

Introduction

Rendering and Animation Basic Concepts

Basic Key Commands

Chapter 1- The Blender Interface

The Blender Screen

Window Types

Open, Saving and Appending Files

Packing Data

Importing Objects (from other file formats)

Chapter 2- Working with Viewports (windows)

Creating Viewports

Changing Window Type

Moving Around in 3D Space

Chapter 3- Creating and Editing Objects

Working with Basic Meshes

Using Main Modifiers to Manipulate Meshes

Edit Mode- Mesh Vertex Editing

Proportional Vertex Editing

Joining/Separating Meshes, Boolean Operations

Chapter 4- Lighting and Cameras

Lighting Types and Settings

Camera Settings and Options

Chapter 5- Materials and Textures

Basic Material Settings

Halo Settings

Basic Texture Settings

Using JPEG Images as Textures

Displacement Mapping

Chapter 6- Setting Up a World

Using Color, Stars and Mist

Creating a 3D Cloud Background

Using an Image in the Background

Chapter 7- Render Window Settings

Basic Setup Options

Rendering a JPEG Image

Creating an AVI Movie File

Chapter 8- Raytracing (mirror, transparency, shadows)

Lighting and Shadows

Reflection (mirror) and Refraction (transparency)

Chapter 9- Animation Basics

Timing, Moving, Rotating and Scaling

Working with the IPO Window & Auto Keyframing

Animating Materials, Lamps and World Settings

Chapter 10- Adding 3D Text

Blender 3D Text Settings

Using Elefont for 3D Text (external program)

Chapter 11- NURBS and Meta Shape Basics

Using NURBS to create lofted shapes

Liquid and droplet effects using Meta Shapes

Chapter 12- Modifiers

Subsurf (mesh smoothing)

Build Effect

Mesh Mirroring

Wave Effect

Boolean Operations (cutting and adding)

Chapter 13- Particle System and Interactions

Particle Settings and Material Influence

Particle Interaction With Objects and Forces

Chapter 14- Child-Parent Relationships

Using Child-Parented Objects

Adjusting Object Centers (pivot points)

Chapter 15- Working With Constraints

Tracking To An Object

Following Paths and Curves

Chapter 16- Armatures (bones and skeletons)

Using Armatures to Deform Meshes

Creating Vertex Groups

Using Inverse Kinematics (IK)

Chapter 17- Relative Vertex Keys (shape keys)

Creating Mesh Keys

Using Action Editor Sliders

Chapter 18- Soft Bodies

Creating Fabric and Wave Effects

Using Forces to Manipulate Soft Bodies

Chapter 19- Creating Springs, Screws and Gears

Duplicating Meshes to Create Screws and Gears

Using Mesh Editing to Create Helix Shapes

Chapter 20- Game Engine Basics (real-time animation)

Setting Up The Physics Engine

Using Logic Blocks

Applying Materials

Using Game Physics in Animation

Chapter 21- Video Sequence Editor

Producing a Movie From Individual Clips

Adding an Audio Track

1. **Viewports**
Chapter 2 Practice Exercise
2. **Creating Objects**
Chapter 3 Practice Exercise
3. **Basic Editing**
Chapter 3 Practice Exercise
4. **Boolean Editing**
Chapter 3 Practice Exercise
5. **Lighting and Cameras**
Chapter 4 Practice Exercise
6. **Applying Materials**
Chapter 5 Practice Exercise
7. **Applying Textures**
Chapter 5 Practice Exercise
8. **Adding a World**
Chapter 6 Practice Exercise
9. **Rendering an Image**
Chapter 7 Practice Exercise
10. **Raytracing**
Chapter 8 Practice Exercise
11. **Creating an Animation**
Chapter 9 Practice Exercise
12. **Creating 3D Text**
Chapter 10 Practice Exercise
13. **Meta Shapes**
Chapter 11 Practice Exercise

14. **Using Modifiers**
Chapter 12 Practice Exercise
15. **Particle Systems**
Chapter 13 Practice Exercise
16. **Creating a Robot Arm**
Chapter 14 Practice Exercise
17. **Camera Constraints**
Chapter 15 Practice Exercise
18. **Paths & Curves**
Chapter 15 Practice Exercise
19. **Creating a Skeleton**
Chapter 16 Practice Exercise
20. **Vertex Keys**
Chapter 17 Practice Exercise
21. **Making a Flag**
Chapter 18 Practice Exercise
22. **Gear Design**
Chapter 19 Practice Exercise
23. **Real-Time Animation**
Chapter 20 Practice Exercise
24. **Movie Producer**
Chapter 21 Practice Exercise