

### 3. [× Whole Numbers to 10]

**Skill 3.1** Multiplying whole numbers from 1 to 10 by 1 or 10.

MM5 1 2 3 4  
MM6 1 2 3 4

Multiplication forms patterns.

Multiplication is the same as repeated additions.

Any number, multiplied by 1, equals the sum of 1 of the numbers.

Example:  $6 \times 1 = 6$

Hint: *The number stays the same.*

Any number, multiplied by 10, equals the sum of 10 of the numbers.

Example:

$6 \times 10 = 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 = 60$

Hint: *Add a zero to the number.*

Multiplication is 'counting by' a number of times.

You can multiply by 1 by counting by that number, 1 time.

Example:  $\underbrace{6}_{1 \text{ time}}$

You can multiply by 10 by counting by that number, 10 times.

Example:  $\underbrace{6, 12, 18, 24, 30, 36, 42, 48, 54, 60}_{10 \text{ times}}$

Multiplication is reversable.

Example:  $10 \times 6 = 6 \times 10$

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Q.

	6	7	4	8	1	5	3	10	2	9
× 10										

When you multiply a number by 10, add a zero to the end of the number.

A.

	6	7	4	8	1	5	3	10	2	9
× 10	60	70	40	80	10	50	30	100	20	90

a)

	3	8	10	4	1	6	2	9	5	7
× 1	3									

b)

	10	4	9	3	5	7	1	2	8	6
× 10	100									

### Skill 3.2 Multiplying whole numbers from 1 to 10 by 5.

MM5 1 2 3 4  
MM6 1 2 3 4

Multiplication forms patterns.

Multiplication is the same as repeated additions.

Any number, multiplied by 5, equals the sum of 5 of the numbers.

Example:  $9 \times 5 = 9 + 9 + 9 + 9 + 9 = 45$

Multiplication is 'counting by' a number of times.

You can multiply by 5 by counting by that number, 5 times.

Example:  $\underbrace{9, 18, 27, 36, 45}_{5 \text{ times}}$

Multiplication is reversable.

Example:  $9 \times 5 = 5 \times 9$

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	<b>45</b>	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

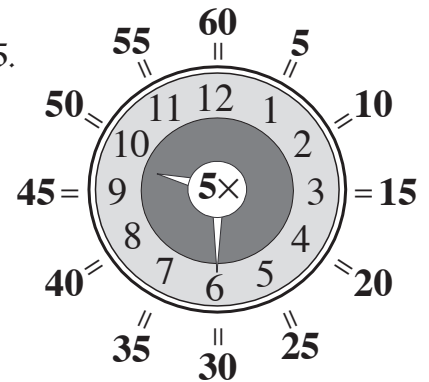
Hint: Multiplying by 5 produces a value that is half that of a multiplication by 10.

$$9 \times 10 = 90$$

$$9 \times 5 = 45$$

Hint: Multiplying by 5 produces a value that always ends in 0 or 5.

Hint: Multiplying by 5 produces the same values as the minutes on a clock face.



Q.

	9	2	1	5	7	8	3	10	6	4
× 5										

A.

	9	2	1	5	7	8	3	10	6	4
× 5	45	10	5	25	35	40	15	50	30	20

a)

	5	1	6	2	7	4	9	3	10	8
× 5	25									

### Skill 3.3 Multiplying whole numbers from 1 to 10 by 2 or 4.

MM5 11 22 33 44  
MM6 11 22 33 44

Multiplication forms patterns.

Multiplication is the same as repeated additions.

Any number, multiplied by 2,  
equals the sum of 2 of the numbers.  
Example:  $7 \times 2 = 7 + 7 = 14$

Any number, multiplied by 4,  
equals the sum of 4 of the numbers  
Example:  $7 \times 4 = 7 + 7 + 7 + 7 = 28$

Multiplication is 'counting by' a number of times.

You can multiply by 4  
by counting by that number, 4 times.  
Example:  $7, 14, 21, 28$   
4 times

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Multiplication is reversable.

Example:  $7 \times 2 = 2 \times 7$

*Hint: Multiplying by 2 always produces an even number.*

*Hint: Multiplying by 2 is the same as doubling.  
Double 7 is 14 OR  $7 \times 2 = 14$*

*Hint: Multiplying by 4 is the same as doubling the number and then multiplying by 2.  
 $7 \times 4 = 14 \times 2 = 28$*

Q.

	6	3	8	1	7	9	2	10	4	5
×	4									

A.

	6	3	8	1	7	9	2	10	4	5	
×	4	24	12	32	4	28	36	8	40	16	20

a)

	5	8	2	7	3	1	6	10	9	4
×	2	10								

$5 \times 2$   
 $= 5 + 5$  Repeated  
 $= 10$  additions

b)

	3	10	5	4	9	7	2	6	1	8
×	4	12								

$3 \times 4$   
 $= 6 \times 2$  Double 3  
 $= 12$  and  $\times$  by 2

### Skill 3.4 Multiplying whole numbers from 1 to 10 by 3.

MM5 1 1 2 2 3 3 4 4  
MM6 1 1 2 2 3 3 4 4

Multiplication forms patterns.

Multiplication is the same as repeated additions.

Any number, multiplied by 3,  
equals the sum of 3 of the numbers.

Example:  $8 \times 3 = 8 + 8 + 8 = 24$

Multiplication is 'counting by' a number of times.

You can multiply by 3  
by counting by that number, 3 times.

Example:  $8, 16, 24$   
3 times

Multiplication is reversible.

Example:  $8 \times 3 = 3 \times 8$

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Q.

	8	1	6	9	7	3	2	4	5	10
× 3										

A.

	8	1	6	9	7	3	2	4	5	10
× 3	24	3	18	27	21	9	6	12	15	30

a)

	6	4	10	1	5	8	7	9	3	2
× 3	18									

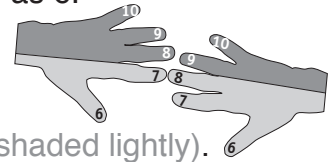
b)

	1	5	9	8	4	7	2	10	6	3
× 3	3									

### Skill 3.5 Multiplying whole numbers from 1 to 10 by 6, 7, 8 or 9.

MM5 1 1 2 2 3 3 4 4  
MM6 1 1 2 2 3 3 4 4

- Number the fingers on each hand from 6 to 10 starting with the thumb as 6.
- Touch the appropriate fingers together to match the table you are working on. Example:  $7 \times 8$



- Count your thumbs, the touching fingers and any fingers in between (shaded lightly). This result makes up the tens.

$$(2 \text{ fingers on left hand, } 3 \text{ fingers on right hand}) \Rightarrow 2 + 3 = 5$$

$$5 \text{ tens} = 50$$

- Count separately, the fingers on each hand that are beyond the touching fingers (shaded dark).

Multiply the sums. This result makes up the units.

$$(3 \text{ fingers on left hand, } 2 \text{ fingers on right hand}) \Rightarrow 3 \times 2 = 6$$

$$6 \text{ units} = 6$$

- Finally add the tens and units.

$$50 + 6 = 56$$

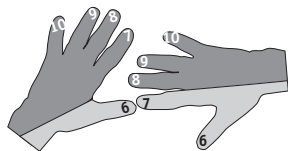
$$\text{So } 7 \times 8 = 56$$

Q.

	6	2	5	1	8	7	4	10	3	9
$\times 7$										

A.

	6	2	5	1	8	7	4	10	3	9
$\times 7$	42	14	35	7	56	49	28	70	21	63



$$6 \times 7 = ?$$

$$1 + 2 = 3 \text{ tens} = 30 \text{ (light fingers)}$$

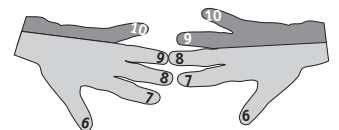
$$4 \times 3 = 12 \text{ units} = 12 \text{ (dark fingers)}$$

$$30 + 12 = 42$$

$$\text{So } 6 \times 7 = 42$$

a)

	9	4	7	2	5	6	10	3	1	8
$\times 8$	72									



b)

	3	6	2	8	10	1	5	4	9	7
$\times 7$	21									

c)

	9	6	5	8	1	4	3	7	10	2
$\times 6$										

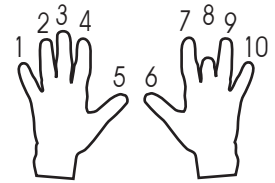
d)

	4	2	9	1	7	3	8	5	6	10
$\times 9$										

### Skill 3.6 Multiplying whole numbers from 1 to 10 by 9.

MM5 11 2 3 4 4  
MM6 11 2 3 4 4

- Number the fingers on each hand from 1 to 10.
- Bend the finger that matches the  $9 \times$  table you are working on.  
Example: For  $8 \times 9$ , bend the 8th finger.
- Count the fingers before the bent finger. This result makes up the tens.  
 $7 \text{ fingers} \Rightarrow 7 \text{ tens} = 70$
- Count the fingers after the bent finger. This result makes up the units.  
 $2 \text{ fingers} \Rightarrow 2 \text{ units} = 2$
- Add the tens and units.  
 $70 + 2 = 72$   
So  $8 \times 9 = 72$



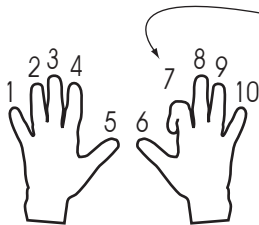
Q.

	7	5	1	9	2	8	10	6	3	4
$\times 9$										

A.

	7	5	1	9	2	8	10	6	3	4
$\times 9$	63	45	9	81	18	72	90	54	27	36
	$6+3=9$	$4+5=9$	$9+0=9$	$8+1=9$	$1+8=9$	$7+2=9$	$9+0=9$	$5+4=9$	$2+7=9$	$3+6=9$

Hint: When multiplying by 9, the digits in the answer always add to 9.



To find  $7 \times 9 = ?$ , bend the 7th finger.

6 fingers before the bent finger  $\Rightarrow$  6 tens = 60

3 fingers after the bent finger  $\Rightarrow$  3 units = 3

$60 + 3 = 63$

So  $7 \times 9 = 63$

a)

	4	5	2	7	6	9	10	1	3	8
$\times 9$	36									

b)

	3	10	6	2	1	8	5	4	9	7
$\times 9$	27									