**﻿﻿Module 1 -
Place Value and Decimal Fractions**﻿﻿
In Module 1, students’ understanding of the patterns in the base ten system are extended from Grade 4’s
work with place value of multi-digit whole numbers and decimals to hundredths to
the thousandths place.  In Grade 5, students deepen their knowledge through
a more generalized understanding of the relationships between and among adjacent
places on the place value chart, e.g., 1 tenth times any digit on the place
value chart moves it one place value to the right.  Toward the module’s end
students apply these new understandings as they reason about and perform decimal
operations through the hundredths place.

﻿﻿**Module
2 - Multi-Digit Whole Number and Decimal Fraction Operations**﻿﻿
In Module 2 students apply patterns of the base ten system  to mental strategies and a sequential
study of multiplication via area diagrams and the distributive property leading
to fluency with the standard algorithm.  Students move from whole numbers
to multiplication with decimals, again using place value as a guide to reason
and make estimations about products. Multiplication is explored as a method for
expressing equivalent measures in both whole number and decimal forms.  A
similar sequence for division begins concretely with number disks as an
introduction to division with multi-digit divisors and leads student to divide
multi-digit whole number and decimal dividends by two-digit divisors using a
vertical written method.  In addition, students evaluate and write
expressions, recording their calculations using the associative property and
parentheses.  Students apply the work of the module to solve multi-step
word problems using multi-digit multiplication and division with unknowns
representing either the group size or number of groups.  An emphasis on the
reasonableness of both products and quotients, interpretation of remainders and
reasoning about the placement of decimals draws on skills learned throughout the
module, including refining knowledge of place value, rounding, and
estimation.

**Module 3 -
Addition and Subtraction of Fractions**
In Module 3, students' understanding of addition and subtraction of fractions extends from earlier work
with fraction equivalence and decimals. This module marks a significant shift
away from the elementary grades' centrality of base ten units to the study and
use of the full set of fractional units from Grade 5 forward, especially as
applied to algebra.

**Module 4 -
Multiplication and Division of Fractions and Decimal Fractions**
Grade 5’s Module 4 extends student understanding of fraction operations to multiplication and division of
both fractions and decimal fractions.  Work proceeds from interpretation of
line plots which include fractional measurements to interpreting fractions as
division and reasoning about finding fractions of sets through fraction by whole
number multiplication.  The module proceeds to fraction by fraction
multiplication in both fraction and decimal forms.  An understanding of
multiplication as scaling and multiplication by n/n as multiplication by 1
allows students to reason about products and convert fractions to decimals and
vice versa.  Students are introduced to the work of division with fractions
and decimal fractions.  Division cases are limited to division of whole
numbers by unit fractions and unit fractions by whole numbers.  Decimal
fraction divisors are introduced and equivalent fraction and place value
thinking allow student to reason about the size of quotients, calculate
quotients and sensibly place decimals in quotients.  Throughout the module
students are asked to reason about these important concepts by interpreting
numerical expressions which include fraction and decimal operations and by
persevering in solving real-world, multistep problems which include all fraction
operations supported by the use of tape diagrams.

**Module 5 -
Addition and Multiplication with Volume and Area**
In this 25-day module, students work with two- and three-dimensional figures.  Volume is introduced to
students through concrete exploration of cubic units and culminates with the
development of the volume formula for right rectangular prisms.  The second
half of the module turns to extending students’ understanding of two-dimensional
figures.  Students combine prior knowledge of area with newly acquired
knowledge of fraction multiplication to determine the area of rectangular
figures with fractional side lengths.  They then engage in hands-on
construction of two-dimensional shapes, developing a foundation for classifying
the shapes by reasoning about their attributes.  This module fills a gap
between Grade 4’s work with two-dimensional figures and Grade 6’s work with
volume and area.

**Module 6 - Problem
Solving with the Coordinate Plane**
In this 40-day module, students develop a coordinate system for the first quadrant of the coordinate plane and
use it to solve problems.  Students use the familiar number line as an
introduction to the idea of a coordinate, and they construct two perpendicular
number lines to create a coordinate system on the plane.  Students see that
just as points on the line can be located by their distance from 0, the plane’s
coordinate system can be used to locate and plot points using two
coordinates.  They then use the coordinate system to explore relationships
between points, ordered pairs, patterns, lines and, more abstractly, the rules
that generate them.  This study culminates in an exploration of the
coordinate plane in real world applications.