

# Correlation of Consumer Mathematics to the NCTM Standards

## STANDARD 1 Number and Operations

Instructional programs from prekindergarten through grade 12 should enable all students to:

- ◆ understand numbers, ways of representing numbers, relationships among numbers, and number systems;
- ◆ understand meanings of operations and how they relate to one another;
- ◆ compute fluently and make reasonable estimates.

### Consumer Mathematics

*Whole numbers, relationships among numbers, number systems* can be found in application activities throughout the textbook.

*Operations:* Operations can be found throughout the textbook in chapters 1-12, and on pages 353-393 & 396-403.

*Computation with Calculator Practice:* pages 23, 47, 61, 92, 119, 151, 182, 215, 256, 274, 318, 339, 394-395.

*Paper/pencil computation* can be found throughout the textbook.

*Reasonable estimations:* pages 6, 7, 13, 18, 20, 21, 51, 55, 60, 61, 72, 82, 85, 86, 212, 213, 215, 249, 287, 288, 290-293.

## STANDARD 2 Algebra

Instructional programs from prekindergarten through grade 12 should enable all students to:

- ◆ understand patterns, relations, and functions;
- ◆ represent and analyze mathematical situations and structures using algebraic symbols;
- ◆ use mathematical models to represent and understand quantitative relationships;
- ◆ analyze change in various contexts.

### Consumer Mathematics

Pages 19-20, 44-45, 61-62, 73-74, 76, 86-93, 104-106, 116-117, 126, 129, 132-134, 142-146, 151, 155, 170-173, 220-231, 242, 248-262, 268-276, 291-293, 306-310, 319-323, 334-341, 344-348.

## STANDARD 3 Geometry

Instructional programs from prekindergarten through grade 12 should enable all students to:

- ◆ analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships;
- ◆ specify locations and describe spatial relationships using coordinate geometry and other representational systems;
- ◆ apply transformations and use symmetry to analyze mathematical situations;
- ◆ use visualization, spatial reasoning, and geometric modeling to solve problems.

### Consumer Mathematics

Pages 176-182, 186-205, 344-345.

## STANDARD 4 Measurement

Instructional programs from prekindergarten through grade 12 should enable all students to:

- ◆ understand measurable attributes of objects and the units, systems, and processes of measurement;
- ◆ apply appropriate techniques, tools, and formulas to determine measurements.

### Consumer Mathematics

*Measurable attributes and processes of measurement:* pages 44, 45, 94, 95, 122-127, 176-182, 208-241, 342-345.

*Determining measurements:* pages 44, 45, 94, 95, 122-127, 176-182, 208-241, 342-345.

*Technology Connection:* pages 9, 34, 60, 97, 122, 158, 187, 209, 255, 286, 318, 345.

## STANDARD 5 Data Analysis and Probability

Instructional programs from prekindergarten through grade 12 should enable all students to:

- ◆ formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them;
- ◆ select and use appropriate statistical methods to analyze data;
- ◆ develop and evaluate inferences and predictions that are based on data;
- ◆ understand and apply basic concepts of probability.

### Consumer Mathematics

*Data organization, display, and evaluation:* pages 69-71, 102-103, 141-142, 147-149, 154, 156, 248, 250-257, 272-273, 306-309.

## STANDARD 6 Problem Solving

Instructional programs from prekindergarten through grade 12 should enable all students to:

- ◆ build new mathematical knowledge through problem solving;
- ◆ solve problems that arise in mathematics and in other contexts;
- ◆ apply and adapt a variety of appropriate strategies to solve problems;
- ◆ monitor and reflect on the process of mathematical problem solving.

### Consumer Mathematics

*Problem-Solving exercises:* pages 11, 12, 49, 69, 70, 71, 100, 101, 120, 121, 140, 141, 146, 148, 149, 154, 180, 181, 183, 184, 185, 208, 209, 210, 211, 216, 217, 253, 254, 255, 260, 261, 295, 305, 308, 309, 338, 339.

*Problem-Solving Strategies are present throughout the textbook in the form of Examples.*

*Problem-Solving related to Careers:* pages 328-349.

*Application Exercises:* pages 26, 52, 76, 106, 134, 164, 202, 242, 262, 298, 324, 348.

## STANDARD 7 Reasoning and Proof

Instructional programs from prekindergarten through grade 12 should enable all students to:

- ◆ recognize reasoning and proof as fundamental aspects of mathematics;
- ◆ make and investigate mathematical conjectures;
- ◆ develop and evaluate mathematical arguments and proofs;
- ◆ select and use various types of reasoning and methods of proof.

### Consumer Mathematics

*Reasoning skills/processes, conjectures, and argumentation are applied throughout the textbook in Exercises at the end of each lesson, in Problem-Solving and Application Exercises listed under the previous standard and in Chapter Tests.*

## STANDARD 8 Communication

Instructional programs from prekindergarten through grade 12 should enable all students to:

- ◆ organize and consolidate their mathematical thinking through communication;
- ◆ communicate their mathematical thinking coherently and clearly to peers, teachers, and others;
- ◆ analyze and evaluate the mathematical thinking and strategies of others;
- ◆ use the language of mathematics to express mathematical ideas precisely.

### Consumer Mathematics

*Oral explanation and discussion:* Problem-Solving Exercises throughout provide opportunities for oral language: pages 11, 12, 49, 69, 70, 71, 100, 101, 120, 121, 140, 141, 146, 148, 149, 154, 180, 181, 183, 184, 185, 208, 209, 210, 211, 216, 217, 253, 254, 255, 260, 261, 295, 305, 308, 309, 338, 339.

*Application Exercises:* pages 26, 52, 76, 106, 134, 164, 202, 242, 262, 298, 324, 348.

*Writing About Mathematics:* pages 3, 15, 17, 33, 42, 51, 61, 73, 83, 86, 90, 127, 128, 130, 140, 155, 176, 197, 218, 229, 252, 257, 274, 297, 319, 320, 337.

*Tables, Charts, and Graphical Representations:* pages 4, 6-10, 13-19, 20-22, 24-25, 43-46, 49, 51, 59-60, 62, 69-72, 74-76, 88, 90-91, 102-103, 104, 120, 126-127, 140-142, 145, 148-149, 152-157, 161, 185, 198, 212, 214, 216, 218, 220-223, 226, 228-234, 238, 240, 250-259, 272-273, 284-285, 297, 306-309, 311-312, 317, 331, 339, 347.

*Definitions of topic-relevant mathematical terms are included on the first page of each lesson as well as in the Glossary.*

## STANDARD 9 Connections

Instructional programs from prekindergarten through grade 12 should enable all students to:

- ◆ recognize and use connections among mathematical ideas;
- ◆ understand how mathematical ideas interconnect and build on one another to produce a coherent whole;
- ◆ recognize and apply mathematics in contexts outside of mathematics.

### Consumer Mathematics

*Relationships between basic math skills principles and whole numbers, fractions, decimals, percents, geometry, measurement, graphing and algebra are explored throughout the text and underlying principles are presented as an integrated whole.*

The role of basic math skills in contexts outside of mathematics is explored in each chapter as follows: Ch. 1 - Earning Money: pp. 1 - 26; Ch. 2 - Buying Food: pp. 30-52; Ch. 3 - Shopping for Clothes: pp. 56-76; Ch. 4 - Managing a Household: pp. 80-106; Ch. 5 - Buying and Maintaining a Car: pp. 110-134; Ch. 6 - Working with Food: pp. 138-164; Ch. 7 - Improving Your Home: pp. 168-202; Ch. 8 - Traveling: pp. 206-242; Ch. 9 - Budgeting Your Money: pp. 246-262; Ch. 10 - Banking and Investing: pp. 266-298; Ch. 11 - Paying Taxes: pp. 302-324; Ch. 12 - Preparing for Careers: pp. 328-348.

*Mathematical Connections to careers:* pages 328-349.

## STANDARD 10 Representation

Instructional programs from prekindergarten through grade 12 should enable all students to:

- ◆ create and use representations to organize, record, and communicate mathematical ideas;
- ◆ select, apply, and translate among mathematical representations to solve problems;
- ◆ use representations to model and interpret physical, social, and mathematical phenomena.

### Consumer Mathematics

*Representations:* Throughout the textbook; particularly Tables, Charts, and Graphical Representations: pages 4, 6-10, 13-19, 20-22, 24-25, 43, 46, 49, 51, 59-60, 62, 69-72, 74-76, 88, 90-91, 102-104, 120, 126-127, 140-142, 145, 148-149, 152-157, 161, 185, 198, 212, 214, 216, 218, 220-223, 226, 228-234, 238, 240, 250-259, 272-273, 284-285, 297, 306-309, 311-312, 317, 331, 339, 347.

*Writing About Mathematics:* pages 3, 15, 17, 33, 42, 51, 61, 73, 83, 86, 90, 127, 128, 130, 140, 155, 176, 197, 218, 229, 252, 257, 274, 297, 319, 320, 337.

*Technology Connection:* pages 9, 34, 61, 97, 122, 158, 187, 209, 255, 286, 318, 345.