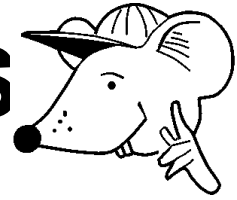


# MATHEMATICS



**N.S. Yr. 4 P.74**

**Choose appropriate number operations  
and methods of calculating.**

## Equipment

Paper, pencil.

# MathSphere

© MathSphere P.O. Box 1234 Worthing BN13 2UJ [www.mathsphere.co.uk](http://www.mathsphere.co.uk)

### 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  $16 + 5 = 21$ '*

*Paul: 'Two rabbits were walking down the road. One said to the other "What's sixteen add five?". The other rabbit said "That's easy, twenty-one".'*

The teacher was expecting something along the lines: 'Mary had sixteen stamps. She bought another five. Now she had **21** altogether'.

Another example: Sarah has **85p** pocket money each week. In four weeks she receives **340p** or **£3.40**.

Children should also be able to deduce an operation in a sum.

Eg In the sum  $24 * 5 = 120$ , the  $*$  stands for multiplication.

Lastly, they should be able to study the subtraction 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 subtraction.

Eg. 
$$\begin{array}{r} 99 \\ -58 \\ \hline \end{array}$$
 and 
$$\begin{array}{r} 67 \\ -38 \\ \hline \end{array}$$

The first example is easier because each digit on the bottom line is smaller than the digit above it.

The second example is harder because we have to take from the tens column into the units column before we can do this (or we need to do a lot of counting on!).



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

Can you give me an example, please?

Eg. Simon bought six tennis balls. Each ball cost £4.  
 How much did he pay altogether?

<b>Operation:</b>	$\times$	<b>Answer:</b>	£24
<b>Method:</b>	I did this in my head because I know my four times table.		
<b>How:</b>	I multiplied £4 by 6 because each ball cost £4 and there were six of them.		

**Practice with this one:**

Eg. Kathy sold three books, one for **£1.50**, one for **£2.40** and another for **£4.70**.  
 How much money did she make altogether?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

Work out each problem and then fill in the table.



1. There are 32 pupils in a class. One day eight of the pupils are away. How many are left in the class?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

2. A box has 48 chocolates. Twelve children share the chocolates equally. How many chocolates do they have each?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

3. Fourteen children take part in a cycle rally. They each cycle 34 kilometres. How many kilometres do they cycle altogether?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

Work out each problem and then fill in the table.



1. I have a book with 244 pages. It has four chapters and each chapter is the same length. How many pages are there in each chapter?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

2. Mary has 350cm of string. She cuts off a piece 27cm long. How long is the piece that is left?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

3. A book cupboard has 23 books on the first shelf, 30 on the second shelf and 10 on the third shelf. How many books are there altogether?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

Work out each problem and then fill in the table.



1. Sam has fifteen marbles. Yvette has forty five. How many more marbles does Yvette have than Sam?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

2. I think of a number. It is 23 more than 17.  
What is the number?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

3. A spider has eight legs. How many legs do 65 spiders have?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

Work out each problem and then fill in the table.



1. How many egg boxes would you need for 156 eggs if each box holds 12 eggs?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

2. Tom runs seventy metres. Harry runs one hundred and fifty metres.  
How far do they run altogether?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

3. Natasha runs forty metres. Julie runs one hundred and eighty metres.  
How much farther does Julie run than Natasha?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

Work out each problem and then fill in the table.



1. A stamp costs 23p. How much do 35 stamps cost?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

2. A box can hold 24 pencils. How many boxes would you need to hold 480 pencils?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			

3. What do I need to subtract from 45 to get 18 ?

<b>Operation:</b>		<b>Answer:</b>	
<b>Method:</b>			
<b>How:</b>			



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  $23 + 16 = 39$ , you could say:

*"23 people were on a bus and 16 more got on. There were now 39 people on the bus."*



Or you could say:

*"John had 23p in his pocket and Fred had 16p. They had 39p altogether."*

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

a.  $15 + 16 = 31$

b.  $35 - 18 = 17$

c.  $52 \times 2 = 104$

d.  $60 \div 4 = 15$

e.  $482 + 243 = 725$

f.  $672 - 377 = 295$

g.  $70 \times 5 = 350$

h.  $22 \times 22 = 484$

i.  $120 \div 6 = 20$

j.  $72 - 45 = 27$

k.  $163 + 522 = 685$

l.  $700 - 243 = 457$

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

a.  $23 * 16 = 39$

b.  $48 * 15 = 33$

c.  $224 * 5 = 1120$

d.  $99 * 45 = 54$

e.  $72 * 6 = 12$

f.  $34 * 2 = 68$

g.  $43 * 124 = 167$

h.  $56 * 18 = 38$

i.  $40 * 5 = 8$

j.  $99 * 9 = 11$

k.  $12 * 80 = 92$

l.  $40 * 5 = 200$



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

Eg. The first of these sums is easier because each digit in the top line is bigger than each digit in the bottom line.

The second sum is harder because we need to take some from the tens into the units before we can begin.

$$\begin{array}{r} 78 \\ -36 \\ \hline \end{array} \quad \begin{array}{r} 63 \\ -29 \\ \hline \end{array}$$

1.

a. 
$$\begin{array}{r} 99 \\ -57 \\ \hline \end{array}$$

b. 
$$\begin{array}{r} 62 \\ -22 \\ \hline \end{array}$$

c. 
$$\begin{array}{r} 85 \\ -37 \\ \hline \end{array}$$

d. 
$$\begin{array}{r} 64 \\ -28 \\ \hline \end{array}$$

e. 
$$\begin{array}{r} 80 \\ -70 \\ \hline \end{array}$$

f. 
$$\begin{array}{r} 36 \\ -28 \\ \hline \end{array}$$

2. Describe how you would answer this problem:

John and Paula do jobs for their parents.  
John does three jobs and earns 60p for each job.  
Paula does four jobs and earns 70p for each job.  
How much did they earn altogether?

## Answers

### **Page 3**

Practice question + £8.60

### **Page 4**

1. −, 24 pupils
2. ÷, 4 chocolates
3. ×, 476km

### **Page 5**

1. ÷, 61 pages
2. −, 323cm
3. +, 63 books

### **Page 6**

1. −, 30 marbles
2. +, 40
3. ×, 520 legs

### **Page 7**

1. ÷, 13 boxes
2. +, 220m
3. −, 140m

### **Page 8**

1. ×, 805p or £8.05
2. ÷, 20 boxes
3. −, 27

### **Page 9**

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

### **Page 10**

1. Children's own ideas.
2. Something like:  
     $60\text{p} \times 3$   
     $70\text{p} \times 4$   
Add them up