Numeracy and Mathematics

Number

Handy Tips Guide

Dear Parent/Carer,

This Guide is intended to help you support your child at home. It offers examples of how pupils answer various calculations and guidance as to the appropriate vocabulary to utilise.

The four core operations- Addition, Subtraction, Multiplication and Division are central to all work within Numeracy and Mathematics. A consistent approach to the teaching methods employed is essential in allowing your child to consolidate their understanding in these areas.

We hope you find it useful.

Addition and Subtraction

- Use the word "calculation" instead of "sums". Use "show your working" or "written calculation" rather than "write out the sum".

- Words for addition and subtraction
  Add: Plus, total, find the sum of
  Subtract: Take away, moving towards subtract and minus when appropriate

- Avoid the use of "and" when meaning addition e.g. "4 and 2 is 6"

- Start addition and subtraction at the top and work downwards e.g.

```
    5        "five add four"
  + 4
  ─────

  ─────
```

```
    6        "six take away 2"
  - 2
  ─────

  ─────
```

When one addition fact is known it is important to understand the other three facts in terms of addition and subtraction e.g.

$$2+3=5$$
$$3+2=5$$
$$5-2=3$$
$$5-3=2$$

- The above facts are linked to 5. Children should be encouraged to investigate and explore other facts which "make" 5 e.g.

Pattern	Random
9 – 4 = 5	27 – 22 = 5
19 - 14= 5	15 - 10 = 5
29 – 24 =5	14 - 9 = 5

Concrete materials (e.g. counters, cubes, pennies, buttons), should be used to experiment and explore linked facts for as long as is necessary.

Written Addition and Subtraction

Pupils need to set out addition and subtraction properly. The sign needs to be outwith the calculation.

Incorrect layout
```
    23
    +6
_____

_____
```

Correct layout
```
    23
  +  6
_____

_____
```

Worked examples showing "carrying" and "exchanging"

$$
\begin{array}{r}
5\ 6 \\
+\ 3_1\ 9 \\
\hline
9\ 5 \\
\hline
\end{array}
$$

Steps for addition:
1. Check the sign and ask, is it addition or subtraction?
2. Start with the units column.
3. Say "six add nine equals fifteen".
4. The "carry" digit always sits above the line.
5. Add the tens column. Say, "five add three add one equals nine".

$$
\begin{array}{r}
^2\!\not{3}\ {}^1 1 \\
-\ 1\ \ 2 \\
\hline
1\ \ 9 \\
\hline
\end{array}
$$

Steps for subtraction:
1. Say, "one take away two, we can't do this"
2. Exchange one ten for ten units.
3. Then say, "eleven take away two equals nine".
4. Then for the tens say, "two take away one equals one".

$$
\begin{array}{r}
^3\!\not{4}\ \ ^9\not{0}\ \ ^1 0 \\
2\ \ \ \ 3\ \ \ \ 4 \\
\hline
1\ \ \ \ 6\ \ \ \ 6 \\
\hline
\end{array}
$$

Steps for subtraction:
1. Say "zero subtract four, we can't do this".
2. We have no tens to exchange, so we have to exchange one hundred for ten tens. Then exchange one ten for ten units.
3. Repeat as before.

Multiplication and Division

- Words for multiply and divide
  Multiply: Multiplied by, product
  Divide: Divided by, quotient

- Table facts e.g. 2 × 5 = 10 should be stated as "two fives are ten".

- For multiplication tables the table number comes first.
  e.g. Two times table 2 × 0 = 0
  $\qquad\qquad\qquad\quad$ 2 × 1 = 2
  $\qquad\qquad\qquad\quad$ 2 × 2 = 4
  $\qquad\qquad\qquad\quad$ 2 × 3 = 6 and so on…

- When working on tables, always stress the corresponding division facts e.g.

   4 x 6= 24 $\qquad\qquad$ 24 divided by 4= 6

- Always try to link fractions to division facts e.g.

  24 divided by 4= 6 one quarter of 24= 6

Worked examples for Multiplication and Division

```
        2   6
        x   2   4
     ———————————
     1   0   4
        ————————
```

Steps:
1. Say "four sixes are twenty four".
2. As for addition/subtraction the four goes in the units column and the two in the tens column. It should look like twenty four.
3. Say "four twos are eight".
4. Add the two tens that were carried to give ten.
5. Ensure that the one representing the hundreds is placed in the answer.

- As with addition, the "carry" digit always sits above the line.

```
          1   8   9
      ———————————————
    4 | 7 ₃ 5   6
              3
```

Steps:
1. Say "this is 756 divided by 4".
2. Start by saying "7 divided by 4". Support if necessary by saying "how many 4's in 7?"
3. Avoid saying "4 goes into"
4. Place answer on top line of calculation.
5. Carry remaining hundreds to tens column.
6. Say "35 divided by 4".
7. Place answer on top line of calculation.
8. Carry remaining tens to units column.
9. Say "36 divided by 4".
10. Place answer on top line of calculation.