Scheme of Learning

Year 3

#MathsEveryoneCan
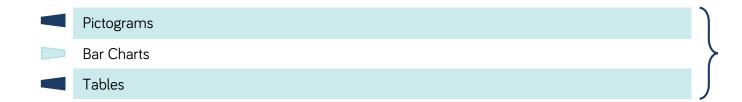
White Rose Maths

White Rose Maths

Statistics

Overview

Small Steps

Pictograms

Bar Charts

Tables

NC Objectives

Interpret and present data using bar charts, pictograms and tables.

Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.

Pictograms

Notes and Guidance

Children build on their understanding of pictograms from Year 2. They continue to read and interpret information in order to answer questions about the data. It is important that children understand the value of each symbol used and what it means when half a symbol is used.

Children construct pictograms and choose an appropriate key. Encourage children to carry out their own data collection.
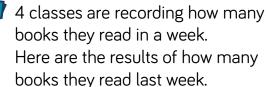
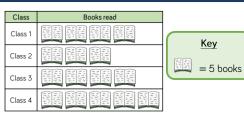## Mathematical Talk

What is each symbol worth?

What does half of the symbol represent? Is it always possible to use half of a symbol? Why?

What other questions could you ask about the pictogram?

What would each symbol represent in your pictogram? Have you used the same key as a friend? Could it be represented in different ways?

Varied Fluency

4 classes are recording how many books they read in a week.
Here are the results of how many books they read last week.

- Which class read the most books?
- Which class read the least books?
- How many more books did Class 4 read than Class 2?

Complete the pictogram using the information.
- Group 2 collected 40 apples.
- Group 4 collected half as many apples as Group 1
- Group 5 collected 20 more apples than Group 3
How many apples did each group collect?

Class 3 are counting the colour of cars that pass the school.

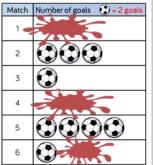| Red	Blue	Black	Silver	White	Other
12	6	14	10	14	2

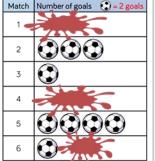Draw a pictogram to represent their findings.
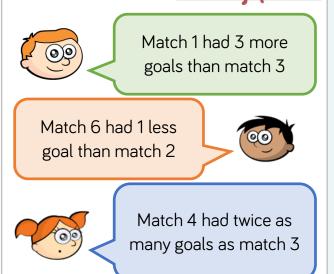
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Pictograms

Reasoning and Problem Solving

Ron, Amir and Alex record the scores of six football matches. Unfortunately, Ron spilt paint on them.

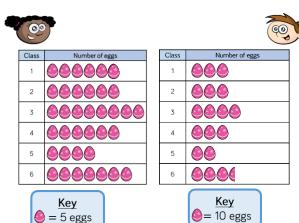Record the results based on what the children remember.

Match	Number of goals ⚽ = 2 goals
1	
2	
3	
4	
5	
6	

Match 1 had 3 more goals than match 3

Match 6 had 1 less goal than match 2

Match 4 had twice as many goals as match 3

Possible answer:

Match	Number of goals
1	⚽⚽◖
2	⚽⚽⚽
3	⚽
4	⚽⚽
5	⚽⚽⚽⚽
6	⚽⚽◖

Whitney and Teddy are making pictograms to show how many chocolate eggs each class won at the school fair.

Class	Number of eggs
1	🥚🥚🥚🥚🥚🥚
2	🥚🥚🥚🥚🥚🥚
3	🥚🥚🥚🥚🥚🥚🥚
4	🥚🥚🥚🥚🥚
5	🥚🥚🥚
6	🥚🥚🥚🥚🥚

Key
🥚 = 5 eggs

Class	Number of eggs
1	🥚🥚🥚
2	🥚🥚🥚
3	🥚🥚🥚🥚
4	🥚🥚🥚
5	🥚🥚
6	🥚🥚🥚

Key
🥚 = 10 eggs

What's the same and what's different about their pictograms?
Whose pictogram do you prefer and why?

Possible answer:

Same image/symbol for key, same total of eggs, different values for the key...

Bar Charts

Notes and Guidance

Children interpret information in pictograms and tally charts in order to construct bar charts. They interpret information from bar charts and answer questions relating to the data.

Children read and interpret bar charts with scales of 1, 2, 5 and 10. They decide which scale will be the most appropriate when drawing their own bar charts.

Mathematical Talk

What's the same and what's different about the pictogram and the bar chart?

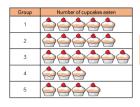How does the bar chart help you understand the information?

Which scale should we use? How can we decide whether to have a scale going up in intervals of 1, 2, 5 or 10?

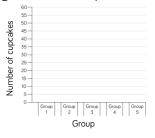What other questions could you ask about the bar chart?

Varied Fluency

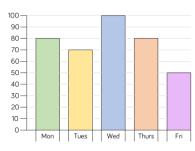Use the information from the pictogram to complete the bar chart.

The bar chart shows how many children attend after school clubs.

Which day is the most popular?
Which day is the least popular?
What is the difference between the number of children attending on Tuesday and on Thursday?
What information is missing from the bar chart?

Here is a tally chart showing the number of children in each sports club.
Draw a bar chart to represent the data.

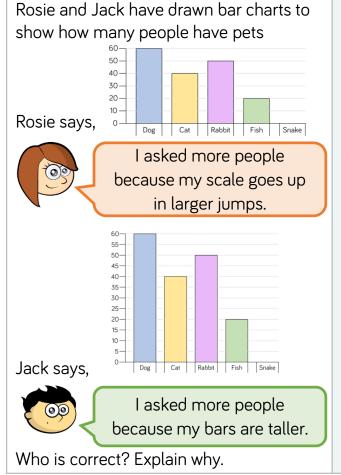| Sport	Tally	Total
Football	|||| |||| ||||	15
Tennis	|||| |||| ||||	
Rugby	|||| |||| |||| |||	
Cricket	|||| |||| ||	
Basketball	|||| |||	

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Bar Charts

Reasoning and Problem Solving

Which would be more suitable to represent this information, a bar chart or a pictogram?
Explain why.

Child	Number of Skips in 30 Seconds
Teddy	12
Annie	15
Whitney	17
Ron	8

Possible answer:

I think a bar chart would be more suitable because in a pictogram you would need to draw symbols representing 1 or 2 which would make it less efficient.
Children may draw both to experiment which representation is clearer.

Rosie and Jack have drawn bar charts to show how many people have pets

Rosie says,

I asked more people because my scale goes up in larger jumps.

Jack says,

I asked more people because my bars are taller.

Who is correct? Explain why.

Possible answer:

They are both incorrect as they asked the same amount of people but they have just used different scales on their bar charts.
Children could discuss which scale is more efficient.

Tables

Notes and Guidance

Children interpret information from tables to answer one and two-step problems.

They use their addition and subtraction skills to answer questions accurately and ask their own questions about the data in tables.

Mathematical Talk

What information can we gather from the table?

Can you explain to a friend how to read the table?

Where do we need to use tables in real life?

What other questions could I ask and answer using the information in the table?

Varied Fluency

The table shows which sports children play.

	Whitney	Jack	Eva	Mo	Teddy	Annie
Football	✓		✓	✓		✓
Rugby			✓		✓	
Tennis	✓	✓		✓		✓
Cricket			✓		✓	
Basketball		✓	✓	✓		✓

How many children play tennis?
Which sports does Mo play?
Which children play football and tennis?
Which child plays the most sport?

The table shows the increase in bus ticket prices.
- The cost of Ron's new ticket is 60p. How much was his ticket last year? How much has the price increased by?
- Which ticket price has increased the most from 2016 to 2017? Which ticket price has increased the least?

1st January	
2016	2017
44p	49p
56p	60p
64p	69p
76p	85p
85p	93p
98p	£1.03
£1.05	£1.11

Tables

Reasoning and Problem Solving

How many questions can you create for your partner about this table?

Day	Number of hours shop is open
Monday	8
Tuesday	8
Wednesday	4
Thursday	10
Friday	7
Saturday	12

Possible answers:

How many hours does the shop open for in total?
Which day does it open the longest?
How many more hours does the shop open for on Saturday than Thursday?
Which day was the shop open the shortest amount of time?

Eva has created a table to show how many boys and girls took part in after school clubs last week.

Day	Boys	Girls
Monday	11	9
Tuesday	18	12
Wednesday	13	11
Thursday	8	8
Friday	9	7

Eva says,

106 boys took part in after school clubs last week.

Is Eva correct?

Explain why.

Possible answer:

Eva is incorrect. She has counted all the children rather than just the boys. 59 boys took part in after school clubs last week.