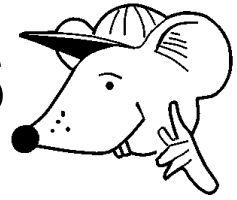


MATHEMATICS



Y6 Multiplication and Division 6360

Use formal written methods of multiplication

Equipment

Pencil, paper.

MathSphere

Concepts

We are now moving towards formal, or standard written methods. Don't forget to encourage estimates with these problems.

Method 1

e.g. $2\,637 \times 7$

Writing **method 1** vertically, we have:

$$\begin{array}{r} 2637 \\ \times 7 \\ \hline 18459 \\ \hline \end{array}$$

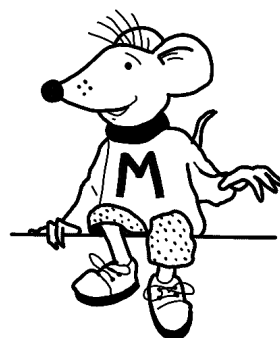
Method 2.

e.g. 462×37

$$\begin{array}{r} 462 \\ \times 37 \\ \hline 13860 \quad (462 \times 30) \\ 3234 \quad (462 \times 7) \\ \hline 17094 \\ \hline \end{array}$$

Here is the formal method.

Lay the sum out vertically and carry figures into the next column to the left as necessary.



Let's multiply 4 723 by 6. Estimate: $5\ 000 \times 6 = 30\ 000$

$$\begin{array}{r} 4\ 723 \\ \times 6 \\ \hline 28\ 338 \\ \hline 4\ 1\ 1 \end{array}$$

Don't forget the carry figures.

So the answer is 28 338

Here is another example.

Let's multiply 6 249 by 8. Estimate: $6\ 000 \times 8 = 48\ 000$

$$\begin{array}{r} 6\ 249 \\ \times 8 \\ \hline 49992 \\ \hline 1\ 3\ 7 \end{array}$$

Don't forget the carry figures.

So the answer is 49 992

Now try these! Don't forget to do an estimate first.



a. $2\ 635 \times 3$

b. $8\ 536 \times 5$

c. $4\ 855 \times 7$

d. $1\ 836 \times 3$

e. $9\ 867 \times 9$

f. $6\ 734 \times 8$

g. $7\ 365 \times 6$

h. $8\ 512 \times 7$

When we have a three digit number multiplied by a two digit number, we can still put the numbers underneath each other.



Let's multiply 436 by 27. Estimate: $400 \times 30 = 12000$

$$\begin{array}{r}
 436 \\
 \times 27 \\
 \hline
 8720 \\
 3052 \\
 \hline
 11772
 \end{array}
 \quad
 \begin{array}{l}
 (436 \times 20) \\
 (436 \times 7)
 \end{array}$$

So the answer is 11 772

Here is another example.

Let's multiply 534 by 98. Estimate: $500 \times 100 = 50\,000$



$$\begin{array}{r}
 534 \\
 \times 98 \\
 \hline
 48060 \\
 4272 \\
 \hline
 52332
 \end{array}
 \quad
 \begin{array}{l}
 (534 \times 90) \\
 (534 \times 8)
 \end{array}$$

So the answer is 52 332

Now try these! Don't forget to do an estimate first.



- | | | | |
|--------------------|--------------------|--------------------|--------------------|
| a. 523×32 | b. 562×23 | c. 143×52 | d. 425×63 |
| e. 862×74 | f. 581×62 | g. 994×19 | h. 475×27 |

Lastly, we can use what we have learnt to multiply some decimals.



Let's multiply 3.67 by 8. **Estimate:** $4 \times 8 = 32$

$$\begin{array}{r} 3.00 \times 8 = 24.00 \\ 0.60 \times 8 = 4.80 \\ 0.07 \times 8 = \underline{0.56} \\ \hline 29.36 \end{array}$$

Notice how the units, the tenths and the hundredths are lined up vertically.

So the answer is 29.36

Here is another example.

Let's multiply 5.83 by 9. **Estimate:** $6 \times 9 = 54$

$$\begin{array}{r} 5.00 \times 9 = 45.00 \\ 0.80 \times 9 = 7.20 \\ 0.03 \times 9 = \underline{0.27} \\ \hline 52.47 \end{array}$$

Notice how the units, the tenths and the hundredths are lined up vertically.

So the answer is 52.47

Now try these! Don't forget to do an estimate first.

a. 6.31×8

b. 8.53×4

c. 7.34×2

d. 9.57×6

e. 4.61×5

f. 8.52×7

g. 7.33×3

h. 9.37×8



Answers**Page 3**

- a.** 7 905 **b.** 42 680 **c.** 33 985 **d.** 5 508
e. 88 803 **f.** 53 872 **g.** 44 190 **h.** 59 584

Page 4

- a.** 16 736 **b.** 12 926 **c.** 7 436 **d.** 26 775
e. 63 788 **f.** 36 022 **g.** 18 886 **h.** 12 825

Page 5

- a.** 50.48 **b.** 34.12 **c.** 14.68 **d.** 57.42
e. 23.05 **f.** 59.64 **g.** 21.99 **h.** 74.96