

# K-5 MATH ADOPTION INFORMATION NIGHT

# Learning Outcomes

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- Provide an overview of our curriculum adoption process
- Share essential concepts and learning in K-5 math
- Provide overview of two curricula being piloted
- Communicate timeline for adoption and implementation



# What We Want for all Students

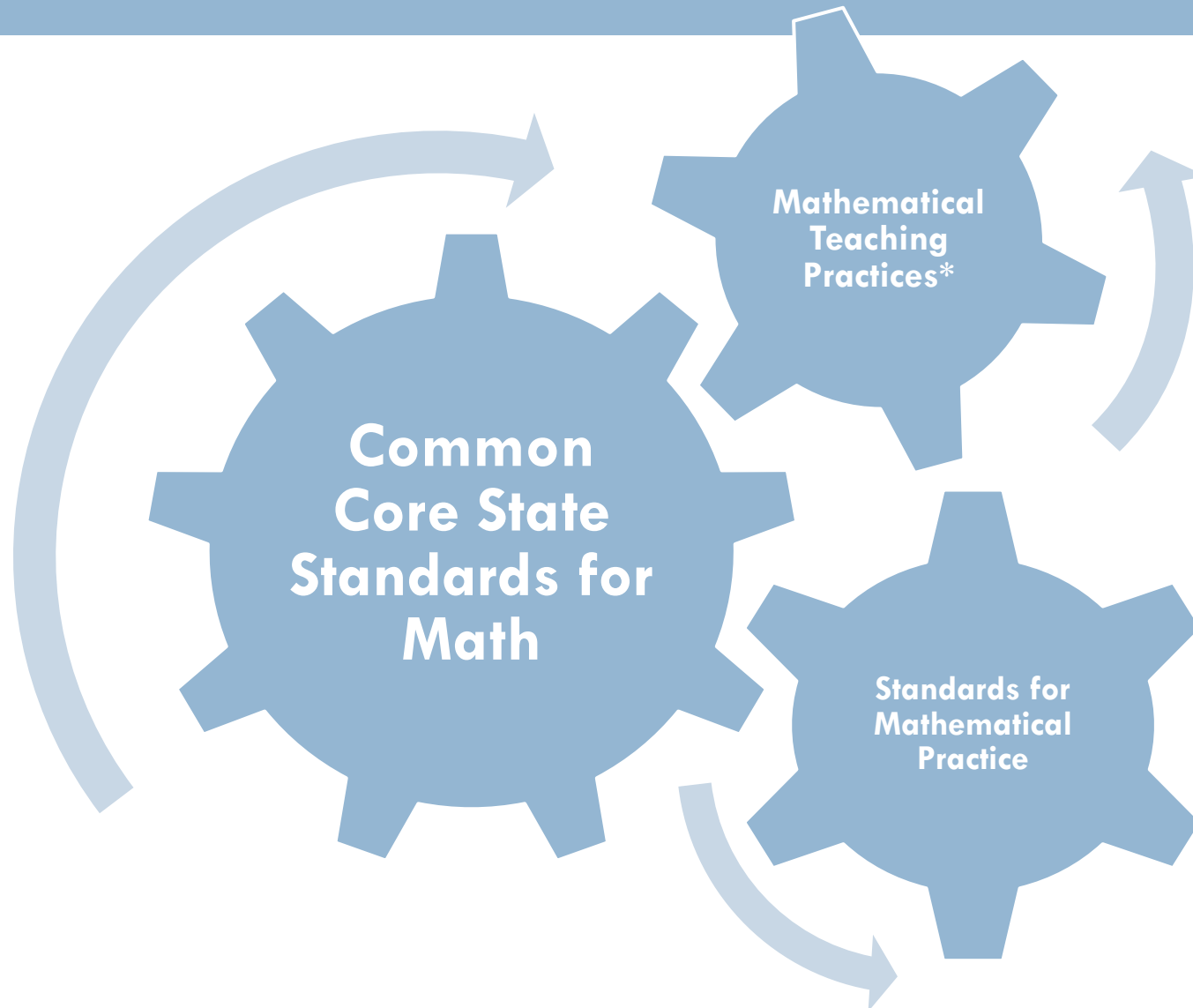
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- Deep conceptual understanding
- Coherent instruction at and across all levels
- Positive math dispositions
- Equitable outcomes



# Elements of Comprehensive Math Instruction

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\*National Council of Teachers of Mathematics (NCTM)

# Common Core State Standards for Mathematics

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The [Common Core State Standards] define what students should understand and be able to do in their study of math. These learning goals outline what a student should know and be able to do at the end of each grade.”

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The Common Core concentrates on a clear set of math skills and concepts. Students will learn concepts in a more organized way both during the school year and across grades. The standards encourage students to solve real-world problems.

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# Standards for Mathematical Practice

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The Standards for Mathematical Practice describe skills all students need to develop through their math education.

## Process Standards

- Problem Solving
- Reasoning and Proof
- Communication
- Representation
- Connections

~National Council of Teachers of Mathematics

## Strands of Mathematical Proficiency

- Conceptual Understanding
- Procedural Fluency
- Strategic Competence
- Adaptive Reasoning
- Productive Disposition

~National Research Council: *Adding it Up*

# Mathematical Teaching Practices

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Core set of high-leverage practices and essential teaching skills necessary to promote deep learning of mathematics.

~Principles to Actions: Ensuring Mathematical Success for All. Reston, VA: NCTM, National Council of Teachers of Mathematics, 2014.

Mathematics Teaching Practices
<b>Establish mathematics goals to focus learning.</b> Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions.
<b>Implement tasks that promote reasoning and problem solving.</b> Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies.
<b>Use and connect mathematical representations.</b> Effective teaching of mathematics engages students in making connections among mathematical representations to deepen understanding of mathematics concepts and procedures and as tools for problem solving.
<b>Facilitate meaningful mathematical discourse.</b> Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.
<b>Pose purposeful questions.</b> Effective teaching of mathematics uses purposeful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships.
<b>Build procedural fluency from conceptual understanding.</b> Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems.
<b>Support productive struggle in learning mathematics.</b> Effective teaching of mathematics consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships.
<b>Elicit and use evidence of student thinking.</b> Effective teaching of mathematics uses evidence of student thinking to assess progress toward mathematical understanding and to adjust instruction continually in ways that support and extend learning.

# Common Core State Standards Alignment Rubric

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## Shifts in Mathematics Instruction



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Greater **focus** on fewer topics.



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**Coherence:** Linking topics and thinking across grades.



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**Rigor:** Pursue conceptual understanding, procedural skills and fluency, and application with equal intensity.



# K-5 Math Adoption Process

## The Committee:

- Formed in fall of 2019
- Evaluated the status and quality of current K-5 math curriculum
- Focused on current effective practices in math and equity
- Determined the need for new materials
- Engaged in the formal adoption process
- Followed adoption processes and procedures

# K-5 Math Adoption Committee

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- Includes teachers, administrators, community members, parents, and specialists
- Balanced representation across K-5, including Special Education, Intervention, and Quest
- Specialists from Intervention, Professional Learning, Teaching and Learning, and Equity
- Administrators from 9 schools
- Community members

Brenna Knowles	Alcott Elementary
Danielle Lankester	Dickinson Elementary
Mary Lou Luce	Carson Elementary
Emily Mahoney	Kirk Elementary
Jennifer McCreary	Parks Elementary
Haley Miller	Einstein Elementary
Robin Miller	Baker Elementary
Stephanie Miller	Lakeview Elementary
Aundy Newell	Wilder Elementary
Jenny Olsen	Bell Elementary
Stephanie Priest	Rose Hill Elementary
Hannah Rasmussen	Rockwell Elementary
Haley Redmon	Barton Elementary
Rojine Rudio	Redmond Elementary
Kelly Schmidt	McAuliffe Elementary
Bernadette Schmitt	Sandburg Elementary
Kenny Short	Muir Elementary
Celeste Stoneman	Keller Elementary
Jeanne Thomas	Frost Elementary
Trish Trotter	Mann Elementary
Julia Winkel Schmidt	Audubon Elementary

## K-5 Math Adoption Committee 2020-21

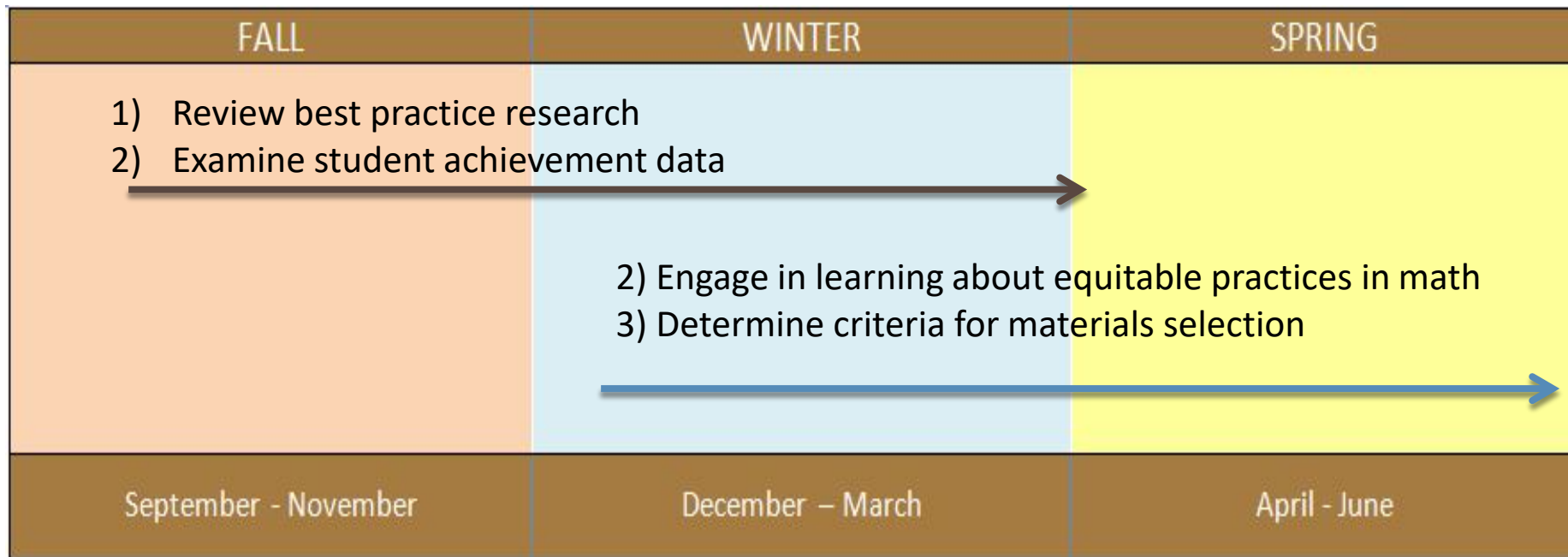


Directors	
Dr. Jennifer Rose	Teaching and Learning
Specialists	
Jennifer Driftmier	Elementary Math Specialist
Jake Duke	Computer Science Specialist
Kelly Jacobson	Equity & Family Engagement Facilitator
Maureen Layton	Intervention Services Program Specialist
Natalie Pullen	Special Services Program Specialist
Wendy Robards	Secondary Math Specialist
Community Members	
Svetlana Aleksieva	Current Parent/Guardian
School Administrators	
Edith Brumant	Juanita Elementary
Keith Buechler	Franklin Elementary
Lucy Davies	Rush Elementary
Erica Gray	Blackwell Elementary
Heather Frazier	Lakeview Elementary
Julie Guest	Thoreau Elementary
Robin Imai	Einstein Elementary
Heidi Lindquist Lane	Dickinson Elementary
Lori Pierce	Keller Elementary
Elementary Teachers	
Emma Albertson	Twain Elementary
Teresa Barber	Smith Elementary
Annette Chan	Barton Elementary
Jaclyn Donald	Mead Elementary
Stephanie Egeberg	Mead Elementary
Leslie Elmer	Lakeview Elementary
Danielle Frost	Kirk Elementary
Kelly Gilbert	Emerson K-12
Erin Glover	Blackwell Elementary
Florinda Gorostiza	Mann Elementary
Lizzy Gryder	Rush Elementary
Karrie Hein	Thoreau Elementary
Victoria Jacobson	Franklin Elementary
Kamila Kaliszek	Rush Elementary

# Two-Year Adoption Process

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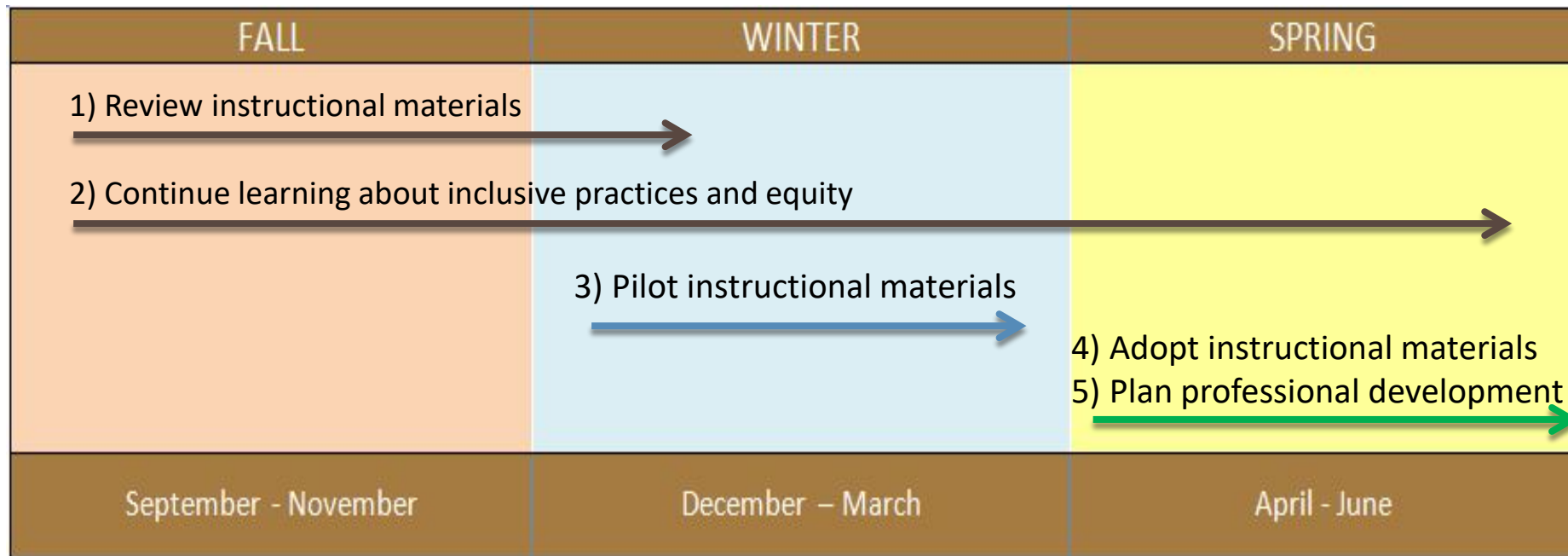
## Year One: 2019-20



# Two-Year Adoption Process

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## Year Two: 2020-21



# Addressing Issues of Equity Through Curriculum

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Data analysis of student outcomes in math in LWSD

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In-depth study of research, including resources from National Council of Teachers of Mathematics

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Collaboration with Equity Department to use equity rubrics

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Use of OSPI's Screening for Biased Content Tool

# Identifying and Reviewing Materials

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Criteria used to identify initial materials to review

- Aligns to the Common Core State Standards
- Clearly demonstrate elements that support equitable outcomes, access and inclusive practices, and critical thinking for each student
- Focuses on resources that align to equitable practices
- Includes resources for differentiating instruction for students requiring intervention as well as enrichment
- Includes digital resources



# Identifying and Reviewing Materials

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Additional elements used to identify initial materials to review

- Use in neighboring districts
- Organizational (EdReports, Office of the Superintendent of Public Instruction, Puget Sound Educational Service District) recommendations
- Committee member recommendations
- Report on curricula used state-wide from OSPI



# Reviewing Materials – Additional Indicators

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Department directors provided additional indicators for materials to ensure access and learning for all students:

- Intervention Services
- Special Services
- Highly-Capable Services
- Equity, Access, and Opportunity Services





# District Rubrics for Evaluating Curriculum

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## Core District Rubrics revised to align with current research

- Standards Alignment
- Effective Practice
- Assessment
- Digital Resources
- Organization and Design

## Equity Resources

- Office of the Superintendent of Public Instruction
- LWSD created

# Evaluating Curriculum to Pilot

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## The Committee:

- Reviewed 12 sets of curriculum materials
- Utilized an extensive evaluation and consensus process to eliminate options
- After comprehensive evaluation, narrowed to two for piloting



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Curriculum Associates

# Pedagogical Background

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## Routines for Reasoning

### Try–Discuss–Connect Routine

## The Importance of Instructional Routines

Instructional routines are gaining greater popularity in effective ways to support teachers' Mathematical Practices and mathematical understanding. **Instructional interaction that organize classroom** (Zani, 2009). **Instructional routines and this repetition makes** for developing mathematical (Janssen Creighton, 2016). Their nature provide a number of teachers, including:

between students, between teacher and students, and between students and the task. These routines are helpful, consistently executed, and

brain space so that they can handle mathematical tasks at hand, rather than being overwhelmed by the tasks and processes

brain space so that they can use evidence of student

is in developing their reasoning practices—especially when these practices are intentionally woven into the routine

ent NCTM's Effective Teaching Practices (2014), instructional routines average teaching moves at their disposal for teachers to mindfully use. The Try–Discuss–Connect routine in mathematics (Curriculum Associates, 2014) is a model of meaningful mathematical instruction by including Individual Think Time and the "Four Rs" (repeat, rephrase, reword, and reason). These are reasoning and communicating

### Support for All Students Using the Four Rs

The Four Rs strategy supports student processing of important math ideas during full group discussions. It also provides a structure in which students can use and develop mathematical language. **While helpful for all students, the Four Rs strategy is a critical support for English learners and students with learning disabilities.**

English learners are doubly challenged during full group conversations as they are not only working to make sense of the mathematical ideas being discussed, but they are also doing so in a language in which they are not yet fluent. **A full group discussion in which student ideas are repeated, rephrased, reworded, and recorded provides students, particularly English learners, much needed multiple passes at hearing the mathematical ideas being shared** and the language being used. In addition, the repeating, rephrasing, and rewording provide opportunities for English learners to use multiple modalities for making sense of the mathematical ideas while they practice producing language.

Like English learners, students with learning disabilities benefit from the multiple passes and modalities inherent in the Four Rs, but sometimes for different reasons. **Repeating and rephrasing is a support for students who benefit from verbal processing, as it provides them multiple opportunities to make sense of an idea while talking it through with others.** It also plays to the strength of students with learning disabilities who are strong verbal processors by positioning them to leverage their learning strength to make sense of and communicate important math ideas. **The repetitive nature of the Four Rs also provides ongoing support for students who struggle with short-term or working memory.** When ideas are revoiced multiple times, these students have more than one chance to intake and process the idea. When important ideas are recorded, students have visual residue to support their ability to process and recall. Additionally, the visual residue serves to engage another modality, thereby supporting students who struggle to maintain attention or focus.

The Four Rs strategy supports student processing of important math ideas during full group discussions.



# Pedagogical Background

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## Math Vocabulary

### Supporting Math and Academic Vocabulary Development

Understanding mathematics and engaging in mathematical discussions requires students to communicate ideas using both academic and math-specific vocabulary and language.

Formal academic mathematical language can be challenging for many students. Exposure to and integrated practice with academic language is critical for all students' success.

Academic language falls into two categories:

- technical, discipline-specific words and phrases used in the area of mathematics (such as *hypotenuse*, *prime number*, *rational number*, *base-ten*, *"per,"* *if and only if*)
- all-purpose academic words—such as *analyze* and *structure*—that transcend the discipline of mathematics (Council of the Great City Schools, 2016)

#### Build Your Vocabulary

At the beginning of each unit the *Build Your Vocabulary* activities make math and academic vocabulary accessible to all learners:

- **My Math Words** provides access to prior knowledge and understanding of critical math words and phrases through teacher-guided activities.
- **My Academic Words** provides an early entry point to those all-purpose academic words students will engage with throughout their study of mathematics. Use the *Academic Vocabulary Routine* to provide explicit instruction and active engagement.

**Unit 1**  
**Build Your Vocabulary**

**My Math Words**  
Match the word with the picture.

five  
add  
subtract  
ten

**My Academic Words**  
Use the academic words to complete the sentences.

☐ discuss ☐ important ☐ strategy

1 Count on is a strategy you can use for adding.

2 My partner and I will discuss how we got our answers.

3 Knowing how to count on is important for learning how to add.

#### Academic Vocabulary Routine

Use with *Build Your Vocabulary*.

##### 1 Assess prior knowledge.

- Assess prior knowledge by asking students to place a check mark next to any vocabulary words they know or are familiar with.
- Have students work in pairs to briefly discuss how and when they have used the words. Listen to assess if perceived knowledge is correct.
- If you have Spanish speakers or speakers of other Latin-based languages, use the *Cognate Support Routine*.

##### 2 Pronounce the words.

- Review *My Academic Words*.
- Say each of the words aloud and then have students repeat to ensure correct pronunciation.

##### 3 Define the words.

- Call on volunteer pairs to provide meanings of the words they know.
- Note which word(s) need more direct instruction and modeling.
- Model the usage of the word(s) in context, using topics that connect with students in a meaningful way.
- Provide the meaning of the word(s). See *Academic Vocabulary Glossary* on the Teacher Toolbox.

##### 4 Use the words.

- Have students write the word(s), their own descriptions or examples, and a picture, symbol, or graphic representation in their math journal.
- Review the activity as a whole class and remediate where needed.



# Pedagogical Background

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## Teacher Moves That Engage Students in Discourse and Mathematical Thinking

Mathematical discourse is a powerful sense-making tool, but it doesn't just *happen*. Students must develop both the inclination and habit of attending to each other's mathematical ideas, and they must have the time and space to make sense of, critique, and develop the ideas. Teacher talk moves are crucial supports for developing students' capacity to engage in productive mathematical discussions (Kazemi and Hintz, 2014; Chapin, O'Connor, and Anderson, 2009). Let's unpack the three talk moves in Try-Discuss-Connect that work in concert to ensure that all students are taking up and talking productively about one another's mathematical ideas.



**Individual Think Time (ITT)** Individual Think Time provides students a short time—typically 10 seconds to 2 minutes—to think about a question or problem before discussing with a partner, a small group, or the whole class. This private processing time significantly increases both the quantity and quality of student talk because it gives students time to make sense of the question or problem and begin to gather their thoughts and questions.



**Turn and Talk** A Turn and Talk gives students an opportunity to share their thinking or ideas with a partner. Teachers often use this teacher move to prepare students for a full group conversation or when students go silent during a whole class discussion (Kelemanik, Lucenta, and Janssen Creighton, 2016; Chapin, O'Connor, and Anderson, 2009; Kazemi and Hintz, 2014). It provides a safe space for students to work through ideas, questions, and language, and it ensures all students have opportunities to "talk math," not just the fraction of students who speak in a whole class conversation.



**The Four Rs** The Four Rs—repeat, rephrase, reword, and record—is a strategy that strings together discrete talk moves in order to support students in processing information shared in classroom conversations and to help them develop mathematical understanding and the language to communicate it. Kelemanik, Lucenta, and Janssen Creighton (2016) call the Four Rs "an essential strategy for helping students make sense of classroom discussions."

The goal of these three teacher moves is to engage each and every student in productive mathematics discourse. As such **the focus of each is sense making rather than merely answer getting or answer telling**. They provide the time, structure, and support to engage students in the co-construction of mathematical ideas and understanding.

Mathematical discourse is a powerful sense-making tool, but it doesn't just *happen*.

## Student Discourse

Individual Think Time provides students access and readies them to begin talking with classmates. **All students benefit from Individual Think Time in varying ways.**

- ★ Students may make observations, develop insight, and/or begin to think of questions they want to ask.
- ★ English learners (ELs) may be processing the language they see or have heard, or retrieving language in order to begin discussing with a partner.
- ★ Some students with learning disabilities (SwDs) may be taking a few seconds to focus or to process the meaning of what they heard or are looking at.

When teachers begin to implement Individual Think Time, they plan for the moments that students will need to pause before responding to a question or discussing with a partner. They anticipate which representations or strategies students will share, and how long it will take their classmates to make sense of them. If students are interpreting a short question or problem situation, they may only need 20–30 seconds. If they are making sense of a classmate's strategy that differs from their own, they may need a minute or so. Teachers then observe the classroom to make a decision regarding when to transition from ITT to partner discussion. The goal is for all students to be able to think about the problem without frustration and begin at least a partial solution strategy before entering into a partner conversation.

It is important that students do not raise their hands to respond during

## Prompting Turn and Talks

Although Turn and Talks are valuable tools for students and teachers alike, teachers need to implement them with purpose. If teachers ask students to talk about something with a partner, students must feel a genuine need to talk through the idea. That is, students need something to talk *about*. Harold Asturias, Director of the Center for Mathematical Excellence at Lawrence Hall of Science, UC Berkeley, suggests that teachers should provide a purpose, a prompt, and a product when launching a Turn and Talk. A teacher may position students to turn and talk by saying, "Will Olivia's strategy always work? Turn and talk to your partner so that, together, you can decide if you think it will always work and justify your decision."

- **The purpose** is to work together to make a decision and justify it.
- **The prompt** is, "Will Olivia's strategy always work?"
- **The product** is the decision and justification.

In contrast, the teacher could have said, "Turn and talk to your partner about what you heard" which could result in students not having a clear idea about what they should talk about. A Turn and Talk that contains a *purpose*, a *prompt*, and a *product* always generates more thinking and language development.

# Access & Inclusivity

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## Language for referring to students

**YEARLY PACING FOR PREREQUISITES** READY CLASSROOM MATHEMATICS

### Overview

As you begin the year, some students in your class may have unfinished learning from the previous grade. Research shows that the most effective and equitable way to address unfinished learning is to selectively and strategically reinforce prerequisite concepts. The focus of instructional time should remain on grade-level content.

**Yearly Pacing for Prerequisites** provides a scope and sequence with opportunities to weave prerequisite content into grade-level work and pacing suggestions to keep learning on track. **Unit and Lesson Support** describes the critical aspects of each prerequisite lesson and provides tips for supporting students as they engage with grade-level content.

To learn more about how to use these documents, read below or go to [ReadyClassroomCentral.com](https://ReadyClassroomCentral.com) for more information.

#### How to Use Yearly Pacing for Prerequisites and Unit and Lesson Support.

Use the Prerequisites report to identify which students need in-depth review or additional support.

If most students have <b>likely acquired</b> the prerequisite skills	▶ Teach the unit as you normally would, using the guidance in the <b>Teacher's Guide</b> for support and recommendations.
If small groups of students need <b>in-depth review or additional support</b>	▶ Use the <b>Recommended Resources</b> provided to address students' learning needs during small group instruction.
If most of the class needs <b>additional support</b>	▶ Use the <b>Unit and Lesson Support</b> to access on-the-spot teaching tips to support students with unfinished learning while teaching on-grade level lessons.
If most of the class needs <b>in-depth review</b>	▶ Review the <b>Unit and Lesson Support</b> to learn what's important about the prerequisite lesson(s) in relation to grade-level instruction. ▶ Use <b>Yearly Pacing for Prerequisites</b> to determine when to teach the prerequisite lesson(s) and how to consolidate pacing elsewhere to keep on track. ▶ Use what you know about your students to determine which recommended prerequisite lesson(s) to teach. ▶ Use the on-the-spot teaching tips, as needed, when teaching grade-level lessons.

### How to Use Yearly Pacing for Prerequisites and Unit and Lesson Support.

Use the Prerequisites report to identify which students need in-depth review or additional support.

If most students have **likely acquired** the prerequisite skills

▶ Teach the unit as you normally would, using the guidance in the **Teacher's Guide** for support and recommendations.

If small groups of students need **in-depth review or additional support**

▶ Use the **Recommended Resources** provided to address students' learning needs during small group instruction.

If most of the class needs **additional support**

▶ Use the **Unit and Lesson Support** to access on-the-spot teaching tips to support students with unfinished learning while teaching on-grade level lessons.

If most of the class needs **in-depth review**

▶ Review the **Unit and Lesson Support** to learn what's

# Access & Inclusivity

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## UNIT 1 Connect Language Development to Mathematics

### Language Expectations for Differentiation

The chart below provides teachers with examples of what English learners can do based on their English language proficiency levels in connection with one of the Common Core State Standards (CCSS) addressed in this Unit. As you plan for the lessons in this Unit, use the examples of language expectations to help you differentiate instruction and meet the needs of your English Language Learners.

#### ELL Language Expectations

**Standard 1.OA.C.5** Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

LANGUAGE DOMAINS	Beginning Level 1	Intermediate Level 2	Level 3	Advanced/Advanced High Level 4	Level 5
<b>LISTENING</b>	Follow simple oral instructions to count on in order to add and subtract, using realia, manipulatives, and drawings with a partner.	Follow simple oral instructions to count on in order to add and subtract using manipulatives and drawings with a partner.	Follow oral instructions to count on in order to add and subtract using a number path and drawings with a partner.	Follow oral instructions to count on in order to add and subtract using a number path with a partner or in a small group.	Follow complex oral instructions to count on in order to add and subtract, using a model with a partner or in a small group.
<b>SPEAKING</b>	Recite steps to count on in order to add and subtract, using manipulatives, drawings, and a word bank with a partner.	Restate the steps to count on in order to add and subtract, using manipulatives and a word bank with a partner or in a small group.	Explain steps to count on in order to add and subtract, using manipulatives with a partner.	Describe steps to count on in order to add and subtract in small groups.	Describe the steps to count on in order to add and subtract, using a graphic organizer.
<b>READING</b>	Match problems and solutions to count on in order to add and subtract, using manipulatives and realia with a partner.	Match problems and solutions to count on in order to add and subtract, using manipulatives and drawings with a partner.	Identify how to count on in order to add and subtract, using manipulatives and drawings with a partner.	Sort problems and solutions showing how to count on in order to add and subtract with a partner or in a small group.	Analyze problems and solutions and determine which used counting on in order to add and subtract in a small group.
<b>WRITING</b>	Complete an explanation of how to count on in order to add and subtract using manipulatives, drawings, and a word bank.	Write phrases to explain how to count on in order to add and subtract using word banks and sentence frames.	Explain how to count on in order to add and subtract, using a word bank and sentence frames in a small group.	Explain how to count on in order to add and subtract, using sentence frames in a small group.	Explain how to count on in order to add and subtract, using a graphic organizer with a partner.

## Build Your Vocabulary

### My Math Words

- Have children point to the *Review* words. Read each word aloud and have children repeat.
- Ask children to think about the meaning of each word. Activate prior knowledge by asking volunteers to share a brief example of each word. For example, children may share ideas such as: *one plus one equals two (add), take away (subtract), 1-2-3-4-5 (five), the number of fingers on two hands (ten).*
- Read the directions for the *My Math Words* activity aloud.
- Preview each picture with children. Ask them to look for clues that will help them match the picture to the correct word. Listen for children to describe specific features of each picture, such as: *two groups of 5, an X or crossed out cube, a plus sign, 5 cubes.*
- When children have matched the words and pictures, pair them up to compare their answers with a partner. Encourage children to justify their answers by explaining what picture clues helped them choose the right word.
- After children have completed the activity, facilitate a whole class discussion. Validate children's ideas or clarify misconceptions as needed.

### My Academic Words

#### Academic Vocabulary Routine

See Connect Language Development to Mathematics at the start of Unit 1 for the full routine.

- Assess prior knowledge.
- Pronounce the words.
- Define the words.
- Use the words.

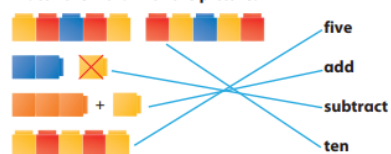
#### Cognate Support

- Ask children if any of the academic words look or sound similar to a word in their first language. Have children circle those words in their books.
- Check to see if the words children have selected are cognates.
- Explain to children that words in two languages that share the same or similar meaning, spelling, and pronunciation are called cognates.
- Write the cognates and have children copy them in their book next to the academic words.
- Say each of the cognates aloud or ask a native-speaker volunteer to model pronunciation and have children repeat.

## Build Your Vocabulary

### My Math Words

Match the word with the picture.



### My Academic Words

Use the academic words to complete the sentences.

- ☐ discuss ☐ important ☐ strategy
- Count on is a strategy you can use for adding.
  - My partner and I will discuss how we got our answers.
  - Knowing how to count on is important for learning how to add.

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Academic Vocabulary	Spanish Cognates	Haitian Creole Cognates
discuss	discutir	diskite
important	importante	enpòtan
strategy	estrategia	estrateji



### Mathematical Language Reference Tool

Have children turn to the front of their Student Worktext to review the sentence frames for this Unit.



# Access & Inclusivity

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## Cultural Responsiveness

### Connect to Community and Cultural Responsiveness

Use these activities to connect with and leverage the diverse backgrounds and experiences of all children.

#### Session 1 Use throughout this session.

- Many cultures with oral traditions use call-and-response chants in which a leader encourages an audience to respond with a word or phrase. Engage children in a call-and-response chant by energetically chanting: *Start with the greatest number!* Teach children to clap as they say each word in the response: *Then count on!* Repeat several times throughout the lesson.

#### Session 2 Use with Try It.

- Draw a concept tree emphasizing the general to specific, or whole-part-part, relationship between the words *children*, *girls*, and *boys*. Draw another concept tree. Reread *Apply It*, problem 3. Write *pets* in the biggest box. Ask children to turn and tell a partner what words from the problem belong in the smaller boxes. [cats, dogs] Write *cats* and *dogs* in the smaller boxes. Have children turn and tell a partner why the words fit into the category. Have them copy the concept tree. Ask them to turn and tell a partner what they might write or draw in the smaller boxes. Have children write their ideas in the notebook.

#### Session 3 Use with Connect It.

- Activate prior knowledge about comparing and contrasting. Create a T-chart with the headings *Like* and *Different*. Show a picture of a

cat and a dog. Ask: *How is a cat like a dog? How is it different?* Have children share one idea with a partner. Ask individuals to share with the group. Record their answers on the chart. Make connections to the thinking process required for the *Connect It*.

#### Session 4 Use with Apply It.

- Direct children's attention to the items used in the word problems: *markers*, *beads*, and *blocks*. Tell them to think of everyday objects they could use to count on. Encourage them to name objects from different places, for example, home, a store, a park, the library, etc.

#### Session 5 Use with Apply It.

- Practice the call-and-response chant used in Session 1. Tell children that they will use the chant to solve problems as a group. Organize the class into two groups. Have one child from each group stand before the class. Read problem 1 aloud. Have the first child begin the chant: *Start with the greatest number!* Pause for the rest of the children in group one to shout out the greatest number (5). The second child responds: *Then count on!* Pause for the next group to count on (6, 7, 8). Choose two more leaders and repeat with the remaining problems.

## Multi-Lingual Learners

### Connect to Language Development

For ELLs, use the Differentiated Instruction chart to plan and prepare for specific activities in every session.

ELL

English Language Learners:  
Differentiated Instruction

Prepare for Session 1  
Use with Try It.

#### Levels 1–3

**Listening/Speaking** Write the first *Try It* problem. Read it aloud. Circle 4 boys and 2 girls. Give children one card with the word *greatest* and another with *count on*. Tell them to think about which label they would use for 4 boys and which they would use for 2 girls. Ask them to arrange the cards in the order they hear the words. Say: *Start with the greatest number and then count on*. Point to the numbers as you ask: *Is 4 greater than 2?* [yes] Ask: *Which number is the greatest?* 4 is the greatest. *How many do we count on?* We count on 2.

#### Levels 2–4

**Listening/Speaking** After children have completed the *Try It* problems, pair them up to take turns describing the steps used in the counting on strategy to solve each problem. For example, Partner A will use the information in the first word problem and the picture of the fingers to describe the steps used to find the answer. Partner B will describe the steps used in the second problem using the picture for support. If children need additional support, provide a word bank with the words *start*, *greatest*, and *count*.

#### Levels 3–5

**Reading/Speaking** After completing the *Try It* problems, have children reread the first sentence of each. Have them underline information that is the same in both problems and circle information that is different and then compare their work with a partner. Have them take turns asking and answering questions about the similarities and differences using complete sentences that include phrases from the problems. [Possible answers include: *There are 2 girls in the first problem and 3 girls in the next problem. There are the same number of boys in each group.*]

# Access & Inclusivity

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## Differentiation

### Differentiated Instruction

#### RETEACH



#### Hands-On Activity

**Model two-digit addition problems.**

**Children** struggling with adding 2 two-digit numbers

**Will benefit from** additional work using multiple models

**Materials** For each pair: base-ten blocks (10 tens rods, 18 ones units), 2 copies of Activity Sheet *Number Bond Mat*, 10 cards with two-digit addition problems (some with regrouping and some without regrouping)

- One partner draws a card and models the addition problem using base-ten blocks and number bonds to find the sum. The other partner solves the problem using place value notation. Partners compare sums.
- If sums are the same, partners draw a new card and switch roles.
- If partners get different sums, they take turns explaining how they got their answers. They correct any errors until they agree on the correct sum.

Teacher Toolbox

### Small Group Differentiation

#### PREPARE

##### Ready Prerequisite Lesson

**Grade K**

- Lesson 29 Count to 100 by Tens

#### RETEACH

##### Tools for Instruction

**Grade K**

- Lesson 29 Count by Tens

**Grade 1**

- Lesson 29 Two-Digit Addition with Regrouping

#### REINFORCE

##### Math Center Activity

**Grade 1**

- Lesson 29 Add and Regroup

#### EXTEND

##### Enrichment Activity

**Grade 1**

- Lesson 29 Reach the Target

# Critical Thinking & Extension

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## Differentiated Instruction

### Teacher Toolbox

#### RETEACH: Tools for Instruction

##### Tools for Instruction

##### Two-Digit Addition with Regrouping

**Objective:** Students will be able to add two-digit numbers with regrouping using the standard algorithm, showing their understanding by explaining the steps. **Materials:** Student workbooks, two-digit number cards, and a recording sheet.

**Step by Step:**

1. Ask 21 and 38.
2. Make a ten to add two-digit numbers.

**Support English Learners:** Display the regrouping symbol to add to student workbooks to write the number in a different way.

**Generalize when regrouping is needed.**

1. Have the student use the number line to add 29 + 45.
2. Ask the student to identify what units are greater than 10.
3. Ask a discussion about what the student is thinking and how they made the number line.

#### REINFORCE: Math Center Activities

Center Activity 1.10

##### Add and Regroup

What You Need

- Number Cards 1-9, for each child

- Recording Sheet

##### What You Do

1. Pick a row on the Recording Sheet.
2. Place your number cards face down. Each player takes 2 numbers. Make a number to add to make the least or greatest total.
3. Compare your totals.
4. The player who wins the row gets a point.

Pick least total

Player A	Player B
5 4	6 1
29 + 45	29 + 16
20 + 40 + 24	20 + 30 + 15
29 + 45 = 74	29 + 16 = 45
Player B wins a point.	

Add the tens. Add the ones. Make a ten if you can.

##### Go Further

Use the digits 4, 5, 6, and 7 to make 2 two-digit numbers. Make numbers that will add to greatest and least totals.

#### EXTEND: Enrichment Activities

Enrichment Activity

Name \_\_\_\_\_

##### Reach the Target

##### Your Challenge

Choose pairs of numbers from the list that add to 63.

23 34 13 41 29 50 22 43 26 48 37 40 15

Example

$$23 + 40 = 63$$

$$\underline{\quad} + \underline{\quad} = 63$$

$$\underline{\quad} + \underline{\quad} = 63$$

$$\underline{\quad} + \underline{\quad} = 63$$

$$\underline{\quad} + \underline{\quad} = 63$$

What strategy did you use to find the addition pairs?

Student Name \_\_\_\_\_



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# Critical Thinking & Extension

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## Deepen Understanding

If no child presented the model shown on the Student Worktext page, connect the quick drawings and equations to the children's models by having children identify how they represent the problem.

**Ask** What do the quick drawings before the equal sign represent?

**Listen for** The blue shows 35 marbles and the red shows 27 marbles. Lines stand for tens and circles stand for ones.

**Ask** What do the quick drawings after the equal sign represent?

**Listen for** The tens are all grouped together and the ones are all grouped together. They show the total number of marbles differently.

**Ask** Why is there a border around 10 of the 12 ones in the drawing that shows all the ones?

**Listen for** There are more than 10 ones, so the border shows that you can make another ten from the 12 ones. That makes 6 tens in all.

**Ask** Why is the total 62 the same in both equations:  $50 + 12$  and  $35 + 27$ ?

**Listen for** The quick drawings show that the

### Connect It

1 How is your way like **Model It**? How is it different?

Children may say that they made a quick drawing combining the tens and the ones like **Model It** but they broke apart 12 ones into a ten and 2 ones before adding it to 50.

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### Deepen Understanding Addition Strategies

**SMP 8** Use repeated reasoning.

When discussing adding a multiple of ten and a teen number, prompt children to describe a mental strategy for finding the total.

**Ask** What is another way that  $50 + 12$  could look as a quick drawing and an equation?

**Listen for**  $50 + 12$  is the same as  $50 + 10 + 2$  because 12 is a ten and 2 ones. The quick drawing could show 5 lines plus another line and 2 circles.

**Ask** Why is  $50 + 12$  easier to add than  $35 + 27$ ?

**Listen for** 5 tens plus 1 ten is 6 tens. There are only 2 ones, so 6 tens and 2 ones is 62.



# Critical Thinking & Extension

29

## Challenge Activities

### EXTEND



#### Challenge Activity

Explore using subtraction.

**Children** who have achieved proficiency  
**Will benefit from** deepening understanding of adding two-digit numbers

**Materials** For each child: base-ten blocks (10 tens rods, 18 ones units), Activity Sheet  
*Hundred Chart*

- Ask children whether they can think of a strategy for solving  $43 + 17$  that uses subtraction.
- Share that you can add  $43 + 20$  and then subtract 3. Ask children to explain why this strategy works.

- Have children show with base-ten blocks and the hundred chart why this strategy works.
- Challenge children to try the strategy with several different two-digit addition problems and determine whether it will always work in this way.

### PERSONALIZE



Provide children with opportunities to work on their personalized instruction path with *i-Ready* Online Instruction to:

- fill prerequisite gaps
- build up grade-level skills

# Illustrative Mathematics

LearnZillion



LearnZillion

LearnZillion Illustrative Mathematics

# Pedagogical Background

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## **Design Principles**

- Students as capable learners of mathematics
- Learning mathematics by doing mathematics
- Problem-based lesson structure
- Balancing rigor
- Coherent progression
- Community building
- Instructional routines
- Using the 5 Practices for Orchestrating Productive Discussions
- Task complexity
- Purposeful representations
- Equitable Teaching Structures and Practices
- Teacher Learning through curriculum materials
- Model with mathematics

# Pedagogical Background

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## Routines for Reasoning

- Number Talks
- How Many Do You See?
- Act it Out
- Choral Count
- Counting Collections
- Write Numbers
- Number Puzzles

## Throughout the Unit

Throughout the unit, Number Talks and How Many Do You See warm-ups allow students to use strategies flexibly to add and subtract within 100.

Students continue to make sense of story problems with the Act it Out routine and practice counting with the Choral Count routine. Each routine reinforces concepts that students extend in the next unit.

In addition to the new center activities introduced in this unit, students revisit:

- Counting Collections, Stage 11
- Write Numbers, Stage 2
- Number Puzzles, Stage 4



# Pedagogical Background

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## Key Structures

### Student journal prompts

- Reflecting on content and practices
- Reflecting on learning and feelings about math

### Teacher planning

- Suggested activities for before, during and after a grade level planning meetings

### Teaching moves to support a math community

#### Teaching Moves to Support Math Community

student vital actions	teacher moves
All students participate.	<ul style="list-style-type: none"><li>• Assign rotating roles, and provide routines for collaboration so that every student is actively engaged in each task, and has experience in all roles over time.</li><li>• When students are confused ask them to show where they got lost or ask a question that can help them move forward (more than “I don’t get it” or “How do you do it?”).</li><li>• Check to see if there are recognizable patterns between participation and prior achievement or social groups (for example, ELL, race/ethnicity, or gender).</li></ul>
Students say a second sentence.	<ul style="list-style-type: none"><li>• Ask and encourage students to ask:<ul style="list-style-type: none"><li>▪ Can you tell me more about that?</li><li>▪ Why do you think that?</li><li>▪ What changed and what stayed the same?</li><li>▪ Is that an answer that makes sense for this problem? How do you know?</li><li>▪ How did you get that answer? Why did you (reference student work)?</li><li>▪ Is it always true? Sometimes true?</li></ul></li></ul>
Students talk about each other’s thinking.	<ul style="list-style-type: none"><li>• Show and discuss work generated by students when working with mathematics concepts. Questions that may be used to prompt students:<ul style="list-style-type: none"><li>▪ Did anyone approach the problem a different way?</li><li>▪ How is your thinking different from theirs?</li><li>▪ What does their way of thinking help you understand?</li><li>▪ Do you think their method would work with this kind of problem? Why or why not?</li></ul></li><li>• Try only responding to questions from groups when no one in the group can answer the question and everyone in the group can ask it.</li></ul>
Students revise their thinking.	<ul style="list-style-type: none"><li>• If a student is presenting an explanation, play the role of not understanding and say “Could you help me make sense of your thinking? Could you revise your explanation?”</li><li>• Have a student quote a classmate’s statement that inspired them to revise.</li><li>• Have students confer in small groups after whole-class presentations to revise and refine their way of thinking.</li></ul>
Students engage and	<ul style="list-style-type: none"><li>• Ask a student who has given a wrong answer additional questions to explore his or her thinking.</li></ul>

# Teacher Reflection Questions

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## Pedagogy

- Which question did you ask today that best supported students' understanding of area? What did students say or do that showed the question was effective?

## Student Thinking

- What strategies were students most comfortable using today?

## Math Content

- In grade 2, students skip counted by 2s, 5s, and 10s. In tomorrow's lesson, record how students are building fluency in multiplication by 2s, 5s and 10s.

## Beliefs & Positioning

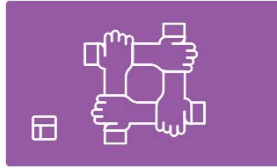
- As students worked in small groups, whose ideas were heard, valued and accepted? How can you adjust the group structure tomorrow to ensure each student's ideas are a part of the collective learning?

# Access & Inclusivity

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## Design Principles to support and engage all students

- Principle 1: Access for All
- Principle 2: Presume Competence
- Principle 3: Strengths-based Approach



### How the curriculum supports students with disabilities

From [iM](#) Illustrative Mathematics

Learn more about the principles, design, and specific supports for students with disabilities.



### How the curriculum supports English Language Learners

From [iM](#) Illustrative Mathematics

Read about the theory of action, design principles, and specific language routines used in the curriculum



### How the curriculum extends learning

From [iM](#) Illustrative Mathematics

Learn about how "Are you ready for more" activities go deeper for students who are ready



### Spanish translation

From [iM](#) Illustrative Mathematics

Read more about the Spanish translation of student materials now available for the 3-year middle school course

# Access & Inclusivity

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## Embedded Support

- Students with Disabilities
- English Learners

In previous lessons, students used strategies based on place value to add within 100, without composing a ten. They analyzed equations that represent strategies for finding the sum.

In this lesson, students add two-digit numbers using strategies of their choice and write equations to match their thinking. Students consider different methods for solving the same problem.

This lesson has a Student Lesson Summary.



### **Students with Disabilities (SwD)**

- Engagement (Activity 3)



### **English Learners (EL)**

- MLR7 (Activity 2)

# Critical Thinking & Extension

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## Student-facing Task Statement

37      22      18      56      41

Choose 2 numbers from above and write an addition expression where the sum:

- makes the smallest possible number.

Expression: \_\_\_\_\_

- makes the largest possible number.

Expression: \_\_\_\_\_

- does not make a new ten.

Expression: \_\_\_\_\_

- makes a new ten and some ones.

Expression: \_\_\_\_\_

- makes a new ten with no more ones.

Expression: \_\_\_\_\_

Be ready to explain how you know in a way that others will be able to understand.

If you have time:

Choose 2 numbers from above and write an

## Deeper Thinking

### Advancing Student Thinking

If students struggle to write equations to show their thinking, encourage them to explain their solution using 10-frames and counters, connecting cubes, or drawings and work with a partner to help them record equations to match it.

### Lesson Synthesis

🕒 10min

Display  $56 + 13$  and  $56 + 19$ .

"In the past you found sums like  $56 + 13$ . In this lesson you found sums like  $56 + 19$ . How are these the same and how are they different?" (Both expressions start with 56.  $56 + 13$  does not make a new ten, but  $56 + 19$  does.  $56 + 19$  is 6 more than  $56 + 13$ .)

# Critical Thinking & Extension

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## Multiple Ways to Solve Problems

- Which method do you like?
- Why?

Which Method Do You Like?

### Standards Alignments

Addressing 1.NBT.C.4

### Student-facing Task Statement

Circle the way you prefer to add  $37 + 25$ .

You may write in a different method if you would like.

Method 1

$$30 + 20 = 50$$

$$7 + 5 = 12$$

$$50 + 12 = 62$$

Method 2

$$37 + 3 + 2 = 42$$

$$42 + 20 = 62$$

Method 3

$$25 + 30 = 55$$

$$55 + 7 = 62$$

My Own Way  
(write it in!)

Why do you like this method?

# Critical Thinking & Extension

39



Grade 1 Unit 5

## Center: Get to 95

Students add within 100.

### Stage 1: Adding Ones

Aligned Sections Grade1.5.B

#### Additional Information

- connecting cubes in towers of 10 and singles
- number cards, 0-10 with 0 and 10 cards removed

#### Stage Description

Students add a one-digit number and a two-digit number with composing a ten. Students start with 55 and turn over a number card. Both students find the sum and record their equation. The sum becomes the first addend in the next round. Students try to get as close to 95 as they can without going over.

#### Standards Alignments

Addressing 1.NBT.C.4

#### Materials to Gather

Connecting cubes, Number cards 0-10

### Stage 2: Adding Tens or Ones

Aligned Sections Grade1.5.B

#### Additional Information

- Connecting cubes in towers of ten and singles
- Number Cards, 0-10 with 0 and 10 cards removed

#### Stage Description

Students start with the number 25 and pick a number card. They determine whether to add that number of tens or ones and write an equation. Each player must take 6 turns. The player who gets closest to 95 without going over is the winner.

#### Standards Alignments

Addressing 1.NBT.C.4

#### Materials to Gather

Connecting cubes, Number cards 0-10

#### Materials to Copy

Get to 95 Recording Sheet Stage 1 (groups of 1)



Grade 1 Unit 5

## Stage 3: Adding Two-Digit Numbers

Aligned Sections Grade1.5.C

#### Additional Information

- 3 number cubes per group of 2 students
- Connecting cubes in towers of ten and singles

#### Stage Description

Students roll 3 number cubes and find the sum to get the starting number. They roll the cubes again and add the sum of the numbers on the cubes to the first sum. Students continue rolling and adding the sum of the numbers rolled to the sum from the previous roll. They continue until each player makes 95.

#### Standards Alignments

Addressing 1.NBT.C.4

#### Materials to Gather

Connecting cubes, Number cubes

#### Materials to Copy

Get to 95 Recording Sheet Stage 3 (groups of 1)

## Center: How Close?

Students pick a given number of digit cards and then choose a subset of those to make an equation that yields a number as close as possible to the target number. Students remove the cards that show the number 10 before playing.

### Stage 4 : Close to 100

Aligned Sections Grade1.5.C

#### Stage Description

Students pick 7 cards and choose 4 of them to create 2 two-digit numbers. Each student finds the sum and the person who is closest to 100 wins.

#### Standards Alignments

Addressing 1.NBT.C.4, 2.NBT.B.5

#### Materials to Gather

Number cards 0-10

## Multiple Access Points

- 4 stages to access content

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## Year Two: Remaining Work for 2020-21 School Year



# Reviewing Materials - Pilot Process

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## Pilot programs

- Adoption members using materials in classrooms
- Additional teachers trained and piloting materials
- All pilot teachers piloting both programs

## Additional information being collected during pilot window

- Student feedback
- Parent and community feedback
- Teacher feedback

# Next Steps

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- Teachers pilot materials with their students
- Team continues gathering input from stakeholders
- Committee considers:
  - Rubric evaluation scores
  - Feedback from pilot teachers, students, parents and community
- Committee makes a final recommendation to the Board
- Committee/team plan professional learning and implementation of new materials for fall 2021-22



# Parent and Community Input on Materials

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## Access information

- *iReady Classroom Mathematics*
  - <https://www.curriculumassociates.com/reviews/generic-program-samplers>
- *Illustrative Mathematics*
  - <https://publicreview.learnzillion.com/>
    - Login: [lzteacher@example.com](mailto:lzteacher@example.com)
    - Password: lzteacher

Information for log-in to the curricula and to the feedback survey are on the LWSD website under Curriculum and Instruction.

Accepting input until May 12, 2021.

Community feedback will be considered in decision-making process.

# Timeline for Next Steps

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May

- Committee will make recommendation to the school board

June

- School board will consider recommendation

September

- If approved, new materials will be implemented Fall 2021

# What we want for all students

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- Deep conceptual understanding
- Coherent instruction at and across all levels
- Positive math dispositions
- Equitable outcomes



# Thank you for your time and engagement!

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