

## REVIEWER'S GUIDE \& LESSON SAMPLER

## Reviewing Everyday Mathematics

For over 35 years, Everyday Mathematics has helped teachers transform how they deliver math instruction. Since the first edition, the program has incorporated research-based practices such as problem-based instruction, flexible grouping strategies, math discourse, and productive struggle.
These features are woven into core instruction rather than appearing as labels or stand-alone parts of the lesson.

The authors have created a unique tool called "Planning for Rich Mathematical Instruction" to help teachers and reviewers see where these practices appear in lessons and specific activities.
See page xx for more information.

Everyday Mathematics remains the only program that dedicates the time and resources required to develop research-based learning trajectories that are carefully designed to spiral both practice and instruction over time, which has been proven to be the most effective of way of achieving true, life-long mastery of mathematics skills and concepts.

> To help teachers and reviewers see the coherence of the spiral, the authors have created tools such as the spiral tracker which shows how each standard progresses across lessons and units.
> See page xxx for more information.

## Features

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## The Everyday Mathematics Classroom

A pervasive element of an Everyday Mathematics classroom is collaborative learning. Working collaboratively in classrooms creates an atmosphere for sharing ideas and problem-solving strategies. As students encounter different ways of solving problems from peers, they learn to interpret and evaluate each other's point of view and engage in discussions that address the strengths and weaknesses of a variety of approaches.

Each lesson activity includes recommendations for one or more grouping options, helping you create a flexible, dynamic learning environment every day.

WARM UP
Strengthen fluency


FOCUS
Show what you know


## An Investment in How Your Children Learn

Behind each student success story is a team of teachers and administrators who set high expectations for themselves and their students. Everyday Mathematics is designed to help you achieve those expectations with a research-based approach to teaching mathematics.

## The Everyday Mathematics Difference

Decades of research show that children who use Everyday Mathematics develop deeper conceptual understanding and greater depth of knowledge than children using other programs. They develop powerful, life-long habits of mind such as perseverance, creative thinking, and the ability to express and defend their reasoning.

About Everyday Mathematics iv<br>\section*{Everyday Mathematics} in Your Classroom<br>$\qquad$ .<br>Lesson Overview and Components<br>Digital Resources and Instructional Support<br>Assessment and Differentiation<br>Your Classroom<br>Resource Package

Pathway to Mastery XXX
Correlations and Mastery Expectations

## A Commitment to Educational Equity

Everyday Mathematics was founded on the principle that every child can and should learn challenging, interesting, and useful mathematics. The program is designed to ensure that each of your children develops positive attitudes about math and powerful habits of mind that will carry them through college, career, and beyond.

## Provide Multiple Pathways to Learning

Through Everyday Mathematics' spiraling structure, your children develop mastery by repeatedly experiencing math concepts in varied contexts, with increasing sophistication, over time. By providing multiple opportunities to access math concepts, you can easily adapt your instruction to better meet the unique learning needs of your children.

## © Access High <br> Quality Materials

All children deserve strong learning materials especially in early childhood. You can be confident teaching with Everyday Mathematics because your instruction is grounded in a century of research in the learning sciences and has been rigorously field tested and proven effective in classrooms for over thirty years.

## I Use Data to <br> Drive Your Instruction

Using the Quick-Entry Evaluation tool in the ConnectED Teacher Center, you can go beyond tracking progress solely through periodic assessments and easily record evaluations of almost every activity your children engage in every day. The data you collect drives a suite of reports that help you tailor your instruction to meet the needs of every child in your classroom.

41
Create a System for Differentiation in Your Classroom
Turn your classroom into a rich learning environment that provides multiple avenues for each of your children to master content, make sense of ideas, develop skills, and demonstrate what they know. Everyday Mathematics helps you do this by providing the tools you need to effectively address the key components of effective differentiation in your classroom: Content, Process, Product, Classroom Organization, and Learning Environment.*

## - Build and Maintain Strong Home-School Connections

Research shows that strengthening the link between home and school is integral to your children's success. That's why Everyday Mathematics provides a wealth of resources to help you extend what your children learn in your classroom to what they can do at home.

[^0]
# Build Mathematical Literacy 

Designed for College and Career Readiness, Everyday Mathematics builds a solid foundation for success in your mathematics classroom through meaningful practice opportunities, discussion of reasoning and strategies, and engagement in the mathematical practices every day.

## Focused Instruction

The instructional design of Everyday Mathematics allows you to focus on the critical areas of instruction for each grade.


## Focus Clusters

Everyday Mathematics identifies the clusters addressed in the Focus part of each lesson to help you understand the content that is being taught in the lesson.

## Major Clusters

Each unit focuses on Major Clusters that are clearly identified in the Unit Organizer.

## Focus

In this unit, children will focus on addition and subtraction.

## Major Clusters

2.0A.B Add and subtract within 20.
2.NBT.B Use place value understanding and properties of operation

## Supporting Clusters

2.0A.C Add and subtract within 20.
2.MD.C Use place value understanding and properties of operation

## Process and Practice Standards

SMP7 Look for and make use of structure.
SMP8 Look for and express regularity in repeated reasoning

## Focus

In Unit 2, children review and extend fact strategies and program routines.

## Major Clusters

2.0A.B Add and subtract within 20
2.NBT.B Use place value
understanding and properties of operations to add and subtract.

## Coherence Within and Across Grades

## Spiral Towards Mastery

Carefully crafted, research-based learning progressions provide opportunities for your children to connect skills, concepts, and applications, while developing deep understanding, long-term learning, and transfer of knowledge and skills to new contexts.

## Spiral Towards Mastery

The Everyday Mathematics curriculum is built on the spiral, where standards are introduced, developed, and mastered in multiple exposures across the grade. Go to the Teacher Center at my.mheducation.com to use the Spiral Tracker

- Spiral Towards Mastery Progress This Spiral Trace outlines instructional trajectories for key standards in Unit 2. For each standard, it highlights opportunities for Focus instruction, describes the degree of mastery-as measured against the entire standard-expected this point in the year.

Operations and Algebraic Thinking


- Progress Towards Mastery By the end of Unit 2 , expect children to write an addition Progress Towards Mastery By the end of Unit 2, expect children to write an addition
number story that matches a picture, write a number model to represent their story, and number story tha
solve their story.
Full Mastery of 2.0A.1 expected by the end of Unit 8 .


## Coherence

The table below describes how standards addressed in the Focus parts of the lessons link to the mathematics that children have done in the past and will do in the future.

| Links to the Past | Links to the Future |
| :--- | :--- | :--- | :--- |

## Linking Prior and Future Knowledge

Each unit contains information about how the focus standards covered in the unit developed in prior units and grades and how your instruction lays the foundation for future lessons.

## Rigorous Content

Everyday Mathematics gives you the tools and resources you need to emphasize conceptual understanding, procedural fluency, and applications with equal intensity.

| plominim for iteh motun mnstruction |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2-1 | 2-2 | 2-3 | 2-4 |
|  |  | Grouping by 10 | Addition Number Stories | Doubles and Combinations of 10 | The Making-10 Strategy |
|  | Conceptual Understanding | Place value through hundreds place <br> Making Exchanges, p. 152 | Understanding that addition can be represented with a number model <br> Representing Number Stories, p. 158 | Doubles and combinations of ten facts <br> - Using Double Ten Frames, p. 164 <br> - Naming Doubles and Combinations of 10, p. 165 | Making-10 fact strategy <br> - Math Message, p. 170 <br> $\square$ Exploring the Making-10 <br> Strategy, p. 170 |
| $\begin{aligned} & \ddot{O} \\ & \underset{\sim}{0} \end{aligned}$ | Procedural Skill and Fluency | Mental Math and Fluency, p. 152 <br> Math Boxes $\quad 1$, ■ 4 | - Mental Math and Fluency, p. 158 <br> - Math Message, p. 158 <br> Math Boxes 1, ■ 3, 5, ■ 6 <br> - Home Link 2-2, p. 161 | Mental Math and Fluency, p. 164 <br> Using Double Ten Frames, p. 164 <br> Naming Doubles and Combinations of 10, p. 165 <br> Fishing for 10, p. 167 <br> Math Boxes $■ 1$, ■ 4 <br> ■ Home Link 2-3, p. 167 | - Mental Math and Fluency, p. 170 <br> - Math Message, p. 170 <br> - Exploring the Making-10 Strategy, p. 170 <br> - Practicing the Making-10 Strategy, p. 172 <br> - Enrichment, p. 169 <br> - Extra Practice, p. 169 <br> Journal, p. 25: 1, ■ 3, 5, ■ 6 <br> ■ Home Link 2-4, p. 173 |
|  | Applications | - Making Exchanges, p. 152 <br> - Counting Money, p. 153 <br> - The Exchange Game, p. 154 <br> Extra Practice, p. 151 | - Representing Number Stories, <br> p. 158 <br> - Creating and Solving Addition Number Stories, p. 159 <br> Writina Numhor Ctariec a 169 | - Mental Math and Fluency, p. 164 | Math Boxes 2, ■6 |

## Problem-based Instruction

Everyday Mathematics builds problem solving into every lesson.
Problem solving is in everything they do.

| Warm-up Activity | Daily Routines | Math Message | Focus Activities | Summarize | Practice <br> Activities |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Lessons begin with a quick, scaffolded Mental Math and Fluency exercise. | Reinforce and apply concepts and skills with daily activities. | Engage in high cognitive demand problem solving activities that encourage productive struggle | Introduce new content with group problem solving activities and classroom discussion. | Discuss and make connections to the themes of the focus activity. | Lessons end with spiraled review of content from past lessons. |

## Practice Embedded in Every Lesson

Because Everyday Mathematics is a problem-based curriculum, practice opportunities appear naturally in daily instruction, but specific activities in the practice part of lessons help you be confident your children are progressing toward mastery and maintaining and applying knowledge and skills over time.


## Games

Provide opportunities for fluency practice, along with collaborative learning experiences.


## Math Boxes

Provide children with an opportunity to recall previously taught skills and concepts. These are distributed practice activities that include a balance of skills, concepts, and applications.

## Home Links

Allow children to practice school mathematics and help family members connect to school.


## Mathematical Literacy Sets The Stage for Algebra

Everyday Mathematics encourages children to recognize, analyze, and generalize patterns; represent quantities and relationships symbolically; model problem situations using objects, pictures, words, and symbols; and understand real-world relationships such as direct proportion-which, along with a fluent mastery of basic arithmetic, are the building blocks of algebraic thinking.

GRADE \begin{tabular}{lllll}
K \& $\mathbf{2}$ \& $\mathbf{3}$ \& $\mathbf{4}$ \& \multicolumn{1}{c}{$\mathbf{5}$} <br>

| Instruction builds on children's |
| :--- |
| curiosity about patterns to |
| explore numbers, shapes, and |
| relationships between them. | \& | Children work with symbolic |
| :--- |
| representations for quantities |
| and relationships, model |
| simple situations, and build |
| arithmetic skills. | \& | Children use symbolic representations |
| :--- |
| to model problem situations, build their |
| understanding of fundamental relations such |
| as direct proportion, and master elementary |
| arithmetic concepts and skills |

\end{tabular}

## Be the Teacher They Will Always Remember

An Everyday Mathematics classroom has a unique energy that's a result of student engagement and excitement about learning math. This environment builds growth mindset and other positive attitudes about learning that will help your children succeed long after they've left your classroom.


## "I can share my solution!"

## Collaboration

Everyday Mathematics was designed to allow your children to share ideas and strategies. They work in small groups and with partners formed according to their needs, helping you create a rich learning environment that supports powerful instruction.

## Math Talk

Talking about mathematics is an essential part of learning mathematics. Opportunities for children to share their problem-solving strategies and their reasoning as well as critique others' reasoning are embedded throughout Everyday Mathematics, making it easy for you to facilitate math discussions every day.


## Hands-on Exploration

Everyday Mathematics includes hands-on activities in every lesson that often involve the use of manipulatives and games to help children make connections to their everyday life. These activities allow children to model mathematics physically, concretely, and visually-deepening their understanding of concepts and skills.

## Perseverance and Productive Struggle

Everyday Mathematics helps you create a classroom culture that values and supports productive struggle, that fosters productive dispositions in your children-a belief that mathematics is worthwhile, an inclination to use the mathematics they know to solve problems and confidence in their own mathematical abilities.


# The Everyday Mathematics Lesson 

Lessons are designed to help teachers facilitate instruction and engineered to accommodate flexible grouping models. The three-part, activity-driven lesson structure helps you easily incorporate researchbased instructional methods into your daily instruction.

## Embedded Rigor and Spiraled Instruction

Each lesson weaves new content with practice of content introduced in earlier lessons. The structure of the lessons ensures that your instruction includes all elements of rigor in equal measure with problem solving at the heart of everything you do.


Lessons begin with quick, scaffolded warm up exercises that provide important fluency practice.

Introduction of New Content
Focus
CONCEPTUAL UNDERSTANDING AND APPLICATION

Math Message Children solve a challenging and engaging problem and discuss how they solved it.
Focus Activities Introduce new content, skills, and concepts.

```
Review
Practice
APPLICATION AND FLUENCY
Spiraled practice that revisits content from earlier lessons.
```



## Key Components

The Everyday Mathematics authors have developed a suite of resources that support your instruction, helping you create a mathematically rich environment every day.


## Open Response and Reengagement Lessons

Every unit includes a 2-day lesson that provides your children the opportunity to work with rich tasks and solve complex problems while explicitly engaging in the mathematical practices.


## Activity Cards

Activity Cards provide structured exploration of content tied to the focus of the lesson independently, in partnerships, and in small groups, especially in centers, where children are expected to complete the activity with minimal teacher guidance.


## Games

Research shows that games provide a more effective learning experience than tedious drills and worksheets. Games allow for playful, repetitive practice that develops fluency and confidence and helps children learn to strategize.


## Quick Looks

Quick Look activities are routines that help your children develop the ability to recognize a quantity without counting and to decompose numbers in various ways. As they encounter various combinations of numbers, they also develop strategies for basic facts.

## Online Resources

Digital tools to help you confidently deliver effective mathematics instruction in your classroom are included with every implementation. Everything you need is included in one easy-to-navigate place and you can customize your lessons by adding resources and notes-and everything is saved and available to you year after year.

## The Teacher Center

You'll never waste time looking for resources because everything you need for every lesson is right where you need it, when you need it. When you open the Everyday Mathematics Teacher Center, you're automatically taken to the overview of the current lesson.


## Launch Presentation

Editable versions of digital lessons that help you lead instruction.

## Plan Your Lesson

Review all of the activities for the lesson.

## Resources

Access lesson resources, additional projects and home-school connections.

## Games

Open online games for fluency practice.

Quick Entry
Easily record evaluations of your children's progress.

## Today's Data

Easy access to Data
Dashboard reports to drive your daily instruction.

## Differentiation

Resources to help you adjust the lesson to support all learners.

## The Student Learning Center

Engineered to help each of your children experience confidence and develop positive feelings about math in a digital environment that keeps them engaged and excited about learning.


## Lesson Content

Your children's lessons are synched with your planner so they always have easy access to each day's activities.

## My Reference Book

One-click access to the interactive reference book that includes descriptions and examples as well grade-level-appropriate explanations of mathematical content and practices.

## eToolkit

eTools and writing tools that enable your children to show their work and explore dynamic extensions.

## Geometer's

Sketchpad Activities and EM Games Online
Easy to access Fact Practice games and full integration of The Geometer’s Sketchpad ${ }^{\circledR}$ activities.

## Tutorial Videos

Demonstrations of concepts and skills.

## EM at Home

Parents have easy access to resources to help them support their child's learning.

# Data Driven Instruction 

Everyday Mathematics includes a complete set of tools and resources to help teachers evaluate the development of each child's mathematical understanding and skills, while providing actionable data to inform instruction.

## Evaluate

Assessment Check-In Math Journal 1, p. 19
Expect most children to succeed at writing that matches the picture on journal page 1 to represent their number story, and solvin those who struggle with one or more of th the Adjusting the Activity note or have the Practice activity on page 157. GMP2.1

## Ongoing Assessments

Assessment Check-In Daily lesson based
assessment opportunities.
Writing and Reasoning Prompts Allow children to communicate understanding of concepts and skills and strategies for solving problems.


## Pre Unit Assessment

Preview Math Boxes Appear in two lessons toward the end of each unit and help you gauge readiness for upcoming content, plan instruction and choose appropriate differentiation activities.

Data Dashboard Through the reports provided in the ConnectED Teacher Center, data recorded in prior units can provide valuable information to inform instruction in the upcoming unit.

## Periodic Assessments

Progress Check lessons at the end of each unit provide formal opportunities to assess children's progress toward mastery of content and process/practice standards.

- Unit Assessments Assess children's progress toward mastery of concepts, skills, and applications in the current unit.
- Self Assessments Allow children to reflect on their understanding of content and process/practice standards that are the focus of the unit.
- Challenge Problems Extend important ideas from the unit, allowing children to demonstrate progress beyond expectations.
- Cumulative Assessments Assess children's progress toward mastery of content and process/ practice standards from prior units.
- Open Response Assessments Provide information about children's performance on longer, more complex problems and emphasize the process and practice standards for mathematics.

Benchmark Assessments Beginning of Year, Mid-Year, and End of Year benchmarks follow the same format as Unit Assessments.


## Record

A full suite of tools including rubrics and class checklists are available to help you track your children's progress.


## Quick Entry Evaluation Tool

You can quickly and efficiently record evaluations of your
children's performance as well as add notes.

## Report

The Data Dashboard is a responsive reporting tool that delivers actionable information to help you adapt and personalize your instruction and provide feedback to families and administrators.


Recommendations Report


Progress Report


Grade Card Report

## Differentiation System

Everyday Mathematics fosters rich learning environments that provide multiple avenues for mastering content, making sense of ideas, developing skills, and demonstrating knowledge. This allows rigorous mathematics content to be accessible and engaging for all children.

## Everyday Mathematics Differentiation Model



## Differentiation Options



## Supplementary Activities

Everyday Mathematics offers specific differentiation options in every lesson for:

- Children who need more scaffolding
- Children who need extra practice
- Advanced Learners
- Beginning English Language Learners
- Intermediate and Advanced English Language Learners



## Lesson Supplements

Almost every lesson has Differentiation Support Pages found in the ConnectED Teacher Center that offer extended suggestions for working with diverse learners, including English Language Learners and children who need more scaffolding.


## Point-of-Use Differentiation

Assessment Adjustments Suggestions for scaffolding and extending Progress Check assessments.

Game and Activity Adjustments Recommendations for tools, visual aids, and other instructional strategies that provide immediate support.

Adjusting the Activity Suggestions for adapting activities to fit children's needs.

Common Misconceptions Notes that suggest how to use observations of children's work to adapt instruction.

# Supporting Rich Mathematical Instruction 

Everyday Mathematics includes a wealth of resources to help you deliver effective instruction every day.

## Planning

Every Unit Organizer includes a chart that shows where the building-blocks for rich mathematical instruction appear throughout every unit.

## Preparing

Every Unit Organizer also includes important background information on both content and practice standards to help you confidently deliver instruction.


## Support

The Everyday Mathematics Virtual Learning Community (VLC) at The University of Chicago, provides a free space where you can connect with a network of skilled, passionate educators who are also using the program, and interact with the authors. Resources on the VLC include classroom videos of lessons in action and instructional tools and resources.


## Resources

Everything you need to successfully implement Everyday Mathematics is at your fingertips through the ConnectED Resource page of your Teacher Center including videos from the authors, quick start guides for key features, and the Implementation Guide, a comprehensive guide to using the program.


## Getting Ready to Teach Second Grade Everyday Mathematics

Welcome to Second Grade Everyday Mathematics. This guide introduces the organization and pedagogy of Everyday Mathematics and provides tips to help you start planning and teaching right away.

Grade 2 has $\mathbf{1 0 7}$ lessons in 9 units. Plan to spend 60-75 minutes every day on math so that you complete 3-4 lessons each week and one unit every 3-5 weeks.

This pacing is designed for flexibility and depth. You will have flexibility so you can extend a lesson if discussion has been rich or if students' understandings are incomplete. You can add a day for "journal fix-up" or for differentiation-to provide an Enrichment activity to every student, for example-or for games. There will also be time to accommodate outside mandates, district initiatives, and special projects.

This pacing also gives you time to go deep, to create a classroom culture that values and supports productive struggle. You can expect your students to do their own thinking, to solve problems they have not been shown how to solve, to make connections between concepts and procedures, to explain their thinking, and to understand others' thinking. Creating such a classroom culture takes time, but the pacing of Everyday Mathematics 4 is designed to give you the time you'll need.

The Teacher's Lesson Guide is your primary source for information on planning units and teaching lessons. In most lessons, children will complete pages in their Math Journals or digitally in the Student Learning Center. Additional pages that require copies are available as Math Masters. See the Materials section on pages xxvixxvii for information on the teacher and student components.

## Preparing for the Beginning of School

- Use the list on pages xxvi-xxvii to check that your Classroom Resource Package is complete.
- See page xxix for manipulatives and supplies you will need.
- Set up the Ongoing Daily Routines so you can initiate them on the first day.
- Read the Unit 1 Organizer (pages $44-55$ ) and the first several lessons in Unit 1 to help you plan for the first week of school.
- Read the Everyday Mathematics in Grades 1-6 section of the Implementation Guide for more information on getting started.
- Copy the Unit 1 Family Letters on Math Masters, pages 4-7 to distribute early in the school year.
- Review the Beginning-of-the-Year Assessment on pages 70-74 in the Assessment Handbook and consider when you will administer it.

Goonline to join the Virtual Learning Community (VLC) to learn about Everyday Mathematics classrooms from other teachers and to find tips for setting up your classroom.


## Lesson Types

Second Grade Everyday Mathematics includes four types of lessons, which share many of the same features.

Regular Lessons are the most common lesson type. See the table on the following pages for details about regular lessons.

Explorations Lessons occur once per unit and give children three unique opportunities to explore new concepts and tools in an informal small-group setting. Exploration A is often a teacher-led activity and focuses on the main content of the lesson. Activity Cards provide directions for children to complete most Explorations.

Open Response and Reengagement Lessons extend over two days and occur in every unit. On Day 1 children solve a challenging problem that involves more than one possible strategy or solution. On Day 2 children reengage in the problem and are asked to defend their reasoning and critique the reasoning of other students.

Progress Check Lessons are two-day lessons at the end of every unit. All items on the Progress Check match expectations for progress at that point in the grade and, with the exception of the optional challenge assessment, are fair to grade. On Day 1 children complete a self-assessment, a unit assessment, and an optional challenge assessment covering the content and standards that were the focus of the unit. Day 2 includes one of the following types of assessments:

Open Response Assessments are included in odd-numbered units and allow children to think creatively about a problem. They address both content and process/practice standards and are accompanied by task-specific rubrics.

Cumulative Assessments are included in even-numbered units and cover standards from prior units.


## Lesson Parts and Features

Every lesson begins with two planning pages. The remaining pages provide a detailed guide for teaching the three parts of a lesson: Warm Up, Focus, and Practice.

| Lesson Parts and Features |  | Description | Tips |
| :---: | :---: | :---: | :---: |
|  | Lesson Opener | An outline of the lesson to assist in your planning that includes information on content and standards, timing suggestions, assessment, and materials. | - See Before You Begin for preparation tips. <br> - Follow the time allotments for each part of the lesson. |
|  | Differentiation Options | Optional Readiness, Enrichment, Extra Practice, and English Language Learners (ELL) Support activities that allow you to differentiate instruction. Additional Differentiation Support pages are available online for each regular lesson. | - Choose to complete Differentiation Options as a whole class, as a small group, or individually depending on the needs of your children. <br> - Note that some children may benefit from completing the Readiness activity prior to the lesson. to the Implementation Guide for information on differentiation. |
| Part 1: Warm Up |  | Description | Tips |
|  | Mental Math and Fluency | Quick, leveled warm-up exercises children answer orally, with gestures, or on slates or tablets that provide practice towards fluency. | - Select the levels that make sense for your children and customize for your class. <br> - Spend 5 or fewer minutes on this feature. |
|  | Routines | Daily activities that reinforce mathematical concepts and help children connect those concepts to their everyday lives. Routines are described on pages $2-3$ of the Teacher's Lesson Guide. | - Establish the six Grade 2 Routines early in the year and let children grow into them at their own pace. Each routine includes suggestions for adding complexity as the year progresses. <br> Go Online to the VLC for information on establishing routines. |
| Part 2: Focus |  | Description | Tips |
|  | Math Message and Math Message Follow-Up | An introductory activity to the day's lesson that usually requires children to solve a problem they have not been shown how to solve. The followup discussion connects to the focus activities of the lesson and gives children opportunities to discuss their strategies. | - Consider where and how you will display the Math Message and how children will record their answers. <br> - Maintain high cognitive demand by expecting children to work through the problem without your help before the follow-up discussion begins. |


| Part 2: Focus, con't. |  | Description |  | Tips |
| :---: | :---: | :---: | :---: | :---: |
|  | Focus Activities | Two to four main instructional activities, including games, in which children explore and engage in new content (skills, concepts, applications). |  | - Encourage children to discuss and work together to solve problems during focus activities. <br> - Remember that many focus skills, concepts, applications, and games will be revisited in later practice. <br> Go Online <br> to the Spiral Tracker to see the complete spiral. <br> - Look for Goals for Mathematical Process and Practice Standards icons. GMP1.1 Use these to facilitate discussions about the standards. See also the Implementation Guide for information on Process and Practice Standards. |
|  | Assessment <br> Check-In | A daily assessment opportunity to assess the focus standards in the lesson. Assessment Check-Ins provide information on expectations for particular standards at that point in the curriculum. |  | - Use results to inform instruction. Expectation statements in the Assessment Check-Ins help you decide which children would benefit from differentiation activities. <br> - Consider Assessment Check-Ins as "fair to grade" in most cases. Goonline to record children's progress and to see trajectories toward mastery for all standards. <br> See also the Implementation Guide for assessment information. |
| Part 3: Practice |  | Description |  | Tips |
|  | Practice Activity | An opportunity to practice previously taught skills and content through a practice page or a game. |  | - Allow time for practice pages and games because they are critical for children to meet expectations for standards. This is an essential part of the distributed practice in Everyday Mathematics. <br> - Plan for all children to play Everyday Mathematics games at least 60 minutes per week. <br> Go Online to the Implementation Guide for tips to ensure that all children have ample game time. <br> See also the Virtual Learning Community (VLC) to observe many Everyday Mathematics games in action. |
|  | Math Boxes | A daily Math Journal page, beginning in Lesson 1-8, that reviews skills and concepts which children have seen prior to that point in the program. Preview Math Boxes anticipate content in the upcoming unit. |  | - Aim to have children complete Math Boxes with as little teacher support as possible. <br> - Complete Math Boxes at any point during the day. |
|  | Home Link | A daily home 1-11, that provid families abou | ge, beginning in Lesson ctice and informs th from that day's lesson. | Encourage children to do these activities with someone at home, such as a parent, caregiver, or sibling. |
| Differentiation and Language Features |  |  | Description and Purpose |  |
|  | Adjusting the Activity |  | Allows for differentiated instruction by offering modifications to lesson activities. |  |
|  | Common Misconception |  | Offers point-of-use intervention tips that address common misconceptions. |  |
|  | Game Modifications |  | Provides suggestions for modifying games to support children who struggle and challenge children who are ready. |  |
|  | Differentiation Support |  | Offers two online pages of specific differentiation ideas for each lesson, as well as ELL suggestions, and scaffolding for children who need it. |  |
|  | Academic Language Development |  | Suggests how to introduce new academic vocabulary that is relevant to the lesson. These notes benefit all children, not solely English language learners. |  |
|  | English Language Learners (ELL) |  | Provides activities and point-of-use ideas for supporting children at different levels of English language proficiency. |  |

## Getting to Know Your Classroom Resource Package

Complete access to all digital resources is included in your Classroom Resource Package.
To access these resources, log into my.mheducation.com.

| Planning, Instruction, and Assessment |  |
| :---: | :---: |
| Resource | Description |
| Teacher's <br> Lesson Guide <br> (Volumes 1 and 2) <br> d digital <br> d print | - Comprehensive guide to the Everyday Mathematics lessons and assessments <br> - Standards alignment information: digital version includes online tracking of each content standard <br> - Point-of-use differentiation strategies: Readiness, Enrichment, Extra Practice, English Language Learners support, general language development, Adjusting the Activity, Game Modifications, Common Misconceptions <br> - Additional Differentiation Support pages available digitally for virtually every lesson <br> - Unit overviews <br> - Planning and calendar tools |
| eToolkit <br> $\checkmark$ digital <br> - print | - Online tools and virtual manipulatives for dynamic instruction <br> - A complete list of Grade 2 eTools on page xxix |
| ePresentations <br> 6 digital <br> O print | - Ready-made interactive white board lesson content to support daily instruction |
| Math Masters <br> $\checkmark$ digital <br> © print | - Reproducible masters for lessons, Home Links, Family Letters, and games |
| Minute Math+ <br> $\checkmark$ digital <br> (6) print | - Brief activities that require little or no materials; useful for transition times and for spare moments throughout the day |
| Classroom Posters <br> © digital <br> $\int$ print | - Posters that display grade-specific mathematical content |


| Planning, Instruction, and Assessment (con't) |  |
| :---: | :---: |
| Resource | Description |
| Assessment <br> Handbook <br> $\checkmark$ digital <br> $\checkmark$ print | - Assessment masters for unit-based assessments and interim assessments <br> - Record sheets for tracking individual and class progress |
| Assessment and Reporting Tools <br> $\checkmark$ digital print | - Student, class, school, and district reports <br> - Data available at point-of-use in the planning and teaching materials <br> - Real-time data to inform instruction and differentiation |
| Spiral Tracker digital print | - Online tool that helps you understand how standards develop across the spiral curriculum |


| Professional Development |  |
| :--- | :--- |
| Resource | Description |
| Implementation Guide | • Online resource with information on implementing the curriculum |
| digital |  |
| print |  |
| Virtual Learning | • An online community, sponsored and facilitated by the Center for Elementary |
| Community |  |
| Mathematics and Science Education (CEMSE) at the University of Chicago, to |  |
| digital |  |$\quad$| network with other educators, and share best practices |
| :--- |

## Family Communications

| Resource | Description |
| :--- | :--- |
| Home Connection | • A collection of tips and tools to help you communicate to families about Everyday |
| Handbook | Mathematics |
| - Reproducible masters for home communication for use by both teachers and <br> administrators |  |


| Student Materials |  |
| :---: | :---: |
| Resource | Description |
| Student Math <br> Journal, <br> (Volumes 1 and 2) <br> d digital <br> $\checkmark$ print | - Student work pages that provide daily support for classroom instruction <br> - Provides a long-term record of each student's mathematical development |
| Pattern Block <br> Template <br> $\checkmark$ digital <br> d print | - eTools to support mathematical concepts, including geometry and measurement <br> - Also available as plastic templates |
| My Reference Book © digital <br> © print | - Resource to support student learning in the classroom and at home <br> - Includes explanations of mathematical content and directions for many Everyday Mathematics games |
| Activity Cards <br> © digital <br> (6) print | - Directions for students for Explorations, Differentiation Options, and other small-group activities |
| Student Learning Center <br> $\checkmark$ digital print | - Combines Student Journal, My Reference Book, eToolkit, Activity Cards, and other resources for students in one location <br> - Interactive functionality provides access in English and Spanish <br> - Interactive functionality provides immediate feedback on select problems <br> - Animations that can help with skills and concepts and reinforce classroom teaching <br> - Provides access to EM Games Online and Facts Workshop Game |
| EM Games Online <br> © digital <br> - print | - Digital versions of many of the Everyday Mathematics games that provide important practice in a fun and engaging setting |
| Facts Workshop Game digital print | - Games that build computational skill and fact fluency with Everyday Mathematics routines such as fact families and fact triangles |

## Manipulative Kits and eToolkit

The table below lists the materials that are used on a regular basis throughout Second Grade Everyday Mathematics. All of the items below are available from McGraw-Hill Education. They may be purchased as a comprehensive classroom manipulatives kit or by individual items. The manipulative kit comes packaged in durable plastic tubs. Note that some lessons call for additional materials, which you or your children can bring in at the appropriate times. The additional materials are listed in the Unit Organizers and in the lessons in which they are used.

| Manipulative Kit Contents |  | eTools |
| :---: | :---: | :---: |
| Item | Quantity | Item |
| Base-10 Big Cube | 1 big cube | $\checkmark$ |
| Base-10 Flats | 8 packs of 10 flats | $\checkmark$ |
| Base-10 Longs | 5 packs of 50 longs | $\checkmark$ |
| Base-10 Unit Cubes | 10 packs of 100 cubes | $\checkmark$ |
| Clock Face | 1 pack of 25 | $\checkmark$ |
| Clock Face Stamp | 1 stamp |  |
| Coin Stamp Set, Heads | 1 set of 5 |  |
| Connectors | 1 pack of 2,000 |  |
| Counters, Double-Sided | 1 pack of 500 | $\checkmark$ |
| Counters; translucent; multi-colored, 4 colors | 1 pack of 200 | $\checkmark$ |
| Counting Sticks | 1 pack of 1,000 | $\checkmark$ |
| Dice, Blank | 1 pack of 16 | $\checkmark$ |
| Dice, Dot | 2 packs of 12 | $\checkmark$ |
| Dice, Polyhedral | 3 packs of 6 | $\checkmark$ |
| Dominoes, Double-9 | 2 sets of 55 | $\checkmark$ |
| Everything Math Decks | 15 decks | $\checkmark$ |
| Geoboards, Two-sided, 7" $\times 7$ " | 4 boards | $\checkmark$ |
| Geosolids | 1 set of 12 | $\checkmark$ |
| Marker Boards | 25 boards |  |
| Metersticks | 2 sets of 6 |  |
| Number Line, -35 to 180 | 1 number line (in 3 parts) | $\checkmark$ |
| Pattern Blocks | 2 sets of 250 | $\checkmark$ |
| Play Money Penny Set | 1 set of 500 | $\checkmark$ |
| Play Money Dime Set | 1 set of 250 | $\checkmark$ |
| Play Money Nickel Set | 1 set of 500 | $\checkmark$ |
| Play Money Quarter Set | 1 set of 100 | $\checkmark$ |
| Quick Look Cards | 1 pack each of ten-frames and double ten-frames | $\checkmark$ |
| Rubber Bands | 1 pack of 400 |  |
| Rulers, 6 in. 15 cm | 1 set of 25 rulers |  |
| Stamp Pad | 1 pad |  |
| Straws | 1 pack of 500 |  |
| Tape Measure, Retractable | 15 tape measures |  |
| Ten Frames | Not in kit | $\checkmark$ |
| Thermometer, Classroom | 1 thermometer | $\checkmark$ |
| Yardsticks | 2 sets of 6 yardsticks |  |

# Clear Pathway to Mastery 

You can be confident your children are progressing toward mastery of every standard because Everyday Mathematics provides detailed information about the learning trajectories for each standard as well as expectations for mastery at every step of the way.

## Unpack



## Goals for Mathematical Content

The Everyday Mathematics authors developed Goals for Mathematical Content (GMC) that break down each content standard to provide detailed information about the learning trajectories required to meet the full standard. See pages EM3-EM5 for a full view of the content standards and the related GMCs.

## Goals for Mathematical Practice

The authors created Goals for
Mathematical Practice (GMP) that unpack the practice standards, operationalizating them in ways that are appropriate for elementary students. See pages EM6-EM9 for a full view of the practice standards and the related GMPs.

## Standards for Mathematical Process and Practice

1 Make sense of problems and persevere in solving them.
Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for reqularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense? problems and identify correspondences between different approaches

## 2 Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize-to abstract a given situation and represent it symbolically

Everyday Mathematics Goals for Mathematical Process and Practice


GMP2.1 Create mathematical representations using numbers, words, pictures, symbols, gestures, tables, graphs, and concrete objects.

## Track

Everyday Mathematics provides the tools you need to easily monitor your children's progress toward mastery.

## Visible Learning Trajectories

Get a full picture of how each standard develops across a unit-and the entire grade.

## Spiral Towards Mastery

The Everyday Mathematics curriculum is built on the spiral, where standards are introduced, developed, and mastered in multiple exposures across the grade. Go to the Teacher Center at my.mheducation.com to use the Spiral Tracker.
A Spiral Towards Mastery Progress This Spiral Trace outlines instructional trajectories for key standards in Unit 2. For each standard, it highlights opportunities for Focus instruction, Warm Up and Practice activities, as well as formative and summative assessment. It describes the degree of mastery-as measured against the entire standard-expected at this point in the year.

Operations and Algebraic Thinking

Each unit organizer contains a view of the progression of the standards in the unit across recent and upcoming lessons.


Using the online Spiral Tracker you can see how each standard progresses across the grade.

## Master

Unit organizers include mastery expectation statements that provide guidance about what you should expect your children to know by the end of the unit and to help you make decisions about differentiation and groupings.

Progress Towards Mastery By the end of Unit 2, expect children to write an addition number story that matches a picture, write a number model to represent their story, and solve their story.

Full Mastery of 2.0A. 1 expected by the end of Unit 8.

The Mastery Expectations charts starting on page xl provide a full picture of how every standard develops across the entire grade.

| Standards | First Quarter Benchmark Expectations for Units 1 and 2 | Second Quarter <br> Benchmark Expectations for Units 3 and 4 | Third Quarter Benchmark Expectations for Units 5 and 6 | Fourth Quarter Benchmark Expectations for Units 7 through 9 |
| :---: | :---: | :---: | :---: | :---: |
| 2.OA. 1 | Write an addition number story that matches a picture, write a number model to represent the story, and solve the story. | Add and subtract within 20 to solve one-step word problems involving situations of adding to, taking from, putting together, and taking apart by using drawings | Add and subtract within 100 to solve one-step word problems involving situations of adding to, taking from, putting together, and taking apart, e.g. by using | Use addition and subtraction within 100 to solve one- and twostep word problems involving situations of adding to, taking from, putting together, taking |

## Correlation to the Standards for Mathematics

Everyday Mathematics is a standards-based curriculum engineered to focus on specific mathematical content in every lesson and activity. The chart below shows complete coverage of each mathematics standard in the core program throughout the grade level.
*Bold lesson numbers indicate that content from the standard is taught in the Focus part of the lesson. Lesson numbers not in bold indicate that content from the standard is addressed in the Warm Up or Practice part of the lesson. The second set of lesson numbers, which are in parentheses, indicate that content from the standard is being addressed in Home Links or Math Boxes.

| Content Standards for Mathematics for Grade 2 | Everyday Mathematics Grade 2 Lessons* |
| :---: | :---: |
| Operations and Algebraic Thinking 2.OA |  |
| Represent and solve problems involving addition and subtraction. |  |
| 2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. | $\begin{aligned} & \text { Routines 1, 2, 3, 5, 6; 2-2, 2-3, 2-5, 2-7, } \\ & \text { 2-8, 2-9, 2-11, 2-12, 3-2, 3-5, 3-7, 3-8, 3-9, } \\ & \text { 3-11, 4-4, 4-11, 5-1, 5-3, 5-7, 5-8, 5-9, 5-10, } \\ & \text { 6-1, 6-2, 6-3, 6-4, 6-5, 6-7, 6-9, 7-1, 7-2, } \\ & \text { 8-8, 8-9, 9-9, 9-10, 9-11 } \\ & \text { (2-4, 3-1, 3-3, 4-1, 4-3, 4-5, 4-7, 4-8, 4-12, } \\ & 5-6,5-12,6-8, ~ 6-10, ~ 6-11, ~ 7-3, ~ 7-4, ~ 7-5, ~ 7-7, ~ \\ & 7-8, ~ 7-9, ~ 8-1, ~ 8-2, ~ 8-3, ~ 8-4, ~ 8-6, ~ 8-10) ~ \end{aligned}$ |
| Add and subtract within 20. |  |
| 2.OA. 2 Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers. | Routines 1, 2; 1-2, 1-6, 1-7, 1-8, 1-10, 1-9, 1-11, 1-12, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, 2-12, 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9, 3-10, 3-11, 4-1, 4-2, 4-3, 4-4, 4-6, 4-9, 4-11, 5-1, 5-3, 5-5, 5-7, 5-9, 6-2, 6-7, 6-8, 6-10, 7-1, 7-2, 7-5, 7-8, 8-1, 8-2, 8-5, 8-7, 8-8, 8-10, 8-11, 9-2, 9-7, 9-10, 9-11 <br> (1-10, 1-13, 4-5, 4-7, 4-10, 5-2, 5-4, 5-6, 6-11) |
| Work with equal groups of objects to gain foundations for multiplication. |  |
| 2.OA.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2 s ; write an equation to express an even number as a sum of two equal addends. | Routines 1, 2, 3, 5; 1-9, 2-6, 2-8, 2-9, 2-10, 3-11, 4-2, 4-4, 9-10 <br> (3-2, 3-4, 4-1, 4-3) |
| 2.OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends. | $\begin{aligned} & 4-11,5-5,6-10,8-8,8-9,8-10,8-11, \\ & 9-1,9-10 \\ & (7-6,7-10,8-12,9-5,9-6,9-7,9-8) \end{aligned}$ |


| Content Standards for Mathematics for Grade 2 | Everyday Mathematics Grade 2 Lessons* |
| :---: | :---: |
| Number and Operations in Base Ten 2.NBT |  |
| Understand place value. |  |
| 2.NBT. 1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: | Routines 1, 2; 2-1, 4-4, 4-5, 4-6, 4-7, 4-8, 4-10, 5-4, 5-5, 5-10, 6-4, 6-6, 6-7, 6-8, 6-9, 7-1, 8-3, 8-6, 9-1, 9-5, 9-6, 9-7 <br> (2-5, 2-7, 3-8, 3-12, 4-9, 4-11, 5-1, 5-2, 5-3, $5-6,5-7,5-8,5-9,5-11,5-12,6-2,6-5,6-10$, $7-7,7-9,8-8,8-10,8-12,9-3,9-9,9-11)$ |
| 2.NBT.1a 100 can be thought of as a bundle of ten tens-called a "hundred." | Routine 1; 2-1, 2-5, 2-8, 3-10, 4-4, 4-6, 4-7, 4-8, 4-10, 6-6, 6-9, 7-1, 8-3, 8-6, 9-5, 9-6, 9-7 |
| 2.NBT.1b The numbers $100,200,300,400,500,600,700,800,900$ refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones). | Routine 1; 4-4, 4-10, 6-6, 8-3, 8-6, 9-6 $(4-9,4-11,5-5,5-7,6-2,6-9)$ |
| 2.NBT. 2 Count within 1000; skip-count by $5 \mathrm{~s}, 10 \mathrm{~s}$, and 100s. | Routines 1, 2, 3, 5; 1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 1-10, 1-11, 1-12, 2-1, 2-2, 2-4, 2-8, 2-11, 2-12, 4-1, 4-2, 4-5, 5-2, 5-3, 5-4, 5-6, 5-10, 6-1, 6-10, 8-8, 8-9, 8-10, 8-11, 9-1, 9-8, 9-11 <br> (1-9, 2-3, 2-5, 2-6, 2-7, 2-9, 2-10, 2-13, 3-1, $3-2,3-3,3-4,3-5,3-6,3-7,3-8,3-9,3-10$, 3-11, 4-6, 4-7, 5-1, 5-9, 5-11, 7-1, 7-3, 7-6, 7-10) |
| 2.NBT. 3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. | Routines 1, 2, 5, 1-1, 1-2, 1-3, 1-4, 1-7, 1-11, 1-12, 2-1, 2-5, 2-8, 2-10, 2-11, 2-12, 3-4, 3-6, 3-10, 4-4, 4-5, 4-6, 4-7, 4-8, 5-1, 5-4, 5-5, 5-10, 6-4, 6-6, 6-8, 7-8, 8-3, 9-1, 9-5, 9-6, 9-7 <br> (1-9, 1-10, 1-13, 2-3, 3-1, 3-2, 3-3, 3-5, 3-7, 3-8, 3-9, 3-11, 3-12, 4-1, 4-2, 4-3, 4-9, 4-10, 4-11, 5-2, 5-3, 5-6, 5-8, 5-12, 6-2, 6-5, 6-9, 6-10, $7-7,7-9,8-6,8-8,8-10,8-12,9-3)$ |
| 2.NBT. 4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons. | Routine 5; 1-1, 1-2, 1-11, 1-12, 3-4, 3-6, 4-3, 4-5, 4-7, 5-1, 5-5, 5-10, 6-4, 6-8, 7-3, 7-6, 7-7, 9-5 <br> (2-2, 2-4, 2-6, 2-11, 3-2, 3-5, 3-7, 3-8, 3-12, 4-1, 4-2, 4-4, 4-9, 4-11, 5-2, 5-3, 5-4, 5-7, 6-2, 9-2, 9-4, 9-9, 9-11) |

## Content Standards for Mathematics for Grade 2 <br> Use place value understanding and properties of operations to add and subtract. <br> 2.NBT. 5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. <br> 2.NBT. 6 Add up to four two-digit numbers using strategies based on place value and properties of operations.

2.NBT. 7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
2.NBT. 8 Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.
2.NBT. 9 Explain why addition and subtraction strategies work, using place value and the properties of operations.

## Everyday Mathematics Grade 2 Lessons*

Routines 1, 3, 5, 6; 1-6, 1-10, 2-10, 2-11, 2-12, 3-2, 3-3, 3-4, 3-6, 3-8, 3-9, 4-11, 5-3, 5-6, 5-7, 5-8, 5-9, 5-10, 5-11, 6-1, 6-2, 6-3,
6-4, 6-5, 6-6, 6-7, 6-8, 6-9, 7-1, 7-3, 7-4,
7-6, 7-7, 7-8, 7-9, 8-3, 8-4, 8-6, 8-7, 8-9,
8-10, 9-6, 9-7, 9-8, 9-9, 9-11
(1-9, 1-11, 2-5, 2-7, 3-1, 4-2, 4-4, 4-5, 4-7,
5-12, 6-10, 6-11, 7-2, 7-5, 8-1, 8-2, 8-5, 8-8,
8-11, 8-12, 9-1, 9-2, 9-3, 9-4, 9-5, 9-10)
Routine 6; 6-1, 6-7, 7-2, 7-3, 7-4, 7-5, 7-9, 8-9, 9-2, 9-3, 9-4, 9-9
(6-11, 7-7, 7-8, 8-1, 8-2, 8-3, 8-4, 8-11)
Routine 5; 1-2, 1-12, 2-1, 2-8, 3-7, 3-9, 4-3, 4-7, 5-3, 5-4, 5-6, 5-7, 5-8, 5-9, 5-10, 6-1, 6-2, 6-3, 6-4, 6-5, 6-6, 6-7, 6-8, 6-9, 7-1, 7-3, 7-7, 7-9, 8-3, 8-6, 8-7, 8-10, 9-1, 9-6, 9-7, 9-8, 9-11
(3-6, 3-10, 4-2, 4-4, 4-5, 4-8, 4-12, 5-11, 5-12, 8-1, 8-9, 8-11, 9-3, 9-9)

Routines 1, 2, 5; 1-4, 1-5, 1-11, 1-12, 2-2, 2-4, 4-5, 4-8, 4-11, 5-1, 5-6, 5-7, 5-9, 5-11, 6-3, 7-6, 7-8, 7-9, 9-9
(2-6, 2-8, 2-11, 3-6, 3-9, 3-10, 3-11, 4-6, 4-10,
4-12, 5-8, 5-12, 6-2, 6-4, 6-5, 6-6, 6-8, 6-9,
6-10, 7-1, 9-1, 9-3)
1-5, 1-12, 2-1, 2-4, 2-5, 2-6, 2-7, 3-2, 3-6, 3-7, 5-6, 5-11, 6-6, 6-7, 6-8, 7-1, 7-3, 7-4, 8-9, 9-6, 9-7
(7-5, 8-7)

## Measurement and Data 2.MD

## Measure and estimate lengths in standard units.

2.MD. 1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
2.MD. 2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
2.MD. 3 Estimate lengths using units of inches, feet, centimeters, and meters.
2.MD. 4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

## 4-8, 4-9, 4-10, 4-11, 5-8, 6-10, 7-4, 7-5, 7-6, 7-9, 9-4

(3-8, 3-12, 5-1, 5-2, 5-3, 5-4, 5-6, 5-10, 6-1, 6-3, 7-8, 8-2, 8-4, 8-5, 8-7, 8-8, 8-12, 9-1, 9-3)

4-8, 4-10, 4-11, 6-4, 7-4, 7-5, 7-6,
7-8, 7-9
(5-3, 8-5)
4-8, 5-8, 7-4, 7-5, 7-6, 7-9
6-10, 7-4, 7-5, 7-6, 9-4

| Content Standards for Mathematics for Grade 2 | Everyday Mathematics <br> Grade 2 Lessons* |
| :--- | :--- |
| Relate addition and subtraction to length. |  |
| 2.MD.5 Use addition and subtraction within 100 to solve word problems involving lengths that <br> are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations <br> with a symbol for the unknown number to represent the problem. | $\mathbf{6 - 2 , 6}$ 6-3, 6-4, 7-1 |

# Correlation to the Mathematical Processes and Practices 

Everyday Mathematics is a standards-based curriculum engineered to focus on specific mathematical content, processes, and practices in every lesson and activity. The chart below shows complete coverage of each mathematical process and practice in the core program throughout the grade level.

## Mathematical Processes and Practices

## 1. Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

## 2. Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize-to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents-and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

## Everyday Mathematics Goals for Mathematical Processes and Practices

Pages 69, 84, 85, 87, 151, 178, 188, 189, 190, 192, 193, 207, 210, 214, 245, 246, 247, 248, 249, 251, 267, 269, 270, 275, 276, 279, 308, 313, 368, 371, 373, 401, 453, $454,459,469,477,484,490,492,497,503,507,508$, 509, 510, 512, 513, 539, 547, 553, 559, 560, 561, 563, $565,566,567,569,571,575,577,578,579,583,584$, 587, 588, 618, 621, 622, 623, 625, 627, 633, 634, 638, 641, 711, 712, 713, 715, 716, 727, 734, 743, 747, 779, 791, $794,796,815,819,824,827,830,831,833,834,835$, 836, 838, 839

Pages 5, 6, 7, 19, 20, 21, 22, 40, 69, 91, 93, 95, 97, 109, 123, 124, 129, 153, 157, 159, 160, 163, 169, 171, 172, 176, 197, 201, 203, 207, 209, 210, 213, 215, 216, 224, 255, $267,273,283,286,301,305,355,357,358,359,361$, $367,368,369,371,372,375,376,377,378,399,402$, $454,464,465,467,471,483,491,497,498,536,539$, $557,569,575,576,577,581,582,583,584,585,587$, $588,592,593,615,664,676,677,706,720,721,732$, 733, 737, 738, 739, 740, 743, 744, 745, 746, 747, 749, $750,753,755,757,758,759,779,780,781,782,783$, 785, 787, 788, 806, 808, 809, 811, 813, 815, 819, 820, 821, 822, 829, 841

## Mathematical Processes and Practices

## Everyday Mathematics Goals for Mathematical Processes and Practices

## 3. Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and-if there is a flaw in an argument-explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

## 4. Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

Pages 27, 63, 65, 67, 111, 165, 171, 176, 177, 181, 183, 201,
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$452,518,535,565,569,571,615,617,618,633,649$,
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## Mathematical Processes and Practices

## Everyday Mathematics Goals for

 Mathematical Processes and Practices
## 5. Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

## 6. Attend to precision.

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

Pages 11, 12, 14, 15, 31, 32, 34, 35, 59, 72, 105, 130, 151, 153, 154, 155, 163, 197, 199, 261, 264, 267, 305, 307, 309, $311,335,339,343,345,346,381,383,384,393,396$, 399, 447, 451, 455, 459, 460, 465, 481, 507, 508, 509, $510,512,542,554,569,571,572,575,582,583,584$, 585, 587, 588, 589, 593, 631, 637, 638, 639, 640, 641, $643,646,647,650,651,652,653,670,727,735,753$, 800, 802, 803, 848, 849

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## Mathematical Processes and Practices

## 7. Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see $7 \times 8$ equals the well remembered $7 \times 5+7 \times 3$, in preparation for learning about the distributive property. In the expression $x^{2}+9 x+14$, older students can see the 14 as $2 \times 7$ and the 9 as $2+7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective.
They can see complicated things, such as some algebraic expressions, as single solving problems. They also can step back for an overview and shift perspective.
They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5-3(x-y)^{2}$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers $x$ and $y$.

## 8. Look for and express regularity in repeated reasoning.

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through $(1,2)$ with slope 3 , middle school students might abstract the equation $(y-2) /(x-1)=3$. Noticing the regularity in the way terms cancel when expanding $(x-1)(x+1),(x-1)\left(x^{2}+x+1\right)$, and $(x-1)\left(x^{3}+x^{2}+x+1\right)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process and practice, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

## Everyday Mathematics Goals for Mathematical Processes and Practices

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## Mastery Expectations

In Second Grade, Everyday Mathematics focuses on procedures, concepts, and applications in four critical areas:

- Understanding of base-10 notation.
- Building fluency with addition and subtraction.
- Using standard units of measure.
- Describing and analyzing shapes.

| Standards | First Quarter <br> Benchmark Expectations <br> for Units 1 and 2 | Second Quarter <br> Benchmark Expectations <br> for Units 3 and 4 | Third Quarter <br> Benchmark Expectations <br> for Units 5 and 6 | Fourth Quarter <br> Benchmark Expectations <br> for Units 7 through 9 |
| :--- | :--- | :--- | :--- | :--- |
| 2.0A.1 | Write an addition number <br> story that matches a <br> picture, write a number <br> model to represent the <br> story, and solve the <br> story. | Add and subtract within <br> 20 to solve one-step <br> word problems involving <br> situations of adding <br> to, taking from, putting <br> together, and taking <br> apart by using drawings <br> or equations to represent <br> the problem. | Add and subtract within <br> 100 to solve one-step <br> word problems involving <br> situations of adding <br> to, taking from, putting <br> together, and taking <br> apart, e.g. by using <br> drawings oquations to <br> represent the problem. | t Use addition and <br> subtraction within 100 <br> to solve one- and two- <br> step word problems <br> involving situations of <br> adding to, taking from, <br> putting together, taking <br> apart, and comparing, <br> with unknowns in all <br> positions, e.g., by using <br> drawings and equations <br> with a symbol for the |
| unknown number to |  |  |  |  |
| represent the problem. |  |  |  |  |


| Standards | First Quarter <br> Benchmark Expectations for Units 1 and 2 | Second Quarter <br> Benchmark Expectations for Units 3 and 4 | Third Quarter <br> Benchmark Expectations for Units 5 and 6 | Fourth Quarter <br> Benchmark Expectations for Units 7 through 9 |
| :---: | :---: | :---: | :---: | :---: |
| 2.NBT. 1 | Understand that the 2-digits of a 2-digit number represent amounts of tens and ones. | Understand that three nonzero digits of a 3-digit number represent amounts of hundreds, tens, and ones. | Understand that the three digits of a threedigit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: | Ongoing practice and application. |
| 2.NBT.1a | Demonstrate an understanding of exchanging 10 and 1 s using manipulatives. | Represent 3-digit numbers that are multiples of 100 using base-10 blocks. | Understand that 100 can be thought of as a bundle of ten tenscalled a "hundred." | Ongoing practice and application. |
| 2.NBT.1b | Understand that the numbers 10, 20 . . . 90 refer to some tens and no ones. | Represent 3-digit numbers that are multiples of 100 using base-10 blocks. | Understand that the numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones). | Ongoing practice and application. |
| 2.NBT. 2 | Count by 1 s to at least 120; skip count by 5 s using a calculator; and skip count by 10s to at least 200. | Count by 1s within 500; skip count by 5 s and 10 s past 200; count by 100 to 900 . | Count within 1000; skip-count by $5 \mathrm{~s}, 10 \mathrm{~s}$, and 100s. | Ongoing practice and application. |
| 2.NBT. 3 | Read and write numbers to at least 120 using base-10 numerals and numbers to 10 using number names. | Read and write numbers to at least 600 using base-10 numerals. Read and write numbers to 20 using number names. Read and write numbers in expanded form to 99 without manipulatives. Read and write numbers in expanded form to 999 using base-10 blocks. | Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. | Ongoing practice and application. |
| 2.NBT. 4 | No expectations for mastery at this point. | Compare two 3-digit numbers with nonzero digits based on meanings of the hundreds, tens, and ones digits, using <, >, and = symbols to record the results of comparisons. | Compare two threedigit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons. | Ongoing practice and application. |

Instruction concludes for this standard during this quarter (but the standard may be revisited for review, practice, or application to promote long-term retention, applications, generalization, and transfer).
Mastery expected during this quarter.

| Standards | First Quarter <br> Benchmark Expectations for Units 1 and 2 | Second Quarter <br> Benchmark Expectations for Units 3 and 4 | Third Quarter <br> Benchmark Expectations for Units 5 and 6 | Fourth Quarter <br> Benchmark Expectations for Units 7 through 9 |
| :---: | :---: | :---: | :---: | :---: |
| 2.NBT. 5 | Add and subtract within 100 using a number grid, a number line, or counters. | Add within 100 using a number grid, number line, or counters, and use the inverse relationship between addition and subtraction to write fact families and solve addition and subtraction facts. | Add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction, with or without tools. | Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. |
| 2.NBT. 6 | No expectations for mastery at this point. | No expectations for mastery at this point. | No expectations for mastery at this point. | Add up to four two-digit numbers using strategies based on place value and properties of operations. |
| 2.NBT. 7 | Add and subtract within 100 using base-10 blocks, number grids and number lines. | Add and subtract within 100 using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; understand that in adding or subtracting 2-digit numbers, one adds or subtracts tens and tens, ones and ones; understand that sometimes it is necessary to compose and decompose tens. | Add and subtract within 100 using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; understand that in adding or subtracting 3-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; understand that sometimes it is necessary to compose and decompose hundreds. | Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. |
| 2.NBT. 8 | Mentally add 10 and subtract 10 from a 2-digit number. | Mentally add 10 to and subtract 10 from a given number 100-900. <br> Mentally add and subtract 100 to a given number that is a multiple of 100 to 900 . | Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900. | Ongoing practice and application. |
| 2.NBT. 9 | Understand addition as putting together and subtraction as taking apart. | Explain addition and subtraction fact strategies such as Making-10, Near Doubles, Turn-Around Rule for Addition, Think Addition, Counting Up, and Counting Back. | Explain why addition and subtraction strategies work using place value. | Explain why addition and subtraction strategies work, using place value and the properties of operations. |


| Standards | First Quarter <br> Benchmark Expectations for Units 1 and 2 | Second Quarter <br> Benchmark Expectations for Units 3 and 4 | Third Quarter <br> Benchmark Expectations for Units 5 and 6 | Fourth Quarter Benchmark Expectations for Units 7 through 9 |
| :---: | :---: | :---: | :---: | :---: |
| 2.MD. 1 | No expectations for mastery at this point. | Select an appropriate tool to measure inches and centimeters. | Measure the length of an object by selecting and using appropriate tools to measure inches and centimeters. | Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. |
| 2.MD. 2 | No expectations for mastery at this point. | Measure the length of an object twice, using inches and centimeters for the two measurements. | Measure the length of an object twice, using inches and centimeters for the two measurements and describe how the two measurements relate to the size of the unit. | Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen. |
| 2.MD. 3 | No expectations for mastery at this point. | No expectations for mastery at this point. | No expectations for mastery at this point. | Estimate lengths using units of inches, feet, centimeters, and meters. |
| 2.MD. 4 | No expectations for mastery at this point. | No expectations for mastery at this point. | Measure to determine how much longer one object is than another by lining up both objects and measuring the part that does not overlap in inches and centimeters. | Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. |
| 2.MD. 5 | No expectations for mastery at this point. | No expectations for mastery at this point. | Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units using drawings. | Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. |
| 2.MD. 6 | Represent numbers from 1 through 10 as lengths from 0 on a number line. | Represent numbers from 0 to 20 as lengths on a number line. Represent whole-number sums and differences within 20 on a number line. | Represent whole numbers as lengths from 0 on a number line. Represent sums within 100 on an number line. | Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers $0,1,2, \ldots$, and represent whole-number sums and differences within 100 on a number line diagram. |

Instruction concludes for this standard during this quarter (but the standard may be revisited for review, practice, or application to promote long-term retention, applications, generalization, and transfer).
Mastery expected during this quarter.

| Standards | First Quarter <br> Benchmark Expectations for Units 1 and 2 | Second Quarter <br> Benchmark Expectations for Units 3 and 4 | Third Quarter <br> Benchmark Expectations for Units 5 and 6 | Fourth Quarter Benchmark Expectations for Units 7 through 9 |
| :---: | :---: | :---: | :---: | :---: |
| 2.MD. 7 | No expectations for mastery at this point. | Tell and write time using analog and digital clocks to the nearest half hour. | Draw events that typically occur in the a.m. and p.m. hours. | Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. |
| 2.MD. 8 | Solve word problems involving dimes and pennies. | Solve word problems involving a single type of coin (either quarters, dimes, nickels, or pennies); use $\$$ symbol appropriately. | Solve word problems involving quarters, dimes, nickels, and pennies to show exact change up to \$1; use ¢ symbol appropriately. | Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and \$ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have? |
| 2.MD. 9 | No expectations for mastery at this point. | No expectations for mastery at this point. | Generate measurements by measuring lengths of objects to the nearest inch, centimeter, or foot. | Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in wholenumber units. |
| 2.MD. 10 | No expectations for mastery at this point. | No expectations for mastery at this point. | Draw a picture graph to represent data from a tally chart. | Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple puttogether, take-apart, and compare problems using information presented in a bar graph. |
| 2.6 .1 | Recognize 3- and 4 -sided shapes. | Recognize 3- and 4 -sided shapes. | Draw 3-, 4-, 5-, and 6 -sided shapes; sort shapes and identify common attributes. | Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. |


| Standards | First Quarter <br> Benchmark Expectations <br> for Units 1 and 2 | Second Quarter <br> Benchmark Expectations <br> for Units 3 and 4 | Third Quarter <br> Benchmark Expectations <br> for Units 5 and 6 | Fourth Quarter <br> Benchmark Expectations <br> for Units 7 through 9 |
| :--- | :--- | :--- | :--- | :--- |
| 2.G.2 | No expectations for <br> mastery at this point. | Use same-size square <br> tiles to partition a <br> rectangle into rows and <br> columns and count to <br> find the total number of <br> them. | Use same-size square <br> tiles to partition a <br> rectangle into rows and <br> columns and count to <br> find the total number of <br> them. | E Partition a rectangle <br> into rows and columns of <br> same-size squares and <br> count to find the total <br> number of them. |
| 2.G.3 | No expectations for <br> mastery at this point. | Partition shapes into two <br> equal parts and describe <br> the shares using the <br> words halves and half of. | Partition shapes into two <br> equal parts and describe <br> the shares using the <br> words halves and half of. | A Partition circles and <br> rectangles into two, <br> three, or four equal <br> shares, describe the <br> shares using the words <br> halves, thirds, half of, <br> a third of, enc., and <br> describe the whole as <br> two halves, three thirds, <br> four fourths. Recognize <br> that equal shares of <br> identical wholes need <br> not have the same <br> shape. |

Instruction concludes for this standard during this quarter (but the standard may be revisited for review, practice, or application to promote long-term retention, applications, generalization, and transfer).
H
Mastery expected during this quarter.

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## Focus

In Unit 2, children review and extend fact strategies and program routines.

## Major Clusters

2.0A.B Add and subtract within 20
2.NBT.B Use place value understanding and properties of operations to add and subtract.

## Focus

In Unit 3, children focus on strategies for solving subtraction facts.

## Major Clusters

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2.NBT.B Use place value understanding and properties of operations to add and subtract.
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## Focus

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Major Clusters
2.NBT.A Understand place value.
2.MD.A Measure and estimate lengths in standard units.

## Supporting Clusters

2.MD.C Work with time and money.

Focus

In Unit 5, children review addition and subtraction problems in the context of money and number stories. They learn strategies for mentally adding and subtracting 10 and 100.

## Major Clusters

2.0A.A Represent and solve problems involving addition and subtraction.
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## Major Clusters

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## Major Clusters

2.NBT.B Use place value understanding and properties of operations to add and subtract.
2.MD.A Measure and estimate lengths in standard units.

## Supporting Clusters

2.MD.D Represent and interpret data.

## Focus

In Unit 8, children explore $2-$ and 3-dimensional shapes and their attributes. At the end of the unit, they explore strategies for determining the total number of objects in equal groups and rectangular arrays.

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Focus
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## Major Clusters

2.NBT.A Understand place value.
2.NBT.B Use place value understanding and properties of operations to add and subtract.

## Supporting Clusters

2.0A.C Work with equal groups of objects to gain foundations for multiplication
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## Unit 2 Organizer <br> Fact Strategies

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*The standards listed here are addressed in the Focus of each lesson. For all the standards in a lesson, see the Lesson Opener.

## Focus

In this unit, children will focus on addition and subtraction.

## Major Clusters

2.0A.B Add and subtract within 20.
2.NBT.B Use place value understanding and properties of operations to add and subtract.

## Supporting Clusters

2.0A.C Add and subtract within 20.
2.MD.C Use place value understanding and properties of operations to add and subtract.

Process and Practice Standards
SMP7 Look for and make use of structure.
SMP8 Look for and express regularity in repeated reasoning.

## Coherence

The table below describes how standards addressed in the Focus parts of the lessons link to the mathematics that children have done in the past and will do in the future.

|  | $\quad$ Links to the Past |
| :---: | :--- |
| 2.OA.2 | In Unit 1, children played Fishing for 10 to review their recall of <br> addition combinations of 10. In Grade 1, children added and <br> subtracted within 20 and demonstrated fluency for addition and <br> subtraction within 10. |
| 2.0A.3 | In Unit 1, children explored even and odd numbers using concrete <br> and visual models. In Grade 1, children wrote number models to <br> represent pictures of real-world items with paired features. |
| 2.NBT.5 | In Unit 1, children used addition and subtraction to write equivalent <br> names for numbers. In Grade 1, children used concrete models or <br> drawings and strategies based on place value to add within 100 <br> using a 2-digit number and a 1-digit number, and added a 2-digit <br> number and a multiple of 10. They subtracted multiples of 10 in the <br> range of 10-90 from multiples of 10 in the range of 10-90. |
| 2.NBT.9 | In Unit 1, children found four missing numbers on a number grid <br> and explained how the patterns they noticed helped them solve <br> the problem. In Grade 1, children related strategies used to solve <br> addition and subtraction problems to a written method and <br> explained the reasoning used. |
| In Unit 1, children used number lines to add teen numbers to 1-digit <br> numbers and base-10 blocks to add 100s, 10s, and 1s. In Grade 1, <br> children used concrete models or drawings and strategies based <br> on place value to add within 100 using a 2-digit number and a <br> 1-digit number, and added a 2-digit number and a multiple of 10. <br> They subtracted multiples of 10 in the range of 10-90 from <br> multiples of 10 in the range of 10-90. |  |

## Links to the Future

In Unit 3, children will explore how thinking about addition facts can help them solve subtraction facts. In Grade 3, children will apply their knowledge of basic addition and subtraction facts to solve addition and subtraction problems within 1,000.

Through Unit 4, children will practice determining whether a number of objects in a group is odd or even and express an even number as a sum of two equal addends. In Unit 9, children will apply their knowledge of even numbers to equal-groups stories. In Grade 3, children will identify and explain arithmetic patterns, such as observing that 4 times a number is always even, and will explain why 4 times a number can be decomposed into two equal addends.

Throughout Grade 2, children will represent and solve problems involving addition and subtraction within 100. In Unit 6, children will be introduced to partial-sums addition and in Unit 9 they will be introduced to expand-and-trade subtraction. In Grade 3, children will add and subtract within 1,000 using strategies and algorithms.

Throughout Grade 2, children will represent and solve problems within 1,000 using concrete models or drawings and strategies based on place value. In Unit 5, children will be introduced to open number lines and diagrams for solving problems. In Unit 6, children will use base-10 blocks to solve problems. In Grade 3, children will add and subtract within 1,000 using strategies and algorithms.

Throughout Grade 2, children will make written records of their thinking, which will help them understand and explain why the strategies work. In Grade 3, children will look for arithmetic patterns and explain them using properties of operations.

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## Notes

## 2-13 Assessment

 Unit 2 Progress Check
## Lesson 2-13 is an assessment

## lesson. It includes:

- Self Assessment
- Unit Assessment
- Optional Challenge assessment
- Cumulative Assessment
- Suggestions for adjusting the assessments.

Go Online:

## Evaluation Quick Entry

Use this tool to record children's performance on assessment tasks.

Data Use the Data Dashboard to
view children's progress reports.

## Unit 2 Materials

| Lesson | Math Masters | Activity Cards | Manipulative Kit | Other Materials |
| :---: | :---: | :---: | :---: | :---: |
| 2-1 | pp. 27; TA3; G9-G14 | 20 | toolkit bills; per partnership: one 6-sided die | scissors; envelope, paper clip, or rubber band; per partnership: 20 pennies, 10 nickels; crayons or markers; per group: large paper clip, one \$1 bill, one sheet of paper labeled "Bank"; per player: 7 pennies, 5 nickels, 5 dimes, 4 quarters |
| 2-2 | pp. 28; TA7 | 21 | Quick Look Cards 78, 82, and 102; 8 counters | slate; craft stick |
| 2-3 | pp. 29; TA6; G5; <br> Assessment Handbook, pp. 98-99 | 22-23 | Quick Look Cards 79, 84, 86, 90, 92, 102, and 121; per partnership: 4 each of number cards 0-10 | Class Data Pad chart labeled "Doubles" and "Combinations of 10"; 20 pennies; calculator |
| 2-4 | pp. 30-33; TA6; G3 | 6 | Quick Look Cards 87, 88, 91, 95, 98, 99, and 116; counters (optional); per group: one 6 -sided die | slate; game markers (such as counters or pennies); per partnership: 10 pennies or counters; green and blue crayons |
| 2-5 | pp. 34-35; G14; per partnership: p. G15 | 24 | Quick Look Cards 79, 81, 100, and 102; toolkit bills; one 6 -sided die; 1 each of number cards 1-9 | slate; Class Data Pad; crayons or markers |
| 2-6 | pp. 36-37; TA8 | 25 | Quick Look Cards 76, 88, and 119; calculator; per partnership: 20 toolkit pennies; 1 each of number cards 1-9 | slate; 1 domino |
| 2-7 | pp. 38-40; TA5 |  |  | Standards for Mathematical Process and Practice Poster; Guidelines for Discussions Poster; selected samples of children's work; children's work from Day 1 |
| 2-8 | pp. 41-43; 44 (2 copies); 45; TA2 (3 copies); TA9 or TA10; G14 | 26-29 | Class Number Line; geoboard; rubber bands; toolkit bills; 10 counters; per partnership: 1 set of double-9 dominoes, one 6-sided die; per group: 1 each of number cards $1-10$ | completed Math Masters, pp. 42-44 from Exploration B |
| 2-9 | pp. 41; 46; TA6 | 30 | per partnership: 1 each of number cards 1-20; 20 counters | slate |
| 2-10 | pp. 47-49; TA6 <br> (optional); TA11-TA12 | $\begin{aligned} & 6 ; \\ & 31-32 \end{aligned}$ | 20 counters (optional); Quick Look Cards 86, 99, and 103; per partnership: 1 each of number cards 1-20 | per partnership: 10 pennies or counters |
| 2-11 | pp. 50-52; G16 | 19 | per group: 4 each of number cards 0-10, 1 each of number cards $11-20$, 1 or more sets of double-9 dominoes |  |
| 2-12 | $\begin{aligned} & \text { pp. 53-56; TA13-TA14; } \\ & \text { G16 } \end{aligned}$ | 33-34 | per group: 4 each of number cards 0-10, 1 each of number cards 11-20 | picture frame and eyeglasses (or pictures of them); Pattern-Block Template (optional) |
| 2-13 | pp. 57-60; Assessment Handbook, pp. 11-16 |  |  |  |

Literature Link Optional Books:
Two of Everything: A Chinese Folktale
One Odd Day; My Even Day

[^1]
## Assessment Check-In

These ongoing assessments offer an opportunity to gauge children's performance on one or more of the standards addressed in that lesson.

Evaluation Quick Entry
Record children's performance online.


Data View reports online to see children's progress towards mastery.

| Lesson | Task Description | Content Standards | Processes and Practices |
| :---: | :---: | :---: | :---: |
| 2-1 | Count combinations of \$1, \$10, and \$100 bills. | 2.NBT.1, 2.NBT.7, <br> 2.MD. 8 | SMP5 |
| 2-2 | Write an addition number story and a number model to solve. | 2.OA. 1 | SMP2 |
| 2-3 | Demonstrate automaticity with doubles addition facts and combinations of 10. | 2.0A. 2 |  |
| 2-4 | Use double ten frames and the making-10 strategy to solve addition facts. | 2.0A. 2 | SMP2 |
| 2-5 | Use doubles to help solve nearby facts. | 2.0A. 2 |  |
| 2-6 | Recall and understand turn-around facts. | 2.OA. 2 | SMP7 |
| 2-7 | Write a number story to explain a number model. | 2.OA. 1 | SMP8 |
| 2.9 | Identify odd and even numbers. | 2.0A.2, 2.0A.3 |  |
| 2-10 | Identify and write equivalent names for numbers. | 2.OA.2, 2.NBT. 3 | SMP2 |
| 2-11 | Generate equivalent names for a given number. | 2.OA.2, 2.NBT. 3 |  |
| 2-12 | Solve Frames-and-Arrows problems. | 2.NBT.2, 2.NBT. 5 | SMP7, SMP8 |

## 1 Virtual Learning Community

vlc.uchicago.edu
While planning your instruction for this unit, visit the Everyday Mathematics Virtual Learning Community. You can view videos of lessons in this unit, search for instructional resources shared by teachers, and ask questions of Everyday Mathematics authors and other educators. Some of the resources on the VLC related to this unit include:

EM4: Grade 2 Unit 2 Planning Webinar
This webinar provides a preview of the lessons and content in this unit. Watch this video with your grade-level colleagues and plan together under the guidance of an Everyday Mathematics author.

## Subtraction and the Turn-Around Rule: An Open Response and Reengagement Lesson

Watch one classroom work through an Open Response and Reengagement lesson. Explore the introduction and reengagement in practice.

## Discovering Turn-Around Facts with Dominoes

Second grade children use dominoes to explore and discuss addition facts.
For more resources, go to the VLC Resources page and search for Grade 2.

## IIJ Spiral Towards Mastery

The Everyday Mathematics curriculum is built on the spiral, where standards are introduced, developed, and mastered in multiple exposures across the grade. Go to the Teacher Center at my.mheducation.com to use the Spiral Tracker.

Spiral Towards Mastery Progress This Spiral Trace outlines instructional trajectories for key standards in Unit 2. For each standard, it highlights opportunities for Focus instruction,
 Warm Up and Practice activities, as well as formative and summative assessment. It describes the degree of mastery-as measured against the entire standard-expected at this point in the year.

## Operations and Algebraic Thinking



Progress Towards Mastery By the end of Unit 2, expect children to write an addition number story that matches a picture, write a number model to represent their story, and solve their story.

Full Mastery of 2.0A. 1 expected by the end of Unit 8.


Progress Towards Mastery By the end of Unit 2, expect children to know doubles and combinations-of-10 addition facts.

Full Mastery of 2.0A.2 expected by the end of Unit 9.


Progress Towards Mastery By the end of Unit 2, expect children to determine whether a group of objects (up to 20 ) has an even or odd number of members with the aid of manipulatives.

Full Mastery of 2.0A.3 expected by the end of Unit 4.

## Number and Operations in Base Ten



Progress Towards Mastery By the end of Unit 2, expect children to understand that the two digits of a 2-digit number represent amounts of tens and ones.

Full Mastery of 2.NBT. 1 expected by the end of Unit 7.


Progress Towards Mastery By the end of Unit 2, expect children to count by 1s past 120 and skip count by 5 s and 10 s to at least 200.

Full Mastery of 2.NBT. 2 expected by the end of Unit 5.


Progress Towards Mastery By the end of Unit 2, expect children to read and write numbers to at least 120 using base- 10 numerals and numbers to 20 using number names.

Full Mastery of 2.NBT. 3 expected by the end of Unit 6.

## 2.NBT. 5



Progress Towards Mastery By the end of Unit 2, expect children to add within 100 using a number grid, a number line, or counters.

Full Mastery of 2.NBT. 5 expected by the end of Unit 9.

## Mathematical Background: Content

Place Value (Lesson 2-1)
In the base-10 number system the value of a digit in a given place-value position is 10 times as great as the value of the same digit in the place to its right. For example, the value of 2 in 72 is 2 ones, or 2 . But the value of 2 in 25 is 2 tens, or 20 (which is 10 times as much as 2 ). Similarly, the value of 2 in 231 is 2 hundreds, or 200 (which is 10 times as much as 20). In Grade 1 children began exploring these relationships by bundling objects into groups of 10 and making exchanges, such as trading 1 ten for 10 ones. In Grade 2 children extend their understanding of place value to the hundreds place.
In Lesson 2-1 children count collections of $\$ 100$, $\$ 10$, and $\$ 1$ bills. 2.MD. 8 They make exchanges among bills to illustrate that a $\$ 10$ bill has the same value as ten $\$ 1$ bills, and a $\$ 100$ bill has the same value as ten $\$ 10$ bills. 2.NBT.1a The Exchange Game is introduced as a way

Standards and Goals for Mathematical Content

Because the standards within each strand can be broad, Everyday Mathematics has unpacked each standard into Goals for Mathematical Content GMC. For a complete list of Standards and Goals, see page EM1. to practice counting and making exchanges with money. Later in the year children will apply their understanding of place value to develop and explain strategies for multidigit addition and subtraction. 2.NBT.7, 2.NBT. 9

## - Number Stories (Lesson 2-2)

Number stories involve numbers and one or more explicit or implicit questions. For example: Peter had 5 marbles. Sammie gave him 6 more. How many does he have now? Peter now has 11 marbles. Addition number stories illustrate the different uses of addition in everyday life. Most instances of addition can be categorized as parts-and-total, change-to-more, or comparison situations. Parts-and-total situations involving addition are also known as "putting together" situations. Change-to-more is also known as "adding to." In Lesson 2-2 children write and solve their own number stories and represent the stories with drawings and number models. 2.OA.1 Children are not expected to categorize number stories at this time. Later lessons will include practice with all types of situations that involve addition.
Number stories also provide contextual practice with facts and multidigit computation. 2.OA.2, 2.NBT. 5 Everyday Mathematics uses number stories as a way to expand children's problem-solving skills. When they solve number stories, children are required to make sense of the situation, decide which operation to use, and then carry out the computation.


## 

## Unit 2 Vocabulary

addend
addition number story arrow; arrow rule combinations of 10 divide doubles; doubles fact equal addends equivalent
fourths
frame
Frames-and-Arrows diagram half; halves helper fact
label making 10 name-collection box
near-doubles strategy number model number sentence number story sum; total trade turn-around rule unit box

## Helper Facts (Lessons 2-3 through 2-5)

An important part of fluency with addition facts is the ability to derive an unknown fact from a known fact. Every unknown addition fact can be derived using either doubles facts or combinations of 10 . Automaticity with doubles and combinations of 10 is therefore essential before children can become fluent with all of their facts. Children began building fluency with these key groups of facts in Unit 1. In Lesson 2-3 the Quick Looks routine is used to help children solidify their knowledge of these facts. 2.OA.2 Quick Look Cards showing identical dot patterns in each frame of a double ten frame are used to help children think about doubles, and cards that show the dots aligned to suggest combining into a single ten frame are used to help children recognize combinations of 10 .

In Lessons 2-4 and 2-5 children use doubles and combinations of 10 as "helper facts" to help them solve other facts. Quick Look Cards showing near-identical patterns of dots on the two frames are used to help children think of facts as near doubles. For example, the first card shown in the margin can help children think of $4+5$ as one more than the easier double $4+4$. Similarly, Quick Look Cards showing the dots aligned to suggest combining into a single ten frame are used to help children think about making 10 to solve an unknown fact. The second card shown in the margin can help children think of $8+3$ as 10 plus one more. Children are encouraged to explain their thinking as they use helper facts to solve unknown facts. 2.NBT. 9

## - The Commutative Property of Addition (Lesson 2-6)

According to the Commutative Property of Addition, for any two numbers $a$ and $b, a+b=b+a$. In Second Grade Everyday Mathematics, a more child-friendly name-the turn-around rule for addition-is used with children. In Lesson 2-6 children discover this rule by examining related pairs of addition facts that are shown on double-9 dominoes. They restate the rule in their own words. Children apply their knowledge of this rule in several ways later in the year. They use it to help them develop automatic recall of all the addition facts, using the reasoning that if they already know one fact, they also know its turn-around fact. 2.OA.2 They also apply the rule to larger numbers to help them develop strategies for multidigit addition and explain why the strategies work. 2.NBT.5, 2.NBT.7, 2.NBT. 9

Quick Look Card 81


Quick Look Card 94


## Professional Development

## - Even and Odd Numbers (Lessons 2-8 and 2-9)

Children explored even and odd numbers in Unit 1. In Lessons 2-8 and 2-9 they build on their understanding of these numbers and connect even numbers to doubles facts. In Lesson 2-8 children sort dominoes according to whether the dominoes show two even numbers, two odd numbers, or one even and one odd number. They record the total number of dots on each domino and note that the sum of two even numbers or two odd numbers is always even. In Lesson 2-9 children connect this idea to doubles facts, noting that a doubles fact always has an even sum. They are introduced to a new game, Evens and Odds, in which they write even numbers as the sum of two equal addends and odd numbers as the sum of two equal addends plus or minus 1.2.0A.3 As children make connections between even numbers and doubles facts and explore how even and odd numbers are related, they build new strategies for solving facts into their repertoire. 2.0A. 2

## Equivalent Names for Numbers (Lessons 2-10 and 2-11)

Children's work with equivalent names for numbers continues in Unit 2 with name-collection boxes, a program routine introduced in First Grade Everyday Mathematics, and the introduction of a new game. In Lesson 2-10 children use name-collection boxes to collect equivalent names for numbers. A name-collection box is an open box with a tag at the top identifying the number whose names are collected in the box. In Lesson 2-11 children play Name That Number by using number cards to create equivalent names for a target number. Creating and identifying equivalent names for numbers provides practice with basic facts and helps children see numbers flexibly, which provides a foundation for later development of addition and subtraction strategies. 2.OA.2, 2.NBT. 5

## - Frames and Arrows (Lesson 2-12)

Lesson 2-12 introduces another program routine: Frames and Arrows. Frames-and-Arrows diagrams consist of a sequence of frames connected by arrows. Each frame contains a number; each arrow represents a rule that determines which number goes in the next frame. The numbers in a Frames-and-Arrows diagram form a sequence; the arrow rule(s) represent the mathematical structure that generates the sequence. Children solve several types of Frames-and-Arrows problems. In some cases they use a given rule to fill in empty frames, which provides practice with skip counting and the relationship between addition and subtraction. 2.NBT.2, 2.NBT.5 In other cases they use completed frames to derive the rule (see discussion of Mathematical Process and Practice 8 on page 149). Because Frames-andArrows problems come in several types, children must first decide what needs to be done and then perform the operations, which provides valuable practice with problem solving.


## 5

## HH

$2+3$
9-4
cinco
five

## Mathematical Background: Process and Practice

See below for some of the ways that children engage in SMP7 Look for and make use of structure and SMP8 Look for and express regularity in repeated reasoning through the mathematical content of Operations and Algebraic Thinking and Number and Operations in Base-Ten.

## Standard for Mathematical Process and Practice 7

To develop strategies for solving addition facts in Unit 2, children first examine addition facts and "look closely to discern a pattern or structure," as described in Standard for Mathematical Process and Practice 7.

In Lesson 2-3 children look for patterns in a list of facts and sort the facts into two categories: combinations of 10 and doubles facts. In several other lessons in this unit, children use the facts in these categories as "helper facts" to help them solve other facts.

In Lesson 2-6 children note that two facts with the same addends always have the same sum, even when the order of the addends is reversed. They generalize this pattern into a rule (see discussion of Mathematical Process and Practice 8 below) and then discuss how the rule can be used to help them solve facts later.
In Lesson 2-9 children discover that the ones digits of consecutive even numbers and consecutive odd numbers occur in repeating patterns. They use these patterns to help them determine whether numbers are even or odd. These examples illustrate how children "look for structures such as categories, patterns, and properties" and then "use structures to solve problems and answer questions" throughout Unit 2. GMP7.1, GMP7.2

## Standard for Mathematical Process and Practice 8

Mathematical Process and Practice 8 states that mathematically proficient students "notice if calculations are repeated, and look both for general methods and for shortcuts." In Lesson 2-6 children look at pairs of related addition facts and note that two facts with the same addends always have the same sum, regardless of the order of the addends (see discussion of Mathematical Process and Practice 7 above). They make arguments for why this pattern will hold for any two whole numbers and generalize the pattern into the turn-around rule for addition. (Everyday Mathematics uses this child-friendly name until children are ready for the more formal Commutative Property of Addition later on.) They discuss how the general rule can be used to help them solve addition facts.

In Lesson 2-12 children explore the Frames-and-Arrows program routine. In one variation of this routine they examine a sequence of numbers and look for regularity in how the numbers are changing. Children learn to express this regularity as an arrow rule and use the rule to complete and extend the sequence. The Frames-and-Arrows routine provides ongoing practice that allows children to "create and justify rules, shortcuts, and generalizations." GMP8. 1

Standards and Goals for Mathematical Process and Practice

SMP7 Look for and make use of structure.
GMP7.1 Look for mathematical structures such as categories, patterns, and properties.
GMP7.2 Use structures to solve problems and answer questions.
SMP8 Look for and express regularity in repeated reasoning.
GMP8.1 Create and justify rules, shortcuts, and generalizations.

[^2]
## Addition Number Stories

## Overview Children write and solve addition number stories.

## 1) Warm Up ${ }^{15-20 \mathrm{~min}}$ <br> Mental Math and Fluency <br> Daily Routines <br> Children complete daily routines. <br> Focus <br> 20-30 min

Materials
Quick Look Cards 102, 78, and 82

See pages 4-43.

## Standards

## Focus Clusters

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
2.OA. 2

See pages xiv-xvii.

| Math Message <br> Children solve an addition number story. | 2.OA.1, 2.OA.2 |  |
| :--- | :--- | :--- |
| Representing Number Stories <br> Children are introduced to unit boxes and number <br> models. | 2.OA.1, 2.OA.2 |  |
| Creating and Solving Addition Number Stories <br> Children create addition number stories and represent <br> them with unit boxes and number models. | 2.OA.1, 2.OA.2 |  |
| Writing Number Stories <br> Children write and solve number stories about a picture. | Math Journal 1, p. 19 | SMP2 |
| Assessment Check-In See page 160. <br> Expect most children to be able to write an addition <br> number story to match a picture, write a number <br> model to represent their number story, and solve <br> their number story. | Math Journal 1, p. 19 |  |

## 3 Preatice $10-20 \mathrm{~min}$

## Completing Number-Grid Puzzles

Math Journal 1, p. 20
2.NBT.2, 2.NBT. 8

Children fill in missing numbers on number-grid puzzles.

## Math Boxes 2-2

Children practice and maintain skills.
Home Link 2-2
Homework Children write an addition number story.

Math Journal 1, pp. 21 and inside back cover

Math Masters, p. 28

See page 161.
2.OA.1, 2.OA. 2

## 041 Differentiation Options

## Eng|ish Language Learner

Beginning ELL To prepare children for writing number stories, have them look at the picture on journal page 19 and respond to the following questions (based on the Visual Teaching Strategies method):
-What do you think is going on in the picture?
-What do you see in the picture that makes you say that?
-What else do you see in the picture?
To provide everyday vocabulary support, label the items in the picture to help beginning English language learners build a bank of words for use in their own number stories.


## Enrichment $\quad$ 5-15 min PARTNER INDEPENDEN <br> Creating Addition Number Stories <br> 2.OA.1, SMP2

Activity Card 21;
Math Masters, p. TA7
Children further explore addition number stories by creating their own. Stories can be collected and assembled into a class book. Encourage children to write both parts-and-total and change-to-more number stories. GMP2.1


## Putting Groups Together

2.OA.1, 2.OA.2, SMP2
slate, craft stick, 8 counters
For experience using a concrete model to solve number stories, children use counters to model addition number stories on their slates. Show children how to use a craft stick to divide their slates into two sections. Then tell a number story. For example: I have 5 white shells and 3 pink shells. How many shells do I have all together?

Guide children to place 5 counters on one side of the craft stick and 3 counters on the other. They then remove the craft stick and use it to sweep the counters together. They count the total. Ask: How many shells do I have all together? 8 shells Have children retell the number story and answer to a partner.

Repeat with different number stories as needed, varying parts-and-total

## Extra Practice <br> 5-15 min

 and change-to-more situations. Some children may benefit from modeling with the actual objects from the story, such as shells or marbles. GMP2.1

Standards and Goals for
Mathematical Process and Practice
SMP2 Reason abstractly and quantitatively.
GMP2.1 Create mathematical representations using numbers, words, pictures, symbols, gestures, tables, graphs, and concrete objects

GMP2.2 Make sense of the representations you and others use.

## 1) Warm Up <br> 15-20 min

## Mental Math and Fluency

Flash the following Quick Look Cards in sequence: 102, 78, and 82. Always allow a second look and follow up by asking both what children saw and how they saw it. Asking such questions allows a variety of strategies to emerge.
$\bigcirc \bigcirc$ Quick Look Card 102 Sample answer: I see 6 in the first one and 6 in the second one, and 6 and 6 makes 12 .Quick Look Card 78 Sample answer: I thought of 4 and 4, which is 8 , but 1 is missing so there are 7 .Quick Look Card 82 Sample answer: I moved them together into one frame and saw 1 was missing, so there are 9.

## Daily Routines

Have children complete daily routines. context-that is, they refer to real-world things-and labels make this context clear. Labels can name a thing (for example, books) or a measurement unit (for example, hours). The word label can be used to tell us to do something, as in "Label your answers." It can also refer to a tag or an identifier, as in "a label on a can."

NOTE Display a "unit box for the day" in a prominent place so that children will have a context for the abstract numbers used in the day's activities, including facts practice. You can select the unit yourself or appoint a child each day to supply the day's unit. Children might choose topics of current interest or fanciful or silly labels. Throughout the day, individuals can use the "unit for the day" or pick their own.

Using a unit box, the Math Message story can be shown this way:

## Unit children

$$
5+8=13
$$

Emphasize that $5+8=13$ is called a number model.

## Creating and Solving Addition Number Stories

WHOLECLASS SMALL GROUP

PARTNER

INDEPENDENT
Explain to the class that today they will make up and solve number stories. Do the following for several stories:
1.Display the story or draw a picture that illustrates the story but doesn't suggest a solution strategy.
2. Draw an empty unit box below the story.
3. Have children write a label in the unit box and share how they would answer the question in the story.
4. Ask a volunteer to write a number model for the story. GMP2.1
5. Ask another volunteer to explain how the numbers in the number model connect to the story. GMP2.2
Most of the stories will probably fit in one of these two categories:

## Parts-and-Total

Two or more separate parts are known. Find the total. For example: Beth has 7 dollars. Joe has 6 dollars. How many dollars do they have in all?

## Change-to-More

Start with a given number of items. Increase that number. How many are there now? For example: Beth has 7 dollars. Joe gave her 6 dollars. How many dollars does Beth have now?

NOTE Everyday Mathematics uses the terms parts-and-total, change, and comparison to describe situations that lead to addition and subtraction problems. Parts-and-total can also be referred to as "putting together," and change-to-more is sometimes called "adding to."

## Writing Number Stories

Math Journal 1, p. 19

\section*{| WHOLE CLASS SMALL GROUP PARTNER | INDEPENDENT |
| :--- | :--- | :--- | :--- | :--- |}

Have partners describe to each other what they see in the picture at the top of journal page 19. Then read the directions with the class and have children complete the page.

## Common Misconception

Differentiate
Although this lesson focuses on addition number stories, some children may write subtraction number stories for the picture. Point out that their story is a subtraction number story and suggest that they also write an addition number story.

Go Online an Differentiation

Math Journal 1, p. 19

Number Stories


Write an addition number story about what you see in the picture Write a label in the unit box. Find the answer. Write a number model.
Example: There are 7 ducks in the water. There are 3 ducks in the grass. How many ducks are there in all?
Answer: 10 ducks
Number model: $7+3=10$
Story: Sample answer: There are 6 children sitting. There are 3 children walking. How many children are there in all?

Answer: 9 children
Number model: $6+3=9$
2.OA.1, 2.OA.2, SMP2

Math Journal 1, p. 20


Children's stories may include the following:

## Parts-and-Total Stories

- There are 7 ducks swimming. There are 3 ducks in the grass. How many ducks are there in all? 10 ducks; $7+3=10$
- There are 6 children sitting. There are 3 children walking. How many children are there in all? 9 children; $6+3=9$


## Change-to-More Stories

- There are 7 ducks swimming. Then 3 ducks get in the pond. How many ducks are swimming now? 10 ducks; $7+3=10$
-There are 6 children sitting. Then 3 more children come and sit down. How many children are sitting now? 9 children; $6+3=9$


## Differentiate Adjusting the Activity

- Have children represent their stories using manipulatives or tallies. GMP2.1 For example: /H/ / sitting, /// standing. How many are there in all? 9
- Provide tools such as a number grid or a number line.
- Provide a structured frame for writing number models. For example:
$\qquad$ $+$ $\qquad$ = $\qquad$
- Use classroom objects to model writing an addition number model (for example, 5 crayons +4 crayons $=9$ crayons). GMP2.1 Think aloud as you fill in the sentence frame and model by reading the complete sentence.

Go Online Differentiation Support

## Assessment Check-In 2.0 A .1

Math Journal 1, p. 19
Expect most children to succeed at writing an addition number story that matches the picture on journal page 19, writing a number model to represent their number story, and solving their number story. For those who struggle with one or more of these tasks, suggest that they model their stories with manipulatives or tallies as described in the Adjusting the Activity note or have them complete the Extra Practice activity on page 157. GMP2.1

Evaluation Quick Entry Go online to record children's progress and to see trajectories toward mastery for these standards.

Summarize Volunteers share their stories and number models and explain the meanings of the numbers in their number models. GMP2.1, GMP2.2

## 3 Prectice $10-20 \mathrm{~min}$

## Completing Number-Grid Puzzles

Math Journal 1, p. 20

| WHOLE CLASS SMALL GROUP PARTNER INDEPENDENT |
| :--- | :--- | :--- | :--- |

Have children complete journal page 20. Number-grid puzzles were introduced in Lesson 1-5.

If children are able to complete the first grid but not the second, tell them to ignore the digits in the hundreds place for the numbers in the second grid. Guide children with the following suggestions and questions:

- Ignore the hundreds. Which number comes after 32? Write it in the grid. Children should write 33 in the next space on the grid, leaving a bit of room to the left of the tens place.
- Now remember the hundreds place and write 3 in front of 33.
- The number that comes after 332 is 333.


## Differentiate Adjusting the Activity

- Provide additional clues for completing the number-grid puzzles by filling in several of the blue cells.
- Have children use their calculators or a filled-out number grid to find 1 more, 1 less, 10 more, and 10 less.

$$
\text { Go Online ahe } \begin{aligned}
& \text { Differentiation } \\
& \text { Support }
\end{aligned}
$$

## Math Boxes 2-2

Math Journal 1, p. 21
WHOLECLASS SMALL GROUP PARTNER INDEPENDENT
Mixed Practice Math Boxes 2-2 are paired with Math Boxes 2-4.

## Home Link 2-2

Math Masters, p. 28
Homework Children write an addition number story.

## Math Boxes

| (1) Use a number grid. How many spaces from $\begin{aligned} & 18 \text { to } 28 ? \frac{10}{10} \\ & 49 \text { to } 59 ? \end{aligned}$ | (2) Show $\$ 1$. Use $®, \mathbb{(}),(®)$ and $@$. <br> Sample answer: |
| :---: | :---: |
| $\begin{aligned} & \text { (3) Use }<,>\text { or }=. \\ & 10<9+3 \\ & 12>8+2 \\ & 6+3=9 \\ & 7+3<11 \end{aligned}$ | (4) Which numbers are larger than 38 ? Fill in the circles next to correct answers. <br> $\begin{array}{ll}\text { (A) } & 36 \\ \text { (B) } & 87 \\ \text { (C) } & 70 \\ \text { (D) } & 59\end{array}$ |
| (5) Count by 25 s . $\begin{aligned} & 0,25, \frac{50}{125}, 150 \\ & 100, \underline{75} . \end{aligned}$ | (6) There are 6 pencils in a cup. Then 3 more are pencils added. How many pencils are now in the cup? <br> Answer: $\qquad$ 9 pencils <br> Number model: <br> Sample answers: $6+3=? ; 6+3=9$ |

(1) 2.NBT.2, 2.NBT. 8 (2) 2.MD. 8 (3) 2.NBT. 4
(4) 2.NBT. 4 (5) 2.NBT. 2 (6) 2.OA.1, 2.OA. 2

Math Masters, p. 28

## Writing Addition

 Number Stories
## Family Note

Before beginning this Home Link, review the vocabulary from the Unit 2 Family Letter with your child number story, label, unit box, and number model. Encourage your child to make up and solve
addition numbers stories and write addition number model sor the stories. Stress that the answert a question makes more sense ifit has a label. Please return this Home Link to school tomorrow.
(1) Tell someone at home what you know about number stories, labels, unit boxes, and number models. Write an addition number story for the picture. Write the answer and an addition number model.


Number model:

## Practice

```
Practice
(2) 2+2= 4
(3)}4+4=\
(4) }\begin{array}{r}{5}\\{+5}\\{\hline}
    +5
(5)
    +7
28 twenty-eight 2.OA.1, 2.0A.2
```


## Subtraction and the Turn-Around Rule

## Overview Day 1: Children solve an open response problem by writing number stories and models. Day 2: Children discuss solutions and revise their work.

## Day 1: Open Response

## - Before You Begin

If possible, schedule time to review children's work and plan for Day 2 of this lesson with your grade-level team.
Vocabulary
turn-around rule • number story

## 1 Morn $\quad 15-20 \mathrm{~min}$

Materials

## Standards

## Focus Clusters

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- Use place value understanding and properties of operations to add and subtract.


## Mental Math and Fluency

2.OA.1, 2.OA. 2

Children solve number stories using addition and subtraction facts.

## Daily Routines

See pages 4-43.
See pages xiv-xvii.
Children complete daily routines.

```
45-55 min
```


## Math Message

Children write a number model to represent a number story and discuss what makes a story a number story.

## Writing Number Stories and Number Models

Children discuss their number models, the turn-around rule for addition, and what makes a story a number story.

## Solving the Open Response Problem

Children create a subtraction number story and write a number model to represent it. They use this work to explore whether the turn-around rule works for subtraction.

Math Masters, pp. 38-39; My
Reference Book, p. 22; Standards for Mathematical Process and Practice Poster

## Getting Ready for Day 2

Review children's work and plan discussion for reengagement.

Math Masters, p. TA5; children's work from Day 1

[^3] standards within the grade.

## 1) Werm Up ${ }^{15-20 \mathrm{~min}}$

## Mental Math and Fluency

Pose number stories and have children share their solutions and strategies.Logan has 4 red tomatoes and 8 yellow tomatoes. How many tomatoes does he have in all? 12 tomatoes
$\bigcirc \bigcirc \bigcirc$ Gavin has 8 red grapes and 13 green grapes. How many more green grapes than red grapes does he have? 5 more green grapesJohan has 7 raisins in his hand and some in a baggie. He has 16 raisins in all. How many raisins are in Johan's baggie? 9 raisins

## Daily Routines

Have children complete daily routines.

45-55 min

## Math Message

Math Journal 1, p. 31
Turn to journal page 31. Do Problem 1, then talk with your partner. GMP4.1

## - Writing Number Stories and Number Models

Math Journal 1, p. 31

| WHOLECLASS | SMALL GROUP | PARTNER | INDEPENDENT |
| :--- | :--- | :--- | :--- |

Math Message Follow-Up Ask children to share their number models. Most will have $2+8=10$ because that is the order of the addends in the story. Look for a child who wrote $8+2=10$ and focus attention on that solution. Ask: Can we write the number model this way? Yes. Why? GMP4.1 Sample answer: Because the turn-around rule says both number models have the same sum.

Standards and Goals for
Mathematical Process and Practice
SMP1 Make sense of problems and persevere in solving them.
GMP1.2 Reflect on your thinking as you solve your problem.

SMP4 Model with mathematics.
GMP4.1 Model real-world situations using graphs, drawings, tables, symbols, numbers, diagrams, and other representations.
SMP8 Look for and express regularity in repeated reasoning.
GMP8.1 Create and justify rules, shortcuts, and generalizations.

## Professional Development

The focus of this lesson is GMP8.1. In this lesson, children sharpen their understanding of the turn-around rule as they discuss others' number stories and realize that the rule does not apply to subtraction.

Math Journal 1, p. 31

## Numbar Starict

## (1) Write a number model for this number story.

Jessica has 2 dogs and 8 goldfish. How many pets does she have in all? Sample answer: $2+8=10$ pets
Talk with a partner about what makes a story a number story.

## ELL Support

If children have trouble writing a number story, ask them to explain their story to you using manipulatives, drawings, or other models. If the difficulties appear to be language-based, scaffold the task by using sentence frames based on the child's story. For example: "Marco had $\qquad$ carrots. He gave $\qquad$ carrots to Alma. He had carrots left."

Math Masters, p. 38

(1) Make up a simple subtraction number story. Write it below.

Draw a picture that matches your story.
Answers vary.
See sample children's work on page 193 of the Teacher's Lesson Guide.

To model the turn-around rule in an addition number story, present a new version of the Math Message with the order of the addends reversed. Say: Jessica has 8 goldfish and 2 dogs. How many pets does she have in all? Ask: Does this number story still make sense? Yes. Why? Because Jessica still has 8 goldfish and 2 dogs. Is the total number of pets the same or different? GMP8. 1 The same
Ask children to share their thoughts on what makes a story a number story. Ask: How is a number story different from other types of stories? Sample answers: Number stories include both words and numbers. They often end with a question or something you have to figure out.

Tell children that they are each going to write a number story and use it to think more about the turn-around rule. GMP8. 1

## Solving the Open Response Problem

Math Masters, pp. 38-39

| WHOLE CLASS | SMALL GROUP | PARTNER | INDEPENDENT |
| :--- | :--- | :--- | :--- |

Distribute Math Masters, page 38 and read Problem 1 as a class. Point out that children can use the blank space to illustrate their number stories.
Tell children to use numbers up to 20 in their number stories, and remind them to include a number model. GMP4.1

## Differentiate Adjusting the Activity

If children have difficulty writing a subtraction number story, explain that a subtraction number story might involve taking away a number of things from some starting amount. Help struggling children develop their own approach by providing several examples of addition and subtraction number stories. Have children who continue to struggle name something they can share. Recommend the sentence frames as described in the English Language Learners note to help them write their number stories.

After most children have finished their number stories, number models, and pictures, distribute Math Masters, page 39. Partners should share ideas about this task, but each child should complete a solution. Read Problem 2 as a class. Tell partners to think about the turn-around rule using the subtraction fact from their number model in Problem 1. Prompt partners to discuss how the turn-around rule would affect their subtraction number stories. GMP1.2 Remind children how the turn-around rule was applied to the addition number story in the Math Message.

For children who have trouble getting started with Problem 2, ask whether the number story would still make sense if they switched the order of the numbers. Expect some children to know that the turn-around rule does not work for subtraction-but to have difficulty explaining why. GMP1.2 Some children may know how to do subtraction on a number line or number grid and see that the turn-around fact gives a negative result, for example, $3-5=-2$. Other children may assume (incorrectly) that the turn-around fact results in 0 and report that $3-5=0$. However, what is most important for children to recognize is that with a subtraction fact, the answer is not the same as the original fact when switching the order of the two numbers in the problem. Encourage children to make a new illustration showing how the turn-around rule does not work when applied to their subtraction number story. GMP8.1

NOTE If a child writes a story in which the result is 0 , such as $5-5=0$, then switching the order of the 5 s will not change the result. Discussing this example could be an interesting conversation.

Summarize Have children read My Reference Book, page 22 on GMP8.1. Ask: How did Rosa explain how she used doubles to help her figure out other facts? Answers vary. Ask: How did you explain that the turnaround rule does not work for subtraction? Answers vary. Refer children to GMP8.1 on the Standards for Mathematical Process and Practice Poster.

Collect children's work so that you can evaluate it and prepare for Day 2.

## Getting Ready for Day 2

Math Masters, p. TA5

## Planning a Follow-Up Discussion

Review children's work. Use the Reengagement Planning Form (Math Masters, page TA5) and the rubric on page 191 to plan ways to help children meet expectations for both the content and process/practice standards. Look for common misconceptions as well as drawings or explanations that clearly illustrate that the turn-around rule does not work for subtraction.

## Subtraction and the

Turn-Around Rule
(2) Do you believe the turn-around rule works for subtraction?

Use your number model or number story to help explain
your thinking.
Answers vary.
See sample children's work on page 193 of the Teacher's Lesson Guide.

## Common Misconception

Differentiate For a number model such as $9-2=7$, some children apply the turn-around rule by writing $9-7=2$. This is an effort to switch the order of the numbers in a way that makes sense and creates a true equation, but it misapplies the turnaround rule. Direct children back to the Math Message and point out how the turn-around rule works for addition facts. When addends are reversed, the sum remains the same. Return their attention to the subtraction example, noting that the two numbers in the problem (the minuend and subtrahend) should be switched to check whether the turn-around rule works

Sample child's work, Child A
(1) Make up a simple subtroction number story. Write it below. Drow a picture that matches your story.
 she eats 4 now meany are lett

Write a number model for your story. $6-4=2$
(2) Da you believe the turn-around rule works for subtraction? Use your number model or number story to help explain your thinking.

$$
4-C=0
$$



Sample child's work, Child B
(1) Make up a simple subaraction number story. Write it below.

Draw a picture that matches your story.

$$
\begin{aligned}
& \text { thele are lo pins } \\
& \text { F went bowng in konck } 6 \\
& \text { pin donw. How holany now? } \\
& \text { write a number model for your story. } 10^{-} 6=4
\end{aligned}
$$

(2) Do you believe the turn-around rule works for subtraction? Use your number model or number story to help explain your thinking.

$$
\begin{aligned}
& \text { This is not going to make } \\
& \text { sence. You cap rot kot kotk lo } \\
& \text { When there are lepin. }
\end{aligned}
$$

Organize the discussion in one of the ways below or in another way you choose. If children's work is unclear or if you prefer to show work anonymously, rewrite the work for display.

Go Online for sample children's work that you can use in your discussion.

1. Show a response that includes an explanation focused on the number model. Child A switches the appropriate numbers in the model and knows the result is a number that is smaller than 2. This is evidence that the child understands why the turnaround rule does not work for subtraction. GMP8.1 Ask:

- Is this a subtraction number story? Yes. How do you know? Sample answer: There are words and numbers; it talks about taking something away; there is something to figure out.
- Does the number model match the number story? GMP4.1 Yes. How? Sample answer: She started with 6 cookies, then she ate 4 , and 2 are left.
- Why do you think this child wrote $4-6$ in Problem 2? GMP1.2 Sample answer: The child was trying the turn-around rule with 6-4.
- Do you agree with this child's answer to Problem 2? Why? GMP8.1 Answers vary.

2. Show a response that includes an explanation focused on the effects of reversing the numbers in the number story. Child B switches the appropriate numbers in the story and shows understanding that changing the order produces a different and nonsensical result. As you display this type of response, ask:

- What do you think this child is trying to tell us in Problem 2? Do you think this child believes the turn-around rule works for subtraction? GMP1.2, GMP8.1 Sample answer: This child is saying the turn-around rule doesn't work for subtraction. When the child switched the numbers 10 and 6 in the number story, it didn't make sense because you can't knock down 10 pins when there are only 6 to start with.
- How can this child complete the response to Problem 1? Sample answer: Draw a picture.


## Planning for Revisions

Have copies of Math Masters, pages 38-39 or extra paper available for children to use in revisions. You might want to ask students to use colored pencils so you can see what they revised.

## Subtraction and the Turn-Around Rule

## Overview Day 2: Children discuss solutions and revise their work.

## Day 2: Reengagement

## Before You Begin

Have extra copies available of Math Masters, pages 38-39 for children to revise their work.

## Focus

## 50-55 min

## Setting Expectations

Children revisit guidelines for a cooperative learning environment and discuss what needs to be included in a full response.

## Reengaging in the Problem

Children view examples of others' subtraction number stories and discuss how number stories and number models helped them decide whether the turn-around rule applies to subtraction.

## Revising Work

Children improve the clarity and completeness of their number stories and explanations.

## Standards

## Focus Clusters

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- Use place value understanding and properties of operations to add and subtract.

Assessment Check-In See page 193 and the rubric below.
Expect most children to be able to use subtraction to solve a one-step word problem.

## Materials

Guidelines for Discussions Poster
selected samples of children's work
2.OA.1, 2.OA.2, 2.NBT. 9 SMP1, SMP4, SMP8
2.OA. 1

SMP8


## 3 Practice <br> 10-15 min

## Math Boxes 2-7

Children practice and maintain skills.

## Home Link 2-7

Math Masters, pp. 38-39 (optional);
children's work from Day 1;
colored pencils (optional)
2.OA.1, 2.OA.2, 2.NBT. 9 SMP1, SMP4, SMP8

NOTE These Day 2 activities will ideally take place within a few days of Day 1. Prior to beginning Day 2, see Planning a Follow-Up Discussion from Day 1.

## Guidelines for Discussions

During our class discussions, we can:
$\checkmark$ Make mistakes and learn from them
$\checkmark$ Change our minds
$\checkmark$ Ask questions
$\checkmark$ Listen closely to others'ideas
$\checkmark$ Share ideas and strategies respectfully
$\checkmark$ Feel confused

Math Journal 1, p. 32


## - Setting Expectations

| WHOLECLASS | SMALL GROUP | PARTNER | INDEPENDENT |
| :--- | :--- | :--- | :--- |

## Revisiting Guidelines for Reengagement

To promote a cooperative environment, consider revisiting the class guidelines for discussion that you developed in Unit 1. Review the guidelines and have children reflect on how well they are following them. Solicit additional guidelines from the class. Your revised list might look like the one in the margin.

Model or have children role-play situations based on one or more of the class guidelines. Add sentence frames to the ones you introduced in Unit 1 and encourage children to use them when discussing other children's work:

- I noticed $\qquad$ -
- I like how you $\qquad$ .
- I don't understand $\qquad$
- Could you explain $\qquad$ ? . I think this could be improved if


## Reviewing the Problem

Review the open response problem from Day 1. Ask: What do you think a full answer to this problem needs to include? Sample answer: a number story, a drawing, a number model, and an explanation about the turn-around rule and subtraction
Tell children that they are going to look at other children's work and think about those explanations.

## Reengaging in the Problem

WHOLECLASS SMALL GROUP PARTNER INDEPENDENT
Children reengage in the problem by analyzing and critiquing other children's work in pairs and in a whole-group discussion. Have children discuss in partners before sharing with the whole group. Guide this discussion based on the decisions you made in Getting Ready for Day 2. GMP1.2, GMP4.1, GMP8.1

## - Revising Work

| WHOLE CLASS | SMALL GROUP PARTNER | INDEPENDENT |
| :--- | :--- | :--- | :--- |

Pass back children's work from Day 1. Before children revise anything, ask them to examine their number story, drawing, number model, and explanation and decide how to improve them. Ask the questions below one at a time. Have partners discuss their responses and give a thumbs-up or thumbs-down based on their own work.

## - Did you write a subtraction number story? Did you include a drawing? GMP1.2

- Does your number model match your number story? GMP4.1
- Did you decide whether the turn-around rule works for subtraction? Does your explanation connect to your number story or number model? GMP8.1

Tell children they will now revise their work. Help them see that the explanations shown in the reengagement discussion are not the only correct ones. Tell children to add to their earlier work using colored pencils or to use another sheet of paper, instead of erasing their original work.

Summarize Have children reflect on their work. Ask: What did you do to improve your work? GMP1.2 Answers vary.

## Assessment Check-In 2.00 .1

Collect and review children's revised work. Expect children to improve their number stories, drawings, number models, and explanations based on the class discussion. For the content standard, expect most children to show in Problem 1 that they can use subtraction to solve a one-step word problem. You can use the rubric on page 191 to evaluate children's revised work for GMP8. 1

Evaluation Quick Entry Go online to record children's progress and to see trajectories toward mastery for these standards.

Go Online for optional generic rubrics in the Assessment Handbook that can be used to assess any additional GMPs addressed in the lesson.

## Sample Children's Work—Evaluated

See the sample in the margin. This work meets expectations for the content standard because the child created a subtraction number story and wrote a correct related number model. With revision, the work for Problem 2 meets expectations for the mathematical process and practice standard because the child gives a justification of the claim that the turn-around rule does not work for subtraction and an explanation of why it does not make sense. GMP8. 1

## 3 Practice $10-15 \mathrm{~min}$ <br> Math Boxes $\mathbf{2 . 7}$

Math Journal 1, p. 32

| WHOLE CLASS | SMALL GROUP PARTNER INDEPENDENT |
| :--- | :--- | :--- |

Mixed Practice Math Boxes 2-7 are paired with Math Boxes 2-5.

## Home Link 2-7

Math Masters, p. 40
Homework Children write number models for a number story and use the turn-around rule to write number sentences. GMP1.2, GMP4.1

Sample child's work, "Meeting Expectations"
(1) Make up a simple subtraction number story. Write it below. Draw a picture that matches your story.

(2) Do you believe the turn-around rule works for subtraction? Use your number model or number story to help explain your thinking. $\prod_{\text {if }}^{\text {W I }}$ Hade 3 Worck Because kickT 7 on the roof it is
in posibal Because I onley Have 3 Socker boLs.

Go Online for other samples of evaluated children's work.

Math Masters, p. 40
Turn-Around
Turn-Around
Rule
Rule
Family Note
Family Note


around rule does NOT work for subtraction because changing the order of the numbers produces
around rule does NOT work for subtraction because changing the order of the numbers produces


IN
IN
provide pracice with the tum:around rule for additio
provide pracice with the tum:around rule for additio
(1) Write two number models you can use to solve this
number story.
Bill picked 6 peaches from a tree. Roberta picked 8 .
How many peaches do they have in all?
Number model: $\quad 6+8=14$
Number model: $\quad 8+6=14$
(2) Complete each number sentence and then write the
turn-around number sentence.
Number sentence
Turn-around number sentence
$12+3=15 \quad 3+12=15$
$8+3=11 \quad 3+8=11$

## Practice

(3) Solve the facts.
a. $3+3=$
40 forty 2.OA.1, 2.OA. 2

# Exploring Addition Tools, Odd and Even Patterns, and Shapes 

## Overview Children explore counting up, odd and even numbers, and shapes.

- Before You Begin

Make 3 copies of Math Masters, page TA2 per child for Exploration A and 2 copies of Math Masters, page 44 per child for Exploration B. For Exploration C you may want to have extra geoboard dot paper available. Use Math Masters, page TA9 for 5-by-5 geoboards and Math Masters, page TA10 for 7-by-7 geoboards.

- Vocabulary
divide • half • halves • fourths



## Standards

## Focus Clusters

- Work with equal groups of objects to gain foundations for multiplication.
- Use place value understanding and properties of operations to add and subtract.
- Reason with shapes and their attributes.

$$
\text { 2.OA.1, 2.OA. } 2
$$

See pages xiv-xvii.

## Mental Math and Fluency

Children solve number stories.
Daily Routines
See pages 4-43.
Children complete daily routines.

| Math Message Children count up. |  | 2.NBT. 2 |
| :---: | :---: | :---: |
| Sharing Strategies for Counts <br> Children share their strategies for counting. | Class Number Line | 2.NBT. 2 |
| Exploration A: Using Tools to Add <br> Children find sums using number lines and number grids. | Activity Card 26; Math Journal 1, p. 33; 3 copies of Math Masters, p. TA2 | 2.NBT.7, 2.MD. 6 SMP2, SMP5 |
| Exploration B: Sorting Dominoes <br> Children sort dominoes based on whether the dots on the two sides are both even, both odd, or one even and one odd. | Activity Card 27; Math Masters, pp. 42-43; 2 copies of Math Masters, p. 44; per partnership: 1 set of double-9 dominoes | $\text { 2.OA.2, 2.OA. } 3$ SMP7 |
| Exploration C: Making Geoboard Shapes <br> Children make shapes, designs, or pictures on geoboards and record them on geoboard dot paper. | Activity Card 28; Math Journal 1, p. 34; Math Masters, pp. TA9-TA10 (optional); geoboard; rubber bands | 2.G.1, 2.G. 3 |

## Practice <br> 10-15 min

## Playing The Exchange Game

Game Children play The Exchange Game with \$1, $\$ 10$, and $\$ 100$ bills.

Math Boxes 2-8
Children practice and maintain skills.
Home Link 2-8
Homework Children count up using a number line and a number grid.

My Reference Book, pp. 146-148; Math Masters, p. G14; toolkit bills; per partnership: 1 die

Math Journal 1, p. 35

Math Masters, p. 45
2.NBT.1a, 2.NBT.3, 2.MD. 8 SMP5

See page 199.

Go Online to see how mastery develops for all
standards within the grade.

## thi Differentiation Options

\section*{| Recdingss |
| :--- |
| whole class small group <br> PARTNER <br> Using a Ten Frame to Find Even <br> and Odd Numbers |
| $\begin{array}{l}\text { INDE }\end{array}$ |}

2.OA.3, SMP7

Math Masters, p. 41;
10 counters; per group: 1 each of number cards 1-10

For experience using a concrete model to find whether numbers are even or odd, children pair counters on a ten frame. Place number cards facedown in a pile. Tell children to each pick a card and place that number of counters on the ten frame on Math Masters, page 41. Guide them to place counters in pairs whenever possible. On the same page children then record whether the number is odd or even.

Ask: What do you notice about the counters for the even numbers?
GMP7.1 Sample answer: All the counters can be put into pairs. What do you notice about the counters for the odd numbers? GMP7.1 Sample answer: After making pairs, there is one counter left over. Have children repeat the steps for other number cards.

| Enrichment | 5-15 min |  |
| :---: | :---: | :---: |
| WHOLE CLASS SMALL GROUP | PARTNER | INDEPENDENT |

## Dividing Shapes

2.G.1, 2.G. 3
Math Masters, p. TA9 or TA10
To extend their work making and comparing shapes on a geoboard, have each child create a 4 -sided shape that can be divided into 4 equal parts. Then have them show three different ways to divide their shape into 4 equal parts and record their work on Math Masters, page TA9 or TA10.


## Extra Practice

5-15 min

## Looking for Doubles

2.OA.2, 2.OA.3, SMP7

Activity Card 29; completed Math
Masters, pp. 42-44 from Exploration B; paper

For additional practice identifying doubles with domino dots, children use their domino sorts from Exploration B and write number models for the doubles facts. Children explain what they notice about the addends and the sums. GMP7. 1

## Looking for Doubles



## English Language Learner

Beginning ELL Help children connect the words in a number story to the symbols in a number model. Use teacher think-alouds and demonstrations with objects to roleplay a number story once through. Then recount the same number story, representing it with a number model. Read other number stories and ask children to select the correct corresponding number model from a list of examples.


Differentiation Support pages are found in the online Teacher's Center.

Standards and Goals for

## Mathematical Process and Practice

SMP2 Reason abstractly and quantitatively.
GMP2.1 Create mathematical representations using numbers, words, pictures, symbols, gestures, tables, graphs, and concrete objects. GMP2.3 Make connections between representations.
SMP5 Use appropriate tools strategically.
GMP5.2 Use tools effectively and make sense of your results.

SMP7 Look for and make use of structure.
GMP7.1 Look for mathematical structures such as categories, patterns, and properties.

## 1) Warm Up $\quad 15=20 \mathrm{~min}$

## Mental Math and Fluency

Pose number stories for children to solve. Have children share their strategies. Leveled exercises:
$\bigcirc \bigcirc \bigcirc$ Olivia's soccer team has 6 soccer balls. Carson's soccer team has 7 soccer balls. How many soccer balls do the two teams have all together? 13 soccer balls

Ruth has 11 books in her library bag. Five of the books are for her brother Jason. How many books are not for Jason? 6 books

00 Meredith is 17 years old. She is 8 years older than her sister Maddie. How old is Maddie? 9 years old

## Daily Routines

Have children complete daily routines.

## - Math Message

Start at 0 and count up to 46. You may count by any combination of 1s, 5 s , and 10 s or any other way you want. Be prepared to share your strategy.

## Sharing Strategies for Counts

| WHOLECLASS | SMALL GROUP | PARTNER | INDEPENDENT |
| :--- | :--- | :--- | :--- |

Math Message Follow-Up Use a pointer with the Class Number Line to help children demonstrate their counts. Look for the following strategies:

- Count by 10 s to 40 and then by $1 \mathrm{~s}: 10,20,30,40,41,42,43,44,45$, 46. Model four jumps of 10 and six jumps of 1 .
- Count by 20 s to 40 and then make 1 count of 6 : $20,40,46$. Model two jumps of 20 and one jump of 6 .
Explain that children will explore how to use number grids and number lines to show counting and addition strategies.


## Exploration A: Using Tools to Add

Activity Card 26; Math Journal 1, p. 33; Math Masters, p. TA2
WHOLECLASS SMALL GROUP PARTNER INDEPENDENT

Partners follow the instructions on journal page 33 to represent sums on number grids and number lines and record their work. GMP2.1, GMP2.3, GMP5.2


Activity Card 26

## Exploration B: Sorting Dominoes

Activity Card 27; Math Masters, pp. 42-44
WHOLECLASS SMALL GROUP PARTNER INDEPENDENT

Children work in partnerships to sort dominoes into three groups: those with two even-numbered groups of dots, those with two oddnumbered groups of dots, and those with one even- and one oddnumbered group. GMP7.1 Encourage children to use the terms odd and even as they sort. Children should find 15 dominoes that show two even numbers, 15 dominoes that show two odd numbers, and 25 dominoes that show one even number and one odd number.

## Differentiate Adjusting the Assessment

Some children might benefit from a guide for each of the three sorts.
Display an enlarged copy of each of the example dominoes from Math Masters, pages 42-44 for children to reference when sorting.

Go Online


Differentiation Support

## Using Tools to Add

Use the number lines below to find the sums. Then find the sums using the Number Grid page.
(1) Show $62+10$ on the number line below.
$+10$

Answer: 72
Show $62+10$ on the number grid. Draw arrows to show your counts.
(2) Show $39+10$ on the number line below.
$+10$

Answer: 49
Show $39+10$ on the number grid. Draw arrows to show your counts.

## Try This

3 Show $45+12$ on the number line below.
$+10$
$\xrightarrow[44]{45}$
Answer: 57
Show $45+12$ on the number grid. Draw arrows to show your counts.
2.NBT.7, SMP2, SMP5

Activity Card 27


Math Masters, p. 42


Math Journal 1, p. 34


34 thirty-four 2.G.1, 2.G.3

## Exploration C: Making Geoboard Shapes

Activity Card 28; Math Journal 1, p. 34

WHOLE CLASS SMALL GROUP PARTNER INDEPENDENT

Children make shapes, designs, or pictures with rubber bands on their geoboards and record them on geoboard dot paper on journal page 34. If children need additional dot paper, distribute copies of Math Masters, page TA9 or TA10.

Children work independently and as partners to make several geoboard shapes with three and four sides. You may wish to demonstrate this activity and model the vocabulary divide, half, halves, and fourths.

Academic Language Development Children may not be familiar with the plural form of the word half and may not be aware when they hear the term halves that it refers to more than one half. Model the word half by showing both the singular and plural forms of the word in writing and with numbers (for example, 1 half and 2 halves). Refer to other words that may be more familiar to children, such as knife and knives and calf and calves. This helps them generalize that the plural form of some words ending in $f$ is formed with -ves and to use the term halves more readily.


Activity Card 28

Summarize Children share and discuss the mathematics they engaged in for each exploration.

## 3 Practice $10-15 \mathrm{~min}$

## Playing The Exchange Game

My Reference Book，pp．146－148；Math Masters，p．G14

| WHOLE CLASS SMALL GROUP PARTNER | INDEPENDENT |
| :--- | :--- | :--- |

Partners play the game as introduced in Lesson 2－1．See My Reference Book，pages 146－148 for directions．

## Observe

－Which children are making appropriate exchanges？GMP5．2
－Which children need additional support to understand and play the game？

## Discuss

－How did you and your partner or group work together？
－What mathematics did you use in this game？

## Math Boxes 2－8

Math Journal 1，p． 35

## 

Mixed Practice Math Boxes 2－8 are paired with Math Boxes 2－6 and 2－11．

## Home Link 2－8

Math Masters，p． 45
Homework Children count up using a number line and a number grid．

Math Journal 1，p． 35

（5）Writing／Reasoning Show $35 \varangle$ using as few coins as possible． （＠）（1）
Explain how you know you used the smallest number of coins． Sample answer：There＇s no coin worth 35屯， and I know 1 quarter is $25 屯$ and 1 dime is $10 屯$ ． So I＇m able to use just 2 coins，and I know that＇s the smallest number
（1）2．NBT．2，2．NBT． 8 （2）2．NBT．4（3）2．NBT． 2 $\mid$
（4）2．MD．8，（5）2．MD．8，SMP3

Math Masters 1，p． 45

## Counting Up



## Family Note

Everyday Mathematic encourages chidren to use a variety of strategies to solve problems．This allows chidren to develop number sense rather than simply memorizing steps or learning a shortcut
in today＇s lesson chidren used various strategies to add，including counting up on a number line and In today＇s lesson chi．
on a number grid．
Please return this Home Link to school tomorrow．

Find the sum in two different ways．

$$
56+10=?
$$

（1）Use the number line and show your hops．Record your answer
Sample answer:

$$
+10
$$

| 45 | 56 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | Answer： $56+10=\underline{66}$

（2）Use a number grid and draw arrows to show your counts． Record your answer．Sample answer：

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 12 | 13 | 14 |  | 16 | 17 | 8 | 9 |  | | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 20 | 20 |  |  |  |  |  |  |  | | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{lllllllllllll}31 & 32 & 33 & 34 & 35 & 36 & 37 & 38 & 39 & 40\end{array}$



 \begin{tabular}{|l|l|l|l|l|l|l|l|}
\hline 61 \& 62 \& 63 \& 64 \& 65 \& 66 \& 67 \& 68 <br>
\hline 69 \& 70 <br>
\hline 71 \& 72 \& 3 \& 7 \& 75 \& 76 \& 77 \& 78 <br>
\hline

 

\hline 61 \& 62 \& 63 \& 64 \& 65 \& 66 \& 67 \& 68 \& 69 <br>
\hline 70 <br>
\hline 71 \& 72 \& 73 \& 74 \& 75 \& 76 \& 77 \& 78 \& 79 <br>
\hline
\end{tabular} Answer： $56+10=66$

Unit 2 Progress Check
Overview
Day 1: Administer the Unit Assessments.
Day 2: Administer the Cumulative Assessment.

## Day 1: Unit Assessment

Quick Entry Evaluation Record results and track progress toward mastery.

1) Warm Up

## 5-10 min

Self Assessment
Children complete the Self Assessment.

Materials
Assessment Handbook, p. 11

## $A B E=S E \quad 35-50 \mathrm{~min}$

Unit 2 Assessment
Assessment Handbook, pp. 12-13
These items reflect mastery expectations to this point.
Unit $\mathbf{2}$ Challenge (Optional)
Assessment Handbook, p. 14
Children may demonstrate progress beyond expectations.

| Standards | Goals for Mathematical Content (GMC) | Lessons | Self <br> Assessment | Unit 2 <br> Assessment | Unit 2 <br> Challenge |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 2.OA. 2 | Add within 20 fluently. | 2-2 to 2-12 | 1-3, 5, 6 | $\begin{aligned} & \text { 1a-1f, 2, } \\ & \text { 3a-3b, } \\ & 4 a-4 b, 5 \end{aligned}$ | 2 |
|  | Subtract within 20 fluently. | 2-7, 2-10 to 2-12 |  | 5 |  |
|  | Know all sums of two 1-digit numbers automatically. | 2-2 to 2-12 | 1-3, 5, 6 | $\begin{aligned} & \text { 1a-1f, 2, } \\ & \text { 3a-3b, } \\ & 4 \mathrm{a}-4 \mathrm{~b}, 5 \end{aligned}$ | 2 |
| 2.OA. 3 | Determine whether the number of objects in a group is odd or even. | 2-6, 2-8 to 2-10 | 4 | 6 |  |
|  | Express an even number as a sum of two equal addends. | 2-9, 2-10 |  | 6 |  |
| 2.NBT. 7 | Add multidigit numbers using models or strategies. | 2-5, 2-7, 2-8 |  |  | 1 |
| 2.NBT. 9 | Explain why addition and subtraction strategies work. | 2-5, 2-7 |  |  | 1 |

Goals for Mathematical Practice (GMP)

| SMP2 | Create mathematical representations using numbers, words, <br> pictures, symbols, gestures, tables, graphs, and concrete objects. <br> GMP2.1 | 2-1, 2-2, <br> $2-8$ to 2-11 | 2 |
| :--- | :--- | :--- | :--- |
|  | Make sense of the representations you and others use. | GMP2.2 | $2-2,2-4$, <br> $2-5 ~ t o ~ 2-9 ~$ |
| SMP3 | Make sense of others' mathematical thinking. | GMP3.2 | $2-3$ to 2-5 |

Go Online to see how mastery develops for all
standards within the grade.

## 1) Warm Up

## - Self Assessment

Assessment Handbook, p. 11

| WHOLE CLASS | SMALL GROUP | PARTNER | INDEPENDENT |
| :--- | :--- | :--- | :--- |

Children complete the Self Assessment to reflect on their progress in Unit 2.


Assessment Handbook, p. 11

## 2a. Assess <br> 35-50 min

## Unit 2 Assessment

Assessment Handbook, pp. 12-13

| WHOLE CLASS | SMALL GROUP | PARTNER | INDEPENDENT |
| :--- | :--- | :--- | :--- |

Children complete the Unit 2 Assessment to demonstrate their progress on the standards covered in this unit.

Generic rubrics in the Assessment Handbook appendix can be used to evaluate children's progress on the Mathematical Process and Practice Standards.

Assessment Handbook, p. 12

## Unit 2 Assessment

(1) Add.
a. $4+4=8$
b. $3+7=10$
c. $6+6=12 \quad$ f. $9+9=$
d. $8+2=10$
e. $9+1=10$
(2) Mallory knew that she could use $8+2=10$ to figure out the sum for $8+4$. Explain Mallory's thinking. You may use a double ten frame.

Sample answer:
She made 10 and then added 2.
(3)
freach fact write a helper fact. You can use a double ten
frame to help. Possible answers:
a. $7+8=? 7+7=14$ b. $7+9=? 7+7=14$

$$
\begin{array}{lll}
\text { Helper fact: or } & \text { Helper fact: } & \text { or } \\
0+8 & 0+16 & =-1
\end{array}
$$

$$
8+8=16 \quad 9+9=18
$$

$$
7+8=15 \quad 7+9=16
$$

Assessment Handbook, p. 13

| Name | dore | Lesson 2.13 |
| :--- | :--- | :--- | :--- |

Unit 2 Assessment (continued)
(4) $\because$.|. .
$\begin{array}{ll}\text { a. Write an addition fact } & \text { b. Write the turn-around } \\ \text { for the domino. } & \text { fact. } \\ 3+4=7 & 4+3=7\end{array}$
(5) Write at least five names in the 12 box

12
Answers vary but should be equal to 12. Sample answers: $6+6$. $10+2,12-0,13-1$, twelve
(6) Take an even number of pennies. Answers vary but How many pennies did you take? should be even. How do you know that the number of pennies is even? Answers vary but should demonstrate understanding of an even number. Write a number model with your number of pennies as the sum Use equal addends.
Answers vary, but the addends must be equal.

Differentiate Adjusting the Assessment

## Item(s) Adjustments

1 To scaffold item 1, provide children with counters and a double ten frame

2 To scaffold Item 2, have children use a double ten frame to mode and verbally explain Mallory's thinking.

3 To extend Item 3, have children explain how the helper fact helps them solve the fact.

4 To scaffold item 4, provide children with the actual domino.

5 To extend item 5, have children use a variety of representations, including more than one operation, tallies, and the number name.

6 To scaffold item 6, provide children with a double ten frame.

## Advice for Differentiation

Because this is the beginning of the school year, all of the content included on the Unit 2 Assessment was recently introduced and will be revisited in subsequent units.

## Go Online:

Quick Entry Evaluation Record children's progress and to see trajectories toward mastery for these standards.
Data Review your children's progress reports. Differentiation materials are available online to help you address children's needs.

NOTE See the Unit Organizer on pages 144-145 or the online Spiral Tracker for details on Unit 2 focus topics and the spiral.

## Unit 2 Challenge (Optional)

Assessment Handbook, p. 14
Unit 2 Challenge
(1) Katie knew that $70+70=140$. Explain how she can use this double to solve $70+80$.
Answers vary but should include use of the fact that $70+70=140$. Sample answer: She knew that 80 is 10 more than 70 , so $70+80$ has to be 10 more than $70+70$, or 150
(2) In the first frame, draw 7 counters one way. In the second ten frame, draw 7 counters a different way.
Below each ten frame, explain how the counters show the number 7. Use numbers or words.

Names for 7.


Sample answers:
$5+2$;
2 more than 5 Sample answers: $4+3$; $3+3+1$

## Unit 2 Progress Check

## Overview Day 2: Administer the Cumulative Assessment.

## Day 2: Cumulative Assessment

## Assess

30-45 min

## Cumulative Assessment

## Materials

These items reflect mastery expectations to this point.

| Standards | Goals for Mathematical Content (GMC) | Cumulative Assessment |
| :---: | :---: | :---: |
| 2.OA. 2 | Add within 20 fluently. | 4, 5 |
|  | Know all sums of two 1-digit numbers automatically. | 4, 5 |
| 2.NBT. 2 | Count by 1 s . | 1 |
|  | Count by $5 \mathrm{~s}, 10 \mathrm{~s}$, and 100s. | 2, 3 |
| 2.MD. 8 | Solve problems involving coins and bills. | 6 |
|  | Read and write monetary amounts. | 6 |

## 3 <br> Look Ahead $10-15 \mathrm{~min}$

## Materials

Math Boxes 2-13
Math Journal 1, p. 44
Children preview skills and concepts for Unit 3.
Home Link 2-13
Math Masters, pp. 57-60
Children take home the Family Letter that introduces Unit 3.

Go Online to see how mastery develops for all
standards within the grade.


Unit 2 Cumulative Assessment
(1) Fill in the missing numbers.
$\begin{array}{llllllll}111 & 112 & 113 & 114 & 115 & 116 & 117 & 118 \\ 1199 & 120\end{array}$

(4) Write all the double facts. Order varies.
$1+1=2$
$2+2=4$
$3+3=6 \quad 4+4=8$
$5+5=10$
$6+6=12$
$7+7=14 \quad 8+8=16$
$9+9=18 \quad 10+10=20$

Cumulative Assessment
Assessment Handbook, pp. 15-16

| WHOLE CLASS | SMALL GROUP | PARTNER INDEPENDENT |
| :--- | :--- | :--- | :--- |

Children complete the Cumulative Assessment. The problems in the Cumulative Assessment address content from Unit 1. This assessment can help you monitor learning and retention of some (but not all) of the content and process/practice standards that were the focus of that unit, as detailed in the Cumulative Assessment table on page 229. Successful responses to these problems indicate adequate progress at this point in the year.

Monitor children's progress on the standards using the online assessment and reporting tools.

Generic rubrics in the Assessment Handbook appendix can be used to evaluate children's progress on the Mathematical Process and Practice Standards.

Written assessments are one way children can demonstrate what they know. The table below shows adjustments you can make to the Cumulative Assessment to maximize opportunities for individual children and for your entire class.

| Differentiate Adjusting the Assessment |
| :--- |
| Item(s) Adjustments |
| $1,2,3$ |
| To scaffold items 1, 2, and 3, direct children to the Class Number Line <br> or Number-Grid Poster. |
| 4,5 | | To scaffold Items 4 and 5, provide children with a double ten frame and |
| :--- |
| counters. |$\quad$| To extend item 6, have children count a collection of coins that include |
| :--- |
| pennies, nickels, dimes, and quarters. |

## Advice for Differentiation

Because this is the beginning of the school year, all of the content included in the Unit 2 Cumulative Assessment was recently introduced and will be revisited in subsequent units.

## Go Online:

Quick Entry Evaluation Record children's progress and to see trajectories toward mastery for these standards.
Data Review your children's progress reports. Differentiation materials are available online to help you address children's needs.

## 3 Look Aheod $10-15$ min

## Math Boxes 2-13: Preview for Unit 3

Math Journal 1, pp. 44
WHOLECLASS SMALL GROUP PARTNER INDEPENDENT
Mixed Practice Math Boxes 2-13 are paired with Math Boxes 2-9. These problems focus on skills and understandings that are prerequisite for Unit 3. You may want to use information from these Math Boxes to plan instruction and grouping in Unit 3.

## - Home Link 2-13: Unit 3 Family Letter

Math Masters, pp. 57-60
Home Connection The Unit 3 Family Letter provides information and activities related to Unit 3 content.

Math Journal 1, p. 44


Math Masters, pp. 57-60



Everyday Mathematics. How Children Learn.

- Fully digital options that adapt to your classroom
- Gives each student the opportunity to achieve
- Connects math to the world outside the classroom


[^0]:    *Tomlinson \& Murphy, M (2015). Leading for Differentiation: Growing Teachers Who Grow Kids. ASCD.

[^1]:    Go Online
    for a complete literature list for Grade 2 and to download all Quick Look Cards.

[^2]:    Go Online to the Implementation Guide for more information about the Mathematical Process and Practice Standards.

    For children's information on the Mathematical Process and Practice Standards, see My Reference Book, pages 1-22.

[^3]:    Go Online to see how mastery develops for all

