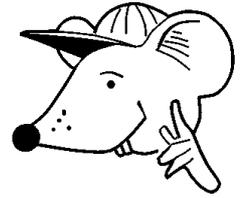




# MATHEMATICS



**N.S. Yr. 5 P.77**

**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:

**5 007 – 4995**      From 4 995 to 5 000 is 5. Plus another 7 gives a difference of 12.

**18 × 15**             $18 \times 10 = 180$ . Plus half as much again.  $180 + 90 = 270$ .

**500 × 60**            This is the same as  $5\,000 \times 6 = 30\,000$ .

**$\frac{1}{4}$  of 680**            Half of 680 is 340. Half of 340 is 170.

**157 ÷ 22**             $22 \times 7 = 154$  remainder 3. Answer is therefore  $7\frac{3}{22}$ .

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:

$$\begin{array}{r} 157 \\ \underline{154} \\ 3 \end{array}$$

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.  $8\,204 + 3\,108$   
d.  $6\,008 - 5\,996$   
g.  $4\,083 - 2\,059$   
j.  $205 \div 20$

b.  $406 - 398$   
e.  $6\,420 + 6\,428$   
h.  $200 \div 6$   
k.  $2\,000 - 1\,638$

c.  $30 \times 40$   
f.  $500 \times 60$   
i.  $385 + 170$   
l.  $4\,000 - 2\,498$

2. a.  $925 + 1\,070$   
d.  $43 \times 50$   
g.  $490 \div 3$   
j.  $6 \times 5\frac{1}{3}$

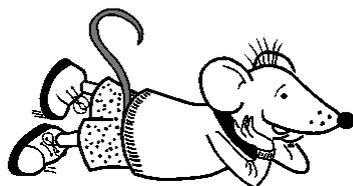
b.  $60 \times 30$   
e.  $98\frac{1}{2} + 3\frac{1}{2}$   
h.  $400 \times 50$   
k.  $400 + 16 - 23$

c.  $1\,010 - 980$   
f.  $800 - 673$   
i.  $800 - 480$   
l.  $780 \div 6$

3. a.  $8\,240 + 1\,029$   
d.  $89 \times 50$   
g.  $800 \times 30$   
j.  $800 - 26 + 28$

b.  $80 \times 40$   
e.  $2\,499 + 3\,504$   
h.  $420 \times 15$   
k.  $6\frac{1}{2} \times 12$

c.  $9\,400 - 9\,280$   
f.  $87 \div 5$   
i.  $(4\frac{1}{2} \times 6) + (36 \div 8)$   
l.  $3\,560 - 461$



Must be time to relax after that lot!!!!!!



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.  $6\,800 + 3\,400$   
d.  $7\,003 - 2\,991$   
g.  $3\,800 - 1\,110$   
j.  $408 \div 20$

b.  $903 - 599$   
e.  $7\,501 + 8\,202$   
h.  $700 \div 3$   
k.  $5\,000 - 2\,552$

c.  $60 \times 50$   
f.  $700 \times 40$   
i.  $913 + 328$   
l.  $7\,000 - 3\,722$

2. a.  $837 + 2\,020$   
d.  $21 \times 70$   
g.  $370 \div 5$   
j.  $9 \times 6\frac{1}{3}$

b.  $90 \times 20$   
e.  $67\frac{1}{2} + 8\frac{1}{2}$   
h.  $200 \times 90$   
k.  $900 + 23 - 17$

c.  $2\,030 - 970$   
f.  $500 - 461$   
i.  $700 - 360$   
l.  $450 \div 5$

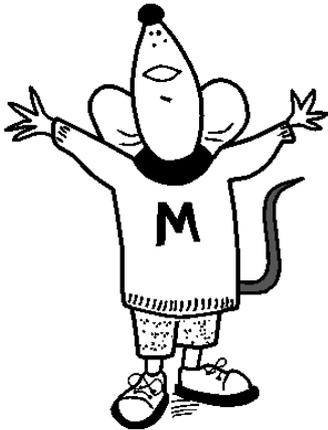
3. a.  $3\,320 + 3\,329$   
d.  $89 \times 50$   
g.  $400 \times 70$   
j.  $600 - 43 + 34$

b.  $20 \times 80$   
e.  $2\,499 + 3\,504$   
h.  $360 \times 15$   
k.  $8\frac{1}{2} \times 24$

c.  $6\,500 - 5\,600$   
f.  $84 \div 5$   
i.  $(2\frac{1}{2} \times 8) + (45 \div 9)$   
l.  $1\,700 - 582$

Time to get out on your stilts!





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. How many more is 5 600 than 4 990 ?
2. A statue weighs  $12\frac{1}{2}$  tonnes. How much would 8 statues weigh?
3. A ship can carry 3 500 passengers. It is one fifth full. How many passengers are on board?
4. Which is bigger: one eighth of 480 or one fifth of 310 ?
5. Peter had 380 stamps. John had one quarter as many as Peter.  
How many did John have?
6. In a Round Britain cycle race, the cyclists rode 4 560 km.  
What is one quarter of this distance?
7. One fifth of a number I am thinking of is 450. What is the number?
8. Forty children each have a bag of sweets. Each bag has thirty sweets.  
How many sweets are there altogether?
9. Jenny has 6 metres of cloth. She uses 355cm of it. How many centimetres does she have left?
10. Tom has £340 in a savings account. He spends one tenth of it.  
How much is left?



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. The police arrested 4 600 criminals last year. This was 570 more than last year. How many did they arrest last year?
2. Three ships are built. Each can carry 2 500 passengers. How many passengers can they carry altogether?
3. If a box of eggs holds twelve eggs, how many boxes will I need for 480 eggs?
4. A car park has 24 rows for cars with 40 cars in each row. How many cars can it hold altogether?
5. A company sold 3 400 packets of YumYum biscuits in one day. Each packet holds 20 biscuits. How many biscuits did they sell?
6. A CD costs £9.50. How much would 20 of these CDs cost?
7. Subtract 459 from 1 000.
8. A plastic toy uses 40 grams of plastic. How many toys can be made from 8kg of plastic.
9. A bucket can hold 22 litres of water. How many jugfulls can the bucket hold if each jug holds a quarter of a litre?
10. A supermarket buys 350 litres of orange each day. How much does it buy in 50 days?

## Answers

**Page 3**

1. a. 11 312   b. 8   c. 1 200   d. 12   e. 12 848   f. 30 000   g. 2 024  
h.  $33\frac{2}{6}$  or  $33\frac{1}{3}$    i. 555   j.  $10\frac{5}{20}$  or  $10\frac{1}{4}$    k. 362   l. 1 502
2. a. 1 995   b. 1 800   c. 30   d. 2 150   e. 102   f. 127   g.  $163\frac{1}{3}$   
h. 20 000   i. 320   j. 32   k. 393   l. 130
3. a. 9 269   b. 3 200   c. 120   d. 4 450   e. 6 003   f.  $17\frac{2}{5}$    g. 24 000  
h. 6 300   i.  $31\frac{1}{2}$    j. 802   k. 78   l. 3 099

**Page 4**

1. a. 10 200   b. 304   c. 3 000   d. 4 012   e. 15 703   f. 28 000   g. 2 690  
h.  $233\frac{1}{3}$    i. 1 241   j.  $20\frac{8}{20}$  or  $20\frac{2}{5}$    k. 2 448   l. 3 278
2. a. 2 857   b. 1 800   c. 1 060   d. 1 470   e. 76   f. 39   g. 74   h. 18 000  
i. 340   j. 57   k. 906   l. 90
3. a. 6 649   b. 1 600   c. 900   d. 4 450   e. 6 003   f.  $16\frac{4}{5}$    g. 28 000  
h. 5 400   i. 25   j. 591   k. 204   l. 1 118

**Page 5**

1. 610   2. 100 t   3. 700   4. 60 , 62. One fifth of 310 is bigger.  
5. 95   6. 1 140   7. 2 250   8. 1 200   9. 245   10. £306

**Page 6**

1. 4 030   2. 7 500   3. 40   4. 960   5. 68 000   6. £190  
7. 541   8. 200   9. 88   10. 17 500