



# Adobe® Flash® CS4

The Professional Portfolio

**AGAINST THE CLOCK**  
mastering graphic technology

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# Acknowledgements

## ABOUT AGAINST THE CLOCK

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Against The Clock has been publishing graphic communications educational materials for more than 17 years, starting out as a Tampa, Florida-based systems integration firm whose primary focus was on skills development in high-volume, demanding commercial environments. Among the company's clients were LL Bean, The New England Journal of Medicine, the Smithsonian, and many others. Over the years, Against The Clock has developed a solid and widely-respected approach to teaching people how to effectively utilize graphics applications while maintaining a disciplined approach to real-world problems.

Against The Clock has been recognized as one of the nation's leaders in courseware development. Having developed the *Against The Clock* and the *Essentials for Design* series with Prentice Hall/Pearson Education, the firm works closely with all major software developers to ensure timely release of educational products aimed at new version releases.

## ABOUT THE AUTHORS

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**Erika Kendra** holds a BA in History and a BA in English Literature from the University of Pittsburgh. She began her career in the graphic communications industry as an editor at Graphic Arts Technical Foundation before moving to Los Angeles in 2000. Erika is the author or co-author of more than fifteen books about graphic design software, including QuarkXPress, Adobe Photoshop, Adobe InDesign, and Adobe PageMaker. She has also written several books about graphic design concepts such as color reproduction and preflighting, and dozens of articles for online and print journals in the graphics industry. Working with Against The Clock for more than seven years, Erika was a key partner in developing the new Portfolio Series of software training books.

**Gary Poysick**, co-owner of Against The Clock, is a well-known and often controversial speaker, writer, and industry consultant who has been involved in professional graphics and communications for more than twenty years. He wrote the highly popular *Workflow Reengineering* (Adobe Press), *Teams and the Graphic Arts Service Provider* (Prentice Hall), *Creative Techniques: Adobe Illustrator*, and *Creative Techniques: Adobe Photoshop* (Hayden Books), and was the author or co-author of many application-specific training books from Against The Clock.

## CONTRIBUTING AUTHORS, ARTISTS, AND EDITORS

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A big thank you to the people whose artwork, comments, and expertise contributed to the success of these books:

- A good deal of the artwork in this book was created by **Dwayne Ferguson**. Dwayne's contributions include the original drawing of the spaceship from the first project, and the incredible talking kid from Project 6. That character — whose real name is Kid Caramel — is known worldwide as the lead character in the Kid Caramel Private Investigator mystery series ([www.kidcaramel.com](http://www.kidcaramel.com)).
- **Robert Bunch**, Flash King Media
- **JoAnn Burkhart**, Dodge City Community College
- **Dana Myers**, Francis Tuttle Technology Center
- **Rosie Richter**, Against The Clock, Inc.
- **Debbie Davidson**, Sweet Dreams Design
- **Dean Bagley**, Against The Clock, Inc.
- **Robin McAllister**, Against The Clock, Inc.

Thanks also to **Laurel Nelson-Cucchiara**, editor, and **Angelina Kendra**, proofreader, for their help in making sure that we all said what we meant to say.

# Walk-Through

## Project 5 Gopher Golf Game

Your client operates a family entertainment complex in suburban Pittsburgh. The facility includes a nationally recognized professional golf course, as well as a miniature golf course to lure families looking for inexpensive entertainment. You have been hired to develop an interactive game for the client's Web site that appeals to both children and adults.

This project incorporates the following skills:

- Importing and analyzing artwork from an Adobe Illustrator file
- Creating various types of symbols from imported artwork
- Editing various types of symbols to meet the unique needs of the job
- Using a mask to hide parts of a custom animation
- Writing a script to minimize different symbols in a random sequence
- Adding a variable to control game duration
- Programming a symbol instance to function in the center throughout the game duration
- Using dynamic text areas to track user actions
- Adding scripts to show specific symbols based on the user's performance



## Project Goals

Each project begins with a clear description of the overall concepts that are explained in the project; these goals closely match the different “stages” of the project workflow.

## Project Meeting

**client comments**

Our organization focuses on animal resource conservation and habitat preservation on the central California coast. This area is home to a number of endangered species, and we work to educate people about observing these creatures without harassing and interfering with them.

We've been told that some kind of interactivity will be an important part of capturing a younger audience. Although we think cartoon fish dancing across the screen would minimize the seriousness of our message, we understand that we have to do something to make the site more interesting for children.

We were thinking about an "aquarium" screen set as well as having, and we thought that kind of thing would be a good balance between our interactivity and positive social games.

**and director comments**

Since the client clearly wants to avoid a cartoon look, I had the staff artist create some fish and other illustrations that are fairly realistic. I also found a good photo of a turtle that will work well with the other elements.

One of the animations—the swarming help scene—should play continuously and will not be controlled by buttons.

Three animations will be controlled by the buttons. First, a fish hiding in a cave will appear and blow bubbles. Second, a turtle will swim across the scene and get bigger, to create the effect of the turtle swimming toward you. Finally, a school of different fish will swim in the other direction, as a "trail" across the scene.

Our final animation—the organizational logo—will play as soon as the file opens, and then stop again until the movie file is reset.

When you're done building all the pieces, you'll hand off the project to the developer who will write the scripts to make the buttons interact with the different animations.

**Project objectives:**

To complete this project, you will:

- Create symbols from imported Illustrator files
- Import symbols from other Flash files
- Create new symbols from scratch
- Place and manage instances of symbols on the Stage, and control the visual properties of those symbols
- Control timing using keyframes
- Control animation timing of the symbols
- Control motion tweens to animate changes in object properties
- Use the Motion Editor to numerically control properties at specific points in time
- Swap graphics with movie clip symbols
- Add visual interactivity to button symbols



## The Project Meeting

Each project includes the client's initial comments, which provide valuable information about the job. The Project Art Director, a vital part of any design workflow, also provides fundamental advice and production requirements.

## Project Objectives

Each Project Meeting includes a summary of the specific skills required to complete the project.

## Stage 1: Modeling Complex Animations

**Stage 1: Modeling Complex Animations**

At this stage, the first step in creating a new project is creating a file and putting together all of the required pieces. This project, however, also requires a great deal of planning on multiple and required pieces. This project, however, also requires a great deal of planning on multiple and required pieces. This project, however, also requires a great deal of planning on multiple and required pieces.

Although the client has decided to manipulate the relative scale of the three planets, the amount of time it takes for each planet to complete one orbit is proportional to the square of its distance from the sun. Mercury should orbit about 88 days, Venus about 225 days, Earth about 365 days, Mars about 687 days, Jupiter about 4,333 days, Saturn about 9,455 days, Uranus about 30,069 days, and Neptune about 60,190 days.

Planet	Diameter (Miles)	Scale Diameter - Actual (in Pixels)	Scale Diameter - Applied (in Pixels)	Length of Year (in Days)	Length of Year (in Frames)
Sun	870,000	100	100	967	40
Mercury	3,033	3	18	88	60
Venus	7,620	7	20	225	82
Earth	7,928	10	10	365	120
Mars	4,217	5	111	687	252
Jupiter	86,880	111	94	4,333	1,602
Saturn	74,800	94	40	9,455	3,482
Uranus	31,763	80	38	30,069	11,068
Neptune	30,773	38	38	60,190	22,068

These times will keep the orbits visually accurate. At 12 frames per second, the longest orbit will be about 20 minutes. Earth (your planet's center of reference) will take about 75 seconds to complete its orbit.

**CREATE THE BASIC DOCUMENT**

The basic workflow documents how much space is available to create the model, so you will use that to help Stage 1. Remember, however, that the Stage 1 file will be more a file length. Because this model might eventually be posted on the Internet, you will go to one of the two options to help you create the animation file.

- Copy the Planet's table from the WIP folder on your Research CD to the WIP folder where you are saving your work.
- Create a new Flash document.

## Real-World Workflow


Projects are broken into logical lessons or “stages” of the workflow. Brief introductions at the beginning of each stage provide vital foundational material required to complete the task.

## CREATE AN OBJECT-BASED ANIMATION

You might have noticed that the two frames by frame animation you created are rather choppy. Although this can be the effect you want, there are also times when you want smooth, continuous movement. Rather than defining each individual frame manually, which could take days, depending on the length of your animation—you can let Flash define the frames that are in between two keyframes (called tween frames).

Flash CS4 incorporates new technology that makes it very easy to define smooth animations by simply moving a symbol object around on the Stage.


- With **ocean.flx** open, create a new layer named **Turtle** immediately below the **Buttons** layer. Select the **Turtle** layer in the active layer.
- Drag an instance of the turtle bitmap image from the Library panel onto the Stage. Scale the placed turtle image to 50% proportionally, and then position the turtle beyond the right edge of the Stage (higher than the **Cave** instance).
- Control-click the turtle instance and choose **Convert to Symbol** from the contextual menu.



When you add a new layer, it automatically appears in the same sequence as the layers of the Timeline.

- Type **Turtle** in the Name field and choose **Movie Clip** in the Type menu.

Click the **Folder** link. Select the **Flamingo** folder under the **sun** and choose movie clips in the list. Click **Select** to return to the **Convert to Symbol** dialog box, and then click **OK** to create the new symbol.



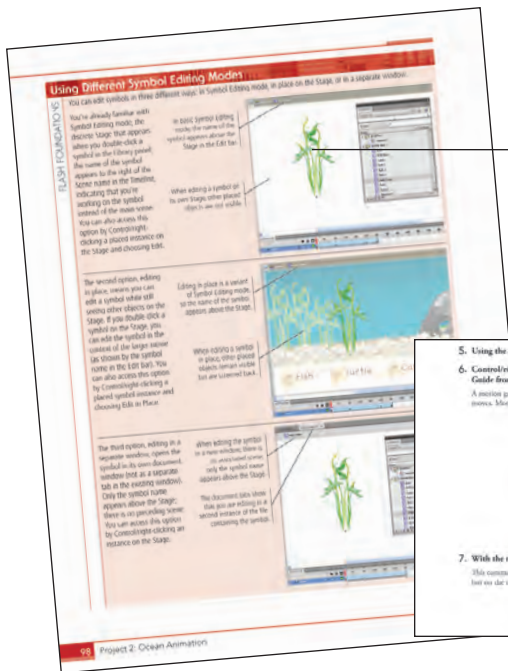
Be sure you're in the **Timeline** panel when you click **OK**.

## Step-By-Step Exercises

Every stage of the workflow is broken into multiple hands-on, step-by-step exercises.

## Visual Explanations

Wherever possible, screen shots are annotated so students can quickly identify important information.



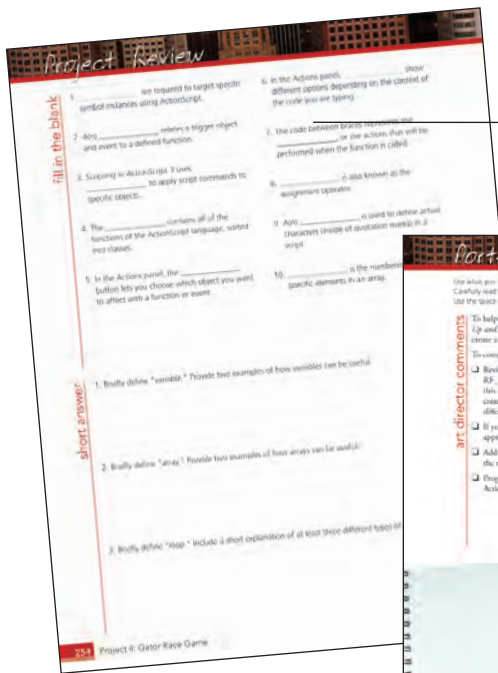
## Flash Foundations

Additional functionality, related tools, and underlying graphic design concepts are included throughout the book.



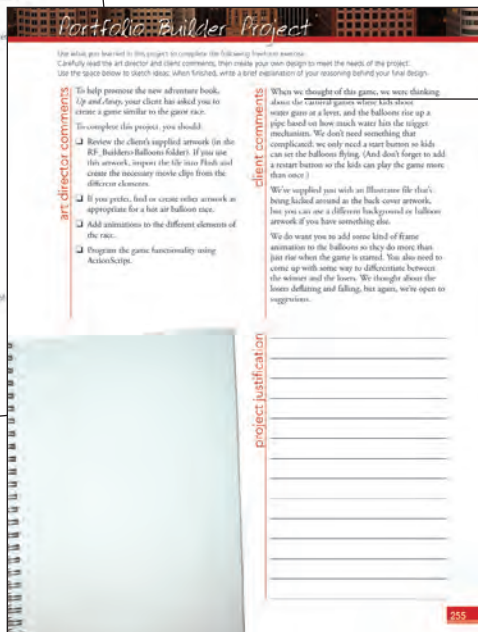
## Advice and Warnings

Where appropriate, sidebars provide shortcuts, warnings, or tips about the topic at hand.



## Project Review

After completing each project, students can complete these fill-in-the-blank and short-answer questions to test their understanding of the concepts in the project.



## Portfolio Builder Projects

Each step-by-step project is accompanied by a freeform project, allowing students to practice skills and creativity, resulting in an extensive and diverse portfolio of work.



## Visual Summary

Using an annotated version of the finished project, students can quickly identify the skills used to complete different aspects of the job.

# Projects at a Glance

The *Against The Clock Portfolio Series* teaches graphic design software tools and techniques entirely within the framework of real-world projects; we introduce and explain skills where they would naturally fall into a real project workflow. For example, rather than providing an entire chapter about publishing files (which most students find boring), we teach publishing where you naturally need to do so — when you complete an animated project.

The project-based approach in the *Portfolio Series* allows you to get in depth with the software beginning in Project 1 — you don't have to read several chapters of introductory material before you can start creating finished artwork.

The project-based approach of the *Portfolio Series* also prevents “topic tedium” — in other words, we don't require you to read pages and pages of information about text (for example); instead, we explain text tools and options as parts of a larger project (in this case, as static text in a solar system model and as dynamic text in a video playback module).

Clear, easy-to-read, step-by-step instructions walk you through every phase of each job, from creating a new file to saving the finished piece. Wherever logical, we also offer practical advice and tips about underlying concepts and graphic design practices that will benefit students as they enter the job market.

The projects in this book reflect a range of different types of Flash jobs, from animating creatures in the ocean to building a model of the solar system to programming an interactive game. When you finish the eight projects in this book (and the accompanying Portfolio Builder exercises), you will have a substantial body of work that should impress any potential employer.

The eight Flash CS3 projects are described briefly here; more detail is provided in the full table of contents (beginning on Page viii).

## project 1

### *Rocket Ship Artwork*

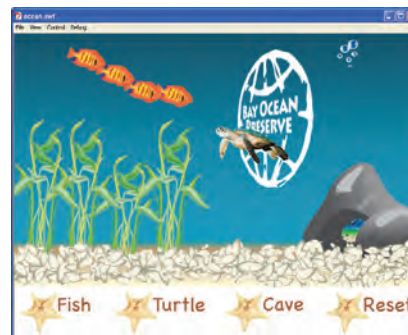
- Setting up the Workspace
- Using Layers to Develop Artwork
- Drawing in Flash
- Painting and Coloring
- Using Gradients



## project 2

### *Ocean Animation*

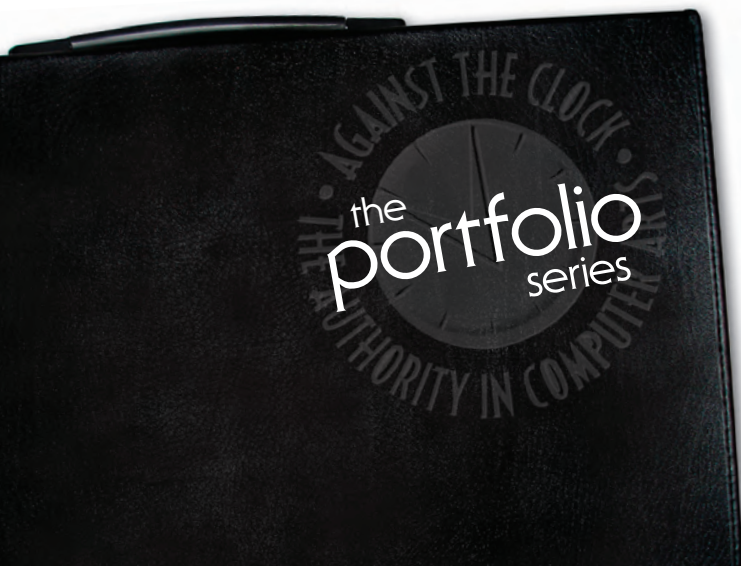
- Working with Graphic Symbols
- Creating Animation
- Defining Button States



## project 3

### *Solar System Model*

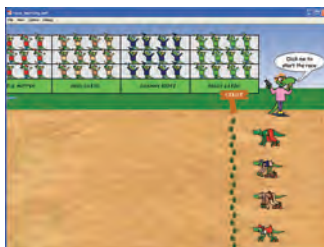
- Modeling Complex Animations
- Aligning Objects to a Path
- Working with Text
- Adding Movie Controls



project 4

### Gator Race Game

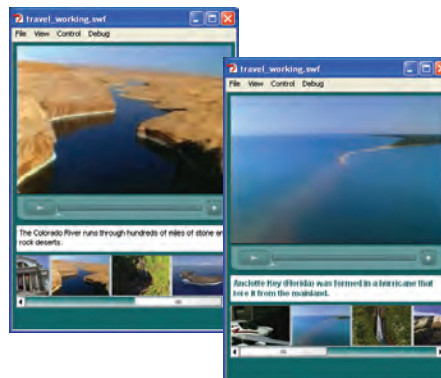
- Preparing for ActionScript
- Working with ActionScript 3
- Creating Custom Functions
- Working with Variables and Arrays
- Scripting Loops
- Adding Sound with ActionScript



project 7

### Travel Video Module

- Encoding Video for Flash
- Working with Components



project 5

### Gopher Golf Game

- Preparing Game Artwork
- Programming Interactivity



project 8

### Seabreeze Web Site

- Building Site Navigation
- Loading External Content



project 6

### Talking Kid Site Intro

- Importing Sound into Flash
- Synchronizing Sound to Animation
- Integrating ActionScript



*Some experts claim most people use only a small fraction — maybe 10% — of their software’s capabilities; this is likely because many people don’t know what is available. As you complete the projects in this book, our goal is to familiarize you with the entire tool set so you can be more productive and more marketable in your career as a graphic designer.*

*It is important to keep in mind that Flash is an extremely versatile and powerful application. The sheer volume of available tools, panels, and features can seem intimidating when you first look at the software interface. Most of these tools, however, are fairly simple to use with a bit of background information and a little practice.*

*Wherever necessary, we explain the underlying concepts and terms that are required for understanding the software. We’re confident that these projects provide the practice you need to be able to create sophisticated artwork by the end of the very first project.*

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# Getting Started

## PREREQUISITES

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The entire Portfolio Series is based on the assumption that you have a basic understanding of how to use your computer. You should know how to use your mouse to point, click, and drag items around the screen. You should be able to resize and arrange windows on your desktop to maximize your available space. You should know how to access drop-down menus, and understand how check boxes and radio buttons work. It also doesn't hurt to have a good understanding of how your operating system organizes files and folders, and how to navigate your way around them. If you're familiar with these fundamental skills, then you know all that's necessary to use the Portfolio Series.

## RESOURCE FILES

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All of the files that you need to complete the projects in this book are on the provided Resource CD in the **RF\_Flash** folder. This folder contains nine subfolders, one for each project in the book (including the Interface); you will be directed to the appropriate folder whenever you need to access a specific file. Files required for the related Portfolio Builder exercises are in the **RF\_Builders** folder.

The Resource CD also includes a **WIP** folder, which also contains (mostly empty) subfolders for each project in the book. This is where you will save your work as you complete the various projects. In some cases, the location of a file will be extremely important for later steps in a project to work properly; that's why we've provided a specific set of folders with known file names.

Before you begin working on the projects in this book, you should copy the entire WIP folder to your hard drive or some other recordable media such as a flash drive; when we tell you to save a file, you should save it to the appropriate folder on the drive where you put that WIP folder.

## SYSTEM REQUIREMENTS

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As software technology continues to mature, the differences in functionality from one platform to another continue to diminish. The Portfolio Series was designed to work on both Macintosh or Windows computers; where differences exist from one platform to another, we include specific instructions relative to each platform.

One issue that remains different from Macintosh to Windows is the use of different modifier keys (Control, Shift, etc.) to accomplish the same task. When we present key commands, we always follow the same Macintosh/Windows format — Macintosh keys are listed first, then a slash, followed by the Windows key command.

### *Minimum System Requirements for Adobe Flash CS4:*

#### Windows

- 1GHz or faster processor
- Microsoft® Windows® XP with Service Pack 2 (Service Pack 3 recommended) or Windows Vista® Home Premium, Business, Ultimate, or Enterprise with Service Pack 1 (certified for 32-bit Windows XP and Windows Vista)
- 1 GB of RAM
- 3.5 GB of available hard-disk space for installation
- 1,024×768 display (1,280×800 recommended) with 16-bit video card
- DVD-ROM drive
- QuickTime 7.1.2 required for multimedia features
- Broadband Internet connection required for online services

#### Macintosh

- PowerPC® G5 or multicore Intel® processor
- Mac OS X v10.4.11–10.5.4
- 1 GB of RAM
- 4 GB of available hard-disk space for installation
- 1,024×768 display (1,280×800 recommended) with 16-bit video card
- DVD-ROM drive
- QuickTime 7.1.2 required for multimedia features
- Broadband Internet connection required for online services