Fourth Grade Mathematics
Instructional Planning Guide

Introduction

Rationale

The *Instructional Planning Guides* were originally developed through the collaborative effort of classroom teachers, mathematics coaches, area mathematics specialists, and curriculum coordinators. The 2.0 version was created by school mathematics/ science facilitators, mathematics/science instructional specialists, and mathematics coordinators. They are designed to serve as teacher instructional planning tools throughout the school year. These guides serve three additional purposes: 1) to provide consistency in pacing across the district; 2) to set target dates that correspond with the administration of assessments (including benchmark, CSAP, and program assessments) and standards-based progress reports; and 3) to support teachers in providing students with all key mathematical experiences at each grade level.

Given the mobility rate of students in Denver Public Schools, it is essential that each student transition smoothly from a mathematics classroom in one school to a mathematics classroom in another school. To support students making this transition, the *Instructional Planning Guides* set target dates for studying Everyday Mathematics units at each grade level.

These target dates include time to administer assessments and ensure that students have opportunities to study essential mathematical ideas in all of the designated units at a particular grade level to support preparation for the Colorado Student Assessment Program (CSAP). Everyday Mathematics is a comprehensive elementary mathematics curriculum that provides students with multiple opportunities to develop knowledge and fluency with skills and concepts across mathematical strands (see key features on the following pages). Because the program's mathematical ideas develop and deepen from ECE (pre-kindergarten) through fifth grade, students must have opportunities to study mathematics in each strand every year.

Content of *Instructional Planning Guides*

Each *Instructional Planning Guide* contains an Introduction that includes key features of Everyday Mathematics and recommended software, Time Frame table, a Year at a Glance, and Units at a Glance.

Year at a Glance

The Year at a Glance provides a visual overview of the year, including:

- Units with corresponding time frame, indicating target dates,
- Main areas of mathematical focus organized by units, and
- Skills addressed through routine practice with games and fact triangles.

Units at a Glance

Unit Overview and Time Frame

- **Unit Overview**—Description of main areas of mathematical focus.
- **Time Frame**—Recommended dates for each unit with time for instruction and assessment administration (i.e., ongoing, periodic, and external assessments including district benchmark and CSAP).

Lesson: Part 1 and Part 2, Part 3, Grade 4 Colorado Assessment Frameworks, and Progress Indicators and Sample Test Questions

- **Part 1 and Part 2**—Identify Everyday Mathematics lesson with its objective.
- **Key Concepts and Skills**—Important mathematical ideas addressed in each lesson that form the essential grade-level mathematical goals important for all students to understand and to provide evidence of their mathematical understanding.
- **Skill Practice**—Lists Everyday Mathematics games that offer skills practice and promote strategic thinking in each lesson.
- **Part 3**—Differentiation options for individualizing the lesson, including support for English language learners, extra practice, readiness, and enrichment. If students **are** making adequate progress, teachers may wish to use Enrichment activities; if students **are not** making adequate progress, consider using Readiness activities.
- **Projects**—If class or individual projects are available for that unit, they are listed in the first lesson of the recommended unit of the guide.
- **Grade 4 Colorado Assessment Frameworks**—Specific assessment framework objectives are identified that match the objective(s) of the Everyday Mathematics lesson. The complete assessment frameworks for fourth grade can be found at http://www.cde.state.co.us/cdeassess/documents/csap/csap_frameworks.html.
- **Progress Indicators**—Progress indicators for the district Standards-Based Progress Report are the Everyday Mathematics Recognizing Student Achievement tasks, which are identified with the expectation that the majority of students will be successful. Students who are making adequate progress as defined by a Recognizing Student Achievement task are on a trajectory to meet the corresponding Grade-Level Goals and Standards. Based on student progress toward Grade-Level Goals, teachers may use Readiness or Enrichment activities to modify instructional plans to meet individual students' needs.
- **Sample Test Questions**—Suggested assessment items are provided from CSAP released items, Math Exemplars, and/or the Everyday Mathematics Teacher's Assessment Assistant CD. These samples include both selected response (multiple choice) and constructed response questions. Using these items with students provides ongoing preparation for the DPS Benchmark and CSAP assessments within the daily Everyday Mathematics lessons. Note that CSAP released items may also be used in the DPS Success after-school tutoring program.

Assessment: Everyday Mathematics has three assessment contexts that provide both observation and product sources of evidence:

1. **Ongoing Assessments**—Recognizing Student Achievement (indicators of progress), Informing Instruction notes…
2. **Periodic Assessments**—Progress Check, End-of-Year Assessment…
3. **External Assessments**—Benchmark Assessments, CSAP…

The final lesson of each unit highlights several opportunities to assess student progress:

- Self-assessments
- Oral and slate assessments
- Written assessments
- Open response assessments

Practice Through Games

Games that provide another opportunity to practice mathematical skills and check for understanding introduced or revisited during the unit are listed in the last lesson.

Key Features of Everyday Mathematics (Third Edition)

Everyday Mathematics is a complete—ECE (pre-kindergarten) through grade 5—research-based mathematics curriculum that introduces students to major mathematical content domains—number sense, algebra, measurement, geometry, data analysis, and probability—beginning in ECE (pre-kindergarten). The program:

- helps students move beyond basic arithmetic;
- nurtures higher-order and critical-thinking skills using everyday, real-world problems and situations; and
- builds and maintains basic skills, including automatic fact recall.

Key features of the Everyday Mathematics program include:

Problem solving for everyday situations—Research and experience show that students who are unable to solve problems in purely symbolic form often have little trouble with these problems when presented in everyday contexts.

Developing concepts through hands-on activities—Everyday Mathematics offers many suggestions for activities with manipulative materials. These activities pave the way for the introduction of new mathematical ideas.

Practice through games–Frequent practice is imperative for students to attain skill mastery. Games are designed to build conceptual understanding and ensure mastery of basic skills in authentic and interesting contexts. By combining activities that focus on understanding basic arithmetic operations with activities that apply arithmetic in geometry, data exploration, measurement, and other contexts, Everyday Mathematics ensures both that students receive ample practice with arithmetic skills and also that they will be better able to use those skills to solve problems.

Establishing links between past experiences and explorations of new concepts—Ideas that have been explored with concrete materials or pictorial representations are revisited through oral descriptions and symbolic representations. Students learn to shift comfortably among various representations and select models that are most appropriate for given situations.

Sharing ideas through discussion—Students gain important insights about mathematics by building on one another's discoveries; one idea leads to another or to refinements of a student's own understanding. Because verbalization often clarifies concepts, talking about mathematics is an important part of thinking about mathematics.

Differentiated instruction—Everyday Mathematics supports teachers in establishing a mathematics classroom in which students have multiple avenues to acquire content, make sense of ideas, develop skills, and demonstrate what they know. The aim is for all students to achieve high standards in mathematics. Both the new *Differentiation Handbook* and Part 3 of the Lesson: Differentiation Options provide a variety of strategies and resources to support teachers.

Ongoing review throughout the year—Rarely do students master something new the first time they encounter it. For this reason, repeated exposures to key ideas presented in slightly different contexts are built into Everyday Mathematics. In addition, Math Box pages in each lesson provide opportunities for cumulative review or assessment.

Daily routines—The program provides routines that students perform regularly—for example, answering Math Message questions and solving Mental Math and Reflexes problems. Other regular classroom tasks help students develop a sense of order, initiative, and responsibility while reinforcing numerous mathematical concepts.

Assessment—In addition to independent review exercises and unit assessments, Everyday Mathematics provides many suggestions for small group activities to help assess students' progress. Teachers gain a clearer understanding of individuals' strengths and weaknesses through interactions with small groups of students. The *Assessment Handbook* describes the Everyday Mathematics assessment resources and serves as a guide to navigate through these resources.

Home and school partnership—Optimal learning involves the student, the teacher, and the home. The *Home Connection Handbook* offers many suggestions for supporting communication between school and home. Family Letters help inform parents and guardians about each unit's topics and terms, offering ideas for home-based mathematics activities to supplement classroom work. Also, parents or others at home are invited to participate in their student's mathematics experiences through the Study Links included in most lessons.

Technology—In addition to games included in the basic Everyday Mathematics program, DPS has a site license for the Everyday Mathematics Online games. Check with your school technology representative (STR) for more information.

Recommended Mathematics Software: Fourth Grade

Number Sense and Computation

The Cruncher	Knowledge Adventure
Math Arena	Sunburst
Mighty Math Calculating Crew	Edmark/Riverdeep
Mighty Math Number Heroes	Edmark/Riverdeep
Ten Tricky Tiles	Sunburst
Thinkin' Things Collection 2: Frippletown Benders	Riverdeep

Algebraic Thinking

Logical Journey of the Zoombinis	Sunburst
Math Arena	Sunburst
Mighty Math Carnival Countdown	Edmark/Riverdeep
Thinkin' Things Collection 2: Frippletown Benders	Riverdeep
Thinkin' Things Collection 3: Galactic Brain Benders	Riverdeep
Zoombinis Mountain Rescue	Sunburst

Data and Probability

The Graph Club	Tom Snyder
Logical Journey of the Zoombinis	Sunburst
Math Arena	Sunburst
Thinkin' Things Collection 2: Frippletown Benders	Riverdeep
Zoombinis Mountain Rescue	Sunburst

Geometry and Measurement

Building Perspective	Sunburst
Math Arena	Sunburst
Mighty Math Number Heroes	Edmark/Riverdeep
Mighty Math Calculating Crew	Edmark/Riverdeep
Tessellation Exploration	Tom Snyder
Thinkin' Things Collection 2: Frippletown Benders	Riverdeep