

Mathematics
Using Mathematics 1
Access 3

5743

Summer 1999

HIGHER STILL

Mathematics

Using Mathematics 1

Access 3

Support Materials



TEACHER'S NOTES

Using Mathematics 1 (Acc 3)

As stated in the Higher Still Arrangements document all content should be within a context and it is suggested that contexts be varied. An attempt has been made to provide a variety of contexts, within all the outcomes, which will be familiar to most students.

It is also stated in the Arrangements that students should experience calculations without a calculator. There is an increasing emphasis in all mathematics courses on mental and pencil and paper calculations, indeed external examinations at all levels of Standard Grade and Higher Still will have a non-calculator paper. There is no external assessment at Access level and the internal assessment allows access to a calculator. It is therefore up to teachers in the classroom to ensure that all students are able to perform simple calculations without a calculator. If, in the case of multiplication and division, some students have difficulty remembering their tables, it is expected that they will have access to a multiplication square.

The support material is designed to be teacher-led. Although worked examples have been included, there is no intention that the material should be used for individualised learning. It is unlikely that in most mainstream secondary schools there will be a class which contains only students working at Access 3 level. These students are more likely to be within a class working at Intermediate level or perhaps a Standard Grade class. In this case, it is suggested that, wherever possible, use should be made of cooperative teaching to ensure that students working at Access 3 are able to be supported within the classroom.

At all times students should be encouraged to set out working, i.e. to show clearly the operation which was used. Activities should be tailored to suit the experience of the individual.

For many students, it is the language of mathematics which is the barrier to learning, e.g. 'how much', 'find the total', 'the sum', all mean to add. A Wordbank has been included to try to help students through the language barrier. A list of terms has been provided along with the appropriate operation. The list is not exhaustive.

Symbols have also been used to assist students:



the calculator symbol indicates when a calculator should be used;



the reading symbol and a **different font** indicate when some advice/help is being given



the writing symbol indicates when students are expected to write.

In outcome 1 some students may still require to use concrete materials. This should be encouraged where teachers feel that it will reinforce the concept.

In outcome 2 students will require to be taught how to interpret the calculator display.

In outcome 3 students should use their own timetable as an example of constructing a simple table. Activities should at all times be tailored to suit the experience of individual students. It is suggested within the exercise that students should be given an opportunity to collect their own data and then present the results in a pictograph using a spreadsheet package.

In outcome 4 the emphasis should be firmly on practical work wherever possible. It is likely that students will require a considerable amount of support here as the answers to the practical exercises will have to be carefully checked and further practice given where necessary. The importance of accuracy in answers should be stressed.

Assessment

It is expected that the approach to assessment at Access 3 level is outcome by outcome. Outcome assessments take the form of a closed book test. There is no specified time limit for each assessment. It is expected that teachers will use their professional judgement for each individual student.

Students are not required to demonstrate competence across outcomes, although the opportunity should be taken to assess outcomes together where this would be appropriate and would not place the student at a disadvantage. For example, if two outcome assessments are short then it could be more practical to assess them together.

It is assumed that students will have access to a calculator. Students who are used to working with concrete material or a multiplication square should be allowed to do so if teachers feel that it would be beneficial.

Further advice on assessment is given within the National Assessment Bank for Using Mathematics 1 (Acc 3).

USING MATHEMATICS 1 (ACC 3)

Outcome 1

Exercise 1

Do not use a calculator for this exercise



Reminders



$$\begin{array}{r} \downarrow \quad \downarrow \\ 5 \quad 3 \\ + 2 \quad 3 \quad 6 \\ \hline 2 \quad 8 \quad 9 \end{array}$$

When adding numbers remember to keep the figures in line

$$\begin{array}{r} \downarrow \quad \downarrow \quad \downarrow \\ 2 \quad 3 \quad 6 \\ + 2 \quad 4_1 \quad 7 \\ \hline 4 \quad 8 \quad 3 \end{array}$$

Don't forget to carry numbers



Copy and complete

1.
$$\begin{array}{r} 462 \\ +133 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 39 \\ +165 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 498 \\ +372 \\ \hline \end{array}$$



If you get stuck - look up the Wordbank to help you.

4. Find the sum of 239, 104 and 26

5. Find the value of $413 + 126 + 7803 + 52$

6. Mark took part in a golf competition.
His scores were
- | | |
|---------|----|
| Round A | 76 |
| Round B | 69 |
| Round C | 80 |

What was his total score?



7. On her fourth birthday Elaine was 102 cm tall.
By her eighth birthday she had grown another 27cm.
How tall was Elaine on her eighth birthday?

8. Last year Tom's wage was £184 per week.
This year he got a pay rise of £26 per week.
How much does he now earn per week?

9. The school show tickets were on sale.
Here is a list of how many tickets had been sold for each night.

Wednesday	186
Thursday	194
Friday	200
Saturday	200

How many people altogether had bought a ticket for the show?

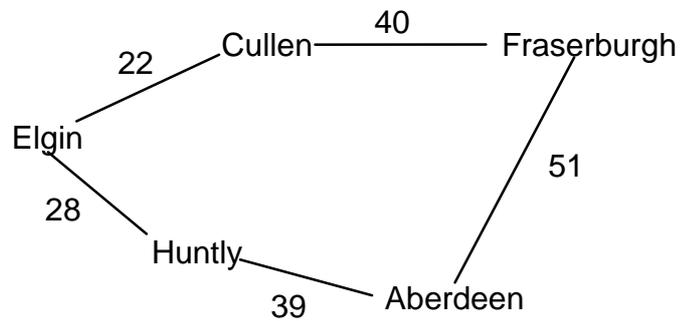


10. On four different Saturdays, the number of people going to watch a rugby team were

382 296 150 and 217.

What was the total number of people who saw these four matches?

11. Dave and Marie went on a motoring holiday. The diagram shows the route they followed and the distances they travelled each day. The distances are in miles.



- a. On Monday they travelled from Elgin to Cullen.
How many miles did they travel on Monday?
- b. (i) On Tuesday morning they went from Cullen to Fraserburgh.
How far is this?
(ii) On Tuesday afternoon they went from Fraserburgh to Aberdeen. How far is this?
(iii) How many miles did they travel altogether on Tuesday?
- c. On Wednesday morning they left Aberdeen and returned to Elgin.
On the way to Elgin they went through Huntly.
How far did they travel altogether?

12. Anne weighs out some ingredients to make a cake.

Flour	250g
Fruit	115g
Sugar	75g
Butter	100g



What is the total weight of these ingredients?

13. Copy and complete the sums to find the numbers behind the stars

$$\begin{array}{r} \text{a)} \quad 4 * \\ + 1 \underline{2} \\ * \underline{6} \end{array}$$

$$\begin{array}{r} \text{b)} \quad 7 \ 2 \\ + * * \\ \underline{8 \ 5} \end{array}$$

$$\begin{array}{r} \text{c)} \quad 9 * \\ + * 4 \\ \underline{1 \ 1 \ 1} \end{array}$$

14. Brian bought a second-hand car for £450.
He spent £120 on repairs
£183 on insurance and
£135 on road tax.



How much money did Brian spend altogether?

15. The table shows the number of workers in four council departments.

DEPARTMENT	NUMBER OF WORKERS
Education	3000
Social Work	2300
Finance	1400
Roads	840

What is the total number of people working in all four departments?

Exercise 2
Do not use a calculator for this exercise



Reminders



$$\begin{array}{r}
 \downarrow \quad \downarrow \quad \downarrow \\
 6 \quad 5 \quad 9 \\
 - 2 \quad 3 \quad 6 \\
 \hline
 4 \quad 2 \quad 3
 \end{array}$$

When subtracting numbers remember to keep the figures in line

$$\begin{array}{r}
 3 \quad \cancel{4} \quad 12 \\
 - 2 \quad 3 \quad 5 \\
 \hline
 1 \quad 1 \quad 7
 \end{array}$$

Don't forget you may have to 'borrow' from the next column



Copy and complete

1.
$$\begin{array}{r}
 468 \\
 - 243 \\
 \hline
 \end{array}$$

2.
$$\begin{array}{r}
 397 \\
 - 165 \\
 \hline
 \end{array}$$

3.
$$\begin{array}{r}
 498 \\
 - 46 \\
 \hline
 \end{array}$$

4.
$$\begin{array}{r}
 1735 \\
 - 513 \\
 \hline
 \end{array}$$

5.
$$\begin{array}{r}
 392 \\
 - 135 \\
 \hline
 \end{array}$$

6.
$$\begin{array}{r}
 491 \\
 - 66 \\
 \hline
 \end{array}$$

7.
$$\begin{array}{r}
 1290 \\
 - 654 \\
 \hline
 \end{array}$$

8.
$$\begin{array}{r}
 2495 \\
 - 1746 \\
 \hline
 \end{array}$$



If you get stuck - look up the Wordbank to help you

9. A camera usually costs £137.
It has been reduced to £95 in the sale.
How much money would you save?

10. Alan is 16 years old and his father is 43 years old.
What is the difference in their ages?

11. Steven has a piece of wood which measures 162 cm.
He wants a piece of the wood to make a shelf 115cm long.
He cuts the wood and makes the shelf, how much wood is left over?

12. Joe has saved up £300 and would like to buy a CD player costing £269.
How much money would Joe have left if he buys the CD player?

13. The number of pupils on the school roll is 914.
Last Wednesday 867 pupils were marked present.
How many pupils were absent?

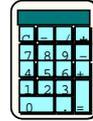
14. A car has to be serviced when it has travelled 8948 miles.
The car has travelled 7225 miles.
How many more miles is it until it needs a service?

15. A sports stadium can seat 6500 spectators.
There are 127 empty seats, how many people are in the stadium?



Exercise 3

You may use a calculator for this exercise



Reminders



For this exercise you have to decide whether you have to **add** or **subtract** to find the answer to each question.

If you get stuck - look up the Wordbank to help you



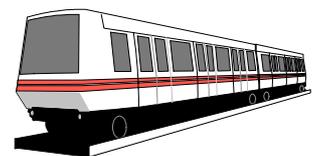
Wherever possible - set out your working.

1. I am driving from Edinburgh to Dover.
I leave Edinburgh and drive 270 miles and then stop for lunch.
After lunch I drive another 190 miles until I get to Dover.
How far is it altogether from Edinburgh to Dover?
2. Mary and her friends organised a coffee morning to raise funds for the school.
They made £112 from ticket sales.

They had to use some of the money to buy the following items
tea £8
coffee £14
milk £11
sugar £4
biscuits £25.

a) How much did they spend on these five items?

b) How much of the £112 did they have left?
3. 487 people were on the London train when it called into Crewe station.
65 passengers got off at Crewe.
How many passengers were now on the train?



4. A theatre is split into three sections.

410 people bought tickets for one section.

264 people bought tickets for another section.

256 people bought tickets for the third section

How many theatre tickets were bought altogether?

5. Anne is an office worker and she earns £9000 a year.
During the year she pays £3200 in rent and spends £4800 on other bills.

a) How much altogether does she spend on rent and other bills?

b) How much does she have left out of her year's salary?

6. David had £2680 in his bank account at the start of last year.
During the year he paid £480 into his account.

a) How much does David now have in his account?

David decides to use £1350 to buy a second-hand car.

b) He takes the money for the car out of his bank account.
How much will he have left in the bank?

7. Ian lives in Glasgow and is planning a holiday in Spain.

He notices the Sun Hotel appears in two brochures.

TAKE-A-TRIP

Sun Hotel
14 nights(full board)
Direct from Glasgow

£697

GO-SPAIN

Sun Hotel
14 nights(full board)
Flight from Manchester*

£570

*Return flight from Glasgow to
Manchester £83 extra

Ian chooses the **GO-SPAIN** holiday.

- a) How much does the **GO-SPAIN** holiday cost Ian?
- b) How much does he save?
8. At the beginning of the year the population of Newtown was 5742.
During the year new houses were built and 452 people moved into
Newtown.
How many people now live in Newtown?
9. Today 8540 fans went to see their local football team play in a cup
final match.
This was 163 more fans than watched the team play in the semi-final.
How many fans saw their team play and win the semi-final match?



Exercise 4
Do not use a calculator for this exercise



Reminders

$$\begin{array}{r} 76 \\ \times 24 \\ \hline 304 \end{array}$$



Don't forget to carry numbers



Wherever possible - show your working

1. $\begin{array}{r} 26 \\ \times 5 \\ \hline \end{array}$

2. $\begin{array}{r} 32 \\ \times 6 \\ \hline \end{array}$

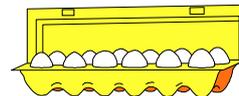
3. $\begin{array}{r} 46 \\ \times 4 \\ \hline \end{array}$



If you get stuck - look up the Wordbank to help you

4. How much wood is needed to make 9 shelves each 3 metres long?

5. Kirsty has 3 boxes of eggs.
Each box contains 48 eggs.
How many eggs are there altogether?



6. Alison stays in a hotel costing £54 per person per night.
How much will it cost her to stay four nights?



7. A new scooter costs £824. How much would 2 new scooters cost?
8. Four people win the football pools. They each receive £112. What was the total money won?
9. A knitting pattern says that nine 40 gram balls of wool are needed to make a jumper. What is the total weight of wool needed to knit the jumper?

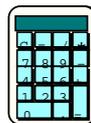
10. Find the total cost of the following bill

6 rolls of wallpaper at £7 each
3 tins of paint at £13 each
1 packet of paste at £3 per packet
2 curtain rails at £16 each



Exercise 5

You may use a calculator for this exercise



Example

Mr Smith earns £884 per month.
How much does he earn in one year?

There are 12 months in a year, so for 1 year we multiply by 12

$$884 \times 12 = \text{£}10608$$

Reminders

1 year = 12 months
1 year = 365 days
January has 31 days

If you get stuck - look up the Wordbank to help you



Wherever possible - set out your working

1. Car Hire rate is £87 per week. How much does it cost to hire a car for 6 weeks?
2. 48 boxes each contain 15 Christmas cards.
How many Christmas cards do they contain altogether?
3. Mr Smith earns £884 a month. How much does he earn in one year?
4. A company bought a new car for each of its workers.
If the company bought 6 cars costing £7995 each.
How much did it cost the company for all the cars?



5. A man eats an average of 12 mint sweets each day.
How many will he eat
 - a) in the month of January
 - b) in one year ?

6. Last weekend the National Lottery paid 96 people £4568 each.
What was the total amount of money the National Lottery paid to the winners?

7. A salesman drives 1680 miles each month.
How many miles will he travel in one year?

8. A group of 42 pupils are going on a trip to Germany.
The cost of the trip for each pupil is £215.
How much will the pupils pay altogether?

9. An obstacle course has been set up in the school playground. One lap of the course measures 260 metres. 36 pupils take part and each pupil completes one lap of the course.
What is the total distance they have covered?

10. Find the total cost of the following bill
 - 17 jumpers at £24 each
 - 8 blouses at £17 each
 - 20 pairs of shoes at £32 per pair

11.

PETROL
47p per litre



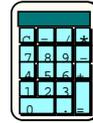
Margaret's car has run out of petrol.
Her petrol tank holds 38 litres when full.
How much does it cost to fill up with petrol?

12. A supermarket gets breakfast cereal delivered in large boxes
Each large box contains 24 packets of breakfast cereal.

The supermarket gets 50 large boxes delivered.
How many packets of cereal have been delivered?

Exercise 6

You may use a calculator for this exercise



Example

A car travels 16 km on one litre of petrol.
How many litres are required for a journey of 704km?

We need to know how many 16s are in 704, so we divide

$$704 \div 16 = 44 \text{ litres}$$

Reminders

1 year = 12 months

1 year = 52 weeks

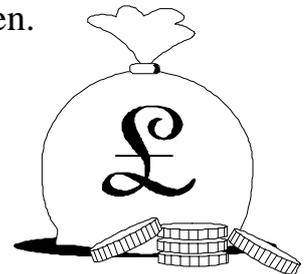
1 year = 365 days

If you get stuck - look up the Wordbank to help you.



Wherever possible - set out your working

1. A shop gets a delivery of 570 eggs.
The eggs have to be divided into small cartons and each carton holds six eggs.
How many cartons can be filled?
2. A prize of £9300 has to be shared equally among 25 men.
How much should each man receive?
3. An annual salary is given as £9984.
How much is this
 - a) per week
 - b) per month?

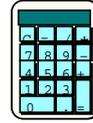


4. A man is given a prescription for 112 tablets.
He has to take the same number of tablets each day for 14 days.
How many tablets should he take each day?
5. Alan has a packet of weedkiller.
The instructions say that it has to be applied at 30 grams per square metre.
The packet of weedkiller weighs 750 grams.
How many square metres can be treated?
6. The cost of a camping holiday for 26 children is £2210.
The children share the cost equally, how much does each child pay?
7. A farmer plants 900 trees in his new orchard.
He wants to plant the trees in rows of 15.
How many rows will he be able to plant?



Exercise 7

You may use a calculator for this exercise



Reminders

For this exercise you have to decide whether you have to **multiply** or **divide** to find the answer to each question.

1 dozen = 12

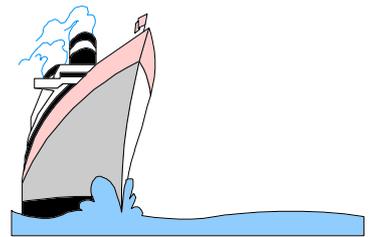
1 hour = 60 minutes

If you get stuck - look up the Wordbank to help you



Wherever possible - set out your working

1. Thirty four metres of curtain material costs £408.
 - a) What is the cost of 1 metre?
 - b) How much would 20 metres of the same material cost?
2. Frank is saving up to go on a cruise.
The cruise costs £3080 and Frank can afford to save £220 each month. How many months will it take Frank to save up enough money for the cruise?



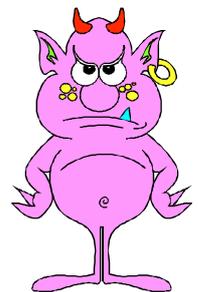
3. A box contains 28 chocolates.
 - a) How many boxes can be filled from a supply of 532 chocolates?
 - b) How many chocolates are needed to fill 36 boxes?
4. In one minute Tom walks 75 metres.
How far will he walk in 30 minutes at the same speed?

5. Nine mountain bikes cost £1215.
How much is each mountain bike if they are all marked at the same price?
6. Robert and Salim enjoyed golf so much they decided to buy some second-hand golf clubs.
- a) Robert bought three woods at £18 each and five irons at £13 each.
How much did Robert pay altogether for his golf clubs?
- b) Salim bought four woods at £16 each and seven irons at £11 each.
How much did Salim pay altogether for his golf clubs?
7. Lesley has 12 new video tapes. Each can record for 240 minutes.
- a) What is the total number of minutes for which Lesley can record?
- b) How long is this in hours?



8. In a computer game points are given as
100 points for catching a Munchit,
60 points for each Trogit
and 10 points for each Slogit.

In a game Stuart managed to catch three Munchits,
six Trogits and twelve Slogits. How many points did he have
altogether?



9. A football team have raised £700.
They want to buy 15 football strips at £36 each.
- a) How much will the football strips cost them?
- b) How much money will they have left?

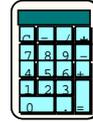
With the money they have left they want to buy
leather footballs costing £20 each.

- c) How many footballs will they be able to buy with their
money?



Exercise 8

You may use a calculator in this exercise



For questions 1, 2 and 3
you should write your answers on the worksheets



1. In each of the diagrams on **worksheet 1** shade the fraction given.
2. Complete the table on **worksheet 2**.
3. Complete the statements on **worksheet 2**. The first one has been done for you.

Use the statements you have completed on **worksheet 2** to help you find answers to each of the following questions:

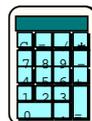
4. Find $\frac{1}{2}$ of
 - a) £2
 - b) £40
 - c) 348 litres
5. Find $\frac{1}{3}$ of
 - a) 15 cm
 - b) 78 eggs
 - c) 450 sweets
6. Find $\frac{1}{4}$ of
 - a) 56 pence
 - b) 120 men
 - c) £1000
7. Find $\frac{1}{5}$ of
 - a) 30 pages
 - b) 365 days
 - c) £1000
8. Find $\frac{1}{10}$ of
 - a) 80 boys
 - b) 140 sweets
 - c) 780 ml

9. A chocolate bar has 8 squares. Graham eats $\frac{1}{4}$ of the the chocolate.
How many squares does he eat?
10. Julie gets £20 pocket money each month. She saves $\frac{1}{5}$ of her pocket money.
How much does she save?
11. Alan takes a youth group.
The youth group has 42 members.
 $\frac{1}{3}$ of the members are girls.

How many are girls?
12. Mandy is $\frac{1}{2}$ her mum's age.
Mandy's mum is 34 years old.
How old is Mandy?
13. There are 45 sweets in a bag.
Ben, Lenny and Sameena have each to get an equal share.
- a) What fraction of the sweets will each child get?
b) How many sweets will they each have?
14. The 28 pupils in class 3B have been invited to party. $\frac{1}{4}$ are unable to go.
- a) How many pupils cannot go to the party?
b) How many pupils are able to go to the party?
15. There were 1680 people at a Rovers v United football match.
 $\frac{1}{5}$ of them were Rovers fans and the rest were United fans.

How many fans were there to support each of the teams?

Exercise 9
You may use a calculator for this exercise



Reminders

Example

A bar of chocolate costs 26p.

a) How many bars can be bought for 90 pence?

b) How much money will be left?

On your calculator,

$90 \div 26 = 3.461\dots$ so only 3 full bars can be bought

a) 3 bars

3 bars would cost $26 \times 3 = 78\text{p}$, so $90 - 78 = 12$

b) 12 pence left



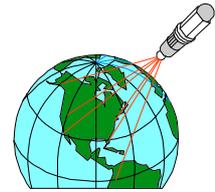
Wherever possible - show your working

1. A bar of chocolate costs 28p.
 - a) How many bars can be bought for 90 pence?
 - b) How much money will be left?

2.
 - a) How many football teams of 11 players can be formed if 104 children want to play?
 - b) How many children will be left out of the teams?

3. A space satellite has been in orbit for 100 hours.

How many complete days and hours is this?



4. For a prize-giving, the janitor arranges the chairs equally in 12 rows. If he has 328 chairs, how many chairs

- a) can he put in each of the 12 rows
- b) are left over?

5. A large bottle of cola holds 1500ml.

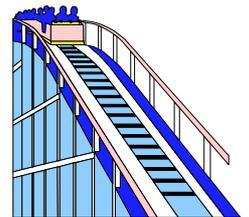
The cola has to be poured into glasses which can each hold 210 ml.

- a) What is the largest number of these glasses that can be filled from one bottle of cola?
- b) How much cola will be left in the bottle?

6. A roller coaster at the fun fair can operate only when all the seats on it are taken. There are 22 seats on the roller coaster.

There are 175 people in the queue waiting for a set on the roller coaster.

- a) How many times can the roller coaster be used?
- b) How many people will not get on the roller coaster?



Exercise 10



Reminders

Use column headings to help you write the numbers in words

th	h	t	u
2	3	5	7

two thousand, three hundred and fifty seven



1. Write each of these numbers in words

a) 7439

b) 1826

c) 4312

d) 2906

e) 9054

f) 6007

2. Write each of the following in figures

a) four hundred and sixty three

b) four thousand

c) six thousand three hundred and eleven

d) eight thousand one hundred and seven

e) four thousand and twelve

f) nine thousand and one

3. The sentences below are taken from the Guinness Book of Records. From each sentence write the numbers in figures. The first one has been done for you.

- a) The highest mountain in the UK is Ben Nevis and measures **four thousand four hundred and six feet**.

Answer 4406



- b) The longest river in Britain is the Severn is **three hundred and fifty four** km long.

- c) The tallest man was Robert Wardlow who measured **two hundred and seventy two** centimetres at the age of **twenty two**.

- d) The heaviest man in Great Britain was William Campbell. He weighed **seven hundred and thirty nine** pounds shortly before he died.



- e) In 1975 the tallest inhabited building in the world was Sears Tower. It is **one thousand four hundred and fifty four** feet.

4. Write each of these numbers in words, and then make up a newspaper headline or advertisement using each answer. The first one has been done for you.

a) 27 - *twenty seven shopping days until Christmas*

b) 45

c) 1426

d) 326

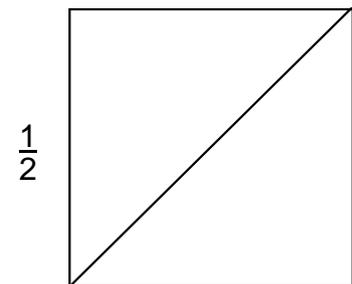
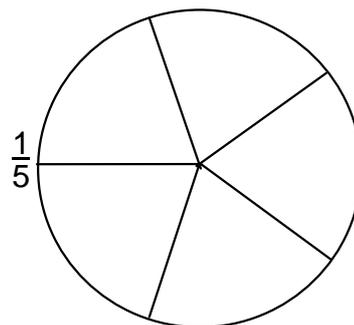
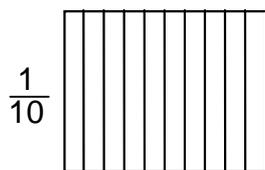
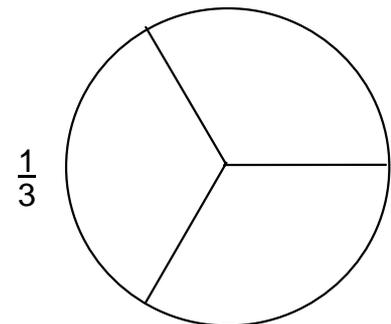
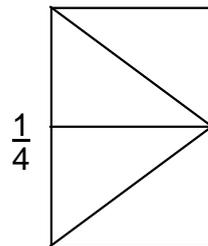
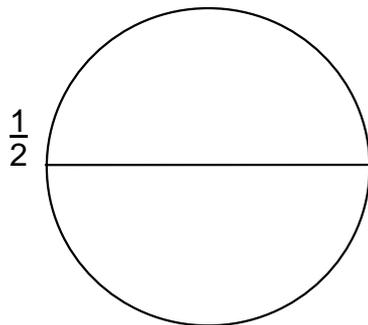
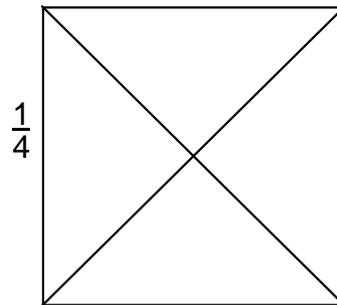
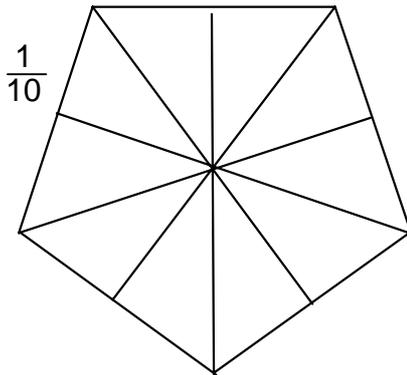
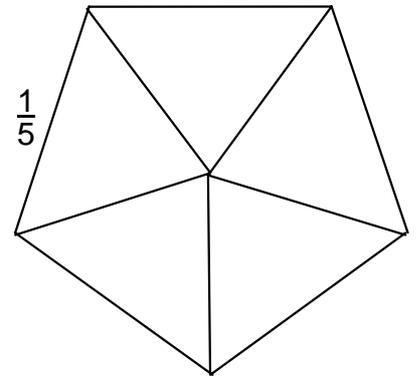
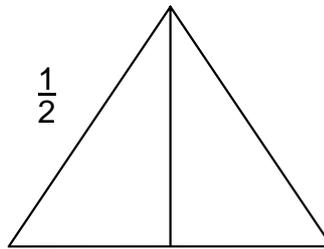
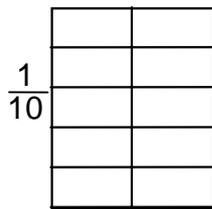
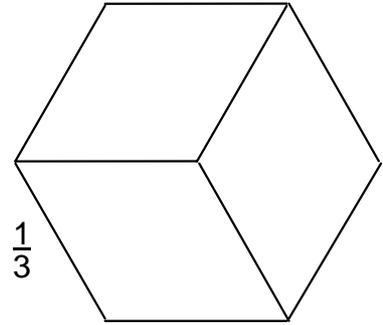
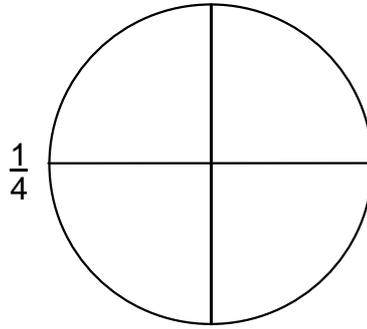
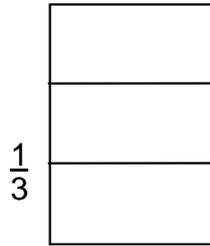
e) 14

f) 900



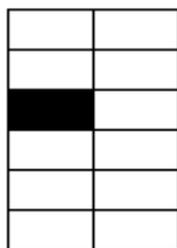
Worksheet 1

Shade the given fraction in each of the diagrams below.

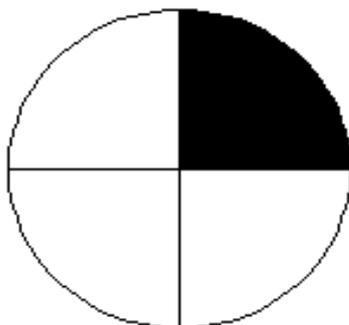


Worksheet 2

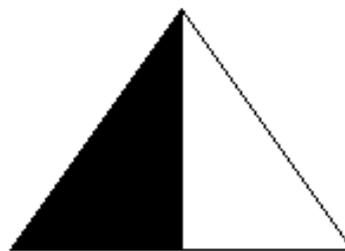
Use the diagrams below to complete the table. The first one has been done for you.



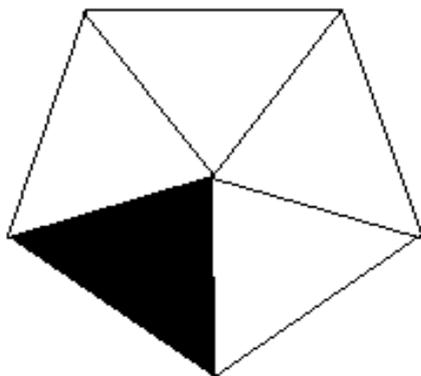
a



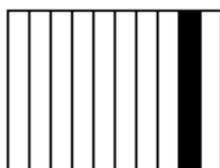
b



c



d



e



f

Shape	Number of equal parts	Number of parts shaded	Fraction shaded
a	10	1	$\frac{1}{10}$
b			
c			
d			
e			
f			

Now complete the following statements. The first one has been done for you.

To find $\frac{1}{2}$ of something divide by 2 ; so $\frac{1}{2}$ of 12 is **6**

To find $\frac{1}{3}$ of something divide by 3 ; so $\frac{1}{3}$ of 12 is ___

To find $\frac{1}{4}$ of something divide by 4 ; so $\frac{1}{4}$ of 12 is ___

To find $\frac{1}{5}$ of something divide by 5 ; so $\frac{1}{5}$ of 20 is ___

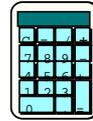
To find $\frac{1}{10}$ of something divide by 10 ; so $\frac{1}{10}$ of 20 is ___

USING MATHEMATICS 1 (ACC 3)

Outcome 2

Exercise 1

You may use a calculator for this exercise



Reminders

On your calculator,

1.4 is one pound forty pence (£1.40)

0.2 is twenty pence (£0.20 or 20p)

1.03 is one pound three pence (£1.03)

If you get stuck - look up the Wordbank to help you



Wherever possible - set out your working

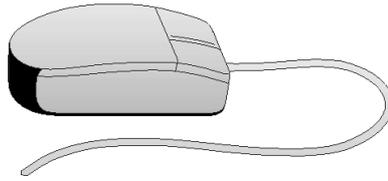
Don't forget to write your answers in pence e.g. 36p

1. Thomas has 45p and Ray has 23p.
 - a) Who has most money?
 - b) How much more?
 - c) How much do Thomas and Ray have altogether?

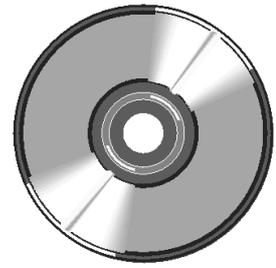
2. Angela has 42p and Lorna has 57p.
 - a) Who has most money?
 - b) How much more?
 - c) How much do Angela and Lorna have altogether?
 - d) Angela wants to buy some sweets for 70p.
How much more money does she need?



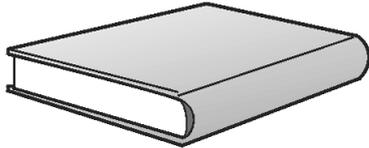
£6.47



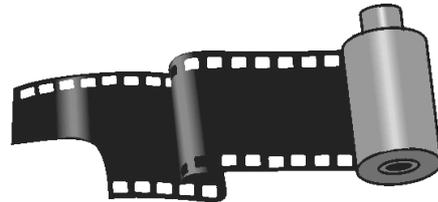
£7.58



£8.46



£1.20



£2.32

Find the total cost of

3. A football and a CD

4. A mouse and a camera film

5. A CD, a book and a camera film

6. How much more is the CD than the football?

7. If Sharon buys a mouse and a camera film, how much change will she get from £10?

8. David would like to buy a CD, a book and a football as Christmas presents.

a) How much will the presents cost David?

He has £15 saved up.

b) Does he have enough money to buy all three presents?

Don't forget to write
your answers in pounds
e.g. £6.72

9. Mrs Jackson spent £5.68 at the butcher's and £4.82 in the fruit shop.
How much did she spend altogether?

10. Leslie earns £256.73 per week.
Here is a list of the bills he has to pay.

Rent £53.26

Food £63

Electricity £15

Telephone £7.50

a) What is the total of Leslie's bills ?

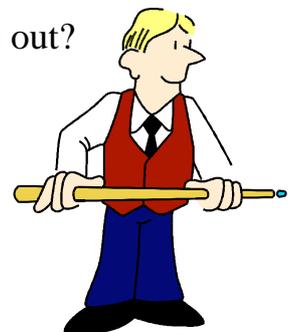
b) How much money does he have left each week after paying his bills?

11. Samantha is paid £1462.36 each month.
She is given a pay rise of £43.86 a month.
How much does she now earn each month?

12. Roddy sets aside £80 of his pay each week to spend on entertainment.
Last week he went to the cinema on Tuesday night and spent £7.50.
He went to play snooker on Thursday and that cost him £14.30.
On Saturday night he took his girlfriend out for an Indian meal costing £45.75.

a) How much did Roddy spend in total on his three nights out?

b) How much of his £80 did he have left?



13. Mr & Mrs Davidson are taking their two children to the cinema.

a) How much will it cost altogether for the four of them to buy tickets for the cinema?

b) How much change will they get from £20 ?

Admission charges

Adult £3.60

Child £2.10

14.

1 carton of milk costing 49p

1 loaf of bread at 75p

1 packet of bacon at £1.42

1 packet of washing powder at £2.50

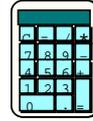
1 packet of crisps at 33p

Anne buys all of the above goods.

Find the total cost of Anne's grocery bill.

Exercise 2

You may use a calculator for this exercise



Reminders

Discount means that you will save money

- so we 'take away' a discount

Example

Peter buys a computer which costs £680.

Peter is given a discount of £56.50.

How much does Peter pay for the computer?

A discount means Peter pays less - so we take away.

On your calculator, $680 - 56.50 = 623.5$, so

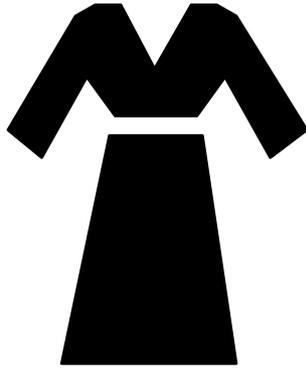
Peter pays £623.50 for the computer.

If you get stuck - look up the Wordbank to help you



Wherever possible - set out your working

1. A shop is giving a discount of £3.50 on each of the three items shown below. What will the reduced price of each item be?



£57.95



£33.80



£22

2. A washing machine costs £347.
There is a discount of £29 offered.
How much will the washing machine cost now?
3. The travel agent is having a 'bargain weekend'.
The holidays are all being reduced in price.
A discount of £57 is being given on each holiday.
What do each of the holidays cost now?



Sunny Cyprus
£272



New York
£456



£130



Reminders

- the discount is the **difference** between the full price and the sale price.

If you get stuck - look up the Wordbank to help you

Example

The price tag shows the full price and the sale price of a tracksuit.

Calculate the discount.

On your calculator, $38 - 32.25 = 5.75$

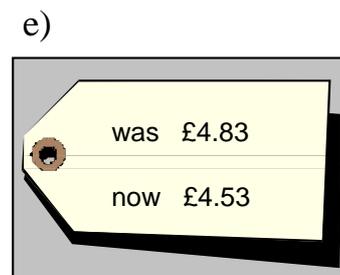
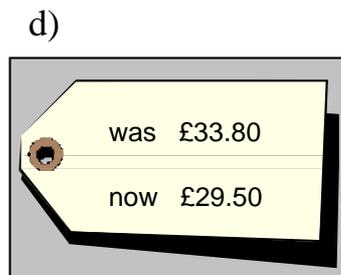
So,

the discount is £5.75



4. The price tags below show the full price and the sale price of 5 items.

Calculate the discount that is being given on each item.





Reminders

- the full price is the **sum** of the discount and the sale price.

If you get stuck - look up the Wordbank to help you

Example

A pair of jeans cost £27.65 in the sale.

The discount which has been given is £4.85.

What was the full price of the jeans before the sale?

The full price is the **sum** of the discount and the sale price.

On your calculator, $27.65 + 4.85 = 32.5$, so

The full price was £32.50



5. After the sale a shopkeeper has to put new price tickets on each of the items below.

The price tags show the sale price and how much discount had been given.

Calculate the full price of each of the items.

a)



b)



c)



d)

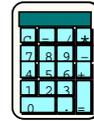


e)



Exercise 3

You may use a calculator for this exercise



Reminders

- **VAT** stands for **Value Added Tax** - this is a tax which the government charges on many goods which we buy in shops. A tax means that we have to pay extra.

So, we add **VAT**.

If you get stuck - look up the Wordbank to help you

Example

A dishwasher costs £342.

The VAT is another £59.85.

What is the total price of the dishwasher?

On your calculator , $342 + 59.85 = 401.85$

The total price of the dishwasher is £401.85



Wherever possible - set out your working

1. A CD player costs £167.50.
The VAT for the CD player is £29.30.
Find the total cost of the CD player, including VAT?

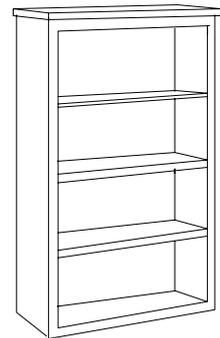


2. The price tags below show the price before VAT and the VAT.
Calculate the total cost of each item, including VAT.



3. A newspaper advertisement shows a bookcase at £45.95 + VAT. The VAT is £8.05.

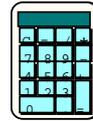
Andy decides that he would like to send for the bookcase.
How much will he have to pay?



4. A new car is advertised at £8460, not including VAT.
The salesman calculates that the VAT would add another £1480.50 to the price of the car.
What is the total cost of the car, including VAT?
5. Schools don't pay VAT.
A calculator cost £14.69 including VAT of £2.19.
How much will it cost the school?
6. A jacket costs £60 including VAT of £9.95.
How much does the jacket cost **not** including VAT?

Exercise 4

You may use a calculator for this exercise



Reminders

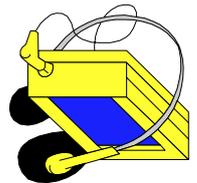
This exercise has questions on **discount** and **VAT**. Remember **'take away'** a discount and **'add'** VAT.

If you get stuck - look up the Wordbank to help you



Wherever possible - set out your working

1. A personal stereo costs £43.40 not including VAT.
The VAT is £7.60.
How much will Eleanor have to pay for the personal stereo, including VAT?
2. A dining room table and chairs are advertised at a price of £654.
For this month only, you can get a discount of £86 on the table and chairs.
How much will you pay if you buy the table and chairs this month?
3. Elaine has ordered new furniture costing £2900.
The VAT is £508.
How much will the furniture cost, including VAT?



4.

MOBILE PHONE COMPANY		
July		£
	Cost	34.55
	VAT	6.05
	TOTAL	

Find the total cost, including VAT.

5. Jane bought a chute costing £89.
She was given a discount of £14.50.
How much did Jane pay for the chute?



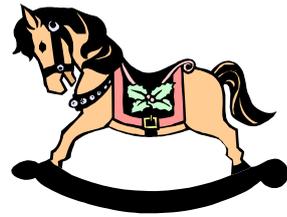
6. A bike costs £179 before VAT.
The VAT is £31.30.
Find the total cost including VAT.

7. Here is Gavin's bill from the garage.

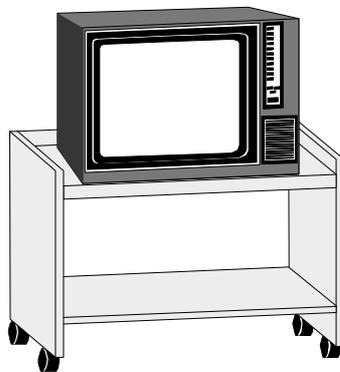
West End Garage	£
Parts & Labour	108.60
VAT	19.00
TOTAL	

How much is Gavin's bill including VAT?

8. Sandra buys a rocking horse which costs £140.
She gets £23.80 discount.
How much does she pay for the rocking horse?

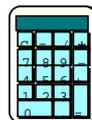


9. Jack wants to buy a colour TV priced at £276.
The VAT is an extra £48.30.
What is the total cost of the TV, including VAT?



Exercise 5

You may use a calculator for this exercise



Reminders

For this exercise you will need to decide whether to **multiply** or **divide**.

Example

Adam buys 6 packets of football stickers.

- a) Each packet of football stickers costs £0.35
How much does Adam pay for the 6 packets of football stickers?

On your calculator, $0.35 \times 6 = 2.1$

The stickers cost £2.10.

- b) Adam puts his new stickers into an album.
Adam has 72 football stickers altogether.
He puts the same number of stickers onto each page and he fills 8 pages.
How many stickers fit on each page?

On your calculator, $72 \div 8 = 9$

He can fit 9 stickers on each page.



If you get stuck - look up the Wordbank to help you.



Wherever possible - set out your working

1. Anita bought three pairs of tights at £1.69 per pair.
How much did they cost her altogether?
2. Mary bought cream cakes for her daughter's birthday party.
Each cake costs 37p and Mary bought 20 cakes.
How much did she spend on the cakes?
3. William paid for 5 CDs from the record club.
Each CD cost £11.99.
How much did William spend?
4. Miriam spends £19.95 on three T-shirts.
Each T-shirt is the same price.
How much is it for one T-shirt?
5. The council ordered 144 new bins at a total cost of £3816.
How much did the council pay for each bin?



6. Tariq is planning a barbecue.
He goes to the supermarket to find out the prices of some items.

This is what he finds out

Sausages	£1.54 for a pack of 10
Rolls	84p for a pack of 6
Hamburgers	£2.10 for a pack of 4
Cola	35p per can



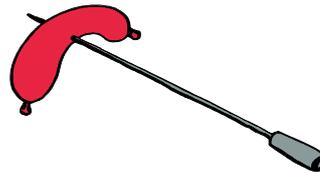
Now use these prices to work out how much Tariq spends on

- a) 8 packs of sausages
- b) 20 packs of rolls
- c) 10 packs of hamburgers
- d) 50 cans of cola
- e) How much does Tariq spend in total?



Five of Tariq's friends have agreed to share the cost of the food and drinks with him.

- f) How much does each person have to pay if each of the six people pay an equal share?

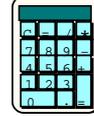


USING MATHEMATICS 1 (ACC 3)

Outcome 3

Exercise 1

You may use a calculator for this exercise



Reminders

In each question study the table carefully before you try to answer any of the questions.

If you get stuck - look up the Wordbank to help you.



Wherever possible - set out your working

HOLIDAY VEHICLE HIRE IN CRETE

	3 Days	7 Days	14 Days
Car	£82	£125	£218
Beach Buggy	£105	£179	£338
Minibus	£114	£190	£368

The table above shows the costs (in pounds) of hiring vehicles in Crete.

Use the table to answer questions 1 and 2.

- How much does it cost to hire a minibus in Crete for 7 days?
 - The cost of the minibus hire is to be shared equally among ten people. How much will each person have to pay?
- Dave hires a car for 14 days. How much does it cost him?
 - Alan hires a beach buggy for 14 days. How much does it cost him?
 - How much cheaper is it to hire a car than a beach buggy for 14 days?

3. This chart shows the distances in miles between towns.

AYR	175					
EDINBURGH	115	73				
FORT WILLIAM	152	132	130			
GLASGOW	142	33	44	103		
INVERNESS	104	198	156	66	169	
STRANRAER	226	51	123	208	84	249
	ABERDEEN	AYR	EDINBURGH	FORT WILLIAM	GLASGOW	INVERNESS

This shows that the distance between **Glasgow** and **Fort William** is 103 miles.

- Use the chart to find which two towns are closest together.
 - How many miles is it from Inverness to Ayr?
 - What is the distance from Stranraer to Fort William?
 - Find the total distance travelled by a lorry driver who drives from Glasgow to Edinburgh and then from Edinburgh to Fort William.
4. The table shows the cost for a one week holiday at different times during the summer.

	June	July	August	September
Week 1	£260	£275	£305	£274
Week 2	£262	£280	£300	£267
Week 3	£268	£285	£290	£260
Week 4	£270	£295	£280	£250

- What is the cost of a one week holiday in week 3, June?
- What is the cost of a one week holiday in week 4, August?
- When is the most expensive week?
- When is the cheapest week ?
- When is the cost £280?

Here is a calendar for May. Use the calendar to answer questions 5, 6, 7 and 8.

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
						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	31					

5. a) What is the date 5 days after May 14th?
b) What day of the week is it?

6. a) What date is it 3 days before 25th May?
b) What day of the week is it?

7. It is May 4th. My birthday is on Wednesday 12th May.
How many days is it until my birthday?

8. List the dates of all the Tuesdays in May.

Exercise 2



Reminders

In each question study the table carefully.

If you get stuck - look up the Wordbank to help you.



- Sam is a third year pupil at Newton High School.

Here is a copy of his timetable.

	1	2		3	4		5	6
MON	P.E.	English	I N T E R V A L	Maths	Science	L U N C H	Art	Music
TUES	Maths	French		Drama	English		History	I.T.
WED	Drama	History		French	Art		Music	English
THURS	Maths	I.T.		History	Science		Drama	P.E.
FRI	Science	I.T.		English	Music		French	Maths

- How many periods of English does Sam get each week?
- On what days will Sam need his PE kit?
- Which subject is Sam in just before lunch on a Wednesday?
- Sam has a hospital appointment on Tuesday afternoon and will have to leave school at lunchtime. What two classes will he miss?
- Which subject does Sam get after the interval on a Thursday?
- Which subject does Sam always get in the morning?

2. Now draw out a copy of your own timetable and use it to answer the following questions.
- a) Which subject do you have period 1 on a Monday?
 - b) How many periods of maths do you have each week?
 - c) Write down the days on which you get maths.
 - d) Which days do you need to bring a P.E. kit?
 - e) What is your favourite subject?
How many periods of this subject do you get each week?
 - f) Which subject do you go to after lunch on a Thursday?

3. The grid below shows the programmes which will be on TV on Saturday evening between 6 p.m. and midnight.

PROGRAMME	START TIME	LENGTH
The Simpsons	6.00 p.m.	1 hour
Cartoon Time	7.00 p.m.	15 minutes
The Saturday Movie	7.15 p.m.	1 hour 30 minutes
The Holiday Spot	8.45 p.m.	45 minutes
The Laugh Half	9.30 p.m.	30 minutes
The News	10.00 p.m.	30 minutes
Saturday Sport	10.30 p.m.	1 hour 15 minutes
Late News	11.45 p.m.	15 minutes
Closedown	Midnight	*****

Use the table above to answer each of the following questions.

- Which programme starts at 7.15 p.m.?
- How many programmes last for exactly 30 minutes?
- How long does 'Saturday Sport' last?
- How many programmes last more than one hour?

4. You have to plan the school concert.
 It has to start at 7.30 p.m. and finish at 10 p.m.
 The interval will last 20 minutes.
 The Headteacher's speech will be at the end of the concert and will last 10 minutes.

There are 5 different acts for the concert.

Junior Choir	20 minutes
Brass Band	15 minutes
Rock Group	20 minutes
Drama Group	30 minutes
Senior Choir	25 minutes

Copy and complete the grid to show your plan for the concert.
 Remember to include the interval and the Headteacher's speech.

ACT	START TIME	LENGTH

5. Here is a list of the fillings and salad you can have on a roll from the school cafe.

Fillings : Cheese, Tuna or Egg

Salad : Tomato or Lettuce .

On each roll you can have **one** filling and **one** salad.
The table below shows two possible choices.

Filling	Salad
Cheese	Lettuce
Egg	Tomato

Altogether there are six different possible choices.

List the six different possible choices in your jotter.

Exercise 3



Reminders

A pictograph is a graph which uses pictures to display information. Each picture used in the graph has a 'value'. This value is given in the 'key'.

If you get stuck - look up the Wordbank to help you.



1.

Key:  stands for 2 cars  stands for 1 car

FORD	
NISSAN	
PEUGEOT	
RENAULT	
ROVER	
VAUXHALL	

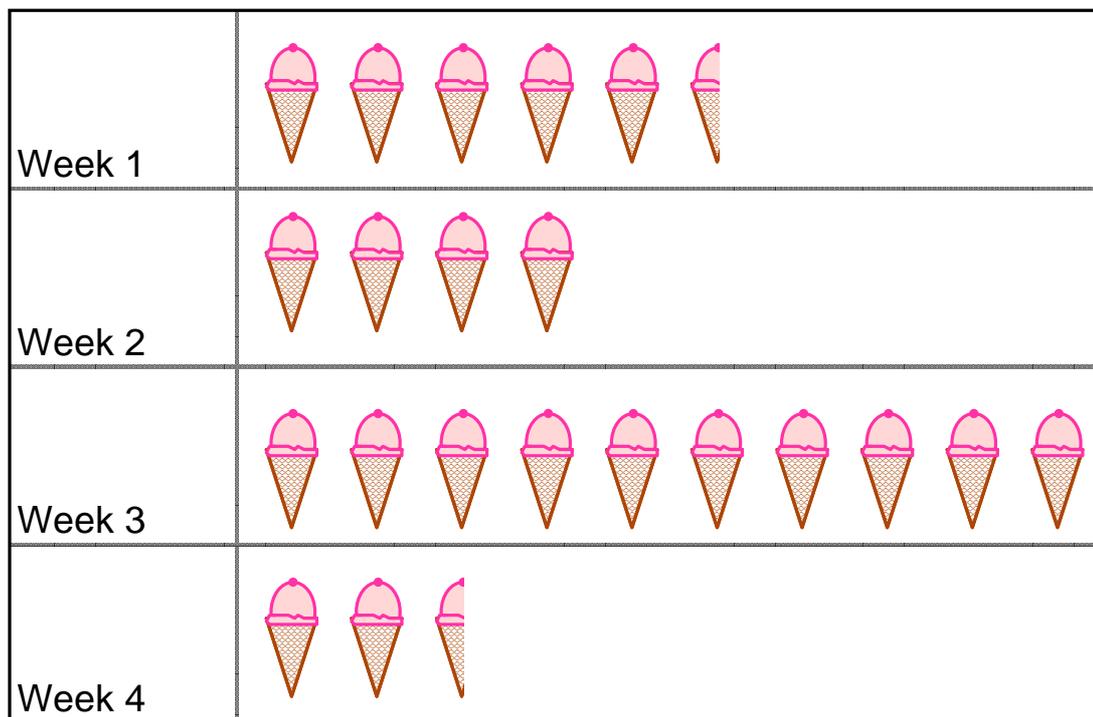
Class 1T at Mains High School asked each of the teachers what make of car they own.

The pictograph shows what they found.

Use the pictograph to answer the following questions :

- a) Which make of car do most teachers own?
- b) Which car is owned by fewest teachers?
- c) Which make of car is owned by 8 of the teachers?
- d) Which make of car is owned by 3 teachers?
- e) How many teachers own a Rover car?
- f) How many own a car made by Peugeot?
- g) Which two makes of car are owned by the same number of teachers?
- h) How many more teachers own a Ford than a Renault?

2.



Key :  stands for 10 cones  stands for 5 cones

The pictograph shows how many ice cream cones were sold by a shop during 4 weeks in July.

Use the pictograph to answer the following questions:

- In which week were most cones sold?
- How many cones were sold during week 1?
- In which week were fewest ice cream cones sold?
- In which week were 25 cones sold?
- How many cones were sold altogether during July?



You need a copy of worksheet 3.

3. Bigtown Boys Club has a football team.
The team have been playing well this season.
The list below shows the number of goals scored this season by six of the players.

Tom	3
Peter	2
Alex	6
Asim	4
John	1
George	4

On **worksheet 3**, the pictograph has been started for you.

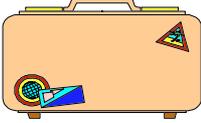
A picture of a football  stands for 1 goal.

Complete the pictograph to show the number of goals scored by each of the 6 boys.

4. Class 3L at Bigtown Academy did a survey on summer holidays.
All the pupils in the school were asked where they went on holiday last summer.
The list below shows the results of the survey.

Scotland	40
England	80
Wales	40
Ireland	30
Europe	100
America	50
Rest of world	20
Stayed at home	60

On **worksheet 3**, the pictograph has been started for you.

A picture of a suitcase  stands for 20 pupils.

Complete the pictograph to show how many pupils went on holiday to each place.

5. Choose a topic of your own.
Gather information from the pupils in your class and display the information in a pictograph. Remember to choose a suitable picture and to include a key.
Ask your teacher you might be able to use a computer to draw your pictograph.

Here are some ideas for topics ...

Favourite TV programmes

Favourite pop groups

Eye colour

Pets owned

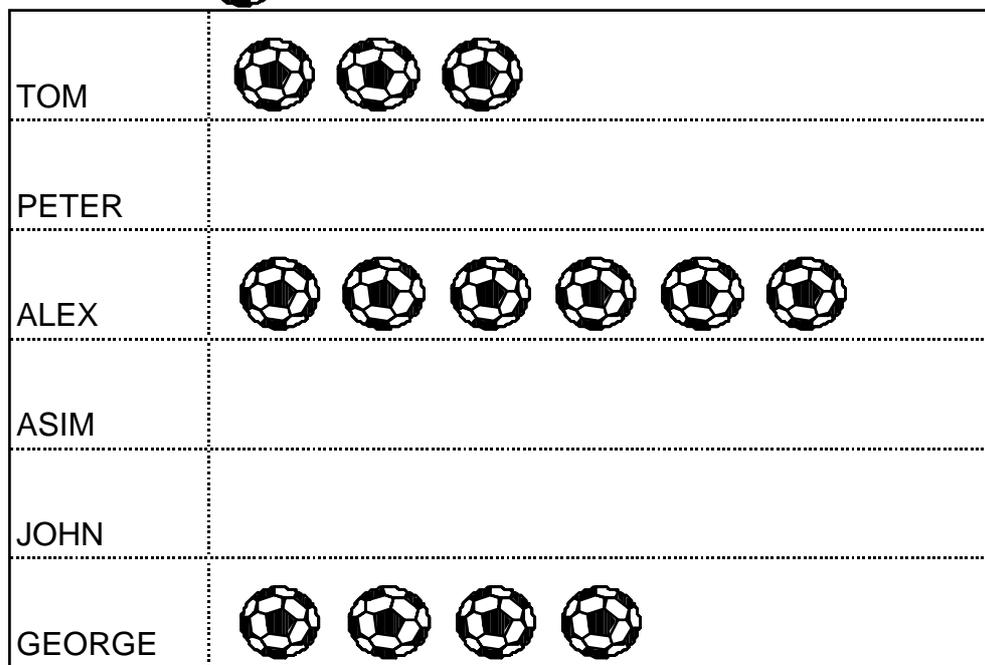
Favourite Sport

....or choose one of your own.

Worksheet 3

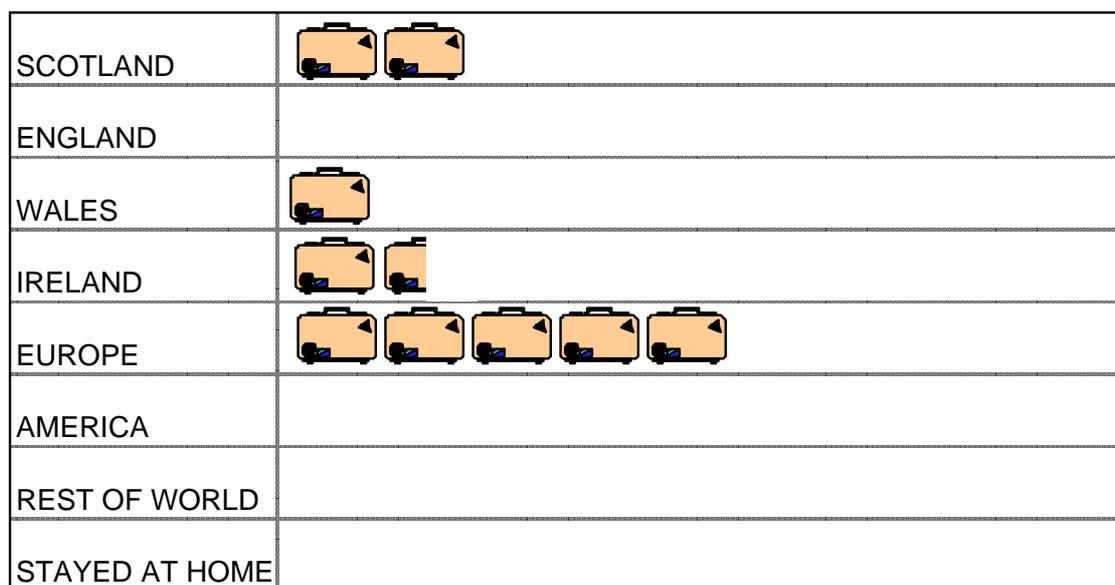
Use the information about Bigtown Boys Club to complete the pictograph.

Key:  stands for 1 goal



Use the information about Bigtown Academy's summer holidays to complete the pictograph. Remember to complete the key.

Key:  stands for 20 pupils  stands for _____



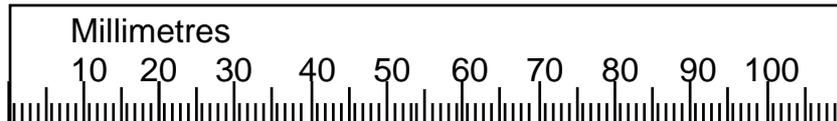
USING MATHEMATICS 1 (ACC 3)

Outcome 4



Reminders

A **millimetre** is used to measure small lengths.



A **centimetre** can also be used to measure small lengths.



A **metre** is used to measure longer lengths - for example :

- your height is measured in metres
- the length of a room will be measured in metres

A **kilometre** is used to measure much longer distances - for example :

- the distance between *Glasgow* and *Edinburgh* will be measured in kilometres

We also measure distances in **miles**. 1 mile is the same as 1.6 kilometres

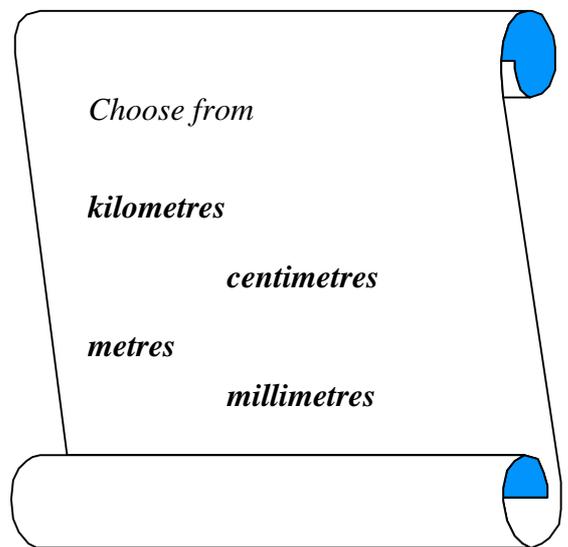
If you get stuck - look up the Wordbank to help you.

Exercise 1



Choose the best units for measuring these :

1. the width of your desk
2. the length of a football pitch
3. the length of a postage stamp
4. the distance from Dundee to Aberdeen
5. the thickness of a book
6. the length of the classroom
7. the length of an eyelash
8. the height of the school building
9. the distance from London to New York
10. your height



Exercise 2



Which measuring instrument would you choose to measure each of these?

1. your waist
2. the length of this page
3. the distance round a running track
4. the height of the door
5. the distance from your elbow to your wrist
6. the width of the playground
7. the length of a pencil
8. the height of football goalposts

Choose from :

Ruler

Trundle wheel

Tape measure

Metre stick

Exercise 3

Practical exercise



If you get stuck - look up the Wordbank to help you



1. Measure your height. Note your height into your jotter.
2. Choose six objects which are in your classroom.
You might want to choose the teacher's desk, the door, the height of a chair from the floor, a cupboard and a few other objects. Write the name of each into your jotter and then use a ruler or a metre stick to measure the length, breadth or height of each object.
Remember to be as accurate as you can and then note the measurements into your jotter beside the name of the object.

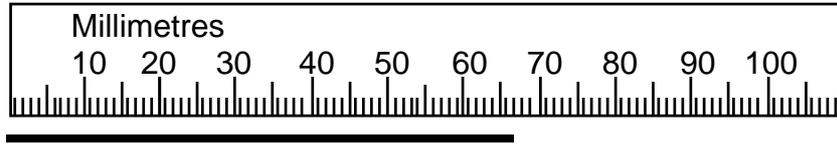
You may have to go to the library to find the answers to these questions.

3. What is the distance between Glasgow and Edinburgh in miles?
4. What is the distance between Perth and Dundee in miles?
5. What is the distance between Inverness and Aberdeen in miles?
6. What is the distance between Glasgow and London in miles

Exercise 4



Reminder

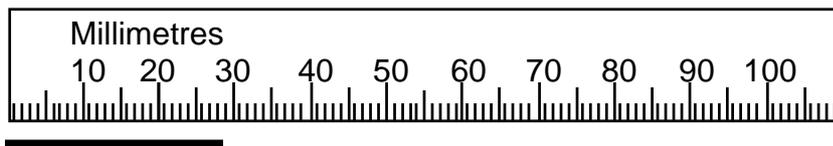


This line measures 67 mm.

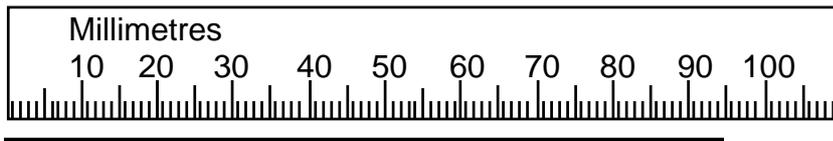


1. Write down the lengths of each of the following in the same way.

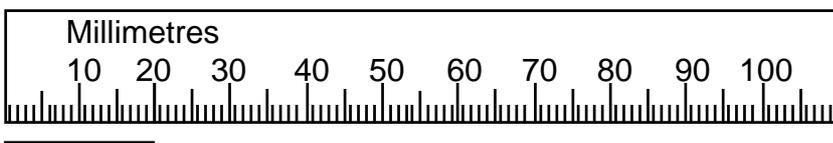
a)



b)

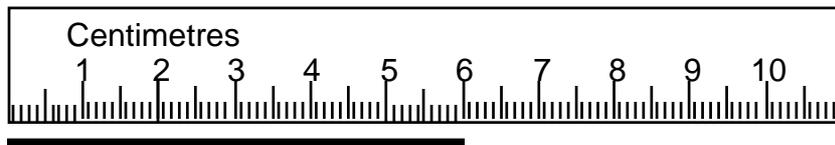


c)





Reminder



This line measures 6 cm.

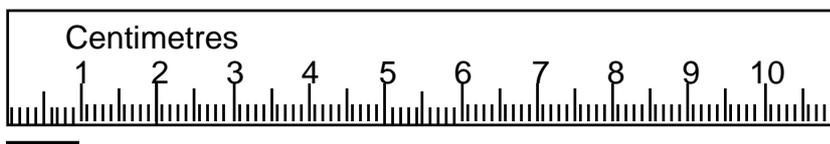


2. Write down the lengths of each of the following in the same way.

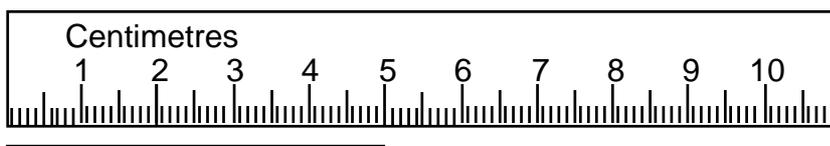
a)



b)



c)





Reminder

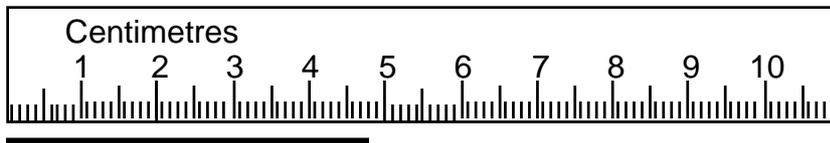


This line measures 5 cm 4 mm.

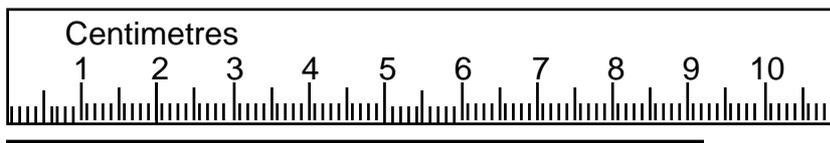


3. Write down the lengths of each of the following in the same way.

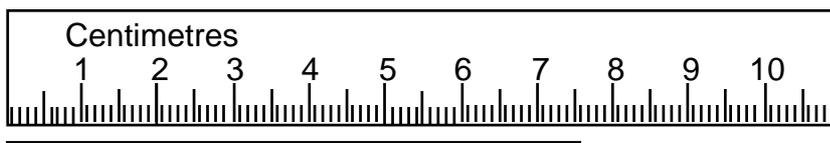
a)



b)



c)



4. For each of the objects shown below, measure the distance straight across the object.

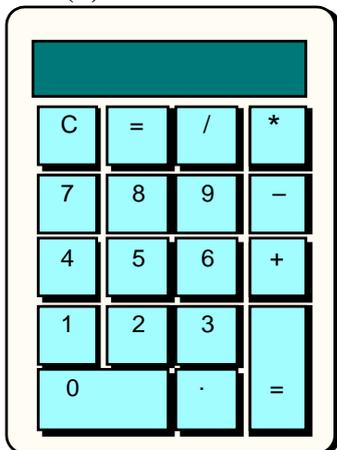
Note your answers into your jotter.



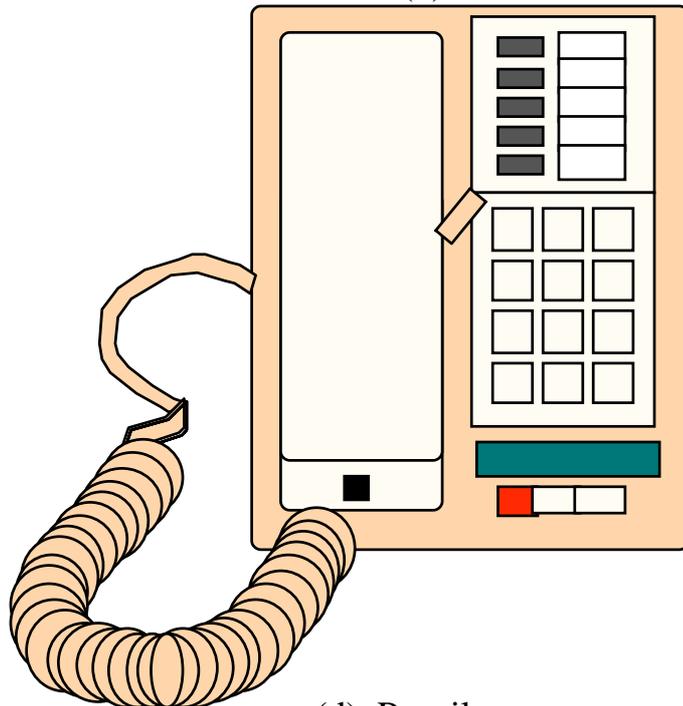
Don't forget to put units in each of your answers

e.g 8 cm or 30 mm or 4 cm 7 mm

(a) Calculator



(b) Phone



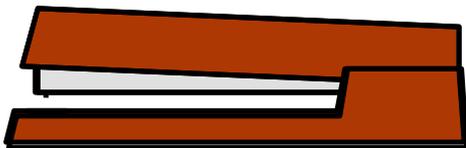
(c) Paperclip



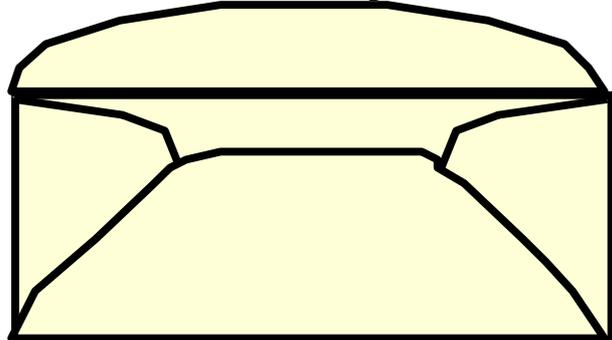
(d) Pencil



(e) Stapler



(f) Envelope



5. Use a ruler to measure each of the items given below.

Give your answers in millimetres.

- a) the length of this page
- b) the width of this page
- c) the length of your pencil
- d) the width of your thumbnail
- e) the thickness of a textbook
- f) the width of your desk

6. Use a ruler to draw lines in your jotter. Each line should be the length given.

- | | | |
|--------------|--------------|--------------|
| a) 8 cm | b) 4 cm | c) 10 cm |
| d) 26 mm | e) 105 mm | f) 84 mm |
| g) 9 cm 2 mm | h) 3 cm 4 mm | i) 7 cm 8 mm |

USING MATHEMATICS 1 (ACC 3)

Outcome 1

Exercise 1

1. 595 2. 204 3. 870 4. 369 5. 8394
6. 225 7. 129 cm 8. £210 9. 780 10. 1045
11a) 22 miles b) 91 miles c) 67 miles 12. 540 grams
13a) 44 b) 72 c) 97 14. £888 15. 7540 people
- $$\begin{array}{r} +12 \\ 56 \end{array}$$

$$\begin{array}{r} +13 \\ 85 \end{array}$$

$$\begin{array}{r} +14 \\ 111 \end{array}$$

Exercise 2

1. 225 2. 232 3. 452 4. 1222 5. 257
6. 425 7. 636 8. 749 9. £42 10. 27 years
11. 47 cm 12. £31 13. 47 pupils 14. 1723 miles 15. 6373 people

Exercise 3

1. 460 miles
2a) £62 b) £50 3. 422 passengers 4. 930 tickets
5a) £8000 b) £1000 6a) £3160 b) £1810
7a) £653 b) £44 8. 6194 people 9. 8377 fans

Exercise 4

1. 130 2. 192 3. 184 4. 27 m 5. 144 eggs
6. £216 7. £1648 8. £448 9. 360 grams 10. £116

Exercise 5

1. £522 2. 720 cards 3. £10608 4. £47970
5a) 372 mints b) 4380 mints 6. £438528 7. 20160 miles
8. £9030 9. 9360 m 10. £1184 11. £17.86 (or 1786p)
12. 1200 packets

Exercise 6

1. cartons 2. £372 3a) £192 b) £832
4. 8 tablets 5. 25 sq m 6. £85 7. 60 rows

Exercise 7

- 1a) £12 b) £240 2. 14 months
3a) 19 boxes b) 1008 chocolates
4. 2250 metres 5. £135
6a) Robert £119 b) Salim £141
7. 2880 minutes b) 48 hours 8. 780 points
9a) £540 b) £160 left c) 8 footballs

Exercise 8

1 & 2 see worksheets

3. a) To find $\frac{1}{2}$ of something divide by 2 ; so $\frac{1}{2}$ of 12 is 6
b) To find $\frac{1}{3}$ of something divide by 3 ; so $\frac{1}{3}$ of 12 is 4
c) To find $\frac{1}{4}$ of something divide by 4 ; so $\frac{1}{4}$ of 12 is 3
d) To find $\frac{1}{5}$ of something divide by 5 ; so $\frac{1}{5}$ of 20 is 4
e) To find $\frac{1}{10}$ of something divide by 10 ; so $\frac{1}{10}$ of 20 is 2

15. Rovers 336 fans , United 1344 fans

- 4a) £1 b) £20 c) 179 litres
5a) 5 cm b) 26 eggs c) 150 sweets
6a) 14 p b) 30 men c) £250
7a) 6 pages b) 73 days c) £200
8a) 8 boys b) 14 sweets c) 78 ml
9. 2 squares 10. £4 11. 14 girls
12. 17 years old
13a) $\frac{1}{3}$ b) 15 sweets
14a) 7 b) 21
15. Rovers 336 fans, United 1344 fans

Exercise 9

- 1a) 3 bars b) 12p
2a) 9 teams b) 5 children
3. 4 days 4 hours
4a) 27 chairs b) 4 chairs
5a) 7 glasses b) 30 ml
6a) 7 times b) 21

Exercise 10

- 1a) seven thousand four hundred and thirty nine
b) one thousand eight hundred and twenty six
c) four thousand three hundred and twelve
d) two thousand nine hundred and six
e) nine thousand and fifty four
f) six thousand and seven
- 2a) 463 b) 4000 c) 6311
d) 8107 e) 4012 f) 9001
- 3b) 354 km c) 272 cm, 22
d) 739 e) 1454
4. Various answers

USING MATHEMATICS 1 (ACC 3)

Outcome 2

Exercise 1

- 1a) Thomas b) 18p c) 68p
2a) Lorna b) 15p c) 99p d) 28p
3. £14.93 4. £9.90 5. £11.98
6. £1.99 7. 10p change 8. no (he needs £16.13)
9. £10.50 10a) £11.40 b) £8.60
11a) £138.76 b) £117.97 12. £1506.22
13a) £67.55 b) £12.45 14. £5.49

Exercise 2

1. Dress £54.45 Shoes £30.30 Shirt £18.50
2. £318 3. Cyprus £215 New York £399 Paris £73
4a) £6.45 b) £2.55 c) £247 d) £4.30
e) £0.30 (30p)
5a) £25.75 b) £870 c) £11.40 d) £60.50
e) £1.66

Exercise 3

1. £196.81 2. £9940.50 3. £54
4. £12 5. £50.05 6. £7998.50

Exercise 4

1. £51 2. £568 3. £3408 4. £40.60 5. £74.50
6. £210.30 7. £127.60 8. 116.20 9. 324.30

Exercise 5

1. £5.07 2. £7.40 3. £59.95 4. £6.65 5. £26.50
6a) £12.32 b) £16.80 c) £21 d) £17.50 e) £67.62
f) £11.27

USING MATHEMATICS 1 (ACC 3)

Outcome 4

Exercise 1

- | | | |
|---------------|---------------|---------------|
| 1. cm | 2. m | 3. mm (or cm) |
| 4. cm | 5. mm (or cm) | 6. m |
| 7. mm (or cm) | 8. m | 9. km |
| 10. m (or cm) | | |

Exercise 2

- | | | |
|-----------------|-----------------|------------------|
| 1. tape measure | 2. ruler | 3. metre stick |
| 4. metre stick | 5. tape measure | 6. trundle wheel |
| 7. ruler | 8. metre stick | |

In the following answers allow ± 2 mm for all practical measurements

Exercise 3

1. various answers - pupil's own height
2. various answers - pupils to choose six objects

The answers given for questions 3 to 6 are the distances (in miles) by road.

3. Glasgow to Edinburgh 46 miles
4. Perth to Dundee 22 miles
5. Inverness to Aberdeen 105 miles
6. Glasgow to London 410 miles

Exercise 4

(Allow for slightly different answers due to slight scaling of diagrams when photocopying)

- 1a) 28 mm b) 94 mm c) 20 mm
- 2a) 8 cm b) 1 cm c) 5 cm
- 3a) 4 cm 8 mm b) 9 cm 2 mm c) 7 cm 6 mm
- 4a) 44 mm or 4 cm 4 mm
- b) 57 mm or 5 cm 7 mm
- c) 18 mm or 1 cm 8 mm
- d) 89 mm or 8 cm 9 mm
- e) 61 mm or 6 cm 1 mm
- f) 79 mm or 7 cm 9 mm

- 5a) 296 mm b) 210 mm c) various
- d) various e) various f) various

6. Nine lines drawn in jotter

USING MATHEMATICS 1 (ACC 3)

Some calculations which are the same can be described in different ways.

Some of these are listed below.

Addition

+

add

the sum of

the total of

altogether

the value of

how much

Subtraction

-

subtract

take away

the difference between

how many more

how many less

how much left

Multiplication

X

multiply

times

total

altogether

*(you can sometimes multiply instead of
doing lots of additions)*

Division

÷

divide

share

how many per

how

much each

add	+
altogether	in total; usually means add
centimetre (cm)	unit of length - for measuring small lengths
difference between	take away ; subtract
discount	money taken off a price e.g. in a sale; usually subtract
divide	÷
equal share	divide a quantity into smaller equal amounts
fewest	least; lowest number
figures	numbers; digits

full price	normal price paid (i.e. when not in a sale; before discount) the full price includes VAT
grid	table; list
including	and extra amount has already been added on
key	used with a pictograph; explains what each picture 'stands for'
kilometre (km)	unit of length - for measuring longer distances e.g. Dundee to Perth
least expensive	cheapest; costs the least amount of money
less	take away ; subtract

metre (m)	unit of length - for measuring longer distances e.g. the length of a room
metre stick	a ruler which is one metre long
mile	unit of length - for measuring longer distances e.g. Dundee to Perth (1 mile = 1.6 km)
millimetre (mm)	unit of length - for measuring small lengths
most expensive	dearest; costs most money
most frequent	most often; largest number
multiply	\times ; times
pay rise	increase in pay; add

per	each e.g. 'per week' means 'each week'
pictograph	a type of graph using pictures to show information
reduced price	sale price; full price ' take away ' discount
reduction	amount to be ' taken away '
remainder	amount left over after sharing out; divide
sale price	reduced price; full price ' take away ' discount
share	divide into equal parts
subtract	- ; take away
sum of	total of; add
table	chart; list; grid

take away	-; subtract
tape measure	used for measuring e.g. a person's waist
times	X ; multiply
total	altogether; usually add but can be multiply
trundle wheel	used for measuring distances along the ground
value	amount; answer
VAT	Value Added Tax ; a tax paid to the government; an extra cost; add

