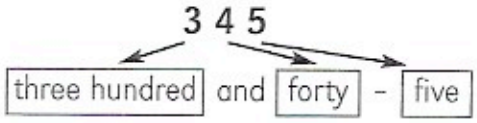
Rachel

1. Know your place

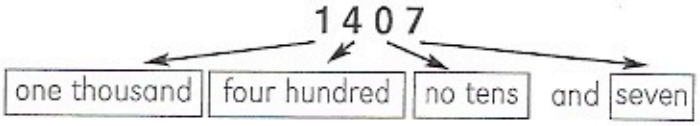
skillbuild

Understand place value.

The position of a digit in a number signifies its *value*. It is important that you know the value of each digit in a number, wherever it appears.



The digit zero has a value too.



1. Look at how the two numbers are written in this table. Do the same for the other numbers.

Number	Thousands	Hundreds	Tens	Units
345	0	3	4	5
1407	1	4	0	7
10				
215				
308				
1045				
321				

2. Now fill in the missing gaps in this table.

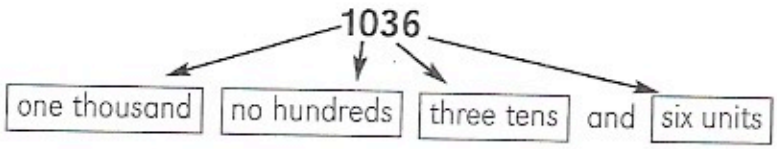
Number	Thousands	Hundreds	Tens	Units
25				
762				
7001				
			four	nine
	three	seven	nine	zero
	two	zero	four	five
	zero	nine	eight	one
	three	zero	six	zero
	one	five	zero	zero
two				
thirty				
one hundred and six				
two hundred and seven				
one thousand and twelve				
two thousand and two				

2. Place value 1

skillbuild

Understand place value.

Remember that the position of a digit in a number signifies its value. For example:



For each of these numbers write down the value of each digit. One has been done for you.

1. 45 Four tens five units
2. 718
3. 109
4. 1076
5. 1550
6. 860
7. 20
8. 164
9. 1842
10. 1001

3. Place value 2

skillbuild

Understand that the position of a digit signifies its value.

Numbers can be rearranged to show the value of the digits.
Look at these examples.

$12 = 10 + 2$

The number 12 is made up of the components 10 and 2.

$25 = 20 + 5$

$146 = 100 + 40 + 6$

Write the components of these numbers.

1. 39 _____
2. 120 _____
3. 76 _____
4. 603 _____
5. 586 _____
6. 1987 _____
7. 1726 _____
8. 1090 _____

4. Rounding numbers 1

skillbuild

Round numbers to the nearest 10 or 100.

Sometimes it can be useful to round numbers up or down to the nearest 10 or 100. It is a useful skill to use when shopping to make sure you have enough money to pay! You are going to use rounding skills to answer the questions on Worksheet 5.

0 1 **2** 3 4 5 6 7 8 **9** 10

The number 2 is nearer to the 0 so would be rounded (down) to zero, but the number 9 is nearer to 10 and so would be rounded (up) to 10.

20 21 **22** 23 24 25 26 27 **28** 29 40

The number 22 is nearer to the 20 so would be rounded (down) to 20, but the number 28 is nearer to 30 and so would be rounded (up) to 30.

Look at how these numbers have been rounded to the nearest 10.

3	is rounded to	0
11	is rounded to	10
19	is rounded to	20
48	is rounded to	50
61	is rounded to	60
119	is rounded to	120
211	is rounded to	210

The following numbers have all been rounded to the nearest 100.

99	is rounded to	100
130	is rounded to	100
295	is rounded to	300
521	is rounded to	500
789	is rounded to	800
905	is rounded to	900

5. Rounding numbers 2

skillbuild

Round numbers to the nearest 10 or 100.

1. Use the skills you learned on Worksheet 4 to round these numbers to the nearest 10. If the unit ends in 5, round up to the nearest 10.

Number	Nearest 10
12	
29	
32	
48	
67	
101	
298	
325	
545	
672	
812	
898	

2. Now round these numbers to the nearest 100.

Number	Nearest 100
98	
43	
129	
398	
141	
789	
368	
99	
221	
515	
120	
670	

6. How many pence to the pound?

skillbuild

Understand decimals.

In 1976 the currency used in the United Kingdom changed to a *decimal system*. Instead of having 240 pennies to the pound there were now 100. The old coins were replaced by decimal coins. We still use this system today.

When you write pounds and pence they are separated by a *decimal point*. Look at the difference in the value of these amounts. Take special notice of the decimal point.

£0.12	12 pence
£1.25	1 pound and twenty-five pence
£12.50	12 pounds and fifty pence
£125.00	125 pounds and no pence

1. Fill in this table to convert money from pounds to pence. The first two have been done for you.

	Pounds	Pence
1.	£1.00	100p
2.	£0.45	45p
3.	£4.06	
4.	£0.04	
5.	£3.97	
6.	£2.01	
7.	£7.10	
8.	£0.10	
9.	£9.99	
10.	£10.67	

2. Fill in this table to convert money from pence to pounds. The first two have been done for you.

	Pounds	Pence
11.	£1.15	115p
12.	£0.06	6p
13.	£	308p
14.	£	260p
15.	£	982p
16.	£	5p
17.	£	14p
18.	£	105p
19.	£	280p
20.	£	1890p

7. Parts of a whole 1

skillbuild

Understand common fractions.

This fraction board shows you how a whole can be split into halves, thirds, quarters, eighths and sixteenths.

Fraction board															
A whole one															
1/2								half							
1/4				1/4				quarter				quarter			
1/8		1/8		1/8		1/8		eighth		eighth		eighth		eighth	
1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16								

1. How many halves in a whole one? ☐
2. How many quarters in a whole one? ☐
3. How many eighths in a whole one? ☐
4. How many sixteenths in a whole one? ☐
5. How many quarters in a half? ☐
6. How many eighths in a half? ☐
7. How many sixteenths in a half? ☐
8. How many eighths in a quarter? ☐
9. How many sixteenths in an eighth? ☐
10. How many sixteenths in a quarter? ☐

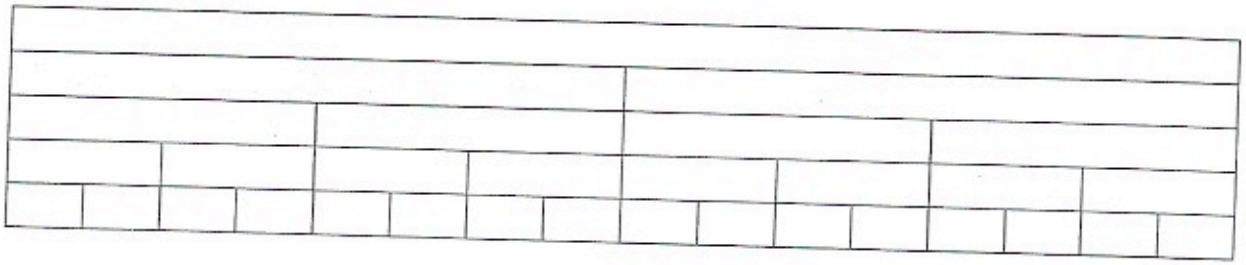
8. Parts of a whole 2

skillbuild

Understand common fractions.

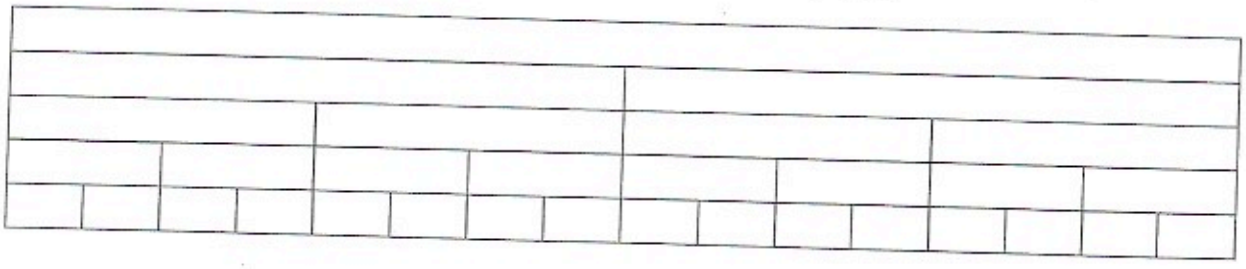
Use some coloured pens or pencils to shade in different parts of the fraction board. One has been done for you.

1. Colour one half block grey.
2. Colour one quarter block red.
3. Colour one eighth block green.
4. Colour one sixteenth block yellow.



With this fraction board, each time you colour a fraction start at the left-hand side.

5. Colour one half block blue.
6. Colour two quarter blocks next to each other green.
7. Colour four eighth blocks next to each other red.
8. Colour eight sixteenth blocks next to each other yellow.



What do you notice? You should now be able to answer these questions.

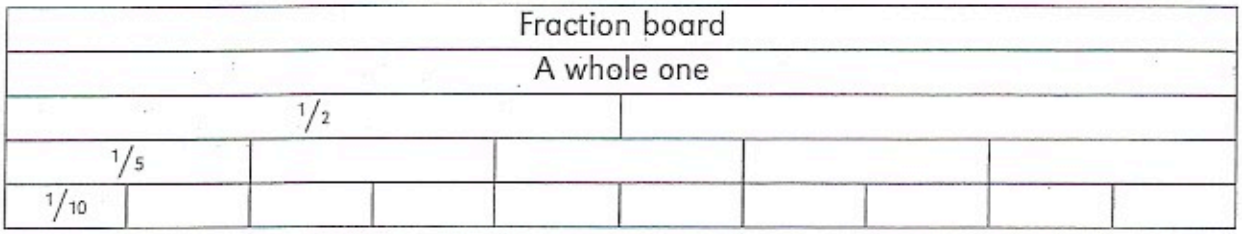
9. How many sixteenths in two quarters? ☐
10. How many sixteenths in three quarters? ☐
11. How many eighths in two quarters? ☐
12. How many eighths in three quarters? ☐

9. Parts of a whole 3

skillbuild

Understand common fractions.

Use the fraction board to answer the questions.

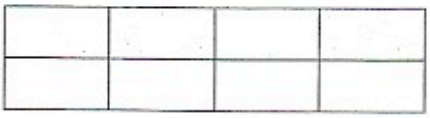


1. How many halves in a whole one? ☐
2. How many fifths in a whole one? ☐
3. How many tenths in a whole one? ☐
4. How may tenths in a fifth? ☐
5. How many tenths in a half? ☐
6. How many tenths in two fifths? ☐
7. How many tenths in three fifths? ☐
8. How many tenths in four fifths? ☐

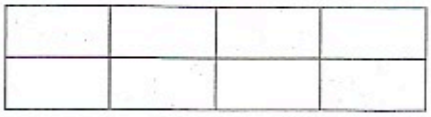
This is a real challenge! Look at the fraction board and see if you can work out the answer to this.

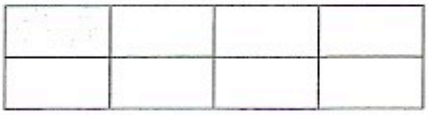
9. How many fifths in a half? ☐

Now work out what fraction of each rectangle is shaded.

10.  ☐

11. ☐

12.  ☐

13.  ☐

10. Equivalent fractions 1

skillbuild

Recognise and use equivalent forms of fractions.

Two fractions can represent the same part of something even though they don't look the same when they are written down.

A whole one	
A half	$\frac{1}{2}$
A quarter	$\frac{1}{4}$

Two halves are the same as a whole one ($2/2 = 1$)
Two quarters are the same as a half ($2/4 = 1/2$)

Use these fraction boards to write down as many equivalent fractions as you can.

1.

Fraction board															
A whole one															
$\frac{1}{2}$								half							
$\frac{1}{4}$												quarter			
$\frac{1}{8}$														eighth	
$\frac{1}{16}$															

2.

Fraction board										
A whole one										
$\frac{1}{2}$										
$\frac{1}{5}$										
$\frac{1}{10}$										

3.

Fraction board											
A whole one											
$\frac{1}{3}$											
$\frac{1}{6}$											
$\frac{1}{12}$											

11. Equivalent fractions 2

skillbuild

Recognise and use equivalent forms of fractions.

1. Which of these fractions are the same as a half? Circle them.

$\frac{1}{4}$ $\frac{5}{8}$ $\frac{4}{8}$ $\frac{2}{3}$ $\frac{3}{6}$ $\frac{1}{5}$ $\frac{5}{10}$ $\frac{5}{6}$ $\frac{1}{2}$ $\frac{3}{4}$

2. Which of these fractions are the same as a quarter? Circle them.

$\frac{1}{2}$ $\frac{7}{8}$ $\frac{2}{8}$ $\frac{1}{3}$ $\frac{5}{6}$ $\frac{2}{5}$ $\frac{3}{12}$ $\frac{5}{20}$ $\frac{1}{10}$ $\frac{4}{16}$

3. Write down ten fractions (different from your answers to question 1) which are the same as a half.

$\frac{1}{2} = \square = \square = \square = \square = \square$

$\square = \square = \square = \square = \square = \square$

4. Write down ten fractions (different from your answers to question 2) which are the same as a quarter.

$\frac{1}{4} = \square = \square = \square = \square = \square$

$\square = \square = \square = \square = \square = \square$

12. Multiplication tricks 1

skillbuild

Multiply numbers.

There are quite a few tricks you can use to help with multiplying larger numbers together. Here are just a few to try.

- To multiply a number by 2, split the number into hundreds, tens, units then double each one and add them together!
  2 x 45 = double 40 plus double 5 = 80 + 10 = 90
- To multiply a number by 4, double and double again.
  4 x 28 = double 28 plus double 28 = 56 + 56 = 112
- To multiply a number by 5, multiply by 10 first and then halve it.
  5 x 16 is half of 10 x 16 = half of 160 = 80
- To multiply a number by 10, just add a zero.
  10 x 16 = 160
- To multiply a number by 9, multiply by 10 first and then take away the number you are multiplying.
  9 x 16 = 10 x 16 (160) take away 16 = 144
- You can multiply numbers by *splitting* them.
  4 x 24 is the same as 4 x 20 plus 4 x 4 = 80 + 16 = 96
- You can multiply by *easier* numbers and then *adjust* your answer.
  5 x 19 is the same as 5 x 20 - 5 = 100 - 5 = 95

13. Multiplication tricks 2

skillbuild

Multiply numbers.

Work out the answers to these multiplications using a selection of the strategies on Worksheet 12.

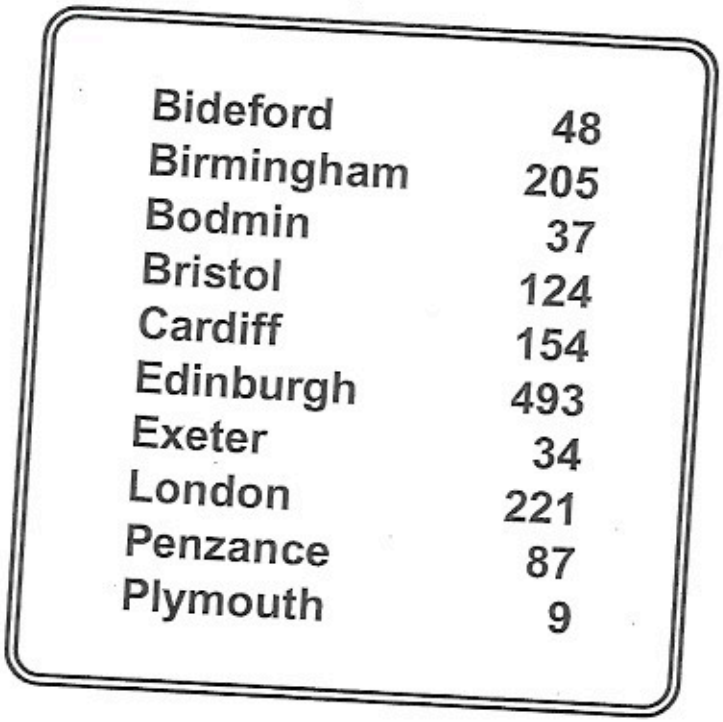
1. 10 x 84 = _____
2. 6 x 15 = _____
3. 3 x 30 = _____
4. 7 x 18 = _____
5. 2 x 19 = _____
6. 5 x 21 = _____
7. 4 x 35 = _____
8. 9 x 42 = _____
9. 15 x 67 = _____
10. 5 x 29 = _____
11. 8 x 19 = _____
12. 4 x 18 = _____

14. Hotel – going the distance 1

skillbuild

Round numbers.

Use the information on the signpost to fill in the table showing the distance from the Old Hall Hotel to these cities and towns to the nearest 10 miles.



Town	Miles on sign	To nearest 10 miles
Bideford		
Birmingham		
Bodmin		
Bristol		
Cardiff		
Edinburgh		
Exeter		
London		
Penzance		
Plymouth		

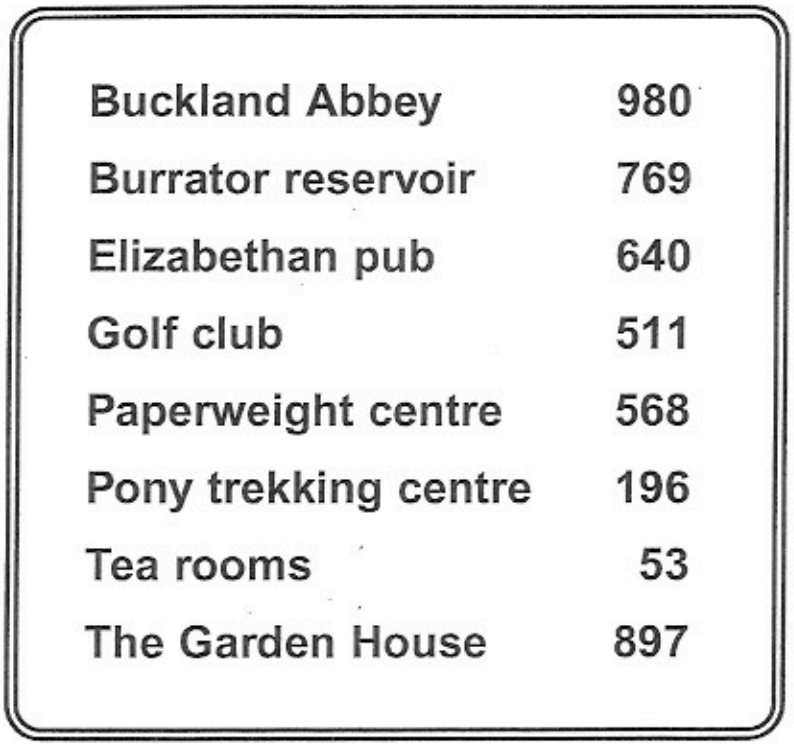
N1/E3.1, N1/E3.7, MSS1/E3.4

15. Hotel – going the distance 2

skillbuild

Round numbers.

Use the information on the signpost to fill in the table showing the distance from the Old Hall Hotel to local attractions to the nearest 100 metres.



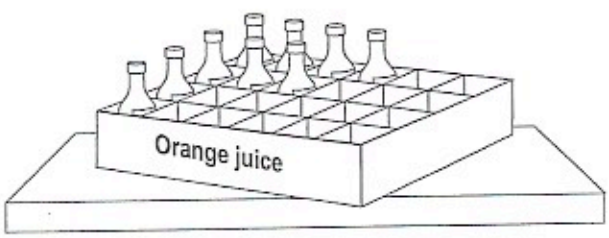
Local attraction	Metres on sign	To nearest 100 metres

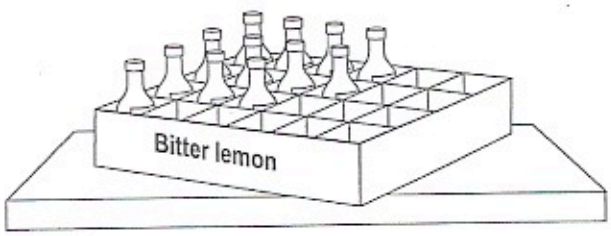
16. Hotel – taking stock 1

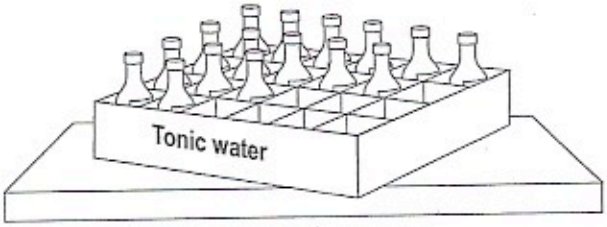
skillbuild

Count stock. Add and subtract.

The bar manager of the hotel has asked you to re-stock some of the mixers. The mixers are supplied in crates of 48. You need to keep 24 of each of these mixers on the shelves.







1. How many bottles are in stock when the shelves are full?
2. How many bottles are on the shelves altogether?
3. How many bottles of orange juice do you need in order to re-stock the shelf?
4. How many bottles of bitter lemon do you need in order to re-stock the shelf?
5. How many bottles of tonic water do you need in order to re-stock the shelf?
6. How many bottles of orange juice will be left in a crate after you've filled up the shelf in the bar?
7. How many bottles of bitter lemon will be left in a crate after you've filled up the shelf in the bar?
8. How many bottles of tonic water will be left in a crate after you've filled up the shelf in the bar?

17. Hotel – taking stock 2

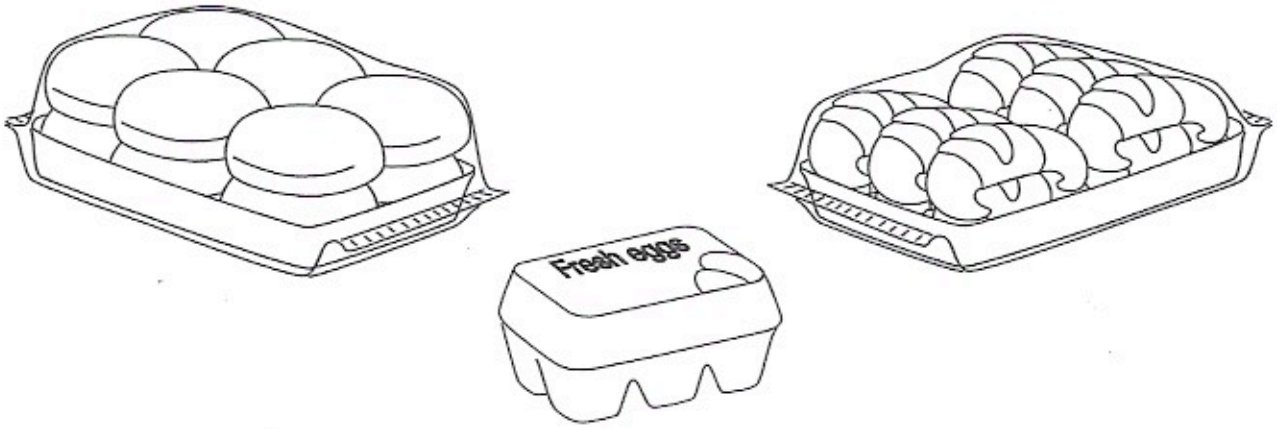
skillbuild

Count stock. Count in batches. Add and subtract.

Some goods are counted in dozens. A dozen is 12 of something. In supermarkets eggs are usually sold in half dozen boxes – in other words, a box of 6 eggs.

The head chef needs to order some produce for the kitchen. He needs:

- **$8\frac{1}{2}$ dozen eggs**
- **5 dozen croissants**
- **6 dozen bread baps.**



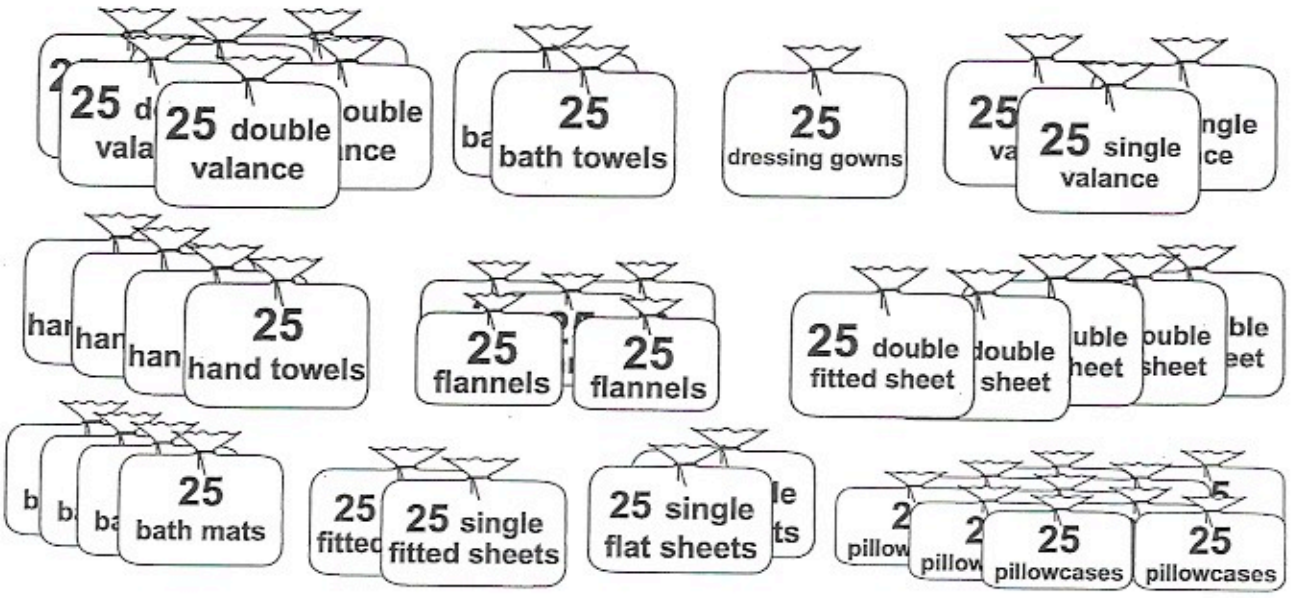
1. How many items are in a dozen?
2. How many eggs are in $8\frac{1}{2}$ dozen?
3. How many croissants are in 5 dozen?
4. How many baps are in 6 dozen?
5. How many dozens will you have in total?
6. How many items will you have in total?
7. How many more croissants would you need to have 7 dozen?
8. If you could only get half as many baps as you needed, how many would you have? Give your answer in dozens.
9. How many baps are in 3 dozen?
10. How did you get this answer? _____

18. Hotel – linen check

skillbuild

Count in batches.

The weekly linen delivery has arrived. Your job is to check that it is all present and correct! Count each type of linen and check it off against the invoice.



Linen item	No. sent	No. returned	Check ✔or ✘	No. missing / over
Bath towels	75			
Bath mats	100			
Dressing gowns	50			
Flannels	150			
Hand towels	100			
Pillowcases	250			
Single fitted sheets	75			
Single flat sheets	50			
Single valance	75			
Double fitted sheet	125			
Double valance	150			

19. Hotel – toiletries check

skillbuild

Count in batches.

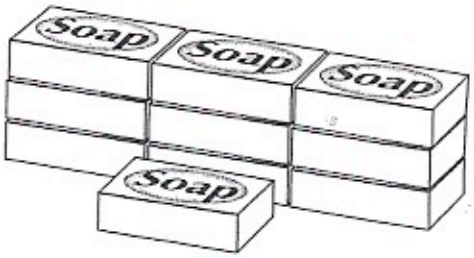
Toiletries for the guest bedrooms are supplied in small packs. The housekeeper has to order enough packs to supply all of the rooms. Use the information about pack sizes and the number of each item required to fill in the table.

Shampoo boxes of 8

Shower caps boxes of 5

Shower gel boxes of 5

Toothpaste boxes of 4



Soap boxes of 10

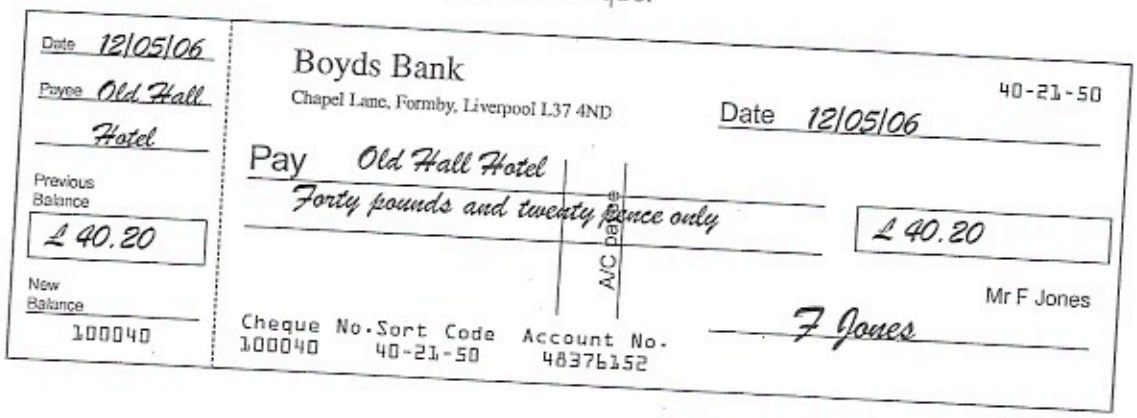
Toiletry item	No. required per week	No. in pack	No. of packs need to order for one week
Shampoo	90		
Shower gel	80		
Mini soap	100		
Toothpaste	75		
Shower caps	45		

20. Hotel – hidden extras 1

skillbuild

Calculate the cost of services. Write cheques.

Cheques are like an order form for money. This example shows you the printed sections on the cheque and how to fill in the blanks on the cheque.



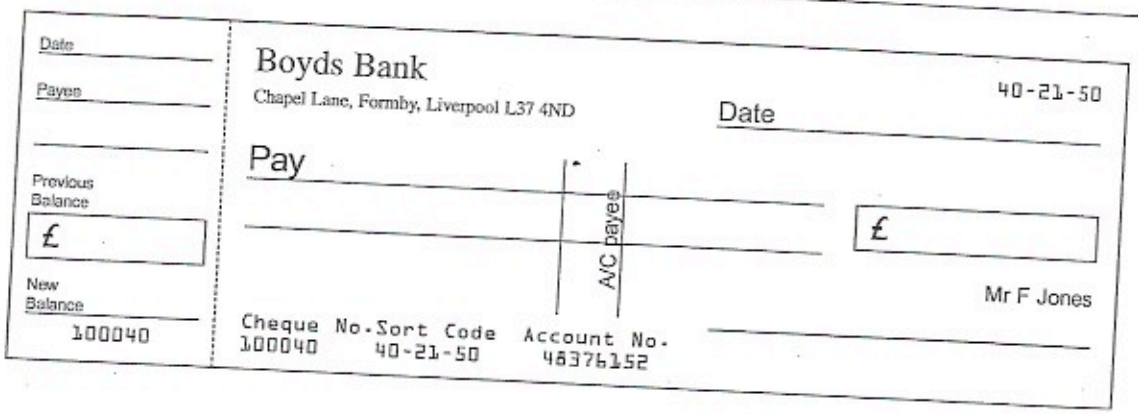
Mr Jones has booked in for a two-day dinner, bed and breakfast break. He ordered extra services. Calculate Mr Jones' bill including the extra services. Write in the correct amount on his cheque below. Make it payable to the Old Hall Hotel.

Old Hall Hotel

The Old Hall Hotel, Blacksmith's Lane, Yelverton, Devon PL20 6RD
Telephone: 01822 504450 Facsimile 01822 504456

Name: Mr Jones Date: 14th December 2006

Two-day break special offer	£150.00
Lunches x 2 (restaurant)	£20.00
Bar bill	£25.00
Newspapers delivered	£1.40
Room service light snack	£6.00
Shoe cleaning service	£3.00
Telephone calls	£2.50
Total	£



N1/E3.1, N1/E3.2, MSS1/E3.1, HD1/E3.1, Ww/E3.1, Ww/E3.3

21. Hotel – hidden extras 2

skillbuild

Calculate the cost of services. Write cheques.

Mrs Mullins also booked in for a two-day dinner, bed and breakfast break and ordered extra services. Calculate the total of Mrs Mullins' bill including the extra services she ordered. Write in the correct amount on her cheque below. Make it payable to the Old Hall Hotel.

Old Hall Hotel

The Old Hall Hotel, Blacksmith's Lane, Yelverton, Devon PL20 6RD
Telephone: 01822 504450 Facsimile 01822 504456

Name: Mrs Mullins Date: 14th December 2006

Two-day break special offer	£150.00
Lunches x 2 (bar)	£15.00
Bar bill	£8.75
Telephone calls	£4.50
Salon treatment – massage	£32.00
Postcards	£1.00
Stamps	£0.56
Total	£

Date
Payee
Previous Balance
£
New Balance
100103

Boyds Bank
Chapel Lane, Formby, Liverpool L37 4ND

20-32-02

Date

Pay

£

A/C payee

Mrs L Mullins

Cheque No. 100103 Sort Code 20-32-02 Account No. 35846200

22. Hotel – mine's a half!

skillbuild

Read, write and understand decimals. Calculate prices.

1. Here is a price list of the drinks from the bar at the Old Hall Hotel. Use the list to work out the total cost of each round.

Old Hall Hotel

Bar price list

Pint of lager	£2.45
Pint of bitter	£2.30
Single vodka	£1.90
Single rum	£1.90
Gin	£1.90
Slimline tonic	£1.10
Glass of white wine	£2.30
Glass of red wine	£2.30
Orange juice	£1.50
Pineapple juice	£1.50
Cola	£1.25
Lemonade	£1.15

Party 1	Party 2	Party 3	Party 4
Round 1	Round 1	Round 1	Round 1
1 x lager	2 x gin and tonic	2 x lager	1 x gin and tonic
2 x bitter	2 x white wine	2 x bitter	1 x vodka
2 x cola	1 x orange	4 x white wine	1 x bitter
2 x lemonade	1 x cola	2 x cola	1 x lager
1 x orange	1 x lemonade	2 x lemonade	3 x cola
Total = £	Total = £	Total = £	Total = £

2. Later that evening, the same groups of people had another round each of exactly the same drinks. How much did they spend that evening?

Total = £	Total = £	Total = £	Total = £

3. How much did the Hotel earn from these groups' drinks that evening? £

N1/E3.1, N1/E3.2, N1/E3.3, N1/E3.4, N1/E3.9, N2/E3.3, MSS1/E3.1, HD1/E3.1

23. Hotel – Happy Hour!

skillbuild

Read, write and understand decimals. Calculate prices. Understand fractions.

1. It is Happy Hour between 5 and 6 pm every Friday night. All the drinks are half price! Work out the Happy Hour price of each drink and fill in the table. The first one has been done for you.

	Normal price	Happy Hour price
Pint of lager	£2.45	£1.23
Pint of bitter	£2.30	£
Single vodka	£1.90	£
Single rum	£1.90	£
Gin	£1.90	£
Slimline tonic	£1.10	£
Glass of white wine	£2.30	£
Glass of red wine	£2.30	£
Orange juice	£1.50	£
Pineapple juice	£1.50	£
Cola	£1.25	£
Lemonade	£1.15	£

2. Work out how much money each of the groups of people mentioned on Worksheet 22 would have spent on their first round of drinks if they had bought them during Happy Hour.

Total = £	Total = £	Total = £	Total = £

3. Now work out how much the total bar bill would have been for each group if they had bought both rounds of their drinks during Happy Hour.

Total = £	Total = £	Total = £	Total = £

24. Hotel – maximum capacity 1

skillbuild

Read, write and understand decimals. Count.

The Old Hall Hotel is having a New Year's Eve Party. The banqueting clerk records the details of each booking carefully so that their needs can be met. Use this list of bookings taken yesterday to answer the questions on Worksheet 25.

Old Hall Hotel

New Year's Eve Party

Tickets only £45

Room and ticket per person £115

Contact the banqueting clerk for details

01822 504450

Name	Contact no.	No. in party	Tickets only	Ticket / room deal	Dietary requirements
Mr Brown	01822 876765	2	2		1 vegetarian
Mrs Green	01822 876156	4		2 double	None
Ms King	01822 817617	2	2		2 vegetarian
Mr Ravi	01579 652435	4		2 double	None
Mrs Hilton	07898 876 654	2		1 double	None
Mrs Collings	01579 726252	6	6		None
Mr Holt	01579 827272	2		1 double	None
Mr O'Leary	07787 765 654	4	4		2 vegetarian
Mr Iqbal	01752 524242	2		1 double	1 gluten free
Miss Bellows	01752 625242	2		1 double	None

25. Hotel – maximum capacity 2

skillbuild

Read, write and understand decimals. Count.

1. How many bookings were made by women?

2. What fraction of the number of bookings made were made by men?

3. How many people will be going to the New Year's Ball?

4. How many people will be spending the night there?

5. How many double rooms have been booked?

6. How many vegetarian meals will be needed?

7. Write the number of vegetarian meals as a fraction of the total number of people who will be eating.

8. Estimate how much the Iqbal party tickets will cost, then use a calculator to check your answer.

   Estimate

   Calculation

9. Estimate how much the O'Leary party tickets will cost, then use a calculator to check your answer.

   Estimate

   Calculation

10. Which party's tickets will cost the most?