



Briar Lee Mitchell

Game Design

ESSENTIALS

GAME DESIGN

ESSENTIALS

GAME DESIGN

ESSENTIALS

Briar Lee Mitchell



WILEY

John Wiley & Sons, Inc.

Acquisitions Editor: Mariann Barsolo
Development Editor: Sara Barry
Technical Editor: James Haldy
Production Editor: Christine O'Connor
Copy Editor: Tiffany Taylor
Editorial Manager: Pete Gaughan
Production Manager: Tim Tate
Vice President and Executive Group Publisher: Richard Swadley
Vice President and Publisher: Neil Edde
Book Designer: Happenstance Type-O-Rama
Compositor: Craig Johnson, Happenstance Type-O-Rama
Proofreaders: Louise Watson and Scott Klemp, Word One New York
Indexer: Robert Swanson
Project Coordinator, Cover: Katherine Crocker
Cover Designer: Ryan Sneed

Copyright © 2012 by John Wiley & Sons, Inc., Indianapolis, Indiana
Published simultaneously in Canada
ISBN: 978-1-118-15927-9 (pbk.)
ISBN: 978-1-118-22609-4 (ebk.)
ISBN: 978-1-118-23933-9 (ebk.)
ISBN: 978-1-118-26407-2 (ebk.)

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at <http://www.wiley.com/go/permissions>.

Limit of Liability/Disclaimer of Warranty: The publisher and the author make no representations or warranties with respect to the accuracy or completeness of the contents of this work and specifically disclaim all warranties, including without limitation warranties of fitness for a particular purpose. No warranty may be created or extended by sales or promotional materials. The advice and strategies contained herein may not be suitable for every situation. This work is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional services. If professional assistance is required, the services of a competent professional person should be sought. Neither the publisher nor the author shall be liable for damages arising herefrom. The fact that an organization or Web site is referred to in this work as a citation and/or a potential source of further information does not mean that the author or the publisher endorses the information the organization or Web site may provide or recommendations it may make. Further, readers should be aware that Internet Web sites listed in this work may have changed or disappeared between when this work was written and when it is read.

For general information on our other products and services or to obtain technical support, please contact our Customer Care Department within the U.S. at (877) 762-2974, outside the U.S. at (317) 572-3993 or fax (317) 572-4002.

Wiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with standard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to media such as a CD or DVD that is not included in the version you purchased, you may download this material at <http://booksupport.wiley.com>. For more information about Wiley products, visit www.wiley.com.

Library of Congress Control Number: 2011945558

TRADEMARKS: Wiley, the Wiley logo, and the Sybex logo are trademarks or registered trademarks of John Wiley & Sons, Inc. and/or its affiliates, in the United States and other countries, and may not be used without written permission. All other trademarks are the property of their respective owners. John Wiley & Sons, Inc. is not associated with any product or vendor mentioned in this book.

Dear Reader,

Thank you for choosing *Game Design Essentials*. This book is part of a family of premium-quality Sybex books, all of which are written by outstanding authors who combine practical experience with a gift for teaching.

Sybex was founded in 1976. More than 30 years later, we're still committed to producing consistently exceptional books. With each of our titles, we're working hard to set a new standard for the industry. From the paper we print on, to the authors we work with, our goal is to bring you the best books available.

I hope you see all that reflected in these pages. I'd be very interested to hear your comments and get your feedback on how we're doing. Feel free to let me know what you think about this or any other Sybex book by sending me an email at nedde@wiley.com. If you think you've found a technical error in this book, please visit <http://sybex.custhelp.com>. Customer feedback is critical to our efforts at Sybex.

Best regards,

A handwritten signature in black ink, appearing to read 'Neil Edde', with a stylized, flowing script.

Neil Edde
Vice President and Publisher
Sybex, an Imprint of Wiley

for Richard and Adam

ACKNOWLEDGMENTS

I would like to express my sincere gratitude to the professional team at Sybex (an imprint of Wiley) for all their hard work. Writing a book is a huge undertaking, but I was not alone and had an amazing group of people who helped shepherd it to you.

Thank you to the terrific team who worked with me: Mariann Barsolo, Sara Barry, Pete Gaughan, Jim Haldy, Christine O'Connor, and Tiffany Taylor. Their professionalism and skills were instrumental in producing this book, and I'm grateful for their enthusiasm and support.

My partners in Star Mountain Studios, Richard and Adam (who truly lives in the secret cow level), are my friends and fellow game makers. They were a constant source of information and guidance with the research and writing of this book. I so enjoy making games with them, and I look forward to making many more. My friend Jack Keely, an amazing illustrator and author, has been a tremendous supporter of this endeavor as well, always there at the right time with the right comment or cartoon to keep things fun and focused.



A special thank you to my parents, Gerry and Steph—according to them, I can do no wrong.

ABOUT THE AUTHOR



Briar Lee Mitchell, MA, runs Star Mountain Studios, www.starmountainstudios.com, a successful gaming company, with her partners, Richard Sternberg and Adam Ryan. They produced an online video game with Joe Perry of Aerosmith, *Genie Joe and the Axeman*, and *Apparitions* with Jason Hawes and Grant Wilson, the Ghost Hunters and founders of The Atlantic Paranormal Society (TAPS).

Briar is also on the faculty at the Art Institute, teaching game art, animation, and VFX techniques for TV, film, and games.

Briar began work as an illustrator in 1977 and has degrees from the University of Toledo (Ohio, BA in art) and the University of California, San Francisco (MA in medical and biological illustration).

She worked in conjunction with Lucasfilm on the very first interactive videodisc for the Smithsonian, titled *The Life and Times of Albert Einstein*. The videodisc and a portrait she painted of Albert Einstein are still at the Smithsonian.

Briar joined the Society of Illustrators of Los Angeles (SILA) in 1992 and served as president for two years. Through her association with SILA, she became a member of the Air Force Art Program; she traveled around the world with the Air Force to document its work in paintings that have been inducted into the National Archives in Washington, DC. Her travels have taken her to

Asia, the South Pacific, New Zealand, and as far away as McMurdo Station at the South Pole along with noted director/producer James Cameron.

You can view Briar's work for environments at www.paisleyshark.com and her medical/forensic work at www.medicalart-briarlee.com. You can contact Briar at briarlee@aol.com.

In the photo with Briar is Bardy, an amazing Labrador who is her partner in K9 Search and Rescue.

CONTENTS AT A GLANCE

	<i>Introduction</i>	<i>xxi</i>
CHAPTER 1	Game Design Origins	1
CHAPTER 2	Gameplay Styles	25
CHAPTER 3	Core Game Design Concepts	43
CHAPTER 4	Visual Design	81
CHAPTER 5	Detailed Development of Visuals	111
CHAPTER 6	Navigation and Interfaces	139
CHAPTER 7	Designing Levels and the Game Design Document	165
CHAPTER 8	Sound	185
CHAPTER 9	Job Descriptions, Game Tracking, and Legal Issues	203
CHAPTER 10	Distribution and Marketing	225
APPENDIX A	Answers to Review Questions	249
APPENDIX B	Education, Training, and Working in Games	255
APPENDIX C	Game Design Document	275
	<i>Index</i>	<i>289</i>

CONTENTS

Introduction

xxi

CHAPTER 1	Game Design Origins	1
	What Is a Game?	1
	Why Are There Rules?	4
	Cheaters?	7
	Chance	8
	History: Going Way Back	10
	Leisure Games	11
	Playing at War	14
	Going Electronic	16
	The Brown Box	18
	And Now We Are Digital	18
	Put Another Quarter In!	20
	Game Boy and More	21
	The Essentials and Beyond	22
CHAPTER 2	Gameplay Styles	25
	What Defines a Gameplay Style?	25
	Role-Playing Games	26
	Action Games	27
	Adventure Games	29
	Action-Adventure Games	31
	Shooters	31
	Simulations	33
	Strategy Games	34
	Clustering Game Types	34
	Designing for a Specific Audience	35
	Casual Games	35
	Hardcore and Core Games	36
	Multiplayer Games	36

Playing for Fun and to Learn	38
Serious Games	38
Educational Games	39
Entertainment Software Rating Board	40
The Essentials and Beyond	42

CHAPTER 3 Core Game Design Concepts 43

Writing the Game	43
Loglines	44
Creating Game Lore	45
Fans and Game Lore	46
Developing the Script	50
Writing Dialogue	54
Testing Gameplay	55
Compiling the Game Doc	56
Preparing Pitches	64
Creating the Characters	64
Design	66
Personality/Abilities	68
Bosses	69
Quest Givers	70
Designing Props	71
Creating Environments	72
2D/3D	72
The Physics of the World	74
Interactivity with the Environment	75
Understanding the Basics of Animation	75
Navigating the World	77
Understanding Cinematics and Cutscenes	78
The Essentials and Beyond	78

CHAPTER 4 Visual Design 81

Developing Concept Art	81
Where Do You Start?	82
Inspiration and Originality	89
Designing Original Characters	89
Where to Find Inspiration for Original Designs	89

Functionality of Characters	95
Functionality of the Interface	97
Backgrounds	97
Understand the Physics of the World	102
Previsualization	103
Storyboards	104
Animatics	107
Pitches and Vertical Slices	107
The Essentials and Beyond	108

CHAPTER 5 Detailed Development of Visuals 111

Overview of Designing Graphics	111
Who Is Your Audience?	112
Demographic Traits	112
Researching Game Sales	113
What Do They Have in Common?	116
Camera Angles	118
Bird's-Eye View	120
Side-Scrolling	122
Faux 3D Backgrounds	122
3D Models	125
Rigging	128
Cel Shading	128
Color, Texture, and Lighting	130
Painting 2D Images	130
Painting 3D Images	131
Animation	133
Characters, Props, and Vehicles	134
Clickable Items	135
The Essentials and Beyond	137

CHAPTER 6 Navigation and Interfaces 139

Guides for the Player	139
Languages	140
Everything Needs to Be Tested!	141
Launch Icons	141
Launch!	142

Interface Design	142
GUI and HUD	143
Important Aspects of the UI	144
Spatial Relationships	146
Different Types of Screens	147
Licenses	147
Splash Art	148
Loading Screens	150
Main Menu	151
Instructions	153
Options	156
Toolbar	158
Scores	160
Exit	160
Pop-Ups	160
Testing!	162
The Essentials and Beyond	162

CHAPTER 7

Designing Levels and the Game Design Document 165

Level Design	166
Determining Waypoints	166
Research!	169
OK, Now What?	171
Adding Gameplay	175
How the Narrative Figures into Level Design	176
How Large to Make the Level	177
Level Editors	178
Levels and Their Genres	179
Spatial Design	180
Hub-and-Spoke Design	181
What Is in the Hub?	182
What Are the Spokes?	182
The Game Design Document	183
The Essentials and Beyond	183

CHAPTER 8	Sound	185
	Organization and Planning	185
	Charting Work	186
	What Sounds Will You Need?	186
	Music	187
	Audio Producers and Composers	188
	Breaking Down Music Types	191
	Ambient Sound	192
	Sampling	192
	Foley and Remote Recording	193
	Original Sounds	195
	Editing Software and File Formats	196
	Sound Effects	196
	Weapons	197
	Interfaces	197
	Speech	198
	Dialogue	198
	Cinematics	199
	Sound-Based Computer Games	199
	The Essentials and Beyond	200
CHAPTER 9	Job Descriptions, Game Tracking, and Legal Issues	203
	Job Descriptions	203
	Game Developer	205
	Game Designer	205
	Creative Director	205
	Producer	206
	Art Director	206
	Leads	207
	Audio Director	207
	Animation Director	207
	Writer	209
	Level Designer	209
	System Designer	210
	Interface Designer	211
	World Builder	213
	Q/A (Tester)	213

Technical Director	213
Programmer	214
Animator	215
Modeler	215
Rigger	216
Pipelines	216
Production Phases	217
Builds	218
Tracking Progress	218
Copyrights and Licenses	220
Copyrights	220
PMCs	221
Trademarks	221
Standards	222
Licenses	222
The Essentials and Beyond	223

CHAPTER 10

Distribution and Marketing

225

Platforms	225
PC	226
Micro-Transactions	226
Property Rights Issues	227
Development for the Home Computer Market	227
Unity	229
Consoles	229
Handheld	231
Mobile	232
Arcade	233
Online	234
MMOGs	234
Social Games	236
Portals	238
Using Games for Marketing	240
Product Placement	240
In-Game Ads	241
Advergames	242
Sponsorship	243

Marketing of Games	244
Viral Marketing	244
Web Presence	244
Marketing to the Demographic	244
Reviews and Endorsements	245
Beta Testing	245
Conferences	246
The Essentials and Beyond	247

APPENDIX A Answers to Review Questions 249

Chapter 1	249
Chapter 2	250
Chapter 3	250
Chapter 4	251
Chapter 5	251
Chapter 6	252
Chapter 7	252
Chapter 8	253
Chapter 9	253
Chapter 10	254

APPENDIX B Education, Training, and Working in Games 255

Education	255
Getting Started in the Field	256
Entry-Level Jobs	258
Internships	258
Applying for Jobs and Internships	259
The Flatbook (Portfolio)	261
Flatbooks Are Rarely Returned	263
Binding Flatbook Materials	263
Types of Flatbooks	264
Reel Types (Digital)	266
Types of Animation Reels	266
Types of Modeling Reels	267
Web Portfolios	268
Copyright	269
Materials for Other Positions	269
Resume and Cover Letter	272
Networking	272

APPENDIX C

Game Design Document 275

Red Harvest Overview 275

Player Characters 276

 Sam Wells (Player Character 1) 276

 Job Waters (Player Character 2) 277

Narrative 277

 The Story of *Red Harvest* 277

Red Harvest Matinees 278

Levels 282

 Level Design Metrics 282

 Level 1—Farm 284

Interface—HUD 285

 HUD Design 285

Index 289

INTRODUCTION

We have played games for thousands of years, to learn how to improve military skills, increase math and business abilities, learn new talents, sharpen old ones, and just have fun. Games are an integral part of being human, and there seems to be a game to fit each of our many different interests. Games have evolved right along with humans, and their development has been influenced strongly by culture and technology.

The gaming experience changed remarkably with the introduction of video games in the 1960s and 1970s, when intrepid inventors built them and made them available for everyone to enjoy. As technology has bloomed and the Internet has radically changed everyone's life, the growth of games, with their inventive use of this technology, continues to enthrall gamers in ever-increasing numbers.

Faster animation, more detailed graphics, and advanced sophistication in sound contribute to creating gameplay that is intriguing, compelling, and addictive. Consumers are spending more money and time on games, whether on a console, their home computer, or a mobile device or phone. There is no abatement in the desire to play, which means opportunities for those of us who love both playing and creating games.

Game makers have evolved to embrace the constantly improving technology to bring us more sophisticated and compelling games to play. Their efforts appear seamless to the gamer, but the work behind the scenes requires a huge array of skills and teamwork.

I hope this book will be an inspiration to those of you on the starting line of finding your way into the intriguing world of making games.

Who Should Read This Book

This book is for people who are interested in computer games and what goes into making them, folks who might want to segue into this field, and students in game art.

What You Will Learn

You'll gain a great understanding of how games are made and the importance of gameplay style. You'll get practical advice on creating characters, props, environments, and interfaces. The book also provides practice working with visuals,

audio, navigation, and interfaces. Throughout, you'll learn to keep gameplay at the forefront, which is what any successful game maker does.

In addition to learning about making games, you'll learn a great deal about the industry. When you finish this book, you'll know more about the roles and pipelines involved in the production of games and be able to refine your own ideas about what you want to do in the industry.

If you have an interest in making games or working in the industry and you just aren't sure where to start, there is a lot of information here to help you understand how games are made, who does what during production, and methods for distributing and marketing games.

Reader Requirements

If you have an interest in computer games, enjoy playing them, and might like to make them, those are all the requirements you need.

What Is Covered in This Book

Game Design Essentials is written to help people who have an interest in creating games and may wish to segue into this field, and for students already in school. The book's web page is located at www.sybex.com/go/gamedesignessentials, where you can download files mentioned in the book and additional documents.

Chapter 1: Game Design Origins In order to understand how games are designed and created today, you'll examine their historical origins. This chapter includes a look at some of the earliest games known to man and how their design and gameplay are apparent in modern productions.

Chapter 2: Gameplay Styles This chapter examines what gameplay styles are and how important they are to a successful product. Too often, new game makers focus on the look of the game, when in fact the most important component of a successful game is gameplay. You'll study elements that make up good gameplay and review the major categories of gameplay style.

Chapter 3: Core Game Design Concepts This chapter walks through the first steps of writing a game and takes you from concept to script to Game Design Document to pitch. You'll learn how to prepare the synopsis, establish the goals, and write a logline. Chapter 3 covers essential information about describing the look and functionality of characters, props, and environments and about creating lore.

Chapter 4: Visual Design This chapter covers the basics of how to begin designing characters, props, environments, and interfaces from concept to finished art. Information provided includes methods for working on original work, how to find inspiration, and the impact gameplay style and demographics have on designing visuals for a game.

Chapter 5: Detailed Development of Visuals Chapter 4 discussed some of the initial visuals created for a game. This chapter provides more detailed descriptions for creating 3D models, color, texture, and lighting. In addition, the chapter provides an overview of design graphics.

Chapter 6: Navigation and Interfaces Navigation, when referencing game design, deals with how the player can move through a game. This includes adjusting visuals and sound, where to find interactive elements in the game, and how to move about the world being created. An interface is what allows a gamer to interact with the game. This chapter examines some of the types of interfaces typical to games, including diegetic and non-diegetic.

Chapter 7: Designing Levels and the Game Design Document The levels reviewed in this chapter have to do with where the player is in the game world, and what they experience while they are there. You'll learn how to plot out a physical area for a game and then understand how game makers plan events. The Game Design Document (GDD) is a written tome that game makers create, which contains everything related to the game from initial log line to the full, finished list of assets that have been or need to be created for the project.

Chapter 8: Sound Sound for games helps to define the mood for the project and can telegraph changes in the gameplay. The chapter explains how musical scores are created and describes the methods audio designers use to create sound effects.

Chapter 9: Job Descriptions, Game Tracking, and Legal Issues This chapter reviews a variety of jobs and their duties, along with how they relate to large versus small productions. In addition, game pipelines and how they work with regard to tracking a production are discussed. The chapter also covers legal issues related to game production and game marketing, such as trademarks, copyright, and standards.

Chapter 10: Distribution and Marketing Game sales have increased tremendously over the past few years, surpassing even the feature film industry. As methods for playing games through the Internet, home computer systems, and so on have increased, so have the methods for marketing games. This chapter looks at some of those unique methods, such as in-game advertising and advergames.

Appendix A This appendix contains the answers to the review questions from each chapter.

Appendix B This appendix is about getting started in the field. It provides information on education, internships, entry-level positions, and a wealth of resources for networking and staying current. The appendix also provides detailed information about preparing a flatbook, a reel, and other materials you may need as you apply for jobs and internships.

Appendix C This appendix contains an excerpt from the Game Design Document (GDD) for *Red Harvest* from Bedlam Games. This excerpt shows you the kind of information and the level of detail found in a GDD.

Game Design Origins

In order to understand how game design has evolved, let's take a look back at their origins, to get some insight into how games today are planned and executed. Looking beyond your own knowledge base is the core of learning, and that is what this book is aimed at doing—helping you learn how games are designed and made.

There is no doubt that human beings enjoy games. According to Hudson Square Research, game-sale revenue surpassed that of films in the United States in 2005 and became a global phenomenon in 2008, exceeding film sales. Game revenue in 2011 reached \$48.9 billion. You can read more at <http://www.videogamesblogger.com/2008/04/09/global-videogame-sales-surpass-movie-industry-in-2008.htm>. Literally thousands of games have been developed and played for millennia, with the oldest known one, *The Royal Game of Ur* (2500 BC), chronicling the start of it all in recorded history. We play games for fun, we play them to learn, and we play them to be competitive.

In this chapter, we'll take a look at how gaming evolved and how many of the core principles are still applicable in today's games.

- ▶ **What is a game?**
- ▶ **History: going way back**
- ▶ **Going electronic**
- ▶ **And now we are digital**

What Is a Game?

If we define a *game* as an activity that brings pleasure, that definition is too broad. Many things can bring pleasure, like reading, cooking, or engaging in conversation with a good friend. However, if you combine an activity with a challenge and a set of rules, then you have the basics of what makes a game. The challenge is to reach the end goal—to win—using the game components and the rules for using them.

Some games require elaborate playing pieces and richly constructed environments, either virtual or practical; however, some games can be played verbally or by thinking through the demands of the game to achieve the win. Rhyming games, for example, don't need tangible elements. When I was a child, taking long road trips with my family, my mother sought to distract us from getting bored and unruly by having us play the *I Spy* game. The rules were simple: watch the other cars on the road and try to "spy" as many different license plates as possible, or color or make of car, or just convertibles or motorcycles, and so on.

One of my favorite games that can be played without pieces, *The Six Degrees of Kevin Bacon*, is a trivia game based on the philosophical concept of six degrees of separation. This concept, proposed by Frigyes Karinthy, holds that everyone is linked to everyone one else in the world through a chain of no more than six people. In February 1994, during an interview with *Premiere Magazine*, Bacon commented that he had worked with everyone in Hollywood. The movie *Six Degrees of Separation*, based on Karinthy's premise and the play written by John Guare, debuted around the same time, prompting people to associate Bacon with that phenomenon.

Games can be played individually, one on one, or in groups. Our fascination with games has grown to be a global phenomenon extending beyond traditional board and card games to small and efficient handheld units, personal computers, powerful home-entertainment systems, and the Internet, where millions of gamers can log in with high-speed connections to play everything from simple games of solitaire to massive multiple-player competitions in real time. Figure 1.1 shows one type of competition where gamers come from all over the world to compete with one another in online games that are broadcast on enormous Jumbotrons to fans who come just to watch them play. What is fascinating about this image is that the majority of people at the event are so intrigued with the gameplay that they come just to watch others battle it out. Gaming has become so large in some instances that, as you see in the picture, it has become a spectator sport.

Games are designed to entertain, to teach, and to spark the spirit of competition. As far as entertaining games go, several top sellers vie for the crown of being the most popular, including *Mario Bros.*, *Halo*, *The Legend of Zelda*, *Grand Theft Auto*, and *Metroid Prime*. The reigning champ for entertaining games, according to GamePro, is *Windows Solitaire*—the single-player version. This casual game has been played by millions of people.

One remarkable example of an educational game is *Oregon Trail*, dreamed up over 40 years ago by three student teachers in Minnesota. Don Rawitsch, Bill Heinemann, and Paul Dillenberger created the landmark game that traces the 2,000-mile path traveled by pioneers in the old West from Independence, Missouri to Willamette Valley, Oregon.



FIGURE 1.1 World Cyber Games

For many players, *Oregon Trail* was their introduction to the world of digital games, and it still holds the record for the most sales for an educational game. Fans of the game watched it grow from a small game designed to help students learn history in the Minnesota school system to a game played on multiple platforms today including Windows, iPhone, iPod Touch, and Facebook. Players travel the route, and along the way they must keep track of their resources and deal with many hazards such as bad weather, rough terrain, and poor health. The last of these spawned one of the most popular catch phrases of the game: “You have died of dysentery.”

Prestige or financial gain can be associated with how well you do at playing games. People who play online games where scores are tracked compete not only at playing the game but also with each other to see who can achieve the highest score. Gamblers playing games of chance like poker, roulette, and craps can achieve both notoriety and tremendous financial gain—or, in some cases, devastating losses.

In order to understand how and why games came about, it’s critical to grasp some of their core principles, such as rules, chance, and the elements used to design them. Understanding some of this background will also shed light on

the broad range of game types. Simply trotting out names of games and a brief description of the products won't help you understand why certain games or trends in gaming developed the way they did.

Why Are There Rules?

To say that a game has *rules* is another way of saying there is a structure to adhere to in order to understand how the player can compete and win. The term *rules* sounds stifling, but in the world of gaming, it's the very framework that allows the player to master the gameplay.

This isn't to say that every single game has rules; however, some people would argue that having rules is one of the definitions of what a game is. Other gamers prefer to design and/or play more freeform games that don't rely on rules. All games must have some sort of *game mechanic* in order to be created, so if you eliminate that as a definition of rules, then technically there are games without rules, and there are games that can be played differently from the intended set of goals laid out by the developers.

Game mechanics are basically the building blocks of the game design. For example, in *World of Warcraft*, mana for spells is a game mechanic. The game uses the concept of mana to define how many spells a player can cast. Combine that with the game mechanic of "spirit" to define how fast a player replenishes their mana. Mechanics and rules are pretty closely entwined. Mechanics tend to be more subtle, behind-the-scenes rules, though they can also be pretty large and noticeable, like games that are turn-based—a turn is a game mechanic to control the amount of action a player can do in a given situation. Games without rules are primarily *sandbox games*, where you're typically given a world and some direction and then set free to do as you will. To allow you to act freely, a lot of variety in game mechanics is built into these games. A term for that is *emergent gameplay*: basically, making the world interactive enough that the player can do things the designers hadn't originally intended.

Designer Will Wright creates games that fall into this sandbox category. Take a look at his creation, *The Sims*, which is essentially an ecology god game. You're given all the tools to affect the makeup of a planet, and you watch how it evolves and what sorts of life forms thrive. Everything in the world, from the buildings to the weather to the beings that inhabit it, is decided on by the player.

Will Wright commented on the way he played *Grand Theft Auto: San Andreas*, explaining that he didn't play the game as the designers intended, which would have involved stealing cars and doing missions to build a criminal empire. He instead played as though his character was a homeless guy wandering around the city and trying to survive.