Maths in Year 3 and 4 at the British School of Beijing, Shunyi

NORD ANGLIA
EDUCATION
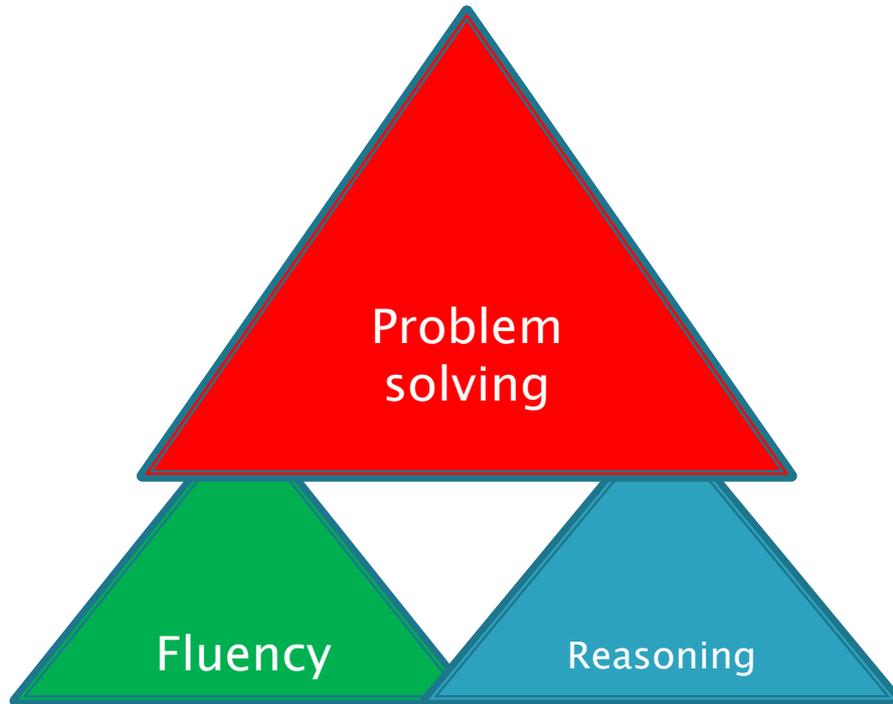
In today's workshop we will:

- Quick oral mental starter– 'crack the code'.
- Overview of maths in Years 3 and 4.
- Focus on how we teach 4 number operations with a focus on multiplication and division.

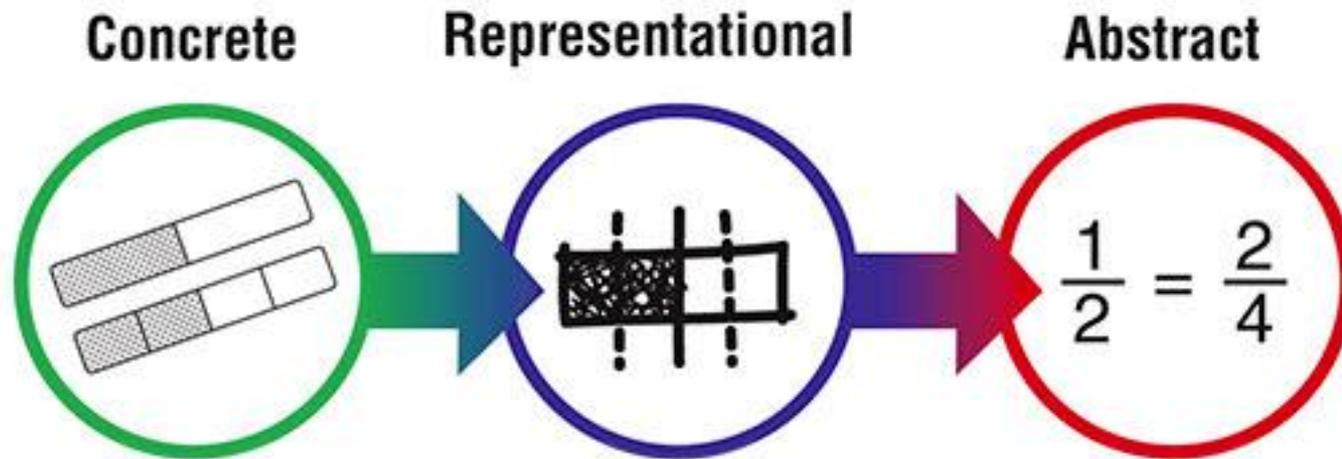# Oral mental starter

- crack the code

Changes to the curriculum

Representations

Concrete → Representational → Abstract

$$\frac{1}{2} = \frac{2}{4}$$

How can you help your child?

- Use the same **methods** that we use in school to help them at home.
- Focus on developing **fluency** and **mastery** of concepts through **quick recall** of number facts.
- Show them maths in different **contexts** and the **relationship** between numbers.

Methods we use in maths lessons
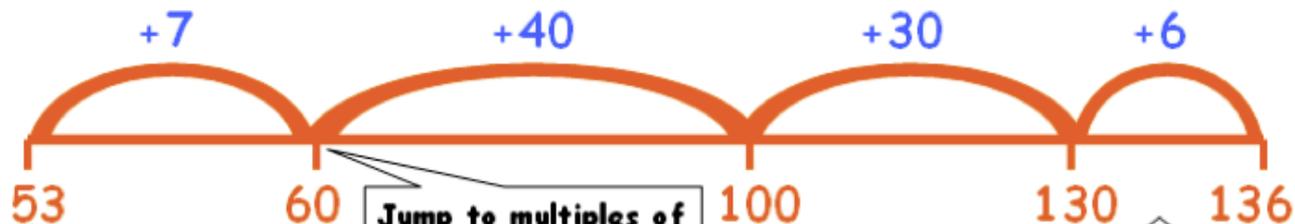
Subtraction number line

82 - 49 =

+1   +30   +2

49 50   80 82

1 + 30 + 2 = 33

+10   +10   +10   +3

49   59   69   79 82

10 + 10 + 10 + 3 = 33

Subtraction

Use the 'counting on' method for subtraction

136 – 53 = ☐

+7   +40   +30   +6

53   60   100   130   136

Jump to multiples of 10 to make it easier

Remember to start at the smallest number.

7 + 40 + 30 + 6 = 83

Add together the jumps that you made

Find the difference

Column subtraction

$$\begin{array}{r} {}^{7}\not{8}{}^{1}3 \\ -\ 35 \\ \hline 48 \end{array}$$

$$\begin{array}{r} 2{}^{5}\not{6}{}^{1}3 \\ -125 \\ \hline 138 \end{array}$$

H	T	U
3	12	
	$\not{2}$	15
4	$\not{3}$	$\not{5}$
2	4	6 −
1	8	9

$67.2 - 9.32$

$$\begin{array}{r} {}^{5}\not{6}{}^{16}\not{7}.{}^{11}\not{2}{}^{1}0 \\ -\ 9.32 \\ \hline 57.88 \end{array}$$

$245 + 75.63$

$$\begin{array}{r} {}^{1}\ {}^{1} \\ 245.00 \\ +\ \ 75.63 \\ \hline 320.63 \end{array}$$
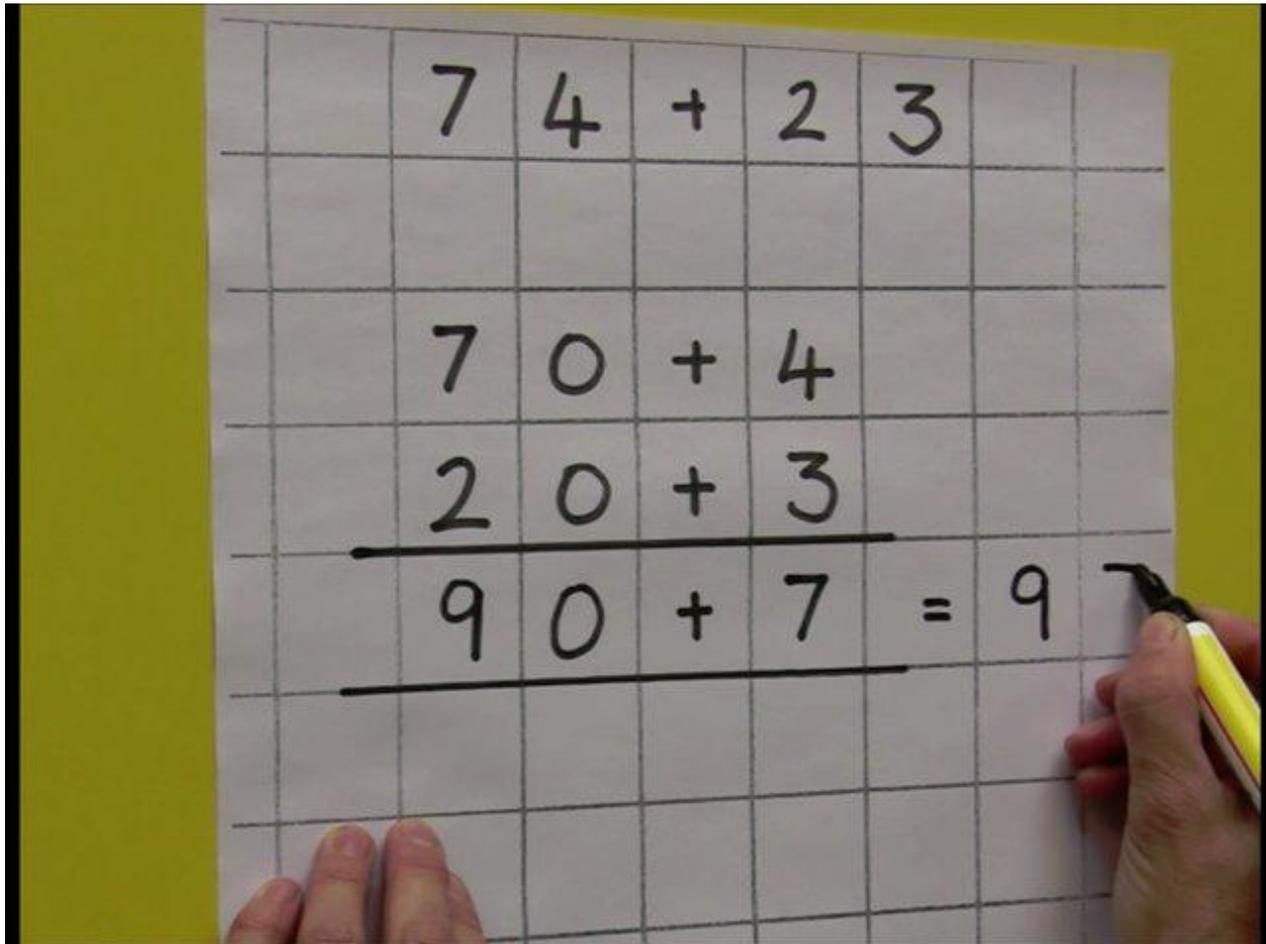
Addition using partitioning

- 567 + 199

Partitioning method

500 + 100 = 600

60 + 90 = 150

7 + 9 = 16

600 + 150 + 16 = (766)

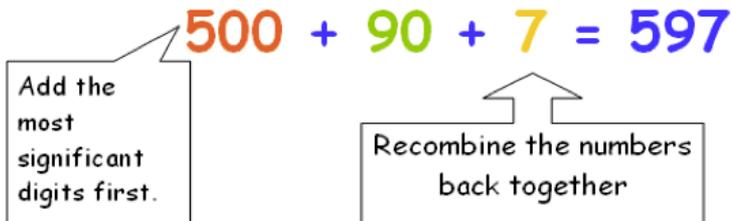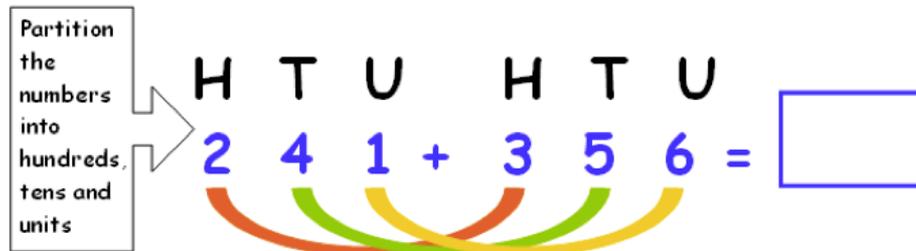# Column method using partitioning

Partitioning and recombining

```
   3  8
        +
   9  3
  ─────────
1  2  0   ➜   add the tens first
   1  2   ➜   then add the units
  ─────────
1  3  2
  ─────────
```

Partitioning

Use the partitioning method for addition

Partition the numbers into hundreds, tens and units

H T U   H T U

2 4 1 + 3 5 6 =

500 + 90 + 7 = 597

Add the most significant digits first.

Recombine the numbers back together

Column addition

$$
\begin{array}{r}
3\ 8 \\
+\ 9\ 3 \\
\hline
1\ 3\ 1 \\
\hline
1
\end{array}
$$

Addition pyramid
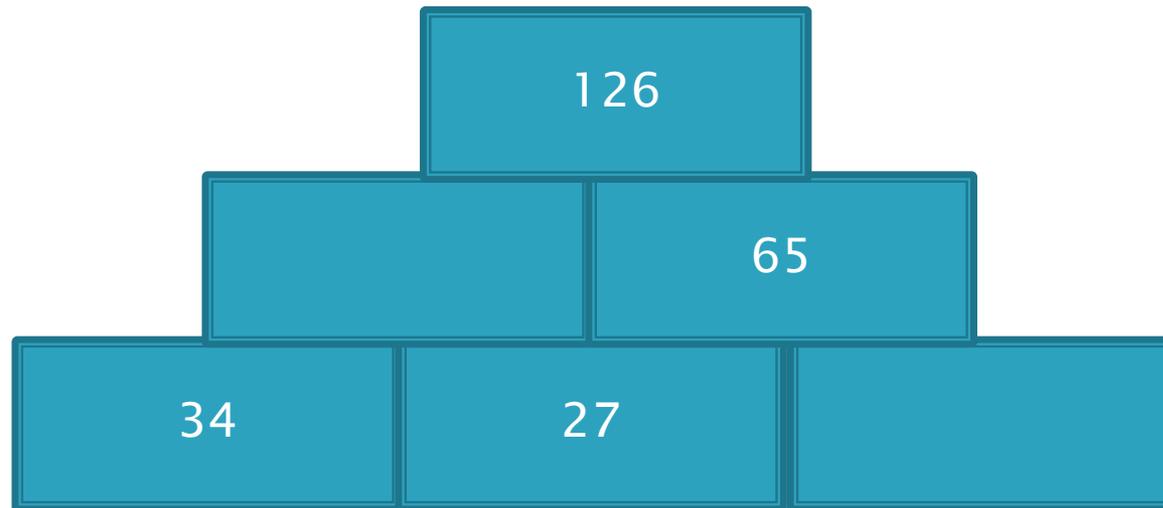
Multiplication grid method

37 x 5 =

X	30	7
5	150	35

37 x 5 = 150 + 35

37 x 5 = 185

Grid method

Use the grid method for multiplication

136 x 7 = ☐

Partition the numbers in hundreds, tens and units

X	100	30	6
7	700	210	42

Make sure the numbers stay in the right place in the grid

700 + 210 + 42 = 952

Recombine the numbers back together.

Grid method

▸ 28 x 33 =

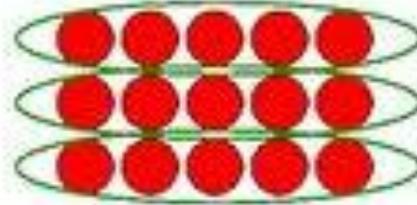| X	20	8
30	600	240
3	60	24

600 +240 +60 + 24 =924

Now it's your turn!

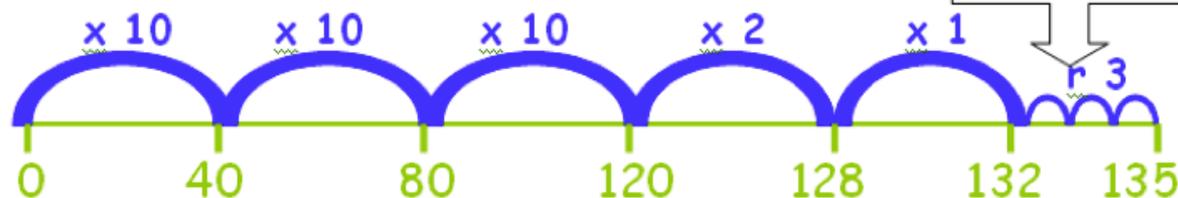▸ 15 x 6 =

▸ 25 x 12 =

Division with arrays

$$15 \div 3 = 5$$

Number of counters

Number of rows

Number in each row

Division using chunking

Use the 'chunking up method' for division

$135 \div 4 =$ ⬜

Don't forget to count any remainder

| x 10 | x 10 | x 10 | x 2 | x 1 | r 3 |

0   40   80   120   128   132   135

$10 + 10 + 10 + 2 + 1 = 33 \text{ r}3$

x 4 facts

$1 \times 4 = 4$

$2 \times 4 = 8$

$5 \times 4 = 20$

$10 \times 4 = 40$

Use easy times table facts to help you.

Add up how many 'lots of 4' you jumped.

Chunking for division

$$172 \div 8 = 21r4$$

$$
\begin{array}{ll}
172 & \\
-\ 80 & (10 \times 8) \\
\hline
92 & \\
-\ 80 & (10 \times 8) \\
\hline
12 & \\
-\ 8 & (1 \times 8) \\
\hline
4 & \quad r4
\end{array}
$$

Short division

$$3 \overline{)\ 5\ {}^23\ {}^24}$$ with quotient **1 7 8**

Short Division

a) $5 \div 3 = 1$ with a remainder of **2**.

b) Write the **2** beside the 3. You know have 23.

c) $23 \div 3 = 7$ with a remainder of **2**.

d) Write the remainder by the 4. You know have 24.

e) $24 \div 3 = 8$ with no remainder.

f) The answer is 178.
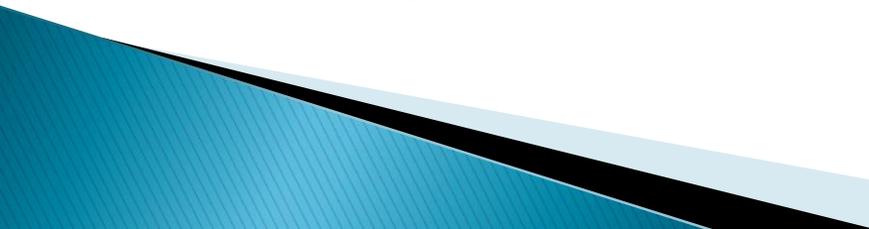
Now it's your turn!

▸ 126 ÷ 3 =

The X box

What if I had put a secret number in the X Box?
And the total of 3 of that number (3x) was 15?

Making maths fun

- puzzle pack!

Making maths fun

- Cooking – understanding recipes, measures and quantities
- Time – TV schedules and train timetables
- Games with dice (score 21, less than, more than)
- Playing cards (bond snap, adding up cards, dealing & switching)
- Seeing number relationships or patterns.
- Apps on tablets or phones
- Guess the number
- Create a target game with rule
- Shop around. Search for advertisements with sales.
- Treasure Hunts with maths clues
- Squash that box! Be aware of the nets for 3D containers.
- Tracking Time. Monitor how long activities take.

Useful websites

- http://www.oxfordowl.co.uk/home/maths-owl/expert-help--2/fun-maths-athome
- www.mathszone.co.uk
- http://www.teachingtime.co.uk
- http://www.theschoolrun.com
- http://www.mathsisfun.com
- http://www.mathschamps.co.uk

Any questions: