Year 3

Small Steps Guidance and Examples

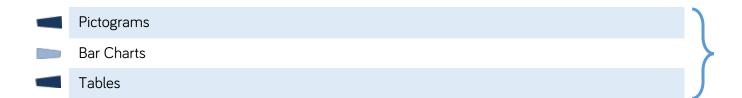### Block 3: Statistics

White Rose Maths

Year 3 – Yearly Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number – Place Value			Number – Addition and Subtraction					Number – Multiplication and Division			Consolidation
Spring	Number - Multiplication and Division			Measurement: Money	Statistics		Measurement: length and perimeter			Number - Fractions		Consolidation
Summer	Number – fractions			Measurement: Time			Geometry – Properties of Shapes		Measurement: Mass and Capacity			Consolidation

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 will build on prior understanding of pictograms from Year 2. They continue to read and interpret information from pictograms, make comparisons and ask questions about data.

It is important that children understand the value of each symbol used and what it means when half a symbol is used.

Mathematical Talk

What is each symbol worth?

How does the pictogram help you understand the information?
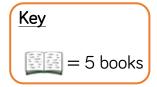
Which is the greatest amount?

Which is the smallest amount?

What other questions could you ask about the pictogram?

Varied Fluency

1 The pictogram shows how many books some classes read.

Class	Books read
Class 1	
Class 2	
Class 3	
Class 4	

Key

= 5 books

- Which class read the most books?
- Which class read the least books?
- How many more books did class 3 read than class 2?
- What other questions could you ask about the pictogram?

2 Use the clues to complete the pictogram to show how many apples each group collect. = 10 apples.

- Group 6 collected twice as many as group 2
- Group 3 collected 35 more apples than group 5
- Group 1 collected a quarter of the amount group 4 collected.

Group	Apples
1	
2	
3	
4	
5	
6	

Pictograms

Reasoning and Problem Solving

Daniel, Charlotte and Freddie record the scores of six football matches. Unfortunately, Freddie spilt paint on the results.
Help them record the possible results based on their memories of the matches.

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

There were 3 more goals in match 1 than there were in match 3

1 less goal was scored in match 6 than match 2

There were at least double the goals scored in match 4 as there were in match 3

Possible answer:

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

Georgia creates a pictogram to show how many chocolate eggs each class won during a fayre.

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

Joe creates a table to show Georgia's results.

Class	Number of eggs 🥚 = 5 chocolate eggs
1	30
2	30
3	40
4	30
5	20
6	35

Georgia is not happy with Joe's table. Can you explain why?

Possible answer: Georgia is not happy with Joe's table because he has represented class 1's eggs incorrectly. They have 27 and a half, not 30. They've counted half an egg as a whole one.

Bar Charts

Notes and Guidance

Children draw bar charts from information given in pictograms and tables. They interpret information from bar charts and ask 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
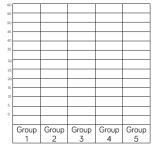
How is a bar chart similar to a pictogram?

How does the bar chart help you understand the information?

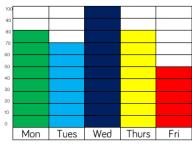Which scale should we use? How do we know whether to have a scale going up in 1, 2, 5 or 10?

Varied Fluency

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

Group	Number of cupcakes eaten 🧁 = 5 cupcakes
Group 1	🧁 🧁 🧁 🧁
Group 2	🧁 🧁 🧁 🧁 🧁
Group 3	🧁 🧁 🧁 🧁 🧁 🧁
Group 4	🧁 🧁 🧁
Group 5	🧁 🧁 🧁 🧁

2 The bar chart shows how many children participate in after school clubs.

Which day is the most popular? By how many children?
Which day is the least popular?
What is the difference between the number of children participating on Tuesday and on Thursday?

3 Use the information in the table to draw a bar chart.

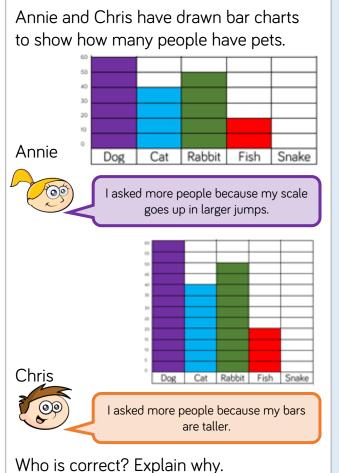| Sport	Tally	Number
Football	𝍢𝍢𝍢	16
Tennis	𝍢𝍢IIII	14
Rugby	𝍢𝍢𝍢III	18
Cricket	𝍢𝍢II	12
Basketball	𝍢III	8

Bar Charts

Reasoning and Problem Solving

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

Charity	Amount raised in a year (£)
Donkey Rescue	2,790
Save the Rhinos	5,650
Money for Meerkats	3,000
Collecting for Cats	4,430

Possible answer: I think a bar chart would be the most suitable chart because you can use different scales to show the amount. Pictograms would be more difficult to use because you would have to use a lot of symbols because of the size of the numbers.

Annie and Chris have drawn bar charts to show how many people have pets.

Annie

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

Chris

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.

Tables

Notes and Guidance

Children interpret information from tables to answer both 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 are we trying to find out?

How does the table help you understand the information?

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

Varied Fluency

1   The table shows which sport children play.

	Lottie	John	Chris	Ann	Joanne	Jack
Football	✓		✓	✓		✓
Rugby			✓		✓	
Tennis	✓	✓		✓		✓
Cricket			✓		✓	
Basketball		✓	✓	✓		✓

Which children play football and tennis?
Which is the most popular sport?
Which is the least popular sport?
Who plays the most sport?

2   The table shows the increase of bus ticket fairs.

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

- The cost of Joel's new ticket is 85p. How much has his fare increased be?
- What was the largest increase in price of any ticket?
- What was the smallest increase in price of any ticket?

Tables

Reasoning and Problem Solving

How many questions can you create for your partner for this set of data?

Day	Number of hours a shop is open for
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?

Ann and Lily have 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

Ann says,

106 boys took part in after school clubs last week.

Lily disagrees with Ann.

Is Ann correct?

Explain why.

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