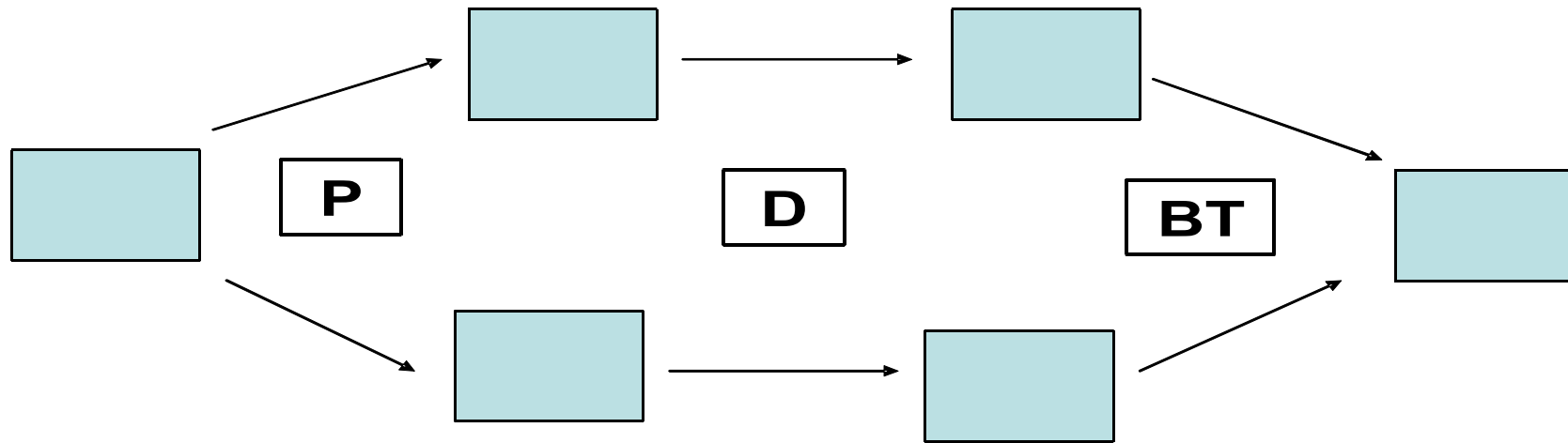


# The 4 Rules – Mental Methods - Addition

Doubling/Halving – children should know their doubles/halves to 30



Near doubles

$$7 + 8 = ??$$

$$7 + 7 = 14 + 1 \text{ more} = 15$$

$$6 + 5 = ??$$

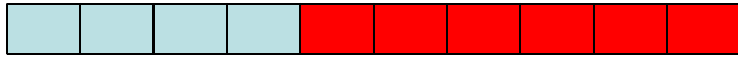
$$5 + 5 = 10 + 1 \text{ more} = 11$$

# Number bonds to 10

1 2 3 4 5 6 7 8 9 10



$5 + 5 = 10$



$4 + 6 = 10$



$3 + 7 = 10$



$2 + 8 = 10$



$1 + 9 = 10$



$0 + 10 = 10$

$50 + 50 = 100$

$500 + 500 = 1000$

$40 + 60 = 100$

$400 + 600 = 1000$

$30 + 70 = 100$

$300 + 700 = 1000$

$20 + 80 = 100$

$200 + 800 = 1000$

$10 + 90 = 100$

$100 + 900 = 1000$

$0 + 100 = 100$

$0 + 1000 = 1000$

$4 + 6 = 10$

$2 + 8 = 10$

$14 + 6 = 20$

$12 + 8 = 20$

$24 + 6 = 30$

$24 + 8 = 30$

$34 + 6 = 40$

$32 + 8 = 40$

$44 + 6 = 50$

$42 + 8 = 50$

$54 + 6 = 60$

$52 + 8 = 60$

And so on...

And so on...

## Adding/taking away 10 and using 10 to add/take away 9

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

$$12 + 10 = 22$$

$$34 + 10 = 44$$

$$23 - 10 = 13$$

$$35 - 10 = 25$$

$$12 + 9 = + 10 = 22 - 1 = 21$$

$$34 + 9 = + 10 = 44 - 1 = 43$$

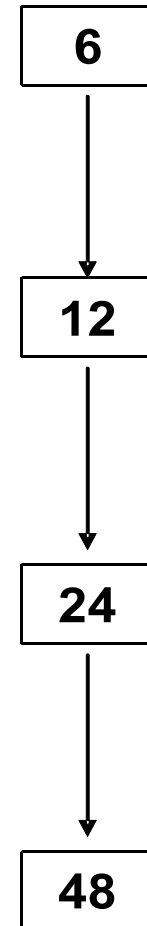
$$23 - 9 = - 10 = 13 + 1 = 14$$

$$35 - 9 = - 10 = 25 + 1 = 26$$

# Mental Methods – Learning Times Tables

$0 \times 6 =$	Anything $\times 0 = 0$
$1 \times 6 =$	Anything $\times 1 =$ what you started with
$2 \times 6 =$	Double 6
$3 \times 6 =$	Double 6, add 6
$4 \times 6 =$	Double 6, double again
$5 \times 6 =$	Half of $10 \times 6$ , 6 times up the 5x table
$6 \times 6 =$	It rhymes! $6 \times 6$ is .....
$7 \times 6 =$	$6 \times 6$ , add 6
$8 \times 6 =$	Double 6 , double again, double again
$9 \times 6 =$	$10 \times 6$ , take away 6
$10 \times 6 =$	Add a zero to 6
$11 \times 6 =$	$10 \times 6$ , add 6 (DOUBLE DIGIT!)
$12 \times 6 =$	$10 \times 6$ , add $2 \times 6$

## Doubles to help!

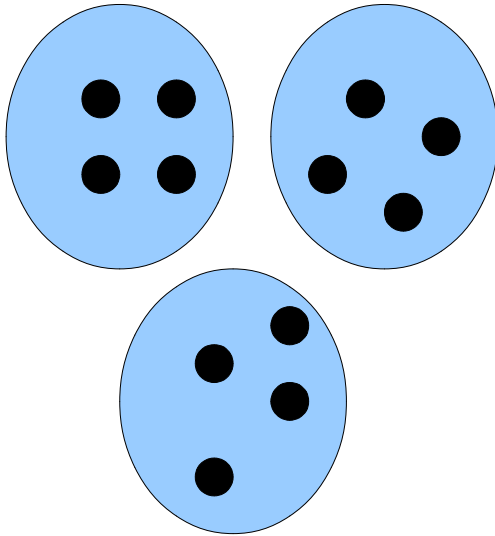


# Mental Methods – Division

What does division mean?

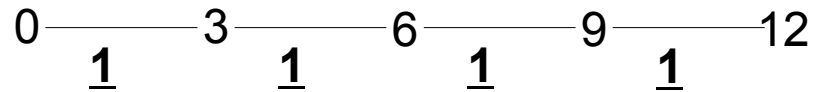
## Sharing/Dividing

- so  $12 \div 3$  means sharing 12 sweets equally amongst 3 friends or dividing 12 into 3 equal groups



How many lots of 3 in 12?

So  $12 \div 3$  means:



= 4, because 4 lots of 3 ( $4 \times 3$ ) = 12

Children should begin to relate the times table fact to the division.

So if they know  $5 \times 4 = 20$ , they know.....

$$5 \times 4 = 20$$

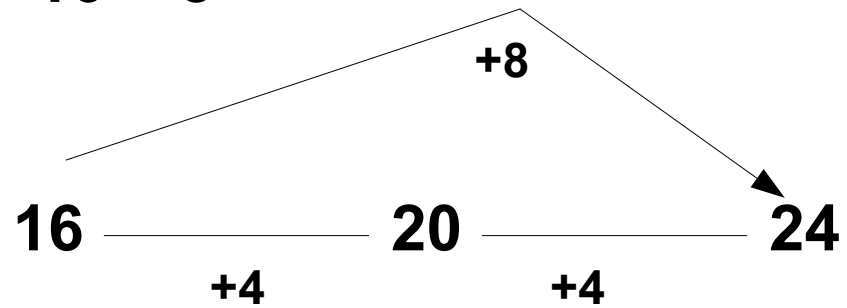
$$4 \times 5 = 20$$

$$20 \div 5 = 4$$

$$20 \div 4 = 5$$

## Bridging through 10

$$16 + 8 =$$



## Partitioning Mentally

$$16 + 23 =$$

$$10 + 20 = 30$$

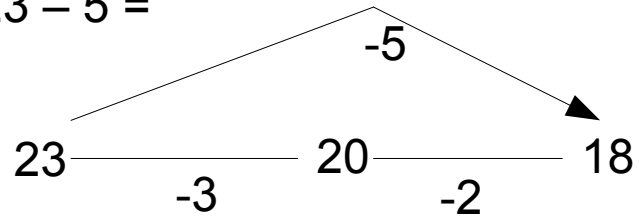
$$6 + 3 = 9$$

$$30 + 9 = 39$$

# Mental Methods - Subtraction

Counting on/counting back – which is the best method for each sum?

$$23 - 5 =$$



$$23 - 16 =$$



$$4 + 3 = 7$$