Knowsley Junior School

Maths Skills & knowledge in Year 3

Year 3	
Place Value	Recap step: Representing numbers to ten using concrete objects. Representing numbers to 100 in different ways.
	Create part whole models to partition and represent numbers made up of tens and ones using addition.
	Represent 100/100s on a number line and count in 100s.
	Represent numbers to 1000.
	Partition numbers to 1000.
	Recognise the value of any digit in a number to 1000.
	Flexible Partitioning of numbers to 1000.
	Hundreds, Tens and Ones focus. (Securing knowledge to support with next lesson next step, 1, 10, 100 more and less.)
	Find one more, ten more, one hundred more, one less, ten less and one hundred less of any number up to 1000.
	Count in 1s, 10s, 100s from a given number.
	Represent numbers on a number line to /identify points on a number line to 1000.
	Estimate on a number line to 1000.
	Compare numbers to 1000.
	Order numbers to 1000.
	Count in 50s.
Addition & Subtraction	Apply number bonds within 10. (In this lesson children will add and subtract tens and hundreds and will applying their knowledge of number bonds to ten to help them solve simple addition and subtraction calculations.)
	Add and subtract 1s.
	Add and subtract 10s.
	Add and subtract 100s.
	Identify patterns in addition and 'subtraction calculations- Understand why certain digits change and why some stay the same. (Children will need to understand and be able to explain why when adding 1s, 10s or hundreds or subtracting, why the number within that place holder column changes and how sometimes it can/will affect/impact another column.)
	Add ones across a 10.
	Add 10s across a 100.
	Subtract 1s across a 10.
	Subtract 10s across a 100.
	To make connections between 1s, 10s and 100s. In this lesson children will need to know that ten ones are equal to one ten. Ten tens are equal to one hundred etc.
	Add two numbers (no exchange). In this lesson children will add to larger numbers (3 digit) and will add using the pictorial method (or concrete objects) within a place value chart – the columns will not become "full" therefore no exchange will be necessary- Whiterose shows what the method would look like as a column addition but children should not yet solve it as a column addition and should recognise how numbers change visually within the place value chart.
	Subtract two numbers (no exchange). (In this lesson children will subtract from larger numbers (3 digit) and will subtract using the pictorial method (or concrete objects) within a place value chart – the children will cross out from the relevant place on the place value chart- Whiterose

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	shows what the method would look like as a column subtraction but children should not yet solve it as a column subtraction and should recognise how numbers change visually within the place value chart.)
	Add two numbers (across a 10). (In this lesson children will add numbers using a pictorial within a place value chart. They will see the ones column become "full" and will see it move to the tens column as a ten (they will complete an exchange). They will see what the addition looks like as a column addition but they won't solve it that way.
	Add two numbers (across a 100). (In this lesson children will add numbers using a pictorial within a place value chart. They will see the tens column become "full" and will see it move to the hundreds column as a hundred (they will complete an exchange). They will see what the addition looks like as a column addition but they won't solve it that way.
	Add numbers using formal column addition method- add to make 2 digits. Add numbers using formal column addition method- add to make 3 digits.
	Subtract two numbers (across a 10). (As above children will not use the column subtraction method to solve this.)
	Subtract two numbers (across a 100). (As above children will not use the column subtraction method to solve this.)
	Subtract numbers using formal column subtraction method- subtract to make 2 digits. Subtract numbers using formal column subtraction method- subtract to make 3 digits.
	Add 2-digit and 3-digit numbers.
	Subtract a 2-digit number from a 3-digit number.
	Understand complements to 100. (Will need to understand pairs to make 100- will use addition and subtraction).
	Make sensible estimates when adding and subtracting.
	Carry out inverse operations with addition and subtraction.
	Make decisions about a range of calculations – based on familiar maths vocabulary or maths symbols.
Multiplication & Division	Understand multiplication as making equal groups.
	Use arrays to show multiplication and to solve a multiplication.
	Understand the concept of multiples of 2 and understand them as even. (Teach the meaning of odd during this lesson)
	Multiples of 5 and 10.
	Understanding grouping and sharing **See it as first time learning- simple grouping and sharing and link to division.*
	Multiply by 3. *Can begin to use number stick to teach x3 multiplication. Focus on this daily until secure. Note: there is a x3 lesson coming up- but repetition will be needed for children to be able to recall x3.
	Divide by 3.
	The 3 times-table.
	Multiply by 4.
	Divide by 4.
	The 4 times-table.
	Multiply by 8.
	Divide by 8.
	The 8 times table.

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	The 2, 4 and 8 times-tables.
	Multiples of 10.
	Related calculations. 8x3 = 24 3x 8 = 24 3 x 80 = 240 80 x 3 = 240
	Reasoning about multiplication.
	Multiply a two-digit number by a one-digit number- no exchange.
	Multiply a two-digit number by a one-digit number- with exchange.
	Link multiplication & division.
	Divide a 2-digit number by a one-digit number- no exchange.
	Scaling “Twice as many, ten times as many, three times as many.”
Length & Perimeter	Measure in metres & centimetres.
	Measure in millimetres.
	measure in centimetres & millimetres.
	Metres, centimetres & millimetres.
	Equivalent lengths (metres & centimetres).
	Equivalent lengths (centimetres & millimetres.)
	Compare lengths.
	Add lengths.
	Subtract lengths.
	What is perimeter?
	Measure perimeter.
	Calculate perimeter.
Fractions (Pt. 1)	Understand the denominators of unit fractions.
	Compare and order unit fractions.
	Understand the numerators of non-unit fractions.
	Understand the whole.
	Compare and order non-unit fractions.
	Understand Fractions and scales.
	Recognise fractions on a number line.
	Count in fractions on a number line.
	Identify equivalent numbers on a number line.
	Represent equivalent fractions as bar models.
Mass & Capacity	Be able to use scales.
	Measure mass in grams.
	Measure mass in kilograms and grams.
	Equivalent masses- kilograms and grams.
	Compare mass.

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	Add and subtract mass.
	Measure capacity and volume in millilitres.
	Measure capacity and volume in litres & millilitres.
	Identify equivalent capacities & volume in litres and millilitres.
	Compare capacity and volume.
	Add and subtract capacity & volume.
Fractions (Pt. 2)	Add fractions.
	Subtract fractions.
	Partition the whole.
	Unit fractions of a set of objects.
	Non-unit fractions of a set of objects.
	Reasoning with fractions of an amount.
Money	Pounds and Pence.
	Convert pounds and pence.
	Add money.
	Subtract money.
	Find change.
Time	Roman numerals to 12.
	Tell the time to 5 minutes.
	Tell the time to the minute.
	Read time on a digital clock.
	Use a.m. and p.m.
	Years, months and days.
	Days and hours.
	Hours and minutes- use start and end times.
	Hours and minutes- use durations.
	Minutes and seconds.
	Units of time.
	Solve problems with time.
Shape	Turns and angles.
	Right angles.
	Compare angles.
	Measure and draw accurately.
	Horizontal and vertical.
	Parallel and perpendicular.
	Recognise and describe 2-D shapes.
	Draw polygons.
	Recognise and describe 3-D shapes.
	Make 3-D shapes.

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Statistics	Interpret pictograms.
	Draw pictograms.
	Interpret bar charts.
	Draw bar charts.
	Collect and represent data.
	Two-way tables.