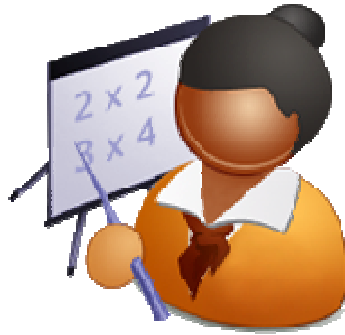




South Marston Cof E Primary School

A Guide to Learning the Times Tables



LEARN YOUR X TABLES

NAME: _____

Times Tables Guidelines

As a general rule the following programme of learning tables should apply to most children:

Reception/Year 1 counting in 2, 5 and 10

Year 2 2, 5 and 10

Year 3 3, 4, 6

Year 4 7, 8, 9

Year 5 All tables to be known in order and recited at speed, working towards instant recall

Year 6 Thorough knowledge of all tables expected, together with the ability to recall them instantly

Ways to help your child to learn the Tables

All children learn in different ways. Therefore some of the tips below will help your child more than others. Pick and choose from this selection: what works for one child will not necessarily work for a sibling. (Do not use the long words with young children).

Learn only a little at a time. If you are starting on a new table don't attempt to master the whole thing at once; start with 1×6 , 2×6 on one day, then add further numbers in the sequence when they are ready for it.

Constant revision of all of the tables is important; not just those learned recently.

Multiplication tables are just a quick way of doing a very long addition sum.

It is very important that the children understand how the tables are compiled: this will make their learning easier as then they will not be just learning 'gobbledygook' by rote.

$$1 \times 5 = 5$$

This means there is 1 'lot of' 5

$$2 \times 5 = 10$$

This means that there are 2 'lots of 5' i.e. 5 plus another 5 ($5 + 5 = 10$)

$$3 \times 5 = 15$$

3 lots of 5

$$5 + 5 + 5 = 15 \text{ etc.}$$

This knowledge is especially helpful for the higher number tables.

If a child does not know what 7×7 is they do not have to start right at the very beginning of the 7 x table but can leap in half way:

$$5 \times 7 = 7 \times 5 = 35$$

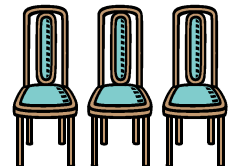
$$6 \times 7 = 35 + 7 \text{ (we now have 6 lots of 7)} = 42$$

$$7 \times 7 = 42 + 7 \text{ (7 lots of 7)} = 49$$

It may help to demonstrate this point using concrete apparatus such as matchsticks or even Smarties! A little bribery goes a very long way and the 'lesson' is more likely to be remembered!

Change this into real life situations:

- "If there are four legs on every chair, how many legs are there altogether on all of the chairs around this table?"
- "If we order three pints of milk from the milkman every day, how much milk do we drink in a week?"



Odd and Even Numbers

The following rules always apply:

$$2 \times 4 = 8$$
$$E \times E = E$$

$$2 \times 3 = 6$$
$$E \times O = E$$

$$3 \times 2 = 6$$
$$O \times E = E$$

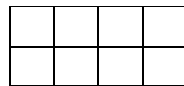
$$3 \times 5 = 15$$
$$O \times O = O$$

Therefore, the only time you get an odd answer is when two odd numbers are multiplied together.

Multiplication is Commutative

$$2 \times 4 = 4 \times 2$$

This can be demonstrated very easily by drawing a rectangle 4 squares by 2:



Here you have 2 rows of 4 squares but it is exactly the same if you turn it around so that there are 4 rows of 2 squares.

Again use the smarties, set out in 4 rows of 2 or 2 rows of 4, you still have the same number of smarties altogether.

Use mnemonics to aid the memory

I ate and ate `till I was sick on the floor: 8 eights are 64!

Wakey, wakey, rise and shine: Seven 7's are 49

Make up some of your own.

$$7 \times 8 = 56 \quad 56 = 7 \times 8$$



Look for number patterns in the tables

Ox: Think of `empty pockets'. Ask your child how many pockets he has in the clothes he is wearing at the moment. If there are three pockets, all with nothing in them, then he has nothing. It doesn't matter how many pockets he has, if they are all empty, there will be nothing. $3 \times 0 = 0$ etc.

2x: 2 4 6 8 10

then the pattern is repeated with the last digit in each answer

12 14 16 18 20 22 24

3x: 3 6 9 12 15

O E O E O

4x: All of these answers are double the answers in the 2x table

5x: Any odd number times 5, ends in a 5. Any even number times 5 ends in a 0

6x: These answers are just double those in the 3x table

8x: 8 16 24 32 40 48 56 64 72 80 88 96

9x: See below for 'Using Fingers'
 All of the answers add up to 9
 18 1 + 8 = 9
 27 2 + 7 = 9
 36 3 + 6 = 9 etc

This even works with the really high multiples of 9:
 $43 \times 9 = 432$ $4 + 3 + 2 = 9$

10x: All numbers end in a zero! (Please note we are not adding a zero'. What is actually happening is that the digits which are being multiplied move one column to the left, to make them ten times bigger: this can be demonstrated with digit cards which can be made from the blank business cards).

T	U		H	T	U
	8			3	5
8	8		3	5	0

Now there isn't a digit in the UNITS column, so we have to put a zero in there. The little ones might even enjoy doing this with bigger numbers as it makes them feel very good when they can multiply very big numbers:

11x: Both digits are the same (for answers < 100)

12x: If you've learnt all the other tables - there actually should only be one thing to learn by this stage: $12 \times 12 = 144$

Oral Work

- Count forwards and backwards in 2s, 3s, 4s, etc.
- Put one more finger up every time you move onto the next number in the sequence if this will help the child to remember which number they are up to.
- Chant the tables in the old fashioned way (see the script for 'making your own tape').
- Working on only one table at a time - dot about i.e. $3 \times 5 = ?$, $7 \times 5 = ?$
- Give them the answer, how many 5s make this?



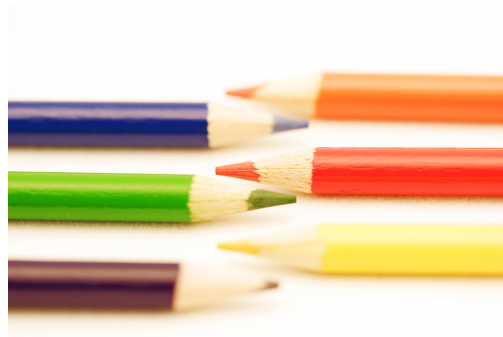
The 9 x Table



Lay both hands flat, palms down, on the table.
 Number the fingers, from left to right, 1 - 10.
 If you want 3×9 , wiggle the third finger and then curl it under.
 On the left of this finger there are 2 fingers (2 TENS).
 On the right of this finger there are 7 fingers (7 UNITS)
 $9 \times 3 = 27$

<u>X</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>
<u>0</u>	0	0	0	0	0	0	0	0	0	0	0	0	0
<u>1</u>	0	1	2	3	4	5	6	7	8	9	10	11	12
<u>2</u>	0	2	4	6	8	10	12	14	16	18	20	22	24
<u>3</u>	0	3	6	9	12	15	18	21	24	27	30	33	36
<u>4</u>	0	4	8	12	16	20	24	28	32	36	40	44	48
<u>5</u>	0	5	10	15	20	25	30	35	40	45	50	55	60
<u>6</u>	0	6	12	18	24	30	36	40	46	54	60	66	72
<u>7</u>	0	7	14	21	28	35	42	49	56	63	70	77	84
<u>8</u>	0	8	16	24	32	40	48	56	64	72	80	88	96
<u>9</u>	0	9	18	27	36	45	54	63	72	81	90	99	108
<u>10</u>	0	10	20	30	40	50	60	70	80	90	100	110	120
<u>11</u>	0	11	22	33	44	55	66	77	88	99	110	121	132
<u>12</u>	0	12	24	36	48	60	72	84	96	108	120	132	144

As the tables are learned, they can be coloured or highlighted both horizontally and vertically. You can use this opportunity again to emphasise that $3 \times 6 = 6 \times 3$ so therefore as well as learning all of the $3 \times$ table, part of the $6 \times$ table has also been learned so this can be coloured in as well! Therefore, by the time all the tables up to and including the $5 \times$ have been learnt, there is actually only one quarter of this grid left to commit to memory.



Learn your times tables (the fun way!)

<http://www.bbc.co.uk/skillswise/numbers/wholenumbers/multiplication/timestables/game.shtml> - all times tables with choice of doing against the clock. Interactive whiteboard game using a 100 square

<http://www.bbc.co.uk/schools/ks1bitesize/numeracy/multiplication/index.shtml> - key stage one games with three levels of difficulty

<http://www.oswego.org/ocsd-web/games/SumSense/summulti.html> - interactive game - re-arrange the number cards to make the sum make sense. Type in 'sum sense division' into Google to get the division version of this game.

<http://oswego.org/ocsd-web/games/mathmagician/maths1.html> - How many multiplication or division questions can you answer in 5 minutes?

<http://www.oswego.org/ocs-web/games/SpeedGrid/Multiplication/unikamultires.html> - Speed grid challenge for more able KS2

http://www.mathplayground.com/balloon_invaders.html - pop balloons with the multiple on it

http://www.mathplayground.com/spaceracer_multiplication.html - use your multiplication skills to navigate your way through the universe. Watch out for the asteroids!

<http://www.wmnet.org.uk/resources/gordon/Hit%20the%20button%20v9.swf> - Hit the right answer and see how many you can get. Great for interactive whiteboard

<http://www.tvokids.com/framesets/play.html?game=51&> - connect the dots. 2 x and 5 x table only

<http://www.crickweb.co.uk/assets/resources/flash.php?&file=digitmenu> - multiplication work out. How many can you answer?

<http://ngfl.northumberland.gov.uk/maths/num%20machine/double.html> - doubling machine

<http://www.oswego.org/ocsd-web/games/Ghostblasters1/gbcd.html> - ghost blasters. Shoot the multiples

http://fwt.txdl.com/4-10/w/e/weddell/mw/short_multiplication/2x1contents.swf - Great to practise TU x U multiplication through partitioning

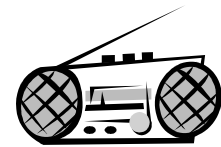
http://fwt.txdl.com/4-10/w/e/weddell/mw/short_multiplication/3x1contents.swf - Great to practise HTU x U through partitioning

<http://www.teachingtables.co.uk/> - Activities, games and worksheets

<http://www.primaryresources.co.uk/online/moonmaths.swf> - hit the alien as it pops up with the right number on it.



Record your own tape



It is supposed to be far more effective if a child listens to his/her own voice on a tape/CD/computer (rather than someone like Carol Vorderman etc.)

It is better if the children follow a 'script' when making the tape. The children should say the first bit into the microphone then leave a short pause before reading the answer: thus, when the tape is being played back, they have chance to say the answer themselves before checking that it is correct with the answer given by the tape.

One 5 is -- 5
 Two 5s are --- 10
 Three 5s are - - - 15
 Four 5s are --- 20
 Five 5s are --- 25
 Six 5s are --- 30.
 Seven 5s are -- 35
 Eight 5s are --- 40
 Nine 5s are --- 45
 Tents 5s are --- 50
 Eleven 5s are - - - 55
 Twelve 5s are - - - 60
 One 3 is --- 3
 Two 3s are --- 6
 Three 3s are --- 9
 Four 3s are --- 12
 Five 3s are --- 15
 Six 3s are --- 18
 Seven 3s are --- 21
 Eight 3s are - - - 24
 Nine 3s are --- 27
 Ten 3s are --- 30
 Eleven 3s are - - - 33
 Twelve 3s are - 36
 One 7 is --- 7
 Two 7s are --- 14
 Three 7s are --- 21
 Four 7s are -- 28
 Five 7s are - - - 35
 Six 7s are --- 42
 Seven 7s are - - - 49
 Eight 7s are - - - 56
 Nine 7s are --- 63
 Ten 7s are --- 70
 Eleven 7s are - - - 77
 Twelve 7s are - - - 84

One 2 is --- 2
 Two 2s are --- 4
 Three 2s are - - - 6
 Four 2s are --- 8
 Five 2s are --- 10
 Six 2s are - - - 12.
 Seven 2s are --- 14
 Eight 2s are --- 16
 Nine 2s are --- 18
 Tents 2s are --- 20
 Eleven 2s are - - 22
 Twelve 2s are - - - 24
 One 4 is --- 4
 Two 4s are --- 8
 Three 4s are --- 12
 Four 4s are --- 16
 Five 4s are --- 20
 Six 4s are --- 24
 Seven 4s are --- 28
 Eight 4s are - - - 32
 Nine 4s are --- 36
 Ten 4s are --- 40
 Eleven 4s are - - - 44
 Twelve 4s are --- 48
 One 8 is --- 8
 Two 8s are --- 16
 Three 8s are --- 24
 Four 8s are - - - 32
 Five 8s are - - - 40
 Six 8s are --- 48
 Seven 8s are - - - 56
 Eight 8s are - - - 64
 Nine 8s are --- 72
 Ten 8s are --- 80
 Eleven 8s are - - - 88
 Twelve 8s are - - - 96

One 10 is --- 10
 Two 10s are - - - 20
 Three 10s are - - - 30
 Four 10s are - - - 40
 Five 10s are --- 50
 Six 10s are --- 60
 Seven 10s are --- 70
 Eight 10s are --- 80
 Nine 10s are - - - 90
 Ten 10s are - - - 100
 Eleven 10s are - - - 110
 Twelve 10s are - - - 120
 One 6 is - - - 6
 Two 6s are --- 12
 Three 6s are --- 18
 Four 6s are --- 24
 Five 6s are --- 30
 Six 6s are --- 36
 Seven 6s are --- 42
 Eight 6s are - - - 48
 Nine 6s are --- 54
 Ten 6s are --- 60
 Eleven 6s are - - - 66
 Twelve 6s are - - - 72
 One 9 is --- 9
 Two 9s are --- 18
 Three 9s are --- 27
 Four 9s are -- 36
 Five 9s are --- 45
 Six 9s are --- 54
 Seven 9s are --- 63
 Eight 9s are - - - 72
 Nine 9s are - - - 81
 Ten 9s are --- 90
 Eleven 9s are - - - 99
 Twelve 9s are - - - 108

Home-made Mathematical Games

The following games can be adapted for the times tables and any other uses you can think of:

- Buy a set of blank business cards from any good stationer.
- Snip one corner of each card so that you can tell which way up they should be when the cards are face down.
- Write a variety of times tables questions and answers the cards (just one thing on each card: For example on 8 different cards I may write
3 x 5: 15: 4 x 5: 20: 5 x 5: 25: 6 x 5: etc

These can be then used to play:

- Snap
- Pairs/ Pelmanism
- Happy Families (but it isn't easy to see the cards when they are held in your hand)

Pelmanism

Shuffle the cards and arrange them in a neat order on the table, face down.

The players take it in turn to reverse any two cards; the cards must be left on the table face upwards so that everybody gets a good chance to look at them.

If the two cards are equivalent the player gets to keep the pair and has another go.

If the two cards are not a pair they are turned over once more and left on the table.

The game continues until all the cards have been claimed.

If this game is used for learning the times tables write 'questions' on half of the cards and 'answers' on the other half.

Snap

Again, half of the cards should be the 'question' (2 x 5) and the other half of the cards should contain the answer (10).

Shuffle the cards and divide them equally between two players.

The players keep their cards in a pile, face down.

One person turns over a card, then the other person turns over a card next to it so the two cards are close to each other. If the cards are equivalent, the last person to have turned over a card keeps all the cards in the two upturned piles. He then leads off on the next round.

Bingo

Each player selects five 'answers' from one of the times tables.

Roll two dice, add the dots together.

Multiply that total by whichever table it is you are doing

e.g. you are learning the 6 x table
five and two is rolled on the dice
five and two is 7
 $7 \times 6 = 42$



Any player who has 42 on their 'Bingo card' can cross it off. The next player rolls the dice.

Thank - you to Red Oaks Primary School
for the use of this booklet.