Mathematics Enhancement Programme

TEACHING SUPPORT: Year 3

EXERCISES

The following exercises are taken from Year 3 Practice Books 3a and 3b. They illustrate more of the problem-solving questions rather than the routine ones. Do try these questions before looking at the solutions and suggested strategies.

1. Write the operations **without** brackets if possible so that the result is the same.

Do the calculations as a check.

a) $(2 + 8) \times 7$ = =

b) $(11 - 3) \times 9$ = =

c) $(21 + 14) \div 7$ = =

d) $(24 - 8) \div 4$ = =

e) $80 \div (12 - 4)$ = =

f) $72 \div (3 + 6)$ = =

(p18, Q3)

2. Fill in the missing numbers so that the equations are true, both horizontally and vertically.

	×		÷		= 4
×		÷		×	
	×		×		= 18
×		×		÷	
	×		÷		= 6
= 27		= 16		= 9	

(p19, Q4)

3. I thought of a number. I divided it by 7 and the result was 8, remainder 6.

What is the number I was thinking of?

Calculation:

Check: *Answer:*

(p20, Q4)

4. Which different 1-digit numbers could a, b and c be if $a + b + c = 14$ and $a \times b \times c = 84$?

(p35, Q5)

5. How many different results can you find? Use +, –, or × signs.

70	☐	10	☐	3 =	☐	70	☐	10	☐	3 =	☐
70	☐	10	☐	3 =	☐	70	☐	10	☐	3 =	☐
70	☐	10	☐	3 =	☐	70	☐	10	☐	3 =	☐
70	☐	10	☐	3 =	☐	70	☐	10	☐	3 =	☐
70	☐	10	☐	3 =	☐	70	☐	10	☐	3 =	☐

(p45, Q3)

6. Two different numbers can be **rounded** to 70 as the nearest whole ten.

a) Is it possible that both numbers are less than 70?

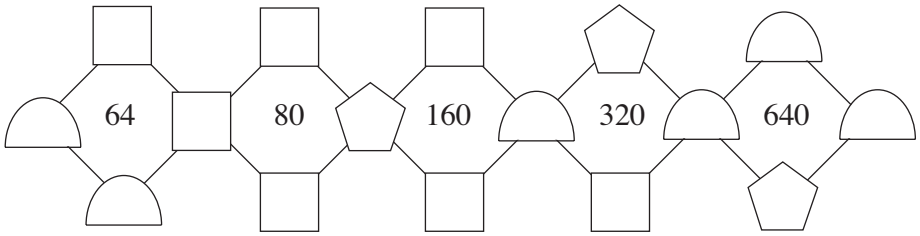
b) Is it possible that one of the numbers is 10 less than the other?

c) Is it possible that one of them has 5 and the other has 0 as the units digits?

d) Is it possible that both numbers are whole tens?

(p49, Q4)

7. The middle number is the **product** of the 4 numbers around it.



Fill in the missing numbers.

(p64, Q4)

8. Create as many different 3-digit numbers as you can from the digits 1, 2, 3 and 4.
Do not use a digit more than once in any number.

(p67, Q2)

9. Continue the sequences.

a) 1, 2, 4, 8, 16, . . .

b) 1, 4, 9, 16, 25, . . .

c) 0, 1, 1, 2, 3, 5, 8, . . .

d) 1, 3, 6, 10, 15, . . .

(p74, Q4)

10. Fill in the missing digits.

a)

i)

	_	_	_
+	1	2	4	3
1	5	6	8

ii)

	_	_	_
+	9	1	3
1	0	4	8

iii)

	5	3	_
+	_	_	1
_	3	4	0

iv)

	5	_	7
+	1	_	8	_
_	6	_	5

v)

	9	7	_
+	_	_	1
_	3	3	_

b) Write an addition which uses each of the digits from 0 to 9 once only.
Try out different solutions. Use your exercise books if you need to.

+	+	+	+

(p94, Q3)

11. Which is more? How many more? Write subtractions and inequalities.

a) The smallest 4-digit number compared with the greatest 3-digit number.

b) The smallest 4-digit number compared with the smallest 3-digit number.

c) The smallest 4-digit number compared with the smallest 2-digit number.

d) The greatest 3-digit whole ten compared with the greatest 3-digit hundred.

e) The smallest 4-digit hundred compared with the smallest 4-digit whole ten.

f) The smallest whole hundred compared with the smallest whole ten.

(p97, Q3)

12. Use every number on a dice only once in each subtraction, so that the subtraction makes sense and the difference is:

a) at least 300 b) the smallest possible c) between 200 and 300

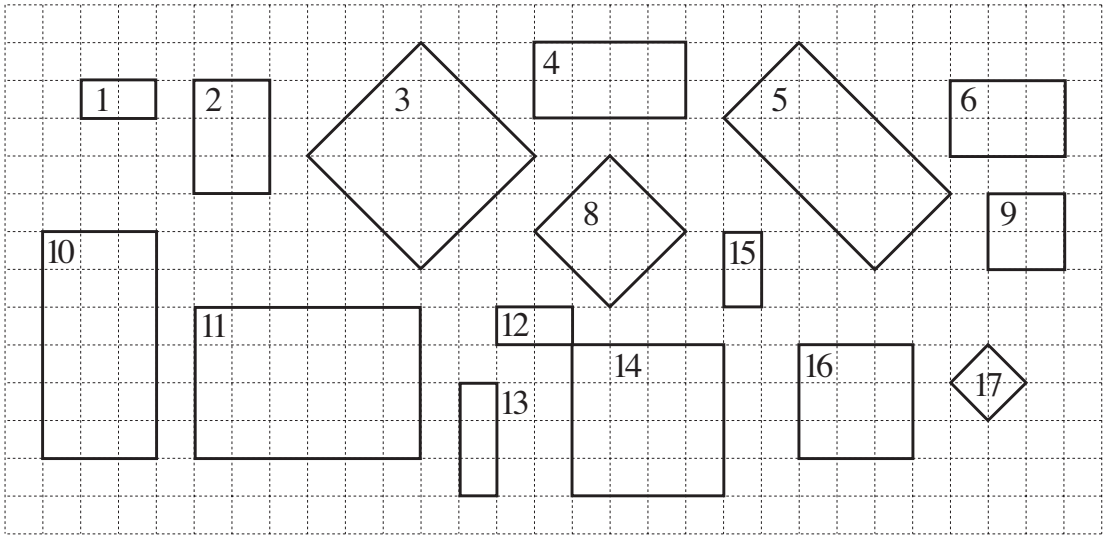
d) even e) the greatest possible f) divisible by 10

(p103, Q4)

13. Colour in the same colour shapes which are **similar** to

i) rectangle 1 ii) rectangle 2 iii) rectangle 3.

Use a different colour for each set of shapes.



(p114, Q1)

14. Write these numbers in the correct place in the diagrams.

0, 4, 13, 30, 72, 95, 100, 321, 679, 1000, 1006, 1027, 2000

a)

Even	Odd

b)

Whole tens	Not whole tens

c)

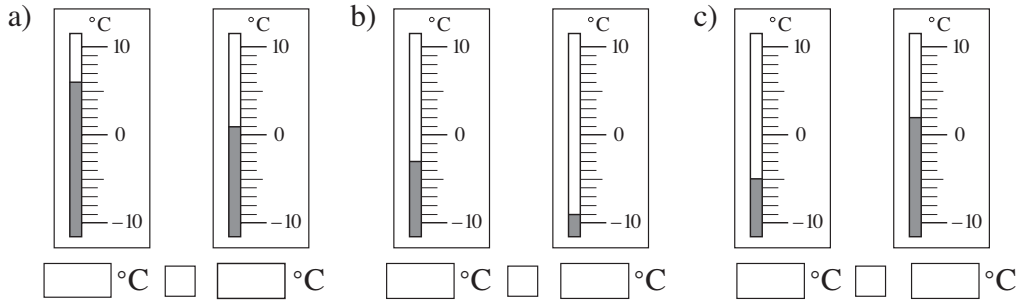
3-digit	Not 3-digit

d)

Whole hundreds	Not whole hundreds

(p126, Q3)

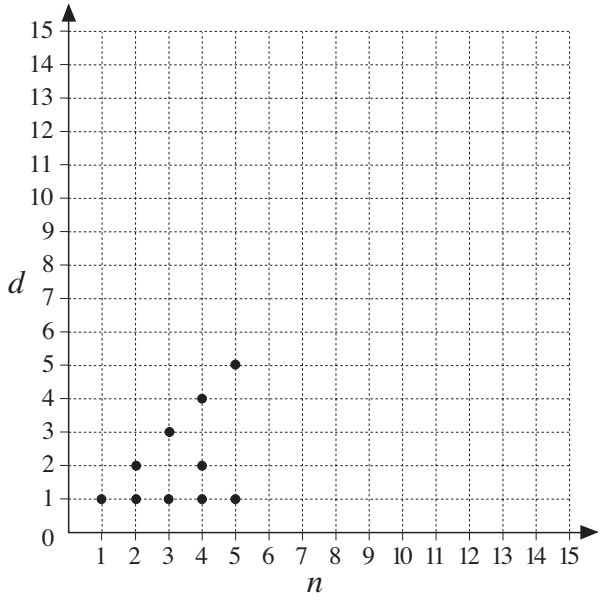
15. Write the temperature below the thermometers. Write in the missing sign.



(p128, Q1)

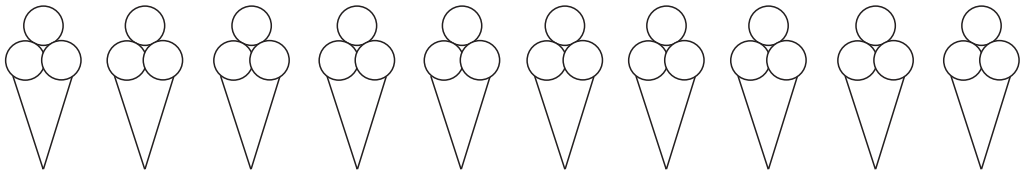
16. What is the rule? Complete the table and the graph.

n	*d*
1	1
2	1, 2
3	1, 3
4	1, 2, 4
5	1, 5
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	



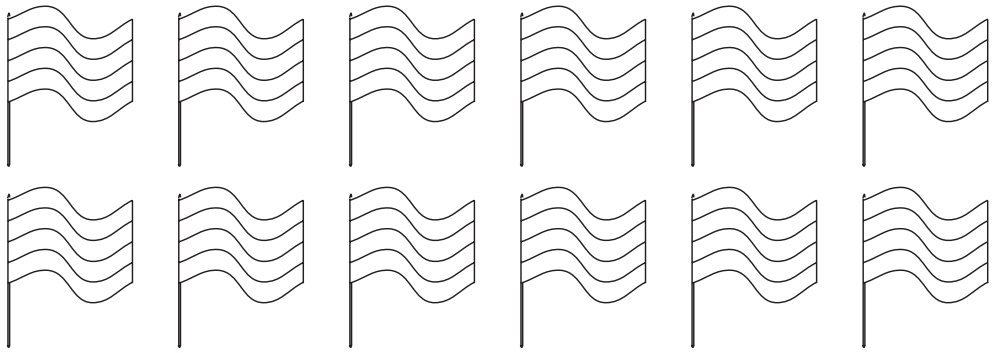
(p147, Q3)

17. How could a 3-scoop ice-cream be made from vanilla or strawberry or lemon?



(p154, Q3)

18. In how many different ways can you colour the flags *red*, *white*, *green* and *blue*?
Use every colour only once in each flag.



How many different ways are possible?

(p167, Q1)

19. a) List in increasing order all the 3-digit numbers which have digits 1 or 2.

b) List in decreasing order all the 2-digit numbers which have digits 1, 2 or 3.

(p170, Q3)

20. Make two 3-digit numbers using the numbers 0, 1, 3, 4, 5 and 8 so that:

a) their sum is the least possible, ☐ and ☐

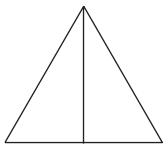
b) their sum is the greatest possible, ☐ and ☐

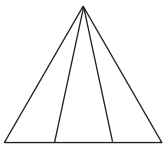
c) their difference is the least possible, ☐ and ☐

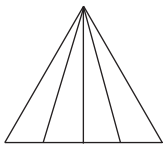
d) their difference is the greatest possible. ☐ and ☐

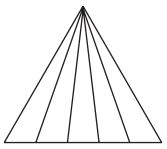
(p172, Q4)

21. How many triangles can you see in each diagram?

a) 

b) 

c) 

d) 

(p174, Q4)