Drawing picture graphs (pictograms)

Emma uses a tally chart to show the number of fruits in the baskets.

orange	~~HHH~~ ||| =8
pear	~~HHH~~	=6
strawberry	~~HHH~~ ~~HHH~~ =10

How else can she show the number of each type of fruit?

A tally chart is the use of lines to show an amount of something.
When we have 5 line, we draw the 5th line across so it is easier to see and add up.

~~HHH~~ = 5

~~HHH~~ + ~~HHH~~ = 10

5 + 5

~~HHH~~ + ||| = 8

5 + 3

On a scrap piece of paper, can you show how many fruits she has in as many different ways as possible?
What different ways can you show her tally?

Did you get any of these?
Emma could use a table or a picture graph (pictogram) to show how many different fruits are in the basket. Look carefully at each one. Can you notice that both different ways are clearly labelled.

Let's Learn

1. Emma uses a table.

number of fruits	oranges	pears	strawberries
	8	6	10

2. She also uses a picture graph or a pictogram.

Number of Fruits in the Baskets

orange	🍊	🟧🟧🟧🟧🟧🟧🟧
pear	🍐	🟧🟧🟧🟧🟧🟧
strawberry	🍓	🟧🟧🟧🟧🟧🟧🟧🟧🟧🟧

Each 🟧 stands for 1 fruit.

The labels make it clear so we know what each number or picture means.

3 She draws a different picture graph.

Number of Fruits in the Baskets

orange	pear	strawberry
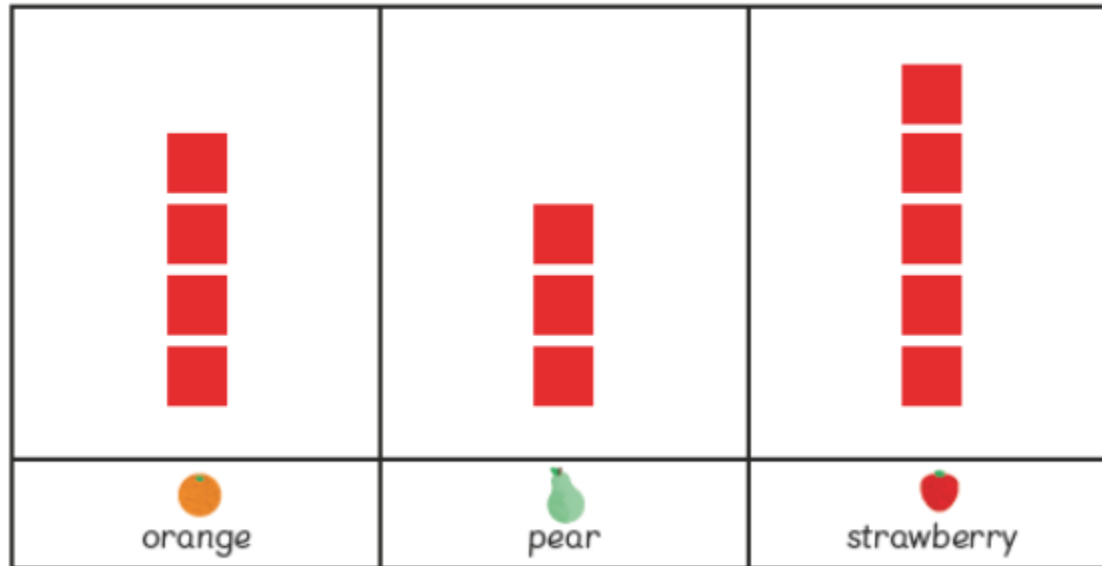
Each ⬛ stands for 2 fruits.

Emma has drawn another **pictograph** that looks slightly different.

How is this one different to the one before?
Talk to a member of your family or write a list.

Both of these are **pictographs** but are just drawn slightly differently. The main differences are:
1. The orange blocks represent just 1 piece of fruit but the red blocks represent 2 pieces of fruit.
2. The first one counts side ways but the second one counts upwards.
Did you get any more?
Even though they are **laid out different**, they still **show the same numbers**.

2 She also uses a picture graph or a pictogram.

Number of Fruits in the Baskets

orange	🍊	1 1 1 1 1 1 1 1 = 8
pear	🍐	1 1 1 1 1 1 = 6
strawberry	🍓	1 1 1 1 1 1 1 1 1 1 = 10

Each 🟧 stands for 1 fruit.

3 She draws a different picture graph.

Number of Fruits in the Baskets

orange	pear	strawberry
= 8	= 6	= 10

Each 🟥 stands for 2 fruits.

The graph shows the number of pupils who joined the football club.

Number of Pupils in Football Club

class 3A	class 3B	class 3C	class 3D
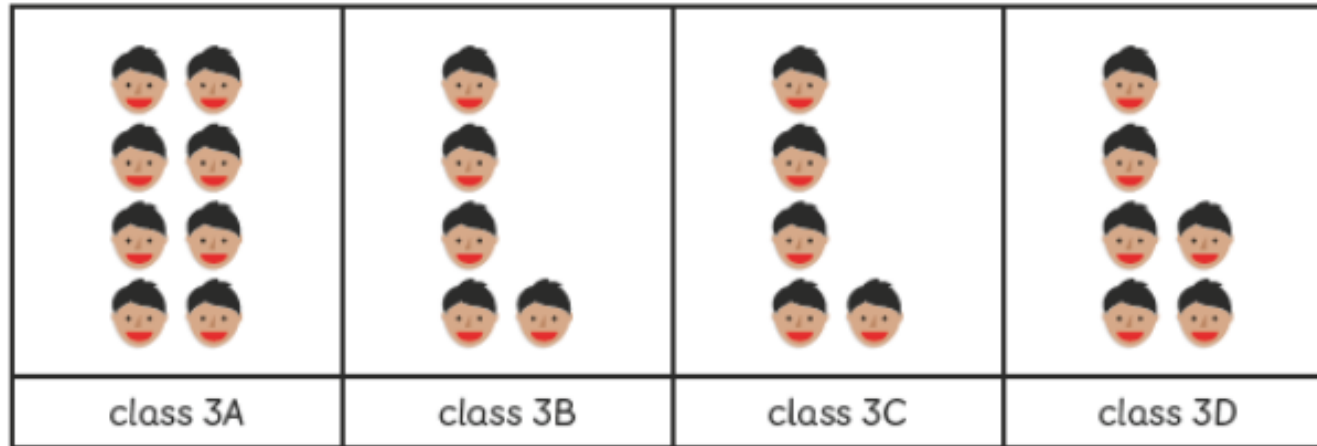
Each 😊 stands for 1 pupil.

This is very important to look at.
What is each picture worth?

Could you work out how many are in each class? Complete the table using tally lines e.g. III

(a) Complete the table.

class	number of pupils in football club
3A	
3B	
3C	
3D	

=

=

=

=

(b) Draw another picture graph to show the number of pupils in each class who joined the football club.

Number of Pupils in Football Club

3A		=
3B		=
3C		=
3D		=

Each ● stands for 2 pupils.

Use your tally chart to help you do this.
Your 2 times table might help you too.
Check that your totals are the same as your tally totals and these are the same as the 🧑 total.

Complete worksheet pages 61-64.

Think carefully about which type of pictogram you are going to use and how much each symbol is worth.

You can complete these questions straight into your book. You do not need to print out the worksheets.

If you want to practice using pictograms more here is a game you can play:

https://www.softschools.com/math/data_analysis/pictograph/games/

Or create your own pictogram through this website:

https://primaryschoolict.com/pictograph/

Drawing bar graphs

Ravi draws a picture graph to show the number of fruits in three baskets.

Number of Fruits in the Baskets
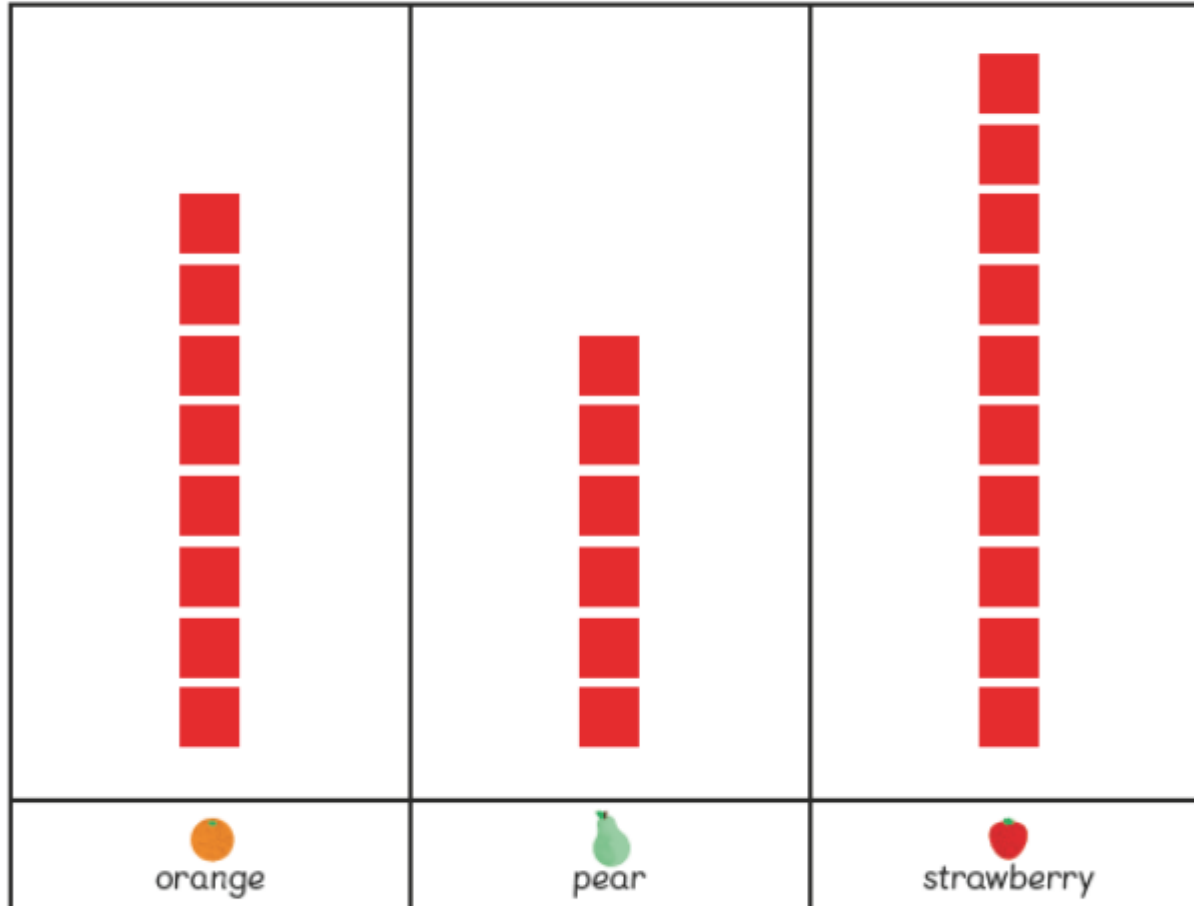
Each ☐ stands for 1 fruit.

How can Ravi draw another graph to show the same information?

Ravi has drawn a picture graph (pictogram) to show fruits in three different baskets. Use your knowledge from the previous lesson. Can you work out:

What does each red square represent?
How many oranges are there?
How many pears are there?
How many strawberries are there?

Have you heard of a different type of graph before? There are other types of graphs we can use to present data.

Let's Learn

We can use a bar graph to show the number of each type of fruit.

Fruits in the Baskets

number of fruits

orange   pear   strawberry
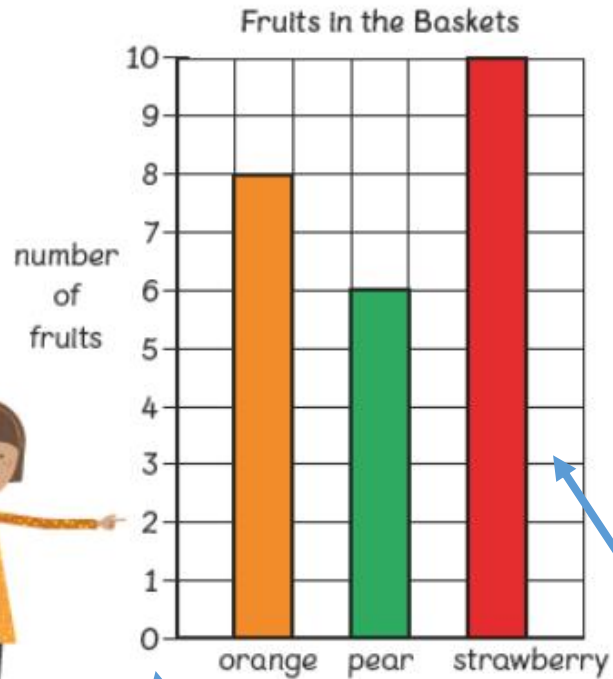
This is a scale.

There are 6 pears.
There are 2 more oranges than pears.
The largest group is the strawberries.

The number of fruits can be read from the scale on the left.

A bar graph is good because it makes it easier to **compare** the different bars.

It is called a bar graph because the numbers are shown in a bar and the we know how much the bar is worth by looking at the scale on the left.

Features of a bar chart:

When we read a bar graph, we always read it by going along the corridor and up the stairs. This means we read the bottom scale first then the scale up the side. The arrows will help you. These two sides of the graph have got special names. The x axis is usually the names of categories and the y axis is usually the numbers.

Title of the bar graph

School supplies students use

Up the stairs (y axis)

Number of supplies

Types of school supplies

Pencil   Scale   Pen   Sharpner   Eraser

Scale- numbers to show how many

Along the corridor (x axis)

Labels of categories to tell what each bar stands for

Looking at scales
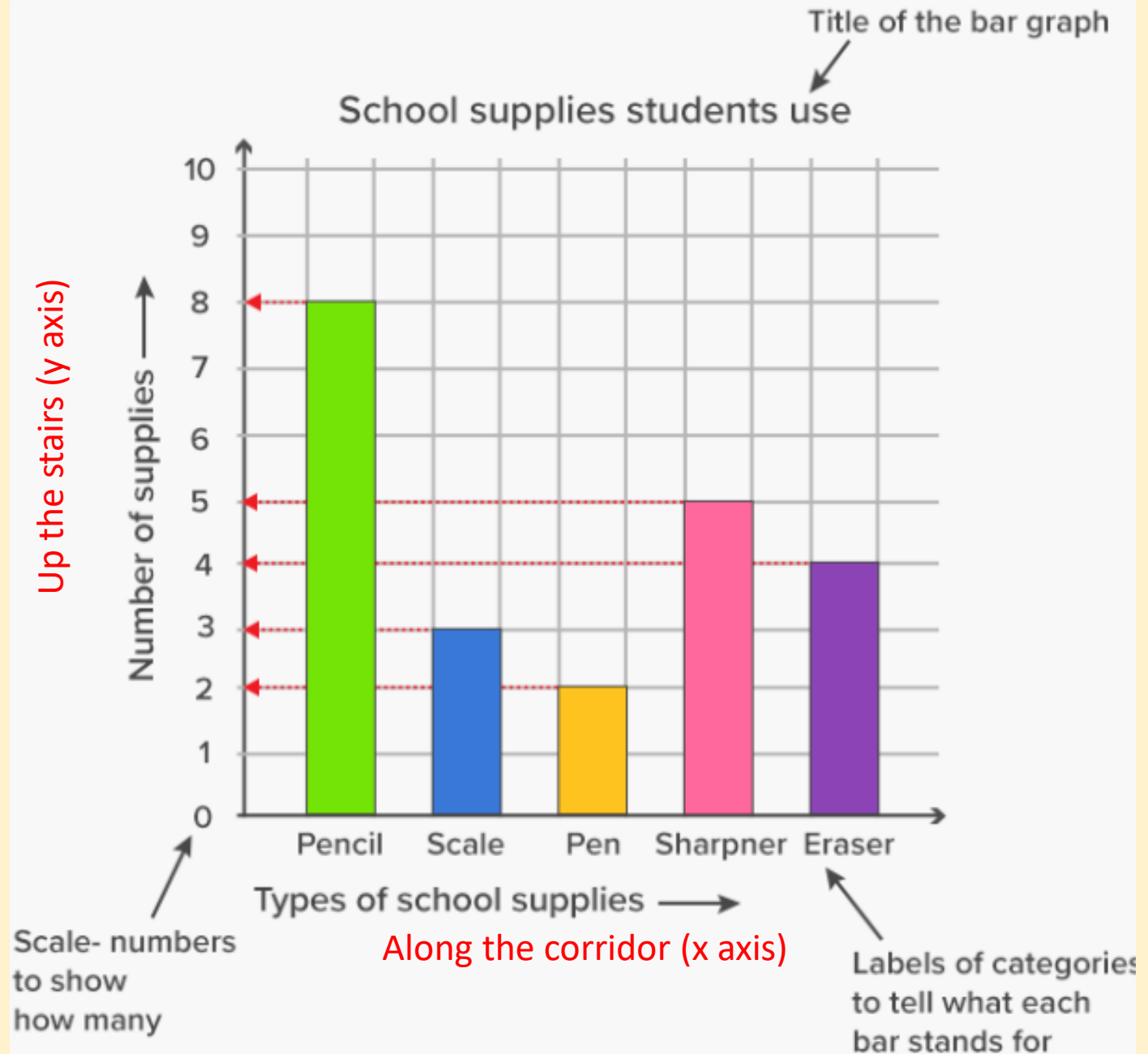
Our Favorite Sports

Scales can go up in different increments (amounts). For example, sometimes they jump up in 1's, 2's, 5's or 10's.

The number they jump in depends what the total and range of numbers are. If there is a big total like 100, the scale may jump up in 10's. If there total is only 12, the scale may jump up in 1's or 2's. Here are some examples.

Nicest Fruit
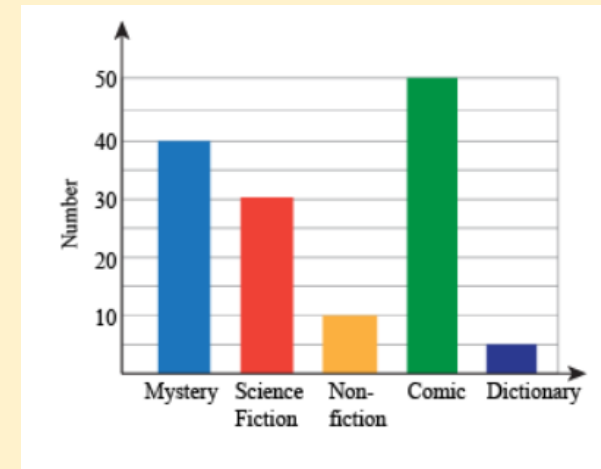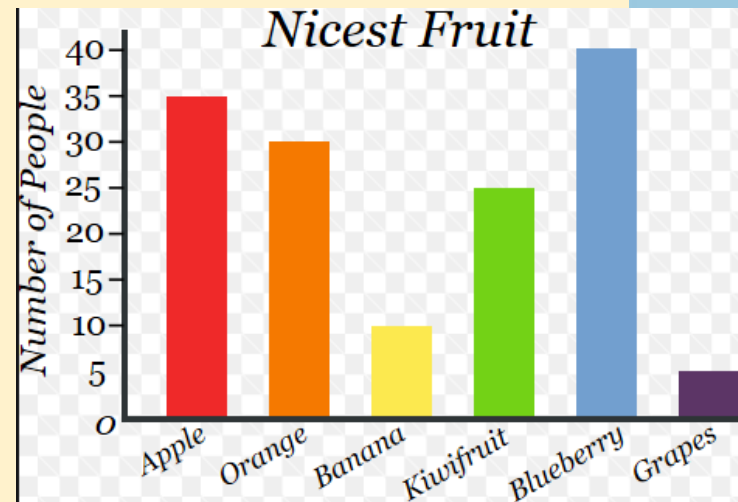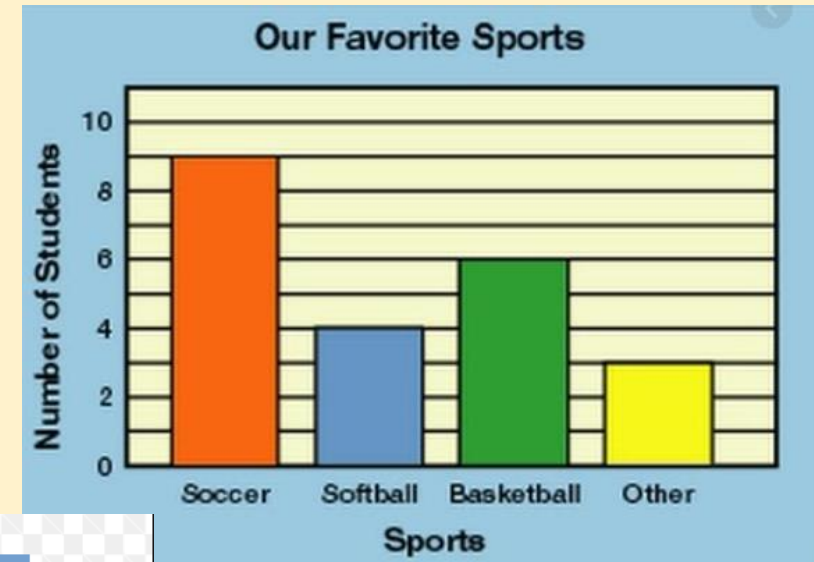
Guided Practice

How We Came to School

Number of pupils vs mode of transport (walk, car, cycle, bus, train):
- walk: 10
- car: 8
- cycle: 5
- bus: 5
- train: 2
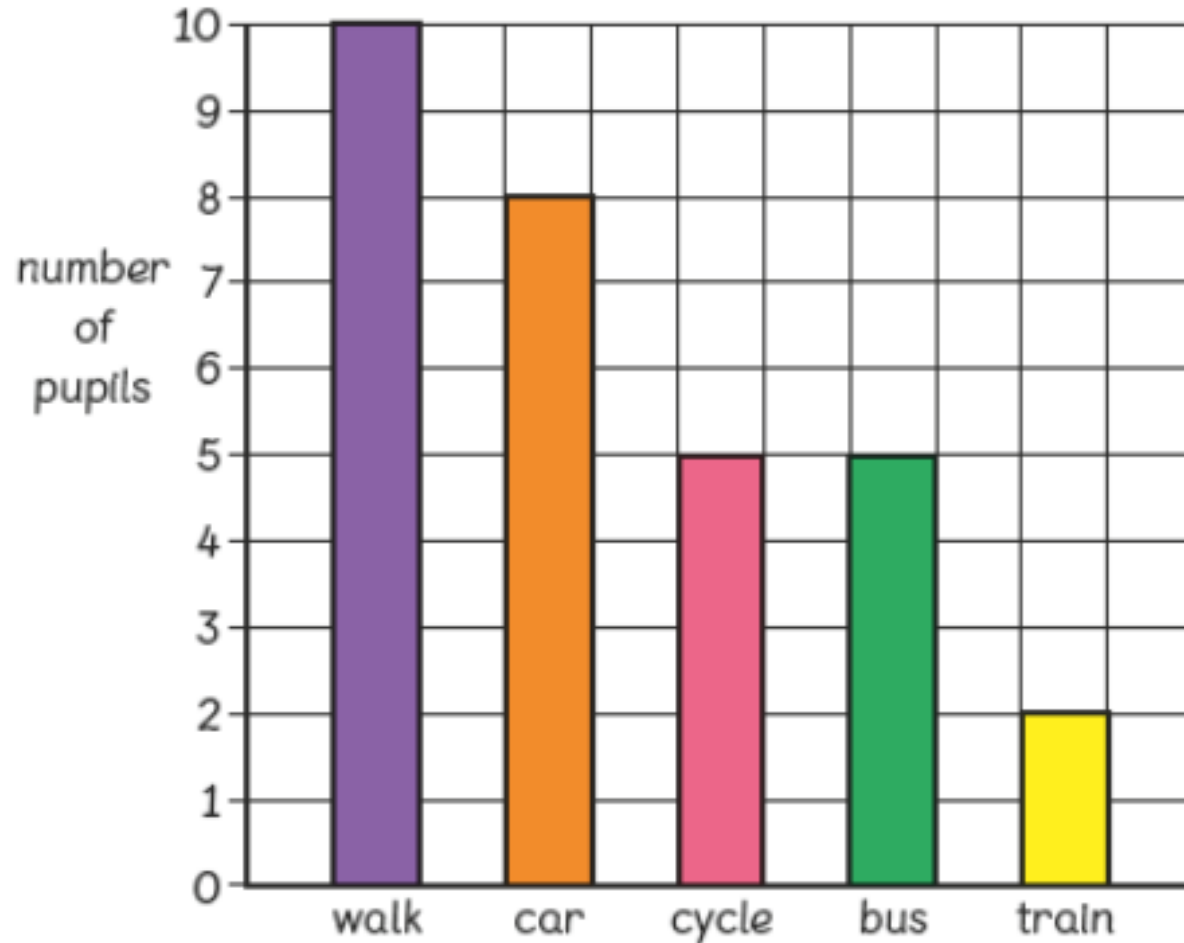
Pupils in a class were asked how they came to school that day.

(a) How many pupils walked to school?

(b) The number of pupils who came by car is ☐ less than the number of pupils who walked.

This is asking how many less used cars than walked.

(c) Is Hannah correct? Explain.

There were more pupils who walked to school than those who did not.

(d) There were ☐ pupils in the class that day.

Think carefully about how we might work this out? Which part of the graph might help us work out how many pupils were at school altogether?

FAVORITE SNACKS
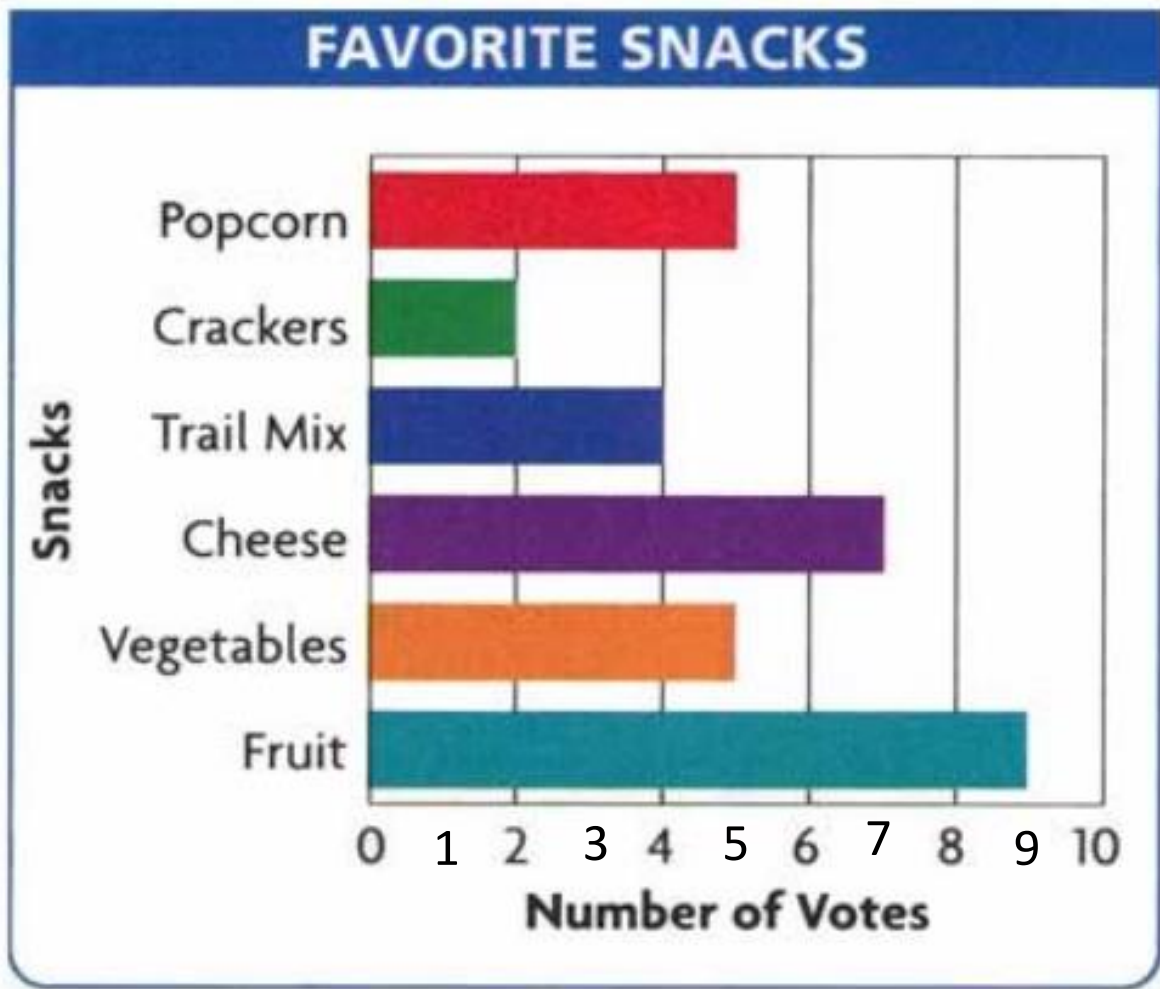
Which snack was the **most** popular?

Which snack was the **least** popular?

Which snack did **5 people** vote for?

How many **more** people liked popcorn than crackers?

Complete workbook **pages 65-68**

Now you have seen lots fo examples of graphs. See if you can practice drawing your own by using tally charts to help you.

Remember, one line represents 1 in a tally chart.

When you draw a graph, the width needs to be the same for each bar.

You can draw it straight into your book. You do not need to print pages.

Take your time and good luck.

Practice using bar graphs more with this game:

https://mathsframe.co.uk/en/resources/resource/51/bar_charts

Or try creating your own bar graph online:

https://nces.ed.gov/nceskids/graphing/classic/bar_pie_data.asp?ChartType=bar (there are details how to fill it in on the next page)

Number of bars you would like to display 1-15 ∨

Title of Graph: Favourite fruit

Title of X Axis: Type of fruit

Title of Y Axis: number of votes ✕

	Name:	Value:	Color:
Bar 1:	apple	6	*Default ∨
Bar 2:	pear	4	*Default ∨
Bar 3:	strawberry	8	*Default ∨
Bar 4:	orange	2	*Default ∨
Bar 5:	kiwi	3	*Default ∨
Bar 6:			*Default ∨
Bar 7:			*Default ∨
Bar 8:			*Default ∨
Bar 9:			*Default ∨
Bar 10:			*Default ∨
Bar 11:			*Default ∨
Bar 12:			*Default ∨
Bar 13:			*Default ∨
Bar 14:			*Default ∨
Bar 15:			*Default ∨

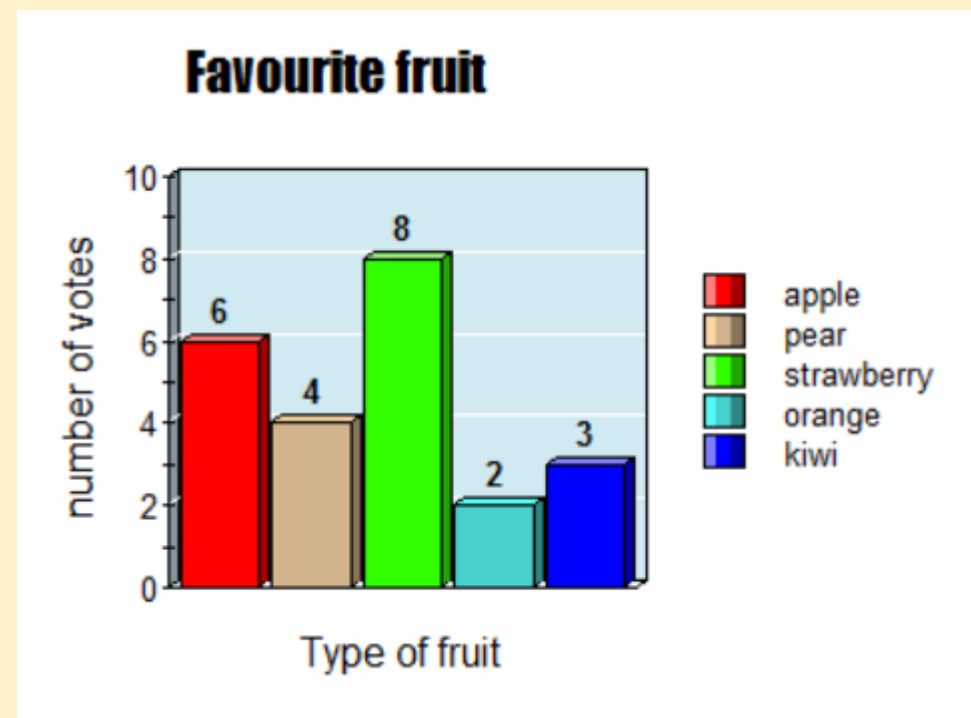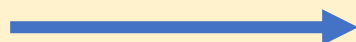Min Value: 0   Max Value: 10

3D Graph ☑

Graph Direction (⦿ Vertical ◯ Horizontal ◯ Stacking)

Graph Size (◯ Small ⦿ Medium ◯ Large ◯ Xtra-Large)

Select Background Color: *Default ∨

Select Image File Type: PNG ∨

Create Printable Graph

Favourite fruit

number of votes

Type of fruit

- apple
- pear
- strawberry
- orange
- kiwi

Challenge:

Could you make your own bar graph?

Maybe you could make a graph. Some ideas are:

-colour of flowers in the garden

-colour of cars you can see out the window

-your family's favourite sports

- Your family's favourite piece of fruit

Remember to have about 4 or 5 options to choose from.

You don't want too many.