



Grade 5 Summer Learning

For students who have just completed Grade 5

Decimals and fractions become increasingly important in the curriculum as students move to Grade 6 and beyond. The multiplication and division of whole numbers is also a critical prerequisite to Grade 6 work. Place value is always important.

Therefore, the Grade 5 topics I decided to focus on to ready students for Grade 6 are the following:

- Representing numbers
- Comparing/ordering fractions/equivalence of fractions
- Representing and comparing fractions greater than 1
- Representing decimal tenths and hundredths
- Addition and subtraction of decimals
- Multi-digit multiplication and division (whole numbers)

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.
- F-1** Every fraction can be represented in many ways. Each way highlights something different about that fraction.
- F-2** Fractions are useful for describing numbers that fall between whole numbers.
- F-3** When a fraction is used to describe a part of a whole, the whole must be known to make sense of the fraction.
- F-5** There are different ways to compare and estimate fractions, such as relating the numerator and denominator, using benchmark numbers, and thinking of each fraction as multiple units of a given size.
- DE-1** Every terminating decimal can be thought of as a whole number of tenths, hundredths, thousandths, and so on. That means every decimal can be thought of as a fraction.
- DE-2** Using decimal numbers allows us to standardize how fractions can be decomposed into smaller fractions and how that decomposition is recorded.
- DE-3** Decimals are useful for describing numbers between whole numbers.
- DE-4** A place-value system makes it easier to describe and compare numbers.
- DE-5** Every decimal number can be represented in many ways. Each way highlights something different about that decimal number.
- 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-3** Multiplication is about a change from a unit of a given size to a unit of 1. You know the size and the number of units (the size and the number of groups) and you multiply to figure out the number of units of 1 (the product).
- O-4** Division is about a change from a unit of 1 to a unit of a given size. You know the number of units of 1 and the size of the unit (the dividend and the size of the group) and you divide to figure out the number of units (the number of groups). Or you know the number of units of 1 and the number of units (the dividend and the number of groups) and you divide to figure out the size of the unit (the size of the group).



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- O-5** There are relationships among the four operations. Addition and subtraction are inverse operations. Multiplication and division are inverse operations. Any multiplication situation can be thought of as repeated addition and vice versa. Any division situation can be thought of as repeated subtraction and vice versa.
- 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-8** Any computation can describe a variety of situations.
- 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.
- O-11** Any decimal computation can be reconsidered as a whole-number computation by changing the place-value unit.
- PR-1** Sometimes it is useful to compare two numbers in terms of how far apart they are, but other times it is useful to compare them in terms of how many units of one number it would take to fit into the other.
- PR-3** The comparison of number a to number b can always be thought of in two ways, by how many units of a make b or how many units of b make a .
- PA-5** Many ideas about number, geometry, measurement, and data can be revealed by exploring underlying patterns.
- A-1** Many of the properties that underlie operations are useful in certain circumstances to simplify calculations or to predict how specific values of expressions will change with a change in the value of a variable.



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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: 5: 3, 4, 5, 9, 15, 16, 17, 20, 21, 25, 28, 29, 31, 35, 38, 47, 50, 52, 55, 73

Grade 6 Diagnostic Tasks to check on prerequisites from Grade 5 come from these topics:

- Representing Whole Numbers
- Representing Decimal Numbers
- Representing, Comparing, and Ordering Fractions
- Whole Number Operations
- Adding and Subtracting Decimal Numbers

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 5 Diagnostic Tasks and treat them as additional activities. These tasks come from the following topics:

- Representing Whole Numbers
- Multiplying Whole Numbers
- Dividing Whole Numbers
- Representing, Comparing, and Ordering Fractions
- Representing Decimal Numbers
- Decimal Operations

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
- Estimating and Comparing Whole Numbers
- Dividing Whole Numbers
- Representing, Comparing, and Ordering Fractions
- Representing Decimal Numbers
- Estimating and Comparing Decimal Numbers
- Decimal Operations

The suggested MathUP lessons that follow assume that students are working at the Grade 5 level and that it is not necessary to return to lessons from an earlier grade.

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 Renaming Five-Digit Numbers Using Place Value	None
N	Multiplying Whole Numbers	Lesson 2 Multiplying Tens Lesson 3 Modelling Multiplication of Two-Digit Numbers Lesson 4 Multiplying Two-Digit Numbers Lesson 5 Solving Multiplication Problems	None
N	Dividing Whole Numbers *	Lesson 1 Relating Numbers Through Multiplication Lesson 2 Dividing Three-Digit by Two-Digit Numbers	Multiplying Whole Numbers
N	Representing, Comparing, and Ordering Fractions	Lesson 3 Representing Fractions Greater Than One Lesson 4 Equivalent Fractions Lesson 5 Comparing Fractions and Mixed Numbers	None
N	Representing Decimal Numbers *	Lesson 1 Extending the Place-Value System to Hundredths Lesson 3 Relating Fractions to Decimals	Representing, Comparing, and Ordering Fractions
N	Decimal Operations *	Lesson 1 Adding Decimals Lesson 2 Subtracting Decimals	Adding and Subtracting Whole Numbers Representing Decimal Numbers Estimating and Comparing Decimal Numbers