

3D DESIGN

CUSTOMIZE A SELF-WATERING PLANTER

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SEARCH FOR THE TEMPLATE

Click on the **search button** near the upper right portion of the screen next to the “**Learn**” and “**Teach**” icons. Search for “**dml-planter**” in the community gallery, **copy and tinker** this design.

The template file already includes the base components of the planter. You will be adorning the 3D planter with your own custom additions and exporting a .STL for 3D printing.

A video tutorial for completing this project can be found at:
youtu.be/GWvfvMeMZDw

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CUSTOMIZE

The planter template is currently locked, to avoid accidentally moving the planter while adding your additions.

The self-watering planter is designed so that there is a container for the plant and dirt, a spout to insert water, and a reservoir to hold water. A string will run from the dirt into the water collector allowing the plant to feed itself as long as water is in the water reservoir. Add water every few days as needed.

Now personalize your planter. Grab other shapes and **overlap** them with the base planter shape.

While you are designing, be sure to rotate your camera around the planter frequently to ensure that all components are overlapping. When the file is exported a hole will be carved away from the inside, removing any overlapping objects to form a perfect cup inside.

If you want to add text to go around the planter, use the “**Text Ring**” found on page two under the “**Featured All**” tab. Click “**Basic Shapes**” to change tabs.

Character elements such as eyes, hands, and feet can be found in the “**Character**” tab.

Many other unique shapes can also be found under “**Basic Shapes**” and “**Featured All.**”

Use the workplane to snap objects onto the side of the planter. Scale and rotate objects to make them more unique.

Keep your design within the blue workplane.

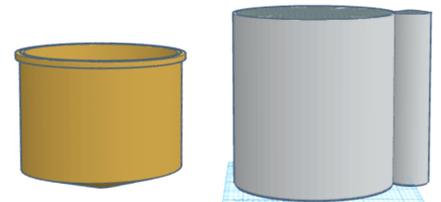


Sign in

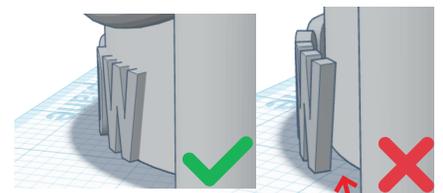
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Template: The template file will have two shapes. The yellow shape will not be altered. Make customizations to the grey shape.



Overlapping: Ensure all objects are touching the planter. There should be no gaps between the object and the planter.

Tips for designing in 3D with Tinkercad:

Grid: Change the grid in the bottom right side to snap at 1/32. Switch to inches if it is currently in millimeters.

Workplane: Use the workplane tool to create a temporary reference plane for objects. When a workplane is applied to the side of a shape, objects that are added from the drop down list will snap to that side. To snap an object to the workplane push “D” on the keyboard. D is for drop.

Creating holes: To create a hole, **group** a solid shape and a hole shape. Any shape can be turned into a hole using the shape window. Holes will also automatically group once exported so be careful to only use holes when intended.

Changing shapes: A shape can be changed in many ways. You can **rotate** or **lift** the shape. You can also **change the size** of two sides or just one side. When you hover over a button that will change the shape, the button turns red. To zoom in close on an object, press “F.” F is for focus.

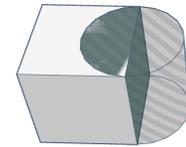
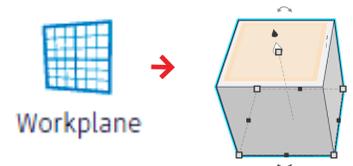
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CHECK FOR ACCURACY

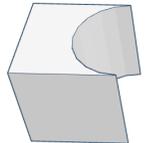
Once you are finished decorating your planter, double check your 3D model to ensure **all components are touching**.

Change the document name to your name and export a .STL using the setting “**export everything in this design.**” Holes will automatically group when exported.

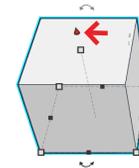
Email the .STL file to 3dprints@carmel.lib.in.us by May 1st to have your model 3D printed for free! All planters will print in a yellow and clear PETG. PETG is non-toxic filament that can hold water and withstand outdoor temperatures and UV exposure.



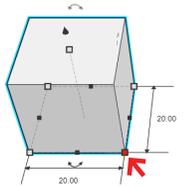
Not grouped:
A solid and a hole



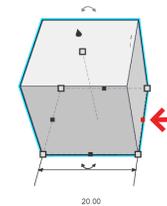
Grouped: solid and a hole



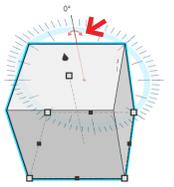
Triangle: used to lift a shape



White Square: change both sides



Black square: change that side



Arrows on line: rotate the object

