

# Collecting and Organizing Data



## Quick Review

**Data** are facts or information.

You collect data to learn about people and things.

➤ To collect data, begin with these questions:

- WHAT do you want to know?
- WHAT question will you ask?
- WHOM will you ask?
- HOW will you show what you find out?

➤ You can record data in **tally charts** and **lists**.

Favourite Pets	
Hamster	### I
Dog	### ### ### II
Cat	### II
Other	

Cubes We Picked Up	
Green	7
Red	9
Yellow	12
Blue	4

## Try These

Marsella collected these data.

1. What question do you think she asked?

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2. How many people did she ask?

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Character	Tally	Number of Children
Pinocchio	### II	7
Goldilocks		3
Cinderella	###	5
Snow White	### ### I	11
Other	### II	7

## Practice

Some children were asked how many times they have been on a train.

1. How many children have never been on a train? \_\_\_\_\_
2. How many children were asked the question? \_\_\_\_\_

Times on a Train	Number of Students
0	### ###
1	
2	###
3	### ###
More than 3	

3. Carlos asked his classmates this question: Are you right-handed or left-handed? He organized the data in a list.

a) How many children are left-handed?

\_\_\_\_\_

b) How many more children are right-handed than left-handed?

\_\_\_\_\_

c) Write a question about Carlos' list.

\_\_\_\_\_

d) Answer your question.

\_\_\_\_\_

Left-Handed	Right-Handed
Ethel	Maria
Dan	Lucia
Igor	Bobby
Salina	Clarke
	Fred
	Sylvester
	Andy
	Helen

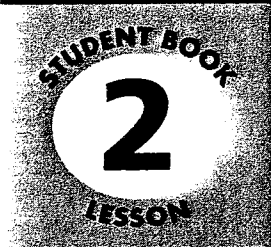
## Stretch Your Thinking

Roll a number cube 50 times. Keep a tally of the number that comes up on each roll.

What did you find out?

\_\_\_\_\_  
\_\_\_\_\_

Number	Tally
1	
2	
3	
4	
5	
6	



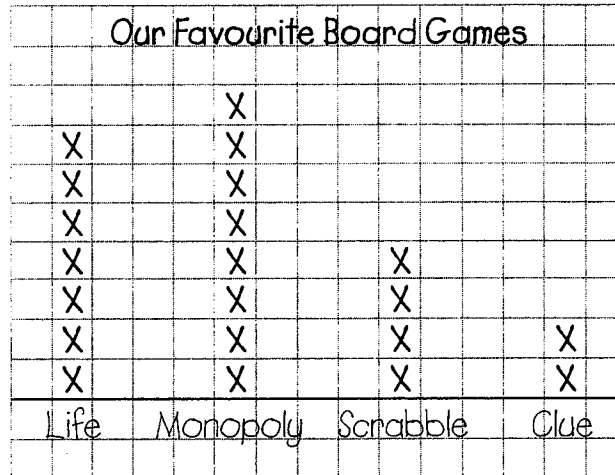
# Line Plots



## Quick Review

The children in Mr. Matsuo's class voted for their favourite board game. Sadie used these steps to make a **line plot** of the data.

- Draw a line on grid paper. Write the names of the board games below the line.
- Mark an X to show each vote.
- Give the line plot a title.

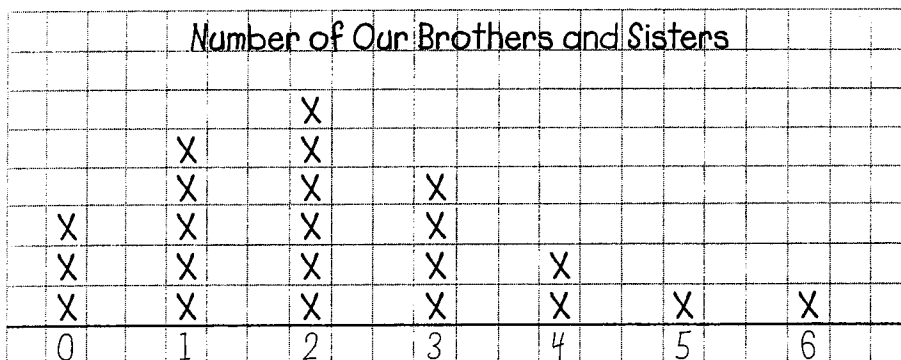


The line plot shows that:

- 8 children chose *Monopoly*
- 3 more children chose *Life* than *Scrabble*

## Try These

1. Bertram made this line plot to show the numbers of brothers and sisters his classmates have.



- a) How many children have 3 brothers and sisters? \_\_\_\_\_
- b) What is the most number of brothers and sisters for any child? \_\_\_\_\_
- c) How many more children have 2 brothers and sisters than 4? \_\_\_\_\_

# Practice

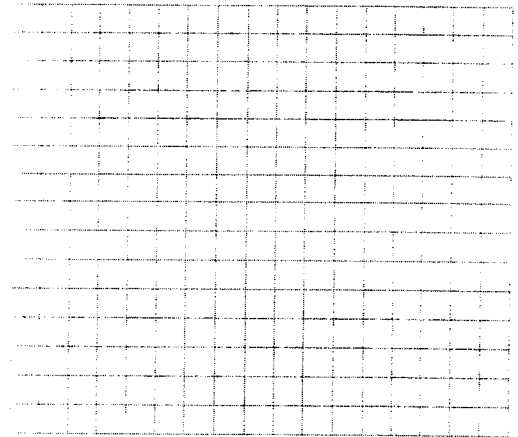
1. Ask some classmates:  
Where would you like to go  
for holidays?

the beach \_\_\_\_\_

the mountains \_\_\_\_\_

a theme park \_\_\_\_\_

Collect and organize the  
data in a line plot.



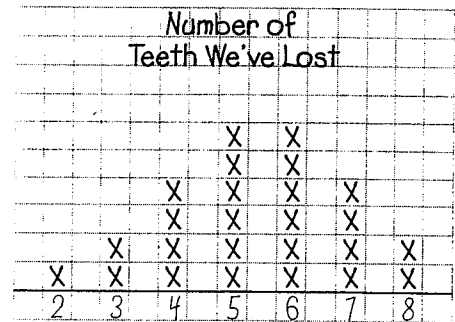
2. Roberto made this line plot to show the  
number of teeth his classmates have lost.

- a) What is the most number of  
teeth lost? \_\_\_\_\_

The least number? \_\_\_\_\_

- b) How many more children lost  
6 teeth than 4 teeth? \_\_\_\_\_

- c) What else do you know from the line plot?



\_\_\_\_\_

\_\_\_\_\_

## Stretch Your Thinking

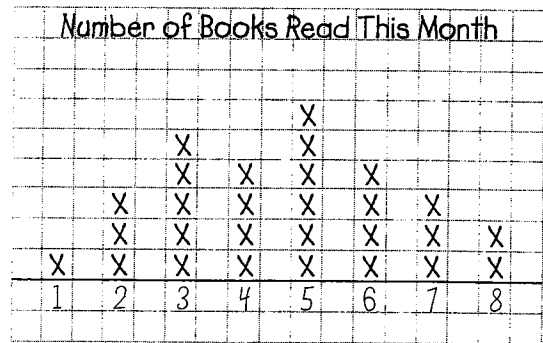
Look at the line plot.  
How many children are in the class? \_\_\_\_\_  
Write 2 things you know from the line plot.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

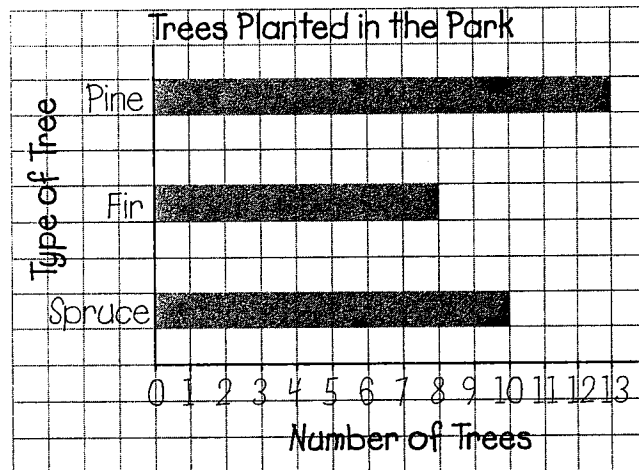
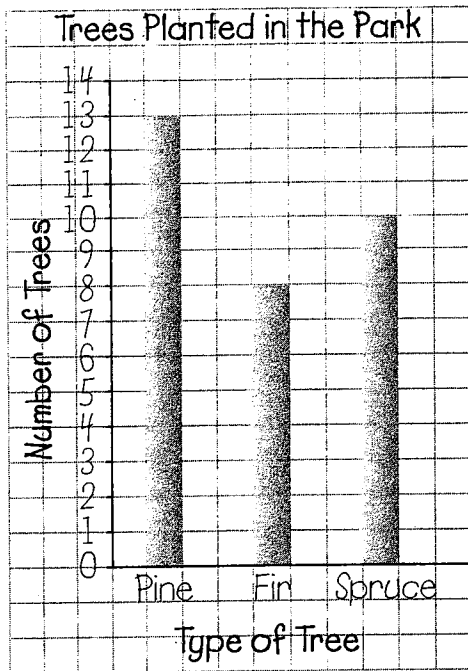


# Reading Bar Graphs



## Quick Review

These 2 graphs show the same data.



The **title** tells what the graph shows.

The labels on the **axes** tell about the data.

The numbers on the **axis** labelled "Number of Trees" show the **scale**.

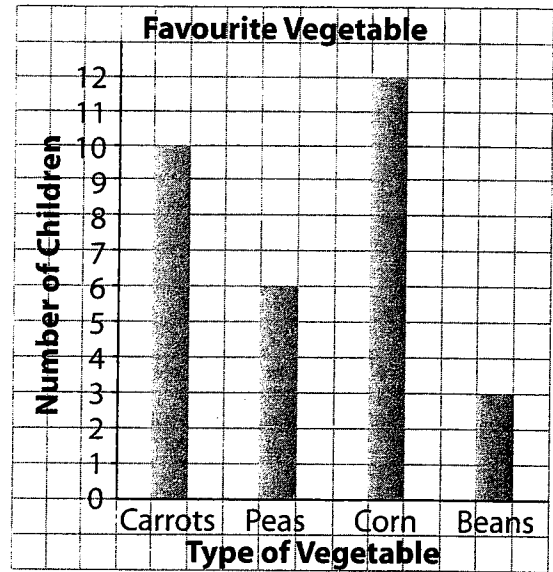
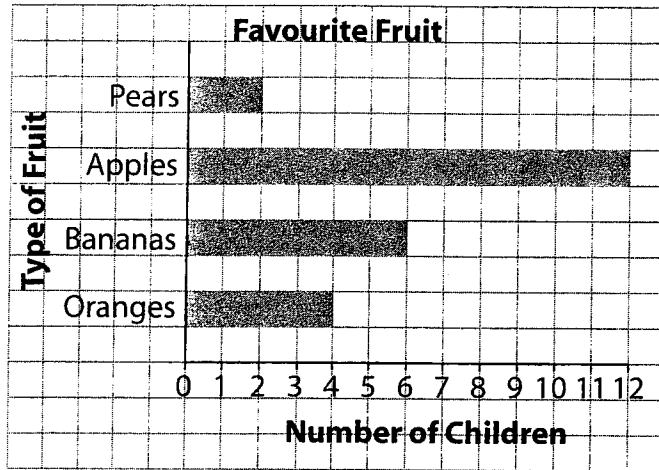
The scale is: 1 square represents 1 tree.

## Try These

- Look at the graphs above.
  - How many more pine trees than fir trees were planted? \_\_\_\_\_
  - How many trees were planted altogether? \_\_\_\_\_

## Practice

Some children were asked to name their favourite fruit.  
Other children were asked to name their favourite vegetable.



1. How many children like bananas? \_\_\_\_\_
2. How many more children like apples than oranges? \_\_\_\_\_
3. List the fruits from least popular to most popular.  
\_\_\_\_\_
4. How many children like beans? \_\_\_\_\_
5. List the vegetables from most popular to least popular.  
\_\_\_\_\_
6. How many children were asked to name
  - a) their favourite fruit? \_\_\_\_\_
  - b) their favourite vegetable? \_\_\_\_\_

## Stretch Your Thinking

Use the bar graphs above to answer these questions.

- a) Which fruit was named by twice as many children as bananas? \_\_\_\_\_
- b) Which vegetable was named by half as many children as corn? \_\_\_\_\_

# Drawing Bar Graphs



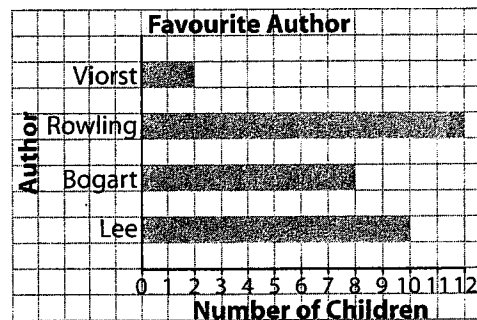
## Quick Review

To draw a bar graph of the data in the chart:

- Draw 2 axes.
- Write the title.
- Label 1 axis "Author."  
Write the authors on this axis.
- Label the other axis "Number of Children."  
Write the numbers along this axis.  
Colour 1 square next to an author for each child who chose her or him.

Favourite Author

Author	Tally	Number of Children
Judith Viorst		2
J. K. Rowling		12
Jo Ellen Bogart		8
Dennis Lee		10



The graph shows J. K. Rowling is the favourite author. Her bar has the most squares.

## Try These

The Grade 3 children in Mr. Shankar's class chose their favourite winter activity.

1. Finish the bar graph.
2. Write 3 things you know from the graph.

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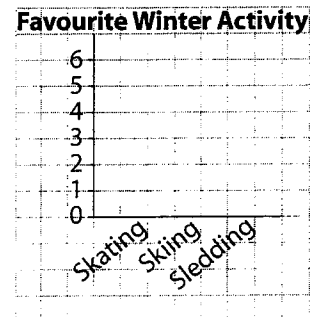
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Favourite Winter Activity

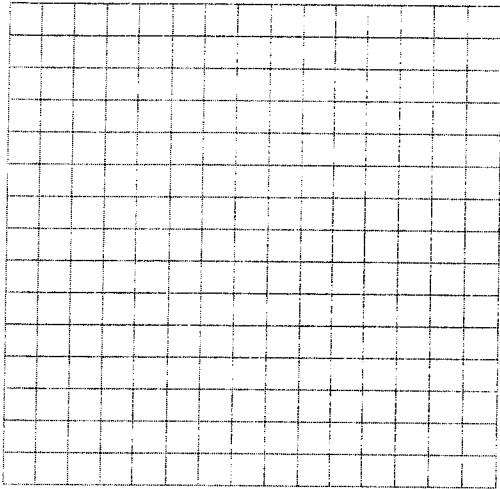
Activity	Tally	Number of Children
Skating		6
Skiing		5
Sledding		4



## Practice

The children in Becky's class chose their favourite school subject. They showed the data in a line plot.

1. Draw a bar graph to show the data.



Favourite School Subject				
X				
X	X	X		
X	X	X		X
X	X	X		X
X	X	X	X	X
X	X	X	X	X
X	X	X	X	X
Math	Science	Reading	Art	Music

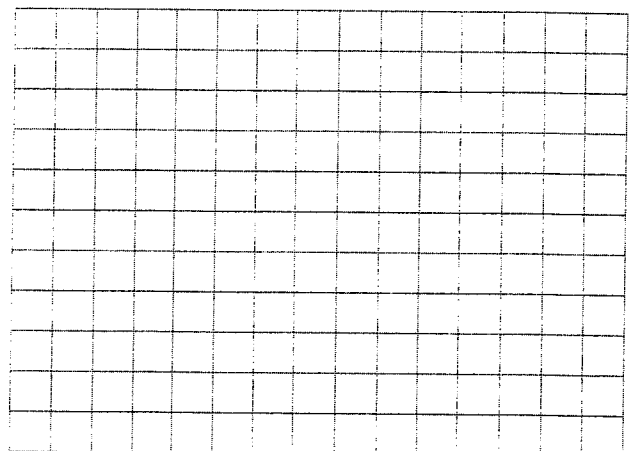
2. Write 3 things you know from the graph.

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## Stretch Your Thinking

Use the data about favourite winter activities in *Try These*. Draw a different bar graph.





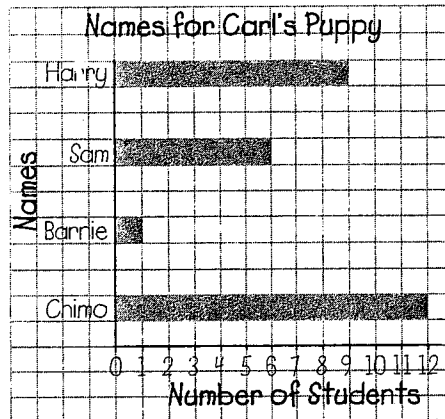
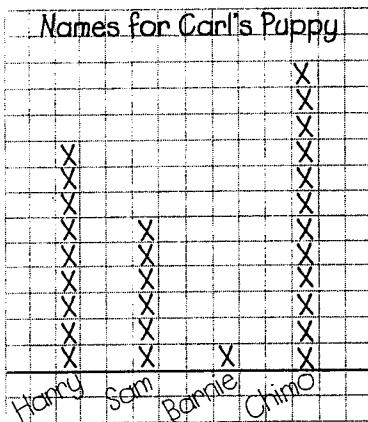
# Using Graphs to Solve Problems



## Quick Review

Carl wanted to solve the problem about what to name his puppy. He asked his classmates for their ideas.

- Carl made a line plot to collect data from his classmates. Then he drew a bar graph.



- Carl found out that the most popular name was Chimo, so that is what he named his puppy.

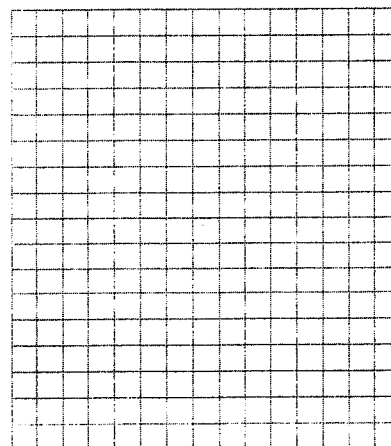
## Try These

- a) Organize Carl's data in this tally chart.

Votes for the Puppy's Name

Names	Tally	Number of Votes

- b) Draw a different bar graph.





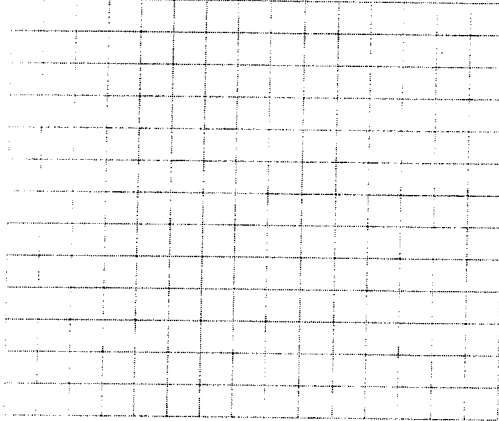
## Practice

1. Solve this problem: Which pet should we get for the classroom?

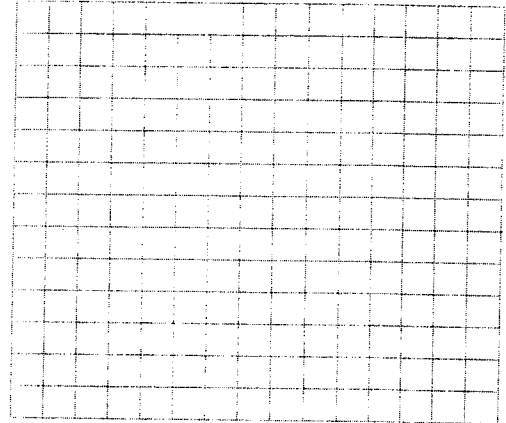
a) List the pets you could get.

\_\_\_\_\_

b) Collect and organize the data in a line plot.



c) Draw a bar graph to show your data.



d) List 2 things you found out.

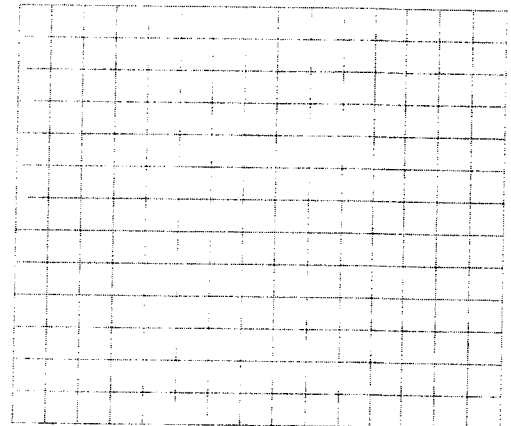
\_\_\_\_\_  
\_\_\_\_\_



## Stretch Your Thinking

Choose a topic for a problem. Decide on a question to ask.  
Collect and organize the data. Draw a bar graph.

Question: \_\_\_\_\_  
\_\_\_\_\_



What is your solution to the problem? \_\_\_\_\_  
\_\_\_\_\_

