

## Introduction to Modeling for 3D Printing: Hands-on Workshop Using TinkerCAD

---

[Tinkercad](#) is a free online collection of software tools that help people all over the world think, create and make. It's the ideal introduction to [Autodesk](#), the leading 3D design, engineering and entertainment software used in a wide variety of engineering and trades careers.

Tinkercad is free and browser-based so it can be used on a wide range of devices and computers. It has been designed specifically for use by children and teachers.

For information on privacy and safeguards built into the application see:

<https://www.autodesk.com/company/legal-notices-trademarks/privacy-statement/childrens-privacy-statement>

---

### Step 1: Create your own TinkerCad account

Create a free personal account for yourself. In your browser, navigate to <https://tinkercad.com> and follow online instructions and login.

---

### Step 2: Get Started

Click on the "Create New Design" button and give your project an appropriate name

---

### Step 3: Creating an Object

Navigate to the "Basic Shapes" section in the right hand column and using the slider bar, navigate to the "Heart" shape and drag it onto the "Workplane"

---

### Step 4: Seeing in 3D

Click and hold on the cube with the word "Top" on the left hand side, change the view to 'Front'. Rotate the cube to other sides to "see" your object from multiple sides. Return to "Front" view.

---

### Step 5: Adjusting Size

Now click on your “Heart” and a small arrow at the top of your “Heart” should appear and you can click on that to change the thickness of your “Heart”. Try and make your “Heart” 5 mm.

---

### Step 6: Customizing your “Heart”

From the “Basic Shapes” sidebar on the right hand column and using the drop-down menu, select “Text and Numbers” and drag the “Text” object onto your workplane. Right click on the “Text” object and type in your name or a word that you would like to appear on your “Heart”. Drag your “Text” Object so that it appears on top of your “Heart” and ensure that both objects are connected.

---

### Step 7: Negative Spaces

From the “Basic Shapes” sidebar, select the “Cylinder” object that appears grey with stripes, drag it onto your workplane and resize it so that it is and place it in a location on the “Heart” object so it acts a keychain hole for your “Heart”

---

### Step 8: Grouping your objects

Select all the objects on your workplane and using the “Group” icon in the top navigation bar or “Ctrl G”. This will turn your 3 objects into a single object that is now ready for downloading and printing.

---

### Step 9: Preparing your Project for 3D printing

Click on the “Export” and select the “.STL” option. STL (an abbreviation of "stereolithography") is the universal format for 3D Printing. Choose the STL format if you are exporting for 3D printing. STL format is supported by many other software packages; it is widely used for rapid prototyping, 3D printing and computer-aided manufacturing.

---

### Step 10: Copy your .STL file to USB key

Copy your .STL file onto the USB drive and bring to the teacher (or to Graphic Lab or Cool School) for printing.