Dividing numbers up to 4 digits by a 2-digit number 6

Discover

1 a) The race is split into 25 equal stages. How long is each stage?

b) How would you deal with a remainder to get an accurate answer in this situation?

Share

a) The race is 1,235 kilometres long. It is split into 25 equal stages.

Divide 1,235 by 25.

	40	9	
25	1,000	225	10

$$\begin{array}{r} \ 4\ 9\ \text{r}\ 10 \\ 29\overline{)\ 1\ 2\ 3\ 5} \\ -\ 1\ 0\ 0\ 0 \\ \hline \ 2\ 3\ 5 \\ -\ 2\ 2\ 5 \\ \hline \ 1\ 0 \end{array}$$

First, I subtracted 40 lots of 25 and then subtracted 9 lots of 25. There was a remainder of 10.

1,235 ÷ 25 = 49 remainder 10.

Each stage is 49 km long with 10 km remaining.

b) To get a more accurate answer, divide the remainder between all 25 stages, so that it is also divided by 25.

This can then be written as a fraction $\frac{10}{25}$

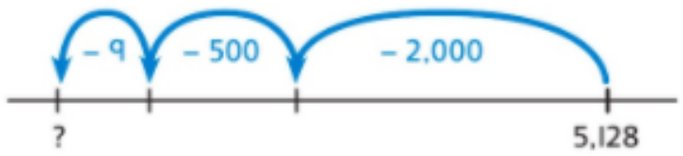
$\frac{10}{25}$ simplifies to $\frac{2}{5}$

Each stage is 49 km plus $\frac{2}{5}$ of a km.

I thought the remainder could be an extra stage at the end, but then the stages would not be equal.

End of unit check

1 Which calculation matches this number line?



A

Th	H	T	O
~~4~~	~~10~~	~~11~~	18
	2	5	9
4	8	6	9

B

Th	H	T	O
~~4~~	11	~~1~~	18
2	5	0	9
2	6	1	9

C

Th	H	T	O
1,000 1,000 1,000 ~~1,000~~ ~~1,000~~	100	10 10	1 1 1 1 1 1 1

D

Th	H	T	O
1,000 1,000 1,000 1,000 1,000	100	10 10	1 1 1 1 1 1 1
1,000 1,000	100 100 100 100 100		1 1 1 1 1 1 1

= 7,637

2 Which of these calculations is not correct?

A 3,065 × 25 = 76,625

B 3,605 × 25 = 90,125

C 3,650 × 25 = 91,250

D 3,506 × 25 = 87,655

3 Which of these divisions has an error?

A

```
15 | 7 5 4 5
   – 6 0 0 0   400
     1 5 4 5
   – 1 5 0 0   100
         4 5
   –     4 5     3
         0     503
```

B

```
          1 8 3
25 | 4 5 7 5
   – 2 5 0 0
     2 0 7 5
   – 2 0 0 0
         7 5
```

C 4,575 ÷ 15

4,575 ÷ 3 = 1,525

1,525 ÷ 5 = 305

D 5,475 ÷ 15

5,475 ÷ 5 = 1,803

1,803 ÷ 3 = 601

4 An aquarium has 2,010 g of fish food. It uses 20 g of food per day.
How many whole days will the fish food last for?

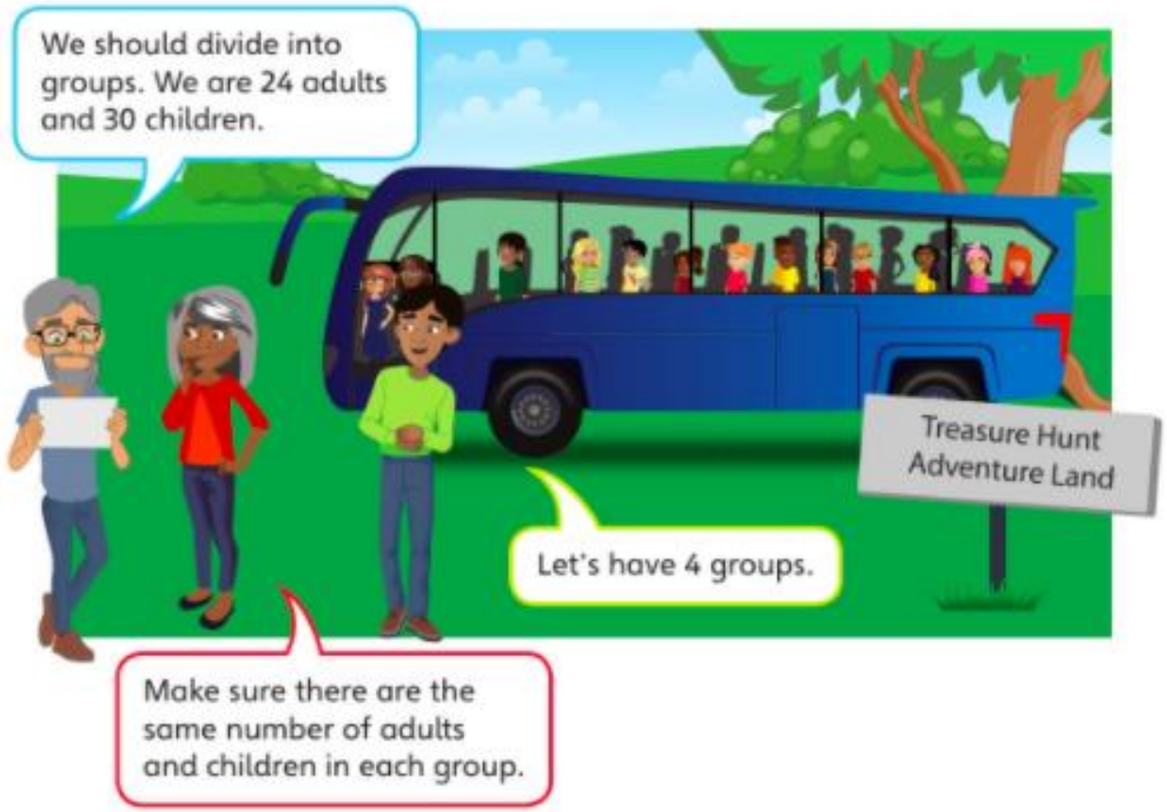
A 10 days **B** 101 days **C** 100 days **D** 201 days

5 275 × 21 = ☐ × 35

→ Practice book 6A p59

Common factors

Discover



1 a) Can the adults and children split equally into 4 groups?

b) What are the equal groups the adults and children could split into?

Share

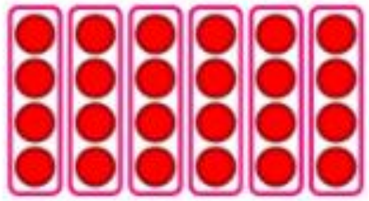
a) The adults can divide equally into 4 groups, because 4 is a **factor** of 24.

The children cannot divide equally into 4 groups, because 4 is **not** a factor of 30.

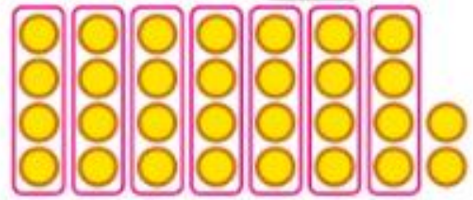
The adults and children cannot split equally into 4 groups.

A factor is a number that divides a number exactly.

4 is a factor of 24, because 24 ÷ 4 = 6 with no remainder.



24 ÷ 4 = 6



30 ÷ 4 = 7 remainder 2

b) Find the factors of both 24 and 30.

1 × 24 = 24	1 × 30 = 30
2 × 12 = 24	2 × 15 = 30
3 × 8 = 24	3 × 10 = 30
4 × 6 = 24	5 × 6 = 30

Factors of 24 are 1, 2, 3, 4, 6, 8, 12 and 24.

Factors of 30 are 1, 2, 3, 5, 6, 10, 15 and 30.

I can use multiplication facts to find the factors of a number. Then I will find the factors that are in both lists.

1, 2, 3 and 6 are called common factors of 24 and 30. They are in **both** lists.

The adults and children could split into 1, 2, 3 or 6 equal groups.

Common multiples

Discover

1 a) On which days will Lexi need to change the bedding and give carrots?

b) On which days will Lexi need to do all three jobs?

Share

a) Flopsy gets a carrot on days that are a multiple of 3.

1	2	(3)	4	5	(6)	7	8	(9)	10
11	(12)	13	14	(15)	16	17	(18)	19	20
(21)	22	23	(24)	25	26	(27)	28	29	(30)

Lexi should change the bedding on every multiple of 5.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

Both jobs need to be done on each day that is a multiple of **both** 3 and 5.

1	2	(3)	4	5	(6)	7	8	(9)	10
11	(12)	13	14	(15)	16	17	(18)	19	20
(21)	22	23	(24)	25	26	(27)	28	29	(30)

I can see that 15 and 30 are common multiples of 3 and 5.

Lexi will need to do both jobs on day 15 and day 30.

b) 30 is a multiple of 2, 3 and 5.

1	2	(3)	4	(5)	(6)	7	8	(9)	10
11	(12)	13	14	(15)	16	17	(18)	19	20
(21)	22	23	(24)	25	26	(27)	28	29	(30)

I marked the multiples like this:
multiples of 2 □
multiples of 3 ○
multiples of 5 ▭

Lexi will need to do all three jobs on day 30.

Recognising prime numbers up to 100

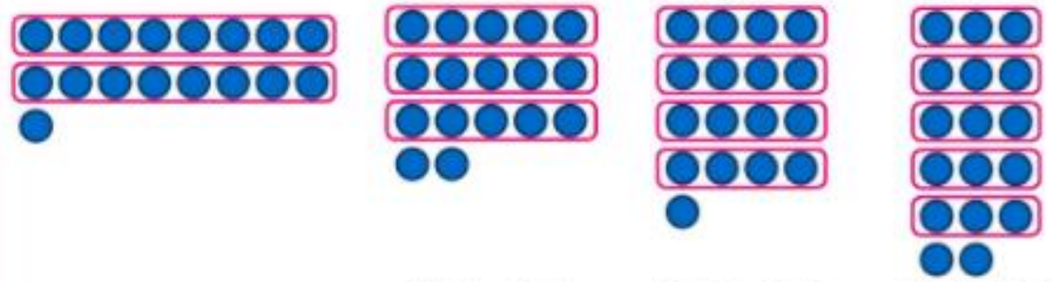
Discover

1 a) Can Isla make more arrays if she uses 17 counters?

b) How many arrays can you make using 13 or 19 counters?

Share

a) If Isla tries to make an array using 17 counters with 2 rows or 3 rows or 4 rows, the rows cannot be equal.



$17 \div 2 = 8$ r 1 $\quad$ $17 \div 3 = 5$ r 2 $\quad$ $17 \div 4 = 4$ r 1 $\quad$ $17 \div 5 = 3$ r 2

Only two different arrays are possible using 17 counters:

1 row of 17 because $17 \div 1 = 17$

17 rows of 1 because $17 \div 17 = 1$

Isla cannot make more arrays using Aki's counter.

b) 13 and 19 are both prime numbers, so you can only make two arrays for each.