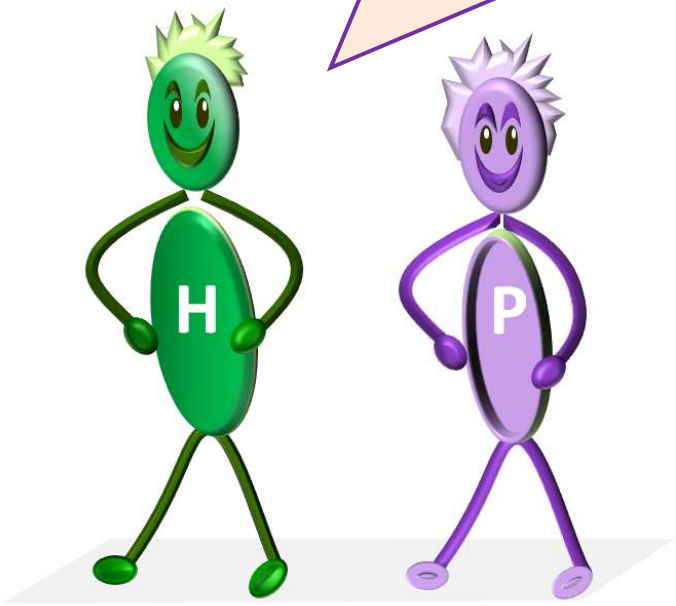
Henry and Poppy

have fun with **Multiplication**

Year 3 to Year 4 maths

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



Year 3:

- Using the grid method for TU × U
- Using the grid method for TU × TU
- Problem solving

Year 4:

- Using the grid method for HTU × TU
- The Lattice grid
- Using the grid method for decimal numbers
- Written method using columns for TU × U
- Formal written layout for multiplication HTU × U
- Problem Solving

1

You can multiply numbers using a **grid**

What's a grid

It's like this

×			add rows
			=

To dos 12 × 4

make 12 into 10 and 2 and lay it out like this

×	10	2	add rows
4	40	8	= 48

Then in each box put each multiplication

Then add to get the answer

Year 4- Multiply Written method using columns for TU × U

2 Use the grid to do 14 × 4

×	10	4	add rows
4			=

1 mark

Year 3 Using the grid method for TU × U

3 Use the grid to do 11 × 8

×	10	1	add rows
8			=

1 mark

Year 3 Using the grid method for TU × U

4 Use the grid to do 23 × 3

×	20	3	add rows
3			=

1 mark

Year 3 Using the grid method for TU × U

5 Use the grid to do 34 × 3

×	30	4	add rows
3			=

1 mark

Year 3 Using the grid method for TU × U

6 Use the grid to do 15 × 3

×			add rows
			=

1 mark

Year 3 Using the grid method for TU × U

7 Use the grid to do 17 × 4

×			add rows

1 mark

Year 3 Using the grid method for TU × U

8 Use the grid to do 25 × 3

×			add rows

1 mark

Year 3 Using the grid method for TU × U

9 Use the grid to do 34 × 5

×			add rows

1 mark

Year 3 Using the grid method for TU × U

10 Use the grid to do 64 × 5

×			add rows

1 mark

Year 3 Using the grid method for TU × U

11 Use the grid to do 88 × 5

×			add rows

1 mark

Year 3 Using the grid method for TU × U

1 Use the grid to do 13 × 13

×	10	3	add rows
10	100	30	= 130
3	30	9	= 39

169

1 mark

Year 3 Using the grid method for TU × TU

2 Use the grid to do 23 × 14

×			add rows
			=
			=

1 mark

Year 3 Using the grid method for TU × TU

3 Use the grid to do 56 × 12

×			add rows
			=
			=

1 mark

Year 3 Using the grid method for TU × TU

4 Use the grid to do 65 × 25

×			add rows
			=
			=

1 mark

Year 3 Using the grid method for TU × TU

5 Use the grid to do 50 × 27

×			add rows
			=
			=

1 mark

Year 3 Using the grid method for TU × TU

6 Use the grid to do 78 × 30

×			add rows
			=
			=

1 mark

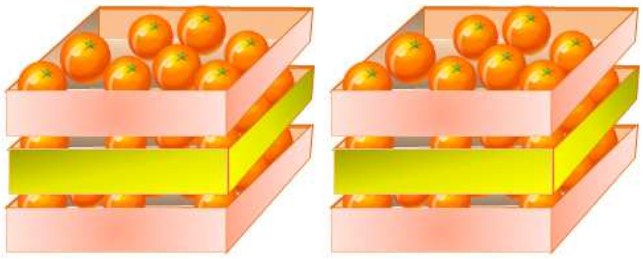
Year 3 Using the grid method for TU × TU

1

Each tray has 8 oranges.

There are 3 trays in a stack

There are two stacks



How many oranges are there altogether.

1 mark

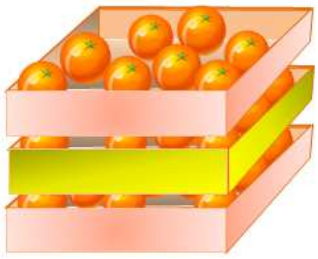
Year-3 MULTIPLY: Problem solve

2

Each tray has 8 oranges.

There are 3 trays in a stack

Each orange costs 10p



How much do all the oranges cost in pence

1 mark

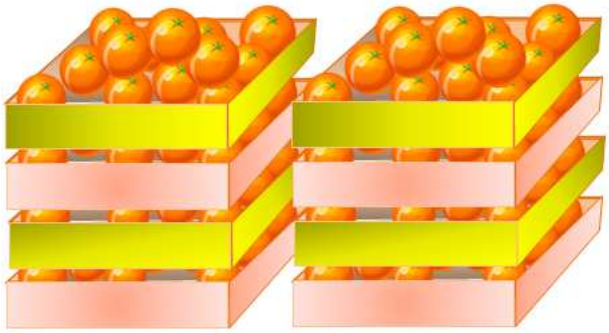
Year-3 MULTIPLY: Problem solve

3

Each tray has 12 oranges.

There are 4 trays in a stack

There are two stacks



How many oranges are there altogether.

1 mark

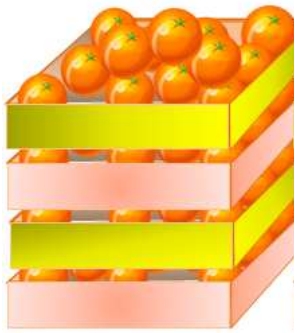
Year-3 MULTIPLY: Problem solve

4

Each tray has 12 oranges.

There are 4 trays in a stack

Each orange costs 10p



How much do all the oranges cost in pence

1 mark

Year-3 MULTIPLY: Problem solve

5

There are six bananas in each box

There are seven boxes

How many bananas are there altogether.

1 mark

Year-3 MULTIPLY: Problem solve

6

There are eight bananas in each box

There are two boxes

Each banana costs 10p

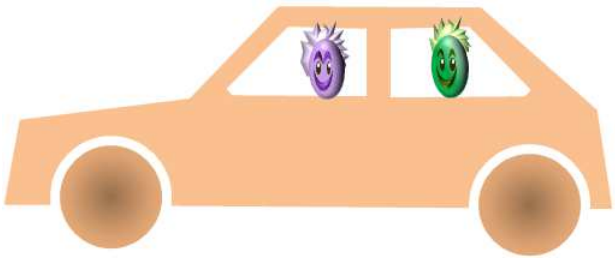
How much do all the bananas cost in pence

1 mark

Year-3 MULTIPLY: Problem solve

7 Henry and Poppy went for a car ride.

The speed of the car was 47 mile every hour



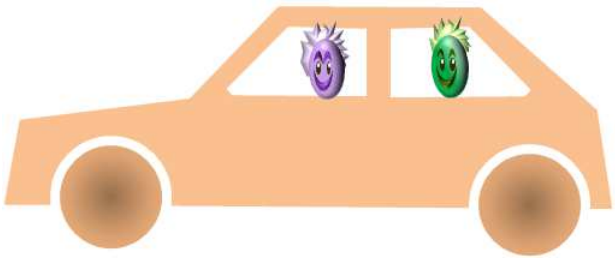
How far did they travel in 3 hours

1 mark

Year-3 MULTIPLY: Problem solve U × TU

8 Henry and Poppy went for a car ride.

The speed of the car was 56 mile every hour

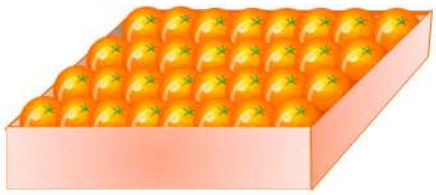


How far did they travel in 12 hours

1 mark

Year-3 MULTIPLY: Problem solve TU × TU

9 In a tray there are 32 oranges.



How many oranges are there in 15 trays

1 mark

Year-3 MULTIPLY: Problem solve TU × TU

10 In a box there are 8 bananas

How many bananas are there in 99 boxes

1 mark

Year-3 MULTIPLY: Problem solve U × TU

1 Use the grid to do 123 × 56

×	100	20	3	add rows
50				=
6				=

1 mark

Year 4 Using the grid method for HTU × TU

2 Use the grid to do 209 × 37

×				add rows
				=
				=

1 mark

Year 4 Using the grid method for HTU × TU

3 Use the grid to do 123 × 45

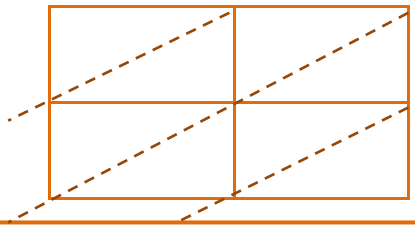
×				add rows
				=
				=

1 mark

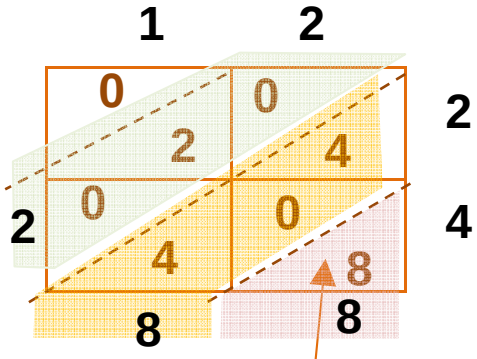
Year 4 Using the grid method for HTU × TU

1

You can also multiply numbers using a **lattice grid with extra diagonals**



To do, 12 × 24, lay it out like this



For 2 × 4 = 8, put 0 in top and 8 in bottom of square

Then add down the diagonal to get 288

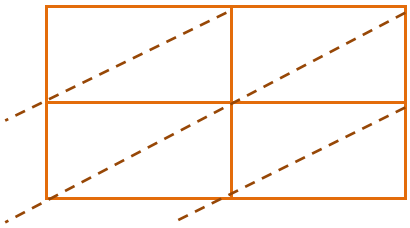
Year 4- Multiply: lattice grid

1

You can also multiply numbers using a **lattice grid**

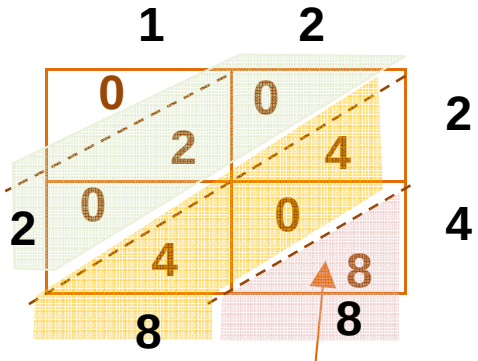
What's a lattice grid

It's like this



It's got extra diagonals.

To do, 12 × 24, lay it out like this



For 2 × 4 = 8, put 0 in top and 8 in bottom of square

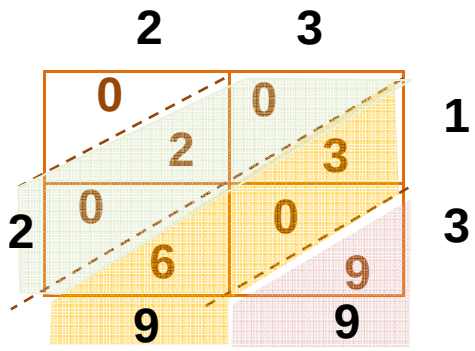
Then add down the diagonal to get 288

Year 4- Multiply: lattice grid

2

Here's another question with a **lattice grid**

23 × 13



It's 299

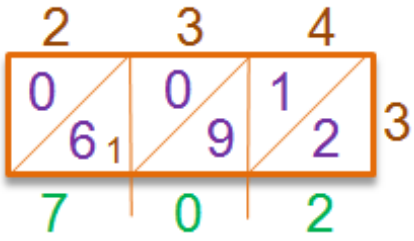
Year 4- Multiply: lattice grid

3

Work out 234 × 3 with lattice grid

Write 234 on top, 3 on right

Each box has a diagonal make two triangles



Can start right or left

Do 2 × 3 = 6 but write 06 with 0 in top triangle

Do 3 × 3 = 6 but write 09 with 0 in top triangle

Do 4 × 3 = 12 and write 1 in top triangle

Now add down diagonally remember to carry the 1.

234 × 3 = 702

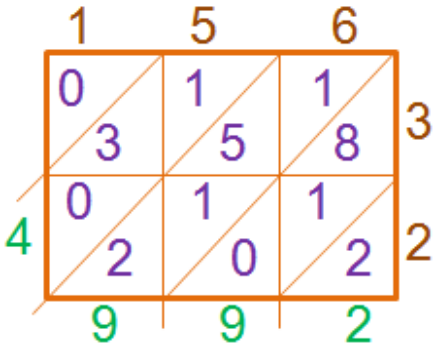
Year 4- Multiply: lattice grid

4

Work out 156 × 32 with lattice grid

Write 156 on top, 32 on right

Each box has a diagonal make two triangles



Can start right or left

Do 1 × 3 = 6 but write 03 with 0 in top triangle

Do 5 × 3 = 15 and write 1 in top triangle

Do 6 × 3 = 18 and write 1 in top triangle

Do 1 × 2 = 2 but write 02 with 0 in top triangle

Do 5 × 2 = 10 and write 1 in top triangle

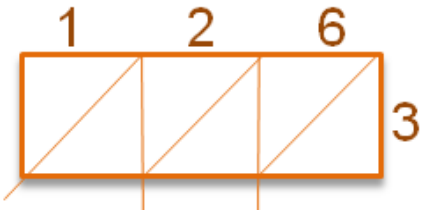
Do 6 × 2 = 12 and write 1 in top triangle

Now add down diagonally and 'around the bend'

156 × 32 = 4992

Year 4- Multiply: lattice grid

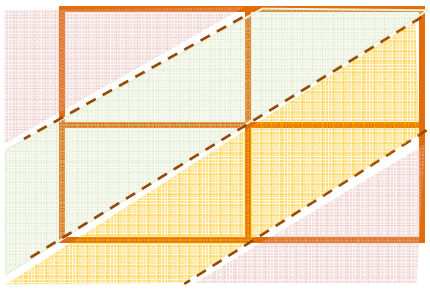
5 Work out 126 × 3 using a lattice GRID



1 mark

Year 4- Multiply: lattice grid

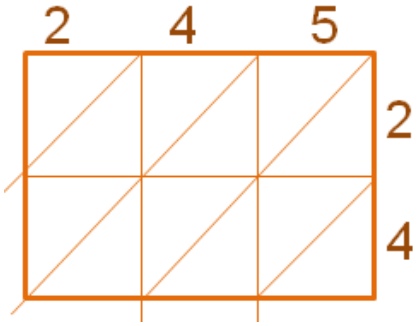
5 Work out 26 × 32 using a lattice GRID



1 mark

Year 4- Multiply: lattice grid

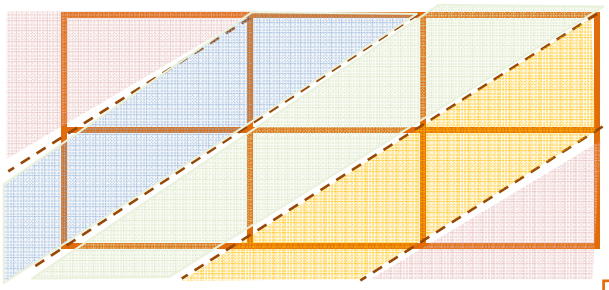
6 Work out 245 × 24 using a lattice GRID



1 mark

Year 4- Multiply: lattice grid

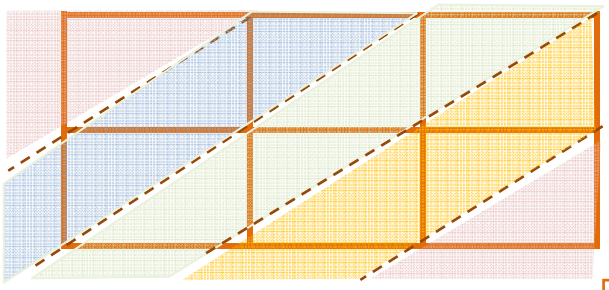
5 Work out 205 × 28 using a lattice GRID



1 mark

Year 4- Multiply: lattice grid

5 Work out 390 × 41 using a lattice GRID



1 mark

Year 4- Multiply: lattice grid

1

Use the grid to do 34 × 0.6

Move the decimal point to make 0.6 → 6.0

Then do **34 × 6**

×	**30**	**4**	add rows
6	180	24	= 204.0

Now move the decimal point back to make the number smaller

204.0 → 20.4

Year 4 Multiply Using the grid method for decimal numbers

2 Use the grid to do 56 × 0.7

Move the decimal point to make 0.7 → .....

Then do .....

×			add rows
			=

Now move the decimal point back to make the number smaller

1 mark

Year 4 Multiply Using the grid method for decimal numbers

3 Use the grid to do 48 × 0.9

Move the decimal point to make 0.9 → .....

Then do .....

×			add rows
			=

Now move the decimal point back to make the number smaller

1 mark

Year 4 Multiply Using the grid method for decimal numbers

4 Use the grid to do 78 × 2.3

Move the decimal point to make 2.3 → ....

Then do .....

×			add rows
			=
			=

Now move the decimal point back to make the number smaller.

1 mark

Year 4 Multiply Using the grid method for decimal numbers

5 Use the grid to do 29 × 3.7

Move the decimal point to make 3.7 → .....

Then do .....

×			add rows
			=
			=

Now move the decimal point back to make the number smaller.

1 mark

Year 4 Multiply Using the grid method for decimal numbers

6

Use the grid to do 29 × 0.23

Move the decimal point to make 0. 2 3 → 23.0

Then do 29 × 23

×	20	9	add rows
20	400	180	= 580
3	60	27	= 87

667.0

Now move the decimal point back to make the number smaller

6 6 7 .0 → 6.67

Year 4 Multiply Using the grid method for decimal numbers

7

Use the grid to do 36 × 0.38

Move the decimal point to make 0. 3 8 → .....

Then do .....

×			add rows
			=
			=

Now move the decimal point back to make the number smaller

→

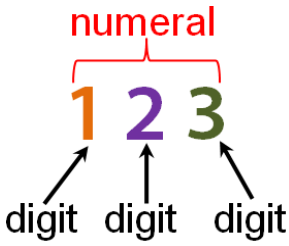
1 mark

Year 4 Multiply Using the grid method for decimal numbers

1

Do you know what a digit is?

The number 123 has 3 digits



How many digits do these numbers have:

1234 ☐

555 ☐

9 ☐

88888 ☐

1 mark

Year 4- Multiply Written method using columns for TU × U

2

Henry, I bet you can't do
123 + 45

That's easy
1+2+3+4+5 is fifteen

Opps – you need some help
understanding numbers

My teacher said
Each digit in a number means something different.
What did she mean?

Well, the 1 means hundreds
the 2 means tens
the 3 is units

123 has 3 digits

each means something different

Hundreds	Tens	Units
H	T	U
1	2	3

so 123 = 100 + 20 + 3

123 + 45 is 100+20+3+40+5 =168

Yippee I got it right

Year 4- Multiply Written method using columns for TU × U

3

You know that each digit in a number means something different.

That means we must line up the digits into tens and units

That's right otherwise it gets messy

So this is how we lay out 34 × 2 into tens and units

	T	U	
	3	4	
		2	×
	T	U	

Year 4- Multiply Written method using columns for TU × U

4

You've lined up the tens and units Now multiply the numbers

Break, 34 into 30 + 4
Then start from the units.

Do 2 × 4 = 8 and write it down
Do 2 × 30 = 60 and put this below

T	U	
3	4	
	2	×
	8	(2 × 4)
6	0	(2 × 30)
6	8	

Add 8 + 60 = 68

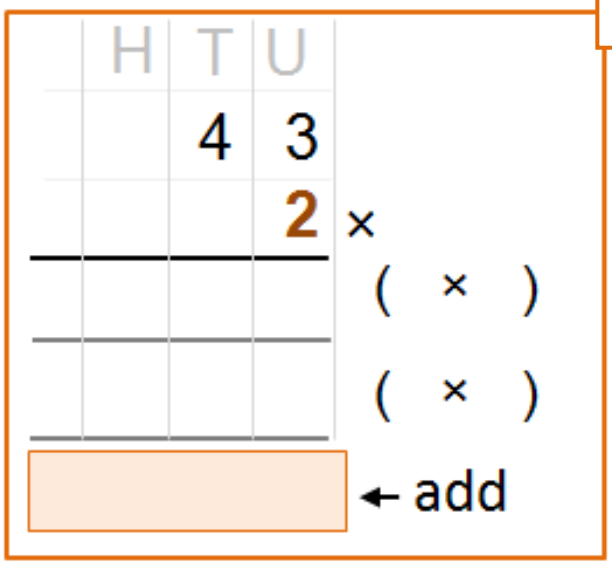
34 × 2 = 68

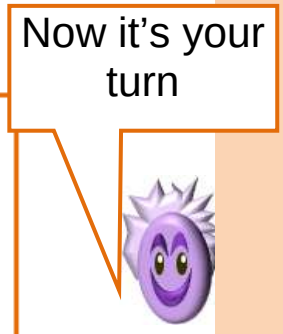
Yippee I got it right

Year 4- Multiply Written method using columns for TU × U

5

Work out



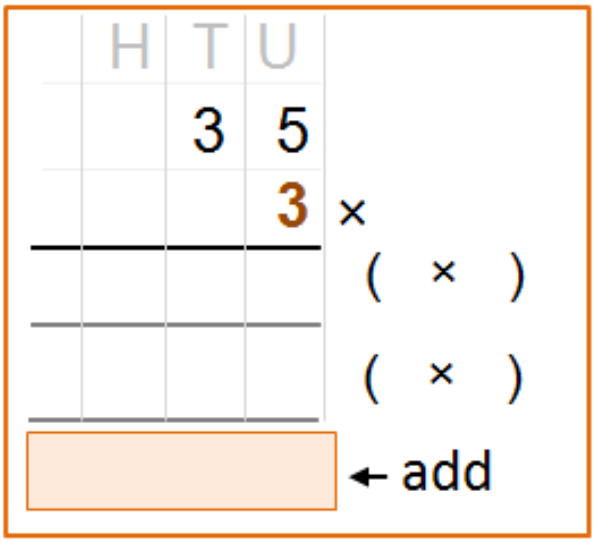


1 mark

Year 4- Multiply Written method using columns for TU × U

6

Work out

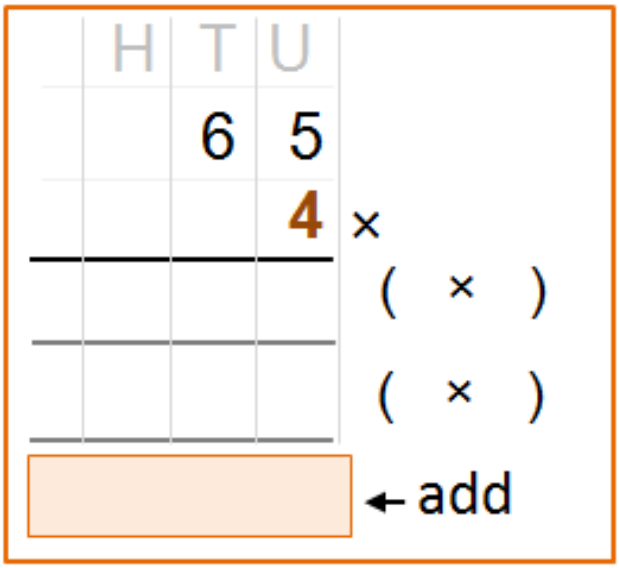


1 mark

Year 4- Multiply Written method using columns for TU × U

7

Work out



1 mark

Year 4- Multiply Written method using columns for TU × U

1

Henry, do you know the **formal** way of multiplying

Yes, Poppy - start from the units.
Do 2 × 4 = 8 and put 8 in the units
Do 2 × 3 = 6 and put 6 in the tens

Lay this out	Do 2×4	Do 2×3
in columns	Put 8 in	Put 6 in
Units/**T**ens	**U**nits	**T**ens

T	U		T	U		T	U	
3	4		3	4		3	4	
	2	×		2	×		2	×
				8		6	8	
T	U		T	U		T	U	

34 × 2 = 68

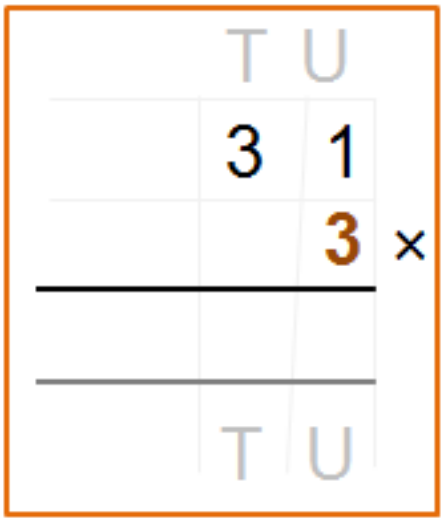
34 × 2 = 68
Yippee I got it right

Year 4- Multiply Formal written layout for multiplication HTU × U

2

Work out

Now it's your turn

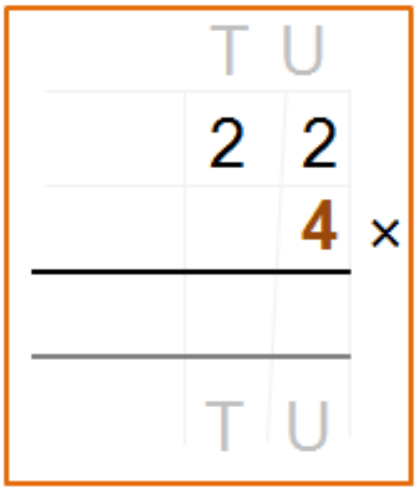


1 mark

Year 4- Multiply Formal written layout for multiplication HTU × U

3

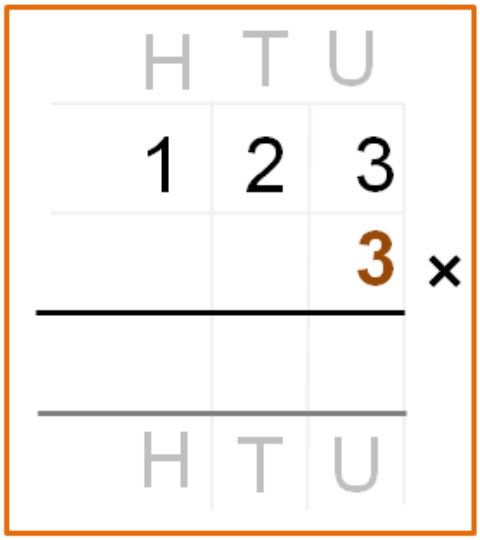
Work out



1 mark

Year 4- Multiply Formal written layout for multiplication HTU × U

4 Work out



1 mark

Year 4- Multiply Formal written layout for multiplication HTU × U

5

Sometimes you need to Carry

Is that moving a digit to the next column, like from the ones to the tens

Yes that's right - here's an example for 3 × 15

3 × 15

	T	U	
	1	5	
	1	3	×
	4	5	
	T	U	

Do 3 × 5 to get 15

You write down 5 in the units and

carry a 1 to the tens column.

Then you do 3 × 1 = 3 and Add the Carry = 4

OK, I got that. Yippee!
I'm a genius.

Year 4- Multiply Formal written layout for multiplication HTU × U

6

Can you do 26 × 3 using a **Carry**

Yep, start from the units.
Do 3 × 6 = 18

Put the 8 in the units
and Carry the 1 to the tens

Then do 2× 3 = 6 Add the Carry 1 =7 Put that in the tens

Lay this out in columns **U**nits/**T**ens

Do 3×6
Put 8 in **U**nits
Carry 1 to Tens

Do 3×2
Add Carry 1
Put 7 in Tens

	T	U
	2	6
×		3
	T	U

	T	U
	2	6
×	1	3
		8
	T	U

	T	U
	2	6
×	1	3
	7	8
	T	U

26 × 3 = 78

Year 4- Multiply Formal written layout for multiplication HTU × U

7

Now it's your turn

Work out

H	T	U	
	4	5	
		3	×
H	T	U	

1 mark

Year 4- Multiply Formal written layout for multiplication HTU × U

8

Work out

H	T	U	
	2	4	
		7	×
H	T	U	

1 mark

Year 4- Multiply Formal written layout for multiplication HTU × U

9

Work out

	H	T	U	
		9	1	
			4	×
	H	T	U	

1 mark

Year 4- Multiply Formal written layout for multiplication HTU × U

10

Now take the challenge with bigger numbers

Work out

	H	T	U	
	1	2	5	
			3	×
	H	T	U	

1 mark

Year 4- Multiply Formal written layout for multiplication HTU × U

11

Work out

	H	T	U	
	1	7	2	
			4	×
	H	T	U	

1 mark

Year 4- Multiply Formal written layout for multiplication HTU × U

12

This calculation has thousands when you Carry

Work out

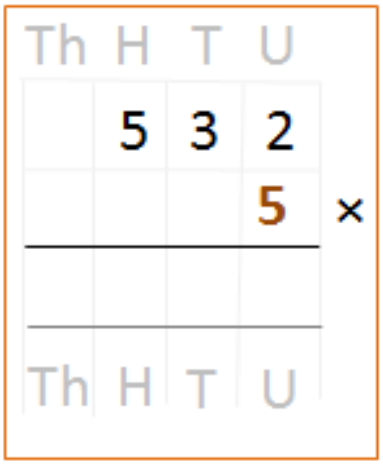
	Th	H	T	U	
		6	3	1	
				3	×
	Th	H	T	U	

1 mark

Year 4- Multiply Formal written layout for multiplication HTU × U

13

Work out

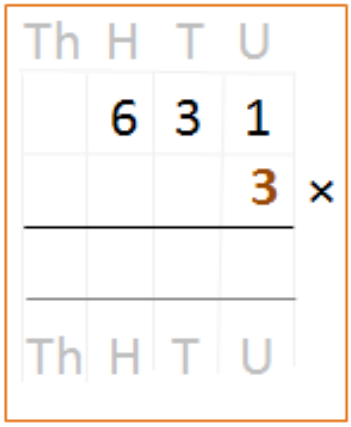


1 mark

Year 4- Multiply Formal written layout for multiplication HTU × U

14

Work out

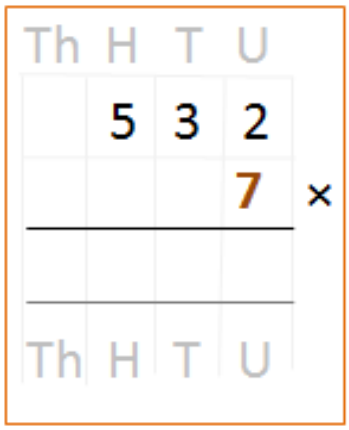


1 mark

Year 4- Multiply Formal written layout for multiplication HTU × U

15

Work out

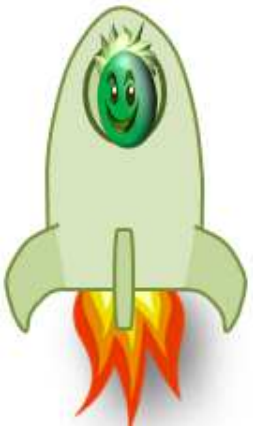


1 mark

Year 4- Multiply Formal written layout for multiplication HTU × U

1 Henry went for a ride in a rocket.

The rocket's speed was 821 miles every hour



How far did he travel in 15 hours

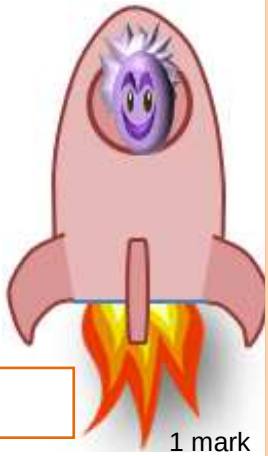
1 mark

Year-4 MULTIPLY: Problem solve HTU × TU

2 Poppy went for a ride in a rocket.

The rocket's speed was 756 miles every hour

How far did she travel in 39 hours

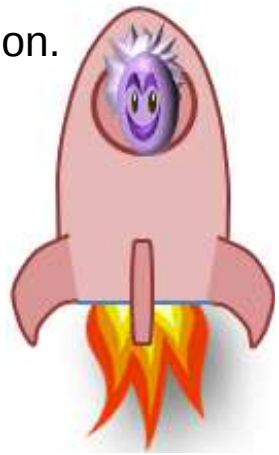


1 mark

Year-4 MULTIPLY: Problem solve HTU × TU

3 Poppy went to the moon in a rocket
Her speed was about 5600 km per hour

It took her 72 hours to get to the moon.
How far is it to the moon?



km

1 mark

Year-4 MULTIPLY: Problem Solving: THTU × TU

4 It took Poppy 72 hours to get to the moon.

How many minutes is that?

min

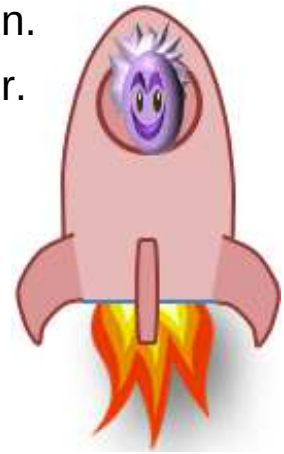
1 mark

Year-4 MULTIPLY: Problem Solving: TU × TU

5 On her trip to the moon, Poppy used 9725 litres of fuel every hour.

It took her 72 hours to get to the moon.

How much fuel did she use altogether.



litres

1 mark

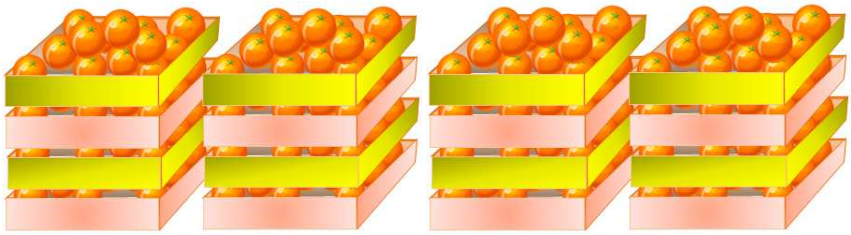
Year-4 MULTIPLY: Problem Solving: THTU × TU

6

Each tray has 12 oranges.

There are 4 trays in a stack

There are four stacks



How many oranges are there altogether.

1 mark

Year-4 MULTIPLY: Problem Solving: TU × TU