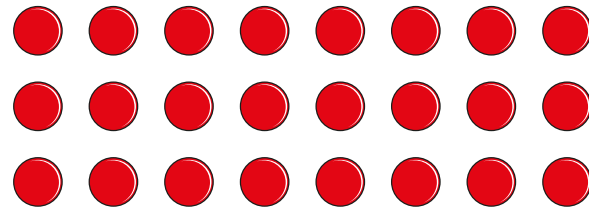# Understand and use factors

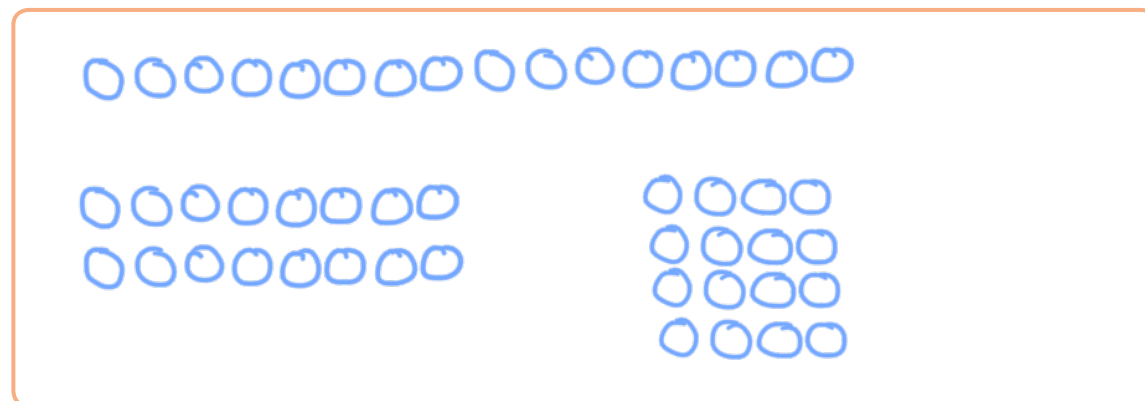**1** The array shows that 3 and 8 are factors of 24

a) Use counters to find other factors of 24

List your answers.

1, 2, 3, 4, 6, 8, 12, 24

b) Use counters to explain why 5 is not a factor of 24

Discuss your findings with a partner.

2 a) Draw all of the arrays that you can make using 16 counters.

b) Use your arrays to list all the factors of 16

1, 2, 4, 8, 16

3 a) Draw all of the arrays that you can make using 7 counters.

b) What does your answer to part a) tell you about the number 7?

It is a prime number.

4 Complete the factor pairs for 20

1 and 20   2 and 10   4 and 5

Are there any more? How do you know?

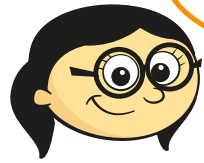**5** Find all the factors of these numbers.

a) 25

1, 5, 25

b) 18

1, 2, 3, 6, 9, 18

c) 30

1, 2, 3, 5, 6, 10, 15, 30

6

4.5 × 2 = 9, so 4.5 must be a factor of 9

Is Annie correct? __No__

Explain your reasoning.

7 Filip is finding the factors of 60

He finds the following factors by halving and doubling the numbers in the previous factor pair.
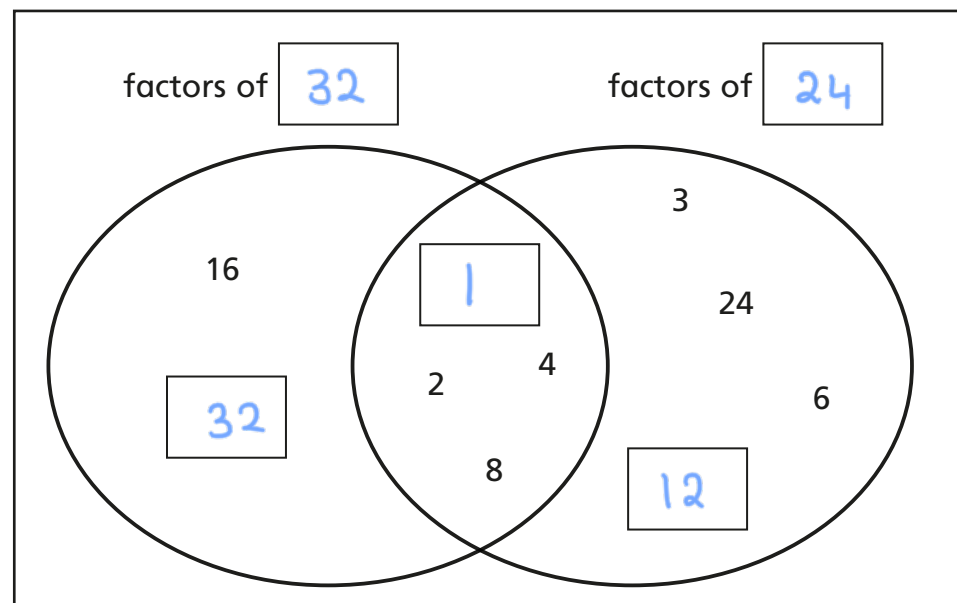
| 60 and 1 | 30 and 2 | 15 and 4 |

Filip thinks he has found all the factors of 60 because he can't halve 15

Do you agree with Filip? __No__

Explain why.

8 a) Complete the Venn diagram.

factors of **32**   factors of **24**

16   **1**

32   2   4   24

8   **12**   6   3

b) What are the common factors shown in the Venn diagram?

__1, 2, 4, 8__

c) What is the highest common factor shown in the Venn diagram? **8**

9 Find the common factors of these pairs of numbers.

State the highest common factor.

a) 15 and 35

The common factors of 15 and 35 are __1, 5__

The highest common factor is **5**

b) 100 and 40

The common factors of 100 and 40 are __1, 2, 4, 5, 10, 20__

The highest common factor is **20**

c) 48 and 32

The common factors of 48 and 32 are __1, 2, 4, 8, 16__

The highest common factor is **16**