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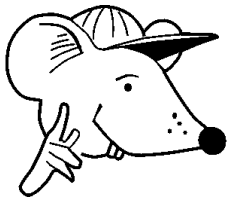
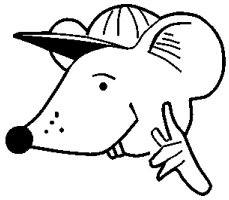


MATHEMATICS



N.S. Yr. 6 P.83

Use all four operations to solve word problems involving 'real life'.

Equipment

Paper, pencil, calculator

MathSphere

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Concepts

Children need to able to read and understand problems written in prose that include some elements of real life, although, particularly with younger children, 'real life' has to sometimes be a little artificial in order to keep the problems within their ability levels.

They should be able to read the problem, understand the situation described, be able to see what processes are necessary to solve it and then lay out their answer clearly, giving some explanation.

Explanations should be brief and to the point and it is good practice to encourage children to set out their answers down the page, one line at a time.

The following example shows one way of doing this.

Q.
John has three boxes, each with six cakes. Pat has four boxes, each with eight cakes.
How many cakes do they have altogether?
How many more cakes does Pat have than John?

A.
Number of cakes John has = 6 × 3 = 18
Number of cakes Pat has = 8 × 4 = 32

Number of cakes altogether = 18 + 32 = 50

Pat has 32 – 18 = 14 cakes more than John.

The same method may be used both for simple and more complex problems.

The problems in this module are divided into two types: those involving just one step to arrive at the answer and those involving more than one step.

Note to Parents: If children have previously done little of this type of work before, they often find it very confusing, so try to build confidence, not destroy it. Adults find these problems **much easier than children generally do.

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Single Step Operations

Here are some problems written in words. They look quite long.

You need to read them very carefully to see what you need to do.

Your teacher or parent will show you how to set out your answers.

1. 4 750 people watched Maths Rats Rovers play Piggy United last year. This was 680 more than this year. How many watched the match this year?

2. On July 24th, a traffic survey revealed that 18 753 cars parked in Centre Town. On December 24th, 23 860 cars parked there. How many more was this?

3. A school has 549 pupils in nineteen classes. What was the average class size?

4. Sixteen branches of Sparks and Mencer had a total of 12 490 customers on one day. What was the average number of customers per branch?

5. Gerry Build use twenty eight nails to make each model boat they produce. If they have 17 000 nails, how many boats could they make with these nails?

6. A teacher buys 360 new history books for twelve classes. How should she share out the books as fairly as possible?

7. Maths Rats Rovers had a total attendance of 98 370 rats over twenty four matches. What was the average attendance per match?

8. A builder can lay 1 430 bricks in a day on average. How many could he lay in five and a half days at the same rate?

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Single Step Operations

Here are some problems written in words. They look quite long.

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1. A disco has 380 visitors and sells 1 050 drinks. What is the average number of drinks bought by each visitor?

2. I think of a number and divide it by six point two. The answer is forty nine point six. What was the number I thought of?

3. I am thinking of a number. It is a square number between two hundred and two hundred and fifty. What is the number?

4. A marble weighs 3.2g. How many marbles could be made from 1Kg of glass?

5. A packet contains twenty three sweets. How many packets could be filled with 2 500 sweets?

6. A plane holds 254 passengers. How many planes would be needed for 2 700 passengers?

7. The average height of an eight year old is 136cm. What would be the total height of twenty four pupils of average height?

8. A sheet of A4 paper weighs 4.97 grams. How much would a ream (500 sheets) weigh?

9. In a church, the seats are arranged in 52 rows of 34. Would a congregation of 1 700 people all be able to sit down? Explain your answer.

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Single Step Operations

1. Hip Junior School is recording a video about their school. The film will last for one hour and thirty minutes. If there are to be 26 activities covered in the video, what is the average length of time devoted to each activity? Write your answer to the nearest minute.

2. A thermometer shows a temperature of six point four degrees Celsius. If the temperature falls by nine point seven degrees, what is the new temperature?

3. A man has overdrawn his bank account by fifteen pound and seventy pence. He pays thirty pounds into the account. How much does he have in there now?

4. Which of these numbers divide into sixty a whole number of times:
7.5, 0.4, 1.935, 0.05, 8.55 ?

5. The length of a cuboid is 4.8 centimetres, its width is 2.5 centimetres and its volume is 198 cubic centimetres. What is its height?

6. The steam piston engine was invented in 1712. The first motor car was invented one hundred and seventy five years later. When was this?

7. What number is seven point six greater than two point four?

8. Which is less, three point four lots of eight or a half of fifty four?

9. How long is it from eight thirty a.m. to four fifteen p.m.?

10. What are all the factors of one hundred and fifty?

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Multi Step Operations

Here are some longer problems written in words. You need to work out more than one thing to get the answers.

Read them very carefully to see what you need to do.

Your teacher or parent will show you how to set out your answers.

1. Milk crates are five bottles long and four bottles wide. How many bottles can twenty of these crates hold?

2. 256 chocolates are put into 32 similar boxes. How many chocolates will seven of the boxes hold?

3. I think of a number and multiply it by eight and then add five. The answer is seventeen. What number did I think of?

4. There are sixty four bicycles in a cycle shop. Seven eighths of them are for adults. Thirty of the adults' bikes are racing bikes and four are mountain bikes. How many are other types of bike?

5. A necklace is made up of red and green beads. There are three red beads for every four green beads. If there are thirty red beads, how many green ones are there?

6. I call a number N. Four times N plus six is thirty four. What is N ?

7. I call a number X. Eight times X plus five is twelve. What is X ?

8. Thirteen boys and seventeen girls went to a sports day in parents' cars. If each car holds four pupils, how many cars were needed?

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Multi Step Operations

Here are some longer problems written in words. You need to work out more than one thing to get the answers.

Read them very carefully to see what you need to do.

Your teacher or parent will show you how to set out your answers.

1. A cinema has twenty four rows with fifty seats in each row and twelve rows with thirty seats in each. How many seats are there altogether?

2. 2 520 nails are put into forty similar boxes. How many nails will nine boxes hold?

3. I think of a number and divide it by seven and then subtract eight. The answer is negative seven point seven. What number did I think of?

4. There are twenty eight people at a party. Three quarters of them are women. One third of the women are wearing red. How many women are not wearing red?

5. A box of chocolates consists of milk and plain chocolates. For every six milk chocolates there are two plain ones. If there are eighteen milk chocolates in a box, how many plain ones are there?

6. I call a number K. Six times K plus eight is forty four. What is K ?

7. I call a number Z. Five times Z subtract nine is negative three. What is Z ?

8. Fourteen lined exercise books and seven plain exercise books are put into each box for sending to schools. If a school orders two hundred books altogether, how many boxes are needed?

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Answers

Page 3
1. 4 070 **2.** 5 107 **3.** 28.89 (accept 28.9 or 29) **4.** 780.6 (accept 781)
5. 607 **6.** 30 per class **7.** 4 098.75 (accept 4 099) **8.** 7 865

Page 4
1. 2.76 (2.8) **2.** 307.52 **3.** 225 **4.** 312 **5.** 108 **6.** 11
7. 3 264cm or 32.64m **8.** 2 485g or 2.485Kg **9.** Yes $52 \times 34 = 1\,768$

Page 5
1. 3 mins **2.** –3.3 °C **3.** £14.30 **4.** 7.5, 0.4, 0.05
5. 16.5 cm **6.** 1887 **7.** 10 **8.** Half of fifty four. **9.** 7hrs 45mins
10. 1, 2, 3, 5, 6, 10, 15, 25, 30, 50, 75, 150

Page 6
1. 400 **2.** 56 **3.** 1.5 **4.** 22 **5.** 40 **6.** 7 **7.** 0.875
8. 8

Page 7
1. 1 560 **2.** 567 **3.** 2.1 **4.** 14 **5.** 6 **6.** 6 **7.** 1.2 **8.** 10