MATHEMATICS

N.S. Yr. 5   P.65

Use known number facts to multiply and divide mentally

Equipment

Paper, pencil, ruler

MathSphere

Concepts

This module consolidates the year 4 on multiplying and dividing mentally.
The key concepts are:

1. Multiplying a two or three digit number by 100. (Remember never say 'add a nought' as this leads to real problems when dealing with decimals later!)

2. Dividing a four digit multiple of 100 by 10 or 100 or 1000
eg 67 000 ÷ 1000 = .

3. Doubling multiples of 5 up to 500.

4. Halving any three digit multiple of 10.

5. General multiplication of two digits by one, explaining the methods used.

Once again explanations of methods used are crucial to fast, efficient mental methods of calculating - there is often more than one way to do a sum, but usually one way is more efficient than the others - it is this quick method that children should be looking for.

Multiply by tens and hundreds
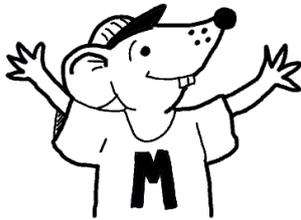
Remember – to multiply by 20, multiply by 10 and then by 2....or the other way round, multiply by 2 and then 10.

To multiply by 30, multiply by 10 and then by 3.

Complete these written questions:

1. 20 x 600 =

2. 30 x 400 =

3. 40 x 500 =

4. 50 x 200 =

5. 60 x 300 =

6. 70 x 500 =

7. 80 x 400 =

8. 90 x 600 =

9. 60 x [   ] = 180 000

10. 40 x [   ] = 160 000

11. 50 x [   ] = 250 000

12. 30 x [   ] = 240 000

13. 70 x [   ] = 490 000

14. 40 x [   ] = 360 000

Multiply by tens and hundreds
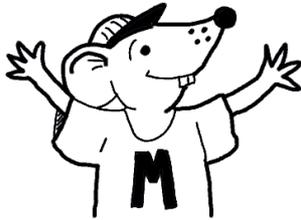
Some pretty big answers here -make sure that you can read the numbers out correctly - most of them are hundreds of thousands.

Complete these written questions:

1. 30 x 300 =

2. 40 x 600 =

3. 50 x 700 =

4. 60 x 300 =

5. 70 x 400 =

6. 80 x 600 =

7. 90 x 700 =

8. 20 x 800 =

9. 70 x ☐ = 420 000

10. 50 x ☐ = 450 000

11. 60 x ☐ = 420 000

12. 40 x ☐ = 360 000

13. 30 x ☐ = 210 000

14. 90 x ☐ = 540 000

<u>Dividing by 10, 100 and 1 000</u>
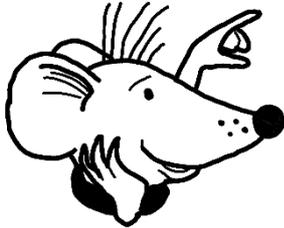
As division is the opposite of multiplication, move each digit one place to the right to divide by 10, two places to divide by 100 and three to divide by 1 000.

Try these:

1. 3 400 ÷ 10 =

2. 5 500 ÷ 10 =

3. 6 800 ÷ 10 =

4. 8 400 ÷ 100 =

5. 7 600 ÷ 100 =

6. 9 800 ÷ 100 =

7. 70 000 ÷ 1 000 =

8. 65 000 ÷ 1 000 =

9. 45 000 ÷ 1 000 =

10. 32 000 ÷ 1 000 =

11. Find one thousandth of 3 000

12. Find one thousandth of 23 000

13. Find one hundredth of 8 000

14. Find one hundredth of 6 500

15. Find one tenth of 8 400

16. Find one tenth of 6 000

Dividing by 10, 100 and 1 000
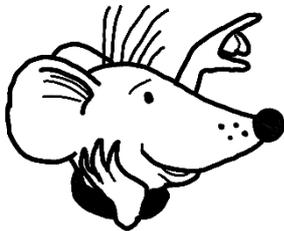
Remember, move the digits to the right to divide by 10 or 100, or 1 000.

Try these:

1. $4\,400 \div 10 =$

2. $6\,400 \div 10 =$

3. $7\,700 \div 10 =$

4. $4\,500 \div 100 =$

5. $6\,700 \div 100 =$

**6.** $1\,900 \div 100 =$

7. $80\,000 \div 1\,000 =$

8. $56\,000 \div 1\,000 =$

9. $37\,000 \div 1\,000 =$

10. $23\,000 \div 1\,000 =$

11. Find one thousandth of 2 000

12. Find one thousandth of 14 000

13. Find one hundredth of 7 000

14. Find one hundredth of 5 900

15. Find one tenth of 7 500

16. Find one tenth of 4 000

Doubling and halving multiples of 5
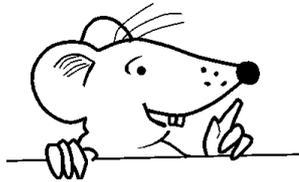
Here we have doubling multiples of 5 up to 500.
Good luck!

1. Double 125

2. Double 250

3. Double 235

4. 155 x 2 =

5. 245 x 2 =

6. 105 x 2 =

7. Halve 350

8. Halve 470

9. Halve 550

10. 230 ÷ 2 =

11. 170 ÷ 2 =

12. 630 ÷ 2 =

13. Double 175

14. Double 345

15. Double 425

16. 435 x 2 =

17. 395 x 2 =

18. 375 x 2 =

19. Halve 830

20. Halve 770

21. Halve 490

22. 790 ÷ 2 =

23. 970 ÷ 2 =

24. 870 ÷ 2 =

If you've got a spare moment explain how you did these to your teacher or an adult.
You could also tell a friend who finds them hard!

Doubling and halving multiples of 5
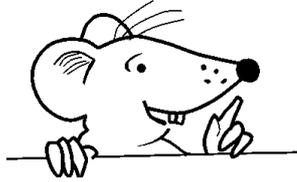
Here we have doubling multiples of 5 up to 500.
Good luck!

1. Double 105

2. Double 270

3. Double 255

4. 165 x 2 =

5. 245 x 2 =

6. 135 x 2 =

7. Halve 370

8. Halve 430

9. Halve 590

10. 210 ÷ 2 =

11. 190 ÷ 2 =

12. 670 ÷ 2 =

13. Double 275

14. Double 445

15. Double 405

16. 415 x 2 =

17. 295 x 2 =

18. 115 x 2 =

19. Halve 870

20. Halve 710

21. Halve 450

22. 850 ÷ 2 =

23. 630 ÷ 2 =

24. 700 ÷ 2 =

If you've got a spare moment explain how you did these to your teacher or an adult.
You could also tell a friend who finds them hard!

Multiplying three digit multiples of 100

Multiplying larger numbers, especially multiples of 100 - they look harder than they really are!

1. 200 x 4 = [   ]   **2.** 300 x 5 = [   ]   **3.** 400 x 3 = [   ]

4. 500 x 4 = [   ]   **5.** 600 x 5 = [   ]   **6.** 700 x 3 = [   ]

7. 3 x [   ] = 1 200   **8.** 5 x [   ] = 2 000

9. 400 x [   ] = 3 200   **10.** 600 x [   ] = 3 600

11. 1 000 = 400 x [   ] + 200   **12.** 2 000 = 600 x [   ] + 200

13. 3 000 = 400 x [   ] + 200   **14.** 4 000 = 700 x [   ] + 500

15. 2 000 = 300 x 6 + [   ]   **16.** 4 000 = 700 x 5 + [   ]

17. 3 000 = 400 x 7 + [   ]   **18.** 8 000 = 900 x 8 + [   ]

Multiplying three digit multiples of 100

Where do sheep get their hair cut?

The baa baas!

1. 300 x 6 =

2. 400 x 4 =

3. 500 x 2 =

4. 600 x 3 =

5. 700 x 4 =

6. 800 x 6 =

7. 4 x   = 1 600

8. 6 x   = 3 000

9. 500 x   = 3 500

10. 700 x   = 2 800

11. 1 000 = 300 x   + 100

12. 3 000 = 400 x   + 200

13. 4 000 = 700 x   + 500

14. 5 000 = 900 x   + 500

15. 6 000 = 700 x 8 +

16. 7 000 = 900 x 7 +

17. 1 000 = 600 x 1 +

18. 3 000 = 800 x 3 +

Explaining!

These sums can all be done in your head, but can you write down how you did them?
  eg   24 x 4 = 96

20 times 4 is 80 and 4 times 4 is 16.

Add the answers to make 96

Or even quicker: Double 24 and double again.

Explain in the box how you did the sum.

1. 26 x 5 =

2. 91 = 7 x

3. 45 x 3 =

4. 140 = 28 x

5. 53 x 4 =

6. 96 = 6 x

7. 27 x 5 =

8. 81 = 3 x

Explaining!

These sums can all be done in your head, but can you write down how you did them?
eg   28 x 5 = 140

20 times 5 is 100 and 8 times 5 is 40.

Add the answers to make 140

Or even quicker:
Multiply 28 by 10 = 280 and halve the answer 140

Explain in the box how you did the sum.

1. 29 x 5 =

2. 207 = 9 x

3. 39 x 4 =

4. 78 = 3 x

5. 39 x 5 =

6. 119 = 7 x

7. 36 x 5 =

8. 180 = 12 x

Answers

Page 3

1. 12 000   **2.** 12 000   **3.** 20 000   **4.** 10 000   **5.** 18 000   **6.** 35 000

7. 32 000   **8.** 54 000   **9.** 3 000   **10.** 4 000   **11.** 5 000   **12.** 8 000

13. 7 000   **14.** 9 000

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1. 9 000   **2.** 24 000   **3.** 35 000   **4.** 18 000   **5.** 28 000   **6.** 48 000

7. 63 000   **8.** 16 000   **9.** 6 000   **10.** 9 000   **11.** 7 000   **12.** 9 000

13. 7 000   **14.** 6 000

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1. 340   **2.** 550   **3.** 680   **4.** 84   **5.** 76   **6.** 98   **7.** 70   **8.** 65

9. 45   **10.** 32   **11.** 3   **12.** 23   **13.** 80   **14.** 65   **15.** 840   **16.** 600

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1. 440   **2.** 640   **3.** 770   **4.** 45   **5.** 67   **6.** 19   **7.** 80   **8.** 56

9. 37   **10.** 23   **11.** 2   **12.** 14   **13.** 70   **14.** 59   **15.** 750   **16.** 400

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1. 250   **2.** 500   **3.** 470   **4.** 310   **5.** 490   **6.** 210   **7.** 175   **8.** 235

9. 275   **10.** 115   **11.** 85   **12.** 315   **13.** 350   **14.** 690   **15.** 850   **16.** 870

17. 790   **18.** 750   **19.** 415   **20.** 385   **21.** 245   **22.** 395   **23.** 485   **24.** 435

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1. 210   **2.** 540   **3.** 510   **4.** 330   **5.** 490   **6.** 270   **7.** 185   **8.** 215

9. 295   **10.** 105   **11.** 95   **12.** 335   **13.** 550   **14.** 890   **15.** 810   **16.** 830

17. 590   **18.** 230   **19.** 435   **20.** 355   **21.** 225   **22.** 425   **23.** 315   **24.** 350

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1. 800   **2.** 1 500   **3.** 1 200   **4.** 2 000   **5.** 3 000   **6.** 2 100   **7.** 400   **8.** 400

9. 8   **10.** 6   **11.** 2   **12.** 3   **13.** 7   **14.** 5   **15.** 200   **16.** 500   **17.** 200   **18.** 800

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1. 1 800   **2.** 1 600   **3.** 1 000   **4.** 1 800   **5.** 2 800   **6.** 4 800   **7.** 400   **8.** 500

9. 7   **10.** 4   **11.** 3   **12.** 7   **13.** 5   **14.** 5   **15.** 400   **16.** 700   **17.** 400   **18.** 600

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1. 130   **2.** 13   **3.** 135   **4.** 5   **5.** 212   **6.** 16   **7.** 135   **8.** 27

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1. 145   **2.** 23   **3.** 156   **4.** 26   **5.** 195   **6.** 17   **7.** 180   **8.** 15