Knowing your basic maths facts is an important life skill. This addition of St Columba’s Curriculum Matters is designed to support parents and care givers in their efforts to encourage their child/ren’s development of...

Basic Maths Facts

Basic facts are generally deemed to be:

Addition facts  - to 9 + 9 = 18
Subtraction facts - those which relate to the addition facts above
                 (ie to 18 – 9 = 9)
Multiplication facts - to 9 x 9 = 81
Division facts  - those which relate to the multiplication facts above
                 (ie to 81 ÷ 9 = 9)

however often 10 is included.

Many of the strategies listed below are helpful for students to enable them to work out their basic facts rather than having them rely on memorisation (rote learning) procedures which many students are never going to achieve at no matter how much practice or tutoring they receive. Often many students who manage to recall facts only by rote methods do poorly in mathematical situations where they need to apply the operation (eg addition) to a problem. Knowing 2 fours are 8 doesn’t help if the student has a poor understanding of the concept of multiplication and no strategy based on such understanding for working them out.

Students need to work with the turnarounds for addition and multiplication so they recognise these as facts they already know rather than another set. For example : 6 + 3 = 9 and 3 + 6 = 9 or 5 x 4 = 20 as well as 4 x 5 = 20.
Once the related subtraction facts (for addition) and division facts (for multiplication) are added to these sets they become the “know one know four” facts.
For example: \[3 + 4 = 7, \ 4 + 3 = 7 \text{ and } 7 - 3 = 4, \ 7 - 4 = 3\]
\[5 \times 4 = 20, \ 4 \times 5 = 20 \text{ and } 20 \div 4 = 5, \ 20 \div 5 = 4\]

**Addition (and Subtraction) Strategies:**

Generally it is best to focus on the development of addition strategies before work on the related subtraction facts. If the addition strategies and thus the recall of addition facts is even over learned the then the subtraction facts are the logical progression. Below the two sets are presented together to make the links clear. Some students can see the links straight away but for those who do not they can feel the need to just remember them because it has stopped making sense for them.

**Based on Counting:**

Count on 1
\[3 + 1 = 4, \ 8 + 1 = 9, \ 1 + 5 = 6 \text{ etc and thus } 6 - 1 = 5 \text{ etc}\]

Count on 2
\[3 + 2 = 5, \ 7 + 2 = 9, \ 2 + 4 = 6 \text{ etc and thus } 5 - 2 = 3 \text{ etc}\]

**Use doubles:**

Doubles
\[3 + 3 = 6, \ 4 + 4 = 8 \ 5 + 5 = 10 \text{ etc and thus } 4 - 2 = 2 \text{ etc because double } 2 = 4 \text{ etc}\]

Doubles add one etc
\[3 + 4 = 7 \text{ because } 3 + 3 = 6 \text{ and one more } 5 + 6 = 11 \text{ and thus } 9 - 5 = 4\]

Doubles add two
\[3 + 5 = 8 \text{ because } 3 + 3 = 6 \text{ and two more is } 8 \text{ and thus } 8 - 5 = 3\]

**Use ten:**

Make to ten
(Pairs of numbers that total 10)
\[4 + 6 = 10, \ 5 + 5 = 10, \ 1 + 9 = 10\]

Near ten
\[4 + 7 = 11 \text{ because } 4 + 6 \text{ is } 10 \text{ and one more (than 6 to get 7) makes } 11\]
\[5 + 4 = 9 \text{ because } 6 + 4 \text{ is } 10 \text{ and one less is } 9 \text{ (5 is one less than 6)}\]


**Multiplication and Division Strategies**

Generally it is best to focus on the development of multiplication strategies before work on the related division facts. If the multiplication strategies and thus the recall of multiplication facts is even over learned the then the division facts are the logical progression. Below the two sets are presented together to make the links clear. Some students can see the links straight away but for those who do not they can feel the need to just remember them because it has stopped making sense for them.

**Use Counting:**

10s facts
- $4 \times 10 = 40$ can be worked out by 10, 20, 30, 40
- $3 \times 10 = 30$, $10 \times 9 = 90$
  and thus $50 \div 5 = 10$ etc

5s facts
- $5 \times 4 = 20$ I can count in 5s four times : 5, 10, 15, 20,
- $3 \times 5 = 15$
  and thus $35 \div 5 = 7$ etc

**Think Real World:**

Ones facts
- Anything multiplied by one is the same number $4 \times 1 = 4$,
- $1 \times 8 = 8$
  and thus $5 \div 5 = 1$ and $5 \div 1 = 5$

Zeros facts
- Anything multiplied by zero is always zero $4 \times 0 = 0$, 0
- **Be careful of division here as it is not possible to divide by zero. Use a calculator to show this**

**Use doubles: (and halves for division)**

Twos facts
- $4 \times 2$ is double 4 which is 8
- $8 \div 2 = 4$ – anything divided by 2 is half

Fours facts
- Anything $x 4$ think double double. $6 \times 4$ is double 6 which is 12 double 12 is 24 so $6 \times 4$ is 24
  and thus $24 \div 4 = 6$ (half half)

Eights facts
- Anything $x 8$ think double double double. $4 \times 8$ is double 4 is 8, double 8 is 16 and double 16 is 32 so $4 \times 8 = 32$.
  and thus $32 \div 8 = 4$ (half half half)
**Build up or build down:**

**Nines facts**  
8 x 9 I think of 8 x 10 which is 80 but this is one 8 too much so – 8 = 72.  
Or build up from double double double if the student likes that strategy better.  
and thus 72 ÷ 9 = 8 by thinking of the related multiplication strategy.

**Sixes facts**  
7 x 6 : I know 7 x 5 is 35 (by counting in 5s if I need to)  
but I need one 7 more so 35 + 7 is 42. 7 x 6 = 42.  
and thus 42 ÷ 6 = 7 by thinking of the multiplication fact

**Threes facts**  
6 x 3: I know 6 x 2 is double 6 which is 12 and I need one more 6 so = 18  
and thus 18 ÷ 3 = 6

The only multiplication facts remaining are the sevens facts but all of these – except 7 x 7 have been covered by using the other strategies ie 7 x 8 think double double double (x8) so put 7 x 7 = 49 into memory. That’s better than putting all the multiplication facts into memory by far.

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**Thank you** to those who contributed to this edition of *St Columba’s Curriculum Matters*...  
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Don’t forget to check out other editions of *St Columba’s Curriculum Matters*, plus additional curriculum information on our **school web site**...  
**www.stcolumbaswilston.qld.edu.au**

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**References:**  