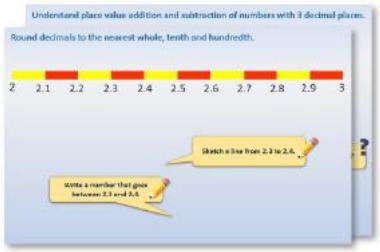
Year 6: Week 2, Day 5
Short division in problems

Each day covers one maths topic. It should take you about 1 hour or just a little more.

1. Start by reading through the **Learning Reminders**.
   They come from our *PowerPoint* slides.



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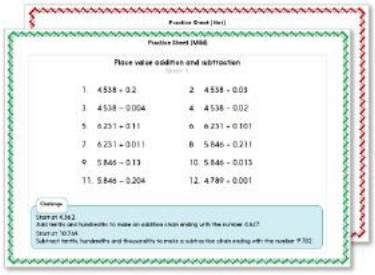
2. Tackle the questions on the **Practice Sheet**.
   There might be a choice of either Mild (easier) or Hot (harder)!
   Check the answers.



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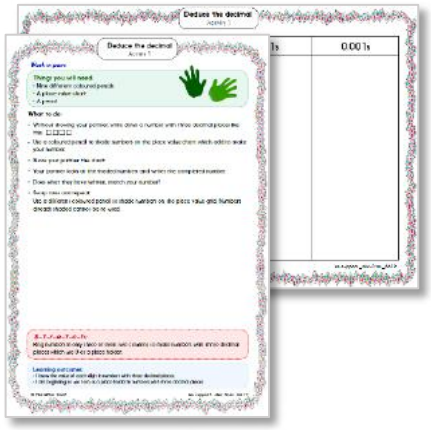
3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**



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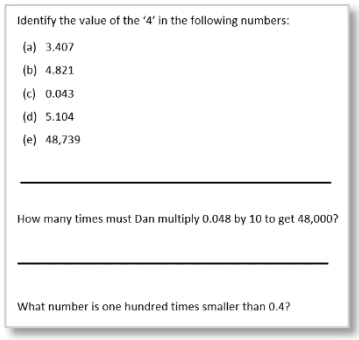
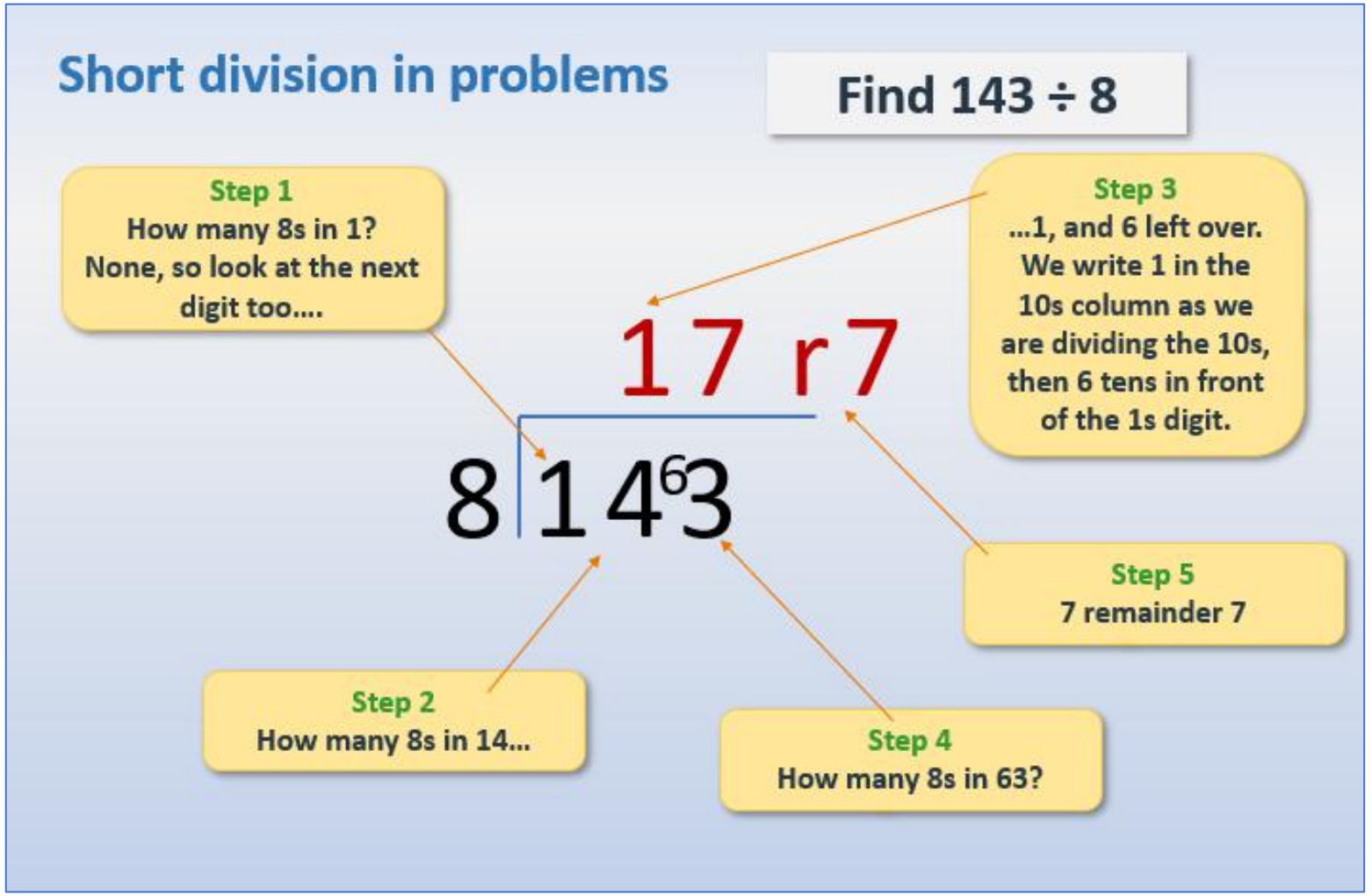
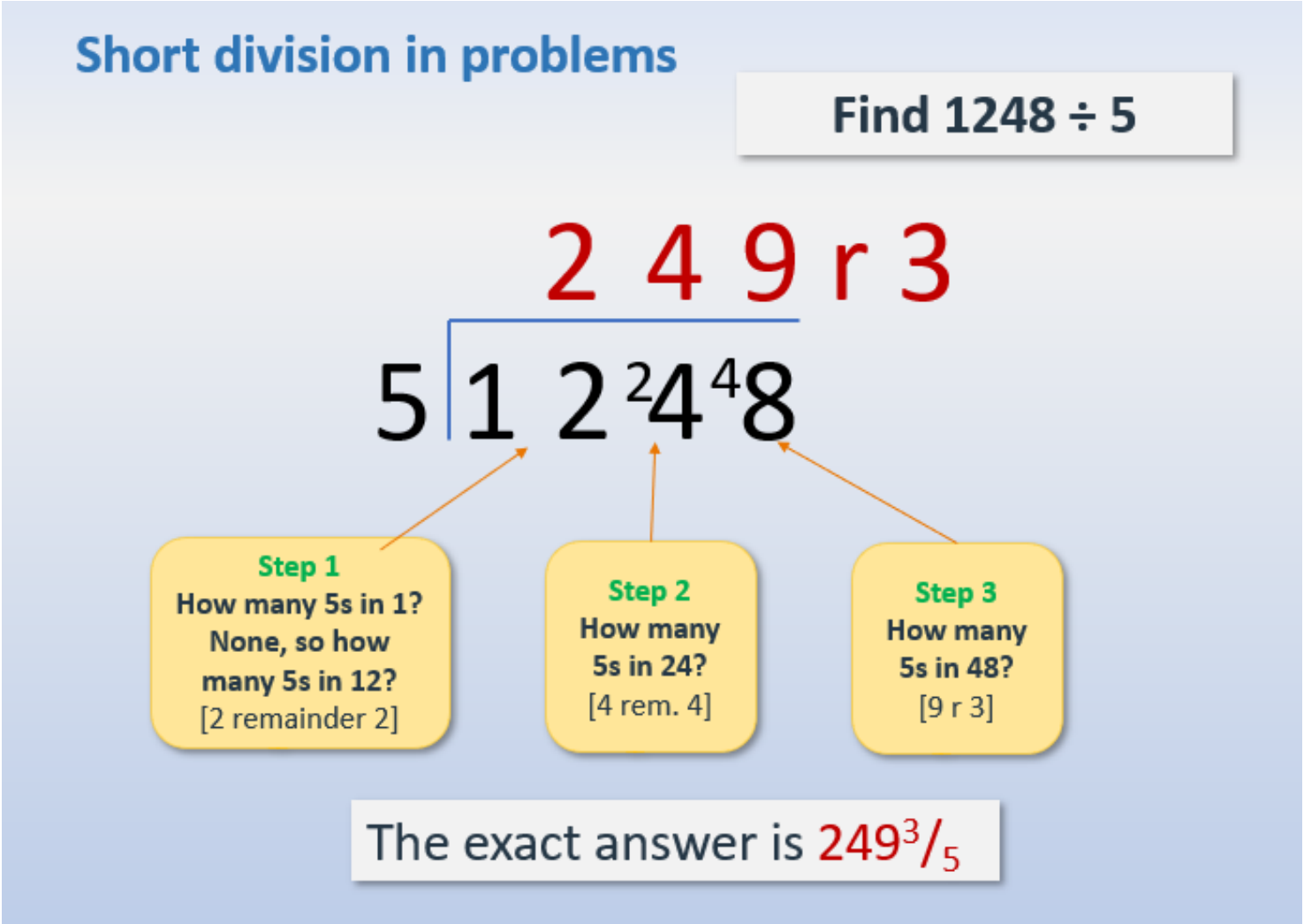
4. Have I mastered the topic? A few questions to **Check your understanding**.
   Fold the page to hide the answers!



Learning Reminders



Learning Reminders



Learning Reminders

Short division in problems

1. **Sarah is taking free-range chicks to sell at the farmers' market. She can put 12 chicks in each cage. She has 160 chicks. How many cages does she need to take all the chicks?**
   Find 160 ÷ 12 = 13 r 4
   = 13 full cages, with 4 chicks left over. So, she'll need 14 cages to carry all the chicks.

2. **She's also taking eggs. She has 257. How many full boxes of six eggs can she take?**
   Find 257 ÷ 6 = 42 r 5
   = 42 full boxes, with 5 eggs left over. So, she'll be able to take 42 full boxes.

3. **A hotel chef needs 78 eggs to make desserts for this evening. How many boxes of 12 is this?**
   Find 78 ÷ 16 = 6 r 6
   = 6 full boxes, with 6 eggs left over. So, this is 6 full boxes.

4. **Six children are sharing a box of 20 fish fingers. How many can they have each?**
   Find 20 ÷ 6 = 3 r 2
   = 3 fish fingers each with 2 left over. They could share these, to have $3^{2}/_{6}$ ($3^{1}/_{3}$) each.

Practice Sheet Mild

Short division practice

Find the exact answer to each division, writing your answer as a decimal.

1. $937 \div 4$
2. $754 \div 4$
3. $342 \div 4$
4. $235 \div 4$
5. $631 \div 5$
6. $727 \div 5$
7. $364 \div 5$
8. $128 \div 5$

Challenge

Arrange the digits 2, 3, 4 and 5 to give a division of this form:

$\square\square\square \div \square$

The answer must include the fraction $\frac{1}{2}$ or decimal part 0.5. Find at least two ways of doing this.

Practice Sheet Mild

Division word problems

1. The cafe have 51 sausages left. If they need 4 sausages per portion, how many portions can they serve?

2. The cafe has served 70 slices of chocolate cake today. If each whole cake was cut into 6 slices, how many cakes did they cut up?

3. Exactly how many weeks are in 31 days? Write a fraction as part of your answer.

4. 80 are travelling to an athletics event. Each minibus will take 12 athletes. How many minibuses are needed?

5. There are 72 children in Upper KS2. There are 9 people in a rounders' team. If all children wanted to play, how many rounders teams could be made? How many reserves would there be?

6. Lucy is walking 62 miles over 4 days. If she walks the same distance each day, how far will she walk each day?

7. A group of 5 friends go out for a celebration meal. The bill comes to £61. How much does the meal cost per person?

Practice Sheet Hot

Short division practice

Find the exact answer to each division, writing your answer as a decimal.

1. $9237 \div 4$
2. $5754 \div 4$
3. $6235 \div 4$
4. $8356 \div 5$
5. $7782 \div 5$
6. $3484 \div 5$
7. $4577 \div 8$
8. $9651 \div 8$
9. $9734 \div 8$

Challenge

Arrange the digits 2, 3, 4 and 5 to give a division of this form:

The answer must include the fraction $\frac{1}{2}$ or decimal part 0.5. How many ways of doing this are there? Can you be certain you have found them all?

Practice Sheet Hot

Division word problems

1. The cafe have 195 sausages left. If they need 4 sausages per portion, how many portions can they serve?

2. The cafe has served 85 slices of chocolate cake today. If each whole cake was cut into 6 slices, how many cakes did they cut up?

3. Exactly how many weeks are in 365 days? Write a fraction as part of your answer.

4. 160 are travelling to an athletics event. Each minibus will take 12 athletes. How many minibuses are needed?

5. There are 113 children in Upper KS2. There are 9 people in a rounders' team. If all children wanted to play, how many rounders teams could be made? How many reserves would there be?

6. Lucy is walking 186 miles over 8 days. If she walks the same distance each day, how far will she walk each day?

7. A group of 5 friends go out for a celebration meal. The bill comes to £82. How much does the meal cost per person?

Practice Sheets Answers

Short division practice (mild)

1. 937 ÷ 4 = 234.25
2. 754 ÷ 4 = 188.5
3. 342 ÷ 4 = 85.5
4. 235 ÷ 4 = 58.75
5. 631 ÷ 5 = 126.2
6. 727 ÷ 5 = 145.4
7. 364 ÷ 5 = 72.8
8. 128 ÷ 5 = 25.6

Challenge

There are are four possibilities 345 ÷ 2, 435 ÷ 2, 453 ÷ 2, 543 ÷ 2.
None of the possibilities where 4 is the divisor give an answer with a remainder of 2.

Division word problems (mild)

1. 51 ÷ 4 = 12 r3 — They can serve 12 portions
2. 70 ÷ 6 = 11 r4 — They cut up 12 cakes
3. 31 ÷ 7 = $4\frac{3}{7}$ — There are $4\frac{3}{7}$ weeks in 31 days
4. 80 ÷ 12 = 6 r8 — 7 minibuses are needed
5. 72 ÷ 9 = 8 — 8 rounders' teams could be made; There would be no reserves
6. 62 ÷ 4 = $15\frac{1}{2}$ — Lucy will walk $15\frac{1}{2}$ miles each day
7. £61 ÷ 5 = £12.20 — The meal costs £12.20 per person

Short division practice (hot)

1. 9237 ÷ 4 = 2309.25
2. 5754 ÷ 4 = 1438.5
3. 6235 ÷ 4 = 1558.75
4. 8356 ÷ 5 = 1671.2
5. 7782 ÷ 5 = 1556.4
6. 3484 ÷ 5 = 696.8
7. 4577 ÷ 8 = 572.125
8. 9651 ÷ 8 = 1206.375
9. 9734 ÷ 8 = 1216.75

Challenge

There are are four possibilities 345 ÷ 2, 435 ÷ 2, 453 ÷ 2, 543 ÷ 2.
None of the possibilities where 4 is the divisor give an answer with a remainder of 2.

Division word problems (hot)

1. 195 ÷ 4 = 48 r3 — They can serve 48 portions
2. 85 ÷ 6 = 14 r1 — They cut up 15 cakes
3. 365 ÷ 7 = $52\frac{1}{7}$ — There are $52\frac{1}{7}$ weeks in 365 days
4. 160 ÷ 12 = 13 r4 — 14 minibuses are needed
5. 113 ÷ 9 = 12 r5 — 12 rounders' teams could be made; There would be 5 reserves
6. 186 ÷ 8 = $23\frac{1}{4}$ — Lucy will walk $23\frac{1}{4}$ miles each day
7. £82 ÷ 5 = £16.40 — The meal costs £16.40 per person

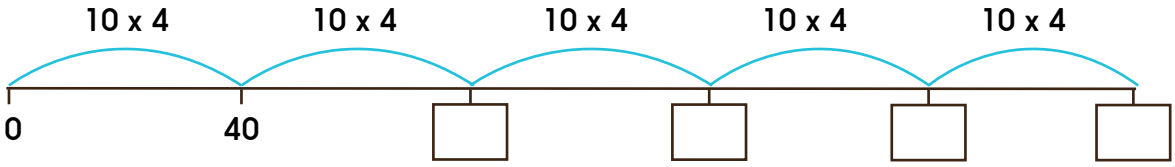
A Bit Stuck?
Chunky jumps

Work in pairs

Things you will need:
- A pencil

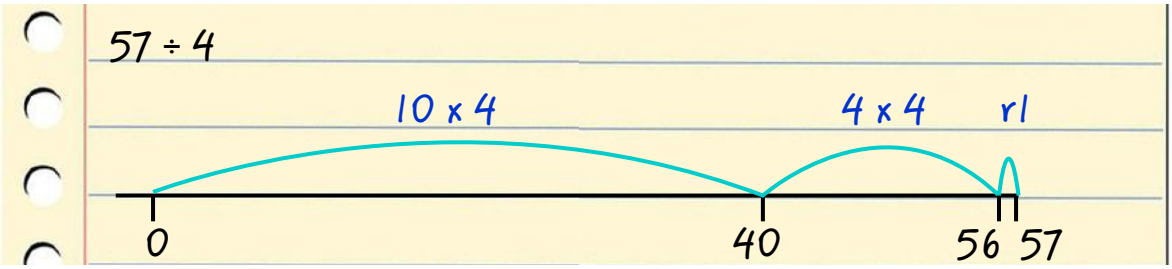
What to do:

- Work out the answer to 10 x 4, 20 x 4, 30 x 4, 40 x 4 and 50 x 4.
- Write the answers under these chunky jumps.

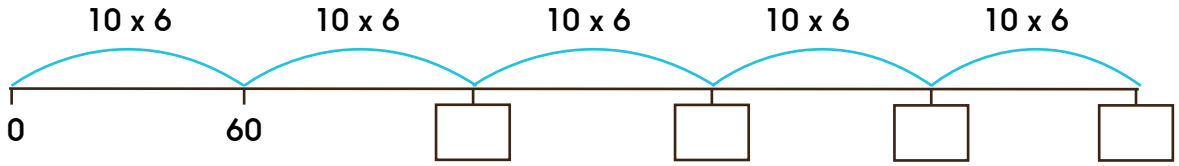


- Now use what you have done to work out the answers to at least three of these divisions:

57 ÷ 4 129 ÷ 4 95 ÷ 41 144 ÷ 4 1 173 ÷ 4



- Work out the answer to 10 x 6, 20 x 6, 30 x 6, 40 x 6 and 50 x 6.
- Write the answers under these chunky jumps.



- Now use what you have done to work out the answers to at least three of these divisions:

129 ÷ 6 97 ÷ 6 190 ÷ 6 252 ÷ 46 160 ÷ 6

S-t-r-e-t-c-h:

Use chunking to work out 134 ÷ 5 and 213 ÷ 5. What multiplication facts could you list to help?

Learning outcomes:
- I can use chunking to divide, using lists of multiples of 10 of the divisor to help.
- I am beginning to write my own lists of multiples to help.

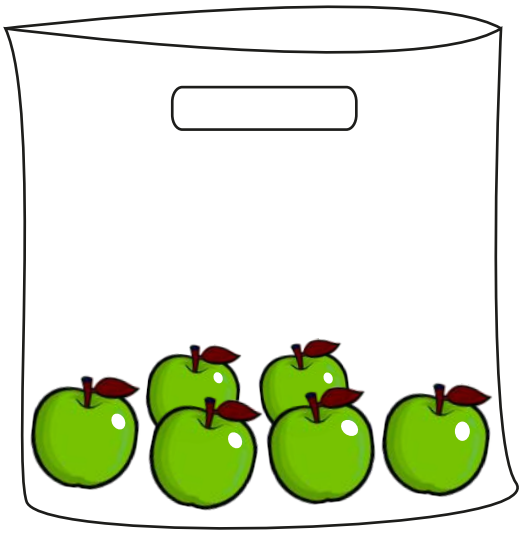
A Bit Stuck?
Toffee apples

Work in pairs

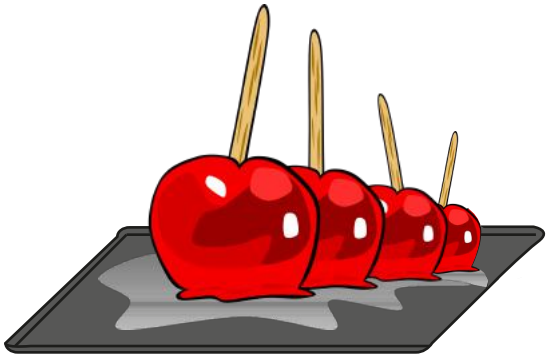
Things you will need:
- A pencil

What to do:

- Choose a word problem. Discuss it together. Work out the answer to the division. Now answer the question in the word problem.
- Repeat with a new problem.
- How many can you work out before the end of the session?



1 bag = 6 apples



1 tray = 4 toffee apples

S-t-r-e-t-c-h:

Think of at least two numbers of apples more than 100 that Becky could sell in trays of 4 where no apples would be left over.

Learning outcomes:

- I can use chunking to divide (answers less than 60).
- I am beginning to decide whether to round up or down to answer a division word problem.

A Bit Stuck?
Toffee apples

Becky buys apples in bags of 6.
Becky packs toffee apples in trays of 4.

Becky has an order for 100 toffee apples. How many bags of apples does she need to buy?	Becky has an order for 140 toffee apples. How many bags of apples does she need to buy?
Becky has made 150 toffee apples. How many trays does she need?	Becky has made 175 toffee apples. How many trays does she need?
Becky has made 130 toffee apples. How many trays does she need?	Becky has made 86 toffee apples. How many apples will she have left over?
Becky has an order for 200 toffee apples. How many bags of apples does she need to buy?	Becky has an order for 135 toffee apples. How many spare apples will she have?

Check your understanding

Questions

Divide 3666 by 3, 4, 5, 6 and 8 and write exact answers with a fraction part as necessary.

Write a division of a 3-digit number by 6 where the answer contains the fraction $^1/_6$.

Write a similar division where the answer contains the fraction $^5/_6$.

A 452cm length of string is divided into 8 equal sections, how long will each section be?

Fold here to hide answers:

Check your understanding

Answers

Divide 3666 by 3, 4, 5, 6 and 8 and write exact answers with a fraction part as necessary.

3666 ÷ 3 = 1222
3666 ÷ 4 = $916^1/_2$
3666 ÷ 5 = $733^1/_5$
3666 ÷ 6 = 611
3666 ÷ 8 = $458^1/_4$
Can you predict which will have remainders (using knowledge of tests for divisibility) and what those remainders may/may not be.

Write a division of a 3-digit number by 6 where the answer contains the fraction $^1/_6$.
Various solutions to this… Use a calculator to check yours. Note that the number being divided will be 1 more than any multiple of 6, e.g. 643 will definitely give a remainder of 1 (and the fraction $^1/_6$).

Write a similar division where the answer contains the fraction $^5/_6$.
Various solutions to this… Use a calculator to check yours. This time the number will be 1 less than a multiple of 6, e.g. 671.

A 452cm length of string is divided into 8 equal sections, how long will each section be? 56.5cm
Did you remember to convert your answer of 56r4 / $56^4/_8$ / $56^1/_2$ into cm?