Multiply 3- and 4-Digits by 2-Digits

To multiply 3- and 4-digit numbers by 2-digit numbers using long multiplication.

1. Archie has been working through some calculations. Can you help him complete his calculations by placing the missing numbers inside the boxes?

a. 132 × 32 = ☐

			H	T	O
			1	3	2
		×		3	2
			2	6	4
	+	3	9	6	0
		☐	☐	☐	☐
			☐	☐	

b. 243 × 21 = ☐

			H	T	O
			2	4	3
		×		2	1
			2	4	3
	+	☐	☐	6	0
		☐	☐	☐	☐
		☐	☐		

c. 2021 × 42 = ☐

		Th	H	T	O
		2	0	2	1
	×			4	2
		4	0	4	2
+	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

d. 2312 × 33 = ☐

		Th	H	T	O
		2	3	1	2
	×			3	3
		☐	☐	☐	☐
+	6	9	3	6	0
	☐	☐	☐	☐	☐
		☐	☐		

2. Solve these calculations using the long multiplication method.

a. 443 × 21 =

		H	T	O
		4	4	3
	×		2	1
+				

b. 3021 × 32 =

|		Th	H	T	O
		3	0	2	1
	×			3	2
+					

3. Use the long multiplication method to solve the word problem.

A rugby stadium can hold 3044 spectators. Each person buys a ticket for £22. How much money is made in total through ticket sales?

⬚ × ⬚ = £ ⬚

|		Th	H	T	O
	×				
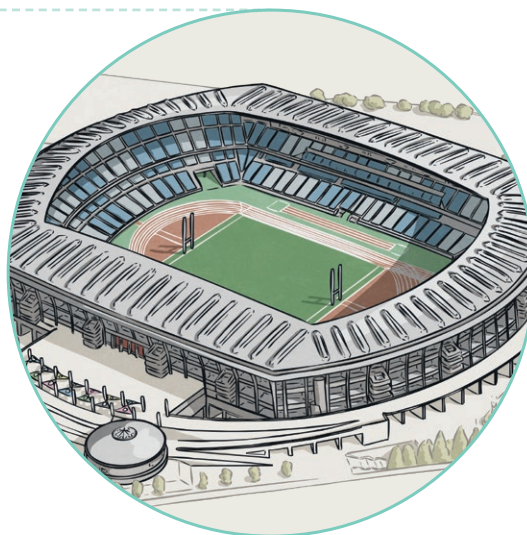
Multiply 3- and 4-Digits by 2-Digits

To multiply 3- and 4-digit numbers by 2-digit numbers using long multiplication.

1. Solve these calculations using the long multiplication method.

a. 235 × 32 =

			H	T	O
×					
+					

b. 343 × 53 =

			H	T	O
×					
+					

c. 4027 × 64 =

		Th	H	T	O
×					

d. 5382 × 75 =

		Th	H	T	O
×					

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2. Joe and Bethany have been working on the same calculation. They have both recorded a different answer.

Joe

			H	T	O
			4	3	2
	×			5	1
			4	3	2
	2	0	5₁	0₁	0
	2	0	9	3	2

Bethany

			H	T	O
			4	3	2
	×			5	1
			4	3	2
	2	1	6₁	0₁	0
	2	2	0	3	2
			1		

Who is correct? Explain the error that one of the children has made.

3. Connie is filling a ball pit with balls. One bag of balls covers an area of 1000cm². The dimensions of the ball pit are 326cm × 73cm.
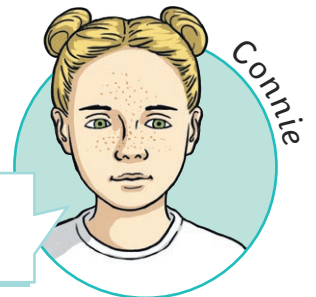
Connie

I will need to buy 25 bags of balls!

		H	T	O
	×			

Is Connie correct with her estimation? Explain your answer.

Multiply 3- and 4-Digits by 2-Digits

To multiply 3- and 4-digit numbers by 2-digit numbers using long multiplication.

1. Solve these calculations using the long multiplication method.

a. 456 × 52 =

b. 578 × 63 =

c. 6036 × 74 =

d. 7198 × 86 =

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2. Identify the missing digits in the calculations below. Some boxes may have two digits missing!

a.

			H	T	O
			□	4	□
	×			3	6
	1	4	□₂		0
	7₁	□	5		0
	□	8	□		0
			1		

b.

			H	T	O
			□	2	7
	×			4	□
	1	□	5₁		4
	5₁	0₂	□		0
	2	□	3	3	□

3. A gardener is planting seeds to grow flowers to cover a path and a flower bed. Each packet of seeds covers 1000 cm². He has ordered 60 packets of flower seeds.

   Has he ordered enough? Explain your answer.

82cm 723cm

60cm 60cm

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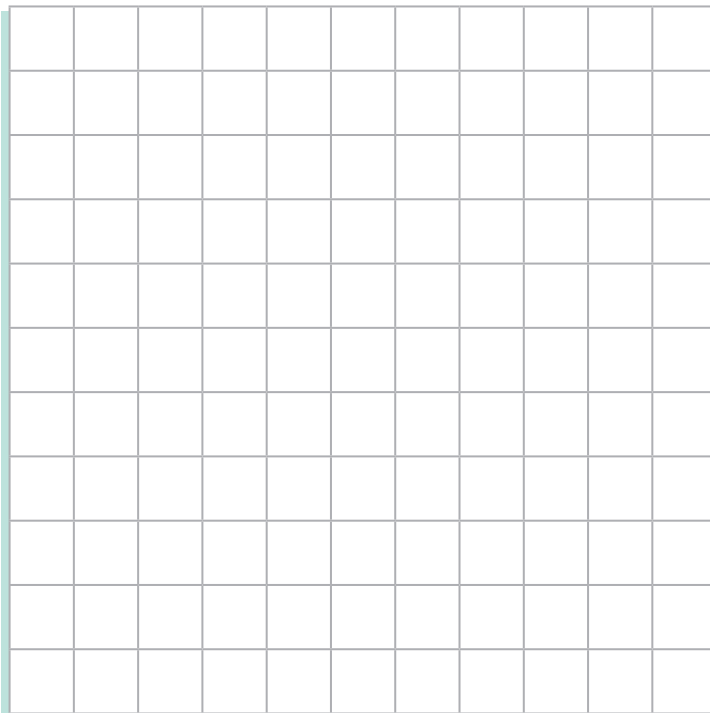
Multiply 3- and 4-Digits by 2-Digits
Answers

1. a. 132 × 32 = **4224**

			H	T	O
			1	3	2
		×		3	2
			2	6	4
	+	3	9	6	0
		4	**2**	**2**	**4**
			1	**1**	

b. 243 × 21 = **5103**

			H	T	O
			2	4	3
		×		2	1
			2	4	3
	+	**4**	**8**	6	0
		5	**1**	**0**	**3**
			1	**1**	

c. 2021 × 42 = **84 882**

	Th	H	T	O
	2	0	2	1
×			4	2
	4	0	4	2
+	**8**	**0**	**8**	**4**	**0**
	8	**4**	**8**	**8**	**2**

d. 2312 × 33 = **76 296**

	Th	H	T	O
	2	3	1	2
×			3	3
	6	**9**	**3**	**6**
+	6	9	3	6	0
	7	**6**	**2**	**9**	**6**
		1	**1**	

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2. a. 443 × 21 = **9303**

			H	T	O
			4	4	3
		×		2	1
			4	**4**	**3**
+		**8**	**8**	**6**	**0**
		9	**3**	**0**	**3**
			1	**1**	

b. 3021 × 32 = **96 672**

			H	T	O
		3	0	2	1
	×			3	2
		6	**0**	**4**	**2**
+	**9**	**0**	**6**	**3**	**0**
	9	**6**	**6**	**7**	**2**

3. **3044 × 22** = £**66 968**

		Th	H	T	O
		3	0	4	4
	×			2	2
		6	**0**	**8**	**8**
	6	**0**	**8**	**8**	**0**
	6	**6**	**9**	**6**	**8**
				1	

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Multiply 3- and 4-Digits by 2-Digits
Answers

1. a. 235 × 32 = **7520**

			H	T	O
			2	3	5
	×			3	2
			4	7₁	0
+		7₁	0₁	5	0
		7	5	2	0
			1		

b. 343 × 53 = **18 179**

			H	T	O
			3	4	3
	×			5	3
		1	0₁	2	9
+	1	7₂	1₁	5	0
	1	8	1	7	9

c. 4027 × 64 = **257 728**

		Th	H	T	O
		4	0	2	7
	×			6	4
	1	6	1₁	0₂	8
2	4	1₁	6₄	2	0
2	5	7	7	2	8

d. 5382 × 75 = **403 650**

		Th	H	T	O
		5	3	8	2
	×			7	5
	2	6₁	9₄	1₁	0
3	7₂	6₅	7₁	4	0
4	0	3	6	5	0
1	1	1			

2. **Bethany is correct. Joe is incorrect because there are two instances where he forgot to add the regrouped digits.**

3. **Connie is incorrect. 326 × 73 = 23 798, so she will only need 24 bags to cover the total area.**

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Multiply 3- and 4-Digits by 2-Digits
Answers

1. a. 456 × 52 = **23 712**

			4	5	6
	×			5	2
			9₁	1₁	2
	2	2₂	8₃	0	0
	2	3	7	1	2
		₁			

b. 5382 × 75 = **36 414**

			5	7	8
	×			6	3
		1	7₂	3₂	4
	3	4₄	6₄	8	0
	3	6	4	1	4
		₁	₁		

a. 6036 × 74 = **446 664**

		6	0	3	6
	×			7	4
	2	4	1₁	4₂	4
4	2	2₂	5₄	2	0
4	4	6	6	6	4

b. 7198 × 86 = **619 028**

		7	1	9	8
	×			8	6
	4	3₁	1₅	8₄	8
5	7₁	5₇	8₆	4	0
6	1	9	0	2	8
₁		₁	₁		

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2.　a.

			H	T	O
			2	4	**5**
×				3	6
	1	4 ₂	**7** ₃	0
	7 ₁	**3** ₁	5	0
	8	8	**2**	0
			1		

b.

			H	T	O
			6	2	7
×				4	**2**
	1	**2**	5	4 ₁
	2	5 ₁	0 ₂	**8**	0
	2	**6**	3	3	**4**

3. **The gardener has not ordered enough packets of seeds. He will need to order 63 packets to cover both of the flower beds.**

		7	2	3			5	9	2	8	6
×			8	2		+		3	6	0	0
	1	4	4	6			6	2	8	8	6
5	7 ₁	8 ₂	4	0			²				
5	9	2	8	6							
	1										

60 × 60 = 3600

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