

Index

About	10
How to use this book	15
Chapter 1 - Basic Concepts	18
1.1 A World of Triangles	18
1.2 What is a shader?	23
1.3 Image rendering process in a shader	28
1.4 When and where are they used?	42
Chapter 2 - Introduction to Shader Graph	48
2.1 Setting Up and Installing	48
2.2 Shader Types using Shader Graph	57
Chapter 3 - Introduction to Shader Graph	68
3.1 What is Shader Graph?	68
3.2 Creating a shader in your project	72
3.3 Interface and first look at Shader Graph	74
3.4 Organization	84
3.5 My first shader	89
3.6 My second shader: Transparency	96
3.7 My third shader: Textures	102
3.8 Combining color and texture	108
Chapter 4 - The Mathematics of Color	110
4.1 Context	111
4.2 Understanding pixels	117
4.3 Blending Modes	123
4.4 Popular Blending Modes and Their Operations	147
4.5 Blending Modes Exercises	165
Chapter 5 - Textures and Data Maps	169
5.1 Textures	169
5.2 UV Coordinates	176
5.3 Texture Types	189

Chapter 6 - Essential Nodes	233
6.1 Sample Texture	234
6.2 Color	239
6.3 Basic Operations	240
6.4 Tiling and Offset	252
6.5 Vectors	255
6.6 Preview	265
6.7 Time	267
6.8 UV Maps / UV Node	275
6.9 Split	278
6.10 Noise	285
6.11 Normal Map	288
6.12 Vertex Color	291
6.13 Main Texture	303
6.14 Booleans	308

Chapter 7 - Shaders and VFX Practices: Basic Level	312
7.1 Blending Modes	316
7.2 Spherize a texture or Fisheye effect	321
7.3 Masks	327
7.4 Vertex Color Trail Renderer	334
7.5 Alpha CutOut	340
7.6 Scene Color - Camera Projection	347
7.7 Texture distortion	356
7.8 Swirl and polar coordinates	360
7.9 Portals	369
7.10 Switching between textures using Lerp	372
7.11 Flipbooks and animations using spritesheets	384
7.12 Booleans	392
7.13 Remap	396
7.14 Basic stylized water	407

Chapter 8 - Shaders and VFX Practices: Intermediate Level	417
8.1 Pixel art shader	420
8.2 Texture2D Arrays	424
8.3 Distortion Texture for translucent objects	429
8.4 Mirror shader	435
8.5 Holographic Card	441
8.6 Vertex Distortion	448
8.7 Object Dissolve	461
8.8 Gradual Growth	471
8.9 Sine Waves Flag	479
8.10 2D Water using a Sine Wave	485
8.11 Basic Toon Shader	491
8.12 Rim Light	509
8.13 3D Water	518
Chapter 9 - Shaders and VFX Practices: Advanced Level	530
9.1 Reacting to Light Direction	532
9.2 Electricity	541
9.3 Cameras and Render Textures	553
9.4 Vertex Distortion for 3D Objects	563
9.5 Edge Detection	570
9.6 Calculating Distance Between Objects Using Shaders	583
9.7 Stencil Buffer	601
9.8 Sub Graphs	609
9.9 Advanced 3D Water	616
9.10 Advanced 2D Water	623
9.11 Post Processing	637
9.12 Custom Post Processing	645
Chapter 10 - Tips & Tricks	663
10.1 Optimization Techniques	665
10.2 Tips and Tricks	725
Acknowledgements and Conclusion	769