

MATHEMATICS



N.S. Yr. 4 P.76

**Explain methods and reasoning about
numbers orally and in writing.**

Equipment

Paper, pencil.

MathSphere

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Concepts

In this module, children should be encouraged to explain the methods they have used when carrying out calculations involving an element of mental work or calculations that have been done entirely mentally.

They should explain their methods initially orally to each other or to their teacher/parent.

Here are some examples of the type of explanations children should be encouraged to give, either orally or in writing:

47 + 19 19 is nearly 20. Add 47 and 20 to get 67 and take one off to get 66.

47 - 32 40 subtract 30 is 10 and 7 subtract 2 is 5, so the answer is 15.

36 × 2 This is the same as 30 + 30 + 6 + 6 which is 60 + 12, making 72 altogether.

46 - 24 46 is 23 + 23, which is the same as 22 + 24, so 46 - 24 is 22.

281 + 342 200 + 300 is 500. 80 + 40 is 120. 1 + 2 = 3. So the answer is 500 + 120 + 3 which is 623.

Remember here that doing a calculation mentally does not mean that children are not allowed to write anything down at all. It is normally fine to jot down intermediate results. For example, in this last sum a child may jot down:

500
120
3

as they describe the calculation, just as an adult might do, in fact.

In this module, we simply give examples for the children to calculate. We leave it to the teacher/parent to decide when they want the answer orally and when the children are ready to write down their explanations.



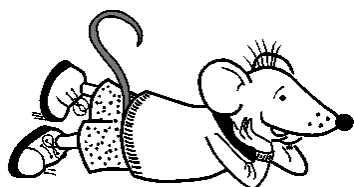
Here are lots of sums for you to work out.
Try to do as much of them in your head as
you can.

Then explain how you did them to your
friends, teacher or parent.

- | | | | |
|-------------------|------------------|-------------------|-------------------|
| 1. a. $24 + 43$ | b. $34 - 17$ | c. 45×2 | d. $84 - 22$ |
| e. $340 + 220$ | f. 31×3 | g. $100 - 56$ | h. $93 \div 3$ |
| i. $19 + 20 + 21$ | j. 14×4 | k. Twice 56 | l. Half of 64 |
| | | | |
| 2. a. $47 + 23$ | b. 56×4 | c. $22 + 23 + 40$ | d. Half of 98 |
| e. $54 + 47$ | f. $403 - 370$ | g. $360 \div 20$ | h. 34×30 |
| i. Quarter of 56 | j. Five 19s | k. $49 - 23 + 24$ | l. $164 \div 8$ |

Here are some sums some summy people find sumptuous!

- | | | | |
|------------------------------------|-------------------|-------------------|-------------------|
| 3. a. $560 + 380$ | b. 88×5 | c. $721 - 530$ | d. 99×5 |
| e. $720 \div 4$ | f. $930 \div 3$ | g. 15×15 | h. 50×20 |
| i. $(12 \times 3) + (6 \times 15)$ | j. $90 - 23 - 17$ | k. 42×6 | l. Half of 374 |



You shouldn't take this
lying down!



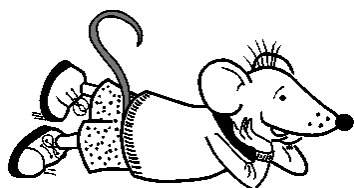
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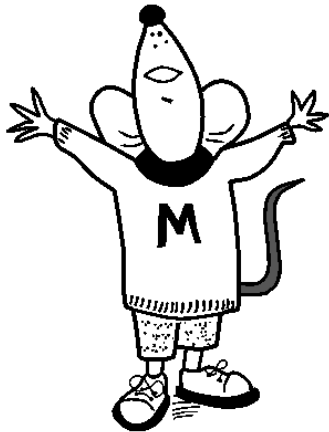
1. a. $41 + 55$ b. $63 - 22$ c. 53×2 d. $75 - 32$
e. $420 + 520$ f. 63×4 g. $200 - 145$ h. $69 \div 3$
i. $31 + 43 + 17$ j. 34×4 k. Twice 92 l. Half of 96
2. a. $39 + 12$ b. 73×4 c. $15 + 15 + 30$ d. Half of 72
e. $53 + 18$ f. $729 - 628$ g. $400 \div 20$ h. 43×30
i. Quarter of 96 j. Four 18s k. $63 - 47 + 49$ l. $279 \div 9$

Here are plenty of problems for people who are sharp, alive and ready to go!

3. a. $345 + 543$ b. 42×8 c. $815 - 723$ d. 77×5
e. $680 \div 4$ f. $186 \div 3$ g. 16×15 h. 30×40
i. $(17 \times 4) + (8 \times 21)$ j. $65 - 21 - 19$ k. 33×7 l. Half of 658



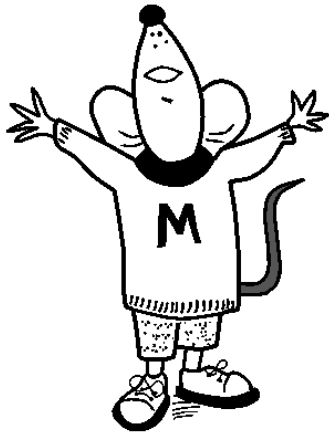
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Here are lots of sums in words for you to work out. Try to do as much of them in your head as you can.

Then explain how you did them to your friends, teacher or parent.

1. An ant has six legs. How many legs would 45 ants have?
2. How many ants would you need to have 420 legs?
3. A box holds 452 marbles. Jonathan took out 144. How many were left?
4. Mrs Brown has 23 bottles of milk a week, Mrs Patel has 42 bottles and Mrs Johnson has 27 bottles.
How many bottles do they have altogether?
5. 640 raffle tickets are given to 160 children in a school to take home and sell.
How many do they take each?
6. A bus had 56 passengers. At the next stop, 24 got off and 28 got on. How many passengers did it have then?
7. Two tins have 56 biscuits in each tin. Another tin has 42 biscuits.
How many biscuits are there altogether?
8. A boy reads 45 pages of his book each day. If he reads for 20 days, how many pages will he have read?
9. I think of a number. I double it and then add three. My answer is 27.
What number did I think of?
10. What is five multiplied by 12 and then add 7 ?



Here are lots of sums in words for you to work out. Try to do as much of them in your head as you can.

Then explain how you did them to your friends, teacher or parent.

1. There are 48 children in a village school. A half of them come to school by car and a third of them cycle. How many come by car and how many cycle?
2. Which is greater, fifteen twelves or sixteen elevens?
3. A CD has three tracks. The first plays for five minutes thirty seconds. The second plays for eight minutes thirty seconds. The third plays for seven minutes. What is the total time the CD plays for?
4. Mr Jones has £550 in the bank. He uses some of the money to buy a cycle. If he has £180 in the bank now, how much did he spend on the cycle?
5. John and Danielle have been growing trees from seed. John's tree is one year old and has 45 leaves. Danielle's is two years old and has 900 leaves. How many **times** more leaves are there on Danielle's tree than on John's tree?
6. A train had 380 passengers. At the next station, 134 got off and 122 got on. How many passengers did it have then?
7. What is twice seventeen plus eight?
8. A boy read three magazines. They have 24 pages, 36 pages and 28 pages. How many pages are there altogether?
9. I think of a number. I double it and then subtract nine. My answer is 37. What number did I think of?
10. If 46 marbles are shared equally between six people, how many would be left over?



You will need to read these tables to answer the questions on this page.

1. Three farmers grew carrots, potatoes and turnips in their fields. The table shows how many tonnes they grew of each.

	Carrots	Potatoes	Turnips
Farmer John	12	21	18
Farmer Simon	15	18	17
Farmer Jenny	9	27	15

- How many tonnes of carrots did farmer Jenny grow?
- How many tonnes of carrots did the three farmers grow altogether?
- How many tonnes of vegetables did Farmer John grow?
- How many tonnes of vegetables did Farmer Simon grow?
- How many tonnes of vegetables did Farmer Jenny grow?
- Which farmer grew the most vegetables?

2. The table shows how many cars used a car park on three days.

Monday	Tuesday	Wednesday
348	534	411

- On which day were most cars parked?
- How many cars were parked on the three days altogether?
- How many more cars were parked on Tuesday than on Monday?

Answers

Page 3

1. a. 67 b. 17 c. 90 d. 62 e. 560 f. 93 g. 44 h. 31
 i. 60 j. 56 k. 112 l. 32
2. a. 70 b. 224 c. 85 d. 49 e. 101 f. 33 g. 18 h. 1 020
 i. 14 j. 95 k. 50 l. $20\frac{1}{2}$
3. a. 940 b. 440 c. 191 d. 495 e. 180 f. 310 g. 225 h. 1 000
 i. 126 j. 50 k. 252 l. 187

Page 4

1. a. 96 b. 41 c. 106 d. 43 e. 940 f. 252 g. 55 h. 23
 i. 91 j. 136 k. 184 l. 48
2. a. 51 b. 292 c. 60 d. 36 e. 71 f. 101 g. 20 h. 1 290
 i. 24 j. 72 k. 65 l. 31
3. a. 888 b. 336 c. 92 d. 385 e. 170 f. 62 g. 240 h. 1 200
 i. 236 j. 25 k. 231 l. 329

Page 5

1. 270 2. 70 3. 308 4. 92 5. 4 6. 60 7. 154
 8. 900 9. 12 10. 67

Page 6

1. Car 24 Cycle 16 2. 180, 176, 15×12 is greater 3. 21 mins
 4. £370 5. 20 6. 368 7. 42 8. 88 9. 23 10. 4

Page 7

1. a. 9 b. 36 c. 51 d. 50 e. 51
 f. Both Farmer John and Farmer Jenny (51 tonnes each)
2. a. Tues. b. 1 293 c. 186