Introduction

Adventures in Food and Nutrition! is designed to help you explore the exciting world of food and nutrition. You will explore beyond familiar foods and preparation methods. A multicultural, multiethnic emphasis will encourage you to try new foods.

Adventures in Food and Nutrition! introduces you to food and nutrition. It will lead you to develop scientific and inquiry skills, preparing you to become nutritionally literate and able to make smart food choices. You will sharpen your critical thinking and problem-solving skills and apply math and science principles with hands-on exercises and experiments. These will help you develop the skills and knowledge you need to become an informed food consumer.

Each chapter begins with objectives and new terms you will encounter. Chapters also include a summary, review questions, application questions, and activities, plus hundreds of colorful photos and charts. Each chapter also includes special interest topics focusing on nutrition, cultures, health concerns, and technology. Math and science topics related to food and nutrition are also featured.

Adventures in Food and Nutrition! makes the study of food and nutrition a fun adventure! It will help you understand the consequences of your food choices. It will also allow you to become involved in both the science and creativity of preparing nutritious meals and snacks.

About the Author

Carol Byrd-Bredbenner, Ph.D., R.D. is a nationally recognized author and nutrition educator. Carol received her degrees in Home Economics Education and Nutrition from Florida State University and Pennsylvania State University. She is a Registered Dietitian and a member of the American Association of Family and Consumer Sciences, American Dietetics Association, and Society for Nutrition Education. In addition to being the author of Adventures in Food and Nutrition!, Carol has written several classroom nutrition education curriculum guides and teaching kits for preschool, elementary, middle school, and high school students. She also writes nutrition education computer software and has contributed nutrition articles to various family and consumer sciences publications as well as the Journal of Nutrition Education and Behavior. She is actively involved in designing new methods to teach people of all ages how to improve their diets and health.

Carol has extensive teaching experience at both the secondary and university levels. As an active lecturer and consultant, she frequently conducts workshops for family and consumer sciences teachers and dietitians. She has made nutrition education presentations at national meetings of the American Association of Family and Consumer Sciences, Society for Nutrition Education, American Dietetics Association, and International Congress of Nutrition. She has served as the Director of the Nutrition Information and Resource Center at Pennsylvania State University. Currently, she is a nutrition teacher and researcher at Rutgers, The State University of New Jersey. For her expertise and significant contributions to the field of nutrition education, she has been named a Fellow of the American Dietetic Association. She also has received the Outstanding Nutrition Educator award from the Society of Nutrition Education, American Dietetic Association, and U.S. Department of Agriculture.
Brief Contents

Chapter 1
Food, Nutrition, and You  14

Chapter 2
Nutrients: The Building Blocks of Health  27

Chapter 3
Your Nutrition Toolbox  48

Chapter 4
Weighing Your Choices  70

Chapter 5
A Look at the Kitchen  91

Chapter 6
Cooking with Microwaves  110

Chapter 7
The Cook’s Tools  126

Chapter 8
Play It Safe!  146

Chapter 9
Keep It Clean!  164

Chapter 10
Recipes—Blueprints for Food  185

Chapter 11
What’s on the Menu?  206

Chapter 12
Smart Shopping  224

Chapter 13
Ready, Set, Cook  244

Chapter 14
When You’re on the Go  261

Chapter 15
Fabulous Fruits  286

Chapter 16
Versatile Vegetables  303

Chapter 17
Salad Success  322

Chapter 18
Great Grains  341

Chapter 19
Bountiful Breads  360

Chapter 20
Dairy Delights  377

Chapter 21
Marvelous Meat and Poultry  393

Chapter 22
Savory Seafood  409

Chapter 23
Incredible Eggs and Legumes  423

Chapter 24
Delicious Desserts  441

Chapter 25
A Career to Consider  458
# Table of Contents

## Chapter 1
### Food, Nutrition, and You 14
- Why Is Food Important? 15
- Why Do You Eat? 17
- What Affects Your Food Choices? 19
- Focus on Food: Bugs for Lunch 21
- Science in the Kitchen: The Five Senses 24

## Chapter 2
### Nutrients: The Building Blocks of Health 27
- Calories, Your Body’s Fuel 28
- Nutrients, Your Body’s Building Blocks 28
- Health Alert: The Heart Beat 32
- Phytochemicals 42
- Supplements and You 42
- Are You Getting All the Nutrients You Need? 43
- Science in the Kitchen: A Journey Through Your Digestive Tract 44

## Chapter 3
### Your Nutrition Toolbox 48
- The Dietary Guidelines for Americans 49
- Health Alert: Herbal Supplements: Healthful or Harmful? 50
- MyPyramid 56
- Science in the Kitchen: Sweet Tooth 55
- Focus on Food: Do You Suffer From Portion Distortion? 66

## Chapter 4
### Weighing Your Choices 70
- The Calories You Burn 71
- The Calories You Eat 73
- Healthy Weight 74
- Math in the Kitchen: Fat Math 75
- Eating Disorders 82
- Focus on Food: Making Changes for the Better 86
Chapter 9
Keep It Clean! 164
What Causes Foodborne Illness? 165
New Technology: Electronic Pasteurization 167
Science in the Kitchen: Growing Bacterial Colonies 168
What Should You Do If You Think You Have a Foodborne Illness? 173
Keeping Food Safe to Eat 174
Kitchen Basics: Every Drop Counts! 177
Chill and Cook: Keep Food out of Danger Zone Temperatures 178
Focus on Food: Avoiding Foodborne Illness When You Eat Out 181

Chapter 10
Recipes—Blueprints for Food 185
The Parts of a Recipe 186
Recipe Language 188
Cultures of the World: Chinese Stir-Fry 195
Measuring Matters 197
Math in the Kitchen: Measurements Count 199
Adjusting Recipe Yields 200

Chapter 11
What’s on the Menu? 206
Planning Nutritious Meals 208
Cultures of the World. Sunny Mexico... Just South of the Border 209
Planning Meals with Appeal 210
Planning Meals with Your Resources in Mind 212
Using Convenience Foods 214
Science in the Kitchen: Is the Earth Becoming a Giant Garbage Heap? 218

Chapter 12
Smart Shopping 224
Where to Shop? 226
Ready, Set, Shop 229
Your Shopping Plan in Action 231
Math in the Kitchen: Computing Unit Prices 233
Storing Foods 238
Science in the Kitchen: Lights, Flavor, Potato Chips! 240
## Chapter 18
### Great Grains

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>What's in a Grain?</td>
<td>342</td>
</tr>
<tr>
<td>Whole-Grain Foods and Enriched Grain Foods</td>
<td>343</td>
</tr>
<tr>
<td>Types of Grains</td>
<td>343</td>
</tr>
<tr>
<td>Focus on Nutrition: The Clue of the Shaky Chickens</td>
<td>346</td>
</tr>
<tr>
<td>Buying Grains</td>
<td>348</td>
</tr>
<tr>
<td>Storing Grain Products</td>
<td>351</td>
</tr>
<tr>
<td>Preparing Grains</td>
<td>352</td>
</tr>
<tr>
<td>Cultures of the World: Italy: Your Pasta Passport</td>
<td>356</td>
</tr>
</tbody>
</table>

## Chapter 19
### Bountiful Breads

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of Bread</td>
<td>361</td>
</tr>
<tr>
<td>Buying and Storing Breads</td>
<td>362</td>
</tr>
<tr>
<td>Cultures of the World: The Breads of India</td>
<td>363</td>
</tr>
<tr>
<td>Preparing Breads</td>
<td>365</td>
</tr>
<tr>
<td>Focus on Food: Pizza-aah!</td>
<td>369</td>
</tr>
<tr>
<td>Science in the Kitchen: Making Muffins</td>
<td>371</td>
</tr>
<tr>
<td>Focus on Food: Hungry People</td>
<td>374</td>
</tr>
</tbody>
</table>

## Chapter 20
### Dairy Delights

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of Dairy Products</td>
<td>378</td>
</tr>
<tr>
<td>Science in the Kitchen: Louis Pasteur</td>
<td>380</td>
</tr>
<tr>
<td>Cultures of the World: The Middle East</td>
<td>384</td>
</tr>
<tr>
<td>Buying Dairy Products</td>
<td>385</td>
</tr>
<tr>
<td>Storing Dairy Products</td>
<td>386</td>
</tr>
<tr>
<td>Health Alert: Food Sensitivities</td>
<td>387</td>
</tr>
<tr>
<td>Cooking with Dairy Products</td>
<td>387</td>
</tr>
<tr>
<td>Focus on Food: Nondairy Products</td>
<td>389</td>
</tr>
</tbody>
</table>

## Chapter 21
### Marvelous Meat and Poultry

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is Meat?</td>
<td>394</td>
</tr>
<tr>
<td>Red Meat</td>
<td>396</td>
</tr>
<tr>
<td>Poultry</td>
<td>397</td>
</tr>
<tr>
<td>Processed Meat</td>
<td>398</td>
</tr>
<tr>
<td>Buying Meat and Poultry</td>
<td>399</td>
</tr>
<tr>
<td>Math in the Kitchen: Computing Cost Per Serving</td>
<td>400</td>
</tr>
<tr>
<td>Storing Meat and Poultry</td>
<td>401</td>
</tr>
<tr>
<td>Preparing Meat and Poultry</td>
<td>402</td>
</tr>
<tr>
<td>Cultures of the World: On the Pampas in Argentina</td>
<td>404</td>
</tr>
</tbody>
</table>
Chapter 22
Savory Seafood

Types 410
Nutritional Features 410
Buying and Storing Seafood 411
Health Alert: Seafood

Toxins! 412
Preparing Seafood 414
Focus on Food: Sushi and Sashimi 417
New Technology: Aquaculture 419

Preventing Eggs 429
Science in the Kitchen: Cooking Up Some Eggs! 431
Legumes 434
Buying and Storing Legumes 434
Focus on Nutrition: Going Vegetarian 435
Preparing Legumes 436

Chapter 23
Incredible Eggs and Legumes

Eggs 424
Science in the Kitchen: Did You Know ... 425
Buying Eggs 425
Cultures of the World: Vive la France! 426
Storing Eggs 429

Preventing Eggs 429
Science in the Kitchen: Cooking Up Some Eggs! 431
Legumes 434
Buying and Storing Legumes 434
Focus on Nutrition: Going Vegetarian 435
Preparing Legumes 436

Chapter 24
Delicious Desserts

Cakes 442
Cultures of the World: Out of Africa 443
Cookies 447
Pies 449
Math in the Kitchen: Comparing Cookie Cost and Appeal 451
Focus on Food: Chocolate, 1,000 Years of Delight 452
Convenience Desserts 453
Features

FOCUS ON FOOD

Bugs for Lunch   19
Do You Suffer From Portion Distortion?  55
Making Changes for the Better   86
Avoiding Foodborne Illness When You Eat Out  181
The Juicy Facts   294
Are Potatoes Really Fattening?   308
Herbs and Spices   312
Flower Petals in My Salad!   332
Pizza-ah!   369
Hungry People   374
Nondairy Products   389
Sushi and Sashimi   417
Chocolate, 1,000 Years of Delight   452

SCIENCE IN THE KITCHEN

The Five Senses   24
A Journey Through Your Digestive Tract  44
Sweet Tooth   55
Protecting Storied Foods   100
Investigating Microwaves  118
Growing Bacterial Colonies   168
Is the Earth Becoming a Giant Garbage Heap?   218
Lights, Flavor, Potato Chips!   240
Biotechnology   305
Munchy, Crunchy Vegetables   311
Mixing the Unmixable?   330
Making Muffins   371
Louis Pasteur   380
Did You Know...   425
Cooking Up Some Eggs!   431

HEALTH ALERT

The Heart Beat   32
Herbal Supplements: Healthful or Harmful?  50
Science Solves Vitamin C Mystery!  288
Food Sensitivities   387
Seafood Toxins   412

MATH IN THE KITCHEN

Fat Math   75
Going Metric  132
Measurements Count   199
Computing Unit Prices   233
Timing Is Everything!   249
Estimating Tips   279
Computing the Cost per Serving   400
Comparing Cookie Cost and Appeal   451

KITCHEN BASICS

Saving Energy in the Kitchen   105
Buying Cookware and Bakeware   142
How Do Accidents Happen   148
Every Drop Counts!   177

NEW TECHNOLOGY

Smart Kitchen   103
Looking into the Future of Microwave Ovens   121
Electronic Pasteurization   167
Aquaculture   419
CULTURES OF THE WORLD

Chinese Stir-Fry 195
Sunny Mexico... Just South of the Border 209
Sweden, Home of Smorgasbord 252
Snacking: An International Incident 266
A Tast of the Caribbean 293
Sunny Greece 316
Tempting Thai Cuisine 336
Italy: Your Pasta Passport 356
The Breads of India 363
The Middle East 384
On the Pampas in Argentina 404
Vive la France! 426
Out of Africa 443

FOCUS ON NUTRITION

Eat to Win 274
The Clue of the Shakey Chickens 346
Going Vegetarian 435

FOCUS ON CAREERS

A Test Kitchen Researcher At Work 473
Smart Cookies Make Dough 476