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## 10bond

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 ..., ..., ... {never past 100}
9. complete e.g. 16 26 36 ..., ..., ...
8. **scaffold to** complete e.g. 16 26 36 ..., ..., ... **scaffold is** pictures
7. **scaffold to** complete e.g. 6 16 26 36 ..., ..., ... **scaffold is** incomplete 100 square and pictures
6. complete the missing numbers e.g. 26 27 28 . ..., ..., ... {past the next multiple of 10}
3. **scaffold to** complete the multiples of 10 **scaffold is** all other squares numbered
2. complete the missing numbers e.g. 6 7 8 ..., ..., ... {always past 10}
1. complete the missing numbers e.g. 5 6 7 ..., ..., ... {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  $2 \times 5$  ends in 0}
8. work out e.g.  $\{20 \text{ or } 200\} \times \{80 \text{ or } 800\}$  {NOT e.g.  $20 \times 500$  because  $2 \times 5$  ends in 0}
6. work out e.g.  $2 \times \{800 \text{ or } 8000\}$  or v.v. {NOT e.g.  $2 \times 500$  because  $2 \times 5$  ends in 0}
4. work out e.g.  $2 \times 80$  or v.v. {NOT e.g.  $2 \times 50$  because  $2 \times 5$  ends in 0}
2. **scaffold to** work out  $70 \times 6$  or  $7 \times 60$  **scaffold is** told  $7 \times 6 = 42$

beginDIVfacts

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

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  $\text{Ones} \times 5$  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**

B<sup>i</sup>DMAS

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
11. write e.g. 4 937 or 4 973 correct to the nearest 10
7. Write e.g. 25 correct to the nearest 10
5. Given part of number line with e.g. labelled 40 to 60 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
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  $1 \times 18 = 18$

given ADD sign

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  $\leq 10$ } **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

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  $U_{big} - U_{small}$
3. **scaffold to** work out  $U_{big} - U_{small}$  **scaffold is** ticks above horizontal line
2. **scaffold to** work out  $U_{big} - U_{small}$  **scaffold is** ticks above horizontal line paired with crosses below
1. **scaffold to** work out  $U_{big} - U_{small}$  **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 mutiplication 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  $\{2 \text{ or } 5\}$  **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.  $-5 \times -7$
9. negative  $\times$  non-negative e.g.  $-5 \times 7$  or  $5 \times -7$
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

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}

## place100value9999

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}
2. write HTO {given in digits} in place value grid and write down the value of H or T {no digits are zero}

## prime

14. write {harder number} as a product of its prime factors {must divide by 3, 7, 11, 13 etc}
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