Fluency and Recall with Automaticity throughout Grade Levels

The purpose of this table is to provide educators with an overview of procedural fluencies and recall with automaticity within number sense and operations and measurement from Kindergarten to Grade 8. This crosswalk should not drive instruction or curriculum. Please refer to your specific course description that can be found on CPALMS.

Grade Level	Required Procedural Reliability, Procedural Fluency and Basic Fact Automaticity			
	Number Sense: Counting and Place Value	Operations: Addition and Subtraction	Operations: Multiplication and Division	Measurement
K	Recite numbers to 100 by ones and tens Count backward within 20 Locate, order and compare whole numbers up to 20	*Procedural Reliability:* Two one-digit whole numbers with sums from 0 to 10 and related subtraction facts		
1	Count forward and backward within 120 by ones Skip count by 2s to 20 and by 5s to 100. Plot, order and compare whole numbers up to 100	*Recall:* Two whole numbers with sums from 0 to 10 and related subtraction facts *Procedural Reliability:* Two whole numbers with sums from 0 to 20 and related subtraction facts		Length of an object to the nearest inch or centimeter
2	Round whole numbers from 0 to 100 to the nearest 10 Plot, order and compare whole numbers up to 1,000	*Recall:* Two whole numbers with sums from 0 to 20 and related subtraction facts *Procedural Reliability:* Two whole numbers with sums up to 100 and subtract a whole number from a whole number, each no larger than 100		Length of an object to the nearest inch, foot, yard, centimeter or meter

Grade Level	Required Procedural Reliability, Procedural Fluency and Basic Fact Automaticity			
	Number Sense: Counting and Place Value	Operations: Addition and Subtraction	Operations: Multiplication and Division	Measurement
3	Round whole numbers from 0 to 1,000 to the nearest 10 or 100 Plot, order and compare: • whole numbers up to 10,000 • fractional numbers with the same numerator or the same denominator	*Procedural Fluency:* Multi-digit whole numbers, including using a standard algorithm	*Procedural Reliability:* Multiplication of a one-digit whole number by a multiple of 10 up to 90 or a multiple of 100 up to 900 *Procedural Reliability:* Two whole numbers with factors from 0 to 12 and related division facts	Length of an object to the nearest centimeter and half or quarter inch Volume of a liquid within a beaker to the nearest milliliter and half or quarter cup Temperature to the nearest degree
4	Round whole numbers from 0 to 10,000 to the nearest 10, 100 or 1,000. Plot, order and compare: • multi-digit whole numbers up to 1,000,000 • decimals up to the hundredths • fractions with different numerators and different denominators, including mixed numbers and fractions greater than 1	*Procedural Reliability:* Two fractions with like denominators, including mixed numbers and fractions greater than 1	*Recall:* Two whole numbers with factors up to 12 and related division facts *Procedural Reliability:* Multiplication of a whole number up to three digits by a whole number up to two digits *Procedural Fluency:* Multiplication of a two-digit whole number by a two-digit whole number, including using a standard algorithm *Procedural Reliability:* Division of a whole number up to four digits by a one-digit whole number	Length of an object Volume of a liquid within a beaker Weight of an object Mass of an object Temperature of an object

Grade Level	Required Procedural Reliability, Procedural Fluency and Basic Fact Automaticity			
	Number Sense: Counting and Place Value	**Operations: Addition and Subtraction**	**Operations: Multiplication and Division**	**Measurement**
5	Round multi-digit numbers with decimals to the nearest hundredth, tenth or whole number Plot, order and compare multi-digit numbers with decimals up to the thousandths	*Procedural Fluency:* Multi-digit numbers with decimals to the thousandths, including using a standard algorithm *Procedural Reliability:* Fractions with unlike denominators, including mixed numbers and fractions greater than 1	*Procedural Fluency:* Multiplication of multi-digit whole numbers, including using a standard algorithm *Procedural Fluency:* Division of a whole number up to five digits by two digits, including using a standard algorithm *Procedural Reliability:* Multiply a multi-digit number with decimals to the tenths by one-tenth or by one-hundredth *Procedural Reliability:* Multiplication of a fraction by a fraction, including mixed numbers and fractions greater than 1	
6	Plot, order and compare rational numbers	*Procedural Fluency:* Positive multi-digit decimals, including using a standard algorithm *Procedural Fluency:* Positive fractions, including mixed numbers and fractions greater than 1 *Procedural Fluency:* Integers		
7		*Procedural Fluency:* Rational numbers		
8	Plot, order and compare rational and irrational numbers	*Procedural Fluency:* Numbers expressed in scientific notation *Procedural Fluency:* Laws of Exponents		