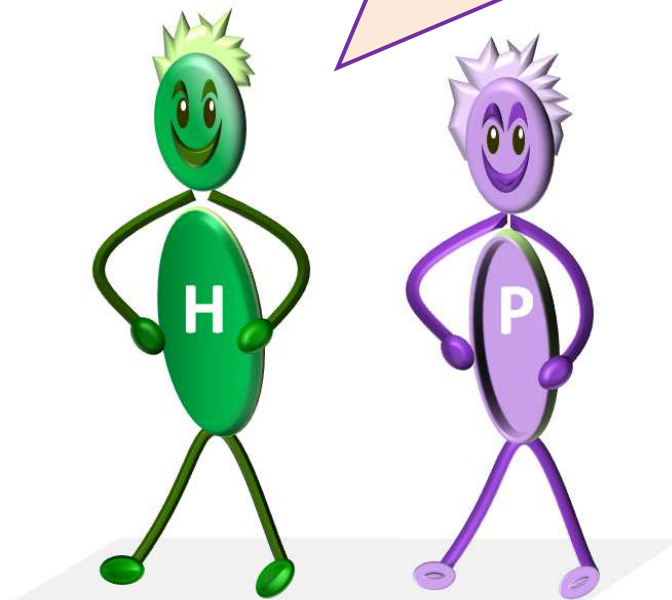


Henry and Poppy
have fun with **Multiplication**

Year 5 to Year 6 maths

We had fun making these questions
for you. Enjoy them.



Year 5:

- Formal written layout for multiplication $\text{THTU} \times \text{U}$
- Expanded written method Long multiplication $\text{TU} \times \text{TU}$
- Long multiplication $\text{TU} \times \text{TU}$
- Long multiplication $\text{HTU} \times \text{TU}$
- Multiply numbers mentally drawing upon known facts (+ 9 times table)
- Poppy's trick for times by 5
- Problem Solving

Year 6:

- Multiply one digit (2 decimal places) by whole numbers
- Written method : Long multiplication

1

This one has thousands.
See if you can do it

Work out

Th	H	T	U
1	6	3	1
			3

Th	H	T	U



1 mark

Year 5- Multiply Formal written layout for multiplication THTU × U

2

There's one Carry in this one

Work out

TT	Th	H	T	U
	2	5	3	2
				3

TT	Th	H	T	U



1 mark

Year 5- Multiply Formal written layout for multiplication THTU × U

3

There's one has lots of Carry's



Work out

TT	Th	H	T	U	
	2	5	3	2	
				5	x
<hr/>					
<hr/>					
TT	Th	H	T	U	

1 mark

Year 5- Multiply Formal written layout for multiplication THTU x U

4

Work out

TT	Th	H	T	U	
	3	4	5	6	
				7	x
<hr/>					
<hr/>					
TT	Th	H	T	U	

1 mark

Year 5- Multiply Formal written layout for multiplication THTU x U

1

Henry can you do
 32×41

OK, Poppy
First write it out like this



T	H	T	U	
		3	2	
		4	1	x
				(x)
				(x)
				(x)
				(x)
				← add

Year 5- Multiply Expanded written method Long multiplication TU x TU



Remember that:

$$32 \text{ is } 30 + 2$$

$$41 \text{ is } 40 + 1$$

Start with the units.

Do $1 \times 2 = 2$ and write it down

Do $1 \times 30 = 30$ and put this below

Now do the tens

Do $40 \times 2 = 80$ and write it down

Do $40 \times 30 = 1200$ and put this below

Now add everything up

T	H	T	U	
		3	2	
		4	1	\times
			2	(1×2)
		3	0	(1×30)
		8	0	(40×2)
1	2	0	0	(40×30)
1	3	1	2	\leftarrow add

So $32 \times 41 = 1312$

You remembered the Carry

My best Bro is a Genius!



3

Now it's your turn



Work out

T	H	T	U	
		6	5	
		3	4	×
				(×)
				(×)
				(×)
				(×)
				← add

1 mark

Year 5- Multiply Expanded written method Long multiplication TU × TU

4

Work out

T	H	T	U	
		7	5	
		8	4	×
				(×)
				(×)
				(×)
				(×)
				← add

1 mark

Year 5- Multiply Expanded written method Long multiplication TU × TU

5

Work out


T	H	T	U	
		2	9	
		3	9	x
<hr/>				(×)
				(×)
				(×)
				(×)
<hr/>				
<div style="border: 1px solid orange; width: 100px; height: 20px;"></div>				← add

1 mark

Year 5- Multiply Expanded written method Long multiplication TU x TU

Henry let's do **Long Multiplication**
 32×31

OK, Poppy
 First write it out like this



T	H	T	U
		3	2
		3	1

← units

← Tens so
put 0 first

← add

Start with the units
 Do 1×2 , put 2 in the U's
 Do 1×3 , put 3 in the T's



Then with the tens
 Put 0 in the U's
 Do 3×2 , put 6 in the T's
 Do 3×3 , put 9 in the H's

T	H	T	U
		3	2
		3	1
		3	2
		9	6
		0	
		9	9
		2	

← units

← Tens so
put 0 first

← add

$32 \times 31 = 992$



2

Now it's your turn



Work out

T	H	T	U
		4	3
		3	2
x			

← units

← Tens so put 0 first

← add

1 mark



Year 5- Multiply Long multiplication TU x TU

3

There's one has some Carry's



T	H	T	U
		5	6
		3	2
x			

← units

← Tens so put 0 first

← add

1 mark



Year 5- Multiply Long multiplication TU x TU

4

Work out

T	H	T	U	
		7	3	
		4	4	×
<hr/>				
				← units
				← Tens so put 0 first
<hr/>				
				← add

1 mark

Year 5- Multiply Long multiplication TU × TU

5

Work out

T	H	T	U	
		8	9	
		6	7	×
<hr/>				
				← units
				← Tens so put 0 first
<hr/>				
				← add

1 mark

Year 5- Multiply Long multiplication TU × TU

1

Now take the challenge with bigger numbers



T	H	T	U
	2	0	9
		3	2
×			

← units

← Tens so put 0 first

← add

1 mark

Year 5- Multiply Long multiplication HTU × TU

2

Work out

T	H	T	U
	2	2	7
		4	3
×			

← units

← Tens so put 0 first

← add

1 mark

Year 5- Multiply Long multiplication HTU × TU

3

Work out

T	H	T	U	
	1	0	1	
		9	9	x
<hr/>				← units
				← Tens so put 0 first
<hr/>				← add
<input type="text"/>				

1 mark



Year 5- Multiply Long multiplication HTU x TU

1

Doubling ($\times 2$) by breaking down the number

$$24 \times 2$$

$$\begin{array}{rcccl} 24 = & 20 & + & 4 & \\ & \downarrow \text{double} & & \downarrow \text{double} & \\ & \boxed{40} & + & \boxed{8} & \\ & \downarrow \text{Add} & & & \\ & \boxed{48} & & & \end{array}$$

1 mark

Year 5 Multiply: Multiply numbers mentally drawing upon known facts

2

Doubling ($\times 2$) by breaking down the number

$$64 \times 2$$

$$\begin{array}{rcccl} 64 = & \dots & + & \dots & \\ & \downarrow \text{double} & & \downarrow \text{double} & \\ & \boxed{} & + & \boxed{} & \\ & \downarrow \text{Add} & & & \\ & \boxed{} & & & \end{array}$$

1 mark

Year 5 Multiply: Multiply numbers mentally drawing upon known facts

3

Doubling ($\times 2$) by breaking down the number

$$245 \times 2$$

$$245 = 200 + 40 + 5$$

$$\begin{array}{ccc} \downarrow \times 2 & \downarrow \times 2 & \downarrow \times 2 \\ \boxed{400} & + \boxed{80} & + \boxed{10} \end{array}$$

$$\begin{array}{c} \downarrow \text{Add} \\ \boxed{490} \end{array}$$

1 mark

Year 5 Multiply: Multiply numbers mentally drawing upon known facts

4

Doubling ($\times 2$) by breaking down the number

$$324 \times 2$$

$$324 = \dots + \dots + \dots$$

$$\begin{array}{ccc} \downarrow \times 2 & \downarrow \times 2 & \downarrow \times 2 \\ \boxed{} & + \boxed{} & + \boxed{} \end{array}$$

$$\begin{array}{c} \downarrow \text{Add} \\ \boxed{} \end{array}$$

1 mark

Year 5 Multiply: Multiply numbers mentally drawing upon known facts

1

Write a number as a decimal number then
 To multiply by 10
move the decimal point 1 place
 to make the number *bigger*...

$$9.0 \times 10 = 90.0$$

$$\begin{array}{r} \times 10 \\ 9.0 \square \end{array} \rightarrow \begin{array}{r} \text{↻} \\ 90.0 \end{array}$$

If you need spare boxes put them after the number

Year 5 Multiply: Multiply numbers mentally drawing upon known facts

2 Multiply these numbers by 10

$$5.0 \times 10 \quad \begin{array}{r} \text{↻} \\ 5.0 \end{array} \rightarrow \begin{array}{r} \text{↻} \\ \square \square \square \end{array}$$

$$22.0 \times 10 \quad \begin{array}{r} \text{↻} \\ 22.0 \end{array} \rightarrow \begin{array}{r} \text{↻} \\ \square \square \square \square \end{array}$$

$$85.0 \times 10 \quad \begin{array}{r} \text{↻} \\ 85.0 \end{array} \rightarrow \begin{array}{r} \text{↻} \\ \square \square \square \square \end{array}$$

3 marks

Year 5 Multiply: Multiply numbers mentally drawing upon known facts

3

Write a number as a decimal number then
To multiply by 100
move the decimal point 2 places
to make the number *bigger...*

$$87.1 \times 100 = 8710.0$$

$$\begin{array}{c} \times 100 \\ 87.1 \end{array} \rightarrow \begin{array}{c} \times 100 \\ 8710.0 \end{array}$$

If you need spare boxes put them after the number

Year 5 Multiply: Multiply numbers mentally drawing upon known facts

4 Multiply these numbers by 100

$$5.1 \times 100 \quad \begin{array}{c} \times 100 \\ 5.1 \end{array} \rightarrow \begin{array}{c} \times 100 \\ \square \square \square \square \end{array}$$

$$22.2 \times 100 \quad \begin{array}{c} \times 100 \\ 22.2 \end{array} \rightarrow \begin{array}{c} \times 100 \\ \square \square \square \square \square \end{array}$$

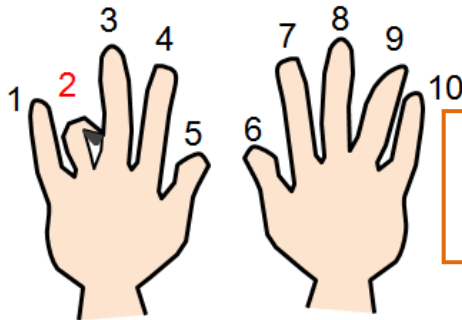
$$85.0 \times 100 \quad \begin{array}{c} \times 100 \\ 85.0 \end{array} \rightarrow \begin{array}{c} \times 100 \\ \square \square \square \square \square \end{array}$$

3 marks

Year 5 Multiply: Multiply numbers mentally drawing upon known facts

The nine times table

hold your fingers up like this



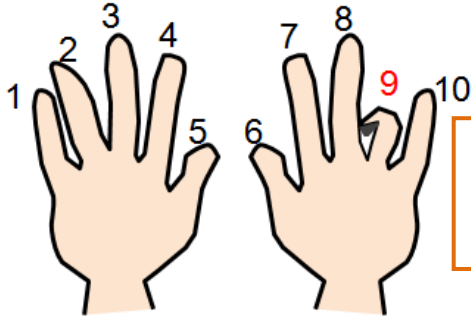
For 2×9 drop the 2nd finger

On the left of that finger you have 1 finger up.
On the right you have 8 fingers
 $2 \times 9 = 18$

Multiply - Nine times table

The nine times table

hold your fingers up like this



For 9×9 drop the 9th finger

On the left of that finger you have 8 fingers up.
On the right you have 1 finger
 $9 \times 9 = 81$

Multiply - Nine times table



1

Poppy has a TRICK :

to $\times 5$, instead $\times 10$ (add zero)
then *halve* the answer



$$12 \times 5 \rightarrow \text{Do } 12 \times 10 = \boxed{120}$$

↓ half

$$24 \times 5 \rightarrow \text{Do } 24 \times 10 = \boxed{}$$

↓ half

1 mark

Year 5 - Poppy's trick for multiply by 5

2 Use Poppy's TRICK



$$14 \times 5 \rightarrow \text{Do } 14 \times 10 = \boxed{}$$

↓ half

$$42 \times 5 \rightarrow \text{Do } 42 \times 10 = \boxed{}$$

↓ half

2 marks

Year 5 - Poppy's trick for multiply by 5

3 Use Poppy's TRICK



$$64 \times 5 \rightarrow \text{Do } 64 \times 10 = \boxed{}$$

↓ half

$$88 \times 5 \rightarrow \text{Do } 88 \times 10 = \boxed{}$$

↓ half

2 marks

Year 5 - Poppy's trick for multiply by 5

4 Use Poppy's TRICK



$$34 \times 5 \rightarrow \text{Do } 34 \times 10 = \boxed{}$$

↓ half

$$120 \times 5 \rightarrow \text{Do } 120 \times 10 = \boxed{}$$

↓ half

2 marks

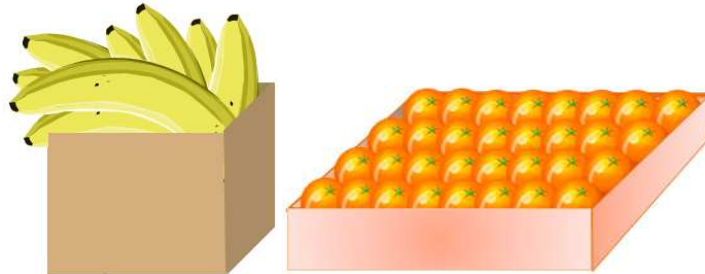
Year 5 - Poppy's trick for multiply by 5

1

There are 32 oranges in a tray.

There are 8 bananas in a box

Each banana costs 15p and each orange 12p



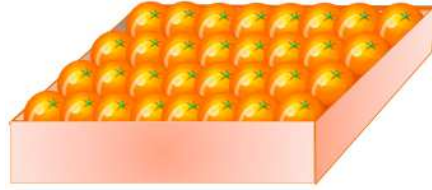
How much do all the oranges and bananas
cost in pence

1 mark

Year 5- Multiply - Problem Solving

2

There are 32 oranges in a tray.
Each orange costs 12p



How much would 10 trays of oranges cost in pence

1 mark

Year 5- Multiply - Problem Solving

3

Mum sent me to the shop to get three tins of beans and two loaves of bread



If you take £5 that should be enough, Poppy.
How much change will you get?

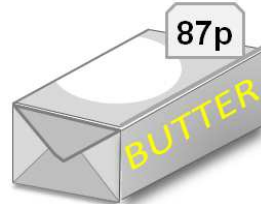
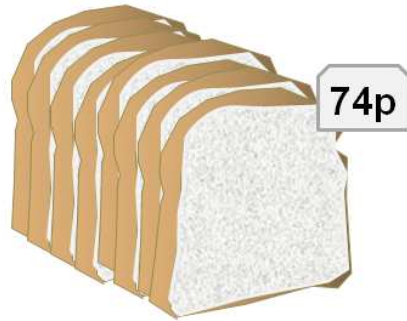


1 mark

Year 5- Multiply - Problem Solving

4

For my birthday party, mum's making sandwiches. And we need to buy cakes



Yes Poppy, we need 9 loaves of bread, 3 packs of butter and 30 cakes
How much will that cost?



1 mark

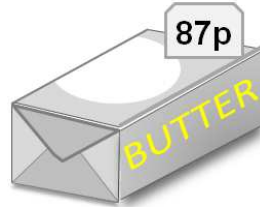


Year 5- Multiply - Problem Solving

5



For my birthday party mums making sandwiches



Yes we need 12 loaves of bread
and 3 packs of butter.
How much will that cost?



1 mark

Year 5- Multiply - Problem Solving

1

Henry let's **Multiply with decimals**
 2.31×6

OK, Poppy
 If I estimate, it's about 12



First lay it out like this



2	.	3	1	
			6	x
<hr/>				
<hr/>				

Then do 6×1 , write 6
 Do 6×3 , write 8, carry 1
 Put the decimal point in



2	.	3	1	
			6	x
	1			
<hr/>				
	.	8	6	
<hr/>				

Do $6 \times 2 = 12$
 add the carry and write 13

2	.	3	1	
			6	x
	1			
<hr/>				
1	3	.	8	6
<hr/>				

And I was right with my
 estimate. **Yippee**



Year 6- **Multiply** one digit (2 decimal places) by whole numbers

2

Work out

4	.	3	2	
			4	×
<hr/>				
<hr/>				

Now it's your turn



1 mark



Year 6- Multiply one digit (2 decimal places) by whole numbers

3

Work out

7	.	3	1	
			5	×
<hr/>				
<hr/>				

1 mark



Year 6- Multiply one digit (2 decimal places) by whole numbers

4

Work out

2	.	3	9	
			6	×
<hr/>				
<hr/>				

1 mark



Year 6- Multiply one digit (2 decimal places) by whole numbers

5

Work out

$$3.99 \times 7$$

A grid for working out the multiplication 3.99 x 7. The grid is 5 columns wide and 4 rows high. A horizontal line is drawn across the grid, and a vertical line is drawn at the end of the grid. An 'x' symbol is placed to the right of the grid, indicating multiplication.

1 mark

Year 6- Multiply one digit (2 decimal places) by whole numbers

6

Work out

$$0.87 \times 5$$

A grid for working out the multiplication 0.87 x 5. The grid is 5 columns wide and 4 rows high. A horizontal line is drawn across the grid, and a vertical line is drawn at the end of the grid. An 'x' symbol is placed to the right of the grid, indicating multiplication.

1 mark

Year 6- Multiply one digit (2 decimal places) by whole numbers

7

Work out

$$1.03 \times 9$$

A grid for working out the multiplication 1.03 x 9. The grid is 5 columns wide and 4 rows high. A horizontal line is drawn across the grid, and a vertical line is drawn at the end of the grid. An 'x' symbol is placed to the right of the grid, indicating multiplication.

1 mark

Year 6- Multiply one digit (2 decimal places) by whole numbers

Henry let's do **Long Multiplication**

$$3209 \times 32$$

OK, Poppy
First write it out like this



		3	2	0	9	

← units

← Tens so
put 0 first

← add

Do 2×9 , write **8** carry **1**
 2×0 , add carry write **1**
 2×2 , write **4**
 2×3 , write **6**



Then with the tens
 Write **0** first
 Do 3×9 , write **7** carry **2**
 3×0 , add carry **2**, write **2**
 3×2 , write **6**; 3×2 , write **9**;

		3	2	0	9	

← units

← Tens so
put 0 first

← add



$$3209 \times 32 = 102688$$

2

Work out
 8169×57

Now it's your
turn



		8	1	6	9	
			x	5	7	
<hr/>						
<hr/>						
<hr/>						

← units

Tens so
put 0 first

← add

1 mark



Year 6- Multiply Long multiplication THTU x TU

3

Work out
 5499×41

		5	4	9	9	
			x	4	1	
<hr/>						
<hr/>						
<hr/>						

← units

Tens so
put 0 first

← add

1 mark



Year 6- Multiply Long multiplication THTU x TU

4

Work out
 8309×76

← units

← Tens so
put 0 first

← add

1 mark

Year 6- Multiply Long multiplication THTU \times TU

5

Work out
 9093×82

← units

← Tens so
put 0 first

← add

1 mark

Year 6- Multiply Long multiplication THTU \times TU

1

Work out 126×3 using a GRID

\times	100	20	6
3			

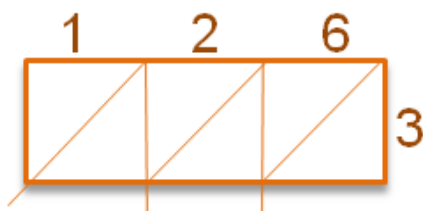
1 mark



Year 5-multiplication

2

Work out 126×3 using a lattice GRID



1 mark



Year 5-multiplication

3

Work out 126×3 using a COLUMN

	H	T	U	
	1	2	6	
			3	\times
<hr/>				
<hr/>				
	H	T	U	

1 mark



Year 5-multiplication

4

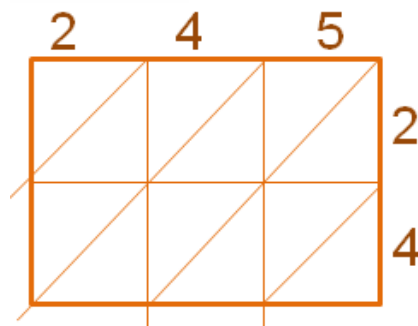
Work out 245×24 using a GRID

×	200	40	5
20			
4			

1 mark

Year 5-multiplication

5

Work out 245×24 using a lattice GRID

1 mark

Year 5-multiplication

6

Work out 245×24 using a COLUMN

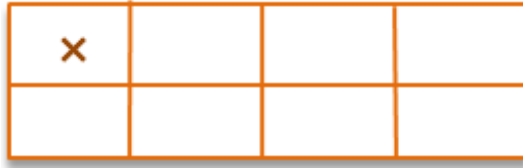
	H	T	U	
	2	4	5	
		2	4	×
<hr/>				
<hr/>				
	Th	H	T	U

1 mark

Year 5-multiplication

7

Work out 306×3 using a GRID



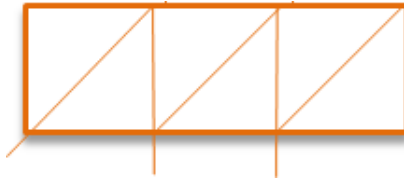
1 mark



Year 5-multiplication

8

Work out 306×4 using a lattice GRID



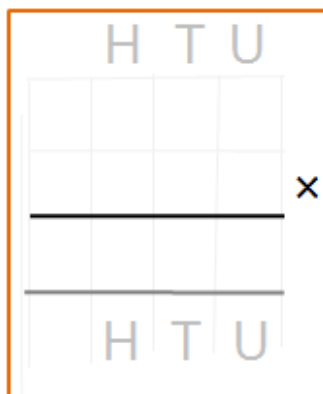
1 mark



Year 5-multiplication

9

Work out 306×5 using a COLUMN



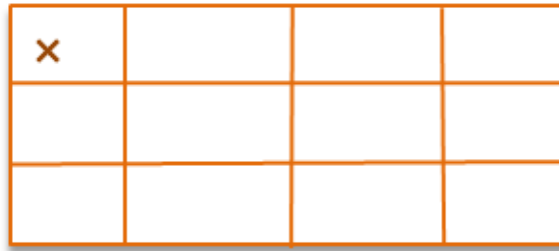
1 mark



Year 5-multiplication

10

Work out 342×35 using a GRID



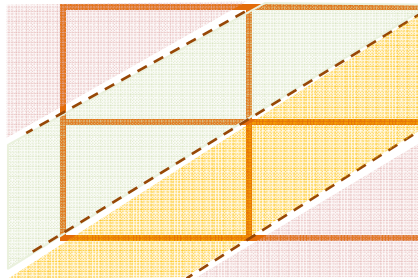
1 mark



Year 5-multiplication

11

Work out 99×99 using a lattice GRID



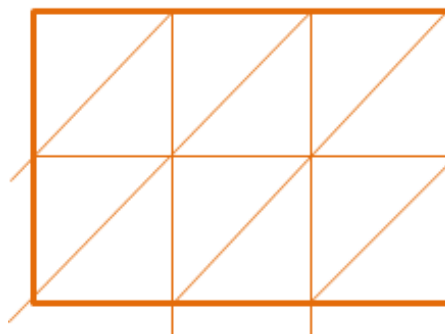
1 mark



Year 5-multiplication

12

Work out 342×43 using a lattice GRID



1 mark



Year 5-multiplication

13

Work out 151×34 using a COLUMN

H	T	U	
_____			x

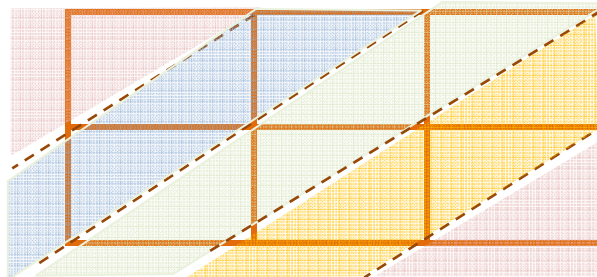
Th	H	T	U

1 mark

Year 5-multiplication

14

Work out 123×97 using a lattice GRID



1 mark

Year 5-multiplication