SIMPLIFY3D™

Quick Start Guide

Preparation

3D Printing Workflow

| Import | → | Process Settings | → | Preview | → | Print! |

Additional Resources

Installing Simplify3D™ Software

Download: Download instructions are emailed to you following your online purchase. Retain the email for reference, as future software updates will require license information contained in this email.

Install:

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Windows XP or Greater	Unzip and double-click the .exe file to install. You may need to right-click and choose "Run as administrator" depending on your permissions and trust settings. The Windows installation requires Microsoft Visual C++ 2010 Redistributable, which should be automatically detected and installed if necessary.
Mac OS X 10.6.8+	Unzip and double click the .app bundle to install. Enter your administrator password and follow the on-screen prompts.
Linux	The Linux installer comes with both 32 and 64-bit options. After choosing the appropriate version for your operating system, unzip the file and launch the .run installation package. It is recommended to launch this program as super-user by opening Terminal, cd'ing to the directory where you unzipped the file, and then typing "sudo ./Simplify3D*installer.run" and entering the administrator password.

Launch: The installer will guide you through the installation steps. The last step is a prompt to open and launch your Simplify3D™ Software for the first time.

Activate: The software must be activated through an Internet connection after installation.

You can deactivate a specific machine at any time by going to **Help** > **Deactivate Product**.

The Configuration Assistant

When you open Simplify3D for the first time, you will be greeted by the **Configuration Assistant**. Select your printer from the numerous printers listed in the drop down menu and the Assistant will automatically configure all of your settings.
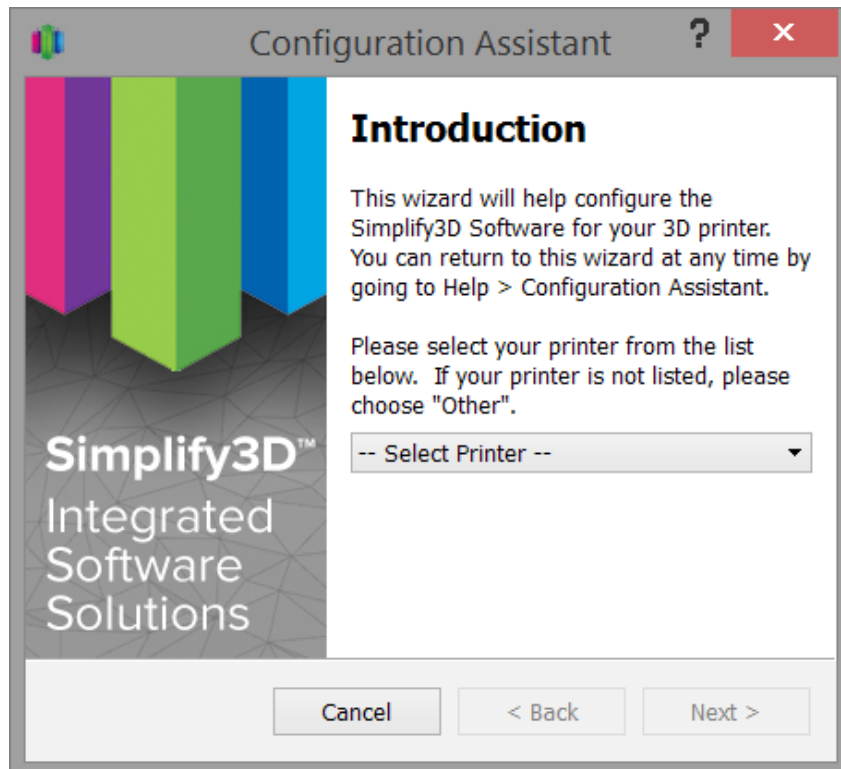
If you want to access the Configuration Assistant after installation to change your settings to a different printer, it can be located in the horizontal Menu Bar under Help > Configuration Assistant.

The Interface Layout
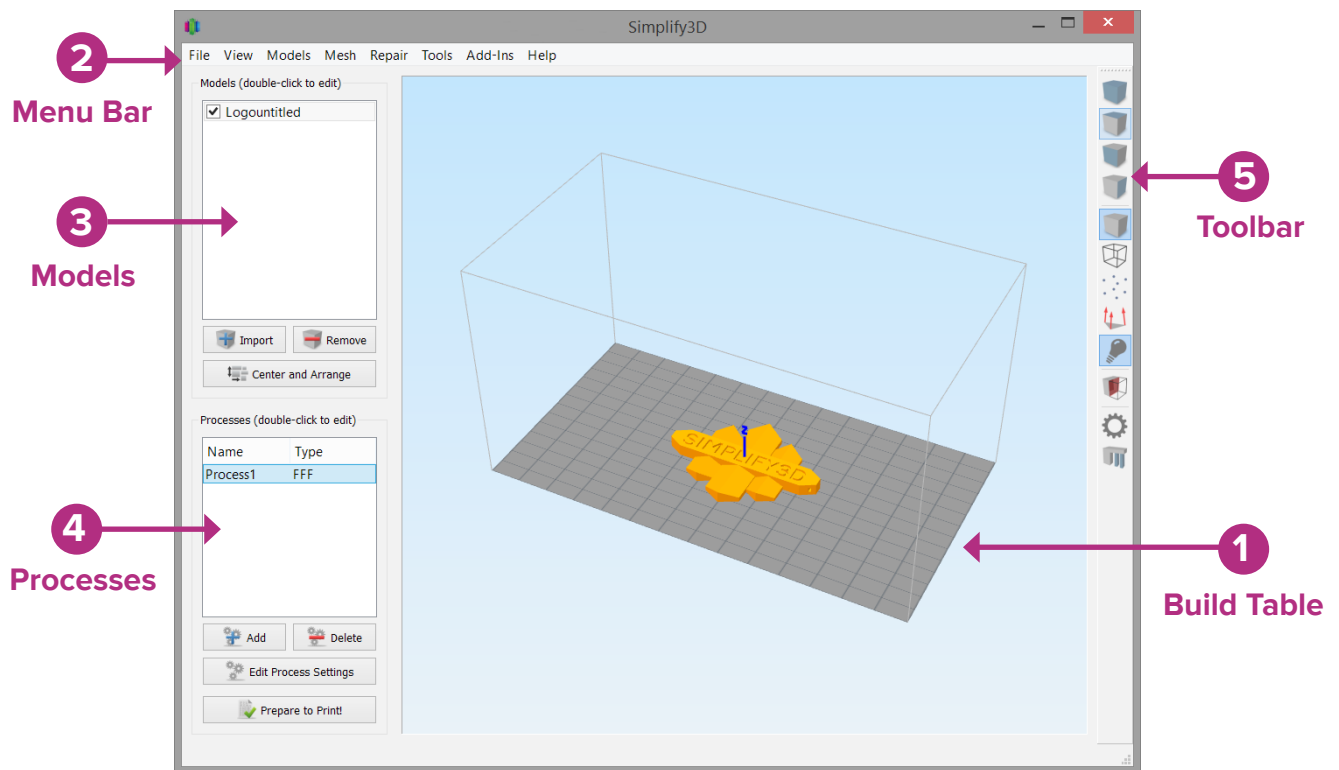
1. Build Table: This is the interactive 3D environment where you will be viewing and working with your 3D content before printing. This is the "main stage" and primary viewing area. The gray grid is scaled proportionally to the size of your build volume and is determined based on your printer selection with the Configuration Assistant.

Use these mouse shortcuts for different views:
- **Rotate View** – Left-click and drag
- **Pan View** – Right-click and drag
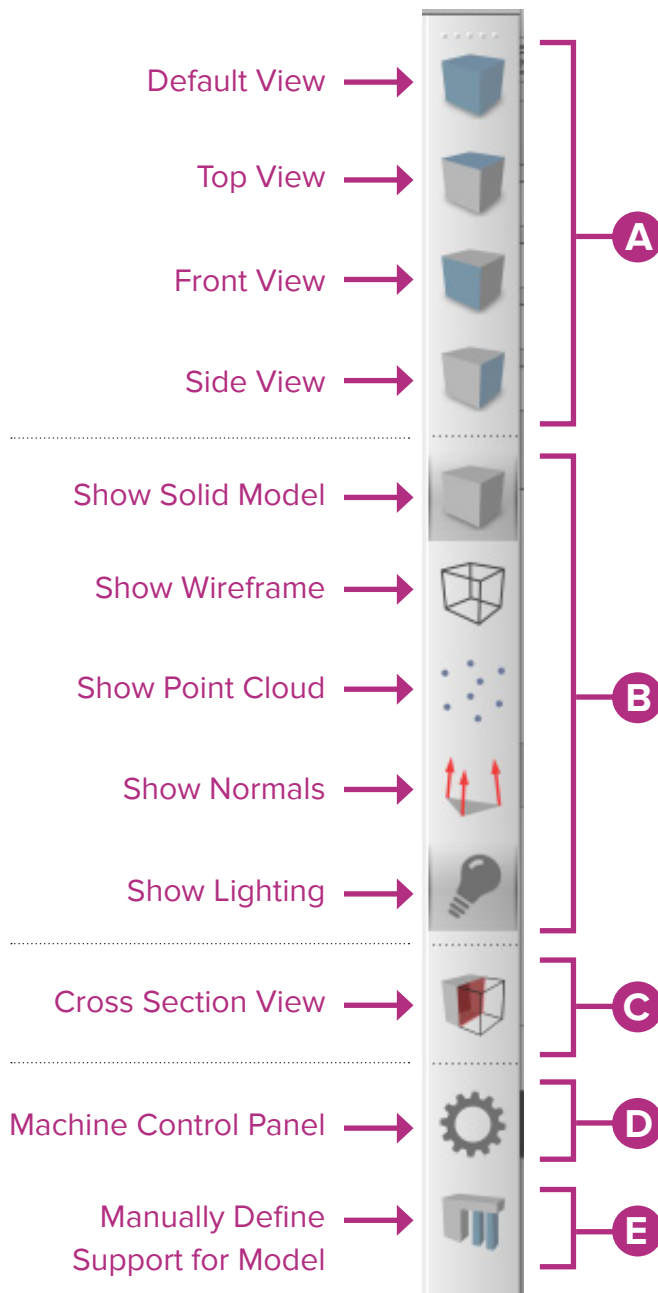- **Zoom** – Scrolling or gesture zoom (or Shift-left-click and drag up and down)

2. Menu Bar: Primary navigation to all aspects of Simplify3D Software.

3. Models: When you import 3D models, they are listed in this section above the buttons/commands that enable you to work with your models.

4. Processes: The build operations to create your 3D print are listed here, along with buttons/commands enabling you to work with process functions.

5. Toolbar: This toolbar contains quick access buttons for frequently used tools. You can move the toolbar anywhere you wish by clicking and dragging the top dotted line.

Default View →

Top View →

Front View →

Side View →

A

Show Solid Model →

Show Wireframe →

Show Point Cloud →

Show Normals →

Show Lighting →

B

Cross Section View →

C

Machine Control Panel →

D

Manually Define Support for Model →

E

A. View: The first four buttons are preset viewing positions, allowing you to quickly change to the default, top, front, or side view.

B. Model Render: These tools control how you view the attributes of your 3D models. You can add a wireframe or a point cloud to your model, enable or disable the lighting and the solid rendering of the model, or display the surface normals of the model.

C. Cross Section Tool: The Cross Section tool gives you the ability to cut a model in half to look inside it. The tool allows you to cut your model from all three axes and can also be accessed in the Preview Mode.

D. Machine Control Panel: Simplify3D™ Software can connect to virtually any printer through the Machine Control Panel (MCP). Another way to access the MCP is through the top menu bar under **Tools > Machine Control Panel**. The MCP allows you to view your extruder and build plate temperatures, preheat your nozzles, jog your machine's motors, and access the software-printer communication log.

E: Support: The Manually Define Support tool provides the freedom to customize your support structure under or inside any part of a model.
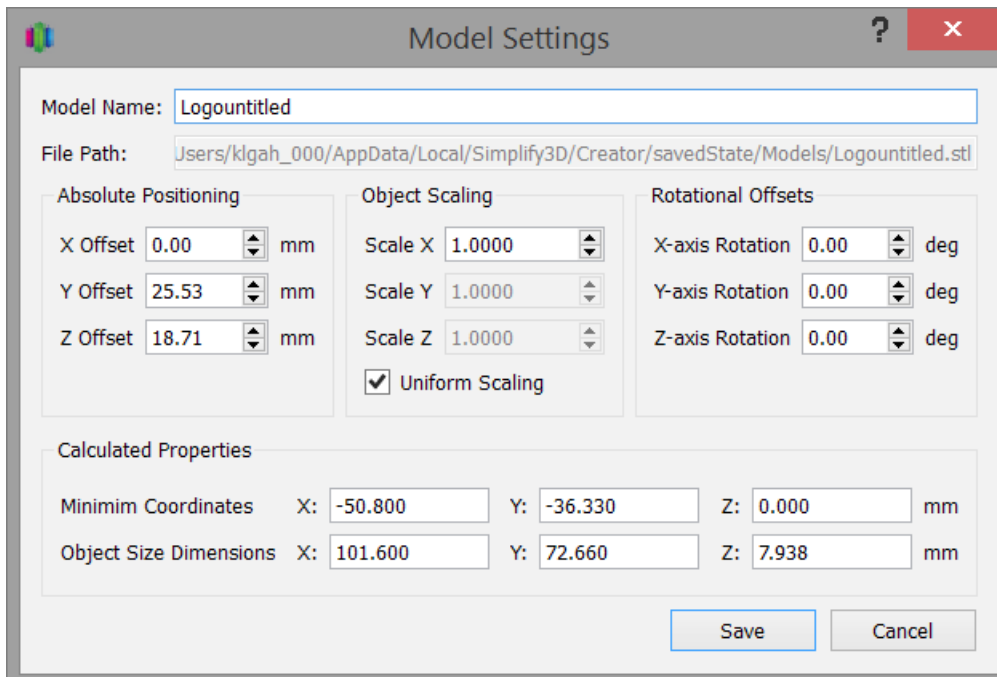
Import and Manipulate Your 3D Model

The first step in the 3D printing process is to import the model you want to build. You can obtain 3D models from http://www.thingiverse.com* or you can make a model yourself using a CAD package like SketchUp or AUTOCAD®. Save the 3D model file on your computer or storage device as an .stl or .obj file.

Click **Import** in the Models section and navigate to the folder where you saved your file. You can also drag-and-drop file(s) onto the Build Table. The software will automatically position and center your imported model on the Build Table.

Helpful mouse and keyboard shortcuts to move, scale, or rotate your model:
- **Move Model** – Ctrl-left-click and drag (or Command-left-click on Mac)
- **Scale Model** – Ctrl-right-click and drag up or down (or Command-right-click on Mac)
- **Rotate Model** – Alt-left-click and drag right or left (or Option-Left Click on Mac)

Advanced model settings: Double click on any model (either in the Models list or on the Build Table) to bring up the **Model Settings** box. Enter numbers or use the up-down arrows to adjust the positioning, scaling, or rotation of your model. A helpful feature is that you can see your model change in real time on the Build Table.

*Thingiverse is owned and operated by MakerBot® Industries, LLC

Settings and Processes for 3D Printing

In the first step of the workflow, you imported a model. The next step is to define a **Process** that specifies how your model will be constructed. A Process is a collection of settings including speed, size, support material, quality levels, etc. Some models are built with one process, while more complicated models may involve multiple processes throughout the build sequence.

The first Process will be configured automatically based on the printer selected in the Configuration Assistant. You're free to make any adjustments you desire, but it's a great starting point!

To make adjustments to your Process, double-click on the Process or click Edit Process Settings. This will open the **FFF* Settings** window.

> **The acronym FFF stands for **Fused Filament Fabrication**, and is the industry term for the 3D printing processes you will be using.*
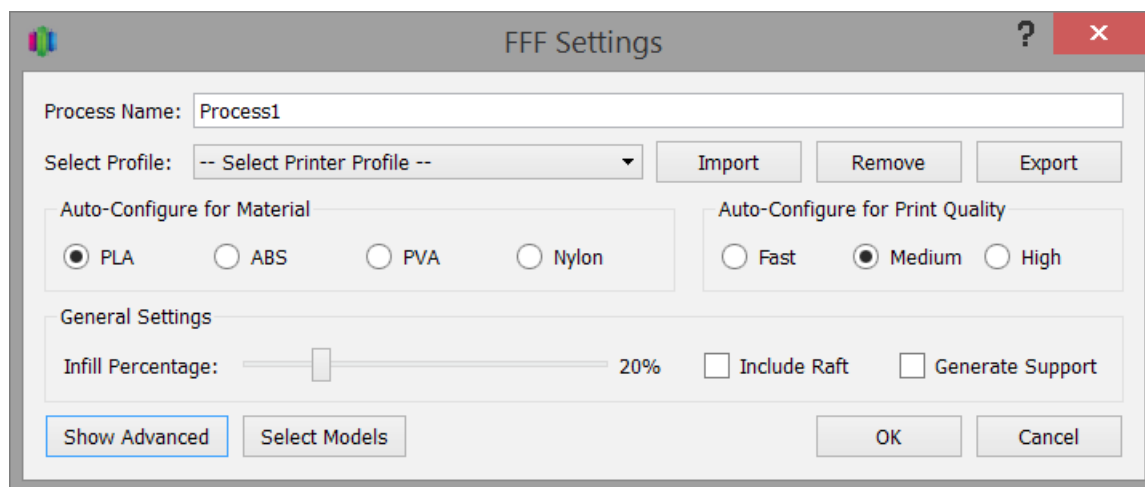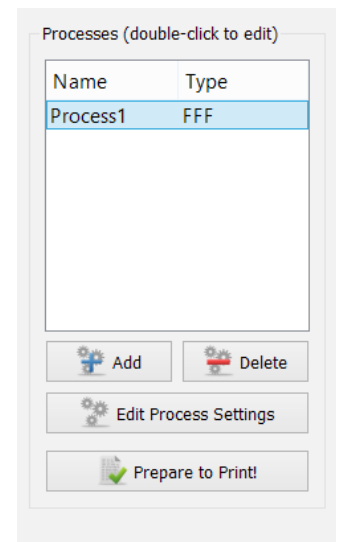
The **FFF Settings** window contains all the Processes that specify how your model will be constructed:

1. **Select Profile** – Allows you to choose a pre-configured printer profile.

2. **Auto-Configure for Material** – Allows you to select the material you will be printing with.

3. **Auto-Configure for Print Quality** – Allows you to select a pre-configured print quality.

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4. **Infill Percentage** – Changes the interior solidity of your 3D print. 0% is completely hollow and 100% is completely solid. A value in the range of 20-50% is a good place to start.

5. **Include Raft** – Generates a raft structure underneath your part. Rafts are used to improve the bond to your build platform and may help reduce warping on large models.

6. **Generate Support** – Turns on support material for your 3D print. Support structures are similar to scaffolding, in that they help support steep overhangs and unsupported areas during the construction process. Typically, a 45° or greater overhang will benefit from support material underneath it. Simplify3D provides a unique ability to customize your supports, with add and delete support buttons. Simplify3D support structures break away cleanly and easily, minimizing difficult post-production cleaning and ensuring the highest quality final print.

   Click **OK** when you have finished configuring your settings in the FFF Settings window. At any time, you can modify the settings by double-clicking on the Process in the list, or by clicking Edit Process Settings.

   Click **Show Advanced** at the bottom of the FFF Settings window to view additional options and settings that are available within Simplify3D Software.

Previewing G-Code Files

"Slicing" is the term used to describe the process of translating a digital model into line-by-line printer instructions called "G-code." The software slices the model into G-Code based on the variables you have selected in the FFF Settings window.

After you have finalized your Process settings, click **Prepare to Print!** to trigger the preparation of G-Code. Simple models will be sliced in seconds, while complex models may take several minutes.

When your G-Code has been created, the software window will transition automatically to Preview Mode.
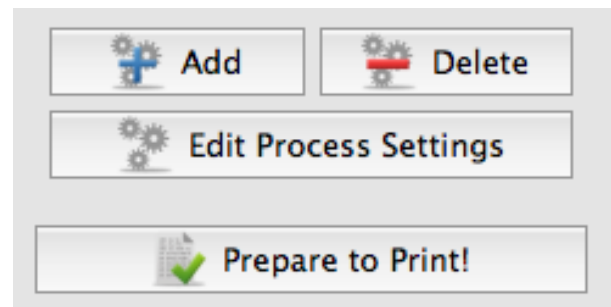
The animated **Preview Mode** in the Simpify3D™ Software allows you to inspect all aspects of your print operation prior to execution. The software takes your generated G-Code and virtually displays line by line how your model will be constructed.
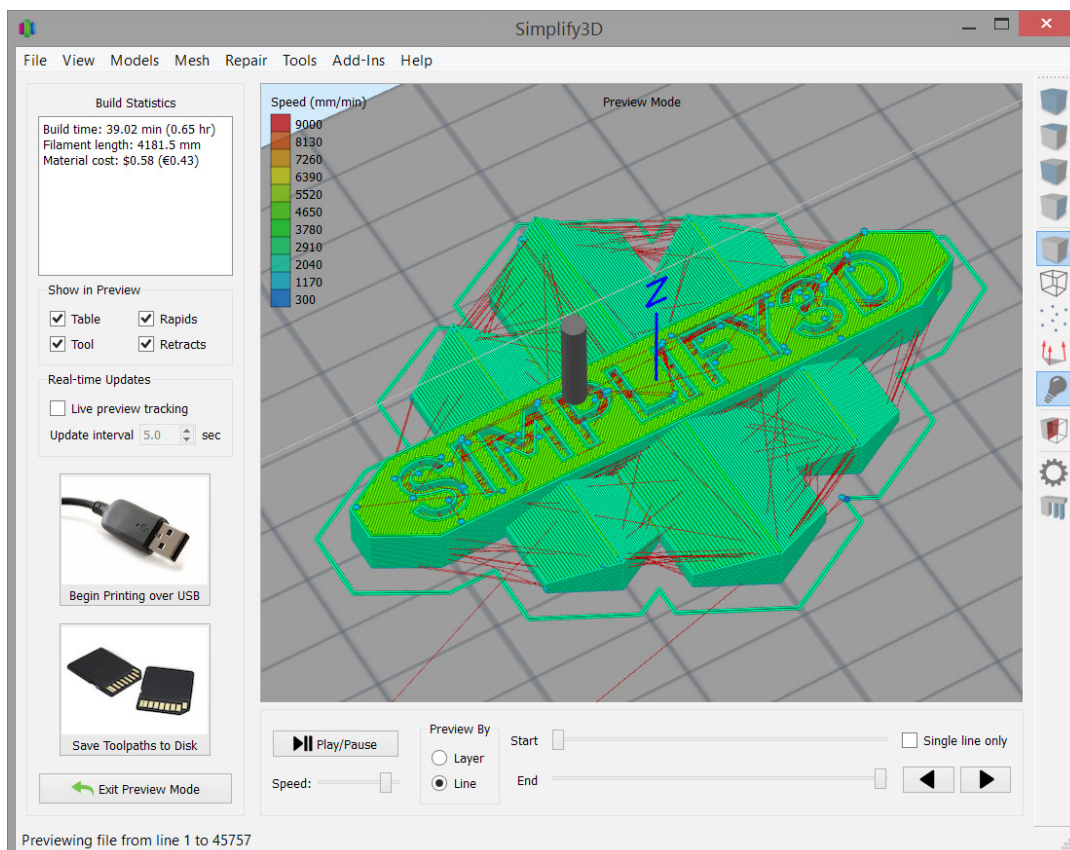
Build Statistics are located in the top left corner of the Preview window and include three estimates:

1. Build Time (how long it would take for your print to finish).
2. Filament Length (how much filament it will take to build your model).
3. Material Cost (an approximation of how much it will cost to make your part).

The Preview provides interactive buttons for precise playback control:
- **Play/Pause button** animates the preview line by line.
- **Start and End Slider Bars** allow you to move through the preview manually. (Hint: leave the Start button positioned at left and drag the End button to see the entire build). The preview can be illustrated by Line or by Layer by clicking on either selection.

A useful setting is to select Preview by Layer and also place a checkmark in Single Layer Only. Together, these selections will allow you to view a single layer at a time.

Printing on Your Machine

When you are happy with the preview, there are two options to begin your print:

Begin Printing over USB – if you are using a USB connection, you have the option to view the build sequence real-time on your monitor by selecting Live Preview Tracking. For additional information on USB communication, access the Machine Control Panel to view a broad range of information that is transmitted via USB.

Save Toolpaths to Disk – This saves your print file to a user-defined location, such as a folder on your computer or an SD card.

If you want to make adjustments to your model or process before printing, click **Exit Preview Mode**.

Congratulations! You have now completed your first 3D print using Simplify3D™ Software. You'll soon be ready to explore other options and create many exciting models.

Resources within the software

You will learn so much about your printer by making your first part! Once you feel comfortable with the basics and are ready for more options, advanced settings can be found by clicking **Show Advanced** in the bottom left corner of the FFF Settings window. This reveals the all of the detailed settings that Simplify3D™ Software is implementing behind the scenes, as well as providing customization options for many settings you may want to adjust. If you want more information about any particular setting, hover the mouse cursor over that element to display a tooltip describing the functionality.

Resources on our website

Visit us at **Simplify3D.com** where you will find a wide array of support materials.

- Tutorials
- Hardware SetUp Guides
- User Forum
- FAQ

Thank you for your purchase of Simplify3D™ Software!