

## OUTCOME 1

### Student Worksheet 1: Car Park Charges

Study the table below and work out how much it would cost to use the Town Centre Car Park.

Car Park Charges	
Up to 30 minutes	50p
Up to 1 hour	80p
Up to 2 hours	£1.20
Up to 3 hours	£2.00
Up to 5 hours	£5.00
Daily Charge	£10.00
Lost Ticket	Daily Charge

**Note:** For more than 5 hours, a daily charge must be paid.

Answer the following questions.

How much would it cost to park for:

1.	25 minutes?	
2.	45 minutes?	
3.	1 hour 35 minutes?	
4.	3 hours 10 minutes?	
5.	2 hours 59 minutes?	
6.	5 hours 15 minutes?	
7.	All day?	
8.	Cost for lost ticket?	

**Student Worksheet 2: Cross Café Menu**

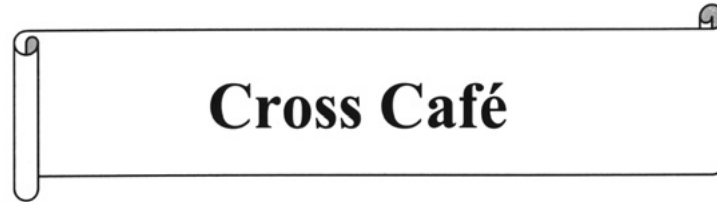


Plate of Home-made Soup	£0.70
Plain Hamburger with Chips	£3.60
Cheese Burger with Chips	£4.20
Baked Potato with Butter	£2.00
Baked Potato with Coleslaw	£2.35
Chicken Sandwich	£1.25
Salad Roll	£1.25
Plain Roll	£0.30
Apple	£0.75
Apple Pie with Ice-Cream	£1.10
Fruit Sundae	£1.50
Tea	£0.50
Coffee	£0.70
Milk	£0.60
Milk-shake	£0.85
Coke	£0.99

John and his friend visit the Cross Café for lunch. On the next page there is a list of what they chose. Write in the price of each item and add up their bill. You may use a calculator.

1 plate of soup	:
1 cheese burger with chips	:
1 salad roll	:
1 fruit sundae	:
1 tea	:
1 milk-shake	:
<b>Total:</b>	:

You visit the Cross Café with your friend. Write down the items you and your friend buy and the price of each item. Find the **total** cost.

	:
	:
	:
	:
	:
	:
<b>Total:</b>	:

**Student Worksheet 3: Firpark Supermarket**

Here is the price list for items sold in the Firpark Supermarket.

<b>Item</b>	<b>Price</b>	<b>Item</b>	<b>Price</b>
Tea Bags (80)	85p	Mixed Fruit Jam	68p
Digestive Biscuits	55p	Strawberry Jam	78p
Custard Creams	62p	Lemon Curd	68p
Fruit Shorties	29p	Table Jelly	31p
Porridge Oats	39p	Tuna in Brine	65p
Brown Sauce	55p	Hot Dog Sausages	45p
Tomato Sauce	55p	Corned Beef	65p
Vinegar	35p	Diet Cola 2 Litre	30p
Sliced Beetroot	47p	Orange Juice	25p
Cream of Chicken Soup	41p	Blackcurrant Juice	25p
Cream of Tomato Soup	41p	Processed Peas	23p
Lentil Soup	41p	Tinned Spaghetti	20p
Vegetable Soup	41p	Baked Beans	19p
Macaroni Pasta	55p	Peeled Plum Tomatoes	20p
Spaghetti Pasta	45p	Tissues	69p
Rice	55p	Washing Up Liquid	30p
Lentils	59p	Toilet Soap (4 Pack)	59p
Orange Marmalade	68p	Toilet Rolls	85p

This is John's shopping list. Fill in the prices and work out his change.

	<b>Item</b>	<b>Price</b>
1.	Tomato Sauce	
2.	Processed Peas	
3.	Tea Bags	
4.	Table Jelly	
5.	Digestive Biscuits	
	<b>Total:</b>	

John has:	£5.00
His shopping costs:	£
His change is:	£

You are going shopping in the Firpark Supermarket.  
Use the price list on the previous page to help you.

Below are some blank shopping lists for you to use.

1. Choose the items you want and write them down in the first column.
2. Check the prices and write them down in the second column.
3. Add up the cost of your shopping and write in the total.

	Item	Price
1.		
2.		
3.		
	<b>Total:</b>	

	Item	Price
1.		
2.		
3.		
4.		
	<b>Total:</b>	

	Item	Price
1.		
2.		
3.		
4.		
5.		
	<b>Total:</b>	

**Student Worksheet 4: Television Times**

Here are the times of television programmes for Tuesdays on BBC1 and STV.

Study the table carefully, then answer the questions below.

<b>STV</b>		<b>BBC1</b>	
<i>Programme</i>	<i>Time</i>	<i>Programme</i>	<i>Time</i>
Scotland Today	6.00 pm	BBC News	6.00 pm
ITV Evening News	6.30 pm	Reporting Scotland	6.30 pm
Emmerdale	7.00 pm	Holiday	7.00 pm
Scottish Passport	7.30 pm	EastEnders	7.30 pm
The Bill	8.00 pm	Airport	8.00 pm
Peak Practice	9.00 pm	DIY SOS	8.30 pm
The Big Match	10.00 pm	BBC News	9.00 pm
ITV Nightly News	11.00 pm	Crimewatch UK	9.30 pm
Scotland Today	11.25 pm	Frontline Scotland	10.20 pm

1.	What time does the ITV Evening News begin?	
2.	You are trying to find a holiday. Which programme might help tonight?	
3.	Peak Practice begins at what time?	
4.	It is nearly 6.00 pm. Which channel should you watch to see the news?	
5.	What time does The Big Match begin?	
6.	What comes on TV earlier, Scotland Today or Frontline Scotland?	
7.	Two programmes begin at 8.00 pm. What are they?	1.
		2.
8.	What time is the ITV Nightly News shown?	

### Student Worksheet 5: Bus Timetable

Here is part of the bus timetable from Motherwell to Glasgow. Look carefully at the timetable, then answer the questions below.

Bus	1	2	3	4
Depart Motherwell	09:00 am	10:00 am	11:00 am	12:00 noon
Arrive Glasgow	09:30 am	10:30 am	11:30 am	12:30 pm

1.	What time does Bus 3 leave Motherwell?	
2.	What time does Bus 3 arrive in Glasgow?	
3.	How long does the journey take?	
4.	Does every bus take the same time to make this journey?	
5.	You must be in Glasgow at 11:15 to meet your friend. Which bus must you take?	
6.	If you just missed a bus in Motherwell, how long would you have to wait for the next bus?	

### Student Worksheet 6: Bus Timetable

Here is part of the bus timetable from Bellshill to Bothwell. Look carefully at the timetable, then answer the questions below.

<b>Bus</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Depart Bellshill	09:00 am	09:15 am	09:30 am	3:00 pm	3:30 pm
Arrive Motherwell	09:30 am	09:45 am	10:00 am	3:30 pm	4:00 pm
Arrive Hamilton	9:45 am	10:00 am	10:15 am	3:45 pm	4:15 pm
Arrive Bothwell	10:15 am	10:30 am	10:45 am	4:15 pm	4:45 pm

1.	How long does the journey from Hamilton to Bothwell take?	
2.	What time does the 3:00 pm bus arrive in Hamilton?	
3.	How long did this journey take?	
4.	Do the buses run regularly all day or is there a gap?	
5.	Which bus must you take if you have an appointment in Hamilton at 11:00 am?	
6.	If you missed the 9:30 am bus from Motherwell, how long would you have to wait for the next bus?	

### Student Worksheet 7: Arrivals and Departures

Here is a list of planes departing from Glasgow Airport with their destinations and arrival times. Study the list then answer the questions below.

<b>Departs:</b>	<b>at:</b>	<b>Arrives:</b>	<b>at:</b>
Glasgow	07:30	London	08:30
Glasgow	08:00	Dublin	08:40
Glasgow	10:15	Paris	11:45
Glasgow	11:00	Orlando	18:00
Glasgow	12:00	Madrid	15:00
Glasgow	12:30	Barcelona	14:45

1.	What time does the plane for Paris leave Glasgow?	
2.	What time does the plane from Glasgow land in Madrid?	
3.	Which plane leaves earlier, the Barcelona or Dublin plane?	
4.	How long is the flight from Glasgow to Madrid?	

**Student Worksheet 8: Firpark Work Experience Timetable**

Students from Firpark go on work experience to many different places. Work experience lasts for one week. Here is a table showing:

- (a) students who went on work experience during five weeks in the summer term
- (b) where they worked.

<b>Lisa</b>		Oxfam			
<b>Alana</b>	Retirement Home				
<b>Amanda</b>		Stanmore House			
<b>Jane</b>	YMCA				
<b>John</b>					Nursery
<b>Michael</b>		Sports Centre			
<b>Stephen</b>				Employment Training	
<b>Martin</b>			Oxfam		
<b>Wajid</b>	NL Fitness Department				
<b>William</b>			Holy Cross Library		
	<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>	<b>Week 4</b>	<b>Week 5</b>

Answer these questions.

1.	Where did Michael go on work experience?	
2.	Which week did Alana go to help the residents of the retirement home?	
3.	How many students went on work experience?	
4.	During which two weeks were most students out on work experience?	
5.	Was any place used more than once with this group of students?	
6.	If yes, which one?	

**Student Worksheet 9: Timetables**

Here is a timetable for class 4A. It shows the subjects covered by the students in this class, the days they have these subjects and the times.

	9.30 to 10.15	10.15 to 11.00	B R E A K	11.15 to 12.00	12.00 to 12.45	L U N C H	1.30 to 2.15	2.15 to 3.00
Mon	Guidance	Maths		Drama	Social and Vocational		Home Economics	
Tues	Language			Art			RE	PSE
Wed	Swimming	Language		PE	Music		Social and Vocational	
Thurs	Maths			College			College	
Fri	RE	Science		Computers			Activities	

Answer these questions using the timetable.

1.	What time do classes start each morning?	
2.	What time does morning break begin?	
3.	What time does morning break end?	
4.	How long is the break?	
5.	What time does lunch begin?	
6.	What time does lunch end?	
7.	How long is the lunch break?	
8.	What subject does 4A have on Monday after lunch?	
9.	What will the students need to bring on Wednesday?	
10.	How many language periods do 4A have?	

## Fact Sheet 1: Displaying Information

We often need to display information. Here are some examples of why we might need to do this.

1. We need to show the amount of sweets and other items sold each week in the school tuck shop in order to have an idea of how many to order for the next week.
2. Travel companies need to show where people choose to go on holiday in order to book roughly the correct number of places for the next year.
3. Companies need to show the amount of goods sold in one year in order to get an idea of how many to make for the next year.

There are many, many more examples of why we need to display information.

There are many ways to display information. Here are the ones we are going to concentrate on:

1. charts
2. graphs
3. tables.

We will look at these carefully in the pages that follow.

**Point to remember: charts, graphs and tables are ways of displaying information.**

## Fact Sheet 2: Pictograms

- A pictogram displays information.
- In pictograms pictures represent information.
- In the easiest pictogram one picture stands for one item or number.
- In more complicated pictograms, a picture can stand for 5, 10, 20, 100 items – any number in fact.

In the next few worksheets we will look at some pictograms and see how they record information accurately and clearly.

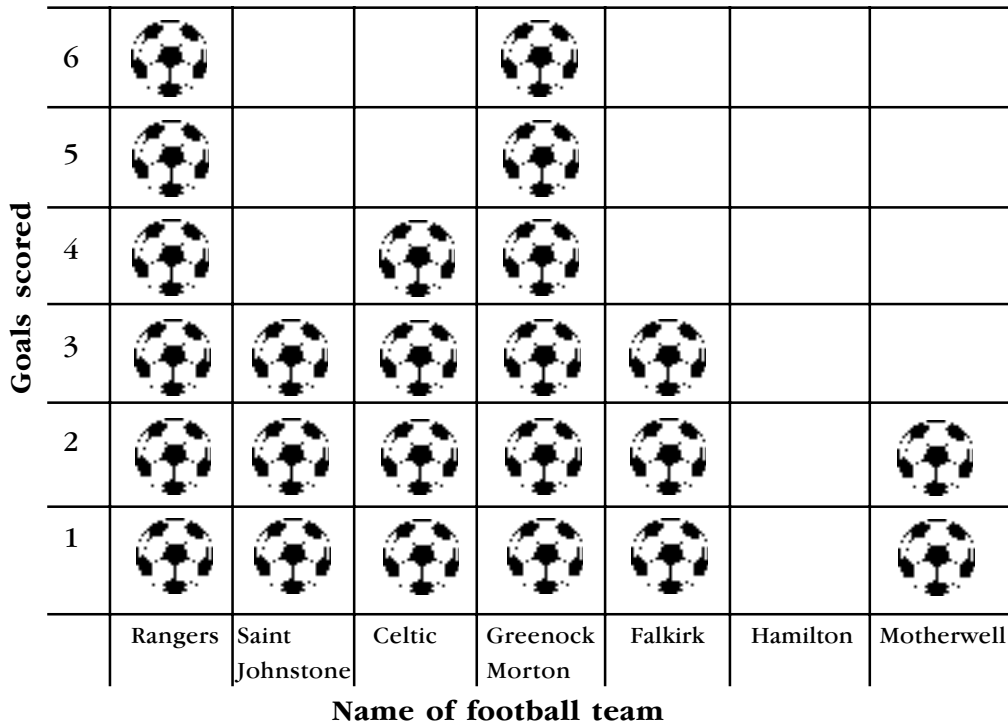
Another word we can use for **information** is **data**.


Point to remember: a **pictogram** is a way of displaying **information** or **data**.

## Student Worksheet 10: Pictograms 1

### Scottish Cup Final - Round 2

This is a **pictogram**. It shows the goals scored by some of the teams taking part in the second round of the Scottish Cup. Each picture of a football represents one goal scored. It is very easy to count how many goals were scored by each team. It is also very easy to see which teams scored the most and the fewest goals. Pictograms are a good way of showing **information** or **data**.



Key:  means 1 goal

On the next worksheet there are some questions for you to answer about this pictogram.

Use the **pictogram** on the last sheet to find out the information you require, then write down the names of the teams that scored:

the fewest goals \_\_\_\_\_

the most goals \_\_\_\_\_

and \_\_\_\_\_

Now fill in the names of the teams that scored this number of goals:

0 goals	
2 goals	
3 goals	
4 goals	
6 goals	

Easy isn't it?

## Student Worksheet 11: Pictograms 2

### A School Holiday

The students of Knowitall School were collecting tokens for a school holiday in Florida. As an extra incentive the headteacher Mr Awfynice gave an extra ten-minute break on a Friday to the class who collected the most tokens.

To make it easier to keep track of the number collected by each class in one week, they decided to mark the number of tokens on a pictogram.

But... because everyone was so keen and so many tokens were coming in, a smiley, happy sun was only put on to the pictogram when **10** tokens had been collected.

To see what the pictogram looked like at the end of the first week, turn to the next page.



Point to remember: one **J** stands for 10 tokens.

**OUTCOME 1**

Number of tokens collected	100	J				J		
	90	J		J		J		
	80	J		J		J		
	70	J		J		J		J
	60	J		J		J	J	J
	50	J		J	J	J	J	J
	40	J		J	J	J	J	J
	30	J	J	J	J	J	J	J
	20	J	J	J	J	J	J	J
	10	J	J	J	J	J	J	J
		1/1	2/1	2/2	3/1	4/1	5/1	6/1

**Classes in Knowitall School**

Key: J means 10 tokens

Have a good look at the pictogram on the last page, then answer the questions below.

1. Which classes will get an extra ten-minute break on Friday this week? \_\_\_\_\_ and \_\_\_\_\_
2. Which class has collected the smallest number of tokens?
3. Fill in the table below showing the numbers of tokens collected by each class.

Classes	Tokens collected
1/1	
2/1	
2/2	
3/1	
4/1	
5/1	
6/1	

4. How many tokens were collected altogether? \_\_\_\_\_

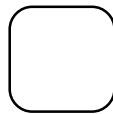
You have now displayed the information about the tokens collected for a school holiday in two different ways:

- using a **pictogram**
- using a **table**.

Both of these show information clearly and well.

### Fact Sheet 3: Block Graphs

Sometimes it might be easier to put little blocks instead of pictures into a pictogram. If you can't draw you might prefer this. A block graph works in exactly the same way as a pictogram, but instead of pictures you use little blocks like this:



Like pictures in a pictogram, these blocks might stand for 1, 2, 5, 10 or whatever number you choose.

You might use different colours to stand for different items. Think of a graph for hair colour. Red could stand for red hair, yellow for blonde, and so on.

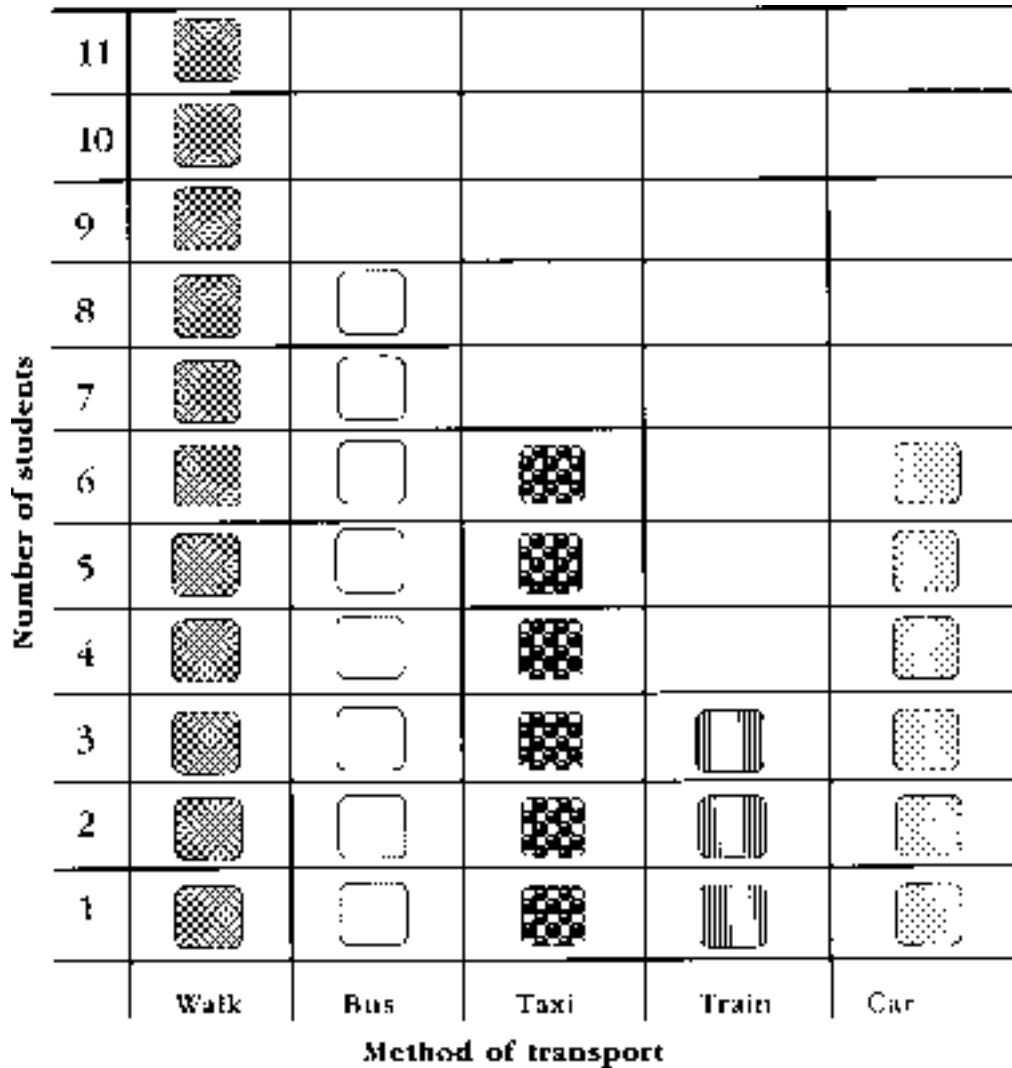
There is a block graph on the next page showing the types of transport students use to travel to school.

Study the graph and then answer the questions.

### Student Worksheet 12: Block Graphs 1

Student transport for a 4th-year group.

Each little block stands for one student. The numbers at the side will help you count.



Key: means 1 student

Answer these questions.

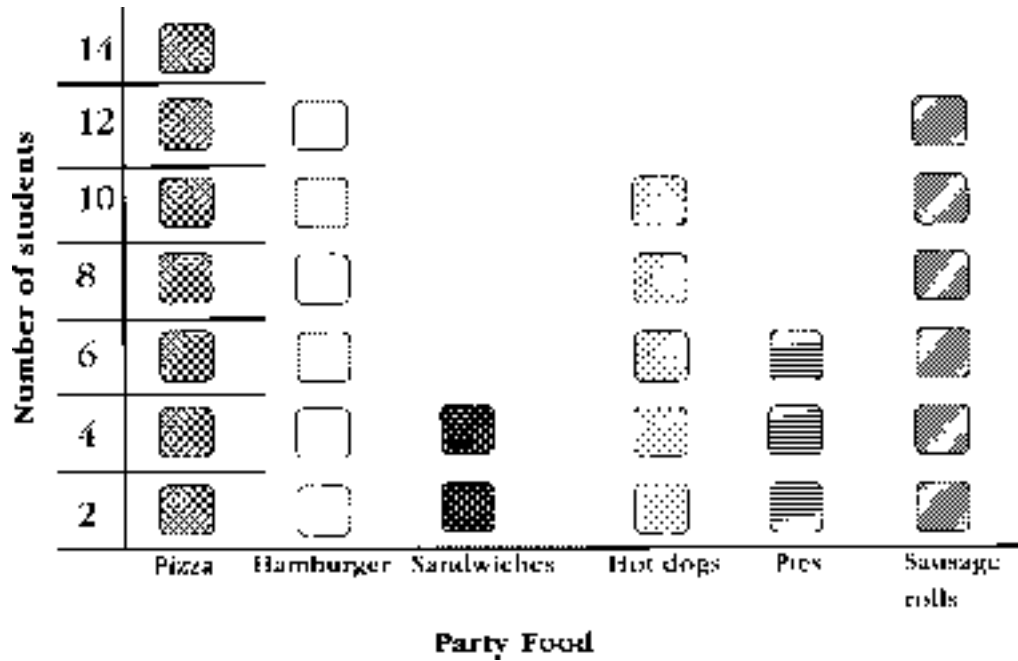
1.	How many students travel to school by bus?
2.	How many students walk?
3.	What is the most common way of getting to school?
4.	What is the least used transport to school?


## Student Worksheet 13: Block Graphs 2

### Party Food

Here is a block graph showing the students' choice of party food for their end-of-term disco.

Each little block stands for two items of food.  
The blocks have different patterns to make it easier for you.



Key:  means 2 items of food

The numbers at the side might help you to count the blocks.

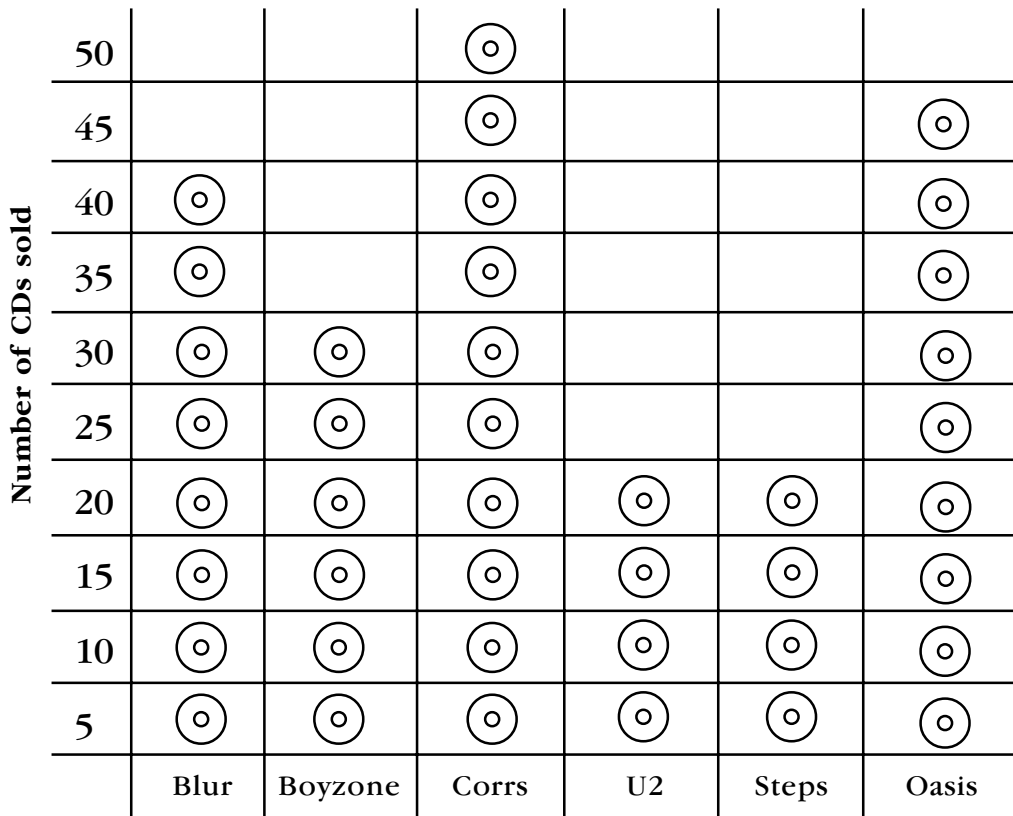
Fill in this table showing the numbers of students who chose each type of food.

Food	Number
Pizza	
Hamburger	
Sandwiches	
Hot dogs	
Pies	
Sausage rolls	

1. What was the most popular food? \_\_\_\_\_
2. What was the least popular? \_\_\_\_\_
3. How many students took part in this survey? Use the table above to help you. \_\_\_\_\_
4. What would you choose? \_\_\_\_\_

**Student Worksheet 14: Pictograms**

Here is a pictogram showing CD sales in the month of December.



Key: ⊙ means 5 CDs

1.	Complete the key beside the pictogram.	
2.	How many CDs does each ⊙ stand for?	
3.	How many CDs did Boyzone sell?	
4.	How many CDs did Oasis sell?	
5.	Which band sold most CDs in December?	
6.	Which two bands sold fewest CDs?	1.
		2.

### Fact Sheet 4: Bar Graphs

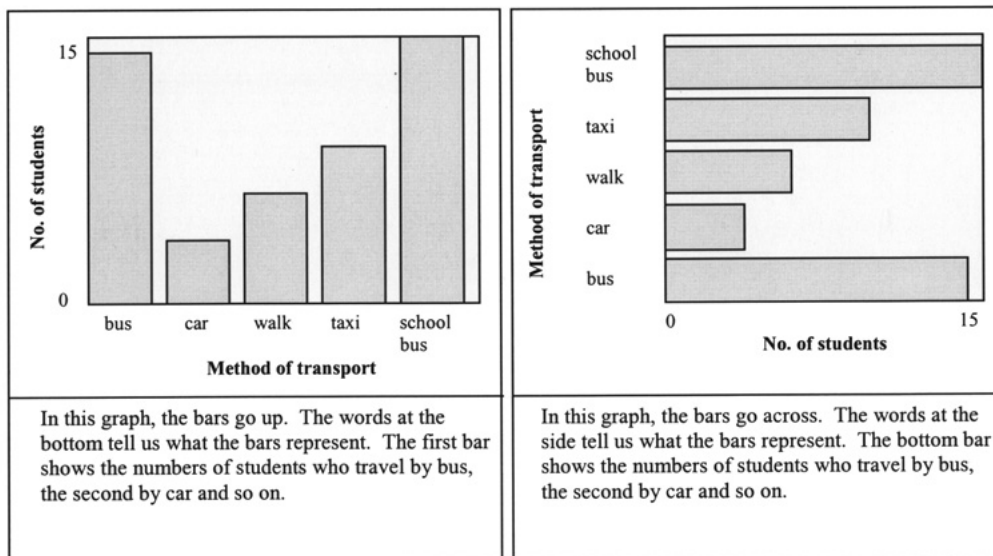
So far we have studied, read and made **pictograms** and **block graphs**. The next type of graph we are going to study is the **bar graph**.

**Bar graphs** are like pictograms or block graphs, simply a way of showing information clearly. We must look carefully at a bar graph and at the words on it. The words tell us a great deal about the graph.

The graphs on this page show how students in one class travel to school. The word beside each bar tells us the type of transport they use.

The bars can go **up** or **across**.

Both these graphs show the same information, but they look very different.

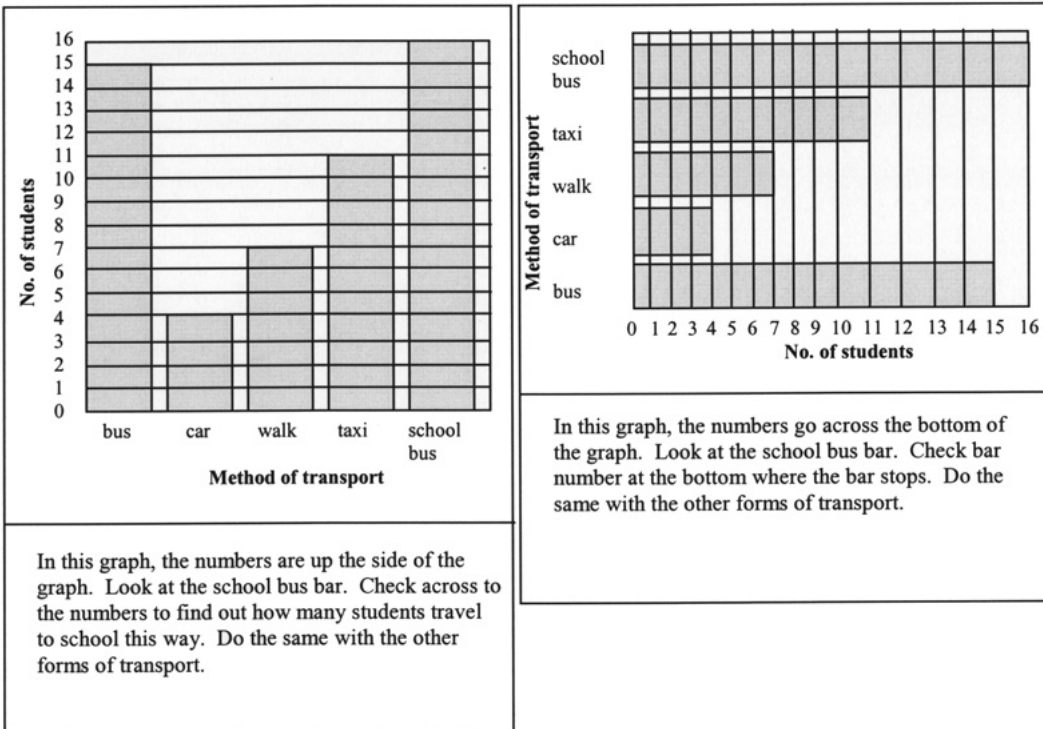


Looking carefully at these graphs we can tell that the way most students travel to school is by school bus and the smallest number travel by car. However, we do not know the exact numbers who use these different means of transport. To tell us this numbers are put on the graph. In

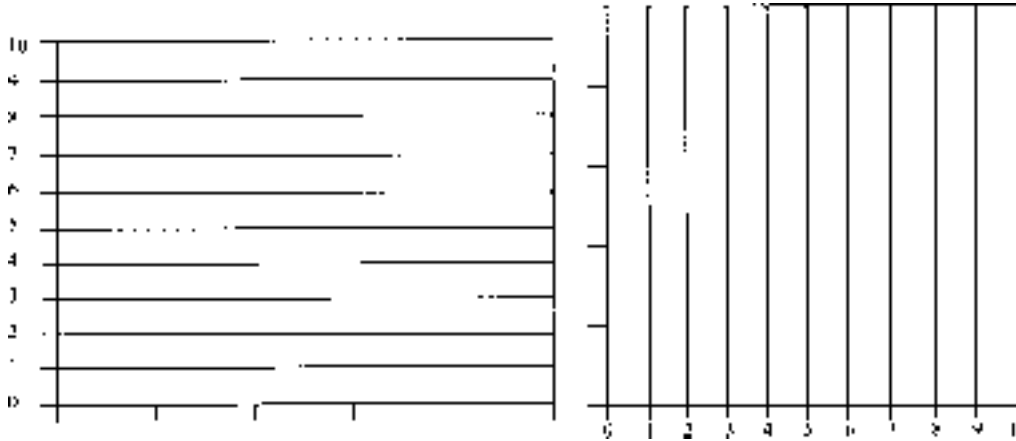
**bar graphs**, the numbers at the side or along the bottom are very important. In pictograms we could count the pictures. In bar graphs we do not have pictures, so we have to depend on the numbers.

The numbers are at the bottom for the vertical graph (the one with bars going up) and at the side for the horizontal graph (the one with bars going across). The bars are all the same width.

Below are the graphs from the last page which now have numbers added to let you see exactly how many students use each method of transport.



## Fact Sheet 5: Numbers on Graphs

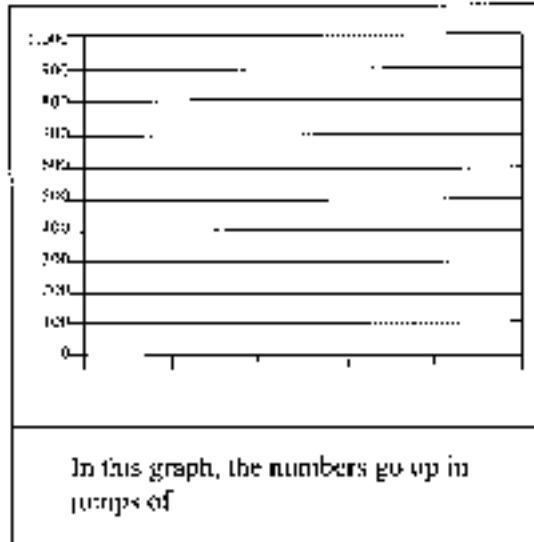
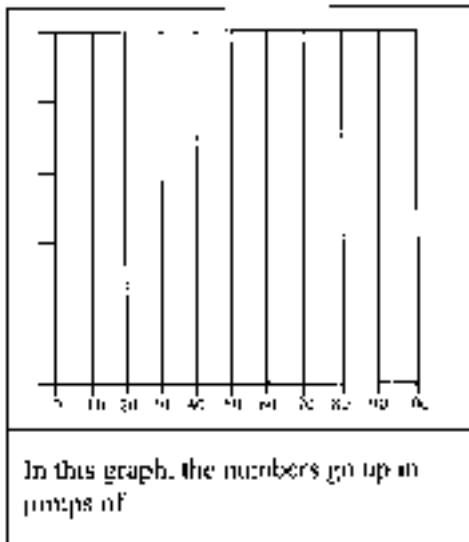
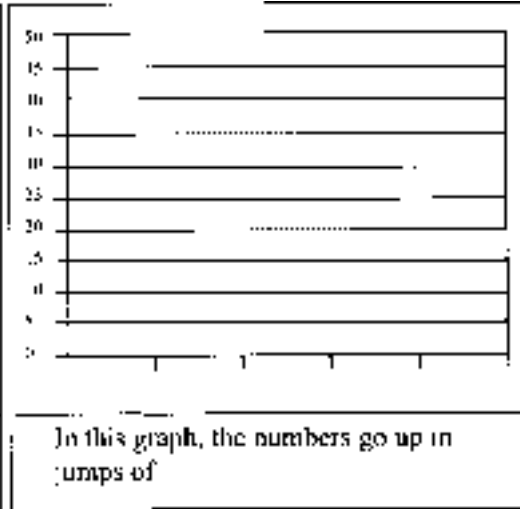
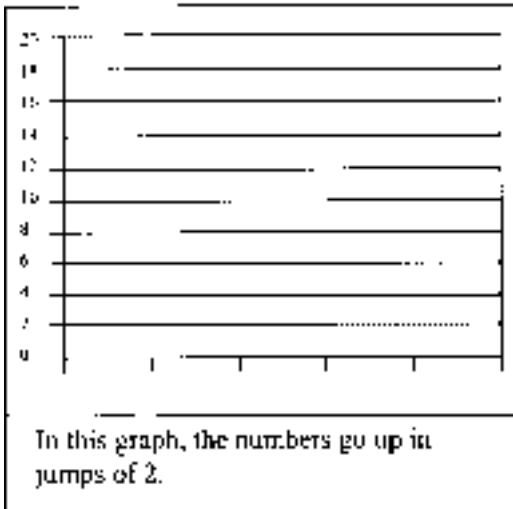


Look at the two graphs above. No information has been put in yet because we are going to look carefully at the numbers up the side of one and along the bottom of the other. The numbers are called the scale of the graph.

In both of these graphs, the numbers go up in jumps of one. This is fine if the numbers we are using are small and the information can only be recorded if the items add up to no more than ten.

But we often have to record numbers that add up to much more than this. Then the numbers might rise in jumps of 2 or 5 or 10 or 20, or even 100 or more. Look at the bar graphs on the next page and write in the 'jumps' the numbers make in each one. The first one is done for you.

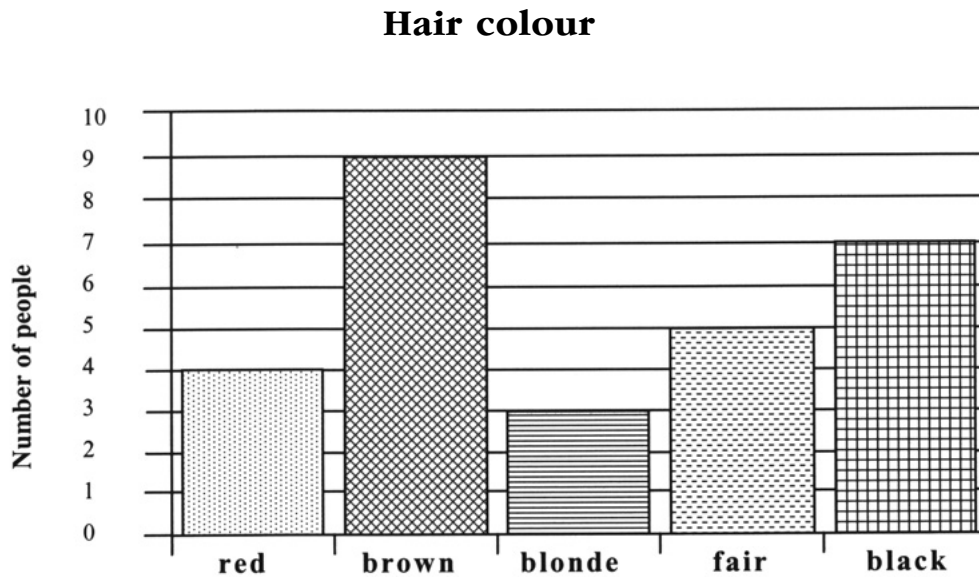
**OUTCOME 1**



It is very important to check the numbers on a graph before you begin to work out the information you need.

### Student Worksheet 15: Bar Graphs

To make a bar graph clearer, the bars sometimes have different patterns like the ones below.

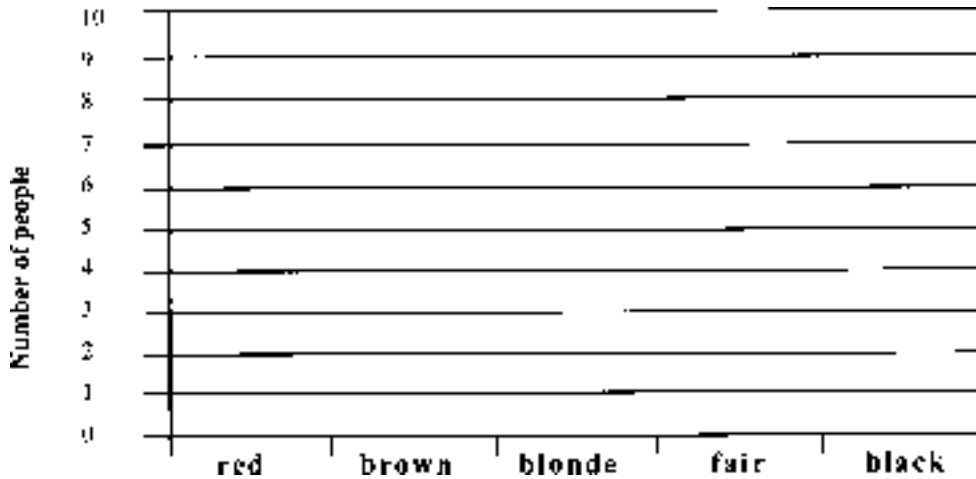


Answer these questions about this bar graph.

1.	What does this graph tell us about?	
2.	What do the numbers jump by each time?	
3.	What is the most common hair colour?	
4.	What is the least common hair colour?	

Do your own survey with your class and fill in the graph below.

**Hair Colour**



Point to remember: before answering any questions about bar graphs, study the graph carefully. Look at the title of the graph, and look at the numbers at the side. Work out by how much the numbers jump each time. Look at the words along the bottom to see exactly what type of information you are being given.

## Student Worksheet 16: Tables

### Scottish Premier League

Here is a table showing the goals scored in the Premier League. The teams are shown in the first column, the **home** goals in the second and the **away** goals in the third. The fourth column is left blank for you to fill in the total number of goals scored by each team.

Teams in League	Home	Away	Total
Rangers	19	11	
Kilmarnock	19	12	
Celtic	17	15	
Livingston	19	10	
Motherwell	15	8	
Aberdeen	16	11	
Dundee	10	11	
Hearts	17	5	
Dundee United	8	15	
Dunfermline	11	17	
Hibernian	14	9	
Partick	13	7	

On the next page there are some questions about this table. Fill in the answers in the spaces given.

1. Which three teams scored most goals in home games?

1.	2.	3.
----	----	----

2. Which team scored most away goals?

--

3. Do teams usually score more goals when they play at home or away, according to this table?

--

4. Three teams scored more goals when they played away. Which ones were they?

1.	2.	3.
----	----	----

Because tables set information out neatly and in order, it is easy to get information from them.

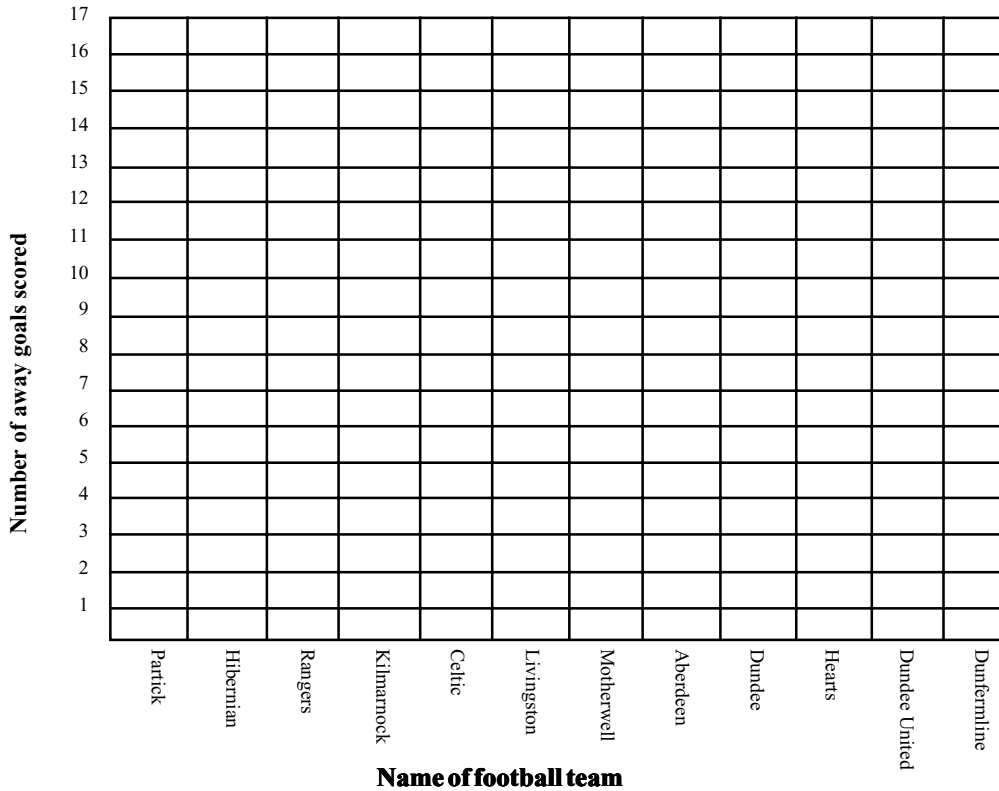
We can use this information and put it in graph form.

Then it becomes even easier to read.

On the next table you will see a graph. The information has not yet been filled in. Use the table for the football league and fill in the graph. To make it even easier to read the graph, use one of each team's colours to fill in the goals scored.

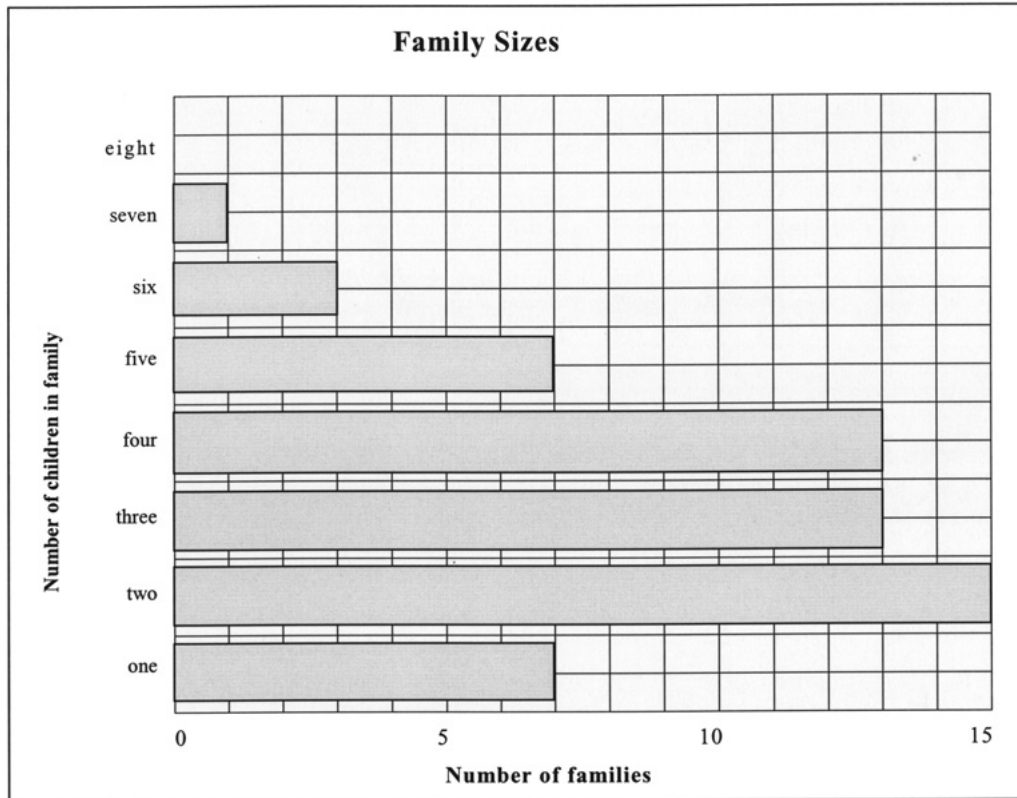
### Student Worksheet 17: Graph of Goals Scored

Fill in this graph to show the number of **away** goals scored by each team in the Scottish Premier League. Remember – if you can, use the teams' colours.



It is very clear now which team scored the most and fewest away goals.

**Student Worksheet 18: Graphs and Tables**

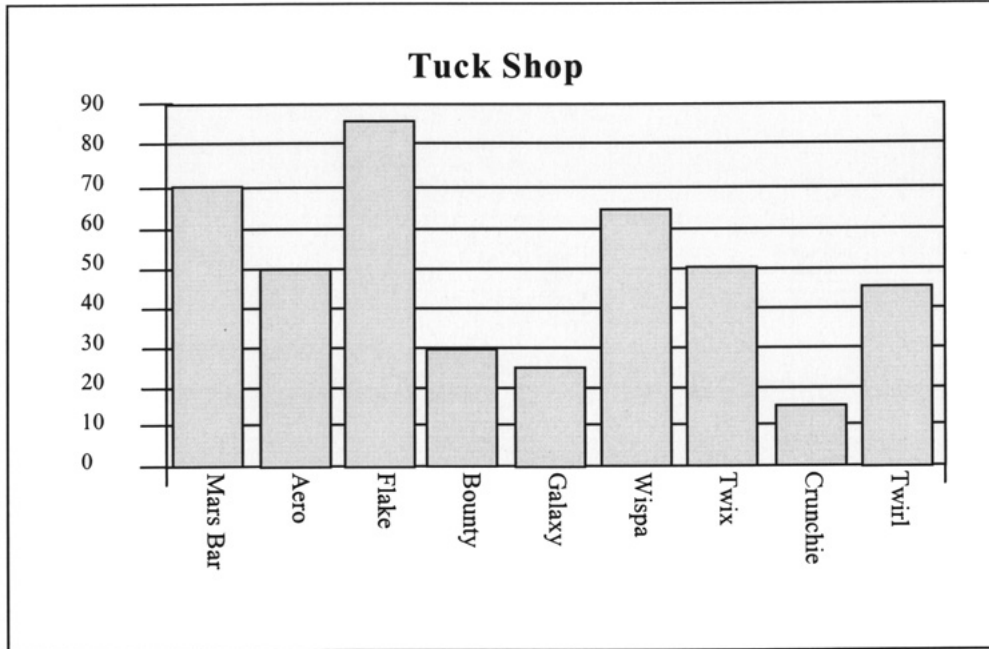


This graph shows the number of children in the families of the students at Knowall Primary School. Instead of going up and down, the bars in this graph go across. The numbers of families are shown along the bottom, but are only marked in jumps of five. You will have to count the boxes in between to find out the exact number.

Using the information in this graph, give the same information in the form of a table on the next page.

<b>Number of children</b>	<b>Number of families</b>
one	
two	
three	
four	
five	
six	
seven	
eight	

**Student Worksheet 19: Graphs and Tables**



The graph above shows how many boxes of different kinds of sweets were sold in the tuck shop. The numbers at the side go up in tens, but be careful - some of the quantities sold are between these numbers. (For example, the number of boxes of Crunchie sold is 15.)

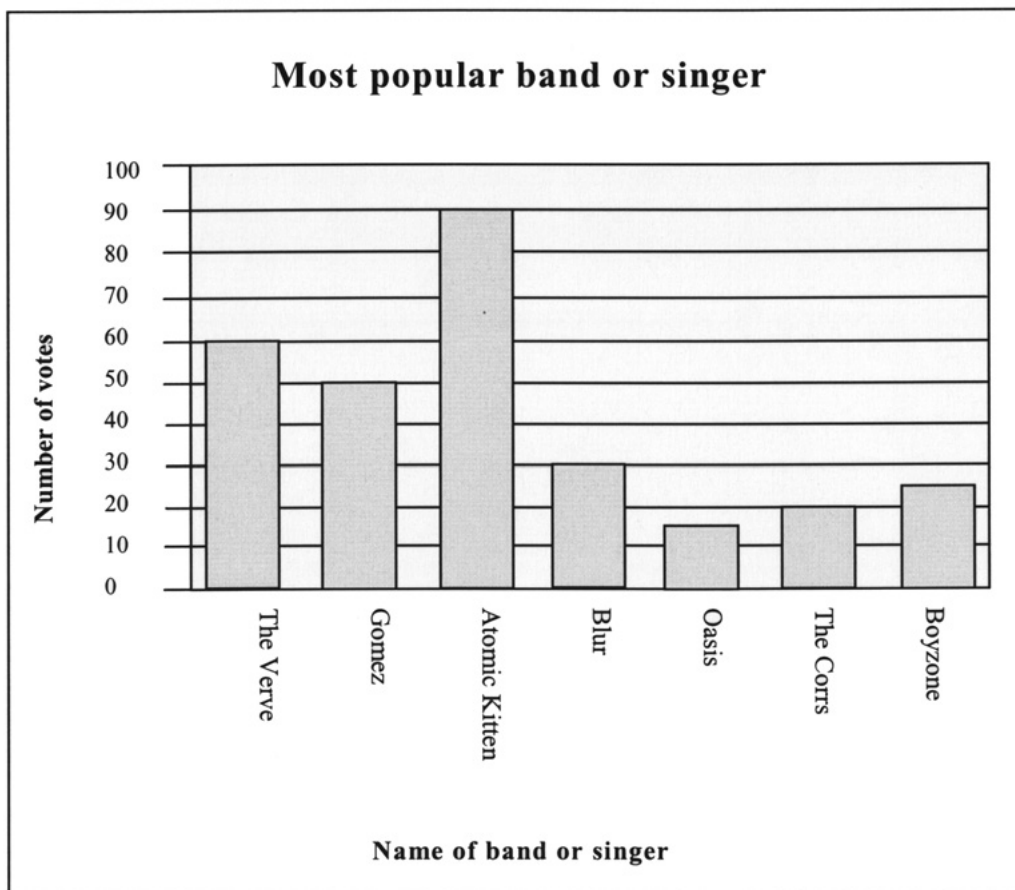
Now put this same information in the table below.

Type of sweets	Number sold
Mars Bar	
Aero	
Flake	
Bounty	
Galaxy	
Wispa	
Twix	
Crunchie	
Twirl	

## Student Worksheet 20: Tables and Graphs

In a survey the students in a school were asked to choose the most popular band or singer from the list given. Here is the result of the survey. They want you to record the results in a table. The scale goes up in tens because lots of people took part in this survey.

Fill in the table on the next page using the information from the graph.



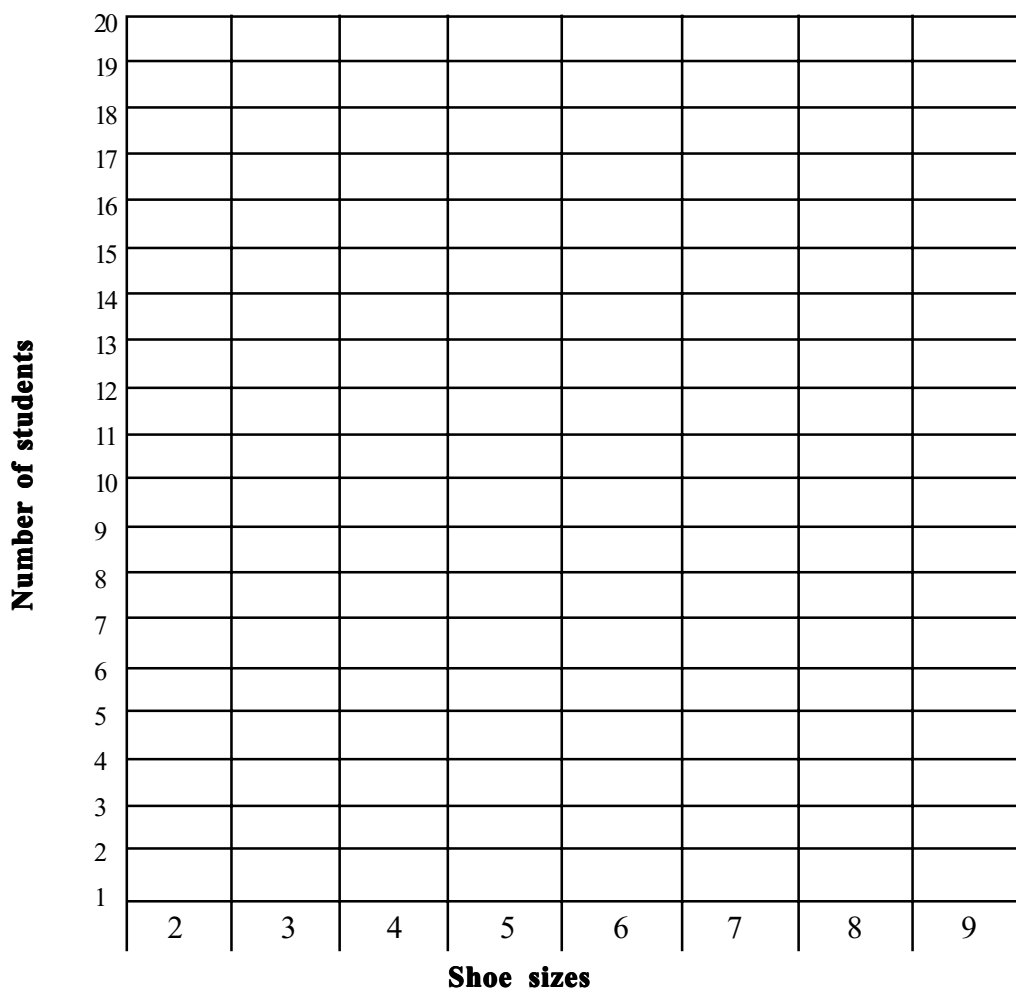
The numbers are shown in jumps of ten, so you will have to look carefully to see exactly where the columns stop.

<b>Band or singer</b>	<b>Number of votes</b>
Boyzone	
The Corrs	
Oasis	
Blur	
Atomic Kitten	
Gomez	
The Verve	

### Student Worksheet 21: Graph of Shoe Sizes

Here is a blank graph for you to fill in showing the sizes of shoes of the students in your year. Use a different colour for each shoe size to make your graph clearer.

Shoe sizes	2	3	4	5	6	7	8	9
Number of students	4	5	15	23	19	18	18	10



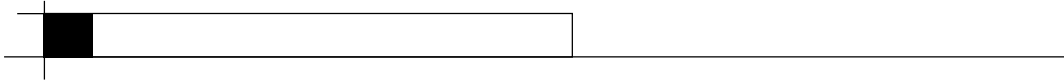
**Student Worksheet 22: Tables**

Fill in the names and the heights in centimetres of the students in your class, then answer the questions below.

<b>Name</b>	<b>Height in centimetres</b>

1.	Who is the tallest student in the class?	
2.	What height is the smallest student in the class?	
3.	Are any students the same height?	
4.	Write their names in the boxes.	





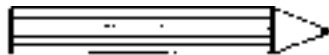
## OUTCOME 2

### Fact Sheet 1: Maps

There are many different kinds of maps and we use them for many different purposes. In general maps are used to help us to find the way. We may need them to find our way round a building, a park, a village, a city, a town, a country and so on. Maps can be very simple or very complicated. If necessary, they can show a great deal of information.

A map is a drawing of a something as seen from a bird's-eye view.

Here are some objects you see every day, but you don't often see them from a bird's-eye view. Can you work out what they are?



If you can't work them out, ask your teacher to help you.

## Fact Sheet 2: Symbols

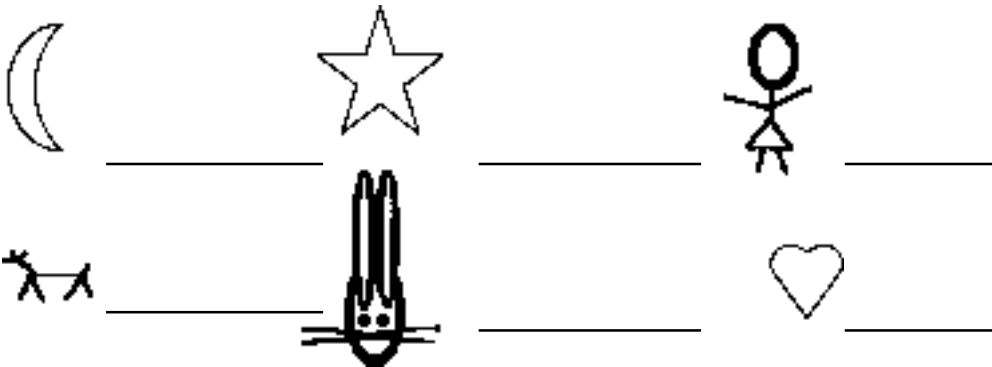
Because maps are very much smaller than the areas they represent, roads, building, rivers, etc. are represented by **symbols** or **signs** rather than pictures or words - because these take up less space. Most maps have a **key** to explain what the symbols stand for.

Symbols are simple drawings on the map of the items they represent.

Some symbols are very easy to recognise, but others are more difficult and that's why the map needs a key.

Here are some symbols you might recognise, or you might guess what they mean simply by looking at them.

Write the words beside the symbols and ask your teacher for help if you get stuck.



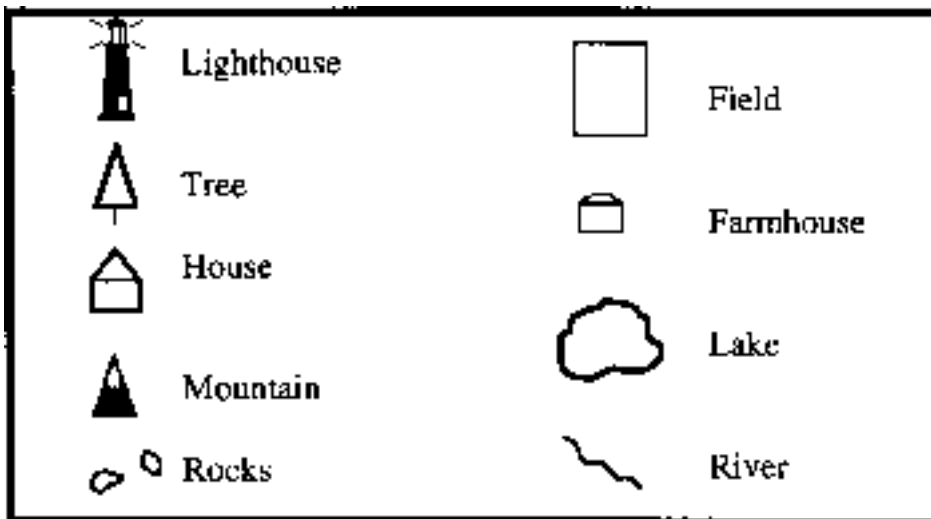
### Student Worksheet 1: The Island

On the next page is the outline of an island.

Here is the key to the map of the island. Some of the symbols in the key are already on the map of the island. Use the others to finish the map.

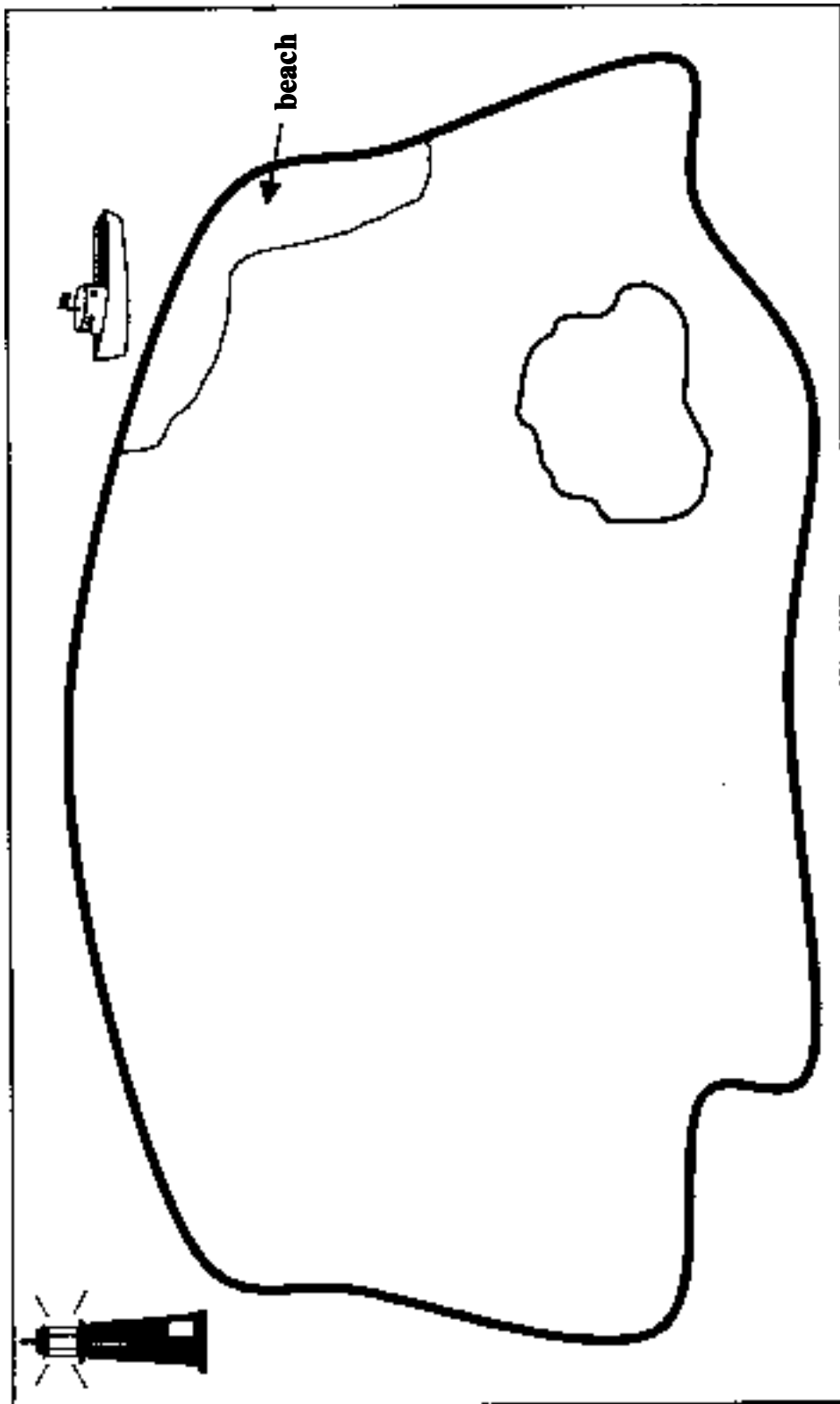
At the bottom of this page are instructions to help you to add symbols to represent the rest of the features of the island.

#### Key



Here are your instructions:

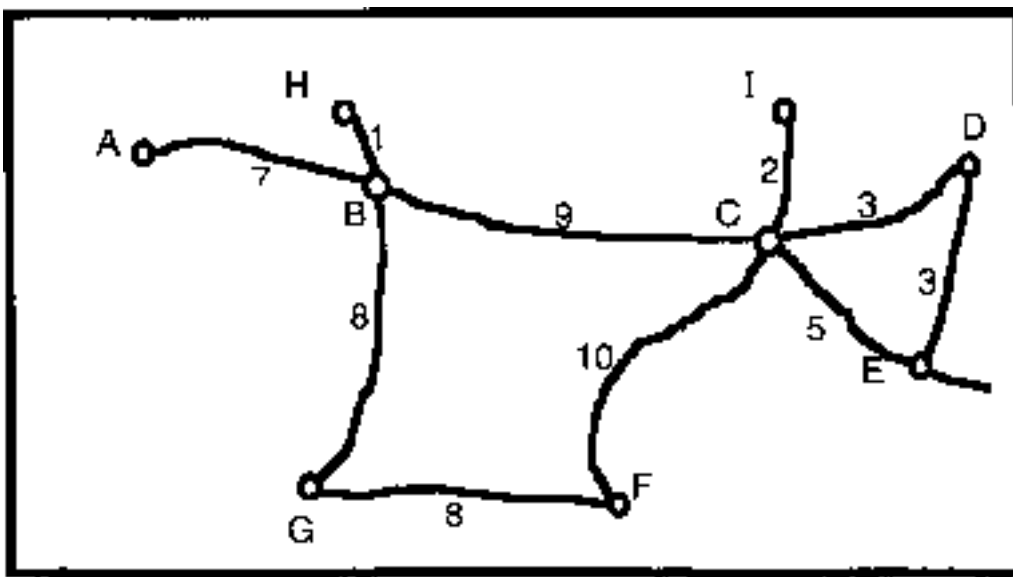
1.	There are mountains in the middle of the island.
2.	There is a little forest in the corner of the island near the lighthouse.
3.	There is a village near the beach.
4.	There is a farm with two fields below the forest.
5.	A river runs from the mountains to the lake.
6.	There are rocks all round the lighthouse.



### Student Worksheet 2: How Far?

Here is a map showing the distances between some villages. Each village has been given a letter instead of its name.

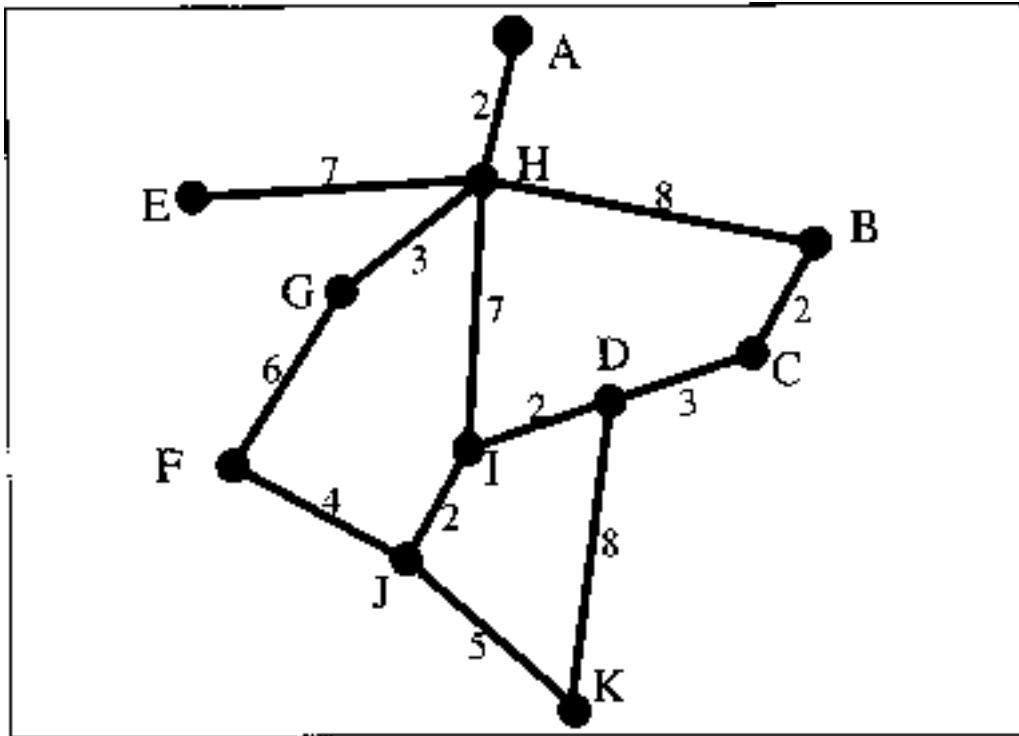
The distances between the villages are **all** measured in **kilometres**.



In the table below fill in the **shortest** distance from one village to the other.

	From village	Distance
1.	A to C	
2.	I to F	
3.	E to G	
4.	G to C	
5.	A to H	
6.	E to B	
7.	E to I	

Student Worksheet 3: The Postman



This is a map showing some villages in Scotland. As with Worksheet 2 each village has been given a letter instead of a name. Pat is the new postman. He wants to take the shortest route when delivering his mail. He begins by looking at the map and working out the **shortest** route from village to village. Complete the table below.

Going from			He passes through
A	to	E	
G	to	J	
G	to	I	
I	to	C	
H	to	C	
B	to	A	

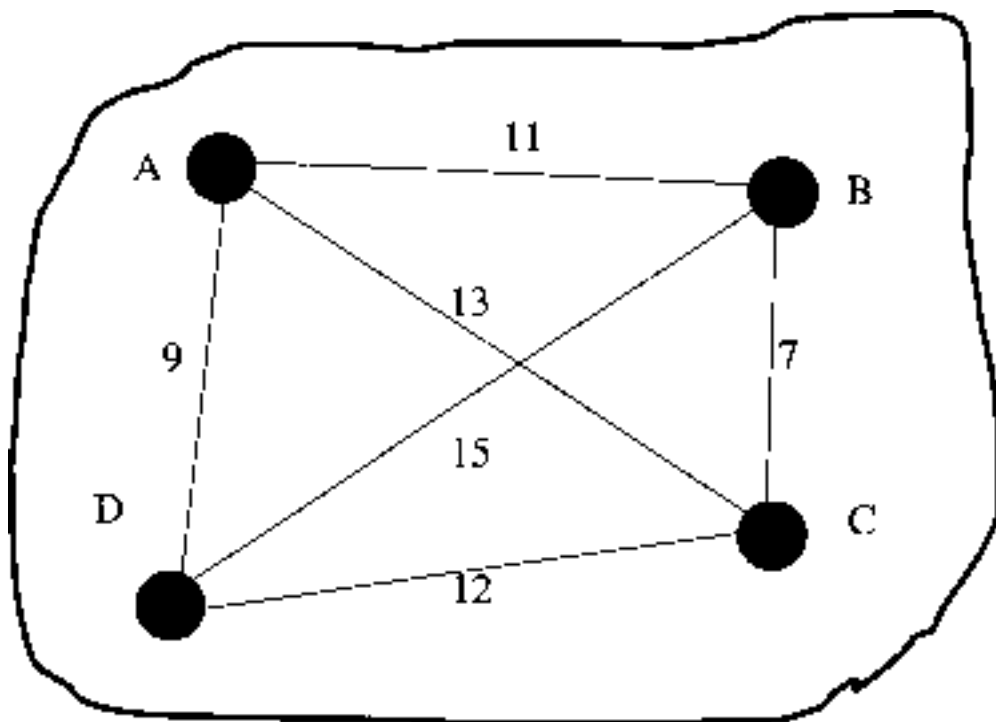
Now work out the distances the postman travels going from village to village and write them in the table.

Going from			Distance in kilometres
A	to	E	
G	to	J	
G	to	I	
I	to	C	
H	to	C	
B	to	A	

**Student Worksheet 4: Maps – some extra practice**

Look carefully at the map below. It shows the distances between towns on an island. The distances are measured in kilometres (for example, the distance between Town A and Town B is 11 kilometres).

Each day during their holiday on the island John and Clare go for a walk. On the next page you will see a table which shows where they go each day. Use the map below and fill in the distances they travel each day.



Fill in the tables below showing the distances between the towns.

Towns	Distances
A and B	kilometres
D and B	kilometres
B and C	kilometres
D and C	kilometres
A and C	kilometres
A and D	kilometres

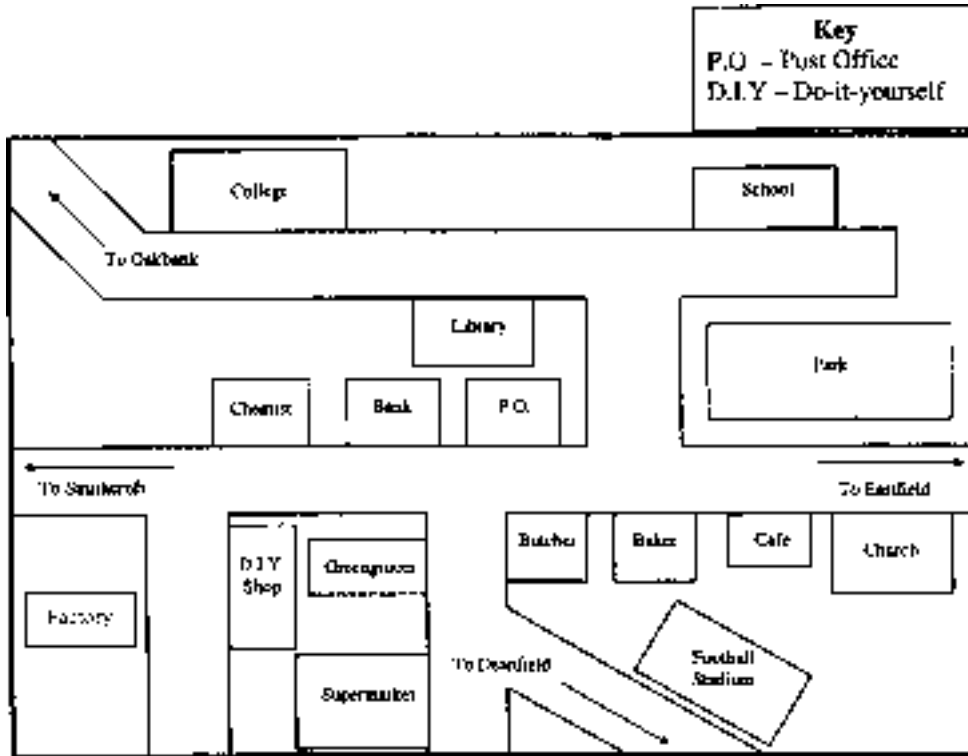
Fill in the table below showing the distances Clare and John walk each day.

Day	Towns	Total distance
Monday	A to B then B to C	kilometres
Tuesday	C to D then D to B	kilometres
Wednesday	B to A then A to C	kilometres
Thursday	C to B then B to A	kilometres

Now answer these questions.

1. On which day did they walk farthest? \_\_\_\_\_
2. Which town is farthest away from A? \_\_\_\_\_
3. On which two days did they walk the same distance?  
\_\_\_\_\_

**Student Worksheet 5: Maps**



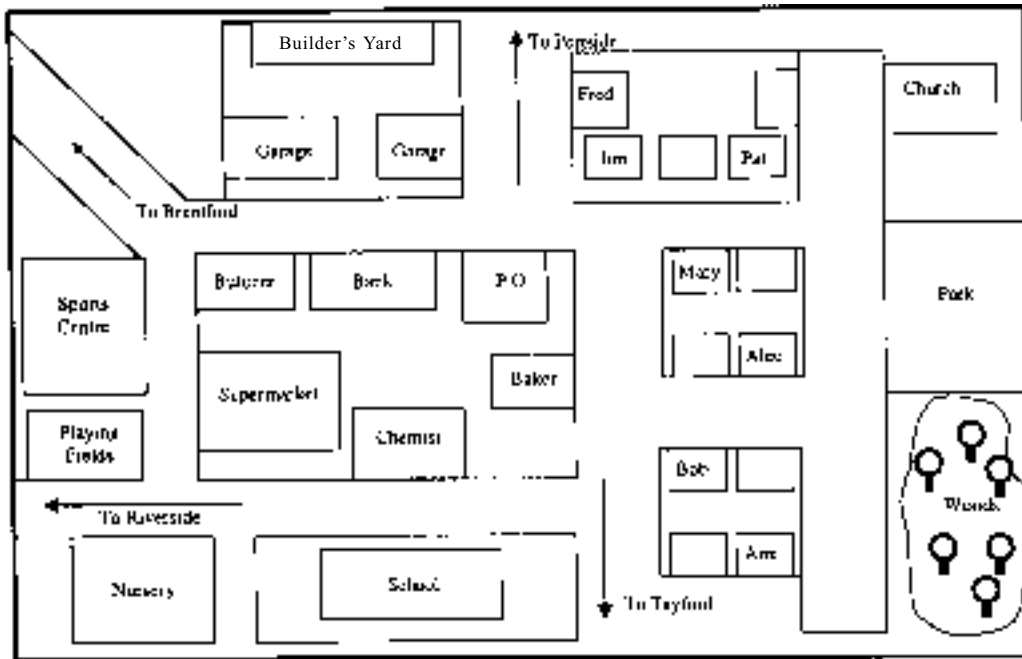
1.	What building is between the P.O. and the chemist	
2.	Look at the key at the top of the page. What does P.O stand for?	
3.	Look at the key at the top of the page. What does D.I.Y. stand for?	
4.	What is opposite the school?	
5.	What is behind the P.O. and the bank?	
6.	If I leave the greengrocer's shop, do I pass the factory to get to the school?	
7.	If I leave the church, do I pass the butcher's to get to the supermarket?	
8.	What is opposite the factory?	

9.	There are four roads leading from this village. Write down where each road leads.

Mark in **red** on the map the path you would take from the supermarket to the college.

Mark in **blue** on the map the path you would take from the football stadium to the factory.

**Student Worksheet 6: Maps**



1.	What building is between the P.O. and the butcher?	
2.	What is next to the school?	
3.	What is between the church and the woods?	
4.	What is next to the sports centre?	
5.	Sam lives next door to Ann. Put his name on his house.	
6.	Bob's neighbour is Ian. Put his name on his house.	
7.	John lives between Jim and Pat. Put his name on his house.	
8.	When Fred looks out of his back window he can see Steve's house. Put his name on his house.	

9.	There are four roads leading from this village. Write down where each road leads.

Mark in **red** on the map the path you would take from the church to the chemist.

Mark in **blue** on the map the path you would take from Pat's house to the supermarket.

Mark in **green** on the map the path you would take from Fred's house to the woods.

## Student Worksheet 7: Plans

Look carefully at the plan of the **classroom** on the next page.

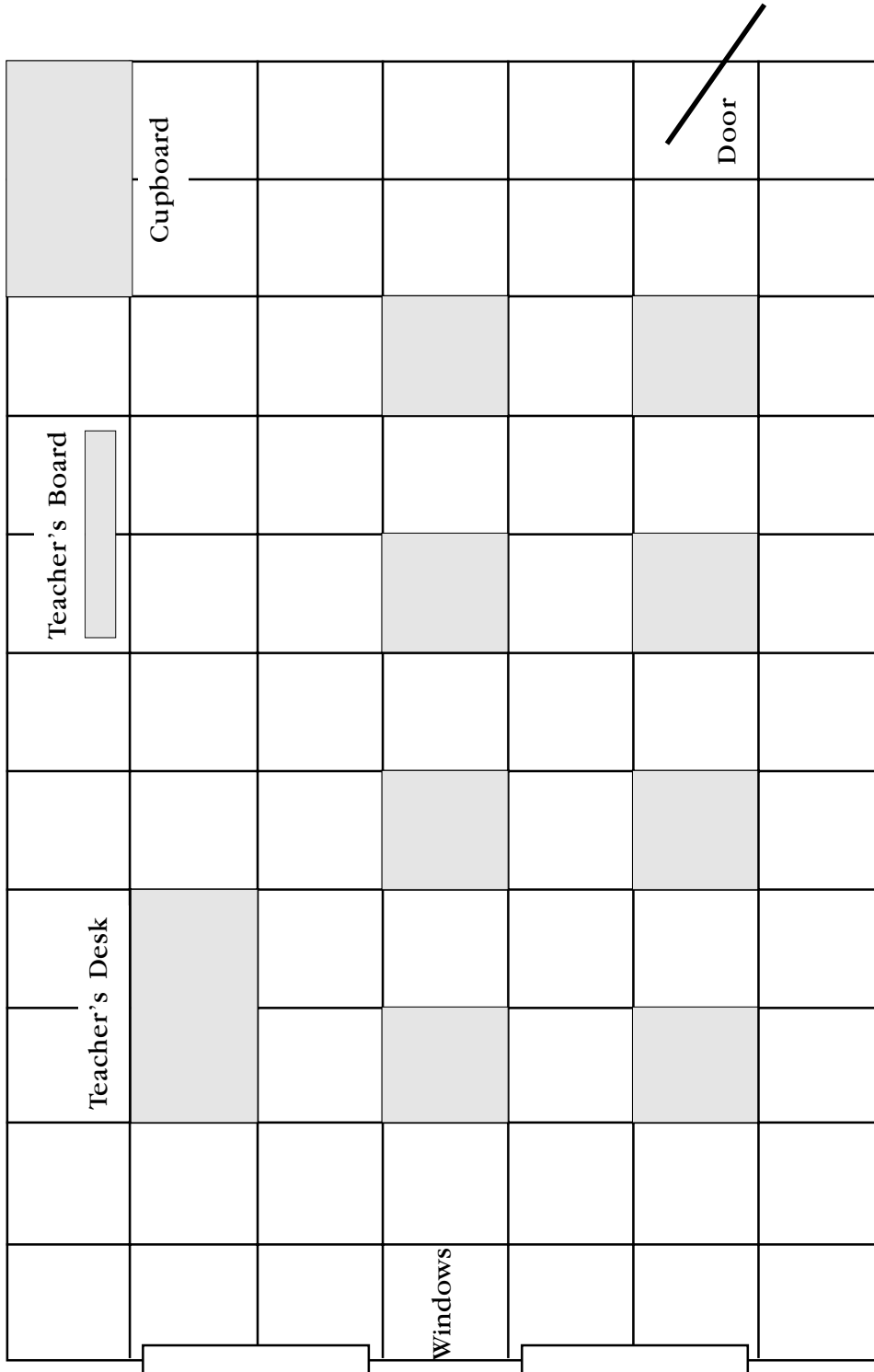
You must try to find out where everyone sits from the clues and directions you are given. As you work out who sits where, write their names on their desks. It is important to do this right away as you will need this information to help you with the next clue.

1.	John sits nearest the door.
2.	Mark sits next to the window and in front of the teacher.
3.	Catherine sits behind Mark.
4.	David sits beside Mark.
5.	Alana sits in front of John and near the cupboard.
6.	James sits between David and Alana.
7.	Jane sits behind James.
8.	Paul is left. Write his name on the last desk.

Well, did you manage?

The important point to remember is to take one step at a time and to follow the clues carefully.

**Classroom Plan for Worksheet 7**

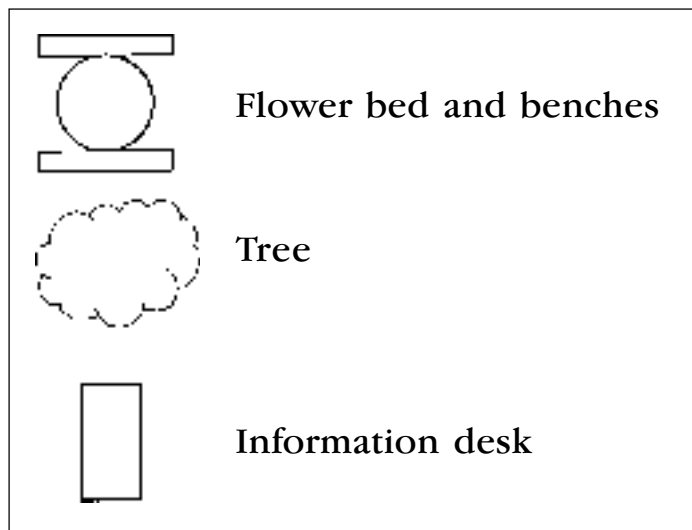


**Student Worksheet 8: Plans – the town centre**

On the next page there is a plan of the town centre. The names of the shops have been left out and you have to fill them in. You will be given clues to help you. Good luck.

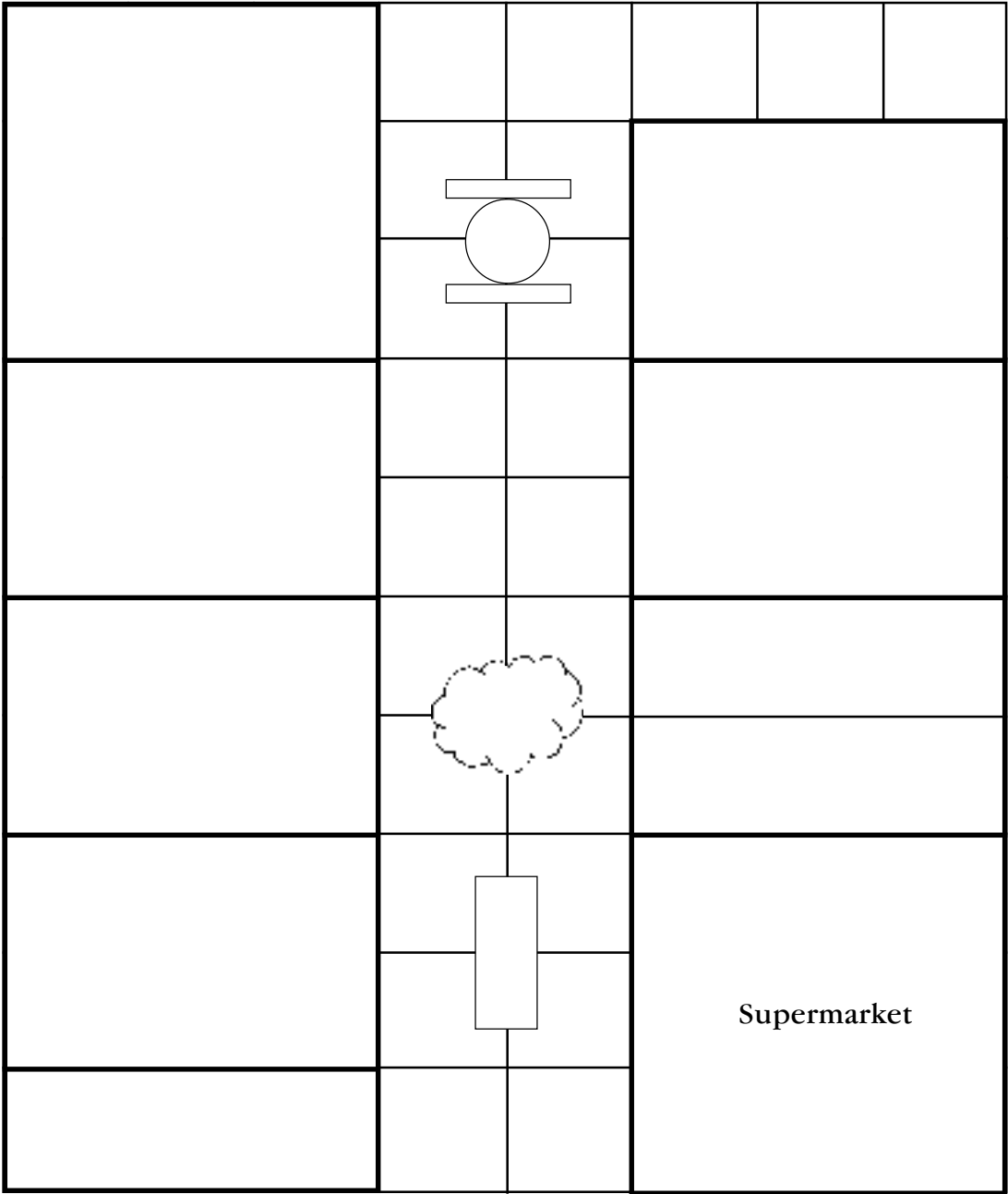
Use this little key to help you with the symbols that represent some of the items on the map.

Key:



Clues:

1.	The shoe shop is the little shop opposite the supermarket.
2.	Next to the shoe shop is the chemist.
3.	The other big shop in the centre is McDonalds.
4.	Boots looks out on to the flower bed and benches.
5.	Come out of the supermarket, turn right, walk to the tree and go to the shop on the left to buy cakes.
6.	If you look out of the baker's window, through the leaves of the tree you will see the pet shop.
7.	Next door to the pet shop is the clothes shop.
8.	Across from the clothes shop is the flower shop.



**Teacher Note: Plans**

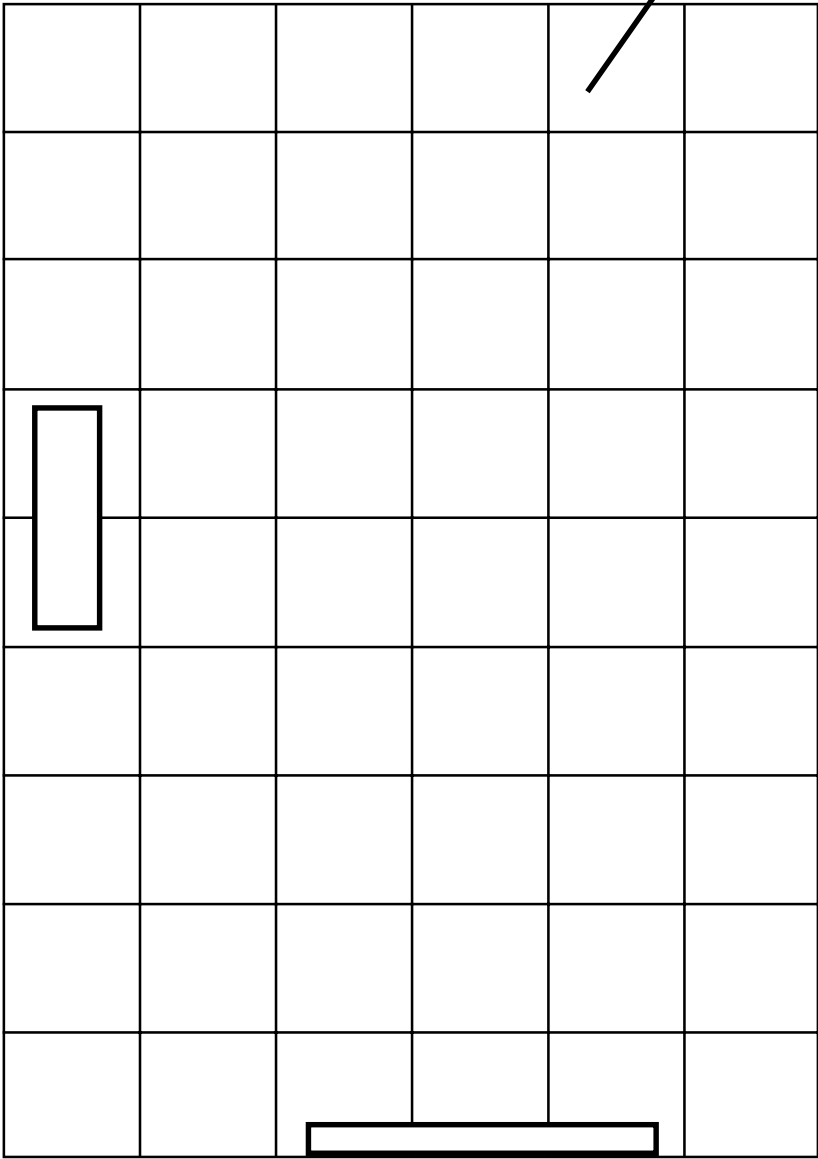
Worksheets showing bedroom, classroom and living room plans are included on the following pages. Blank classroom plans and classroom furniture are also included for students to make their own plans.

Students should look at and draw out their own classrooms, deciding what the basic shape of the classroom is and placing the furniture in the correct positions.

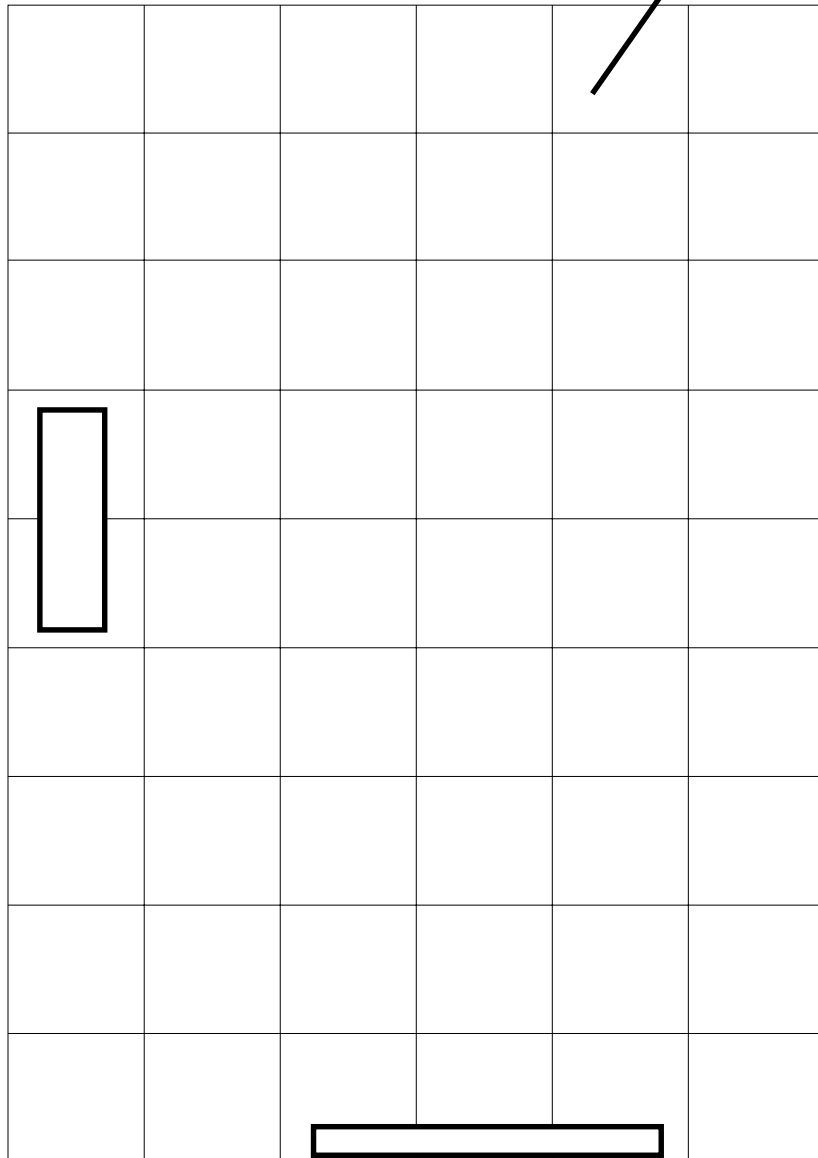
3D classrooms could also be built at this point.

Building blocks, etc. could be used for desks and the classroom could be made from classroom boxes.

The same principles and ideas could be used with students designing, drawing and making their own plans and models of their bedrooms, living rooms, etc.



A vertical column of seven empty rectangular boxes for answers.

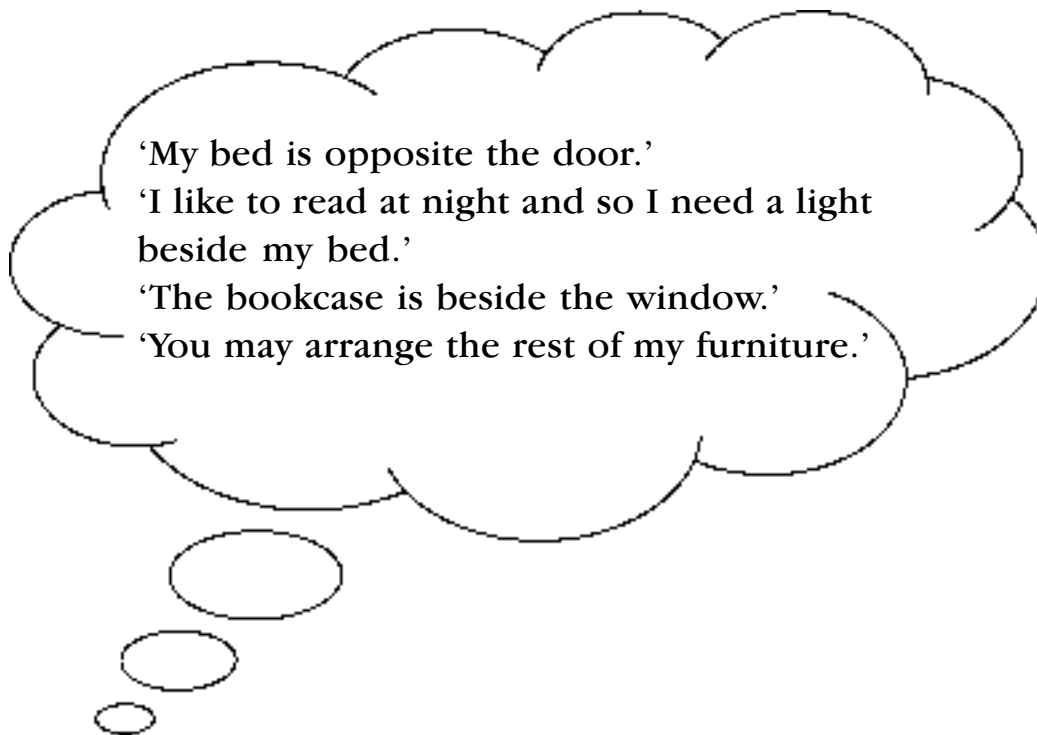


**Student Worksheet 9: Laura's Bedroom Plan**

1. Cut out the furniture shapes on the next worksheet.
2. Read the instructions Laura has given you about how she would like her furniture arranged.
3. Put the furniture on the room plan.

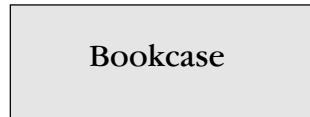
Here are some things you must remember.

- (a) Leave the door clear.
- (b) Don't block the light from the window.
- (c) You can't plug in a light if it's not near a light socket.



Good luck.

## Laura's Bedroom Furniture

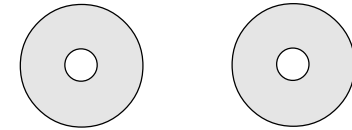


Bedside tables

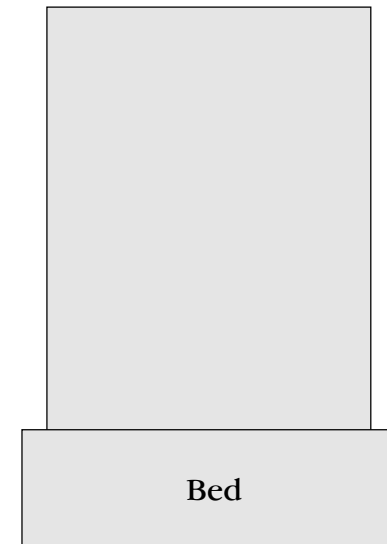


Cut out the pieces of furniture and place them in the bedroom on the next page.

First of all read carefully the instructions given to you by Laura telling you how she wants her bedroom to be arranged.

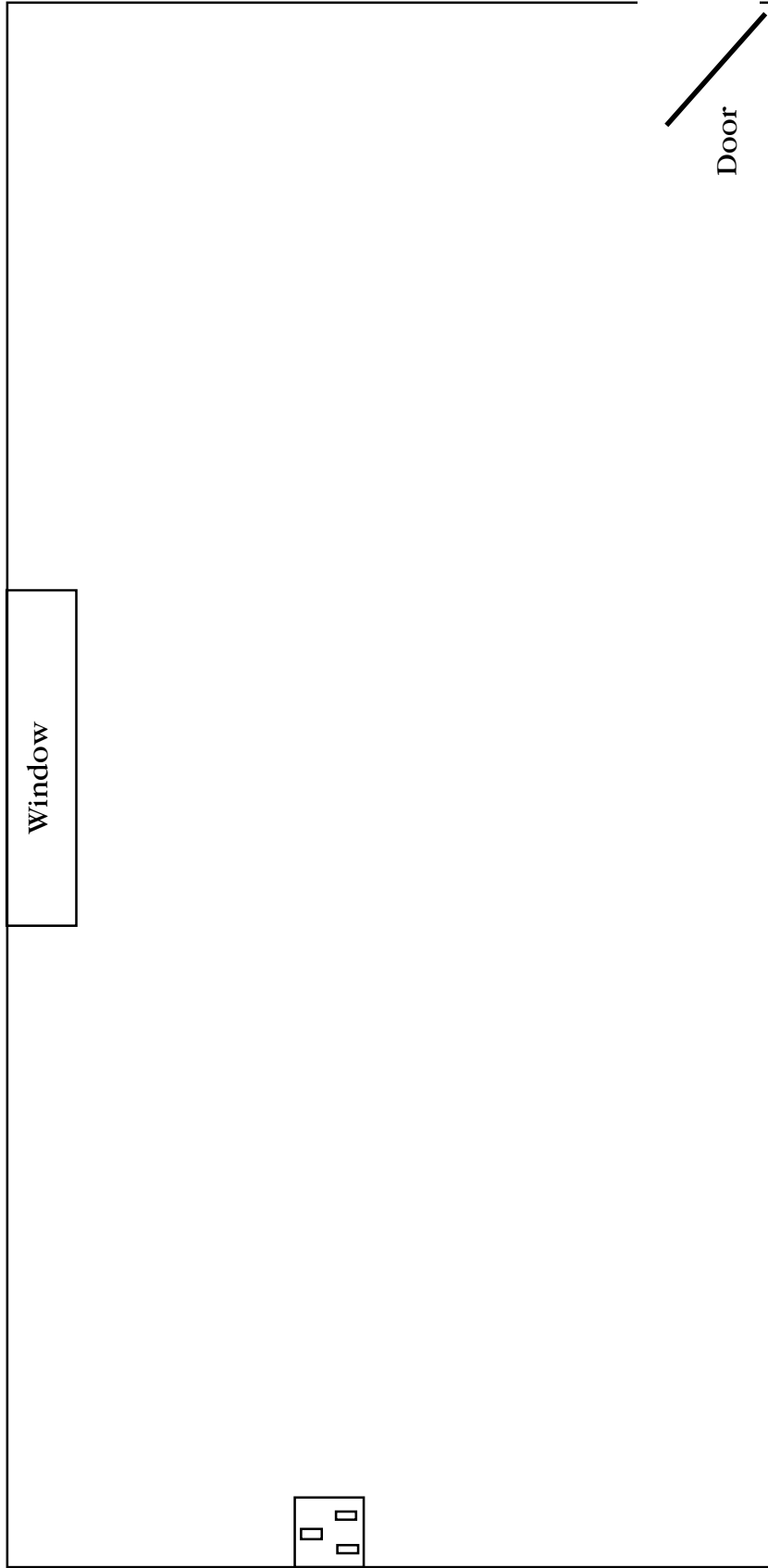


Bedside lights



**Laura's Bedroom Plan**

 = Electric socket

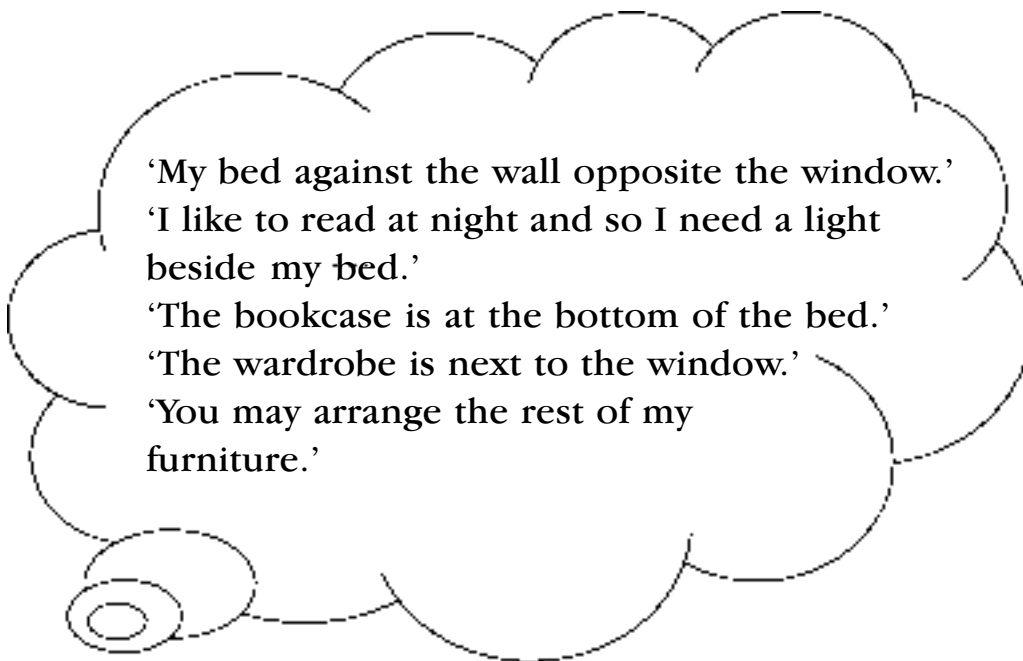


**Student Worksheet 10: Michael's Bedroom Plan**

1. Cut out the furniture shapes on the next worksheet.
2. Read the instructions Michael has given you about how he would like his furniture arranged.
3. Put the furniture on the room plan.

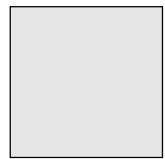
Here are some things you must remember.

- (a) Leave the door clear.
- (b) Don't block the light from the window.
- (c) You can't plug in a light if it's not near a light socket.



Good luck.

### Michael's Bedroom Furniture

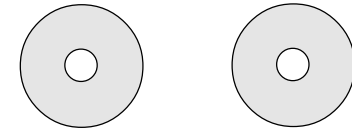


Bedside tables

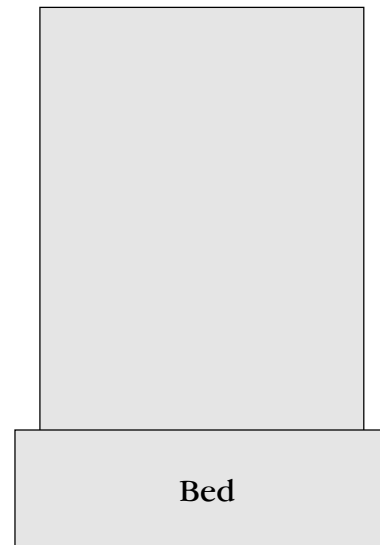


Cut out the pieces of furniture and place them in the bedroom on the next page.

First of all read carefully the instructions given to you by Michael telling you how he arranges his bedroom.



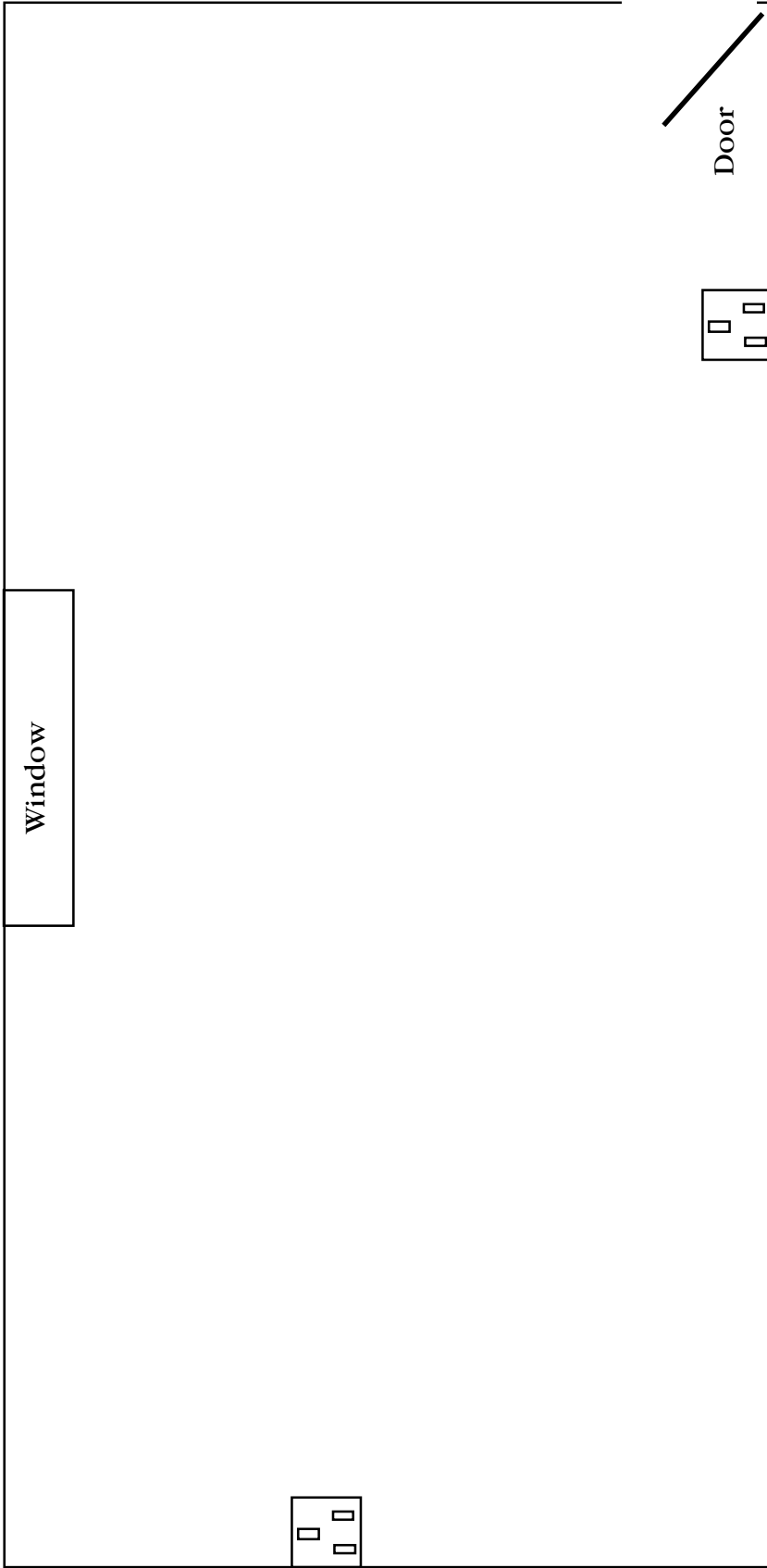
Bedside lights



Michael's Bedroom Plan



= Electric socket



### Student Worksheet 11: Living Room Furniture

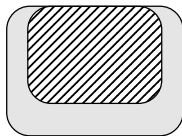
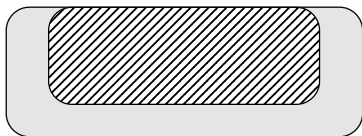
Here are some pieces of furniture you can use to design your living room.

Be sensible about it and look for clues in the room – for example, how will you plug in your TV?

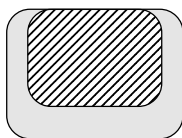
Look out for the door. You must be able to get in and out of a room easily.

Design and draw some more or better furniture of your own if you wish.

Settee



Chairs



Fireplace



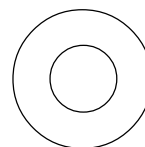
TV



Coffee Table



Lamp



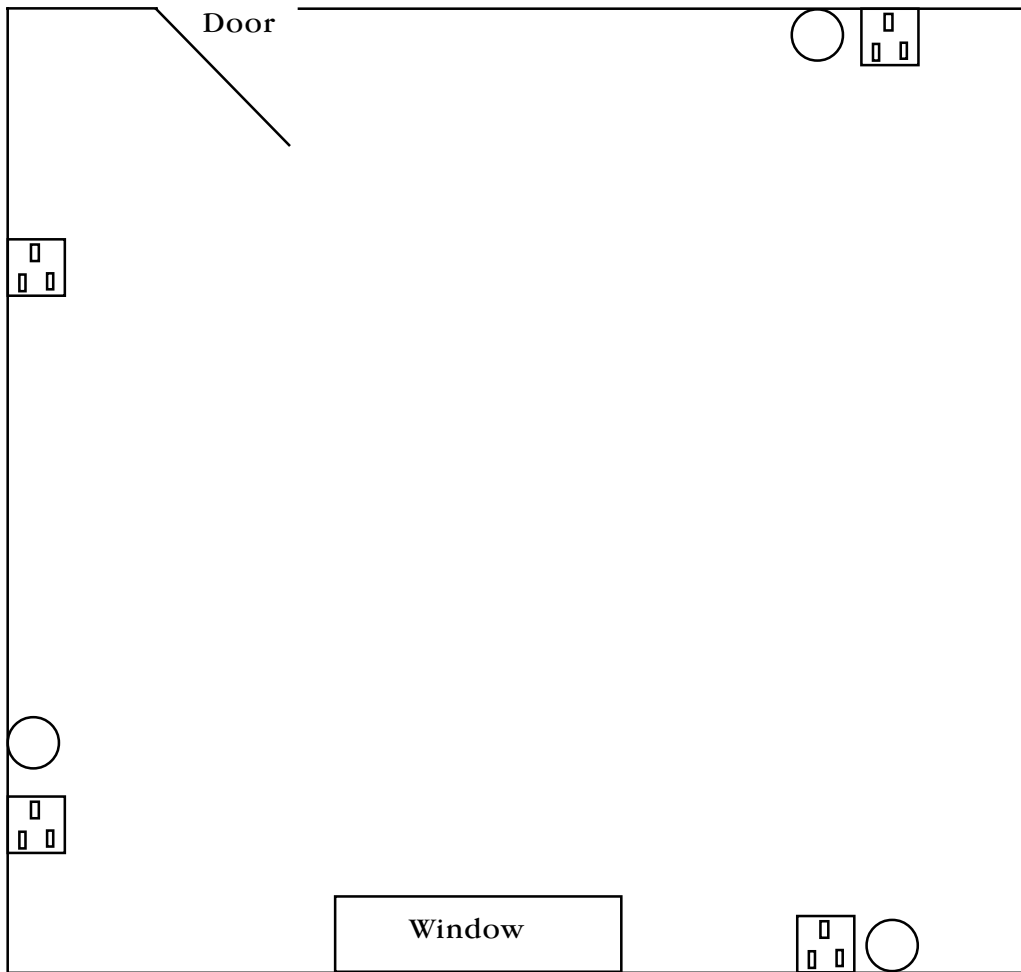
### Living Room Plan



= Electric socket



= Aerial point for TV



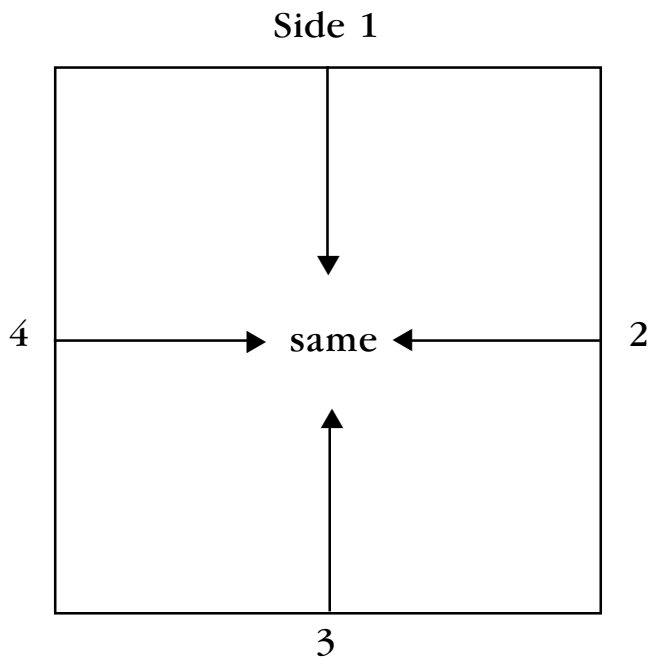
**Fact Sheet 1: The Square**

A square has 4 sides.

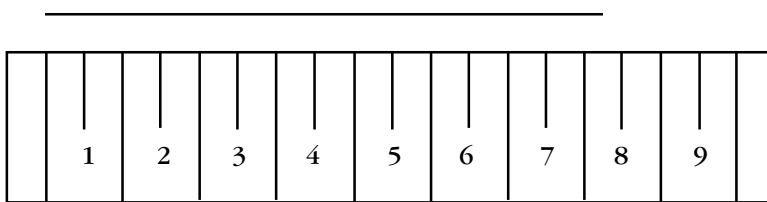
All 4 sides are exactly the same length.

A square has 4 angles.

All 4 angles are exactly the same size.



We measure the length of lines using a ruler.



Use your ruler and measure the length of the sides of the square on this page and make sure they are all the same length. Measure the lengths in centimetres.

Side 1 =	Side 2 =
Side 3 =	Side 4 =

## Fact Sheet 2: Angles

In a square, the angles are all equal. The angles in a square are called right angles.

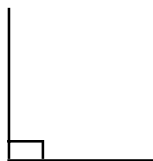
This is what a right angle looks like:



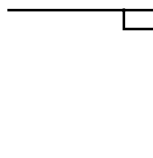
It can be any way round, upside down, etc. but it is always the same size.



We can draw a little corner in the angle to show that it is a right angle. This is what the angle would look like now.



or this:



## Student Worksheet 12: Finding Right Angles

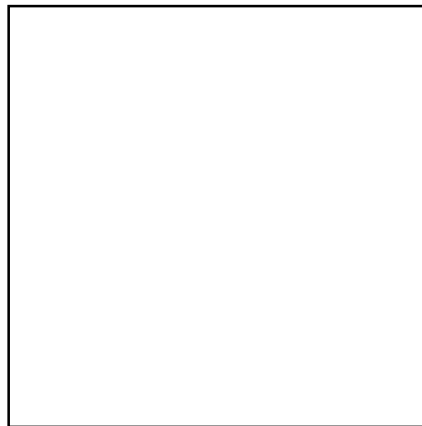
We measure angles in degrees.

A right angle measures 90 degrees.

The angles in a square all measure 90 degrees.

Your teacher will give you a square of paper. Fit the corner of the paper into each of the angles of the shape below one after the other. If it fits exactly into an angle, the angle is a right angle.

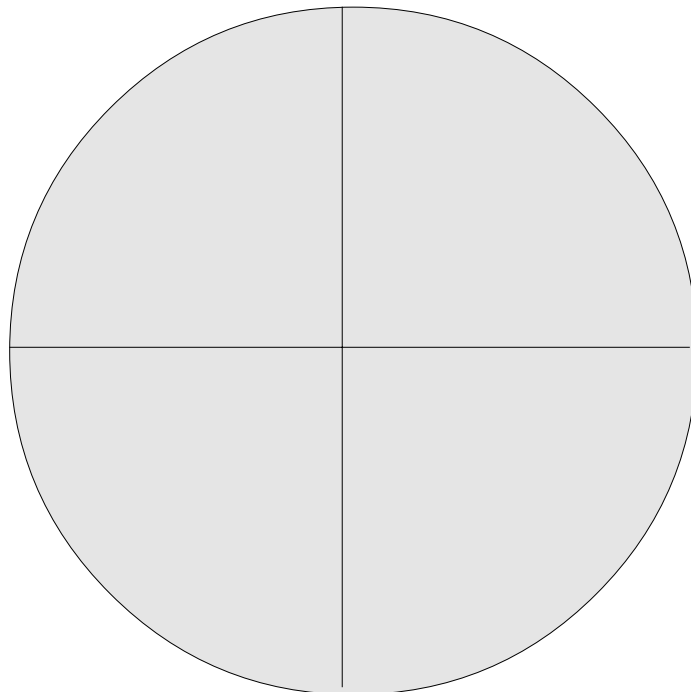
As you measure each angle, if the angle is a right angle, mark a little corner in the angle to show this.



### Student Worksheet 13: Making a Template to Measure Right Angles

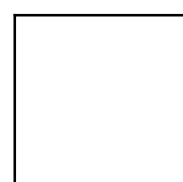
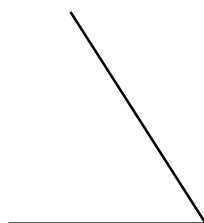
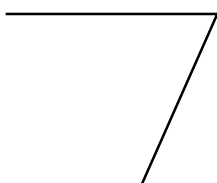
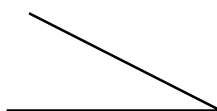
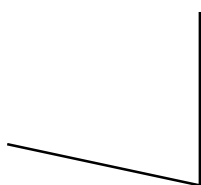
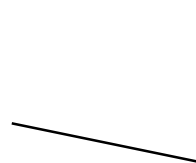
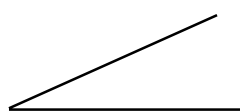
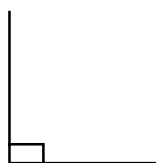
1. Carefully cut round the outside line of the circle below.
2. Fold the circle in half making sure the lines fit exactly on top of one another.
3. Fold in half again.
4. Glue the sides together or staple them if you prefer.

You now have a perfect right angle or a 90-degree angle. You can use this template to decide whether an angle is a right angle or not.



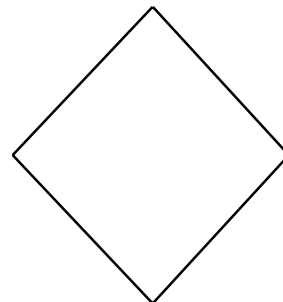
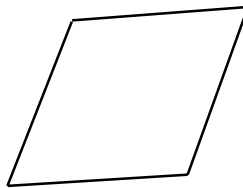
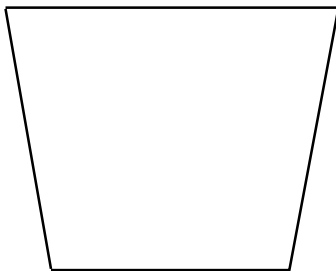
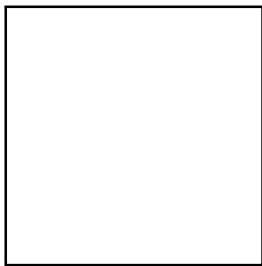
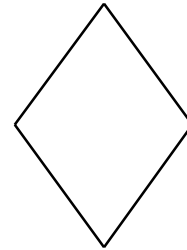
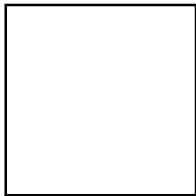
### Student Worksheet 14: Measuring Angles

Use your template to show whether an angle is a right angle or not. If the angle is a right angle, draw a little corner in the angle like this.



### Student Worksheet 15: Finding Squares

1. Measure each of the sides of the shapes. Put a cross in the shapes that are not squares.
2. Use your template to check which of the angles are right angles. Put a little corner in the right angles.
3. Decide if the shape is a square or not.
4. Tick the squares.

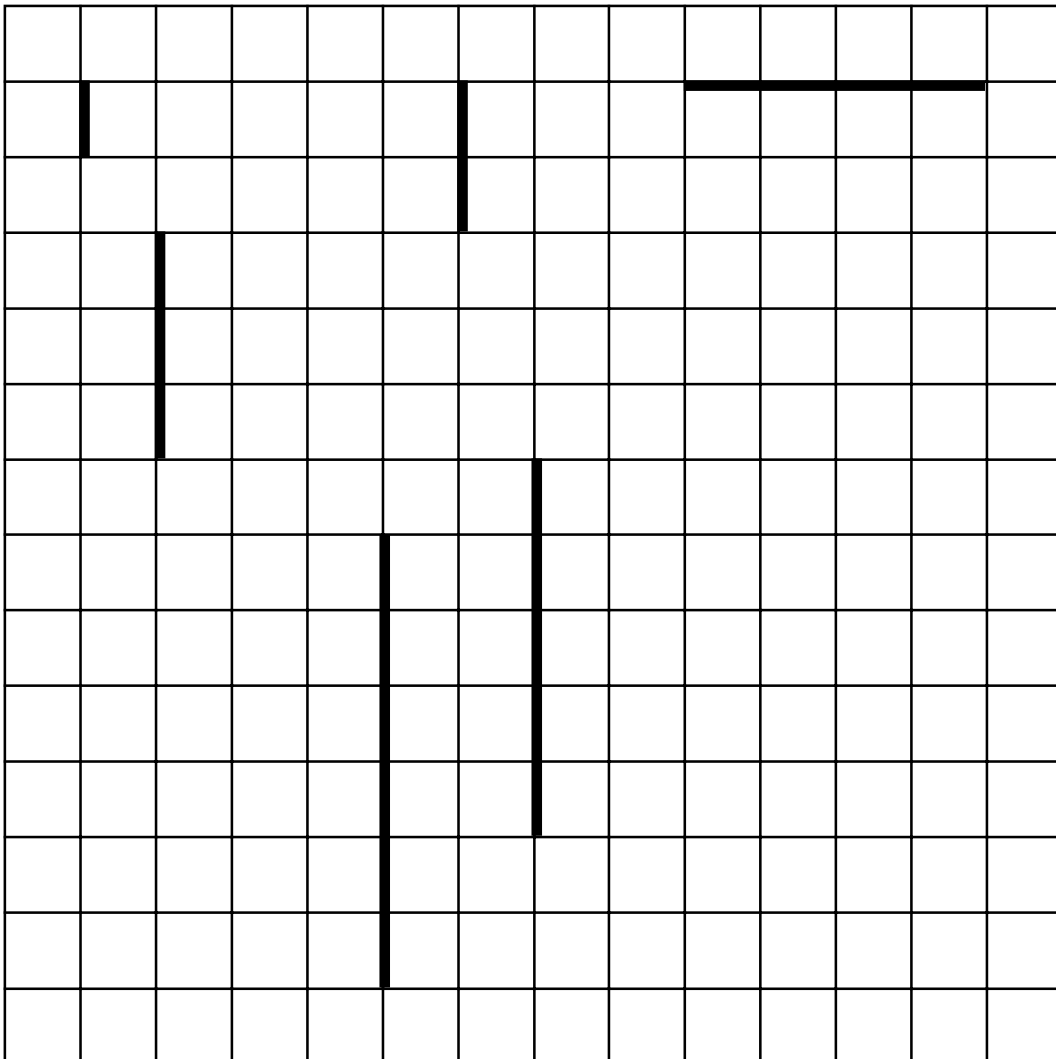


### Student Worksheet 16: Drawing Squares

This grid has little squares all the same size. All the sides of the little boxes are 1 centimetre long. The short way of writing the word centimetre is cm. From now on we will use this short way. Each of the little boxes has angles that are right angles.

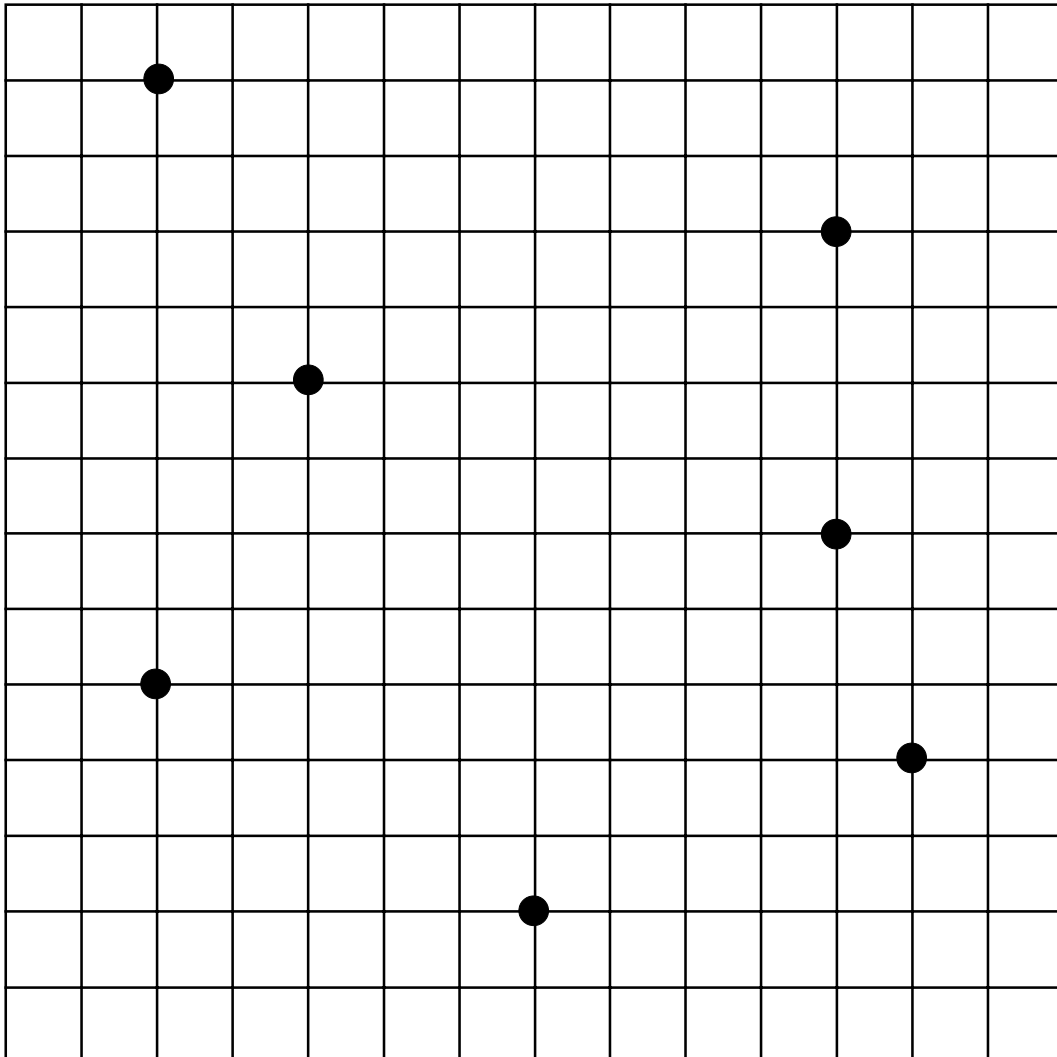
Use these to help you to finish the squares that are started.

1. One side of each square has been drawn.
2. You draw the rest of the square.
3. Colour each square a different colour.



### Student Worksheet 6: Drawing Squares

The sides of the squares on the grid below are all 1 cm long. Draw different size squares on the grid. Use the dots as starting points.



## Student Worksheet 18: Drawing Squares

Each of the little boxes on the next page have sides all measuring 1 cm.

All of the angles are right angles.

Use the little boxes to help you draw squares. You will also need a ruler and some coloured pencils. When you have drawn the squares, colour them in different colours. Here are the sizes of squares you will draw.

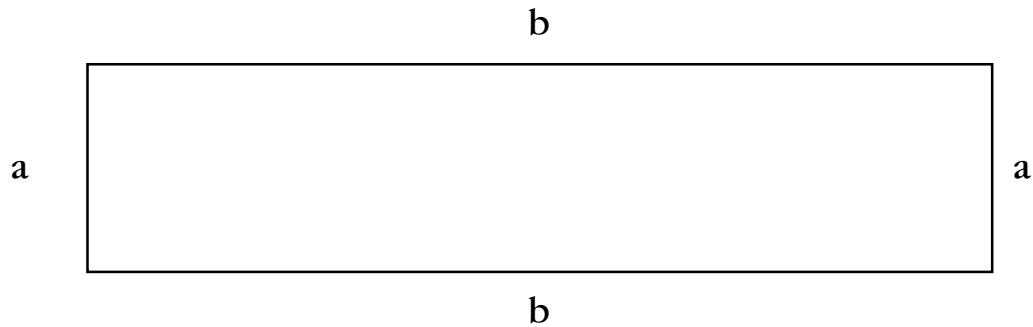
1. Square with sides equal to **8 cm**.
2. Square with sides equal to **3 cm**.
3. Square with sides equal to **5 cm**.
4. Square with sides equal to **1 cm**.
5. Square with sides equal to **7 cm**.
6. Square with sides equal to **2 cm**.
7. Square with sides equal to **4 cm**.



### Fact Sheet 3: The Rectangle

A rectangle has 4 sides.

The **opposite** sides of a rectangle are **the same length**.



The two sides marked **a** are the same length.

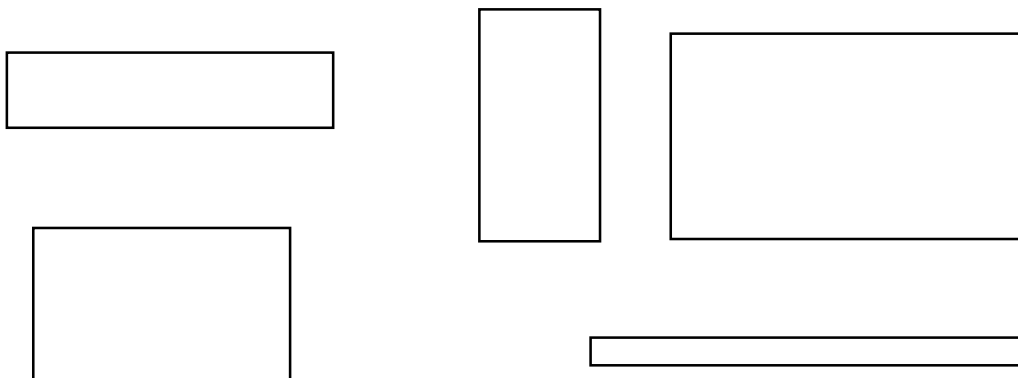
The two sides marked **b** are the same length.

A rectangle has 4 corners.

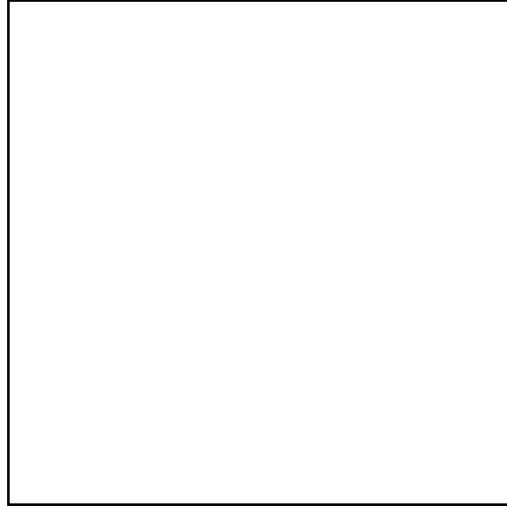
All 4 corners are exactly the same size.

Like a square all 4 corners are right angles.

Rectangles can be any size. These are all rectangles.



## Fact Sheet 4: Rectangles



This is a square. A square is also a rectangle because the **opposite sides** are the **same size**.  
All the angles are **right** angles.

A square is a special kind of rectangle.

## Student Worksheet 19: Drawing Rectangles

All of the little boxes on the next page are squares.

Remember: a square has four sides all the same length and four right angles.

Each side of the little box or square is 1 cm long.

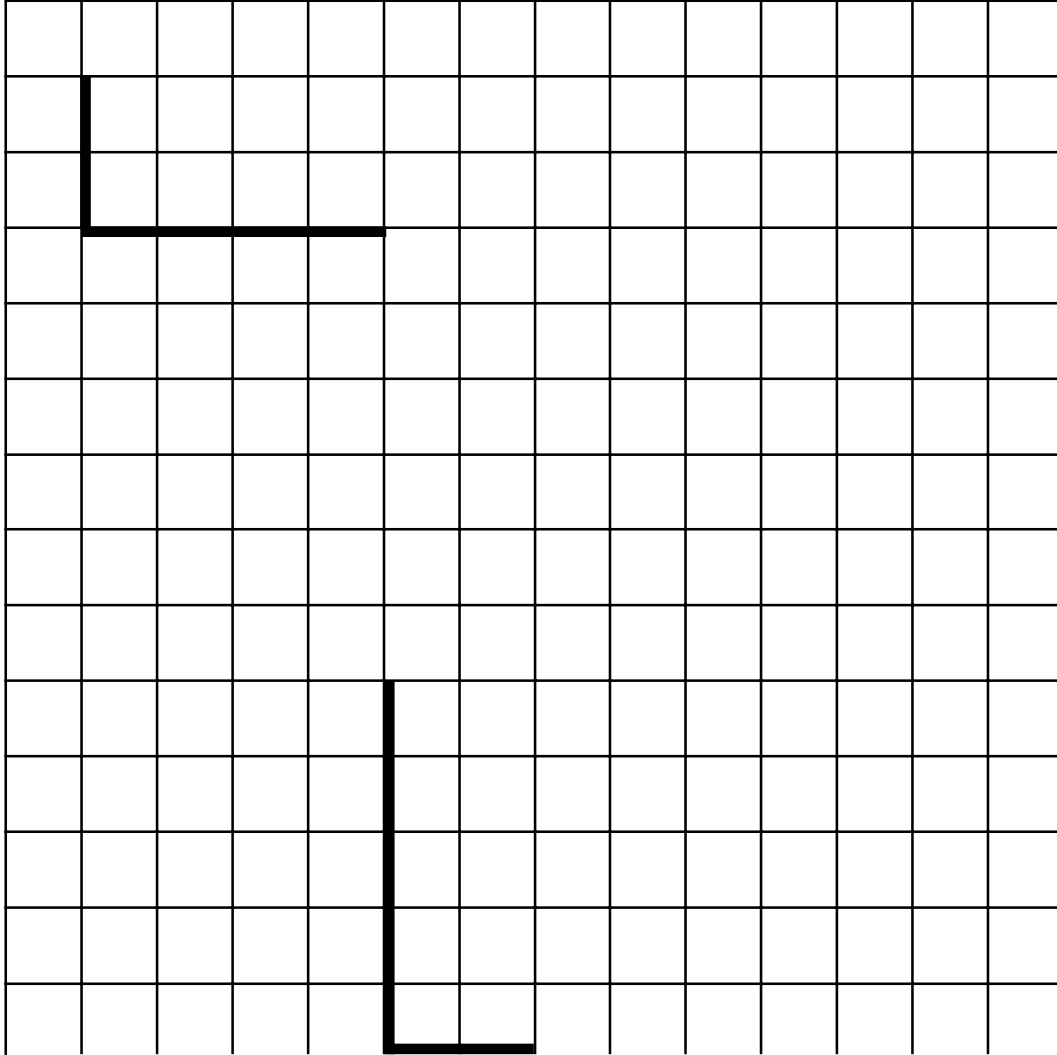
Use the little boxes and your ruler to help you draw some **rectangles**.

The first two have been started to help you.

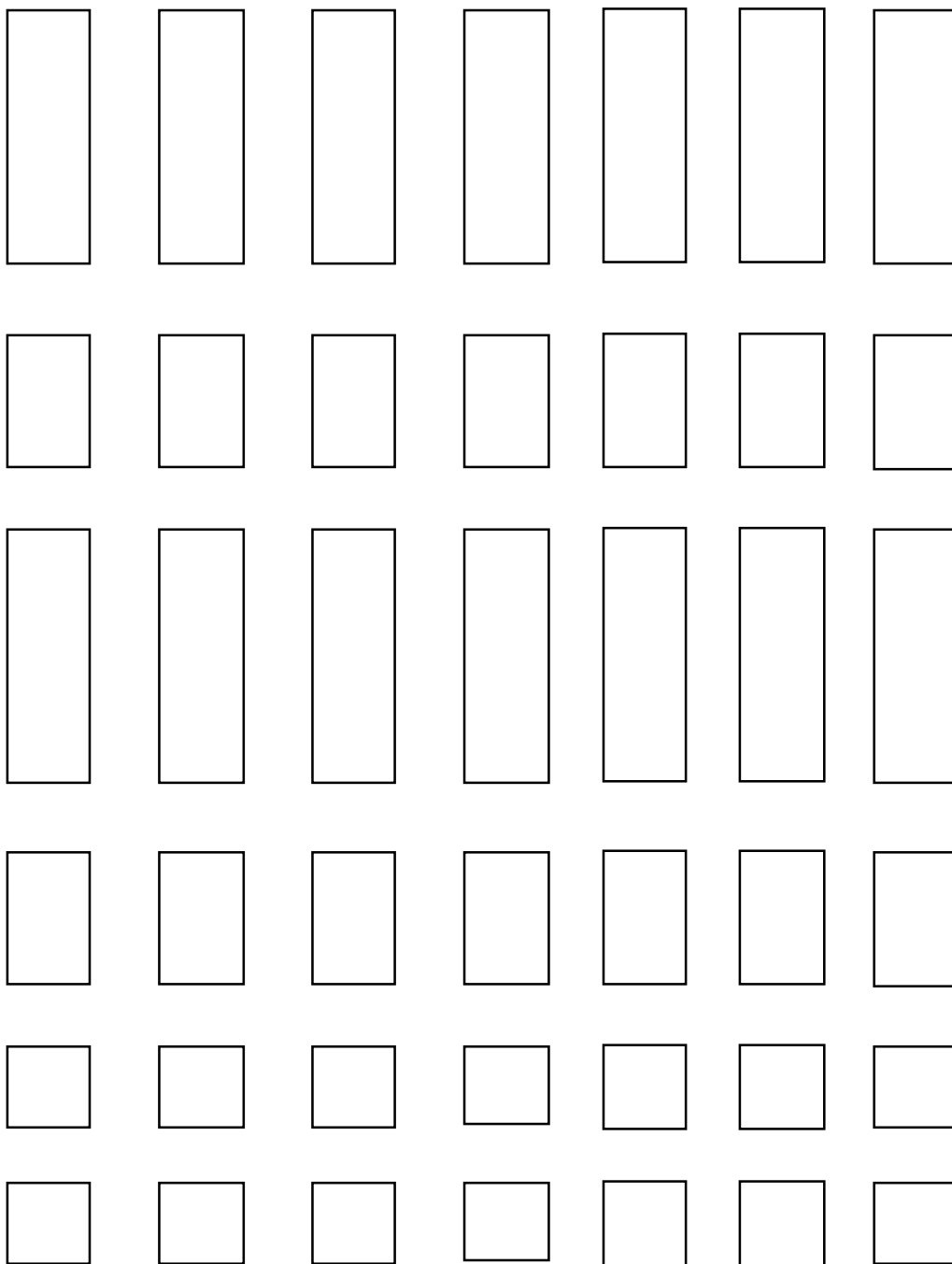
A hint:

1. Draw one long side.
2. Draw a short side.
3. Complete the rectangle.

**Student Worksheet 19 continued**



## Student Worksheet 20: Making Letters, Shapes and Pictures



On this page are some squares and rectangles which students can colour and use along with a centimetre grid to make letters of the alphabet or other pictures and shapes.

## Student Worksheet 21: Squares and Rectangles

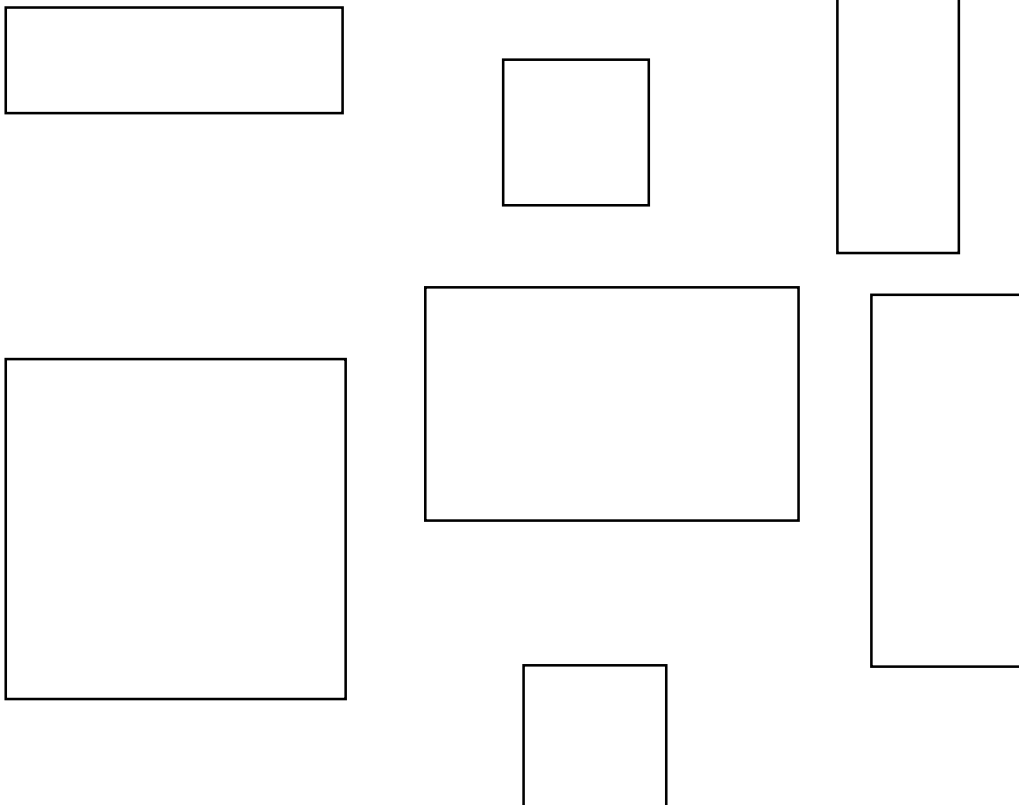
On this sheet there are seven rectangles.

Some of the rectangles are squares.

1. Colour the rectangles that are **squares** green.
2. Colour the **rectangles** that are not **squares** red.

Use your ruler to check if you are not sure about any of the shapes.

Remember: a square has four sides that are all the same length.



**Student Worksheet 22: Squares and Rectangles**

Here are some more shapes.

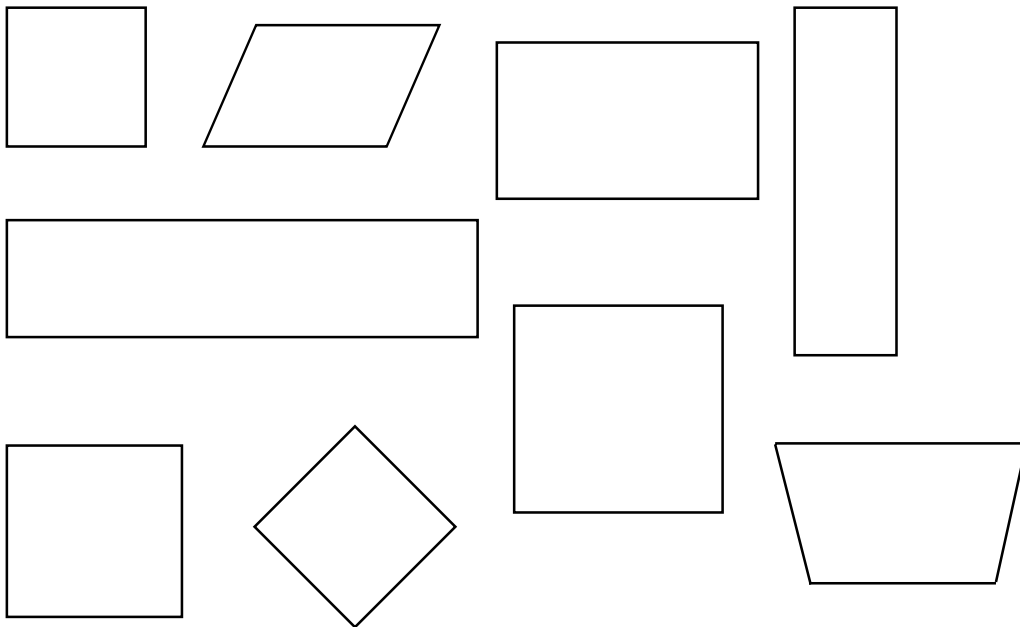
Find the **squares**.

Find the **rectangles**.

1. Use your ruler and measure the sides.  
A square has four equal sides.  
A rectangle has opposite sides equal in length.
2. Use your angle template.
3. Mark the angles where the template fits exactly.

If the four angles and the four sides are equal the shapes are **squares**.

If the four angles and the opposite sides are equal the shapes are **rectangles**.



Write square or rectangle in the squares and rectangles and put a cross in the shapes that are neither.

**Student Worksheet 23: True or False**

On this sheet are some sentences about **squares** and **rectangles**.

Some of these are true and some are false.

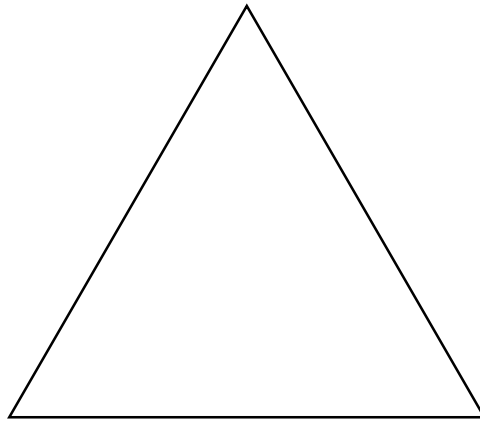
Put a tick beside the sentences that are true and a **cross** beside the ones that are false.

Squares have 4 sides.	
Rectangles have 4 sides that are equal.	
Squares have only 2 angles the same size.	
The angles of a square are right angles.	
Rectangles have opposite sides equal.	
Squares have 4 equal sides.	
Rectangles have 4 angles the same size.	
Squares have 4 angles the same size.	
Squares and rectangles have 4 sides.	
Squares and rectangles have 4 angles.	

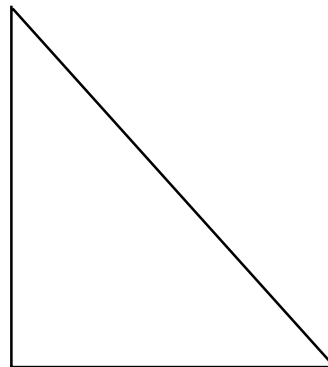
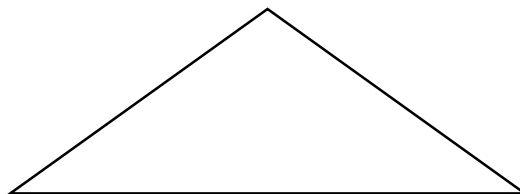
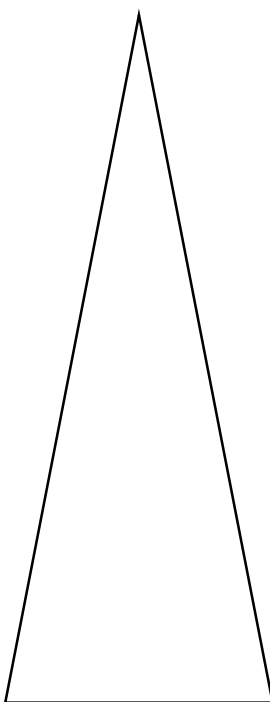
**Fact Sheet 4: The Triangle**

A triangle has 3 sides.

A triangle has 3 angles.



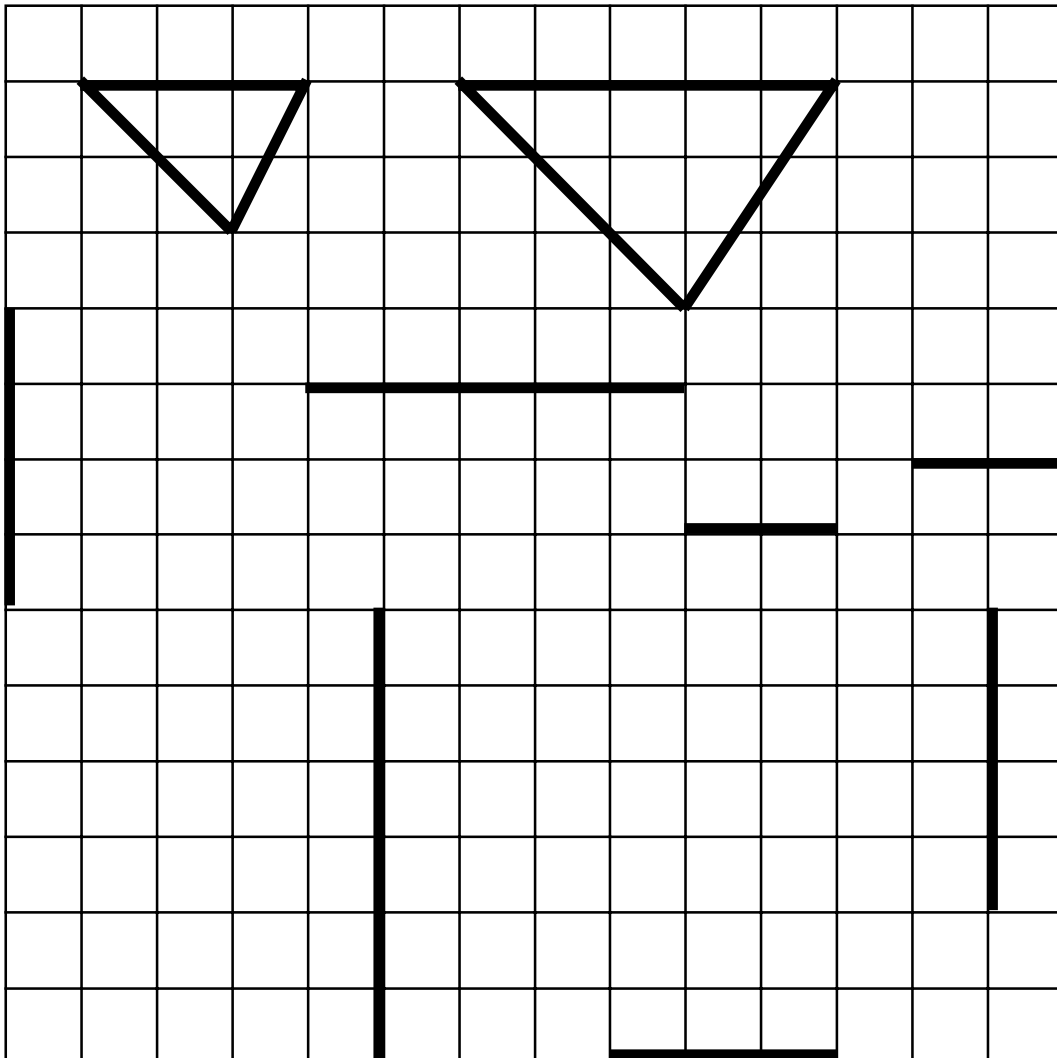
Triangles can be different kinds and sizes like the ones below.



### Student Worksheet 24: Drawing Triangles

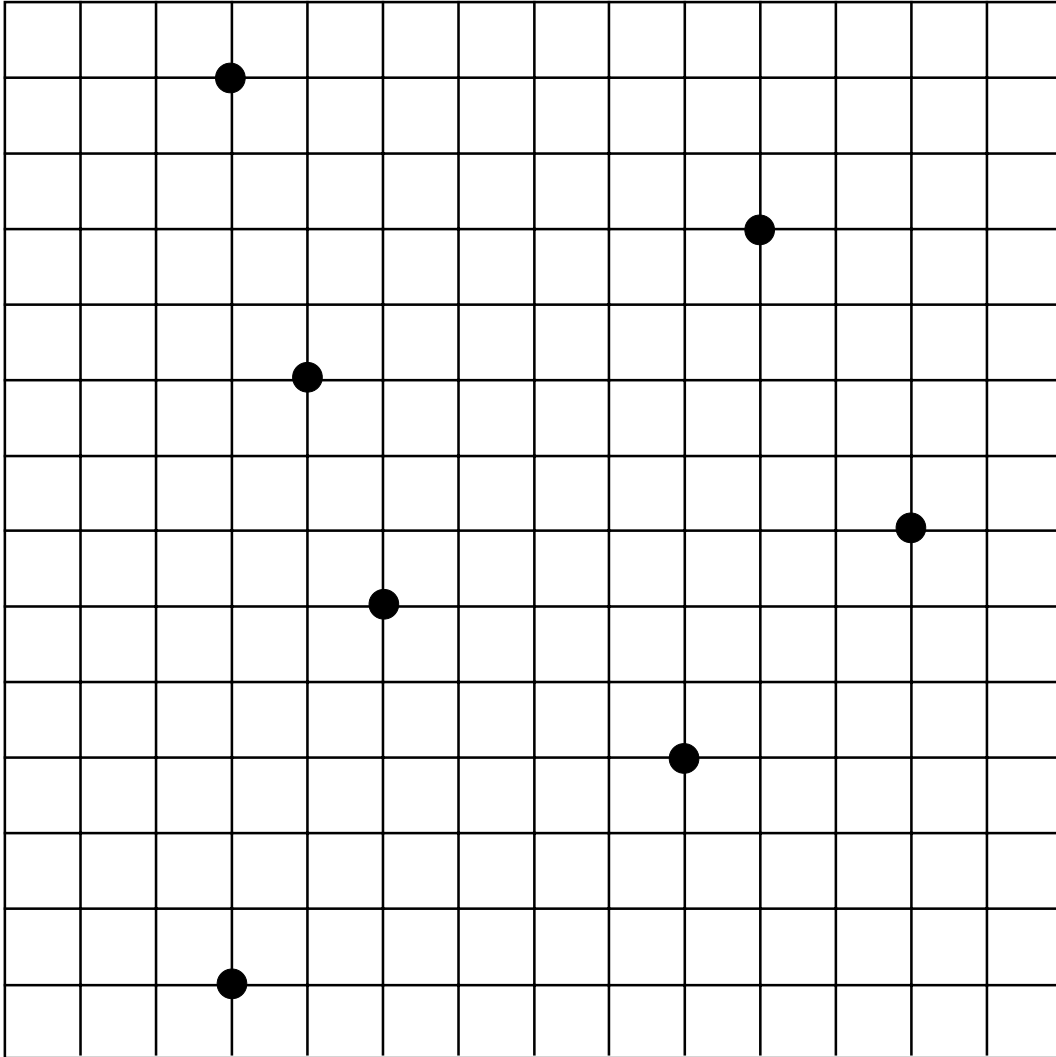
Use the grid below to help you to draw some triangles.

1. Two triangles have already been drawn.
2. One side of some other triangles has been drawn.
3. Draw the other two sides of these triangles using your ruler.
4. Colour each triangle a different colour.



**Student Worksheet 25: Drawing Triangles**

Use the dots as a starting point to draw some triangles.



## **Student Worksheet 26: Drawing Shapes**

Here are the instructions for drawing three shapes using the grid on the next page. Follow the instructions carefully then write the name of the shape inside. The three shapes you are going to draw, but not in this order, are:

Triangle

Square

Rectangle

### **Shape 1**

1. Begin at the top dot.
2. Draw a line four squares across.
3. At the end of this line draw a line four squares down.
4. At the end of this line draw a line four squares back across the page.
5. Join up the end of this line to the dot you began with.

### **Shape 2**

1. Begin at the right-hand dot.
2. Draw a line two squares across.
3. At the end of this line draw a line six squares down.
4. At the end of this line draw a line two squares back across the page.
5. Join up the end of this line to the dot you began with.

### Shape 3

1. Begin at the bottom dot.
2. Draw a line three squares across.
3. At the end of this line draw a line four squares up.
4. Join the end of this line to the dot you began with.

