

Making Everything Easier!™

Digital Macro & Close-Up Photography

FOR
DUMMIES®

Learn to:

- Use specialty lenses and cameras to capture stunning up-close images
- Master techniques like the professionals
- Practice your skills with suggested exercises

IN FULL COLOR!

Thomas Clark
Professional photographer



Digital Macro & Close-Up Photography For Dummies®

Visit

www.dummies.com/cheatsheet/digitalmacrocloseupphotography to view this book's cheat sheet.

Table of Contents

[Introduction](#)

[About This Book](#)

[Conventions Used in This Book](#)

[What You're Not to Read](#)

[Foolish Assumptions](#)

[How This Book Is Organized](#)

[Part I: Getting Acquainted with Macro and Close-Up Photography](#)

[Part II: Equipment: What You Need, What's Nice to Have](#)

[Part III: Creating Successful Images: Light, Composition, and Exposure](#)

[Part IV: Techniques for Shooting Subjects of All Types](#)

[Part V: The Part of Tens](#)

[Icons Used in This Book](#)
[Where to Go from Here](#)

[Part I: Getting Acquainted with Macro and Close-Up Photography](#)

[Chapter 1: Discovering the Basics of Macro and Close-Up Photography](#)

[What Is Macro Photography?](#)

[The 1:1 ratio](#)

[The significance of a 1:4 ratio](#)

[Running Down the Right Tools for the Job](#)
[Attaining Life-Size Representations of Your Subjects](#)

[Focusing distance and focal length](#)

[Moving the lens farther from the digital sensor](#)

[The appropriate viewing distance](#)

[Why any of this matters](#)

[Lighting for Macro Photography](#)

[Composing and Exposing Macro and Close-Up Images](#)

[Seeing Macro's Mega-Potential](#)

[Chapter 2: Close-Up, but No Cigar: How Macro and Close-Up Photography Differ](#)

[How Macro and Close-Up Photography Differ](#)

Why the difference doesn't really matter
Why the difference does matter

Testing Your Equipment: How Close Can You Get to a Subject?

A lens's closest focusing distance
Reviewing your results on the computer
Cropping into an image in postproduction

Discovering Uses for Macro and Close-Up Photography

Chapter 3: Developing an Eye for Details

Changing How You See to Create Amazing Macro and Close-Up Images

Narrowing your attention
Knowing what to look for in a subject

Choosing a Perspective Based on Your Subject

Your perspective is unique, like a fingerprint
Understanding your subject

Incorporating Macro and Close-Up Techniques in a Photo Story

Part II: Equipment: What You Need, What's Nice to Have

Chapter 4: Lenses and the Tools That Enhance Them

The Benefits of Using Extension Tubes

Choosing the right size extension tube

Bellows: The original extension tube

Increasing Magnification with Tele-Converters

Uses for tele-converters

Levels of magnification

The pros and cons of tele-converters

Reversing Rings: A Backward Approach to Shooting Macro

Getting the Most Out of Your Ordinary Lenses

Wide-angle lenses

Normal lenses

Telephoto lenses

Chapter 5: Choosing the Right Macro Lens for You

Comparing Zoom Macro and Fixed Macro Lenses

Making zoom macro lenses work for you

Working with fixed macro lenses

Grasping the Importance of Focal Length

How focal length affects your composition

Keeping your subject in mind when considering focal length
Focal length and light
Summarizing which factors are most important to you

Considering Overall Quality in a Macro Lens

Optical quality: Your No. 1 priority
Understanding a lens's features

Chapter 6: Grasping the Gear That Gets You the Shot

Being Prepared for Obstacles in Macro and Close-Up Photography

Compensating for light loss
Using a tripod to minimize camera shake
Handholding the camera for subjects on the move

Discovering Handy Items for Getting the Shot

Controlling light and getting a “grip”
Purchasing macro-specific gear vs. creating your own

Macro and Close-Up Lens Filters

Important filters for macro and close-up photography
Close-up filters

Chapter 7: Macro Photography and Your Point and Shoot Digital Camera

Comparing Compact Digital, Fixed Lens, and DSLR Cameras

Using the Macro Setting on Your Digital Point and Shoot

Focusing, in auto mode and otherwise

Managing depth of field

Adding attachments and accessories

To Zoom or Not to Zoom

Wide-angle close-up photography

Knowing when to zoom in and move out

Maximizing Close-Up Image Quality with Your Digital Point and Shoot

Having a composition checklist

Conquering issues with light

Tripods and point and shoot digital cameras

Part III: Creating Successful Images: Light, Composition, and Exposure

Chapter 8: Making the Most of Natural Light

Working with Different Types of Natural Light

Direct sunlight

Open shade

Diffused sunlight on cloudy days

Capturing the soft, golden light at dusk and dawn

Creating the Natural Light You Want

Redirecting direct sun

Creating a softer light without waiting for clouds

Mimicking sunshine

Chapter 9: Shooting in the Studio with Artificial Light Sources

Finding the Best Artificial Light Sources for the Job

How the size and distance of your light matter

Accessorizing your lights

Making Good Lighting Happen: Position and Balance

Keeping a natural look

Balancing the intensities of your lights

Artificial Light, Natural Light, and Your Exposure

The benefits of using artificial light

Combining artificial and natural light

Overpowering daylight with artificial light sources

Chapter 10: Composing Macro and Close-Up Images to Suit Your Subjects

Paying Attention to Detail in Macro and Close-Up Photography

Noticing elements of interest
Emphasizing elements of interest

Include What You Want in a Frame; Exclude What You Don't

Determining how much magnification you need for the crop of your choice
Selecting a vertical or horizontal frame

Keeping Viewers in Your Frame with Tonal Contrast

Chapter 11: Choosing the Appropriate Exposure Settings for Your Subjects

When Aperture Should Be Your Priority

Maximizing sharp detail in an image
Using selective focus to drive your message

Photographing Moving Subjects and Avoiding Motion Blur

Freezing motion with a flash
Using your shutter speed to emphasize movement in a scene

When Aperture and Shutter Speed Are Equally Important to Your Message

Adjusting your ISO
Manipulating your exposure with artificial light sources
Shooting at the appropriate time of day based on your exposure settings

Part IV: Techniques for Shooting Subjects of All Types

Chapter 12: Macro and Close-Up Photography in Nature

Finding Inspiration at the Crack of Dawn

Early morning light
Elements that add to your message

Photographing in Nature During the Midday Hours

Advantages to shooting macro and close-up images at midday
Handy items for enhancing the light

Being Prepared for Anything

Equipment list for dealing with the elements

Diversifying the capabilities of your lens

Seeking and Photographing Natural Subjects

Working with living creatures

Flowers and plants

Taking advantage of available resources

Chapter 13: Close-Ups of People (And Other Animals).

Knowing When to Shoot a Close-up Rather than a Typical Portrait

Preparing Subjects for Close-Ups

Explaining your creative vision

Using a lens that lets you keep your distance

Considering Light's Effect on Your Subject

Selecting Your Focal Point

Addressing Movement

Minimizing camera shake

Dealing with your subject's movement

Taking Close-Up Images of Your Pets

Chapter 14: Small Product and Still-Life Photography

Uncovering the Intentions of Product Photography

Showing a subject for what it is
Telling the story of a product

Taking an Artistic Approach to Product and Still-Life Photography

Determining your message
Executing your message through technique

Chapter 15: Tricks of the Trade for Jewelry and Other Reflective Subjects

Lighting Reflective Subjects

Creating smooth highlights
Adding lowlights
Creating a sparkle
Casting a shadow

Choosing a Shooting Surface

Plain background options
Creating a more natural look

Working with Clear, Transparent Subjects

Making the subject stand out from its background

Chapter 16: Extreme Macro Photography: Working with Tiny Subjects

Why and How to Maximize Magnification

Lenses designed for “photomacrography”
Getting more from your macro lens

Working with Magnified Subjects: Tips to Keep in Mind

Keeping Composition in Mind

Your point of focus and depth of field
Paying attention to your camera angle

Chapter 17: Improving Your Macro and Close-Up Images in Postproduction

Adjusting Exposure After the Fact

Setting the contrast just the way you
want it
Correcting an underexposed (or
overexposed) image

Enhancing Sharpness

When to use postproduction sharpening
tools
How sharpening filters work
The downsides to sharpening
Merging images to improve sharpness

Sharpening an image with the High Pass filter in Photoshop

Idealizing Color in an Image
Compositional Improvements to Strengthen Your Message

Enhancing aesthetics and leading viewers to your subject
Getting rid of flaws, dust, and distractions
Fixing your perspective

Part V: The Part of Tens

Chapter 18: Ten Tips for Close-Up Photography with Your Digital Point and Shoot

Shooting with a Wide Angle of View
Using the Camera's Zoom Function
Focusing the Camera
Steadying the Camera on a Tripod
Paying Attention to Composition
Controlling Your Shutter Speed
Setting the Aperture
Finding Subjects That Work Well with Your Camera
Using Macro and Close-Up Attachments
Lighting Your Subject

Chapter 19: Ten Subjects to Explore with Macro and Close-Up Photography

Capturing the Beauty of Flowers

[Small Creatures and Insects](#)
[Tiny Things That Fly](#)
[The Intricacies of Water](#)
[Whatever's at Your Fingertips](#)
[Interesting Textures](#)
[The Many Phases of Leaves](#)
[Small Products](#)
[Jewelry](#)
[Close-Ups of People](#)

[Cheat Sheet](#)

Digital Macro & Close-Up Photography For Dummies®

by Tom Clark



Wiley Publishing, Inc.

Digital Macro & Close-Up Photography For Dummies®

Published by
Wiley Publishing, Inc.
111 River St.
Hoboken, NJ 07030-5774
www.wiley.com

Copyright © 2011 by Wiley Publishing, Inc., Indianapolis, Indiana

Published simultaneously in Canada

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>.

Trademarks: Wiley, the Wiley Publishing logo, For Dummies, the Dummies Man logo, A Reference for the Rest of Us!, The Dummies Way, Dummies Daily, The Fun and Easy Way, Dummies.com, Making Everything Easier, and related trade dress 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. Wiley Publishing, Inc., is not associated with any product or vendor mentioned in this book.

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 Website 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 Website may provide or recommendations it may make. Further, readers should be aware that Internet Websites 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, 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.

For technical support, please visit www.wiley.com/techsupport.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books.

Library of Congress Control Number: 2011930296

ISBN: 978-0-470-93063-2

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1



About the Author

Tom Clark is a professional photographer in Miami, providing services in portraiture, fashion, advertising, product, landscape, architectural, and editorial photography. While studying to obtain a bachelor of arts in commercial photography, he learned compositional, technical, and lighting techniques, which have been (and continue to be) refined throughout his career.

As part of his technical education, Tom received a thorough understanding of macro and close-up techniques. His approach to macro and close-up photography reflects his understanding of composition and light, and reveals his attention to detail. To view Tom's image galleries and check out his Photo of the Week (which highlights his most interesting recent captures), visit his website at www.tomclarkphoto.com.

Author's Acknowledgments

As its writer, this book was both an adventure and a learning experience. I hope the same is true for its readers.

Thank you to Erin Calligan Mooney and John Wiley & Sons for presenting me with another great opportunity. The photographic *For Dummies* series is a valuable tool and resource for photographers of all types. It's a pleasure to be involved.

Thank you Traci Cumbay for keeping the project on track, and for helping to ensure this book provides nothing but the clearest, most useful, and informative material. And thank you to Mark Sawrie for serving as technical editor; you kept me on my toes and helped ensure the validity of this book.

Thanks to Emily Noe for providing creative input and for assisting in the creation of the photography.

Publisher's Acknowledgments

We're proud of this book; please send us your comments through our online registration form located at www.dummies.com/register/.

Some of the people who helped bring this book to market include the following:

Acquisitions, Editorial, and Media Development

Project Editor: Traci Cumbay

Acquisitions Editor: Erin Calligan Mooney

Copy Editor: Traci Cumbay

Assistant Editor: David Lutton

Senior Editorial Assistant: David Lutton

Technical Editor: Mark D. Sawrie

Editorial Supervisor and Reprint Editor: Carmen Krikorian

Editorial Assistants: Rachelle S. Amick, Alexa Koschier

Cover Photos: Tom Clark

Cartoons: Rich Tennant (www.the5thwave.com)

Composition Services

Project Coordinator: Nikki Gee

Layout and Graphics: Claudia Bell, SDJumper, Carrie Socolovitch

Proofreaders: Rebecca Denoncour, Betty Kish

Indexer: Becky Hornyak

Publishing and Editorial for Consumer Dummies

Diane Graves Steele, Vice President and Publisher,
Consumer Dummies

Kristin Ferguson-Wagstaffe, Product Development Director,
Consumer Dummies

Ensley Eikenburg, Associate Publisher, Travel

Kelly Regan, Editorial Director, Travel

Publishing for Technology Dummies

Andy Cummings, Vice President and Publisher, Dummies
Technology/General User

Composition Services

Debbie Stailey, Director of Composition Services

Introduction

Have you ever looked at a photograph and wondered how in the world the photographer captured so much detail in such a small subject? The answer is macro photography.

The purpose of this book is to provide a working knowledge of what macro and close-up photography is, the equipment used to create it, and the techniques practiced to provide amazing results. Your ability to capture fine details of small subjects and wow viewers with your imagery will reach new levels when you apply the practices you find in the following chapters.

Read on if you're interested in photographing flowers, revealing the features of tiny creatures, exploring miniature landscapes, taking close-up portraits of people, making your jewelry photos pop, shooting small products, or if you would like to find ways to get more from your photographic equipment.

About This Book

Macro and close-up photography is one of the more technically challenging art forms out there, but having a firm grasp on its concepts and techniques can open a whole new world of photographic possibilities. To begin exploring this field, you need to know the magnification possibilities and limits of your equipment, how to magnify a subject's appearance on your digital sensor, and how to use your equipment to capture sharp, comprehensive depictions that reveal the quality of detail you want.

In this book you find technical information that helps you get the most from your equipment and determine which equipment

would be worth acquiring based on your photographic style. You're also introduced to theories and concepts that help better your ability to notice fine details and create more interesting and beautiful photographs.

As a prepared and knowledgeable macro and close-up photographer, you'll know which camera settings work best in specific situations, how to avoid common problems and mistakes, and how to approach a shot based on your subject and your message.

Although it would be worthwhile to read this book from cover to cover to gain a complete understanding of macro and close-up photography, you don't have to do so. Feel free to jump in at the specific chapters that address topics you're most interested in. No chapter relies on your knowledge of any preceding chapter to make sense. You may want to practice the ideas expressed in one chapter prior to moving on to the next, but you'll find everything you need (or directions to further information) wherever you begin reading.

Conventions Used in This Book

In this book, I use the following conventions to make sure the text is consistent and easy to understand:

✓ For each photograph, I include the following information:

- **Focal length:** This number shows the angle of view provided by the particular lens used. It determines how much of your scene you capture when you compose a shot.

- **Shutter speed:** This number indicates how long it took to complete the exposure (usually measured in fractions of a second). It determines how precise the moment of capture is, and it's particularly important when photographing subjects in motion.
- **Aperture:** This number shows how much light the lens let in at the time of exposure (measured by an f-stop). It helps to regulate your depth of field, which determines how much of your scene is sharp or blurry.
- **ISO:** This number displays how sensitive the digital sensor is to light during the time of the exposure. A sensitive ISO rating (indicated by a higher number) can produce a properly exposed image more quickly and with less light than a less sensitive rating (indicated by a lower number).

- ✓ All web addresses appear in monofont.
- ✓ New terms appear in *italic* and are followed by an easy-to-understand definition.
- ✓ **Bold** highlights the action parts of numbered steps and the key words in bulleted lists.

When this book was printed, some web addresses may have needed to break across two lines of text. If that happened, rest assured that I've added no extra characters, such as hyphens, to indicate the break. So when using one of these web addresses, simply type in exactly what you see in the book as though the line break doesn't exist.

What You're Not to Read

If you're anxious to start taking macro and close-up images with amazing detail and clarity, then you may want to skip around this book to areas that pertain directly to you. If you're in a big hurry, here's a tip: You can skip the sidebars (those gray-shaded boxes) and any text marked with the Technical Stuff icon. Information found in those areas may interest you and add something to your macro and close-up photography, but it isn't necessary for getting started.

Foolish Assumptions

Before writing this book I had to make some assumptions about you, its reader. For example, I assume that you

- ✓ Are new to macro and close-up photography
- ✓ Have a basic understanding of your camera equipment
- ✓ Have experimented with photography but are still mostly in the beginner camp
- ✓ Are familiar with downloading, viewing, and editing photos on your computer

How This Book Is Organized

Each part in this book covers a different aspect of macro and close-up photography. The parts combine to paint a whole picture, but you can read them in any order that makes sense to you. To help you get straight to the info you want, here's a breakdown of what you find where.

Part I: Getting Acquainted with Macro and Close-Up Photography

This part gives a general overview and introduction to macro and close-up photography. It explains the similarities between macro and close-up photography, how they differ, and how to train your eye to see things from a macro and close-up viewpoint in order to create beautiful images.

Part II: Equipment: What You Need, What's Nice to Have

You need specific equipment and techniques to create stunning macro and close-up photography. This part of the book covers the various options available to get you started, providing comparisons and explanations for each. The information in this part helps you make educated decisions when purchasing gear or practicing certain techniques, and it introduces you to specialized equipment designed for specific purposes and projects.

Part III: Creating Successful Images: Light, Composition, and Exposure

Lighting is very important in all types of photography. This part explains how you can apply the various styles of lighting to macro and close-up photography in order to achieve the best photographic results, depending on your subject and your

message. It also covers which camera settings work best in certain situations, and it gives you information on creating ideal compositions.

Part IV: Techniques for Shooting Subjects of All Types

Different subject matter requires different equipment, styles, and techniques. For instance, you probably won't bring the same amount (or type) of gear hiking up a mountain as you would have available in your home or studio. And you won't photograph a transparent gem on a plain white background in the same way you would photograph a flower in a field.

This part of the book provides information that's relevant to specific subject matter, with each chapter covering a certain type of subject. You also find a chapter on making postproduction improvements to images, based on your subject and your message.

Part V: The Part of Tens

The Part of Tens provides two short chapters designed to spark your creativity and get you shooting right away. You discover ways to maximize image quality when using your digital point and shoot camera, and ten subjects worth exploring with macro and close-up photography.

Icons Used in This Book

Icons are used to categorize information, making it easier for you to find what you're looking for and easier to understand

what you're looking at. I use the following icons to direct your eyes to specific types of information within the book.



Text appearing next to this icon presents information that you'll rely on again and again when photographing macro and close-up subjects. This is the stuff you want to make second nature.



In some instances, the text gets a little more technical to introduce greater detail than is necessary for beginner macro and close-up photographers. You're welcome to skip these divergences; you won't miss anything crucial.



Whenever I provide information that saves you time, money, or photographic frustration, I mark the text with this icon.



Macro and close-up photography can be a delicate process. Whenever I discuss possible errors or missteps, I highlight the information with the icon that represents a threat.

Where to Go from Here

You don't need to read this book in any particular order; where you go from here is entirely up to you.

You can jump into any chapter, based on which topic interests you the most or what will best help you reach your

photographic goals. If you're a jewelry designer and wish to produce photographs for your website, you might like to start with Chapter 15. If you're interested in getting a foundation as to what macro and close-up photography is and how it's used, then start in the beginning of this book. Gearheads feel free to jump right to Part II, and if you're baffled with lighting your macro and close-up subjects then you may want to start with Part III.

To get the most out of this book, be sure to keep your camera handy and to practice the techniques I discuss for some hands-on experience.

Part I

Getting Acquainted with Macro and Close-Up Photography