

Grade 3

The big ideas in Grade 3 include

- **multiplication and division of whole numbers;**
- **arrays and area;**
- **building fractions from unit fractions.**

This blueprint could start with any of the three units without prerequisites: [3.1 Wrapping up 1,000](#), [3.2 Polygons and Area](#), or [3.6 What are Fractions?](#). We chose the first of these because it provides a natural way for students to bridge from their second grade work on addition and subtraction, but any of the three choices would be reasonable.

In Grade 3 students begin by revisiting their Grade 2 work on addition and subtraction of whole numbers and extend it to addition and subtraction within 1,000. If students start the year with this work, there will be time for them to revisit the ideas as needed throughout the year until they develop fluency with those operations.

Next, students work on understanding the area of a region as the number of square units needed to cover a region without gaps or overlaps. Independently, students are introduced to multiplication of whole numbers as the total number of objects in one or more equal-size groups. Fluency with multiplication and division within 100 builds over an extended period of time, and so work towards fluency begins here. Students work to develop strategies for multiplying using place-value structure, the properties of operations, and the relationship between multiplication and division.

Next, students begin work with fractions. They understand fractions as being built from unit fractions, and represent them on a number line. They compare fractions and begin working on the notion of fraction equivalence. The end of the year culminates in a unit where students can bring together all of the ideas they have studied throughout the year, where they solve word problems involving addition and subtraction of time intervals in minutes, liquid volumes and mass, and perimeters of polygons.

Note that this course blueprint is only one of many possible ways of arranging a sequence of topics designed to achieve the standards. It is a continually evolving document and we welcome your comments [here](#).

3.1 Wrapping up 1,000

In this unit students

- **round to the nearest 10 and 100;**
- **add and subtract within 1,000.**

Students begin by revisiting their work on addition and subtraction of whole numbers from Grade 1 and extend it to addition and subtraction within 1,000. If students start with this unit, there will be time for them to revisit the ideas as needed throughout the year until they develop fluency with those operations.

Comment on this unit [here](#).

3.2 Polygons and Area

In this unit students describe and analyze categories of polygons and understand the meaning of area.

Students learn the idea of the area of a region as the number of square units needed to cover it without gaps or overlaps. It is important for students to understand area as an idea that is independent of the formula for the area of a rectangle, otherwise many students develop the major misconception that “area equals base times height” is a definition of area.

Comment on this unit [here](#).

3.3 Multiplication and Division

In this unit students

- **learn the meaning of multiplication and division;**
- **learn the relationship between multiplication and division;**
- **understand and use the commutative property of multiplication.**

Students understand multiplication as finding how many objects there are in a number of equal-size groups, and division as finding the number of groups or the number of objects in each group. Fluency with multiplication and division within 100 builds over an extended period of time, and so work towards fluency begins here. Critically, division is developed in terms of its relationship to multiplication in this and the next two sections.

Comment on this unit [here](#).

3.4 Multiplying and Dividing

In this unit students use properties of operations and the relationship between multiplication and division to find products and quotients.

Students develop explicit strategies for multiplying, using the properties of operations and the relationship between multiplication and division. They solve multiplication and division word problems. They continue their work towards fluency with multiplication and division within 100.

Comment on this unit [here](#).

3.5 When and Why to Multiply

In this unit students

- **understand and use the distributive property;**
- **solve more complex multiplication problems in context.**

This is a culminating unit on multiplication where students put everything they have learned so far together to solve real world and mathematical problems related to multiplication and division. The distributive property plays a prominent role as one of the most important properties or operations. For example, it is the distributive property and place-value structure that underpin the standard algorithms. Students continue their work towards fluency with multiplication and division within 100.

Comment on this unit [here](#).

3.6 What are Fractions?

In this unit students

- **understand fractions as built out of unit fractions;**
- **compare fractions;**
- **work with simple examples of fraction equivalence.**

Students start studying fractions, taking a unit fractions approach. The number line should be introduced as early as students are ready for it. The Number line and mathematical pictures and diagrams are important tools for supporting students' understanding of fraction comparisons and fraction equivalence.

Comment on this unit [here](#).

3.7 Bar Graphs and Line Plots

In this unit students represent and interpret data with an emphasis on using data displays to solve problems.

In this relatively short unit students create and interpret bar graphs and line plots and answer appropriate mathematical questions about the information contained in them. This is an important opportunity for students to get additional practice in using the four operations on whole numbers and working with fractions in context. Students continue to work toward fluency with multiplication and division within 100.

Comment on this unit [here](#).

3.8 Putting it All Together

In this unit students

- **solve multi-step problems with the four operations on whole numbers;**
- **achieve fluency with multiplication and division within 100.**

This is a culminating unit for all of the important mathematical work that students have been doing throughout the year. Here they bring together all of the things they have learned in earlier units, and demonstrate and capitalize on their fluent computational skills by solving multi-step word problems using all four operations. They solve problems involving addition and subtraction of time intervals in minutes, liquid volumes and mass, and perimeters of polygons.

Comment on this unit [here](#).



[Course Blueprint: Grade 3](#)

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