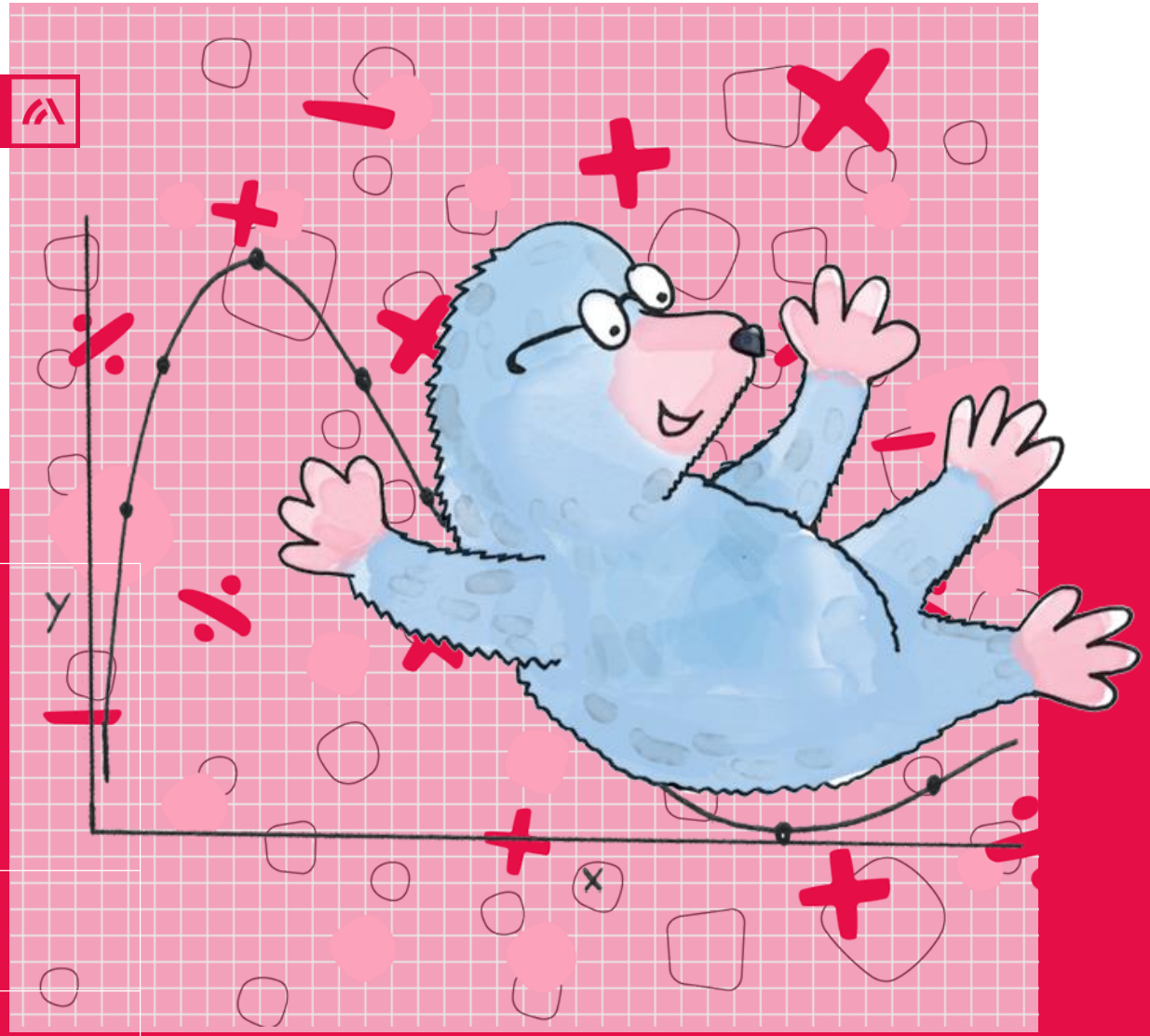
Ark Curriculum+



Year 3 Unit 3: Graphs

Pictograms and bar charts

Mathematics
Mastery

Year 3 Unit 3: Graphs

Mathematics Mastery

This Week

Lesson 1: Pictograms

- Reading and interpreting pictograms with units greater than 1

Lesson 2: Presenting data in pictograms

- Presenting data from a table in a pictogram, with symbols representing more than 1

Lesson 3: Scaled bar charts

- Reading and interpreting scaled bar charts

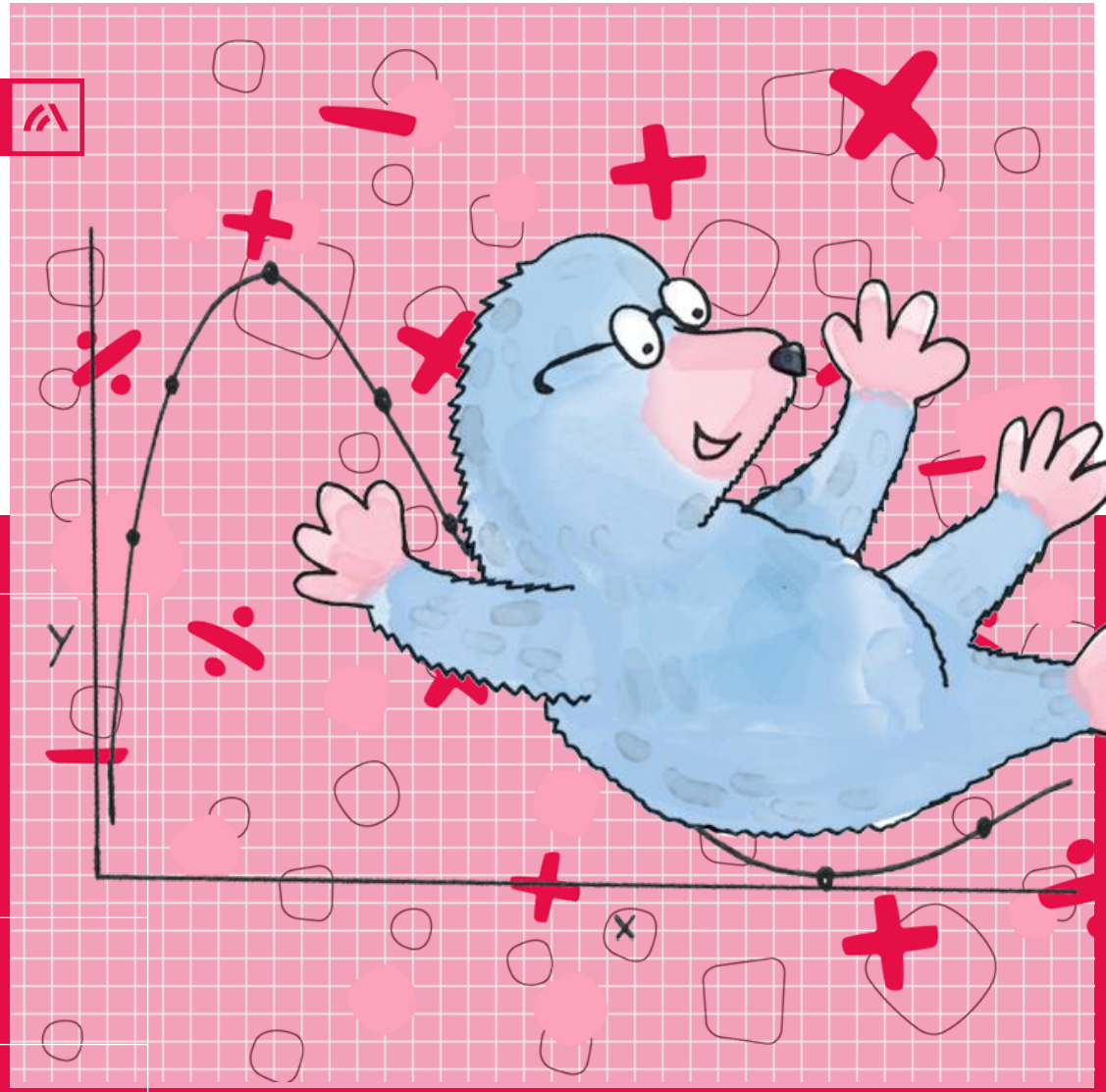
Lesson 4: Constructing scaled bar charts

- Collecting data using a tally and presenting it in tables and scaled bar charts

Lesson 5: Interpreting and presenting data

- Interpreting and presenting data in pictograms and scaled bar charts

Ark Curriculum+



Lesson 1: Pictograms

Mathematics
Mastery

Exploring number information

Do Now

LT read and interpret pictograms with units greater than one

Star Words

pictogram

key

information

data

symbol

stands for

represents

Pictograms with symbols representing 2

What information does this chart give you?

Transport used by pupils to travel to school

Each ⊙ represents 2 pupils.

walk	bike	car	bus	train
⊙	⊙	⊙	⊙	⊙
⊙	⊙	⊙		⊙
⊙	⊙	⊙		⊙
⊙	⊙	⊙		
⊙	⊙	⊙		
⊙	⊙	⊙		
⊙	⊙	⊙		
⊙	⊙	⊙		
⊙	⊙	⊙		

Pay attention to this information!

New Learning

Pictograms with symbols representing 2

What's the same?
What's different?

Transport used by pupils to travel to school	
Each ⊙ represents 2 pupils.	
walk	⊙⊙⊙⊙⊙⊙⊙⊙⊙⊙
bike	⊙⊙⊙⊙
car	⊙⊙
bus	⊙⊙
train	⊙⊙⊙⊙⊙⊙

Transport used by pupils to travel from school

Each ⊙ represents 2 pupils.

walk	bike	car	bus	train
⊙				
⊙				
⊙		⊙		
⊙		⊙		
⊙		⊙		⊙
⊙	⊙	⊙		⊙
⊙	⊙	⊙	⊙	⊙
⊙	⊙	⊙	⊙	⊙

New Learning

Pictograms with symbols representing 2

What's the same?

Transport used by pupils to travel to school	
Each ⊙ represents 2 pupils.	
walk	⊙⊙⊙⊙⊙⊙⊙⊙⊙⊙
bike	⊙⊙⊙⊙
car	⊙⊙
bus	⊙⊙
train	⊙⊙⊙⊙⊙⊙

What's different?

Transport used by pupils to travel from school				
Each ⊙ represents 2 pupils.				
⊙				
⊙				
⊙		⊙		
⊙		⊙		
⊙		⊙		⊙
⊙	⊙	⊙		⊙
⊙	⊙	⊙	⊙	⊙
⊙	⊙	⊙	⊙	⊙
walk	bike	car	bus	train

New Learning

Understanding and interpreting pictograms

Talk Task

1. How many pupils travelled to school by car?
2. Did more pupils walk to school or from school?
3. What is the difference between the number of pupils who walked to school and the number who walked from school?
4. How many pupils went to school altogether?

How many pupils travelled to school by ….?

Each symbol represents 2, so I need to count up in 2s.

Comparing pictograms

Transport used by Year 2 pupils	
Each ⊙ represents 4 pupils.	
walk	⊙⊙⊙
bicycle	⊙⊙
motorbike	⊙
car	⊙⊙
bus	⊙⊙⊙⊙
train	

Transport used by Year 3 pupils	
Each ⊙ represents 3 pupils.	
walk	⊙⊙⊙⊙
bicycle	⊙⊙⊙
motorbike	⊙
car	⊙⊙⊙
bus	⊙⊙⊙⊙
train	⊙

Develop Learning

LT read and interpret pictograms with units greater than one

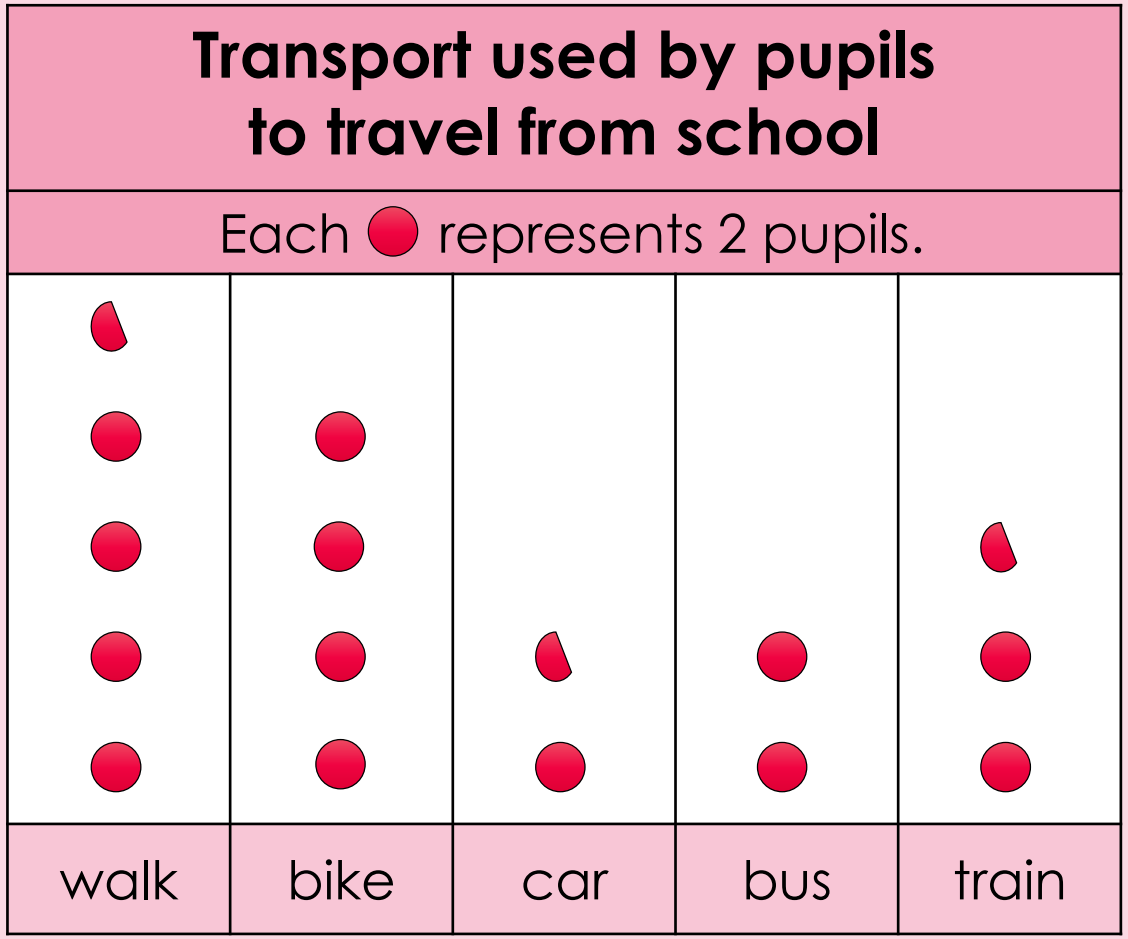
Comparing pictograms

1. How many Year 2 pupils travelled by train?
2. How many Year 3 pupils travelled by train?
3. Did more pupils from Year 2 or Year 3 travel by bus?
4. More pupils in Year 3 than in Year 2 travelled by car. How many more?
5. Use the information in the pictograms to write four sentences about how the pupils in Years 2 and 3 travelled.

Independent Task

Introducing 'half' symbols

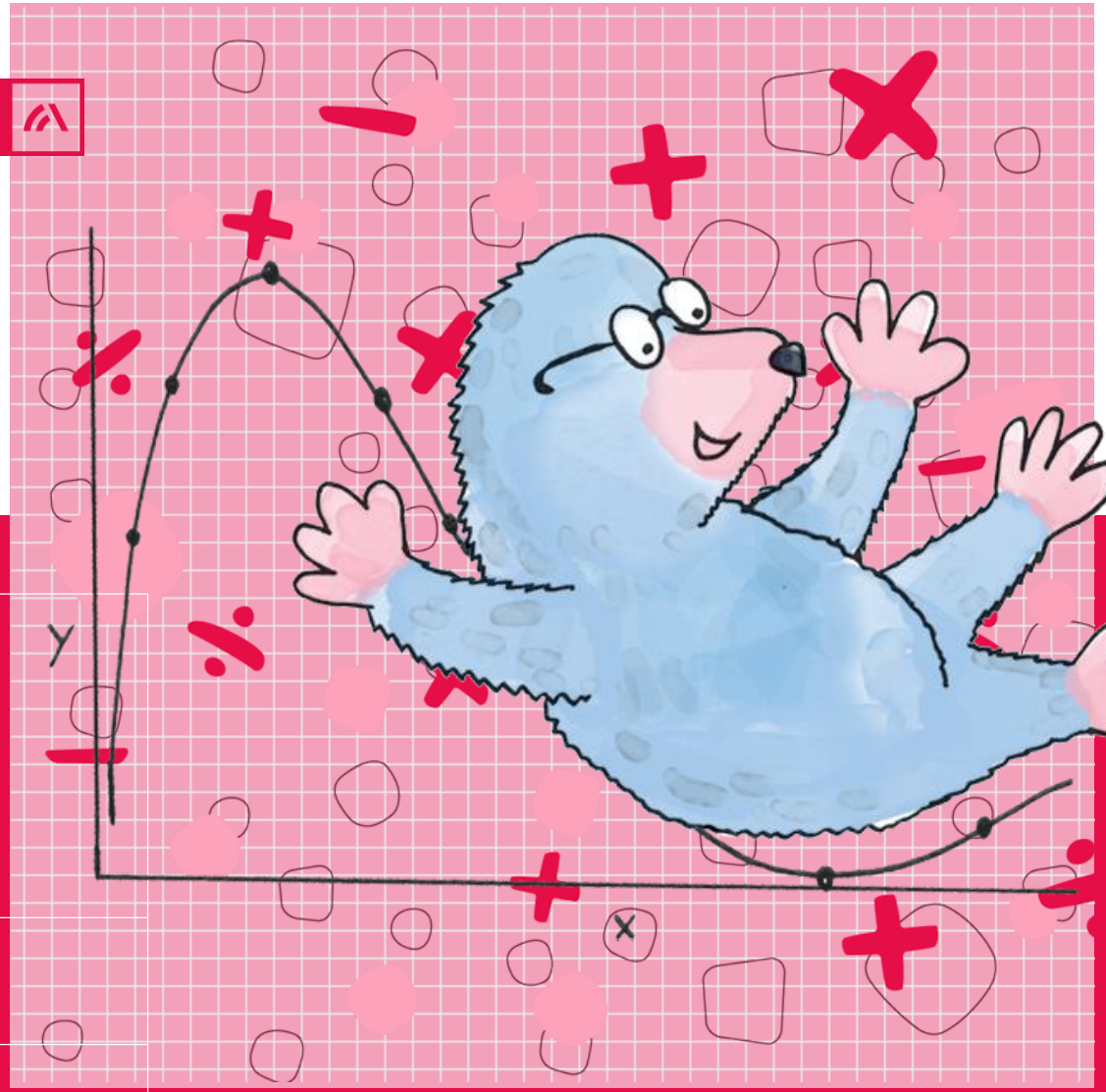
Transport used by pupils to travel to school	
Each ● represents 2 pupils.	
walk	● ● ● ◗
bike	● ● ◗
car	● ● ◗
bus	●
train	●



Did fewer pupils travel by bike to school or from school?

Plenary

Ark Curriculum+

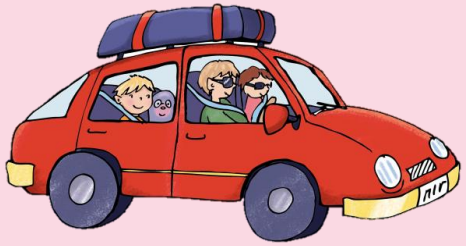


Lesson 2: Presenting data in pictograms

Mathematics
Mastery

Sorting images using a Venn diagram

Do Now



LT present data from a table in a pictogram, with symbols representing more than one

Star Words

information

data

pictogram

key

table

total

row

column

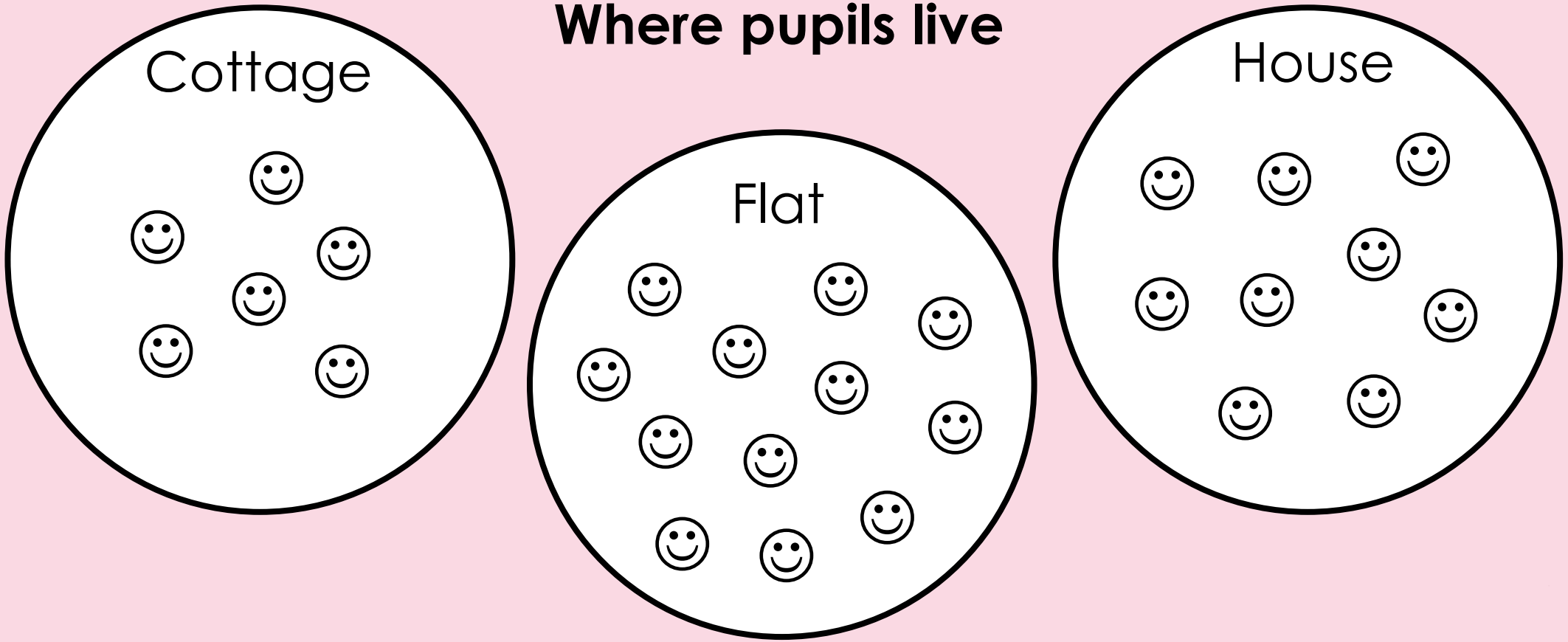
twice as many

three times as many

Organising data in tables

New Learning

Organising data in tables



How else could we present this information?

New Learning

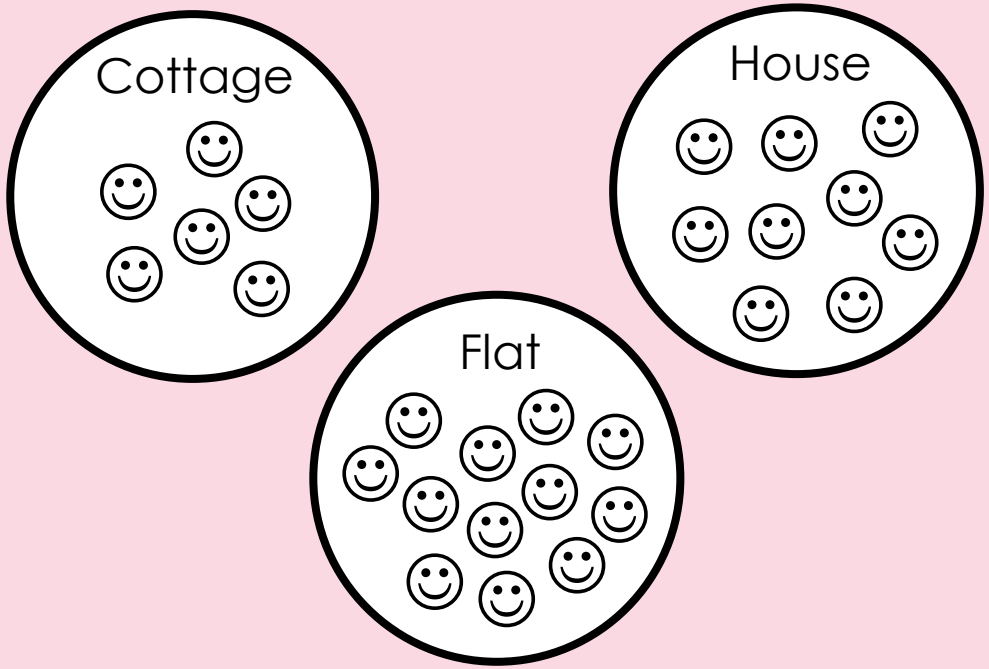
Organising data in tables

New Learning

Comparing data representations

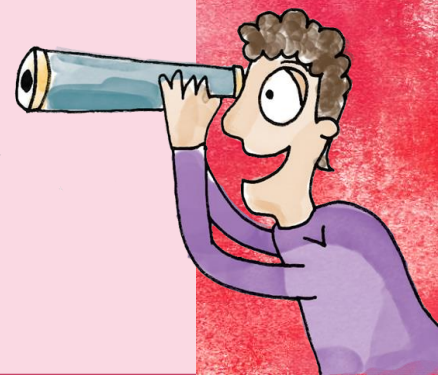
Compare the two representations.
Which do you prefer? Why is that?

Where pupils live



Where pupils live	
Type of home	**Total**
Cottage	6
Flat	12
House	9

Talk Task

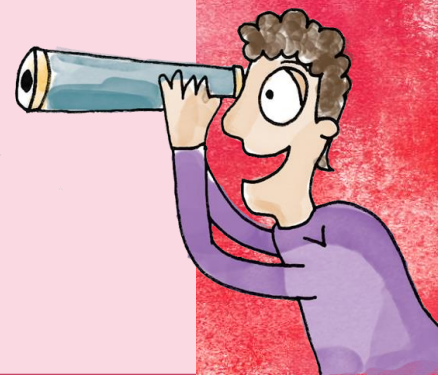


Presenting data in a pictogram with symbols representing more than 1

Where pupils live	
Type of home	Each ★ represents ____ pupils.
Cottage	
Flat	
House	

What information do you need in your pictogram?

How many pupils should each symbol represent?



Develop Learning

LT present data from a table in a pictogram, with symbols representing more than one

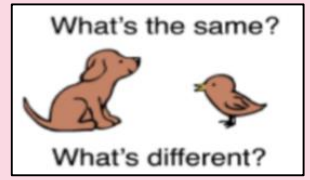
Presenting data in a pictogram

Where people go on holiday	
Country	**Total**
England	12
France	16
Spain	8
Scotland	4

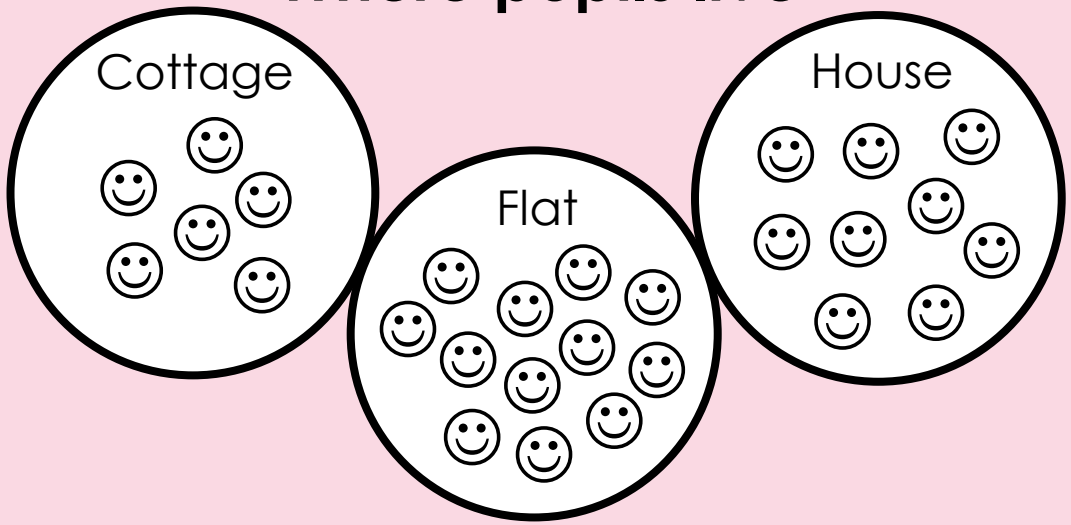
- There are _____ people going on holiday altogether.
- _____ is the most popular place to go on holiday.
- _____ is the least popular place to go on holiday.
- _____ more people went on holiday to France than to Spain.

Independent Task

Comparing different ways of presenting data



Plenary



Where pupils live	
Type of home	**Total**
Cottage	6
Flat	12
House	9

Where pupils live	
Type of home	Each ★ represents 3 pupils.
Cottage	★ ★
Flat	★ ★ ★ ★
House	★ ★ ★

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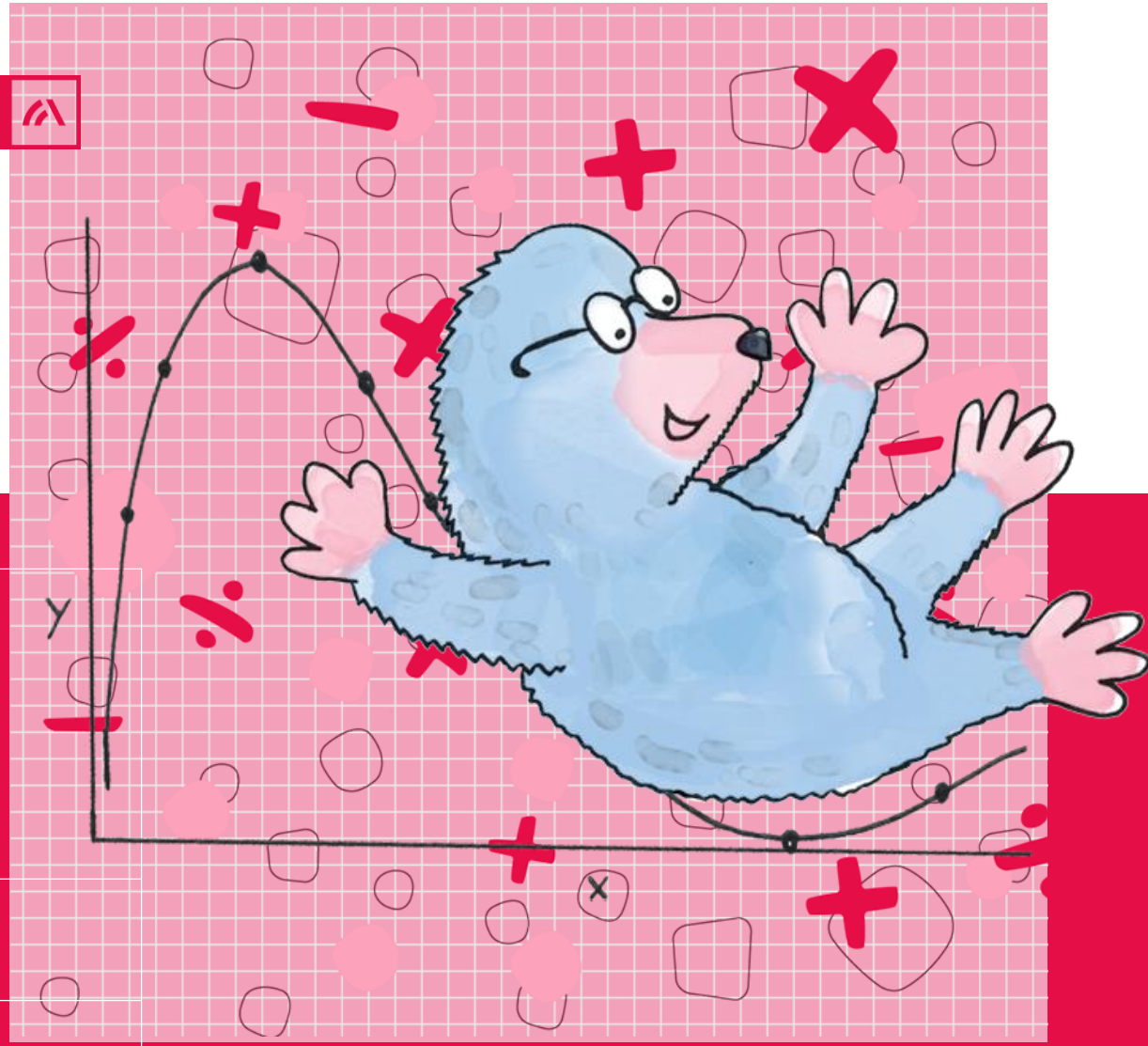
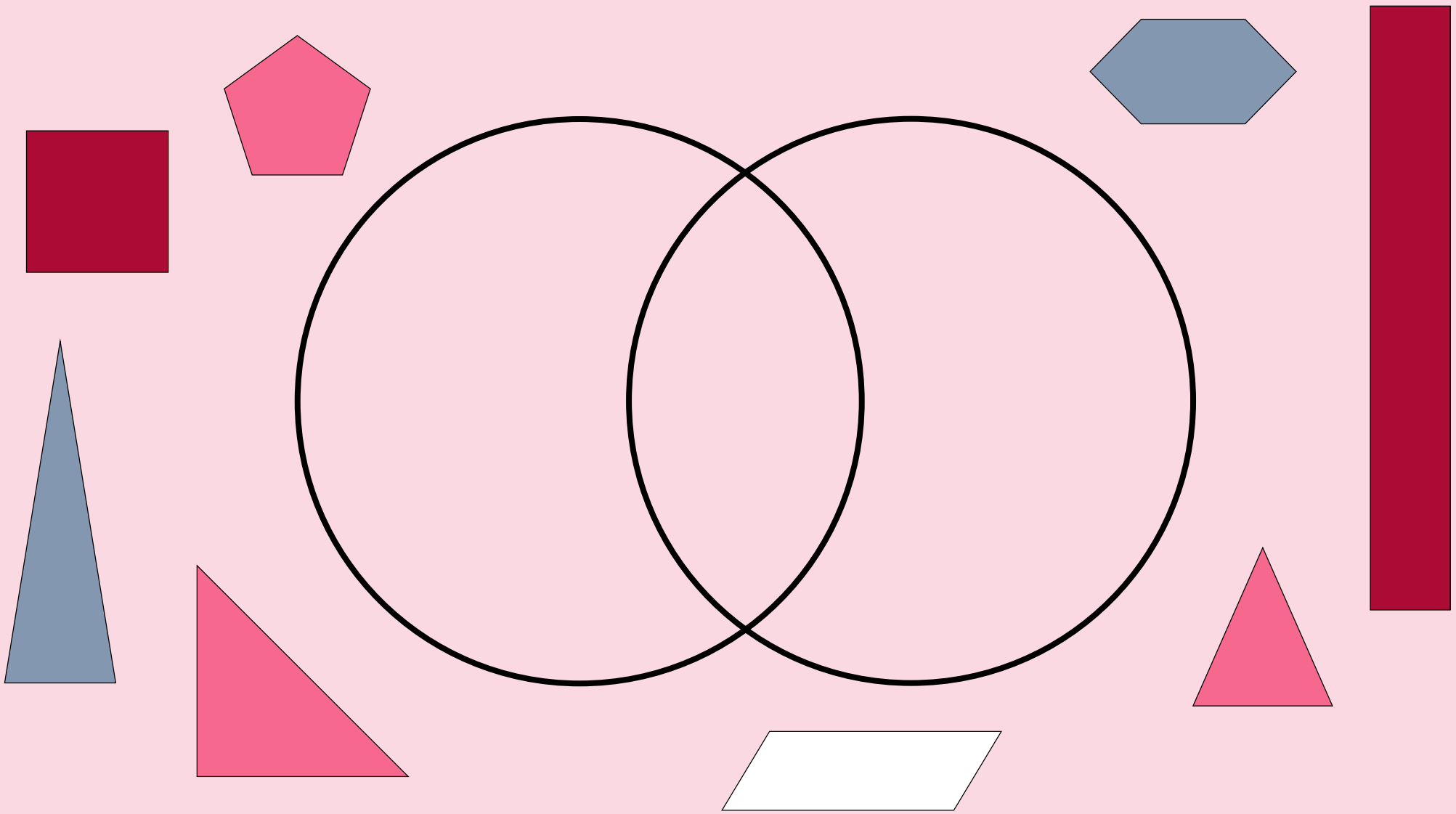


Lesson 3: Scaled bar charts

Mathematics
Mastery

Sorting images using a Venn diagram



Do Now

LT read and interpret scaled bar charts

bar chart

axis

axes

stands for

represents

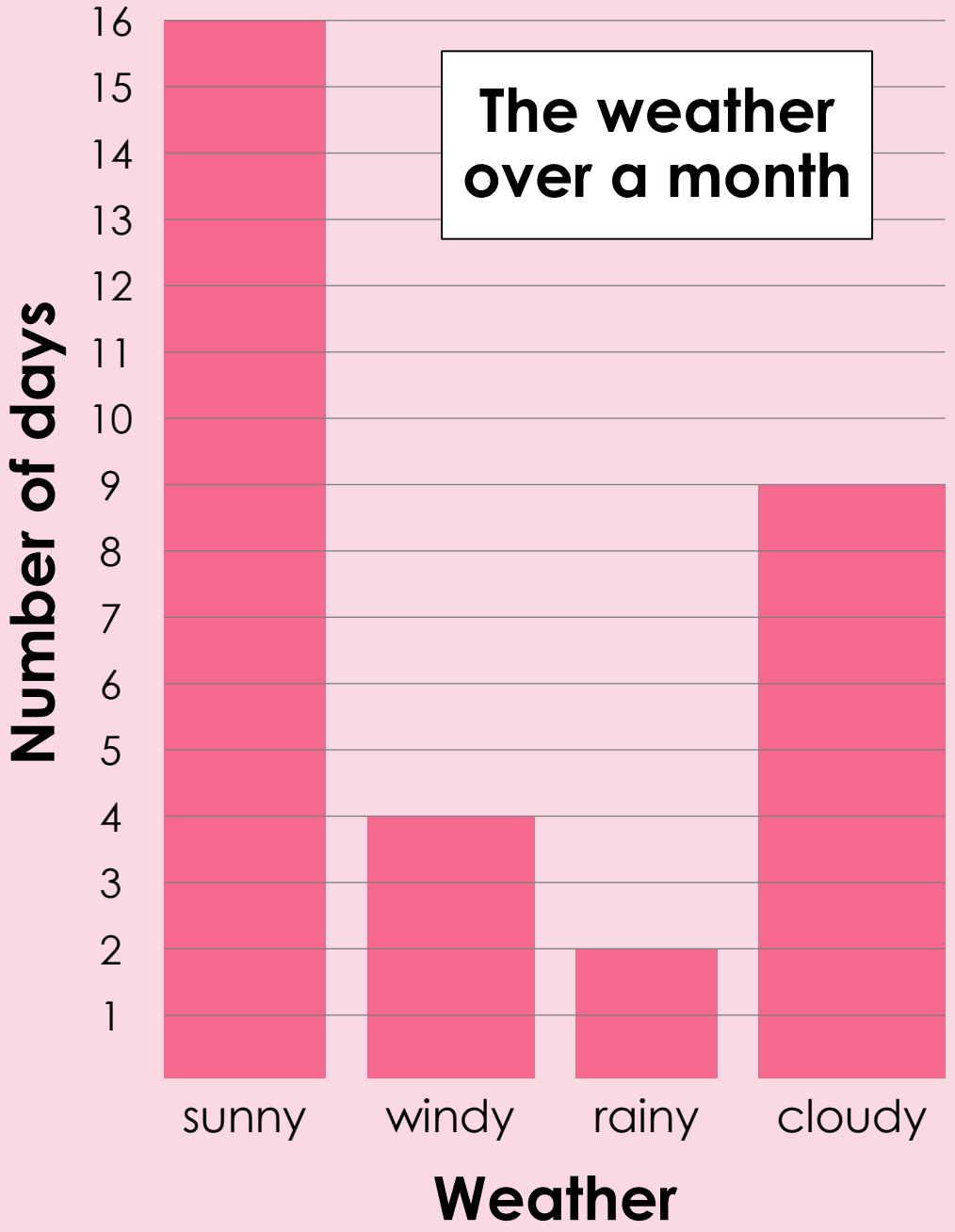
scale

increases

Star Words

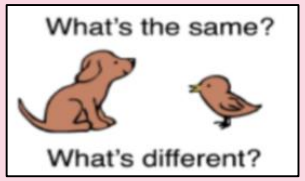
Scaled bar charts

- How many days were there in the month altogether?
- How many sunny days were there?
- Were there more rainy days or sunny days?

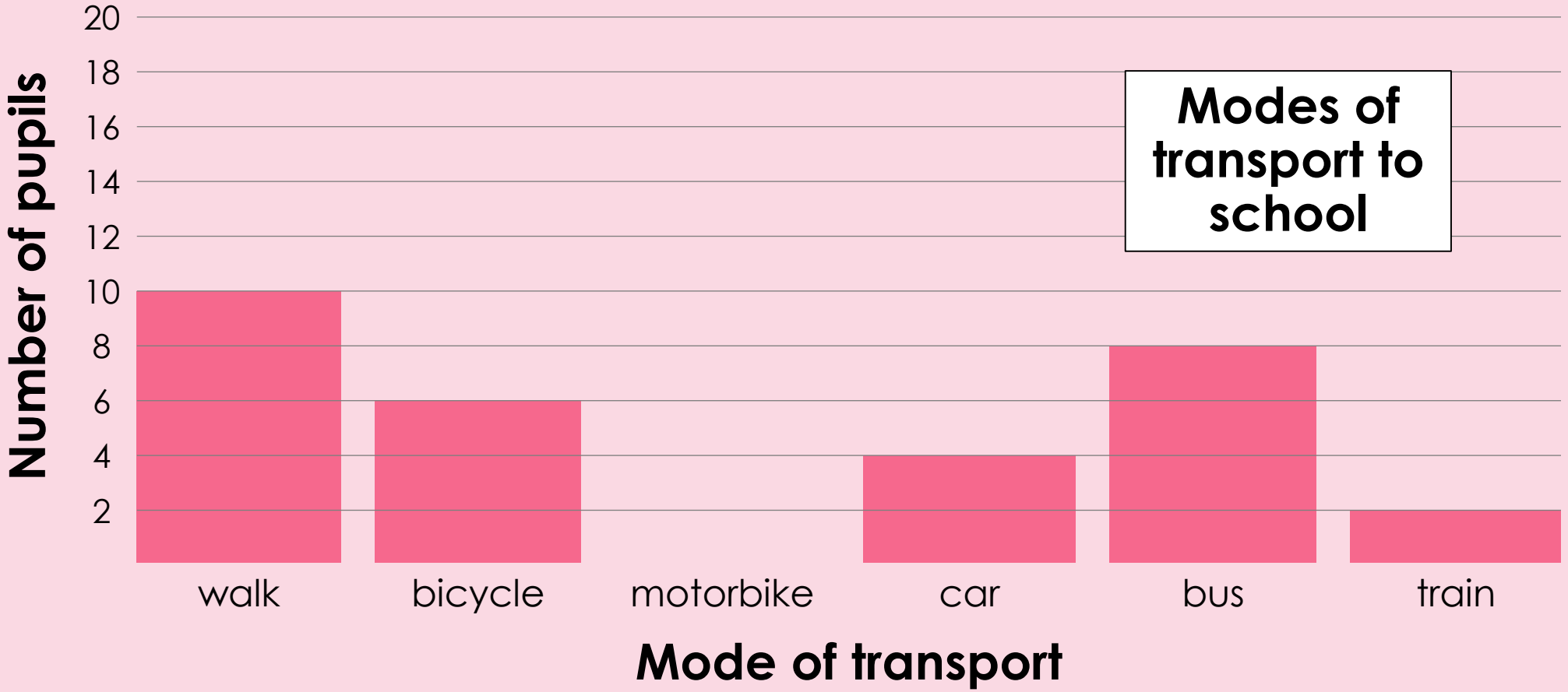


New Learning

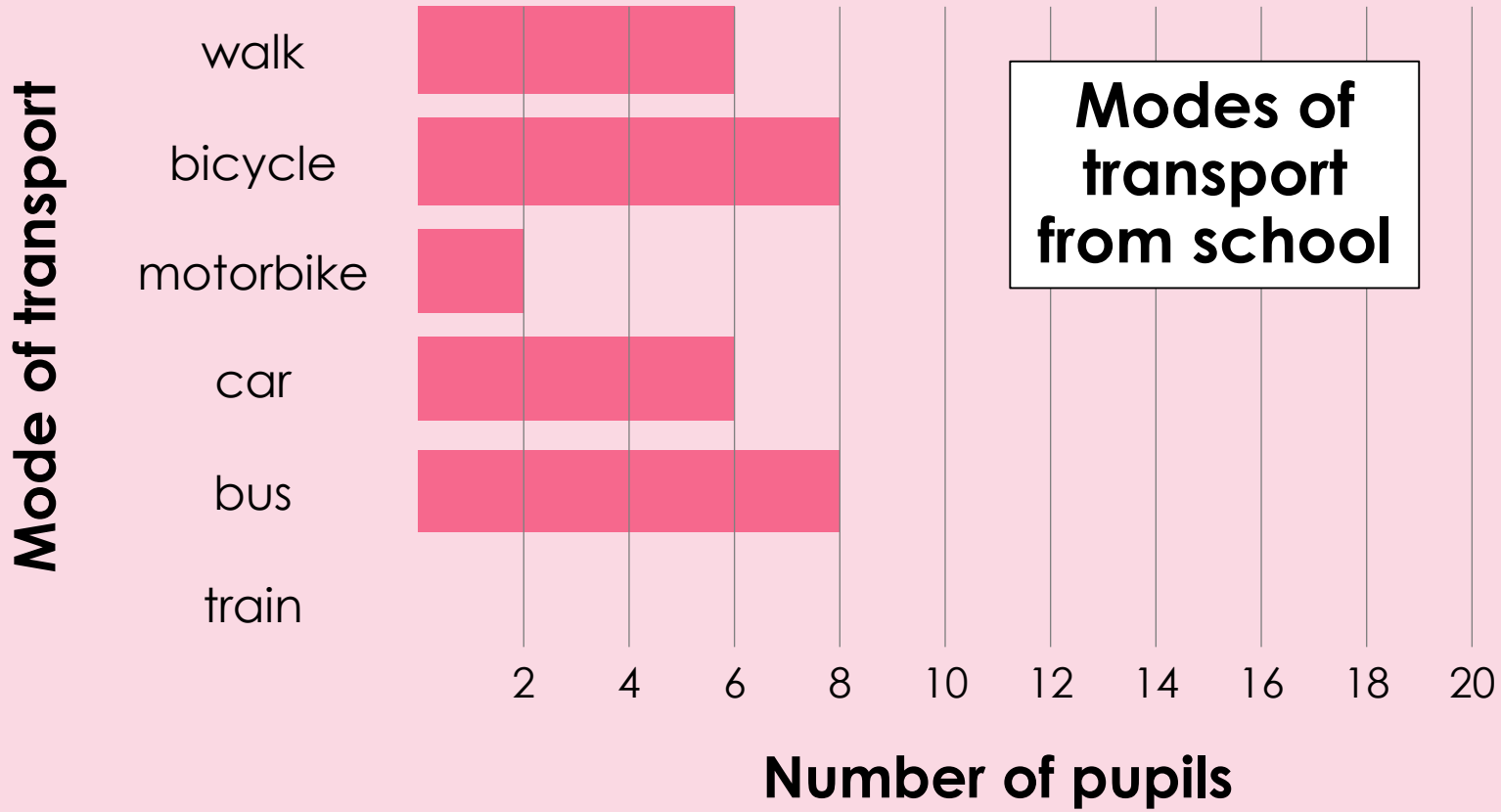
Scaled bar charts



New Learning



Scaled bar charts

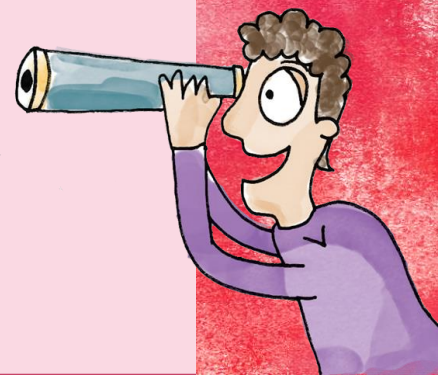


New Learning

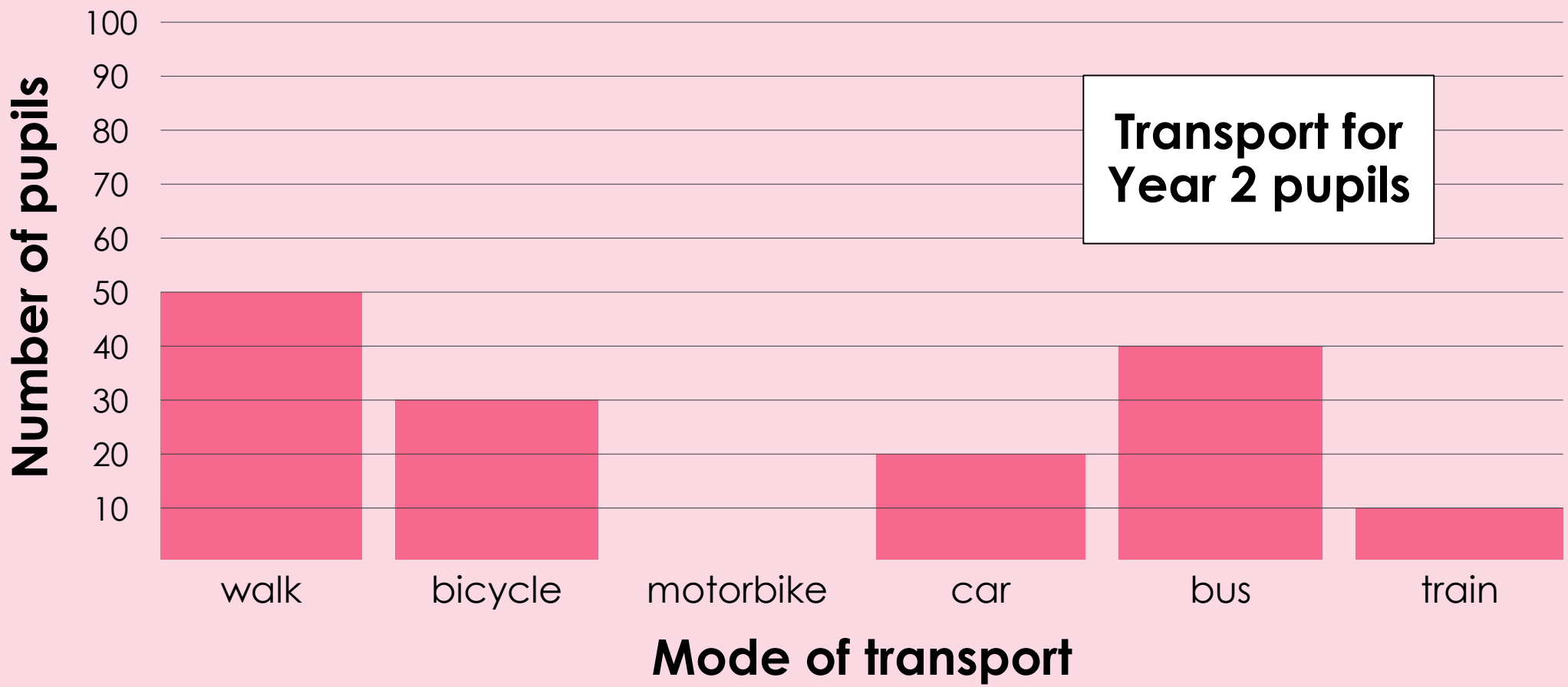
Reading scaled bar charts

1. How many pupils travelled from school in a car?
2. Did more pupils travel to school or from school by car?
3. What is the difference between the number of pupils who cycled to school and the number who cycled from school?
4. How many pupils travelled from school in total?
5. Give three facts about how pupils travelled from school.

Talk Task



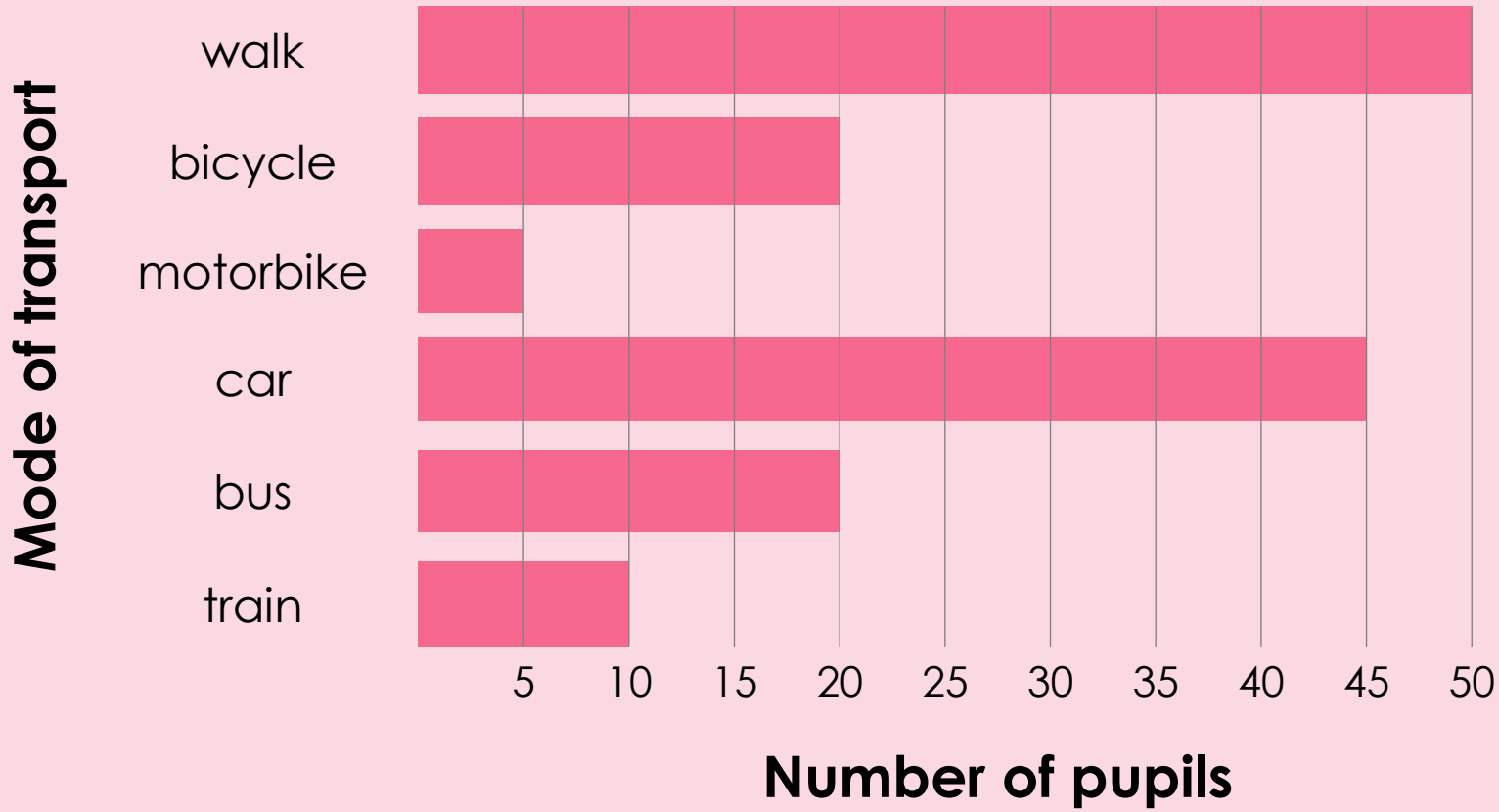
Comparing scaled bar charts



Develop Learning

Comparing scaled bar charts

Transport for Year 3 pupils



Develop Learning

LT read and interpret scaled bar charts

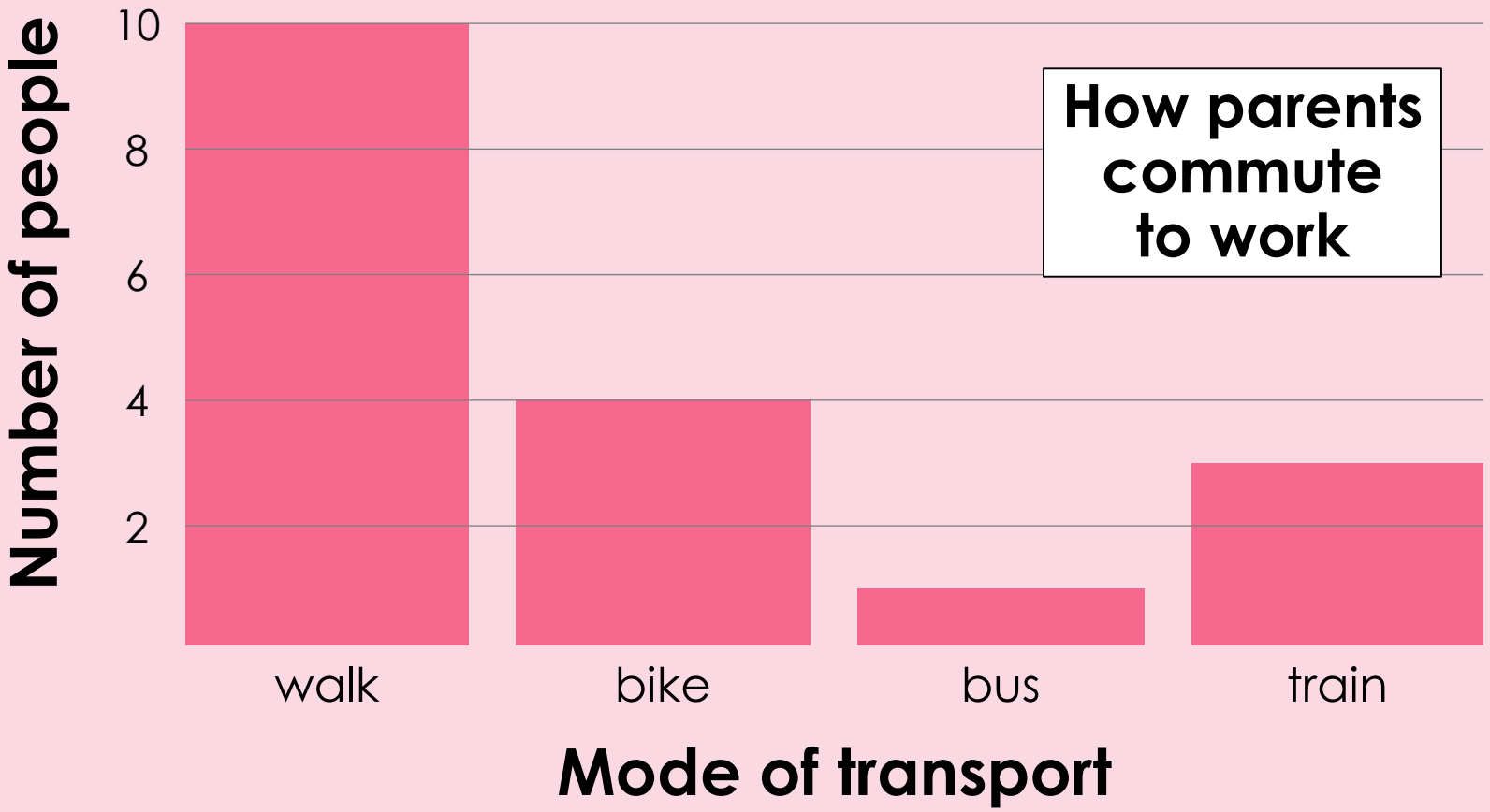
Comparing scaled bar charts

Use the information on the Develop Learning slides to answer these questions.

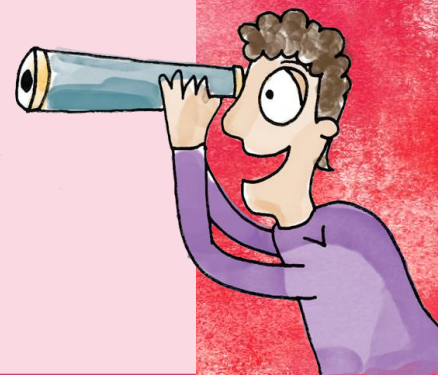
1. How many Year 2 pupils travelled by motorbike?
2. How many Year 3 pupils travelled by motorbike?
3. Did more pupils from Year 2 or Year 3 travel by bus?
4. More pupils in Year 3 than in Year 2 travelled by car. How many more?
5. Use the information in the bar charts to write four sentences about how the pupils in Years 2 and 3 travelled.

Independent Task

Introducing ‘half’



Plenary



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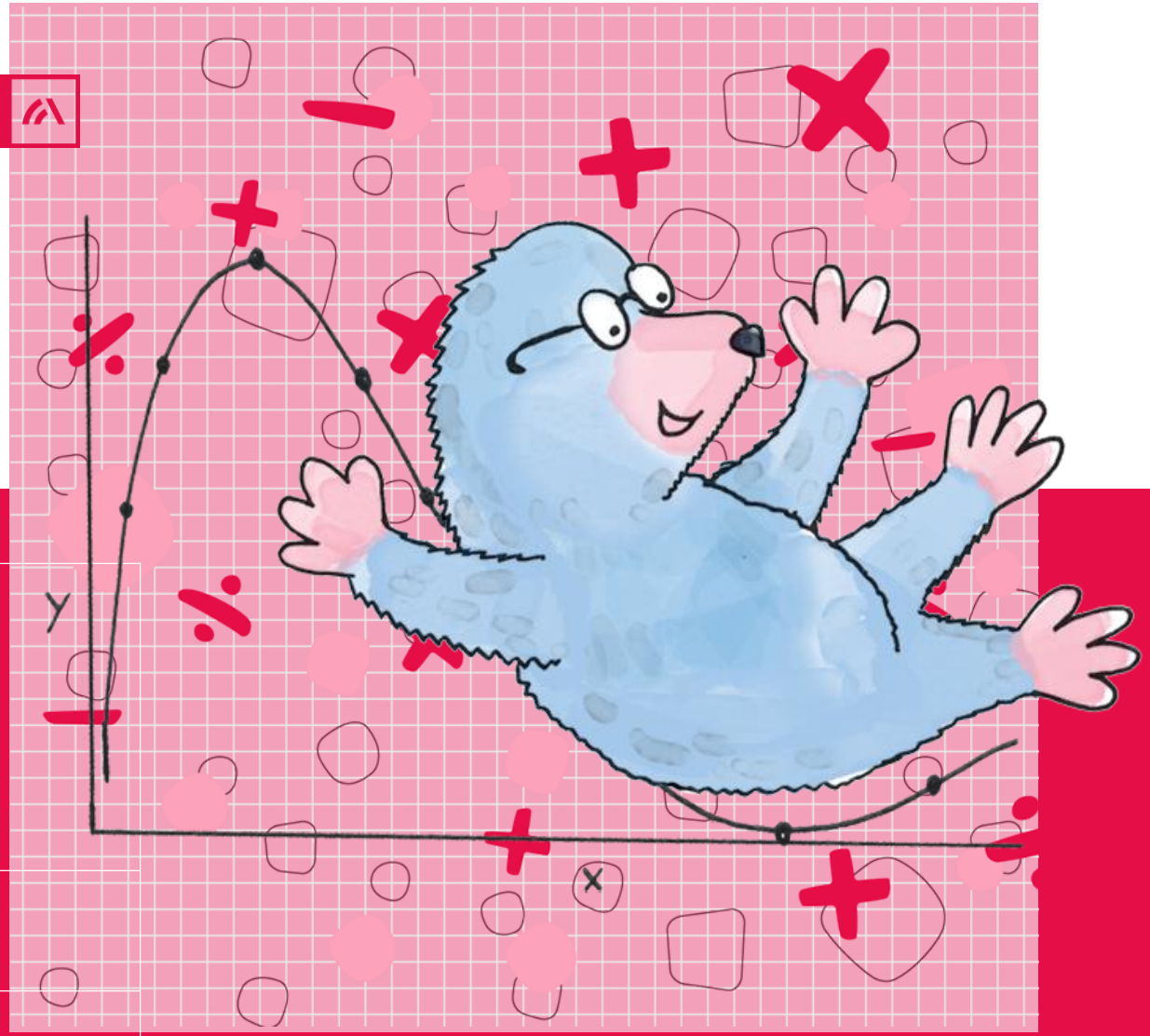


Lesson 4: Constructing scaled bar charts

Mathematics
Mastery

Understanding data

Weather	sunny	windy	rainy	cloudy
Number of days	6	4	10	8

- Were there more rainy days or sunny days?
- What is the difference between the number of sunny days and the number of windy days?
- True or false: There were twice as many cloudy days as sunny days.
- How many rainy days and windy days were there altogether?

Do Now

LT collect data using a tally, and present it in tables and scaled bar charts

Star Words

bar chart

scale

tally

table

axis

Interpreting and using tally charts

Mode of transport	Tally	Total
car	𝍸 𝍸 ||	
motorbike	𝍸 ||	
bus	||||	
bicycle	𝍸 𝍸	

New Learning

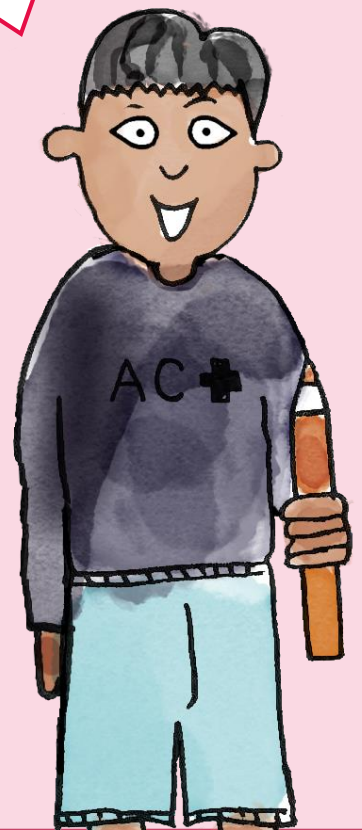
Interpreting and using tally charts

Location	Tally	Total
Dover		
Cambridge		
Blackpool		

New Learning

Collecting data using a tally

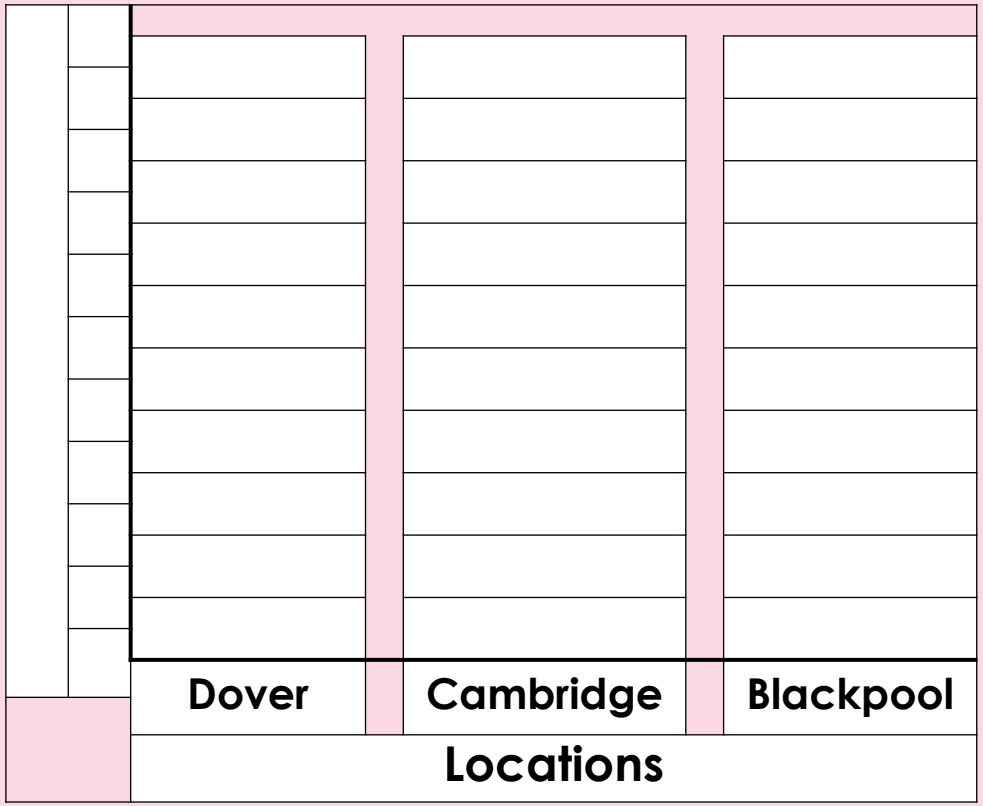
Would you prefer to visit Dover, Cambridge or Blackpool?

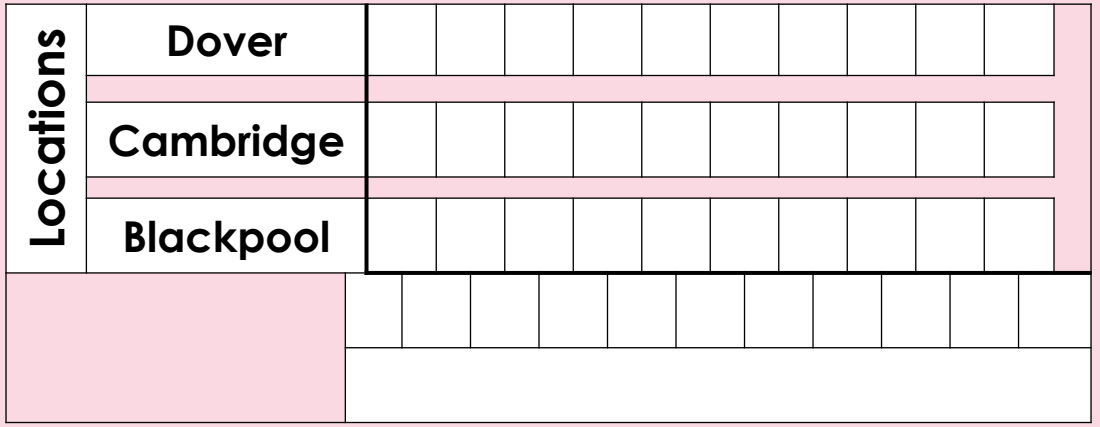


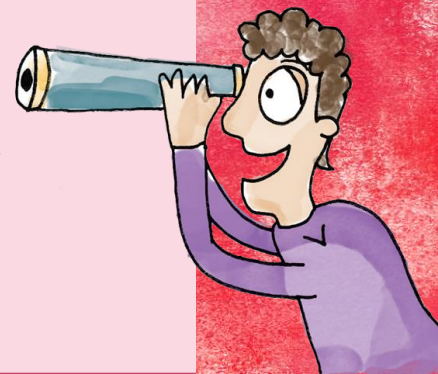
Location	Tally	Total
Dover		
Cambridge		
Blackpool		

Talk Task

Choosing a scale for a bar chart







Develop Learning

LT collect data using a tally, and present it in tables and scaled bar charts

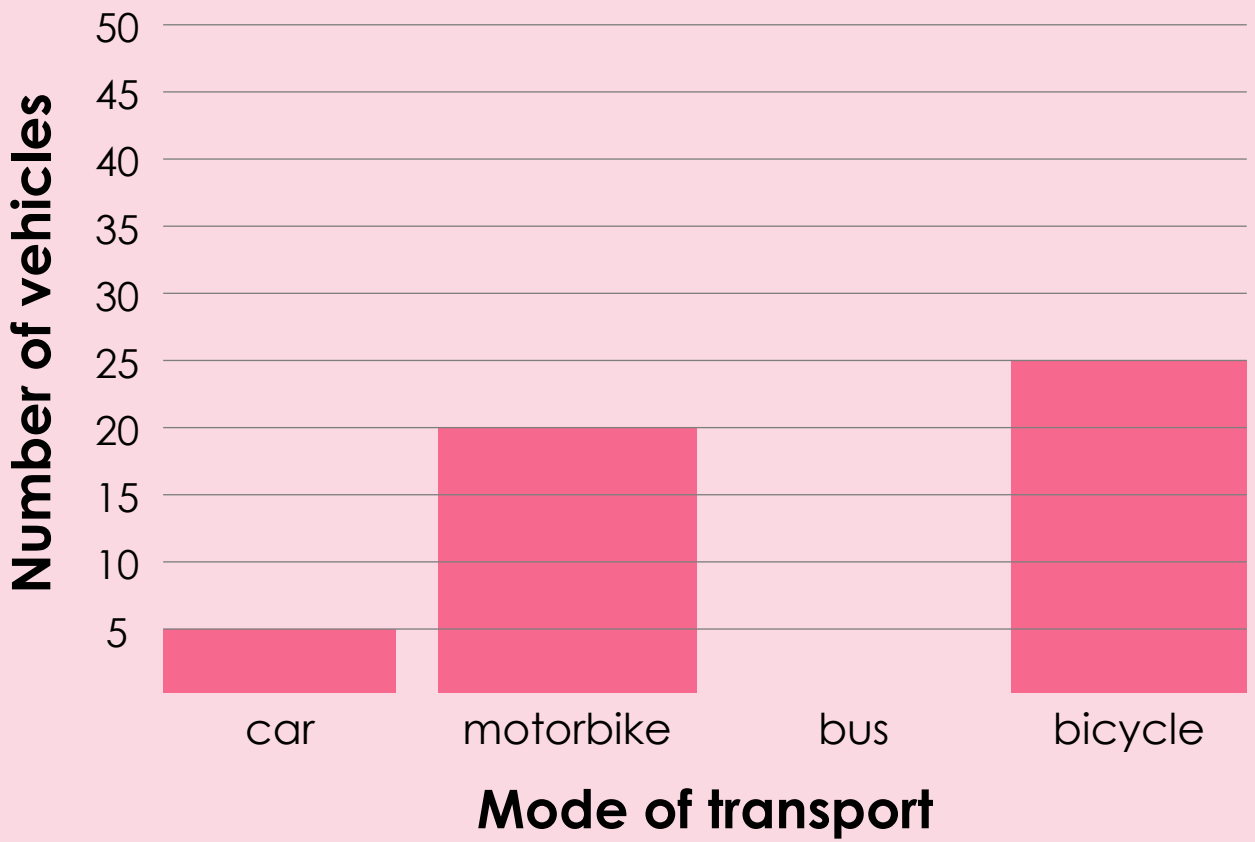
Independent Task

Constructing bar charts with scales

Present the data in the way you prefer.

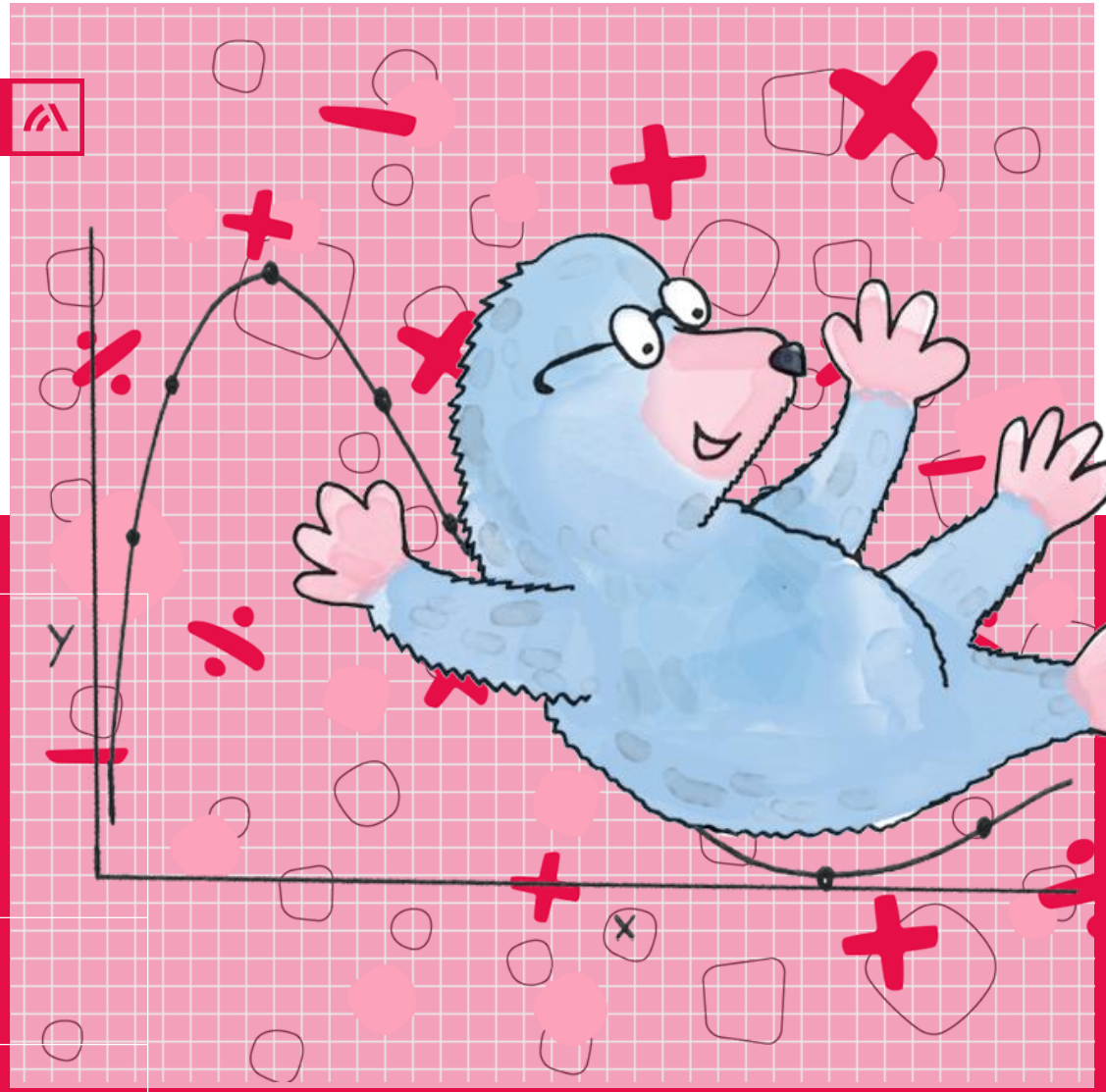
Completing missing information

Transport	car	motorbike	bicycle	bus
Tally	𝍸	𝍸 𝍸 𝍸 𝍸		𝍸 𝍸 𝍸 𝍸 𝍸 𝍸



Plenary

Ark Curriculum+



Lesson 5: Interpreting and presenting data

Mathematics
Mastery

Reading bar charts

Do Now

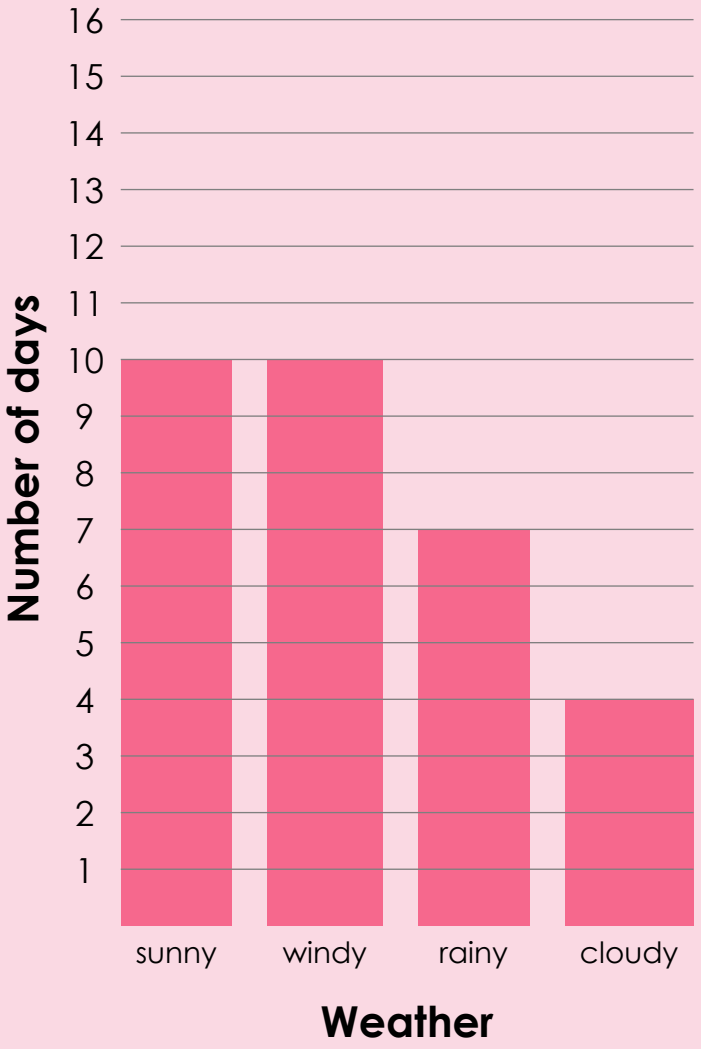
Match each table of data to a corresponding bar chart on the next page.

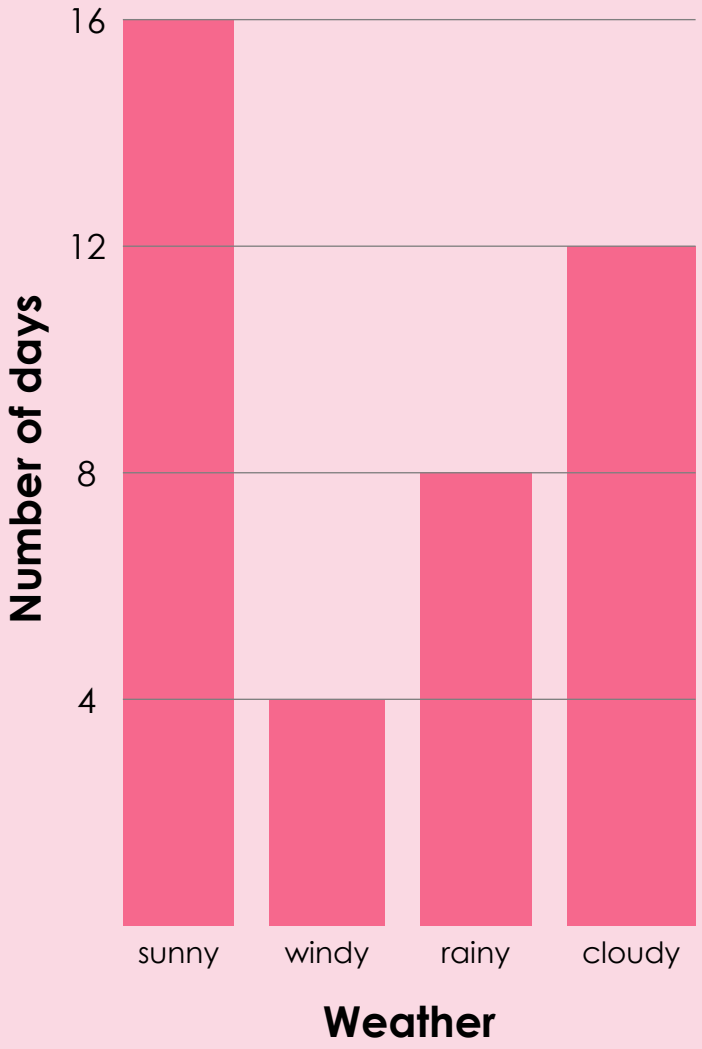
Weather	Number of days
sunny	16
windy	4
rainy	8
cloudy	12

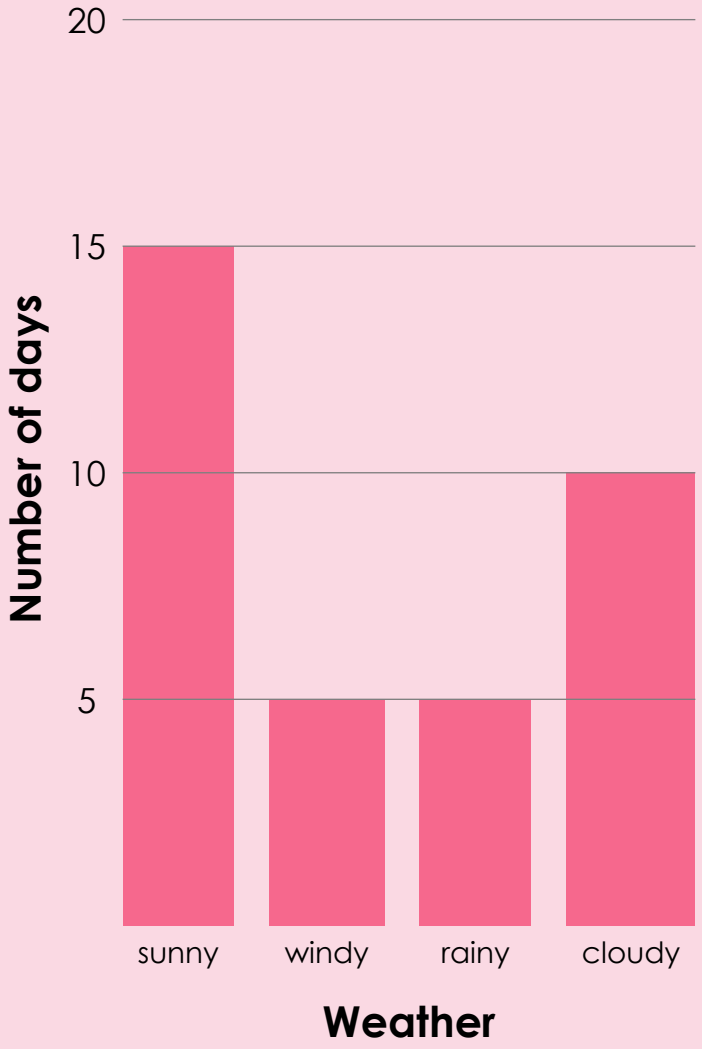
Weather	Number of days
sunny	15
windy	5
rainy	5
cloudy	10

Weather	sunny	windy	rainy	cloudy
Number of days	10	10	7	4

Reading bar charts







Do Now

LT interpret and present data in pictograms and scaled bar charts

Star Words

bar chart

axis

axes

table

row

column

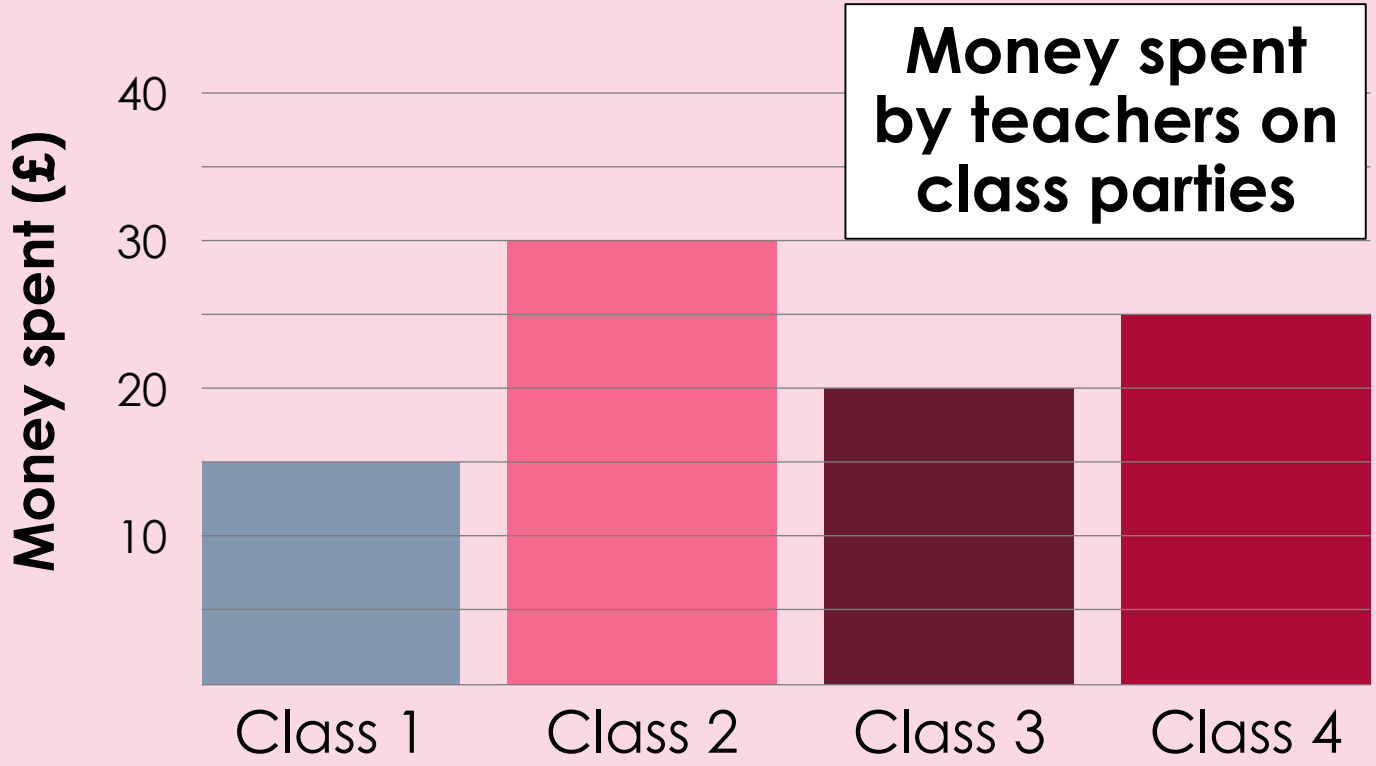
pictogram

symbol

key

Interpreting data

- What data does this bar chart show?
- What is the scale?

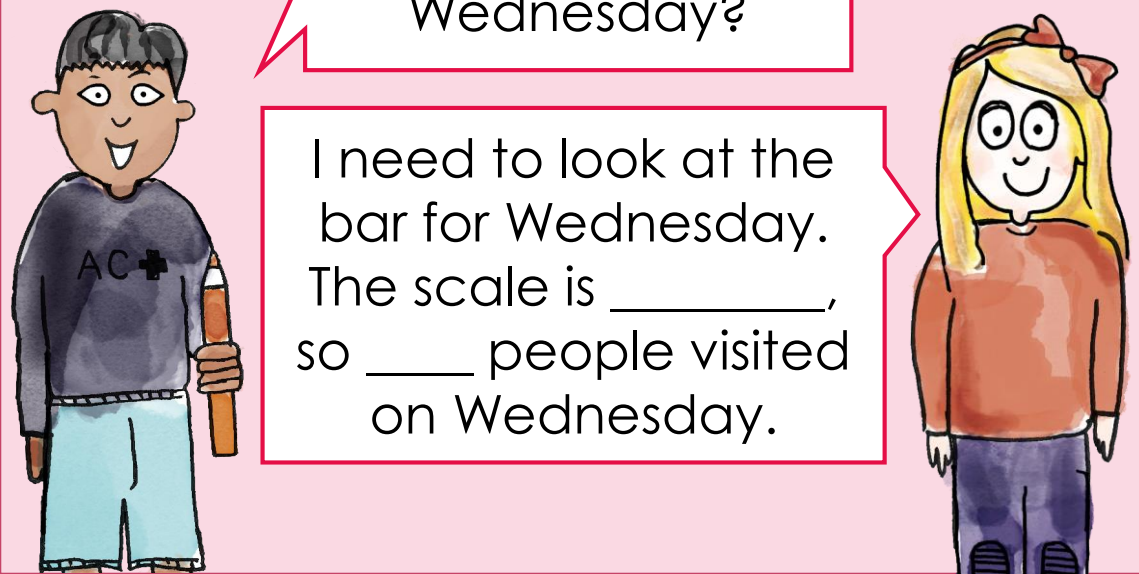


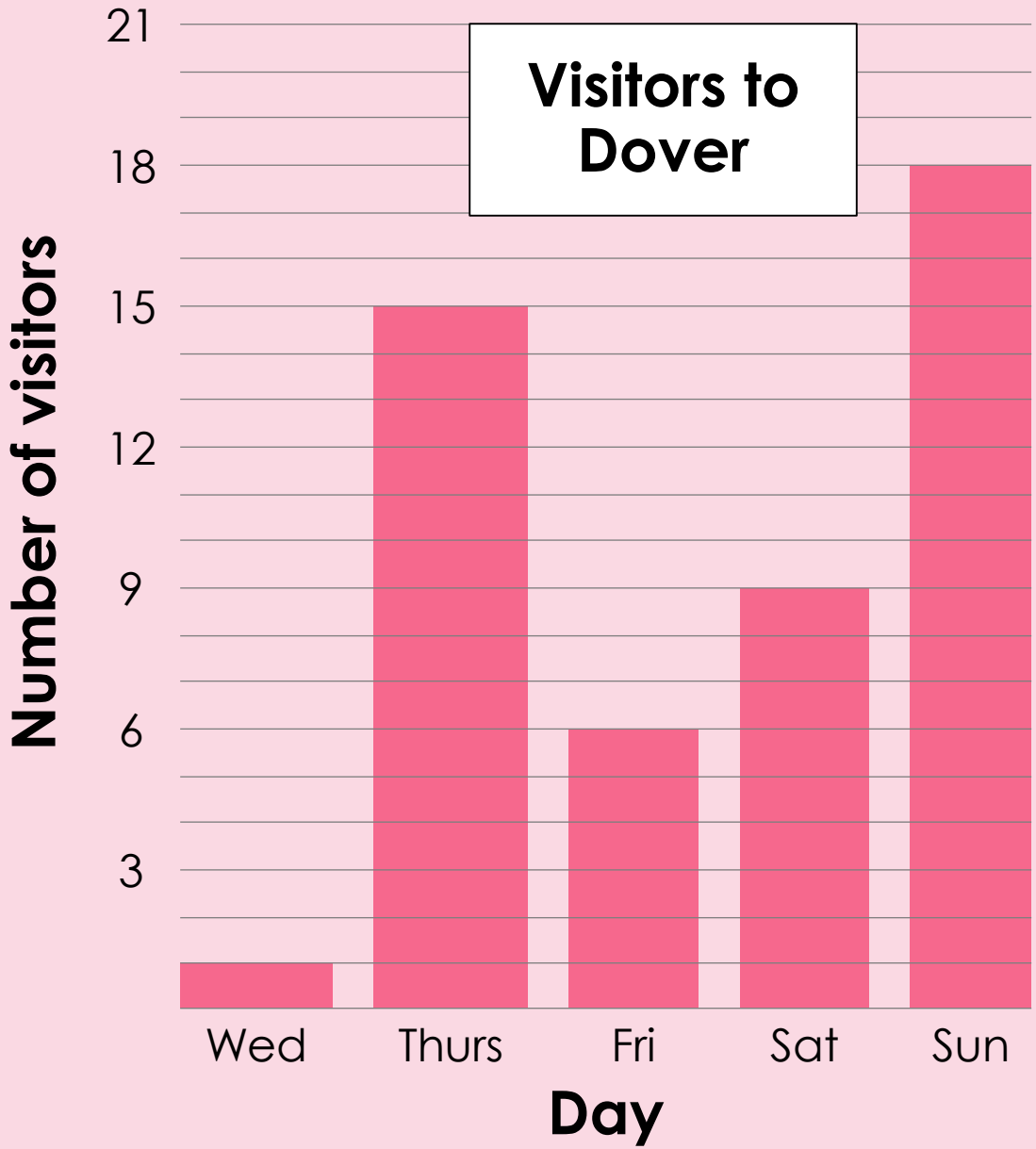
- Which class's party cost the most money?
- What was bought?

New Learning

Interpreting data

1. Pupil A: Read out a question.
2. Pupil B: Use the chart to answer. If you cannot, explain why not.
3. Swap roles.





Talk Task

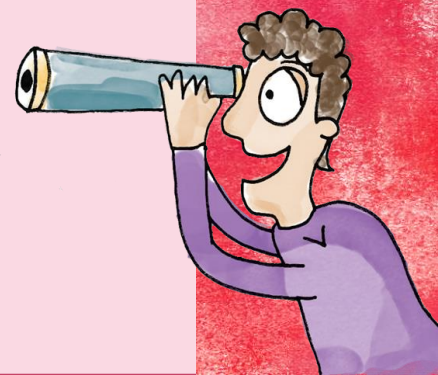
Pictograms and scaled bar charts

What data is being represented here?

How much rain fell in each month?

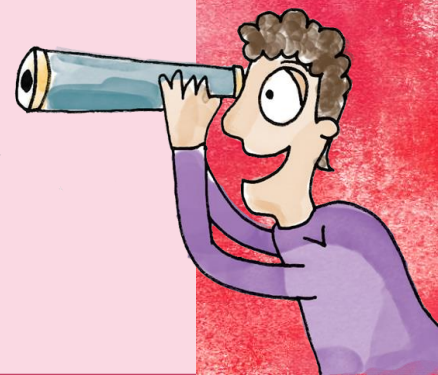
Amount of rainfall in Dover							
Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Amount of rainfall (cm)	10	12	8	10	4	6	4

Develop Learning



Pictograms and scaled bar charts

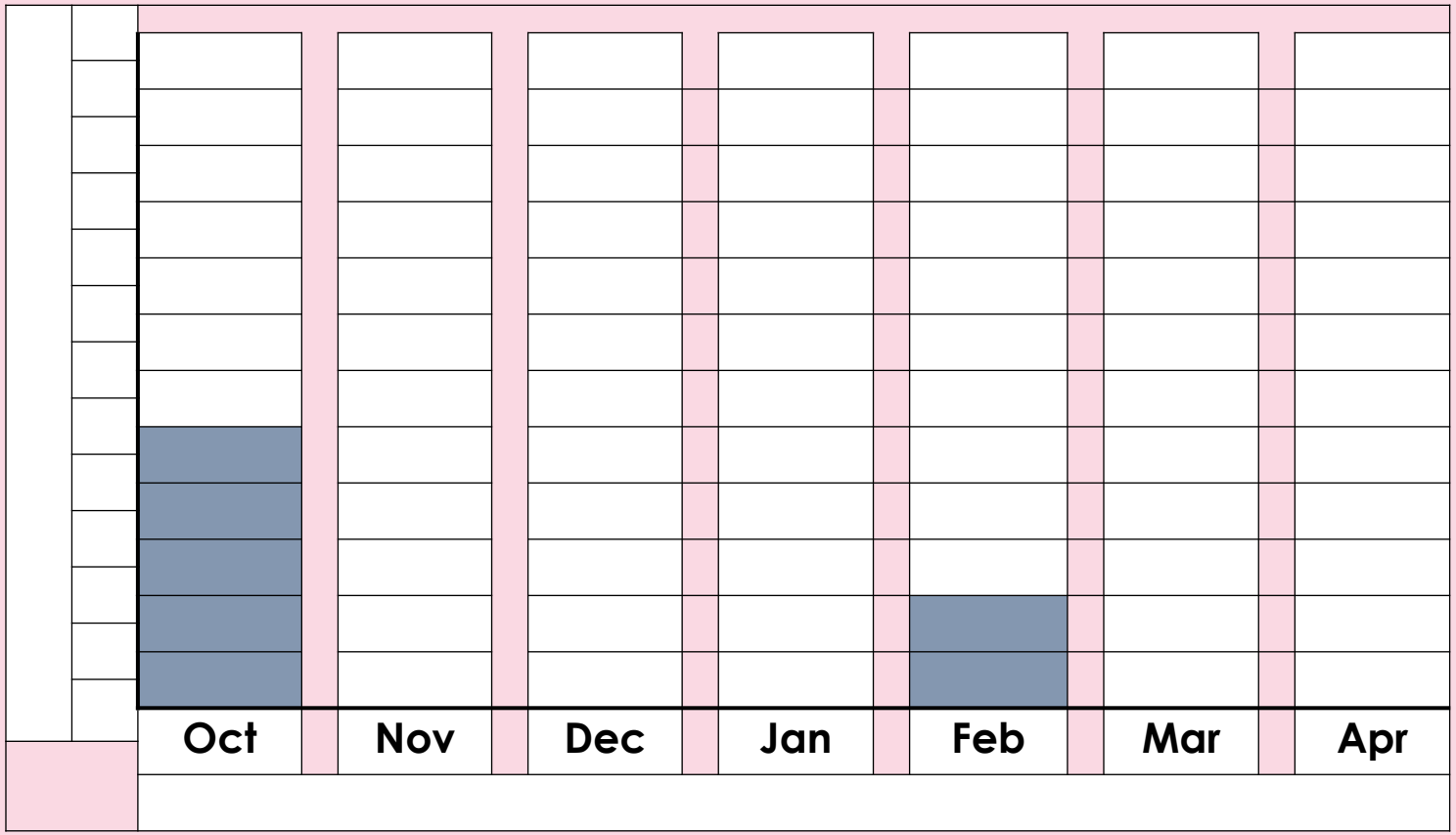
Amount of rainfall in Dover (cm)	
Month	Each ☁ represents 2 cm.
October	
November	
December	
January	
February	
March	
April	



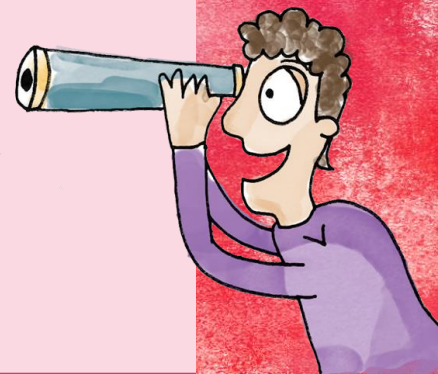
Develop Learning

Pictograms and scaled bar charts

Complete the bar chart using the information from the table.



Amount of rainfall in Dover (cm)



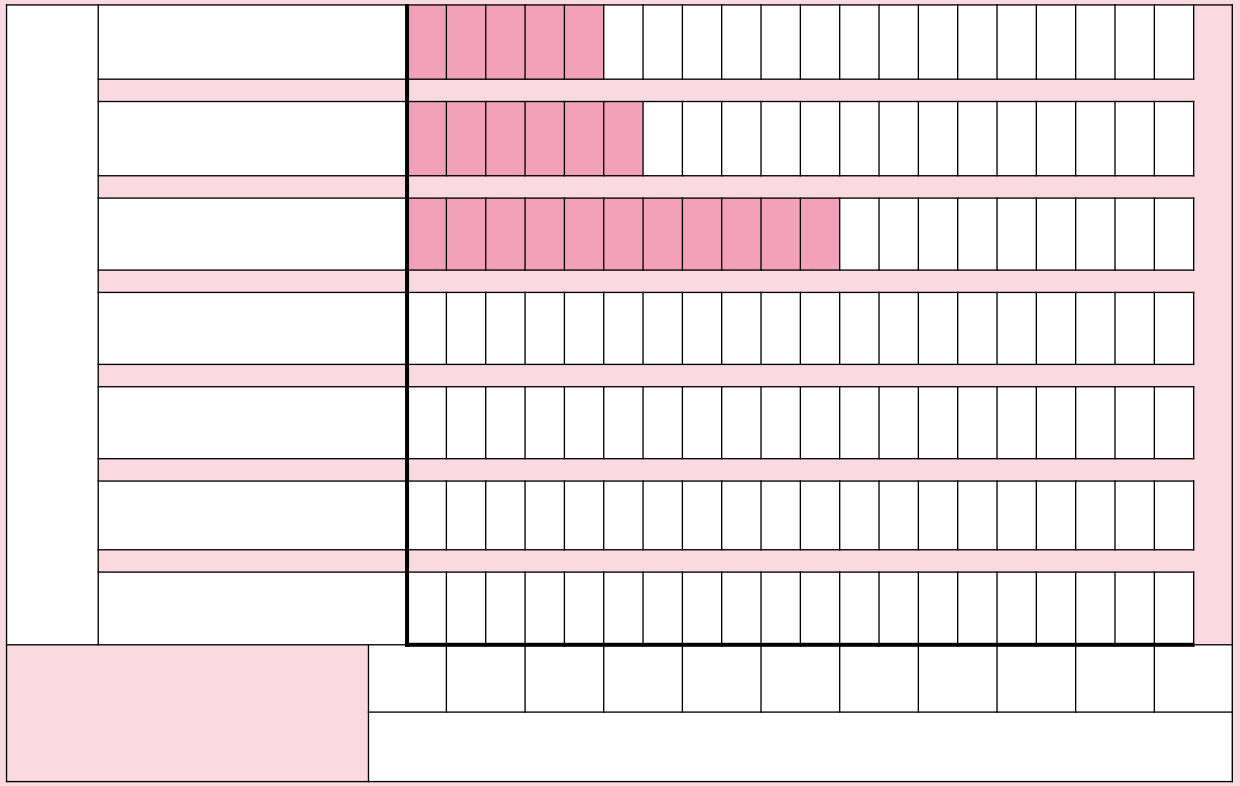
Develop Learning

LT interpret and present data in pictograms and scaled bar charts

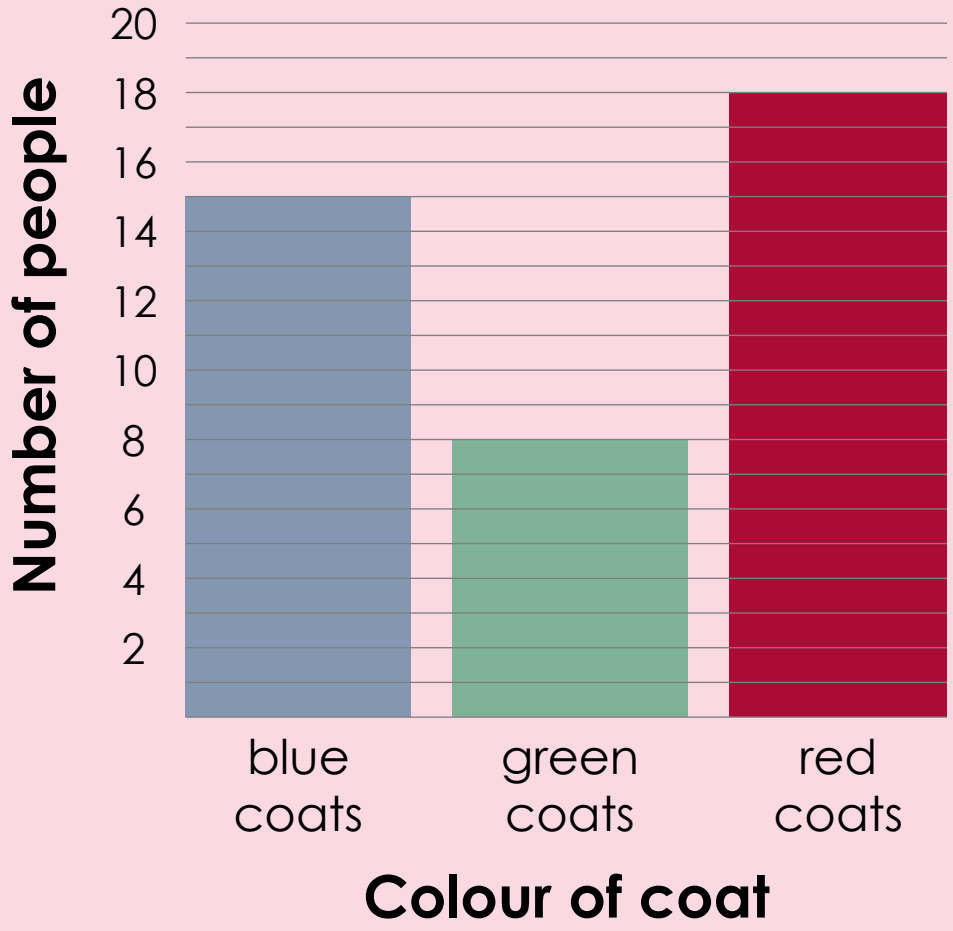
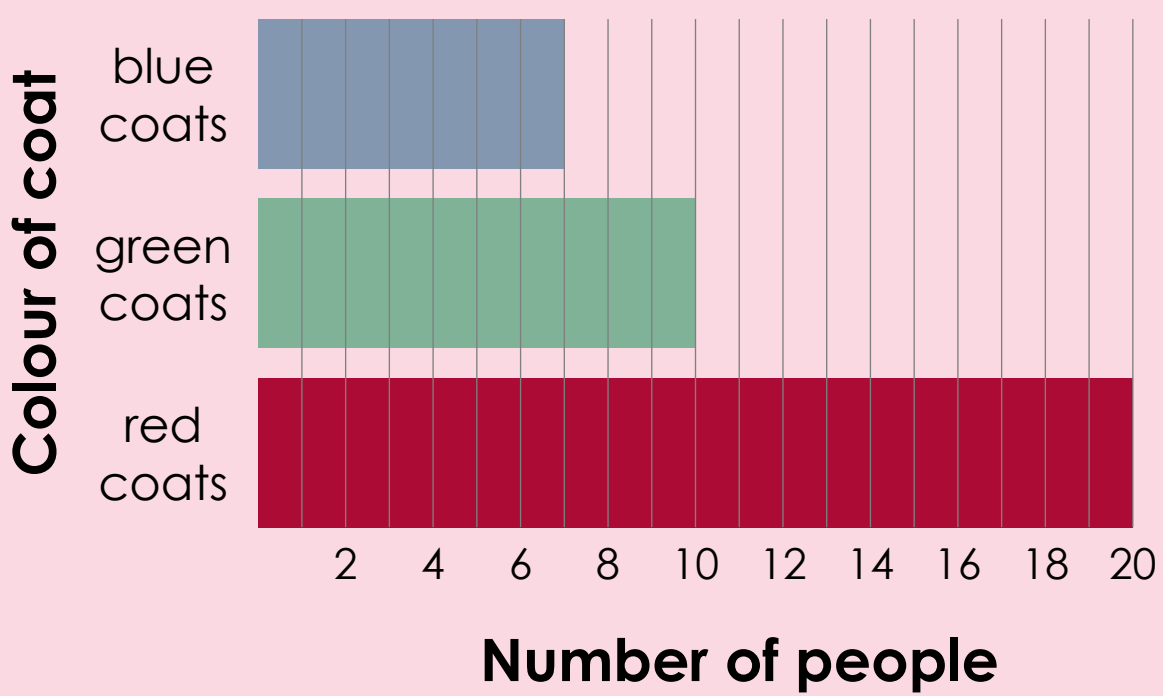
Representing data

Number of children on the ferry to Dover						
Mon	Tues	Wed	Thurs	Fri	Sat	Sun
25	30	55	50	100	70	85

Each ■ represents _____.	
Monday	
Tuesday	



Independent Task

Plenary

- The number of people on the ferry with red coats is 18.
- There are 7 more people wearing blue coats than green coats.
- There are 10 fewer people wearing green coats than red coats.