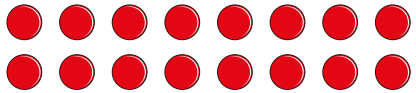
1 Alex arranges 16 counters in different ways.

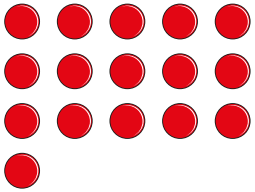
She is trying to work out some factors.



a) Use the array to complete the sentence.

☐ and ☐ are both factors of 16

b) Alex rearranges the counters.



How does this show that 5 is not a factor of 16?

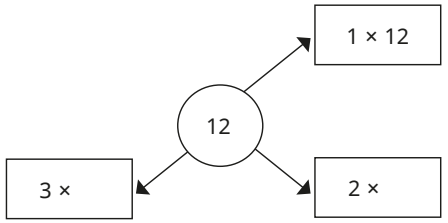
2 Use 20 counters.

a) Show that 2 and 10 are factors of 20

b) Rearrange the counters to show why 4 and 5 are also factors of 20

c) Show why 6 is not a factor of 20

3 **a)** Complete the diagram to show the pairs of numbers that multiply to make 12



List all the factors of 12

b) Draw a similar diagram to show the pairs of numbers that multiply to make 24

List all the factors of 24

4 List all the factors of 32

How can you check that you have found all the factors?

5 **a)** Which of the numbers are factors of 30?

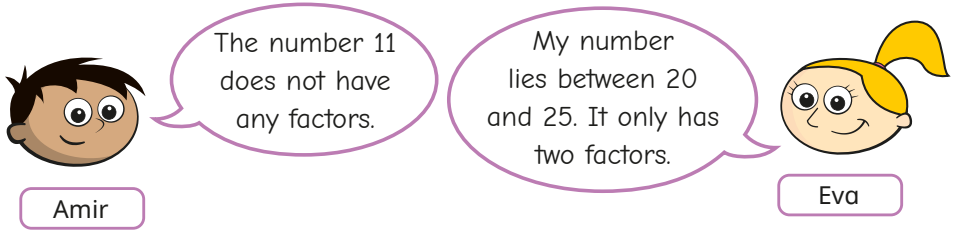
5 **15** **25** **3** **30** **4** **2** **12** **60** **0**

b) These numbers are all factors of a 2-digit number.

1	3	5	9

What could the 2-digit number be?

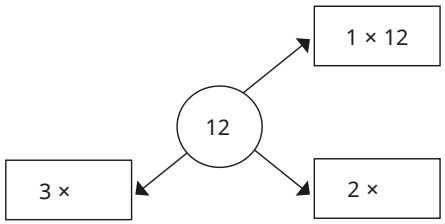
6 Amir and Eva are describing numbers using factors.



a) Is Amir correct? Explain your answer.

b) What number is Eva thinking of?

3 **a)** Complete the diagram to show the pairs of numbers that multiply to make 12



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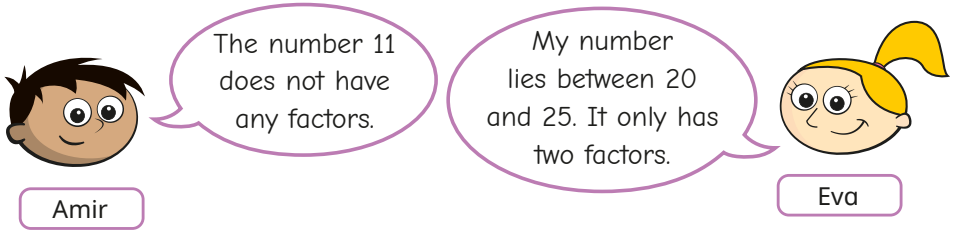


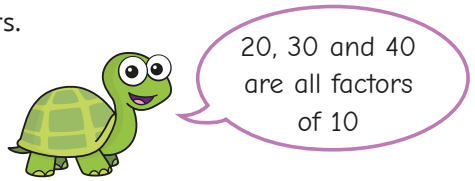
a) Is Amir correct? Explain your answer.

b) What number is Eva thinking of?

7 Which number has more factors?

64	48

8 Tiny is finding factors.



Explain the mistake that Tiny has made.

9 How do you know that the statements are true?

a) 5 is a factor of 195, but not a factor of 196

b) 3 is a factor of 177, but not a factor of 178

c) 20 is a factor of 180, but not a factor of 190

10 Is the statement always, sometimes or never true?

Numbers have an even number of factors, because factors come in factor pairs.