MATHEMATICS
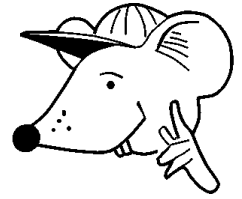
N.S. Yr. 5   P.75

Choose appropriate number operations and methods of calculating.

Equipment

Paper, pencil.

MathSphere

Concepts

This module is concerned with getting children to make decisions about:
Which operation is involved in word problems
Whether calculations should be done mentally or with pen and paper.
How to explain and record the operations used in solving the problem.

This module focuses on examples and draws children's attention to these issues, but it is important to realise that these decisions should be taken by children in most things they do in mathematics, so encourage them to discuss their work wherever possible.

They should be able to make up number stories about sums; in other words, make up their own problems.

Here is an example of how **not** to do it!
Teacher: 'Paul, tell me a story about the sum $23 \times 6 = 138$'

Paul: 'Two rabbits were walking down the road. One said to the other "What's twenty three multiplied by six?". The other rabbit said "That's easy, a hundred and thirty eight".'

The teacher was expecting something along the lines: 'A radio costs £23. Six radios would cost £138 '.

Children should also be able to deduce an operation in a sum.
Eg In the sum   **444 * 4 = 111**, the ***** stands for division.

Lastly, they should be able to study the multiplication of different pairs of numbers and state and justify which is the easiest and which is the hardest to do. This really makes them think about the operation of multiplication.

Eg.   **345**   and   **345**
        ×10   **×7**

The first example is easier because multiplying by ten is simply a matter of moving the digits one place to the left.
The second example is harder because we have to be familiar with the seven times table and carry out three multiplications, carrying into the next column where necessary.

Here are some problems. In each problem I would like you to say:
Which operation (+ – × ÷) you used,
Whether you used a calculator, pencil and paper or did the sum in your head,
How you solved the problem.

Can you give me an example, please?

Eg. Kelvin walked 45.8km and Danielle walked 37.9km.
    How far did they walk altogether?

Operation:	**+**		**Answer:**	83.7km
Method:	This was too difficult to do in my head, so I used a pencil and paper.			
How:	I wrote 37.9 under 45.8 and added up the columns.			

Practice with this one:

Eg. The four Maths Rats had sixteen sausages between them.
    How many sausages did they have each?

Operation:			**Answer:**	
Method:				
How:				

Work out each problem and then fill in the table.

1. A container holds 18 litres of orange juice. How much milk will fifteen containers hold?

Operation:		Answer:	
Method:			
How:			

2. A school has 727 pupils. One day 69 are away.
How many are left in the school?

Operation:		Answer:	
Method:			
How:			

3. If I divide a number by 18, the answer is 34. What was my number?

Operation:		Answer:	
Method:			
How:			

Work out each problem and then fill in the table.

1. Two hundred and fifty two colouring pencils are shared between fourteen children. How many do they have each?

Operation:		**Answer:**	
Method:			
How:			

2. Jonathan runs 480 metres. Fred runs 612 metres. How much further does Fred run than Sam?

Operation:		**Answer:**	
Method:			
How:			

3. A roll of film takes thirty six pictures. How many pictures will 25 rolls take?

Operation:		**Answer:**	
Method:			
How:			

Work out each problem and then fill in the table.

1. Mrs Samuels drives 217 miles each day. If her car travels 6.2 miles to the litre, how many litres of petrol will she need each day?

Operation:		**Answer:**	
Method:			
How:			

2. Mick has 416 stamps, Josh has 656, Petra has 778. How many do they have altogether?

Operation:		**Answer:**	
Method:			
How:			

3. 186 children go ten-pin bowling. If there are six spaces on each lane, how many lanes will they need altogether?

Operation:		**Answer:**	
Method:			
How:			

Work out each problem and then fill in the table.

1. Rebecca and Danielle have £4.23 pocket money each. Jerry and Michelle have £5.20 each. How much is this altogether?
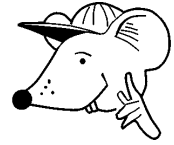
Operation:		**Answer:**	
Method:			
How:			

2. How many grams would twenty three 654 gram blocks weigh?

Operation:		**Answer:**	
Method:			
How:			

3. What number is 264 greater than 682?

Operation:		**Answer:**	
Method:			
How:			

Work out each problem and then fill in the table.

1. Mrs Carmichael has a piece of ribbon 130m long. She cuts off a piece 56.83m long. How much is left?

Operation:			**Answer:**	
Method:				
How:				

2. I think of a number and double it. The answer is 695.
What was my number?

Operation:			**Answer:**	
Method:				
How:				

3. If I divide a number by 16, the answer is 12.5. What was my number?

Operation:			**Answer:**	
Method:				
How:				

I'm going to give you some sums and I would like you to make up some number stories about them.

For example, if I give you the sum **2 674 + 3 644 = 6 318**, you could say:

*"2 674 people were at a football match this week and 3 644 were there last **week**. There were 6 318 people altogether.*
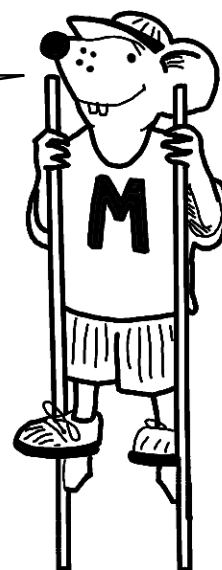
Or you could say:

"2 674 CDs were made at a factory in Birmingham. 3 644 were made at a factory in London. 6 318 were made altogether."

1. Try to make up a problem for these sums:

a. $365 + 87 = 452$

b. $672 - 244 = 428$

c. $65 \times 10 = 650$

d. $840 \div 6 = 140$

e. $2\ 533 + 1\ 627 = 4\ 160$

f. $34.5 - 10.4 = 24.1$

g. $23.7 \times 12 = 284.4$

h. $78 \times 15 = 1\ 170$

i. $28.8 \div 12 = 2.4$

j. $98.2 - 98.1 = 0.1$

k. $1.5 + 3.7 = 5.2$

l. $3\ 000 - 2\ 500 = 500$

2. Which operation $(+ - \times \div)$ does the star represent in each sum?

a. $89 * 72 = 161$

b. $345 * 241 = 104$

c. $3\ 472 * 2 = 6\ 944$

d. $80 * 16 = 5$

e. $45 * 9 = 405$

f. $99 * 77 = 176$

g. $42 * 23 = 19$

h. $121 * 8 = 968$

i. $3.5 * 7 = 24.5$

j. $100 * 11 = 89$

k. $34 * 45 = 1\ 530$

l. $77 * 3.5 = 22$

I am going to give you some multiplication sums.
Discuss with your friends or teacher why some are easier to do than others.

Eg. The first sum is easier because to multiply by 100 all you have to do is move the number two places to the left.

The second sum is harder because we need to do a proper long multiplication sum.

$$23.7 \times 100 \qquad\qquad 16.1 \times 12$$

1.

a. 34.8×20 **b.** 35×17 **c.** 56.89×100

d. $81 \times 5 \times 2$ **e.** 60×55 **f.** $78 \times 6 \times 0 \times 5.2$

2. Describe how you would answer this problem:

Michael earns £4.60 a week for 12 weeks. Jenny earns £5.80 a week for 15 weeks. How much more did Jenny earn than Michael.

Answers

Page 4
1. ×, 270 litres
2. −, 658 pupils
3. ×, 612

Page 5
1. ÷, 18 pencils
2. −, 132m
3. ×, 900 pictures

Page 6
1. ÷, 35 litres
2. +, 1 850 stamps
3. ÷, 31 lanes

Page 7
1. +, £18.86
2. ×, 15 042g
3. +, 946

Page 8
1. −, 73.17m
2. ÷, 347.5
3. ×, 200

Page 9
1. Children's own ideas.
2. a. +   **b.** −   **c.** ×   **d.** ÷   **e.** ×   **f.** +
   g. −   **h.** ×   **i.** ×   **j.** −   **k.** ×   **l.** ÷

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1. Children's own ideas.
2. £4.60 × 12
   £5.80 × 15
Find the difference.