



Blender 3D Printing Essentials

By Gordon Fisher



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Learn 3D printing using the free open-source Blender software. This book gives you both an overview and practical instructions, enabling you to learn how to scale, build, color, and detail a model for a 3D printer.

Overview

- Design beautiful, colourful, and practical objects in Blender to print or export
- Master Blender's special 3D printing tools to maximize print quality and minimize cost
- Consider requirements unique to 3D printing such as structural integrity and stability

In Detail

Like computing, 3D printing has been around for decades but it was expensive and was only used for making complex prototypes. Now, prices have dropped and third-party printing services such as Shapeways have become available, making the technology available to everyone.

Blender is an open source modeling and animation program popular in the 3D printing community. 3D printing demands more of a modeler than animation or virtual reality. The model maker must engineer their model to work in the real world. They must keep in mind the particular needs of the materials and printers that they are planning to use to print their model.

This practical guide gives Blender users all the information they need to design high-quality 3D printed objects. With a solid exploration of the 3D modeling process, design considerations for 3D printing, plus step-by-step exercises, you will soon be comfortable making 3D objects for real-world enjoyment.

Starting with an overview of 3D printing, this guide moves onto to precision measurement, fixing problems in a 3D model, and how to make it light and strong enough for real-world use.

You will learn how to scale, build, and detail a model for a 3D printer. You will learn to color and decorate it, as well as making parts precisely in the size you want them, so that multi-part objects fit together smoothly. You will also learn tips on saving money when you have printed your model.

With the help of this guide, you will be able to complete your project and learn how to export the file so it is ready for a variety of 3D printers.

What you will learn from this book

- Understand how a 3D printer makes a 3D object
- Get an introduction to different types of 3D printers
- Explore the materials that can be used in a 3D printer
- Get to grips with precision modeling techniques in Blender
- Use Blender's Ruler/Protractor tool
- Unwrap a texture to fit a model
- Make a model watertight and manifold
- Design an object hollow using the Solidify modifier
- Export to STL and X3D files for printing

Approach

This book adopts a practical approach, with the use of step-by-step instructions to help guide readers. There are lots of screenshots covering each and every step needed to design a high-quality model in Blender for 3D printing.

Who this book is written for

If you are a Blender user or someone who wants to use Blender to make 3D objects suitable for 3D printing, this book is ideal for you. You should already be comfortable with basic modeling in Blender - including using modifiers - although advanced skills are not required. All of the models that you will need are explored in-depth. This book does not assume that you will use any specific printer and teaches the general principles common to building models for most printers. It also gives you tips on discovering the requirements of the specific printer you will be using.

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Editorial Review

About the Author

Gordon Fisher

Gordon Fisher, as a teenager, studied drafting and built plastic model cars. He got his start in 3D computer modeling back when one would have to create a 3D engineering drawing with a pencil and then input the information into a computer, vertex-by-vertex.

He led a three-person crew in building 3D models of 80 aircraft for the U.S. Army Visual Aircraft Recognition program. He also built an accurate model of the 17th and 18th holes of the Pebble Beach golf course for Callaway Golf's golf simulator. He's currently working with the Open Luna Foundation to create models, X3D and 3D printed, of their parts of their proposed lunar base.

He is the Creative Director at Point Happy Interactive. He has been using Blender professionally since 2002 and has given classes on using Blender and using Python with Blender at Python conferences in Texas and Arkansas. His work has been displayed at the National Air and Space Museum. He is also the author of the book Blender 3D Basics, published by Packt Publishing.

Users Review

From reader reviews:

Lawrence Gregory:

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