Progression of Key Instant Recall Facts

'Key facts' – these keys can help us to unlock the mathematics

This document contains the **progression of instant recall facts** in mathematics for our school setting. The document maps the essential factual building blocks of mathematical knowledge from Year R to Year 6. It has been devised using the National Curriculum (2014), supplemented by non-statutory guidance. It was produced collaboratively by Luke Dix (SL) and Liz White (PDET) during May 2020.

The content coherently maps out the key facts to each half term for each year group in school. In EYFS and KS1, the focus in predominantly on number facts (bonds and times tables) whereas in KS2, additional elements are included.

'Key Facts' – many targets in the document detail the specific number facts involved: these 'new' facts are contained – it is assumed that the older ones have been transferred to the long term memory and therefore do not need to be practiced and so do not reappear in the document. The document is used by teachers in our school to support progression through the year groups.

Each half term, teachers…

...deliver short recall sessions in class (two times per week) – *once targets have been shared, this is time for children to practice as they will have already learned about the key ideas in lessons in previous terms*
…display the key facts and expectations in the classroom on their mathematics working wall - *recognisable by the 'key' image at the top of this document*
…share the relevant targets with parents - *the ideas will be exemplified for parents with the expectation that children spend time at home as part of their homework provision*

If a child does not recall the facts by the end of the half term, intervention is provided during the next half term to ensure they do not fall behind.

The following must be assumed to ensure precision across our school:

Recall *– to instantly know a fact as opposed to being able to derive or calculate it; it should be instant (the child demonstrating automaticity rather than thinking)*
Know *– similar to 'recall': an important piece of factual knowledge which children simply need to know*
Revise *– the content has already been covered previously and so should already be recalled with automaticity*
Recite *– implies there is an order to what is being learned*
Derive *– facts are used to work out those which are not recalled instantly*

Progression of Key Instant Recall Facts – Years R

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
YR	Count to 5	Recall 1 more/1 less of a given number up to 5 *1 + 1 5 - 1* *2 + 1 4 - 1* *3 + 1 3 - 1* *4 + 1 2 - 1* *5 + 1 1 - 1* Recall number bonds to 5 and within 5 *2 + 2* *3 + 2*	Count to 10	Recall 1 more/1 less of a given number up to 10 *6 + 1 10 - 1* *7 + 1 9 - 1* *8 + 1 8 - 1* *9 + 1 7 - 1* *6 – 1*	Time – recall days of the week and order them from Monday to Sunday *Monday* *Tuesday* *Wednesday* *Thursday* *Friday* *Saturday* *Sunday*	Count to 20 and recall 1 more/1 less of a given number *11 + 1 20 - 1* *12 + 1 19 - 1* *13 + 1 18 - 1* *14 + 1 17 - 1* *15 + 1 16 - 1* *16 + 1 15 - 1* *17 + 1 14 - 1* *18 + 1 13 - 1* *19 + 1 12 – 1* *11 - 1* Recall all doubles and halves to 10 *3 + 3* *4 + 4* *5 + 5* *Half of 10 is 5* *Half of 8 is 4* *Half of 6 is 3* *Half of 4 is 2* *Half of 2 is 1*

Progression of Key Instant Recall Facts – Years 1/2

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y1	Recall all new number bonds *within* 10 *2 + 4* *2 + 5* *2 + 6* *2 + 7* *3 + 4* *3 + 5* *3 + 6* *4 + 5*	Recall all number bonds to 10 *2 + 8* *3 + 7* *4 + 6*	Recall all new number bonds within 20 *2 + 9* *6 + 7* *3 + 8* *6 + 8* *3 + 9* *6 + 9* *4 + 7* *7 + 8* *4 + 8* *7 + 9* *4 + 9* *8 + 9* *5 + 6* *5 + 7* *5 + 8* *5 + 9*	Recite 10s from 0 to 100 *0, 10, 20, 30…100* Recite in 5s from 0 to 50 *0, 5, 10, 15, 20, 25...50*	Recite 2s from 0 to 20 Recall all new doubles up to 20 *6 + 6* *9 + 9* *7 + 7* *10 + 10* *8 + 8* Recall all new halves up to 20 *Half of 20 is 10* *Half of 18 is 9* *Half of 16 is 8* *Half of 14 is 7* *Half of 12 is 6*	Recall all number bonds to 20 *2 + 18* *3 + 17* *4 + 16* *5 + 15* *6 + 14* *7 + 13* *8 + 12* *9 + 11*
Y2	Recall all pairs of multiples of 10 which bond to 100 *10 + 90* *20 + 80* *30 + 70* *40 + 60* *50 + 50*	Recall all new pairs of multiples of 5 which bond to 100 *5 + 95* *15 + 85* *25 + 75* *35 + 65* *45 + 55*	Given one addend, quickly derive the other addend for sums of 6, 7, 8, 9 and 10 *using recall* *For example:* *6 + __ = 9* *__ - 3 = 6*	Recall x10 facts and x5 facts *2 x 5* *2 x 10* *3 x 5* *3 x 10* *4 x 5* *4 x 10* *5 x 5* *6 x 10* *6 x 5* *7 x 10* *7 x 5* *8 x 10* *8 x 5* *9 x 10* *9 x 5* *10 x 10* *10 x 5* *11 x 10* *11 x 5* *12 x 10* *12 x 5* Recall ÷10 facts and ÷5 facts	Recall x2 facts *2 x 2* *3 x 2* *4 x 2* *6 x 2* *7 x 2* *8 x 2* *9 x 2* *11 x 2* *12 x 2* Recall ÷2 facts	Given one addend, quickly derive the other addend for sums of 11 up to 20 *using recall* *For example:* *6 + __ = 13* *__ + 9 = 17*

Progression of Key Instant Recall Facts – Years 3/4

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y3	Given one addend, quickly derive the other for sums of 100 E.g. 42 + __ = 100 by making 90 using the tens and 10 using the ones	Revise x5 facts Revise ÷5 facts Revise x2 facts Revise ÷2 facts (all covered in Y2)	Recall x3 facts *3 x 3 8 x 3* *4 x 3 9 x 3* *6 x 3 11 x 3* *7 x 3 12 x 3* Recall ÷3 facts	Recall x4 facts *4 x 4 9 x 4* *6 x 4 11 x 4* *7 x 4 12 x 4* *8 x 4* Recall ÷4 facts	Recall x8 facts *6 x 8 9 x 8* *7 x 8 11 x 8* *8 x 8 12 x 8* Recall ÷8 facts Recall abbreviations for measuring: *metres (m); centimetres (cm); millimetres (mm);* *kilometres (km)* *grams (g); kilograms (kg)* *millilitres (ml); litres (l)* *degrees of temperature (^oC or ^oF)* *hours (hr); minutes (min); seconds (s)*	Recall equivalences for 'time': *100 years in 1 century* *10 years in 1 decade* *365 days in 1 year (and a leap year has 366)* *52 weeks and 1 day in one year* *12 months in 1 year* *30, 31 or 28 days in 1 year* *24 hours in 1 day* *60 minutes in 1 hour* *60 seconds in 1 minute* Recite by heart: *30 days hath September,* *April, June and November;* *February has 28 alone* *All the rest have 31* *Except in Leap Year, that's the time* *When February's Days are 29*
Y4	Given one addend, quickly derive the other for sums of 1000 *E.g. 642 + __ = 1000, by making 900 using the hundreds, 90 using the tens and 10 using the ones*	Revise x3 facts Revise ÷3 facts Revise x4 facts Revise ÷4 facts Revise x8 facts Revise ÷8 facts	Recall x6 facts *6 x 6 11 x 6* *7 x 6 12 x 6* *9 x 6* Recall x7 facts *7 x 7 11 x 7* *9 x 7 12 x 7* Recall x9 facts *9 x 9 11 x 9* *12 x 9* Recall ÷6 , ÷7 and ÷9 facts	Recall x11 facts *11 x 11 12 x 11* Recall x12 facts *12 x 12* Recall ÷11 and ÷12 facts Derive quickly decimal equivalents of any number of tenths or hundredths *E.g.* $\frac{4}{10} = 0.4$ $0.72 = \frac{72}{100}$	Recall all multiplication and division facts for the multiplication tables up to 12x12 within 3 seconds Recall the equivalences for measuring length, mass and capacity: *1km = 1000 metres* *1m = 100cm* *1cm = 10mm* *1l = 1000ml* *1kg = 1000g* Know the following about angles: • angles are measured in degrees (^{o}) • two right angles make a half-turn (180^o) • three right angles make three quarters of a turn (270^o) • four right angles make a complete turn (360^o)	Recall these decimal equivalents: $\frac{1}{4} = 0.25, \frac{1}{2} = 0.5$ and $\frac{3}{4} = 0.75$ Know the conventions of 12 and 24 hr digital clock presentation. 6:00pm being the same as 18:00 (no need for am/pm and sometimes 24hr time can be written as 1800 rather than with a colon to separate numerals) *(Recall all multiplication and division facts for the multiplication tables up to 12x12 if required as high priority for Year 5)*

Progression of Key Instant Recall Facts – Years 5/6

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y5	Derive unknowns which are not products or quotients (factors, dividends and divisors) for multiplication facts up to 12x12 *e.g.* *__ x 3 = 21* *4 x __ = 36* *48 ÷ __ = 8* *__ ÷ 6 = 7*	Recall Roman Numerals up to M (I, V, X, L, C, D) *I One* *V Five* *X Ten* *L 50* *C 100* *D 500* *M 1000* Recall all prime numbers up to 19	Recall square numbers up to 144 and recognise the notation for squared (^{2}) Recall cube numbers up to 125 and recognise the notation for cubed (^{3})	Recognise the percent symbol (%) Recall percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}$ and $\frac{4}{5}$ Derive related products or pairs of decimal numbers which relate to table facts where the multiplicand or the multiplier is ten times smaller than it would be for the table fact *e.g. For 4 x 0.8 "I know 4 x 8 is 32 so 4 x 0.8 is 3.2 as I have a tenth of the 4's"*	Know *approximate* equivalences between imperial and metric units: inches/cm, pounds/grams and pints/ml Recall formula: perimeter of a rectangle: (2 x length) + (2 x width) Recall formula: area of rectangles: length x width (area is usually measured in square units cm² and m²)	Recall that angles are measured in degrees (^{o}); angles around a point total 360^o (one whole turn) Recall that angles around a point on a straight line total 180^o (one half turn)
Y6	Recall/derive pairs of numbers which total 1 up to three decimal places using knowledge of previous number bond understanding *E.g. 0.642 + __ = 1 by making 0.9 using the tenth, 0.09 using the hundredths and 0.01 using the thousandths*	Recall order of operations (Brackets / Multiplication and Division / Addition and Subtraction) Derive related products or pairs of decimal numbers which relate to table facts where the multiplicand and the multiplier is ten times smaller than it would be for the table fact *e.g. For 0.4 x 0.8 "I know 4 x 8 is 32 so 0.4 x 0.8 is 0.32 as I have a tenth of the 4's and the quantity is also ten times smaller, making the new product 100 times smaller than the original table fact product I know"*	Recall percentage and decimal equivalents of $\frac{3}{4}, \frac{3}{5}$, tenths up to $\frac{9}{10}, \frac{1}{3}$ and $\frac{2}{3}$ $(approximate)$ Derive unknowns which are not products or quotients (factors, dividends and divisors) for decimal products which relate to table facts *e.g.* *__ x 3 = 2.1* *0.4 x __ = 3.6* *4.8 ÷ __ = 0.8* *__ ÷ 0.6 = 0.7*	Recall names and properties of all 3 triangles: *Equilateral* *Isosceles* *Scalene* Recall names and properties of all 7 quadrilaterals: *Rectangle* *Square* *Rhombus* *Parallelogram* *Trapezium* *Kite* *Scalene*	Know the approximate conversion rate between miles and kilometres (1km is approximately 5/8 of a mile) Recall formula: volume of cubes and cuboids (length x width x height) Know that volume is notated in cubic units (e.g. cm³ and mm³) Recall formula: area of a triangles: $\frac{1}{2}$ (base x height) Recall formula: area of parallelograms: base x height	Recall the names of parts of circles (radius, diameter and circumference) Know that diameter is equal to twice the radius Recall that angles inside triangles total 180^o Recall that angles inside quadrilaterals total 360^o