

Mathematics Grade 3 Summary

In Grade 3, instructional time should focus on five critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with numerator 1); (3) developing understanding of the structure of rectangular arrays and of area; (4) describing and analyzing two-dimensional shapes; and (5) solving problems involving measurement and estimation of intervals of time, money, liquid volumes, masses, and lengths of objects.

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Algebraic Concepts

- Know that a number of equal groups can be modeled by multiplication. For example, 5 stacks of 7 blocks can be modeled by 5×7 .
- Know that breaking a number of objects into equal groups can be modeled by division. For example, 28 students broken into groups of 4 can be modeled by $28 \div 4$.
- Solve multiplication and division word problems.
- Apply properties of multiplication and division. For example, $6 \times 4 = 4 \times 6$ and realize that $32 \div 8$ is the same as $8 \times ? = 32$.
- Quickly and accurately do multiplication up to 10×10 and the matching division problems.
- Solve two-step word problems using addition, subtraction, multiplication, and division. For example, "Jason has 3 more than 2 times as many marbles as Maria. Jason has 15 marbles. How many marbles does Maria have?"
- Describe an addition or subtraction pattern. Find the missing number in an addition or subtraction pattern.

Geometry

- Know the names of the shapes rhombus, rectangle, square, and quadrilateral. Understand that there are things that all of these shapes have in common (four sides), there are things that **some** of them have in common (both squares and rectangles are quadrilaterals with four right angles), and there are quadrilaterals that are **not** rhombi, rectangles, or squares.
- Divide rectangles and circles into parts with equal areas and use the parts to model fractions.

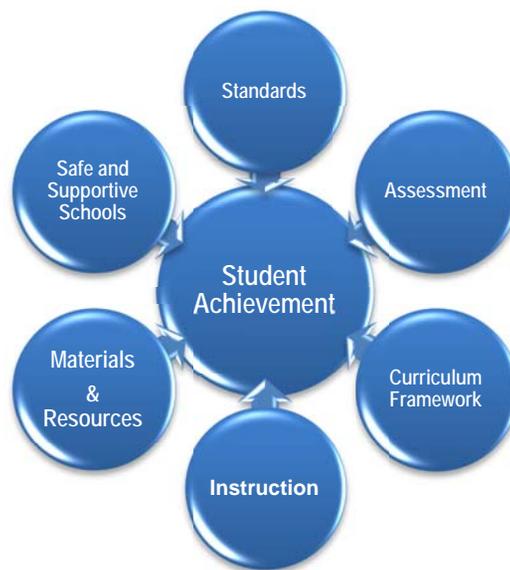
Measurement, Data, and Probability

- Tell time to the nearest minute and solve problems involving time. For example, "Soccer practice started at 6:50 p.m. and lasted 35 minutes. When did soccer practice end?"
- Measure and estimate capacity and mass using grams (g), kilograms (kg), and liters (l). Solve addition, subtraction, multiplication, and division problems using capacity and mass.
- Draw picture graphs and bar graphs using a scale of 1, 2, 5, or 10. Interpret the information in picture graphs and bar graphs.
- Measure the length of objects to the nearest $\frac{1}{4}$ -inch and show the information on a line plot.
- Show the same information in two different ways using pictographs, tally charts, bar graphs, and tables.
- Find area by counting unit squares.
- Use multiplication to solve problems about the area of rectangles.

Diagnostic Category Skills List

Numbers and Operations

- Round numbers to the nearest 10 or 100.
- Quickly and accurately do addition up to a sum of 1000 and the matching subtraction problem.
- Multiply one-digit numbers by a multiple of 10. For example, 3×60 .
- Know that a fraction is the number of smaller parts (numerator) when the whole is divided into equal smaller parts (denominator).
- Model fractions on a number line.
- Find simple equivalent fractions such as $\frac{1}{2} = \frac{2}{4}$ or $\frac{4}{6} = \frac{2}{3}$.
- Find fractions equivalent to whole numbers such as $\frac{5}{1} = 5$.
- Make comparisons between fractions when the fractions have either the same numerator such as $\frac{3}{7}$ and $\frac{3}{8}$, or when the fractions have the same denominator such as $\frac{4}{9}$ and $\frac{5}{9}$. For example, $\frac{3}{7} > \frac{3}{8}$ and $\frac{4}{9} < \frac{5}{9}$.



Additional Materials and Resources can be found at:

<http://www.pdesas.org/>

or

<https://pa.drctdirect.com/>

CLASSROOM DIAGNOSTIC TOOLS

Mathematics Grade 3

Grade Level Summary, Standards for Mathematical Practice, and Diagnostic Category Skills List

The Mathematics summary for grade 3 describes the performance in mathematics that students in grade 3 are expected to demonstrate. The standards for mathematical practice describe practices that students should develop across grades in their study of mathematics. The Diagnostic Category Skills List provides descriptions of skills that students can be expected to demonstrate within each Diagnostic Category while taking the Classroom Diagnostic Tools for Mathematics. While this list does not include every possible skill that students may encounter within the CDT, it does provide a representative sample for each diagnostic category. Additionally, mathematics instruction should not address these as discrete skills but rather incorporate them with the standards for mathematical practice as a part of an integrated curriculum.



July 2014

SAS Standards
Aligned
System