1 Alex is making arrays using counters.
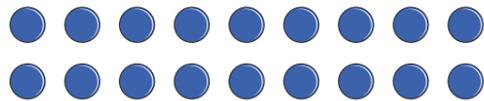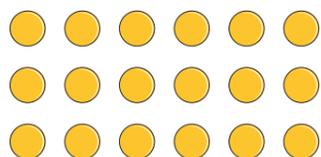
a) What calculation is represented in each array?

$\boxed{1} \times \boxed{18} = 18$

$\boxed{2} \times \boxed{9} = 18$

$\boxed{3} \times \boxed{6} = 18$

b) Use your answers from part a) to help you write all the factors of 18

1, 2, 3, 6, 9, 18

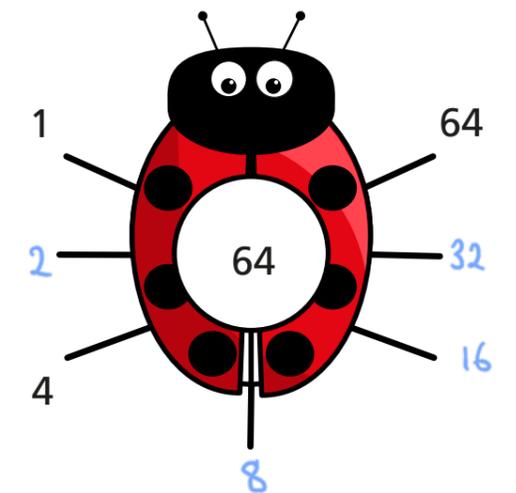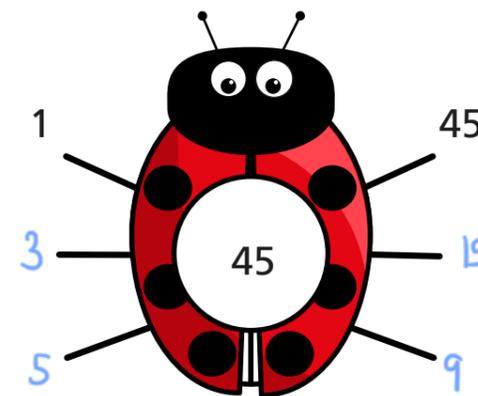**2** Use counters to make arrays and find the factor pairs for each number.

a) 12 1×12 2×6 3×4 1, 2, 3, 4, 6, 12

b) 15 1×15 3×5 1, 3, 5, 15

c) 24 1×24 2×12 3×8 4×6 1, 2, 3, 4, 6, 8, 12, 24

Which of the numbers has the most factor pairs?   24

3 Complete the factor bugs for 45 and 64

1   45
3   45   15
5   9

1   64
2   64   32
4   16
8

4 Find all the factor pairs for the number 72

The factor pairs of 72 are   1, 72,   2, 36,   3, 24,   4, 18,

6, 12,   8, 9

5 Are these statements true or false?

	True	False
8 and 2 are both factors of 10	☐	☑
5 and 50 are both factors of 50	☑	☐
25 has only three factors.	☑	☐
All the factors of 15 are odd.	☑	☐

Talk about your answers with a partner.

6

The bigger the number the more factor pairs it has.

Use examples to show that Dexter is wrong.

E.g.   4 has 3 factors   (1,2,4)

and 5 only has 2 (1,5)

7 Tommy is finding factors of 12 and 18

12 and 18 have the same number of factor pairs.

a) Is Tommy correct? _Yes_

Explain your answer.

They both have 3 factor pairs and so 6 factors

b) Find two other numbers with the same number of factor pairs.

E.g.   32   and 50

8 Class 4B is having a sports day.

There are 36 children in the class.
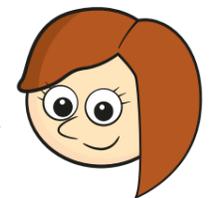
The children need to be in equal groups.

What group sizes are possible?

E.g.   36 groups of 1,   18 groups of 2   etc.

9 Rosie is investigating factor pairs.

6 is a perfect number because when you add its factors together, apart from itself, they equal 6

What is the next perfect number after 6?

28