Big Idea: Number Properties and Operations Middle grades students understand fractions, decimals, percents and integers, compare them and locate their relative positions on a number line. They develop and use proportional reasoning to solve problems. They work with large numbers and small numbers. They use factors, multiples and prime factorizations. They perform arithmetic operations with fractions, decimals and integers, use properties in computation, develop fluency and develop strategies to estimate the result of operations on rational numbers. **Academic Expectations** **2.7** Students understand number concepts and use numbers appropriately and accurately. **2.8** Students understand various mathematical procedures and use them appropriately and accurately.	
Enduring Knowledge — Understandings *Students will understand that:* (1) numbers, ways of representing numbers, relationships among numbers and number systems are means of representing real-world quantities. (2) meanings of and relationships among operations provide tools necessary to solve realistic problems encountered in everyday life. (3) computing fluently and making reasonable estimates with fractions, decimals and whole numbers increases the ability to solve realistic problems encountered in everyday life. (4) proportional reasoning is a tool for modeling and solving problems encountered in everyday situations.	
Skills and Concepts *Students will:*	
Number Sense	
1. continue to develop number sense using fractions, decimals and percents, including percents greater than 100% and improper fractions	**MA-06-1.1.1 Students will provide examples of and describe fractions, decimals, and percents. DOK - 1**
2. extend applications of operations (+, -, X, /) to include fractions and decimals.	
3. develop place value of large and small numbers, including decimals	*MA-06-1.1.1a Students will describe and provide examples of representations of numbers (whole numbers, fractions in simplest form, mixed numbers, decimals, percents) and operations in a variety of equivalent forms using models, diagrams, and symbols (e.g., number lines, 10 by 10 grids, rectangular arrays, number sentences), based on real-world and/or mathematical situations.*
4. explore positive integral exponents (e.g. squares, cubes).	