
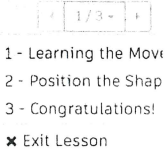

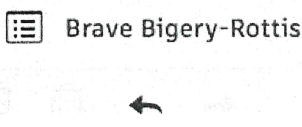

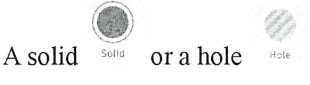

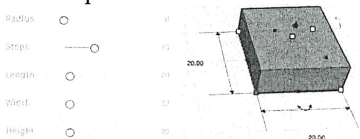

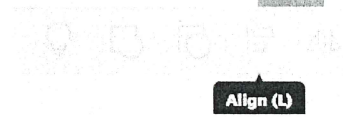
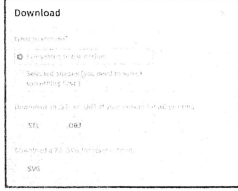
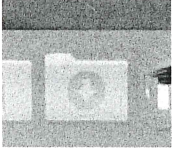



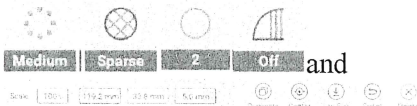


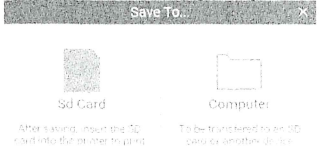


3 D Printing – Quick Reference

Design & Prototype

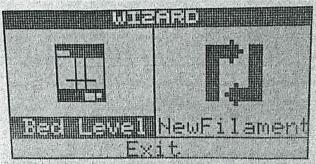
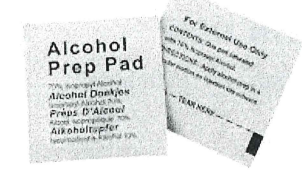

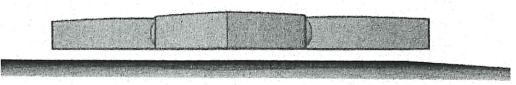
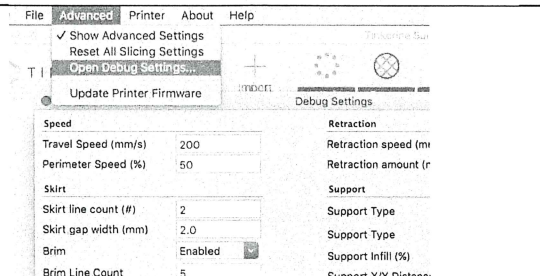
<p>1. Go to www.tinkercad.com</p> <p>JOIN NOW</p> <p>Educator / Student /Individual</p>	<p>2. The first time you open Tinkercad, a few simple lessons will appear.</p> 	<p>3. In the drop down lesson menu, select x Exit Lesson to skip the lessons.</p> 
<p>4. Click on your profile at the top right corner and + New to start</p> 	<p>5. Click on the strange name to rename your creation.</p> 	<p>6. Use various solids to design your 3 D objects. Simply drag and drop.</p> 
<p>7. Any shape can be a solid or a hole</p> 	<p>8. Measurements on the grid are in millimeters. The blue outline = 1cm or 10 mm.</p> 	<p>9. You can adjust the dimensions by clicking on the white squares that appear on each shape.</p> 
<p>10. Rotate the cube on the top left to see your objects from different angles.</p> 	<p>11. This toolbar is quite useful to align, group, ungroup, or flip objects.</p> 	<p>12. When you are done, select Export</p>  <p>Select STL</p>
<p>13. Your design will be saved in the downloads folder.</p> 	<p>14. At this point, you will need to open the slicer software</p> 	

Slice & Print

<p>1. </p>	<p>Download a free copy</p>	<p>This software will slice your design in steps the printer can understand.</p>
<p>2. Import your file from the downloads folder.</p> 	<p>3. You can make some adjustments which will affect the precision, density and print time.</p> 	<p>4. When you are done, select Slice</p> 
<p>5. This will show you your print time and filament usage.</p>  <p>the + allows you to insert a pause during printing if you want to change color mid project. Save for print if you are ready.</p>		<p>6. If you are ready to print</p> 

Take your SD card to the 3D printer and print your design.

Success Tips

<p>1. Before printing, use the Align Wizard on the printer to make sure the print bed is level.</p>	
<p>2. If the painters tape on the print bed is dry or old, use a rubbing alcohol wipe to add moisture to the tape (if required).</p>	
<p>3. Make sure you don't have too much overhang in your design.</p>	
<p>4. In Tinkercad, make sure your design prints directly on the blue grid, not in thin air (like in the image).</p>	
<p>5. In Tinkerine Suite, you can add an extra layer (brim) around your structure to help it stick to the bed. Open debug settings and enable the brim.</p>	

Learn More

TINKERINE™ U


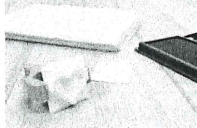

www.u.tinkerine.com

<p> Courses LEARN THE FUNDAMENTALS Learn all about 3D printing from the experts.</p>	<p> Challenges LEARN BY DOING Ignite your creativity by tackling fun design challenges.</p>	<p> Experiments LEARN WITH CURIOSITY Watch us test out myths and facts about 3D printing.</p>
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Challenges

<https://www.thingiverse.com/challenges>

<https://u.tinkerine.com/challenges>

 <p>Personalize Your Nameplate Express who you are with your custom nameplate.</p>	 <p>8-Bit Stamp A fun table tool for work and for fun.</p>	 <p>Design a Spinning Top A simple toy that demonstrates complex concepts.</p>
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