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10bond

9. solve $\star + \text{Ones} = T0$ or $\text{Ones} + \star = T0$
8. **scaffold to** calculate $\text{Ones} + \star = T0$ **scaffold is** count on method, traditional columns and block diagram
5. solve $\star + \text{Ones} = 10$ or $\text{Ones} + \star = 10$
4. **scaffold to** solve $\star + \text{Ones} = 10$ **scaffold is** fingers or boxes
3. **scaffold to** solve $\text{Ones} + \star = 10$ **scaffold is** fingers or boxes
2. complete $\text{Ones} + \dots = 10$
1. **scaffold to** complete $\text{Ones} + \dots = 10$ **scaffold is** fingers on pair of hands

base10add

10. complete e.g. 36 46 56 66 \dots , \dots , \dots {never past 100}
9. complete e.g. 16 26 36 \dots , \dots , \dots
8. **scaffold to** complete e.g. 16 26 36 \dots , \dots , \dots **scaffold is** pictures
7. **scaffold to** complete e.g. 6 16 26 36 \dots , \dots , \dots **scaffold is** incomplete 100 square and pictures
6. complete the missing numbers e.g. 26 27 28 \dots , \dots , \dots {past the next multiple of 10}
5. count e.g. 64 shaded squares in a 100 square {shaded vertically or horizontally}
4. **scaffold to** count e.g. 64 shaded squares in a 100 square **scaffold is** 1 to 10 and 20 written in appropriate squares
3. **scaffold to** complete the multiples of 10 **scaffold is** all other squares numbered
2. complete the missing numbers e.g. 6 7 8 \dots , \dots , \dots {always past 10}
1. complete the missing numbers e.g. 5 6 7 \dots , \dots , \dots {never past 10}

base10skills

10. work out e.g. $\{2 \text{ or } 20 \text{ or } 200\} \times \{50 \text{ or } 500\}$ or v.v. {harder because 2×5 ends in 0}
8. work out e.g. $\{20 \text{ or } 200\} \times \{80 \text{ or } 800\}$ {NOT e.g. 20×500 because 2×5 ends in 0}
6. work out e.g. $2 \times \{800 \text{ or } 8000\}$ or v.v. {NOT e.g. 2×500 because 2×5 ends in 0}
4. work out e.g. 2×80 or v.v. {NOT e.g. 2×50 because 2×5 ends in 0}
2. **scaffold to** work out 70×6 or 7×60 **scaffold is** told $7 \times 6 = 42$

beginDIVfacts

14. square root of $\{100, 4 \text{ and } 1\}$
12. given \div Ones = 10
11. Ones \div 1 = Ones
10. given \div 2 = $\{6, 7, 8, 9\}$
8. given \div 9 = $\{2 \text{ to } 9\}$
7. **scaffold to find \div 9 facts scaffold is guided to use fingers trick**
6. given \div 5 = $\{2 \text{ to } 9\}$
5. **scaffold to find \div 5 facts scaffold is guided to use fingers and place value**
4. given \div Ones = 1
2. given \div 2 = $\{2, 3, 4, 5\}$

beginXfacts

14. write down the value of 2^2 , 5^2 , 9^2 or 10^2
13. $\{1 \text{ to } 10\} \times 1$ and v.v.
11. $\{6 \text{ to } 8\} \times 2$ and v.v.
9. $\{2 \text{ to } 9\} \times 9$ and v.v.
8. **scaffold to find $\{2 \text{ to } 9\} \times 9$ scaffold is example of fingers trick**
7. $\{3 \text{ to } 8\} \times 5$ and v.v.
5. **scaffold to work out Ones \times 5 scaffold is use fingers and place value**
4. $\{2 \text{ to } 10\} \times 10$ and $\{2 \text{ to } 5\} \times 2$ and v.v.
3. **scaffold to write $\{2, 3, 4, 5, 6, 7, 8, 9, 10\} \times 10$ or v.v. scaffold is diagram**

BⁱDMAS

6. work out calculations of the form $a \pm b \times c$ or $a \pm b \div c$
4. work out calculations of the form $a \div (b \pm c)$ or $a - (b \pm c)$
2. Name says e.g. $3 \times 3 \times 3 \times 3$ is 4^3 Is Name correct? **explain**
1. Name says the value of e.g. 3^2 is 6 {or 9} Is Name correct? **explain**

correctTONearest

16. Write e.g. 5 308 738 or 5 308 378 correct to the nearest 1000
15. Write e.g. 5 738 or 5 783 correct to the nearest 100
13. Write e.g. 1823.54 or 1823.45 correct to the nearest integer
12. **scaffold to** Write decimal correct to nearest integer **scaffold is** given LB (lower bound) and clue re which digit is decider
11. Write e.g. 4 937 or 4 973 correct to the nearest 10
10. **scaffold to** write number to the nerest 10 **scaffold is** given LB (lower bound) and clue which digit is decider
7. Write e.g. 25 correct to the nearest 10
6. Write e.g. 24 or 26 etc correct to the nearest 10
5. **scaffold to** Understand why 5 rounds up **scaffold is** circle the 5 forty something and the 5 fifty something numbers which are 50 correct to the nearest 10
4. **scaffold to** complete e.g. 26 correct to the nearest 10 = ... **scaffold is** write the two multiples of 10 closest to 26 on incomplete number line
3. **scaffold to** complete e.g. 26 correct to the nearest 10 = ... **scaffold is** incomplete 100 square or number line and $20 + \dots = 26$ and $26 + \dots = 30$
2. **scaffold to** complete e.g. $20 + \dots = 26$ and $26 + \dots = 30$ **scaffold is** incomplete 100 square or number line
1. **scaffold to** count on from e.g. 3 and stop at 10 **scaffold is** Name models counting on from e.g. 26 to 30 in part of 100 square

factor

7. write down all factor pairs of e.g. 20
6. **scaffold to** write down all factor pairs of e.g. 60 **scaffold is** prime factor tree of 60
5. **scaffold to** write down all factor pairs of e.g. 24 **scaffold is** factor finding method with hints
4. **scaffold to** write down some factor pairs of e.g. 32 **scaffold is** doubling and halving trick
3. write down a factor pair of e.g. 24
2. **scaffold to** write down all the factor pairs of e.g. 32 **scaffold is** multiplication grid and given $2 \times 16 = 32$ {i.e. not found in multiplication grid}
1. **scaffold to** write down all the factor pairs of e.g. 18 **scaffold is** multiplication grid, where every 18 is highlighted and given $1 \times 18 = 18$

givenADDSign

15. work out $TO + TO$ {ones carry} e.g. $34 + 49$
14. **scaffold to** work out $TO + TO$ e.g. $34 + 49$ {ones carry} **scaffold is** (a) partition, order and count on (b) columns (c) partitioning with 10 carry clue
13. work out $TO + TO$ e.g. $34 + 45$ {no carry}
12. **scaffold to** work out $TO + TO$ e.g. $34 + 45$ {no carry} **scaffold is** (a) partition, order and count on (b) columns (c) traditional partitioning
11. work out $TO +$ multiple of 10 e.g. $34 + 40$ {never over 100}
10. **scaffold to** work out $TO +$ multiple of 10 e.g. $34 + 40$ {no carry} **scaffold is** (a) partition, order and count on (b) columns (c) traditional partitioning
9. work out multiple of 10 + multiple of 10 e.g. $30 + 40$ {never over 100}
8. **scaffold to** work out multiple of 10 + multiple of 10 e.g. $30 + 40$ **scaffold is** (a) partition, order and count on (b) columns (c) traditional partitioning
7. work out $TO + O$ e.g. $34 + 9$ {may cross 10s boundary}
6. **scaffold to** work out $TO + O$ **scaffold is** TO in a speech bubble and O fingers {crossing 10s boundary}
5. **scaffold to** work out $TO + O$ **scaffold is** TO in a speech bubble and O fingers {NOT crossing 10s boundary}
4. work out $O_{big} + O_{small}$
3. **scaffold to** work out $O_{big} + O_{small}$ **scaffold is** “big” in a speech bubble and “small” fingers
2. **scaffold to** work out $O + O$ {total > 10 } **scaffold is** items in picture
1. **scaffold to** work out $O + O$ {total ≤ 10 } **scaffold is** items in picture

givenDIVsign

13. work out $\text{given} \div TO_1 = TO_2$ (slightly easier because all digits are 1, 2, 4, 5 or 8)
12. work out $\text{given} \div O_1 = TO_2$: harder because O_1 and T are rarely 1, 2, 4, 5 or 8
11. work out $\text{given} \div O_1 = TO_2$: slightly easier because T is 2, 4, 5 or 8, however O_1 is not
10. **scaffold to** work out e.g. $581 \div 7 = 83$ **scaffold is** given the 7 times table rows with gaps {1, 2, gap, 4, 5, gap, gap, 8, gap, 10}
9. **scaffold to** work out $24 \div 3$ **scaffold is** complete prime factor tree {to help with dividing by 3, 5, 7, 11, 13}
8. **scaffold to** write easy to work out multiples of O and TO **scaffold is** doubling method for {2, 4, 8}, $\times 10$ and then $\div 2$ for {10, 5}
7. **scaffold to** work out e.g. $56 \div 7 = 8$, $85 \div 17 = 5$ {by look up} and $98 \div 7 = 14$, $680 \div 17 = 40$ {by adjust} **scaffold is** given the 7 and 17 times table rows with gaps {1, 2, gap, 4, 5, gap, gap, 8, gap, 10}
6. **scaffold to** work out e.g. $228 \div 6 = 38$, **scaffold is** given the 6 times table row and help with finding the tens digit of the answer
5. **scaffold to** e.g. $24 \div 3 = 8$ **scaffold is** given multiplication square
4. **scaffold to** e.g. $24 \div 3 = 8$ **scaffold is** example to complete writing out multiples of 3
3. **scaffold to** e.g. $24 \div 3 = 4$ given multiplication square **scaffold is** complete sharing into boxes and looking up in grid
2. **scaffold to** work out e.g. $12 \div 3 = 4$ **scaffold is** example showing sharing into boxes
1. **scaffold to** work out e.g. $14 \div 2$ or $\frac{1}{2}$ of 14 {answer 1 to 9} **scaffold is** example pictures with dots and told $\div 2$ and $\frac{1}{2}$ are ways of writing half

givenSUBsign

14. work out TO - o e.g. $76 - 4$ {no borrow}
13. **scaffold to** work out TO - o e.g. $76 - 4$ {no borrow} **scaffold is** count on method, traditional columns and block diagram
12. work out To- tO e.g. $74 - 46$ {i.e. borrow}
11. **scaffold to** work out To- tO e.g. $74 - 46$ {i.e. borrow} **scaffold is** count on method, traditional columns and block diagram
10. work out TO - to e.g. $76 - 43$ {no borrow}
9. **scaffold to** work out TO - to e.g. $76 - 43$ {no borrow} **scaffold is** count on method, traditional columns and block diagram
8. work out TO - multiple of 10 e.g. $76 - 40$
7. **scaffold to** work out TO - multiple of 10 e.g. $76 - 40$ **scaffold is** count on method, traditional columns and block diagram
6. work out multiple 10 - multiple of 10 e.g. $70 - 40$
5. **scaffold to** work out multiple 10 - multiple of 10 e.g. $70 - 40$ **scaffold is** count on method, traditional columns and block diagram
4. work out Ones_{big} - Ones_{small}
3. **scaffold to** work out Ones_{big} - Ones_{small} **scaffold is** ticks above horizontal line
2. **scaffold to** work out Ones_{big} - Ones_{small} **scaffold is** ticks above horizontal line paired with crosses below
1. **scaffold to** work out Ones_{big} - Ones_{small} **scaffold is** picture with counters crossed out

given Xsign

10. work out $TO \times TO$
9. **scaffold to** work out $TO \times TO$ **scaffold is** given i/c multiplication square {beginXfacts are missing} and i/c partitioning
8. **scaffold to** work out $HTO/TO \times TO$ **scaffold is** given i/c multiplication square {beginXfacts are missing} and i/c Gelosia {Gelosia carry IS required}
7. work out $TO \times Ones$
6. **scaffold to** work out $TO \times Ones$ **scaffold is** given i/c Gelosia and partitioning and the Ones row from a multiplication square {Gelosia carry IS required}
5. **scaffold to** work out $HTO/TO \times TO$ **scaffold is** given i/c multiplication square {beginXfacts are missing} and i/c Gelosia {Gelosia carry NOT required}
4. **scaffold to** work out $Teen \times Ones$ **scaffold is** given i/c Gelosia and partitioning and the Ones row from a multiplication square {Gelosia carry NOT required}
3. work out $Ones \times Ones$ given multiplication square
2. **scaffold to** work out $Ones \times Ones$ given multiplication square **scaffold is** guided 2 ways to count squares and link to numbers in row/column of multiplication square
1. **scaffold to** work out $Ones \times Ones$ **scaffold is** dots in rectangle {counting OK}

improveDIVfacts

14. square root of 49
13. given $\div 7 = \{3, 6, 7\}$ (product of prime factor does NOT help)
12. given $\div 3 = \{3, 5, 7\}$ and given $\div 6 = 7$ (product of prime factor does NOT help)
11. square root of 16, 36 and 64
10. square root of 9, 25 and 81
9. given $\div 7 = \{4, 5, 8, 9\}$ (use product of prime factor)
8. given $\div 6 = \{3, 4, 5, 6, 8, 9\}$ (use product of prime factor)
7. given $\div 3 = \{4, 6, 8, 9\}$ (use product of prime factor)
6. given $\div 8 = \{4, 7, 8, 9\}$ (harder: half, half and half again)
5. given $\div 4 = \{4, 8, 9\}$ (harder: half and half again)
4. given $\div 8 = \{3, 5, 6\}$ (easier: half, half and half again)
3. given $\div 4 = \{3, 5, 6, 7\}$ (easier: half and half again)
2. **scaffold to** use \div facts to derive others **scaffold is** e.g. $56 \div 2 \rightarrow 56 \div 4 \rightarrow 56 \div 8$
1. given $\div \{3, 4, 6, 7, 8\} = 2$

improveXfacts

11. write down $1^2, 3^2$ or 7^2
10. write down $\{6, 7\} \times \{6, 7\}$
9. **scaffold to** write down $7 \times \{3, 6, 7\}$ **scaffold is** e.g. $1 \times 6 + 2 \times 6 + 4 \times 6$
8. write down $3 \times \{3, 6, 7\}$ and v.v.
7. **scaffold to** write down $3 \times \{3, 6, 7\}$ **scaffold is** choice of 2 long winded ways to calculate
5. **scaffold to** write down $4^2, 6^2$ or 8^2 **scaffold is** long winded use of product of prime factor
4. write down $\{4, 8\} \times \{6, 7, 8\}$ and v.v.
3. **scaffold to** write down $\{4, 8\} \times \{6, 7, 8\}$ **scaffold is** doubling and doubling (and doubling)
2. write down $\{4, 8\} \times \{3, 4\}$ and v.v.
1. **scaffold to** write down $\{4, 8\} \times \{3, 4\}$ **scaffold is** doubling and doubling (and doubling)

multiple

10. find LCM (lowest common multiple) of 3 numbers
9. find LCM (lowest common multiple) of 2 numbers
6. **scaffold to** find LCM (lowest common multiple) of 2 numbers e.g. 6 and 8 OR 6 and 20
scaffold is guided method with some lists of multiples
5. recall and use the word **multiple**
4. **scaffold to** recognise multiples of Ones and state e.g. the 8th multiple of the One **scaffold is** table and incomplete multiplication grid
3. **scaffold to** write down the multiples of Ones and state next multiple **scaffold is** pictures of dots in rectangle and multiplication grid
2. **scaffold to** write down the multiples of {2 or 5} **scaffold is** pictures of dots in rectangle
1. **scaffold to** add some multiples of 10 to an incomplete 100 square and multiplication grid
scaffold is given pictures or ruler

negative

15. negative - negative e.g. $-5 - -7$
14. non-negative - negative e.g. $12 - -7$
12. negative \div integer e.g. $-35 \div 5$ or $-35 \div -5$
11. non-negative \div negative e.g. $35 \div -5$
10. negative \times negative e.g. -5×-7
9. negative \times non-negative e.g. -5×7 or 5×-7
7. negative + negative e.g. $-5 + -7$
5. negative + non-negative e.g. $-5 + 7$ or $-12 + 7$
4. e.g. $9 - 12$ {answer always negative}
3. **scaffold to** work out e.g. $3 - 9$ or $-9 + 3$ or $-3 + 9$ **scaffold is** given ticks above and crosses below horizontal line
2. order a mix of positive and negative numbers
1. read negative number off thermometer or number line {all negative labels missing}

numberX10etc

14. work out e.g. $0.00123 \times \{10 \text{ or } 100 \text{ or } 1000\}$ {DELETE leading 0s}
12. work out (as complex as) $\text{HTO.th} \times \{100 \text{ or } 1000\}$ {decimal point given, ADD trailing 0s}
10. work out (as complex as) $\text{HTO.th} \times 10$ {decimal point given, NO need to add trailing 0s}
8. work out $\{O \text{ or } TO \text{ or } HTO\} \times \{100 \text{ or } 1000\}$ or v.v.
7. work out $\{T0 \text{ or } H00\} \times 10$ or v.v.
5. **scaffold to** work out $\{\text{Ones or } TO \text{ but NOT } T0\} \times \{10 \text{ then } 100 \text{ then } 1000\}$ **scaffold is** place value grid
4. work out $\{TO \text{ or } HTO\} \times 10$ or v.v. {but NOT $\{20 \text{ or } 200 \text{ or } 207 \text{ or } 270\} \times 10\}$
3. **scaffold to** work out $\{TO \text{ or } HTO\} \times 10$ **scaffold is** place value grid {no 0s in middle/end e.g. NOT $\{20 \text{ or } 200 \text{ or } 207 \text{ or } 270\} \times 10\}$
2. work out $\text{Ones} \times 10$
1. **scaffold to** work out $\text{Ones} \times 10$ **scaffold is** fingers to count in 10s

orderInteger

9. use of $<$ or $=$ or $>$ sign e.g. $808 \dots 880$
8. order list of 2 and 3 or 3 and 4 digit numbers {values represent e.g. length}
6. order list of 2 digit numbers {values represent e.g. length}
4. order a mix of numbers e.g. 9, 13, 27, 34, 62 etc {maximum one number with each T value}
3. order a mix of numbers e.g. 9, 10, 19, 20, 29 Start with the smallest {to help with crossing 10s boundary when counting}
2. write these numbers in order {numbers up to 10} Start with the smallest.
1. select the largest or smallest number from a list {numbers up to 10}

place0value99

12. give the value of e.g. 4 in 46 or 7 in 17
11. **scaffold to** give the value of e.g. 4 in 46 or 7 in 17 **scaffold is** given empty place value grid
10. write e.g. 11 in words and thirteen in digits
9. complete a place value grid e.g. write 11 in words and thirteen in digits
8. write teens, from eleven to nineteen, in words
7. **scaffold to** write teen numbers in words {not 11 or 12} **scaffold is** complete a table with some examples e.g. six and $6 + 10 = 16$ and **sixteen**
6. write TO in digits, given words e.g. fifty eight
5. complete a place value grid for TO, given e.g. write fifty eight in digits and 35 in words {no teens}
4. write the multiples of 10, from twenty to ninety, in words
3. **scaffold to** write the multiples of 10, from twenty to ninety in words **scaffold is** complete a table with some examples e.g. six and $6 \times 10 = 60$ and **sixty**
2. tick e.g. 5 written as a word {from a selection of Ones}
1. tick e.g. five written as a number {from a selection of Ones}

place100value9999

12. write the value of the digit e.g. 6 in 567 or 4567 or 4567 or {i.e. T }
11. write the value of the digit e.g. 5 in 567 or 5678 or 4567 or {i.e. H or Th}
10. write HTO or ThHTO {given in word} as digits {some middle digits are zero}
9. write ThHTO {given in words, no digits are zero} as digits OR {given in digits, some digits may be zero} as words
8. write HTO or ThHTO {given in words} in place value grid {some middle digits are zero}
7. write ThHTO {given in digits} in words {no digits are zero}
6. write ThHTO {given in words} in place value grid {no digits are zero}
5. write Th HTO {given in digits} in place value grid and write down the value of Th H or T {no digits are zero}
4. write HTO {given in digits} in words {no digits are zero}
3. write HTO {given in words} in place value grid {no digits are zero}
2. write HTO {given in digits} in place value grid and write down the value of H or T {no digits are zero}
1. complete a place value table given H00 written in words and v.v.

placeValue10000up

3. **scaffold to** write, up to 12 digit, numbers in words **scaffold is** correcting incorrectly labelled place value grids or inserting labels thousand, million, billion from the right
2. given HTOthousand HTO in place value grid, write in words (no 0?s)
1. write HTOthousand HTO given in words into place value grid (no 0?s)

prime

14. write {harder number} as a product of its prime factors {must divide by 3, 7, 11, 13 etc}
12. write down the list of primes from 1 to 20
11. **scaffold to** learn the list of primes from 11 to 20 **scaffold is** draw prime factor trees of non-primes
10. **scaffold to** learn the list of primes from 1 to 10 **scaffold is** draw prime factor trees of non-primes, complete explanation about why 1 is not prime
9. find HCF and LCM of 2 numbers given each as a product of power of prime factors
8. find the HCF {highest common factor} of e.g. 44 and 60
7. write e.g. 330 as a product of its prime factors {only $\div 2, 5, 9$ or 10 and $\div 3$ up to 33}
6. write e.g. 180 as a product of its prime factors {only $\div 2, 9$ or 10 and $9 = 3 \times 3$ }
5. write e.g. 200 as a product of its prime factors {only $\div 10$ and $10 = 2 \times 5$ }
4. **scaffold to** complete prime factor tree e.g. 180 {only $\div 2, 9$ or 10 and $9 = 3 \times 3$ } **scaffold is** some 2s, 9s and 10s given in incomplete tree
3. **scaffold to** complete prime factor tree e.g. 400 {only $\div 2$ or 10 } **scaffold is** some 2s and 10s given in incomplete tree
2. **scaffold to** complete prime factor tree e.g. 200 {only $\div 10$ and $10 = 2 \times 5$ } **scaffold is** 10s given in incomplete tree
1. **scaffold to** write e.g. 24 as a product of its prime factors **scaffold is** prime factor tree of 24

sequenceMultiple

7. **scaffold to** write list of multiples of 2 starting at T0 {cross 100s boundary} **scaffold is** place value clues
6. **scaffold to** write list of multiples of 5 starting at T0 **scaffold is** place value clues
5. **scaffold to** write list of multiples of 2 starting at T0 **scaffold is** place value clues
4. **scaffold to** write list of multiples of 5 starting at 0 **scaffold is** place value clues
3. **scaffold to** count number of squares shaded in 100 square {only T0} **scaffold is** hint to use multiples of 10
2. **scaffold to** write list of multiples of 10 starting at 0 **scaffold is** place value clues
1. **scaffold to** write list of multiples of 2 starting at 0 **scaffold is** place value clues