

LEARN YOUR TIMES TABLES IN A WEEK



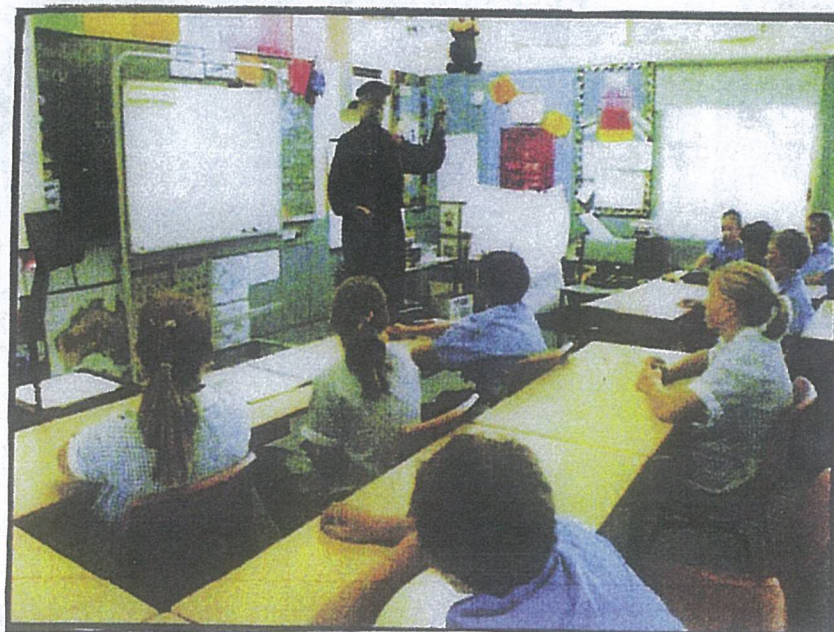
Creative Numeracy
Cattai School of Aart
The 3Rs The Professional Way

**Learn your
Times Tables in a Week**
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From: Numbers in a Nutshell

Author's Background

Born in 1928

1. **Dutch Diplomas:** HSC, Naval College, 2nd Officer Dutch Merchant Navy, Commercial correspondence Spanish, French and English.
2. **Languages:** Dutch, English, German, French, Spanish, Portuguese and Italian.
3. **High School Teacher:** Holland (2 Years), Australia (12 Years).
4. **Subjects:** English, French, Latin, Spanish, Creative Writing, Art, Music, Technical Drawing & Mathematics.
5. **Private Tutor** since 1976.
6. **Author** of Text Books.
7. **Musician.**



Numbers In A Nutshell : Cattai Public School 2003

The Decimal System

- To perform mental arithmetic or to do algorithms, you must instantly know the answers to the **36 multiplications** shown on page 2.
- The definition of 6 is 6×1 , so it's not necessary to write out the complete table.
- Since $3 \times 10 = 30$ and $10 \times 45 = 450$ according to one general rule, that table has also been left out.
- **A visual:** $6 \times 5 = 5 \times 6$ (CLM). To practise **seeing** this, there are 2 sets of test cards (Ex 19)
- Fluency is obtained by leaving out "times" and "equals". During a maths test, multiplication is the result of a thought process. If you say multiplications aloud, you should say 7 eights, 4 fives like 9 apples, 6 people. It's absurd to repeat oral questions!
What's your name? James!..... 3 fours? Twelve!
- To facilitate learning answers in record time, I have created 11 Tables of various lengths and colours.
Since the traditional order is lost, it's imperative that you become familiar with them.
Special **recognition exercises** have to be done to achieve this.
Six tables are clearly labelled, the five others are remembered with the aid of special links. Each exercise has to be done to perfection before attempting the next one!
- By manipulating the number cards and using **Verbal Rehearsal** (Seeing, Saying and Doing), you will employ 3 of your 5 senses to stimulate your brain.
- Once you have recognised these special tables, answers will be learnt by taking advantage of the most creative discoveries ever published.
- With the advent of the Internet, Google, Facebook, iphones and the like, memorising has become almost extinct causing braincells to die off (National Geographic); the price of technology and progress.
Many children now have a TV brain, one that is only suitable to watch the screen. (Endangered Minds, Healey)

It's not the apes we come from, it's where we are going!

Algorithms

- With the introduction of the calculator, doing algorithms might be considered an obsolete activity. In a realistic sense, of course it is. However, not if it is seen as a therapeutic one, especially in Primary Schools because it takes at least 10 years for the human brain to reach maturity; at birth, its weight is only 20% - 25% of the adult one. Although it's then only 2% of the average body weight, it consumes 20%-25% of the daily energy intake! (Uma História da Linguagem)
- Warning: To be beneficial, algorithms must only be done as an old-fashioned professional routine and only when you thoroughly know your tables.

The New Tables

9×2

5×2

6×2

3×9

4×5

4×6

9×4

5×6

6×6

5×9

8×5

8×6

9×6

2×2

3×4

7×9

3×2

7×8

9×8

7×3

7×6

9×9

8×4

8×8

3×3

3×5

2×7

4×2

6×3

5×7

4×7

8×2

8×3

5×5

7×7

4×4

The Detailed Description

1

THE NINES PROGRAM

Monday Morning:
pages 1,2,3

1. Labelling tables 1-6 and learning ways to remember 7-11.
2. Hold the cards with The New Tables in numerical order, coloured side up.
Using Verbal Rehearsal. (identify with colour) place them on this page.

3. Turn over & Mix the cards before putting them back on this page.

Monday Afternoon:

4. Using Verbal Rehearsal Place the singles on page 2 in random order, coloured side up.
5. Turn over & Mix the cards before putting them back on page 2.

2

FIVE & EVEN

2,4,6,8

3

SIX & EVEN

2,4,6,8

7

Look at the top line page 2:
You see

2 x 2 continue
3 x 2 are 6.....

8

..... 3 x 4
..... 7 x 8

9

From 8

Combine

7 x 3
8 x 4

10

From 9

Now

7 x 6 (double 3)
8 x 8 (double 4)

4

THE THREES

5

THE FIVES and odd

6

THE SEVENS

11

We already have
2x2, 3x2, 5x2, 6x2
7x2, and 9x2
Still Missing

4 x 2
8 x 2
=
4 x 4

1

PROGRAM
Tuesday Morning:

- 6. Repeat exercises 2 & 3 on page 4 and exercises 4 & 5 on page 5. (Cover up page 4)
- 7. Visualise page 2. including the colours. Use Verbal Rehearsal while pointing to the appropriate spaces on page 5.
- 8. Write down (in pencil) The New Tables from memory on page 5. Check!

2

3

7

8

9

10

4

5

6

11

Unique and Creative ways to REMEMBER Answers

The 9 - Recipe

Think One less and the partner

Eg: $9 \times 6 = 54$

The 9 - Partners

$1-8 \times 2$ $2-7 \times 2$
 $3-6$ $5-4$

Tuesday Afternoon: This Page

9. The 9 - Partners
10. The 9 - Recipe
11. The 5 & Even Recipe
12. The 6 & Even Recipe
13. Tables 7 & 8
14. Tables 9 & 10
15. Tables 4,5,6 & 11

Wednesday Morning:

16. Repeat exercises 9 - 15
17. Match the coloured singles with the answers on page 7 while calling out the recipes.
18. Turn over and mix the cards before putting them back.

Wednesday Afternoon:

19. Oral test: provide answers to the 72 multiplications. Turn cards to check. Record errors on page 5. Relearn the recipes.

Thursday Morning:

20. Repeat exercise 19.

The 5 & Even Recipe

Half the number and a nought

Eg: $5 \times 6 = 30$

Eg: $5 \times 8 = 40$

The 6 & Even Recipe

Half the number and the number

Eg: $6 \times 2 = 12$

Eg: $6 \times 4 = 24$

2×2

$12 \quad 34$

4

3×2

$12 \quad 34 \quad 56$

6

Count to 8

$12 = 3 \times 4$

to get the answers

$56 = 7 \times 8$

1 back

$7 \times 3 = 21$

1 back

$8 \times 4 = 32$

2 back

$7 \times 6 = 42$

2 back

$8 \times 8 = 64$

3×3



3×6 The Third is the First

18

The 9 - Partners

$$\begin{array}{r} 8 \\ \times 4 \\ \hline 234 \end{array}$$

Odd before & 5

$3 \times 5 = 15$

Odd before & 5

$5 \times 7 = 35$

How many fives do you see?

$5 \times 5 = 25$

2 weeks is a fortnight

$2 \times 7 = 14$

The perfect month (Moon) February, 2nd month, 8 letters

$4 \times 7 = 28$

a week & a week a "fortnine"

$7 \times 7 = 49$

$2 \times 4 = 8$



2 Eights

Sixteen

Same as

4×4

18	10	12	
27	20	24	
36	30	36	
45	40	48	
54	4	12	
63	6	56	
72	21	42	
81	32	64	
9	15	14	8
18	35	28	16
24	25	49	16

Algorithms: Thursday Afternoon

1

$$\begin{array}{r}
 123 \\
 \times 3 \\
 \hline
 369
 \end{array}$$

Eyes travel up

Brain thinks

Pen writes

L ← R

Mentally

L → R

$$\begin{array}{r}
 3 \times 100 = 300 \\
 3 \times 20 = 60 \\
 + 3 \times 3 = 9 \\
 \hline
 369
 \end{array}$$

2

$$\begin{array}{r}
 123 \\
 \times 12 \\
 \hline
 246 \\
 + 1230 \\
 \hline
 1476
 \end{array}$$

Routine:
second row starts in second place.
(No Explanations!)

9- Remainder checking method (Trachtenberg)

- Reduce the number to one digit by adding its digits.

123 x 12 becomes 6 x 3 = 18
1476 becomes 18 ✓

Shortcut: Ignore nines or combinations of 9

Example:
9 4 6 5 3 2 becomes 29, 11, 2

By mentally eliminating the nines first, you'll get the answer quicker.

3

Demonstration Exercise

$$\begin{array}{r}
 + \\
 18 \quad 24 \\
 \text{Write} \quad \uparrow \\
 34 \\
 \text{See } 2 \quad \uparrow \quad \text{See } 1 \\
 \times 6 \\
 \hline
 204
 \end{array}$$

Write and say, twenty - four

Listen & Hear

Put down the carry the 2'n 18's 20

4,

Eventually all Mentally

Dialogue

Student: "I don't understand!"
Teacher: "Excellent! I only want you to repeat what I'm saying and doing until you can do it yourself."

Friday Morning

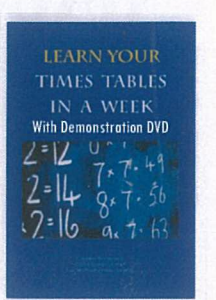
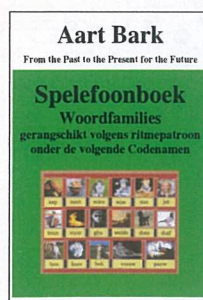
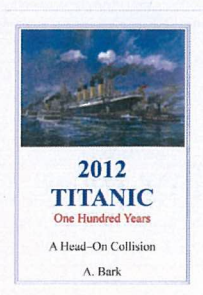
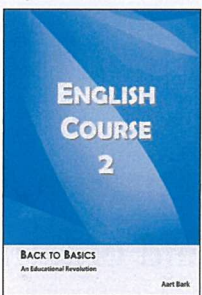
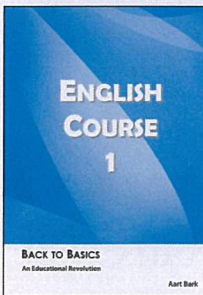
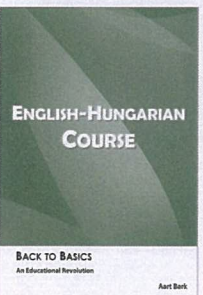
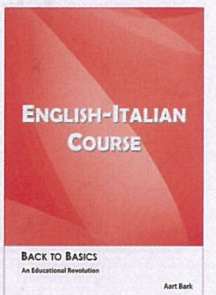
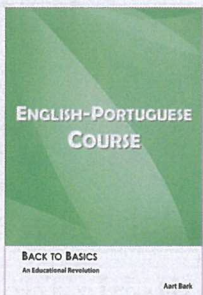
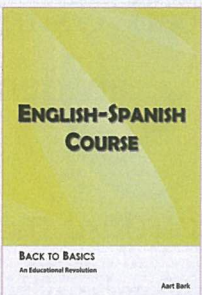
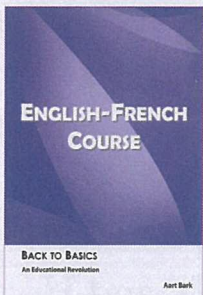
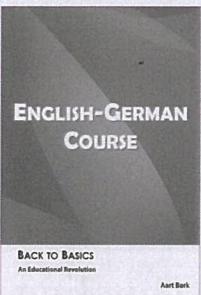
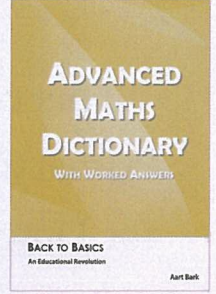
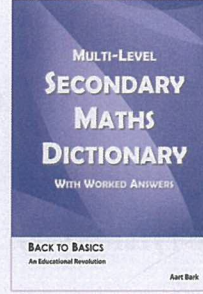
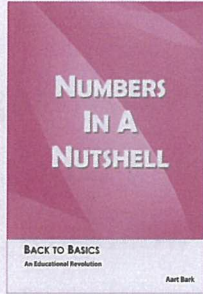
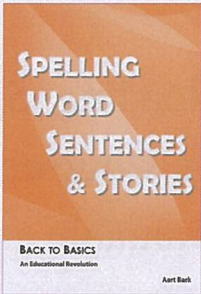
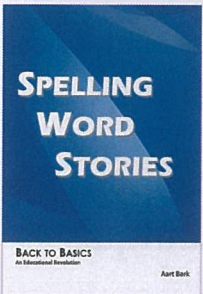
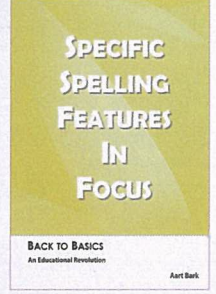
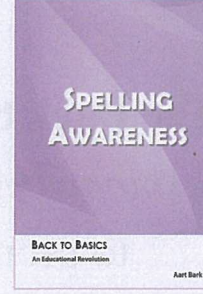
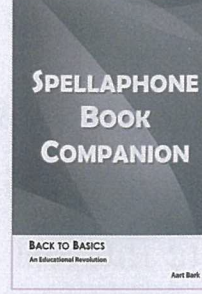
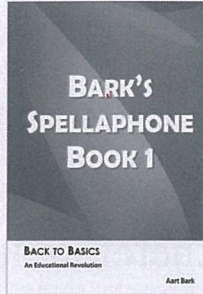
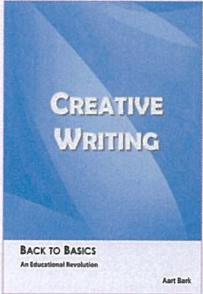
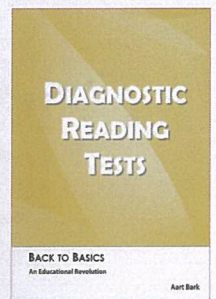
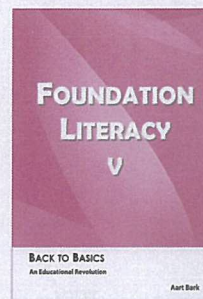
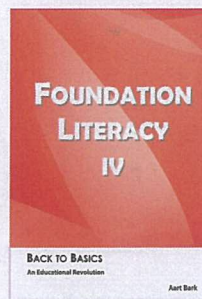
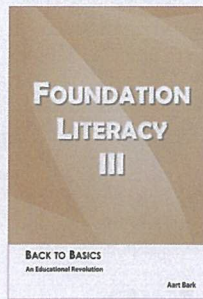
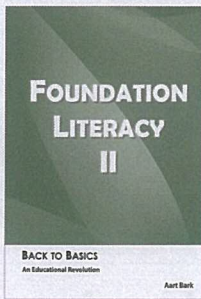
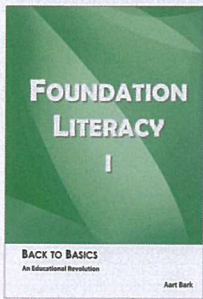
21. Invent your own Algorithms and check them with the 9 - Remainder method.

Friday Afternoon

22. Repeat exercise 19.

Practise makes perfect.

For a while, test yourself at least once a week in order to consolidate your knowledge.



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