



Grade 2 Summer Learning

For students who have just completed Grade 2

Because of the critical nature of representing numbers and adding and subtracting numbers moving forward beyond Grade 2, both of these topics are addressed in this Grade 2 summer learning.

The topics of patterns and algebra also allow for attention to number but from a softer perspective.

Therefore, the Grade 2 topics I decided to focus on to ready students for Grade 3 are the following:

- Representing whole numbers
- Meanings of addition and subtraction
- Adding and subtracting small numbers
- Adding and subtracting two-digit numbers
- Patterns
- Algebra

Essential Understandings that are the focus of the support:

- WN-1** Every whole number can be represented in many ways. Each way highlights something different about that whole number.
- WN-2** A place-value system standardizes how whole numbers are decomposed and how that decomposition is recorded. A place-value system makes it easier to describe and compare numbers.
- WN-3** Benchmark numbers can be used to estimate, compare, and give meaning to numbers.
- O-1** Any addition situation involves parts and a whole. The parts are known, but the whole is not known.
- O-2** Any subtraction situation involves parts and a whole. One or more parts and the whole are known, but not all of the parts are known.
- O-5** There are relationships among the four operations. Addition and subtraction are inverse operations.
- O-6** A place-value system standardizes how numbers are decomposed (i.e., in tenths, ones, tens, hundreds, and so on) and how that decomposition is recorded. Decomposing by place value makes it easier to perform operations with numbers.
- O-7** Performing operations with numbers is often made easier by decomposing and recomposing numbers and/or by thinking of numbers in other units.
- O-9** Estimating is an essential part of any computation to catch errors or to give a feel for how to proceed with a calculation.
- O-10** There are always multiple strategies for determining the result of a computation, whether it is an estimated or an exact result.
- PA-1** Every pattern involves some kind of repetition.
- PA-3** There is no way to be certain how a pattern continues without a pattern rule.
- PA-5** Many ideas about number, geometry, measurement, and data can be revealed by exploring underlying patterns.
- A-2** Equality is an expression of balance. The two sides of an equation describe the same quantity.



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This has been set up for 20 sessions of about 1.5 to 2 hours each:

- Each day includes at least one Number Talk.
- Each day also includes either a Diagnostic Task, which may be followed up with an additional Number Talk or some practice activities, or a MathUP lesson, which is followed up with practice activities.

Number Talks that are particularly recommended are the following:

Grade 2: 6, 9, 11, 13, 15, 16, 17, 22, 23, 24, 26, 29, 35, 39, 40, 43, 45, 56, 65, 67

Grade 3 Diagnostic Tasks to check on prerequisites from Grade 2 come from these topics:

- Representing Whole Numbers
- Adding and Subtracting Numbers Less Than 100
- Adding and Subtracting Greater Numbers
- Patterns
- Algebra

On a day that a Diagnostic Task is used (based on the six focus topics), there is a Number Talk followed by the Diagnostic Task. The task should be described as an activity, not a test, to reduce any anxiety students might feel.

It might be appropriate to review some of the vocabulary in the Diagnostic Task before administering it.

If students struggle with the Diagnostic Task, it might be a good idea to go back to the related Grade 2 Diagnostic Tasks and treat them as additional activities. These tasks come from the following topics:

- Representing Whole Numbers
- Meanings of Addition and Subtraction
- Adding and Subtracting Small Numbers
- Adding and Subtracting Two-Digit Numbers
- Patterns
- Algebra

If there are no problems with the Diagnostic Task and you have more time to work with students, you might choose to work on additional Number Talks, or you might choose to use one or more of these Minds On activities from the following topics:

- Representing Whole Numbers
- Meanings of Addition and Subtraction
- Adding and Subtracting Small Numbers
- Adding and Subtracting Two-Digit Numbers
- Patterns
- Algebra

The suggested MathUP lessons that follow assume that students are working at the Grade 2 level and that it is not necessary to return to lessons from Grade 1.

Before beginning a lesson, it would be valuable for the teacher to read the Sum It UP section to review the content being covered and then move on to the three parts of the lesson — Minds On, Action, and Consolidate — followed by the Your Turn Questions and additional suggested practice activities.



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Strand	Topic	Lesson	* Prerequisite Topics
N	Representing Whole Numbers *	Lesson 2 Representing Two-Digit Numbers Lesson 3 Composing and Decomposing Two-Digit Numbers Lesson 4 Even and Odd Numbers Lesson 5 Representing Numbers to 200	Counting
N	Meanings of Addition and Subtraction *	Lesson 1 Recognizing Addition and Subtraction Situations Lesson 2 Relating Numbers Using Addition and Subtraction	Counting Representing Whole Numbers
N	Adding and Subtracting Small Numbers *	Lesson 2 Adding by Making Ten Lesson 3 Adding by Rearranging Lesson 4 Subtracting by Using Addition	Representing Whole Numbers Meanings of Addition and Subtraction
N	Adding and Subtracting Two-Digit Numbers *	Lesson 2 Adding Using Base Ten Blocks Lesson 4 Subtracting Using Base Ten Blocks	Representing Whole Numbers Meanings of Addition and Subtraction Adding and Subtracting Small Numbers
A	Patterns	Lesson 2 Describing Increasing Patterns Lesson 4 Using Adding and Subtracting Patterns	None
A	Algebra *	Lesson 1 Equations as a Balance Lesson 2 Creating Equivalent Expressions	Meanings of Addition and Subtraction