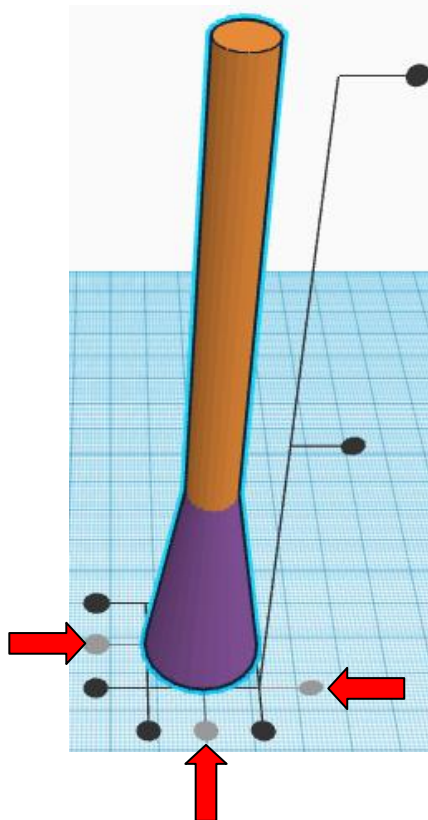
Bring in a Cylinder, located in Basic Shapes on the right 2 shapes down.
From now on this will be called the **Stem**.

Change the dimensions to
10mm X direction,
10mm Y direction, and
140mm Z direction.



Align Stem Bottom and Stem

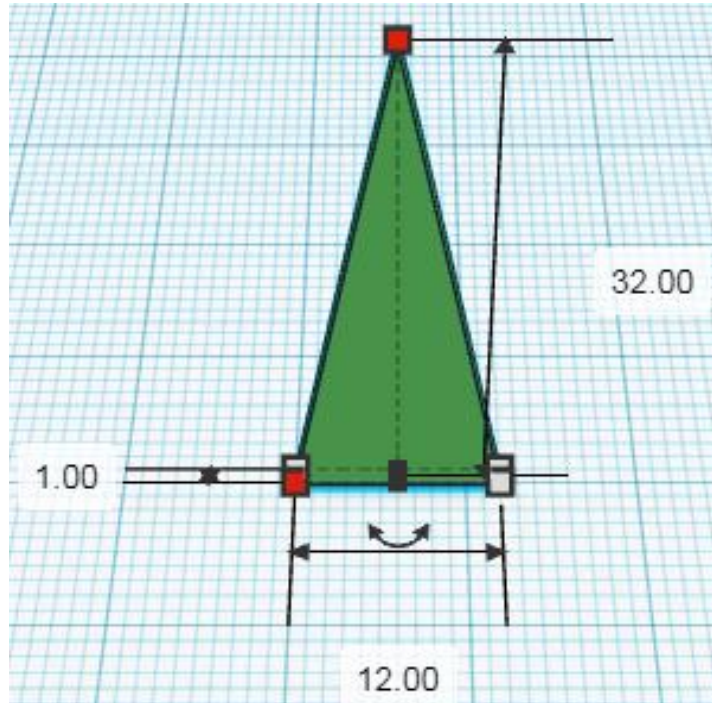
centered in X direction,
centered of Y direction, and
bottom of Z direction.



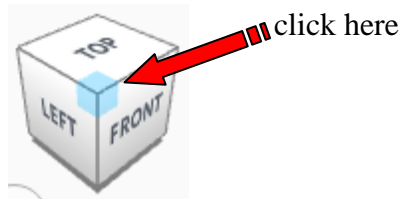
Group Stem Bottom and Stem
From now on this will be called the **Stem**

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

Change the dimensions to
12mm X direction,
1mm Y direction, and
32mm Z direction.

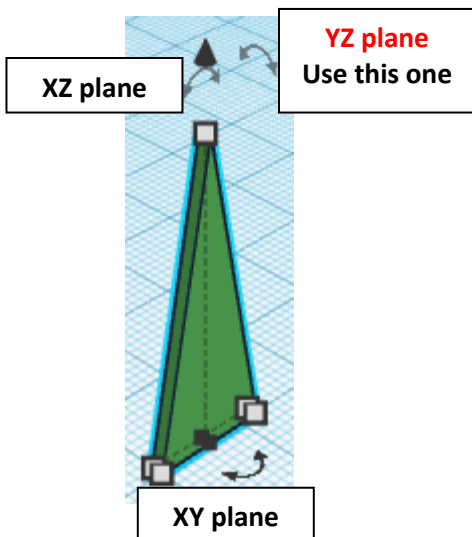


Go to TOP LEFT FRONT view for rotations

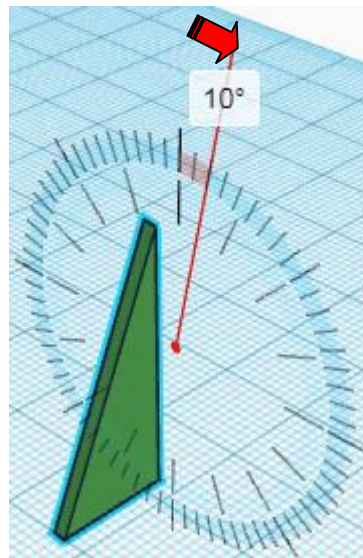


Rotate the Leaf clockwise 10 degrees in YZ plane.

Before



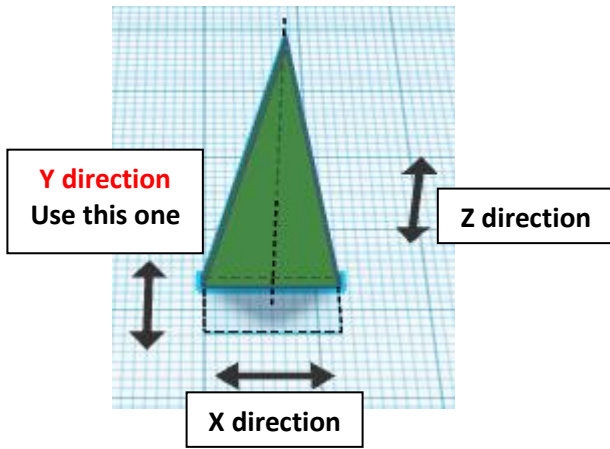
After



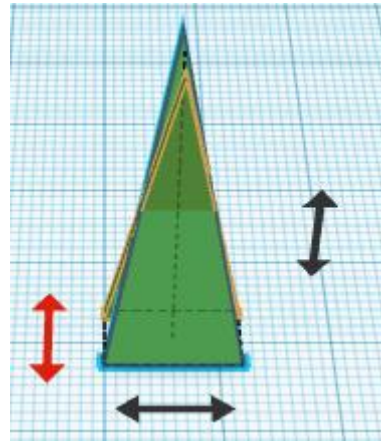
Duplicate Leaf 1 time

Flip Leaf in Y direction.

Before



After

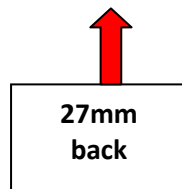
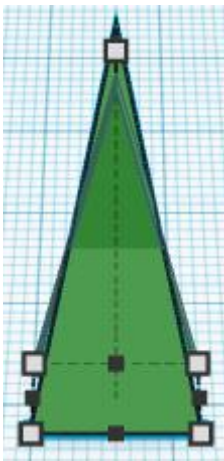


From now on this new flipped part will be called the **Back Leaf** while the original part will be called the **Front Leaf**

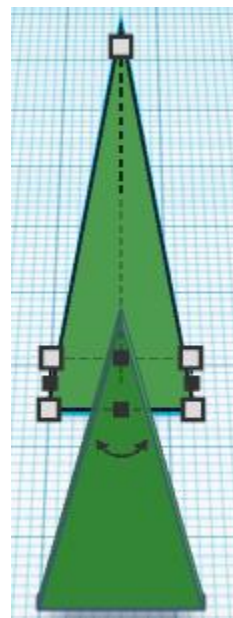
Move Back Leaf (Must be in home view for this to work!)
move back in positive Y direction 27mm

Hint: Select Back Leaf and push up arrow key 27 times

Before



After



Group Back Leaf and Front Leaf

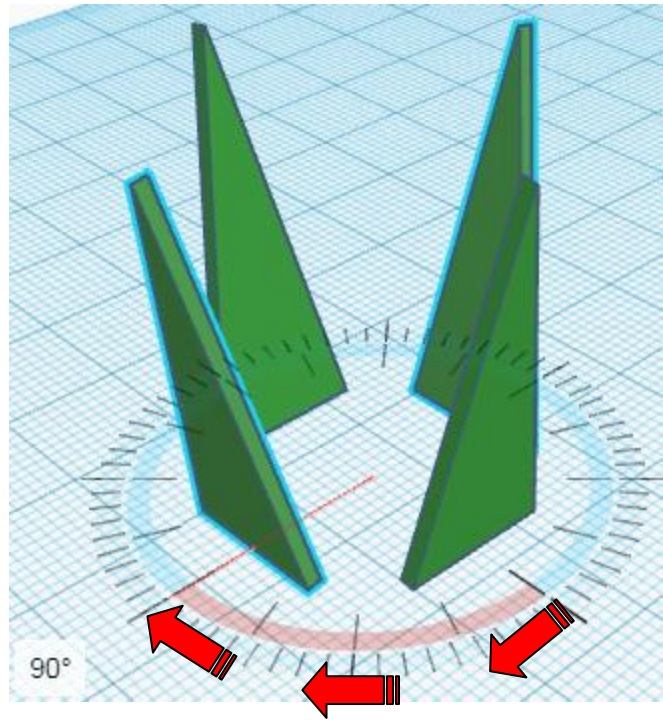
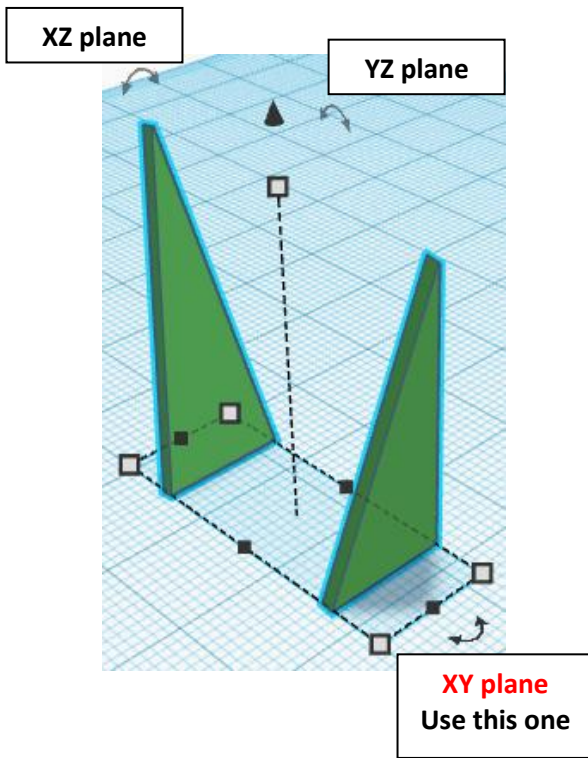
From now on this will be called the **Leaves**

Duplicate Leaves 1 time

Rotate the Leaves clockwise 90 degrees in XY plane.

Before

After

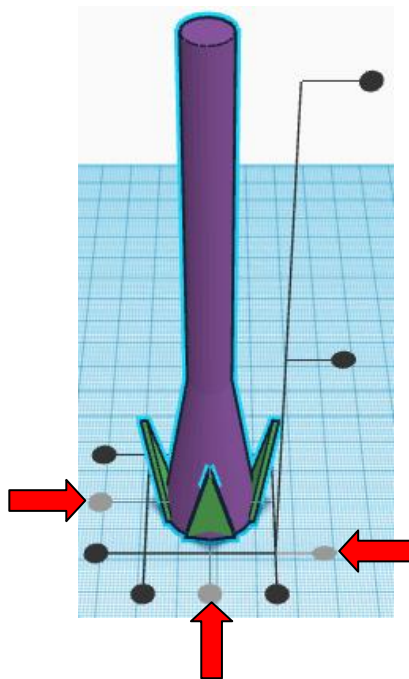


Group both sets of Leaves

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

Align Leaves and Stem

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



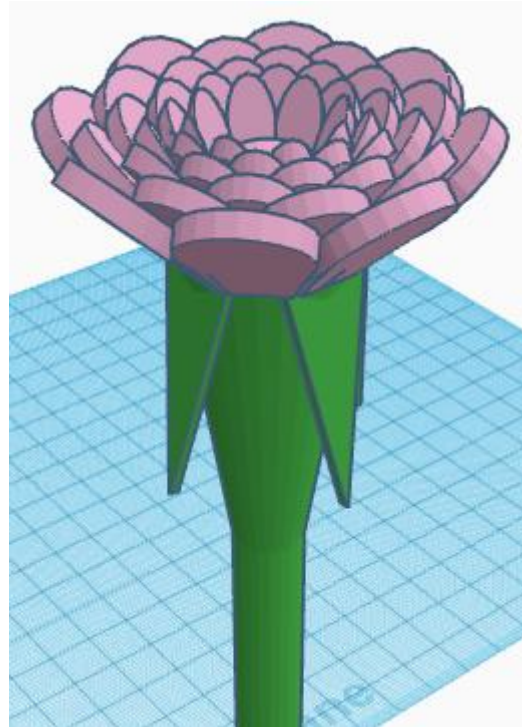
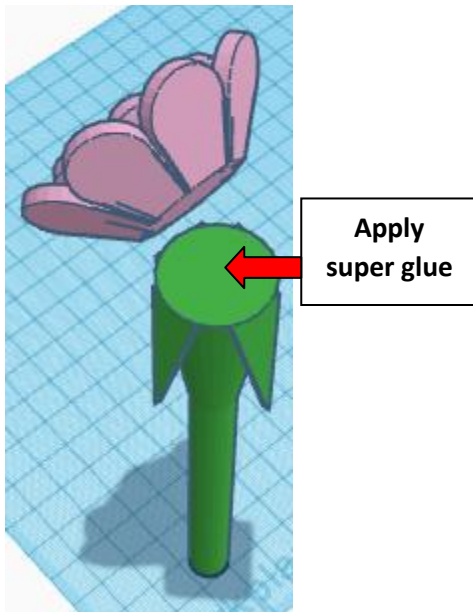
Group Leaves and Stem

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

You are done!

Print each part separately. Print the stem in a green color and the flower in whatever flower color you want.

Have an adult add superglue to the top of the stem and place flower on top of stem. Hold for 10 seconds for glue to dry.



Have fun and enjoy.

Bonus:

Try making your own vase to put your flower in.

