**Two Week block Beginning 22.6.20**

**Year 3**

**Maths Home Learning: Data Handling**

**Expected Workbook**
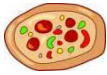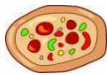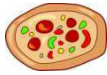
# Pictograms

The pictogram below shows children's favourite fast foods.

Each picture represents 2 children's choices or votes.

Remember:

= 2 votes

= 2 votes

= 2 votes

= 1 vote

= 1 vote

= 1 vote

Pizza       Hot Dog      Burger

**1.** How many children voted for pizzas?

**2.** How many children voted for burgers?

**3.** How many more children voted for burgers than hot dogs?

**4.** How many children voted altogether?

**5.** Which food was least popular?

## **Pictograms**

The pictogram below shows the number of people who visited stalls at a school fair.

The figure represents 10 visitors. represents 5 visitors.

Numbers of visitors to each stall of a school fair

| Tombola | |
|---------|---|
| Toys | |
| Books | |
| Lucky dip | |
| Cakes | |

**1.** How many people visited the tombola stall?

**2.** How many people visited the cake stall?

**3.** How many more people visited the book stall than the lucky dip?

**4.** How many more people visited the toy stall than the tombola?

**5.** What was the total number of visitors to the book and toy stalls?

**6.** Which stall do you think raised the most money?

**7.** Why do you think that?

Cake sale

Class 3R had a cake sale. These numbers of cakes were sold:

Buns  45          Flapjacks  50          Muffins  45          Fairy Cakes  30

Rice Crispy Cakes 65      Chocolate Chip Cakes  50

Draw a pictogram showing how many cakes were sold.

Use a cake like this ⬠ to stand for 10 cakes in your pictogram

and a cake like this ⬠ to stand for 5 cakes.

Pictogram to show number of cakes sold during class 3R's sale.

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Buns | Flapjacks | Muffins | Fairy Cakes | Rice Crispy cakes | Chocolate Chip cakes |

Number sold

Types of cake

**Title**

**Page 1**

**1.** pizza 11     **2.** burgers 15     **3.** 7     **4.** 34     **5.** Hot dogs

**Page 2**

**1.** 35         **2.** 30         **3.** 15         **4.** 25         **5.** 110         **6 and 7.** Choice with reason

# Varied Fluency
## Step 1: Pictograms

## National Curriculum Objectives:

Mathematics Year 3: (3S1) Interpret and present data using bar charts, pictograms and tables
Mathematics Year 3: (3S2) 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

## Differentiation:

**Developing** Questions to support reading and interpreting of pictograms, using values of 1, 2, 5 or 10. No half pictures.
**Expected** Questions to support reading and interpreting of pictograms, using various values. Some pictograms include half pictures.
**Greater Depth** Questions to support reading and interpreting of pictograms, using commutative law to calculate a wider range of multiplication facts. Some pictograms include half and quarter pictures.

More Year 3 Statistics resources.

Did you like this resource? Don't forget to review it on our website.

# Pictograms

## 1a. Complete the missing sections of the pictogram using the information below.

| Month | Number of Children |
|---|---|
| January | |
| February | 🙂 🙂 🙂 |
| March | |
| April | 🙂 🙂 🙂 🙂 🙂 🙂 🙂 |
| May | |

Key: 🙂 = 1 child

A. 4 children have their birthday in January.
B. 2 more children have their birthday in March than February.
C. 3 fewer children have their birthday in May than April.

D

VF

## Pictograms

## 1b. Complete the missing sections of the pictogram using the information below.

| Crisp Flavour | Number of Children |
|---|---|
| Cheese | 🙂 🙂 🙂 🙂 🙂 |
| Slightly salted | |
| Chilli | 🙂 🙂 🙂 🙂 🙂 🙂 🙂 🙂 |
| Pickled onion | |
| Beef | |

Key: 🙂 = 2 children

A. 14 children like slightly salted flavoured crisps.
B. 4 fewer children like pickled onion crisps than slightly salted crisps.
C. 8 fewer children like beef crisps than chilli crisps.

D

VF

## 2a. Answer the questions about the school's favourite sport.

| Class | Number of Children |
|---|---|
| Class 1A | ⚽ ⚽ ⚽ ⚽ ⚽ ⚽ |
| Class 2A | ⚽ ⚽ ⚽ ⚽ ⚽ |
| Class 3A | ⚽ ⚽ ⚽ |
| Class 4A | ⚽ ⚽ |
| Class 5A | ⚽ ⚽ ⚽ ⚽ ⚽ |

Key: ⚽ = 5 children

A. How many children like football in class 2A?
B. How many children like football in Class 4A and Class 5A?
C. Which class liked football the most?
D. Which two classes liked football the least?

D

VF

## 2b. Answer the questions about the children's favourite drink.

| Drink | Number of Children |
|---|---|
| Lemonade | 🥤 🥤 🥤 🥤 |
| Cola | 🥤 🥤 🥤 |
| Juice | 🥤 🥤 🥤 🥤 🥤 |
| Water | 🥤 🥤 🥤 🥤 🥤 🥤 🥤 🥤 |
| Milk | 🥤 🥤 🥤 🥤 🥤 🥤 🥤 |

Key: 🥤 = 10 children

A. How many children like juice?
B. How many children like cola and milk?
C. How many more children like water than lemonade?
D. Which two drinks are the most popular?

D

VF

# Pictograms

## 3a. Complete the missing sections of the pictogram using the information below.

| Transport | Number of Children |
|-----------|--------------------|
| Walk | |
| Bicycle | 😄 😄 |
| Car | 😄 😄 😄 😄 😄 😄 😄 😄 |
| Bus | |
| Taxi | |

Key: 😄 = 3 children

A. 9 fewer children walk to school than come by car.
B. Double the number of children who cycle take the bus.
C. 3 times as many children take the taxi than cycle.

VF

## 3b. Complete the missing sections of the pictogram using the information below.

| Club | Number of Children |
|------|--------------------|
| Karate | 😄 😄 😄 😄 😄 😄 😄 😄 |
| Art | |
| Singing | 😄 😄 😄 |
| Puzzles | |
| Sewing | |

Key: 😄 = 4 children

A. 6 fewer children go to art club than karate club.
B. 4 more children go to puzzles club than singing club.
C. Half the number of children that go to karate club go to sewing club.

VF

## 4a. Answer the questions about the number of cereal boxes sold.

| Cereal | Number of Cereal Boxes |
|--------|------------------------|
| Coco Chips | 🥣🥣🥣🥣🥣🥣🥣🥣 |
| Sugar Flakes | 🥣🥣🥣🥣🥣 |
| Crunchies | 🥣🥣🥣🥣🥣🥣 |
| Wheat Bites | 🥣🥣🥣🥣 |
| Bran Hoops | 🥣🥣🥣 |

Key: 🥣 = 8 cereal boxes sold

A. How many boxes of Sugar Flakes were sold?
B. How many more boxes of Coco Chips were sold than Crunchies?
C. How many boxes of Bran Hoops and Sugar Flakes were sold?
D. How many fewer boxes of Wheat Bites were sold compared to Crunchies?

VF

## 4b. Answer the questions about the number of cupcakes sold in a cafe.

| Cupcake | Number of Cupcakes Sold |
|---------|-------------------------|
| Carrot | 🧁🧁🧁🧁 |
| Lemon | 🧁🧁🧁🧁🧁🧁🧁🧁 |
| Chocolate | 🧁🧁🧁🧁🧁🧁 |
| Vanilla | 🧁🧁🧁🧁 |
| Red velvet | 🧁🧁🧁🧁🧁 |

Key: 🧁 = 10 cupcakes sold

A. How many chocolate cupcakes were sold?
B. How many fewer carrot cupcakes were sold than lemon cupcakes?
C. How many red velvet and vanilla cupcakes were sold in total?
D. How many more chocolate cupcakes were sold than carrot cupcakes?

VF

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Varied Fluency – Pictograms – Year 3 Expected

# Pictograms

## 5a. Complete the missing sections of the pictogram using the information below.

| Snack | Number of People |
|---|---|
| Cherries | 🍫🍫🍫 |
| Cookie | |
| Strawberry | |
| Chocolate | 🍫🍫🍫🍫🍫▪ |
| Orange | |

Key: 🍫 = 12 people

A. 6 more than the total of oranges chose strawberry.
B. 9 fewer than the total of chocolate chose oranges.
C. 6 more than the total of cherries chose a cookie.

VF

## 5b. Complete the missing sections of the pictogram using the information below.

| Food | Number of People |
|---|---|
| Egg | |
| Waffle | |
| Porridge | 🍞🍞 |
| Toast | |
| Doughnut | 🍞🍞🍞🍞 |

Key: 🍞 = 9 people

A. 18 more people chose toast than a waffle.
B. 9 fewer people than the total of doughnut chose a waffle.
C. 9 more people chose an egg than porridge.

VF

## 6a. Answer the questions about the ice cream treats sold at a tuck shop.

| Ice Cream | Number of Items Sold |
|---|---|
| Sundae | 🍦🍦 |
| Bowl | 🍦🍦🍦 |
| Sugar cone | 🍦🍦🍦🍦 |
| Sandwich | 🍦🍦🍦 |
| Wafer cone | 🍦🍦🍦🍦🍦🍦 |

Key: 🍦 = 8 sold

A. How many sugar cones were sold?

B. Which two items were equally sold?

C. How many fewer bowls were sold than wafer cones?

D. Which items have a difference of 20?

VF

## 6b. Answer the questions about the stationery sold at a shop.

| Stationery | Number of Items Sold |
|---|---|
| Rubber | ◖ |
| Pencil | ◯◯◯ |
| Sticky tape | ◯◯◯◯◯◖ |
| Sharpener | ◯◯◯◖ |
| Scissors | ◯◯◯◯◯◯◖ |

Key: ◯ = 12 sold

A. How many sharpeners were sold?

B. Which item was sold the most?

C. Which items have a difference of 30?

D. How many more scissors were sold compared to sticky tape?

VF

# Varied Fluency
## Pictograms

# Varied Fluency
## Pictograms

## Developing

**1a. The pictogram should be completed as follows:**

| Month | Number of Children |
|-------|--------------------|
| January | 😊😊😊😊 |
| February | 😊😊😊 |
| March | 😊😊😊😊😊 |
| April | 😊😊😊😊😊😊😊 |
| May | 😊😊😊😊 |

**2a.** A. 25; B. 35; C. Class 1A; D. Class 3A and Class 4A.

## Developing

**1b. The pictogram should be completed as follows:**

| Crisp Flavour | Number of Children |
|---------------|--------------------|
| Cheese | 😊😊😊😊😊 |
| Slightly salted | 😊😊😊😊😊😊😊 |
| Chilli | 😊😊😊😊😊😊😊😊 |
| Pickled onion | 😊😊😊😊😊😊 |
| Beef | 😊😊😊😊 |

**2b.** A. 50; B. 100; C. 40; D. Water and milk

## Expected

**3a. The pictogram should be completed as follows:**

| Transport | Number of Children |
|-----------|--------------------|
| Walk | 😊😊😊😊😊 |
| Bicycle | 😊😊 |
| Car | 😊😊😊😊😊😊😊😊 |
| Bus | 😊😊😊😊😊 |
| Taxi | 😊😊😊😊😊 |

**4a.** A. 36; B. 12; C. 56; D. 20

## Expected

**3b. The pictogram should be completed as follows:**

| Club | Number of Children |
|------|--------------------|
| Karate | 😊😊😊😊😊😊😊😊 |
| Art | 😊😊😊😊😊😊😊 |
| Singing | 😊😊😊 |
| Puzzles | 😊😊😊😊 |
| Sewing | 😊😊😊😊 |

**4b.** A. 65; B. 35; C. 105; D. 30

## Greater Depth

**5a. The pictogram should be completed as follows:**

| Snack | Number of People |
|-------|------------------|
| Cherries | 🟫🟫🟫 |
| Cookie | 🟫🟫🟫🟫 |
| Strawberry | 🟫🟫🟫🟫🟫 |
| Chocolate | 🟫🟫🟫🟫🟫 |
| Orange | 🟫🟫🟫🟫 |

**6a.** A. 32; B. Bowl and sandwich; C. 28; D. Sundae and sugar cone

## Greater Depth

**5b. The pictogram should be completed as follows:**

| Food | Number of People |
|------|------------------|
| Egg | 🍞🍞🍞 |
| Waffle | 🍞🍞🍞 |
| Porridge | 🍞🍞 |
| Toast | 🍞🍞🍞🍞🍞 |
| Doughnut | 🍞🍞🍞🍞 |

**6b.** A. 42; B. Scissors; C. Pencil and rubber; D. 15

# Reasoning and Problem Solving
## Step 1: Pictograms

## National Curriculum Objectives:

Mathematics Year 3: (3S1) Interpret and present data using bar charts, pictograms and tables
Mathematics Year 3: (3S2) 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

## Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Explain if the statement is correct when describing the pictogram. Images represented with the value of 1 or 2 with no half pictures.
Expected Explain if the statement is correct when describing the pictogram. Pictogram includes half pictures.
Greater Depth Explain if the statement is correct when describing the pictogram. Using commutative law to calculate a wider range of multiplication facts. Pictogram includes half and quarter pictures.

Questions 2, 4 and 8 (Problem Solving)
Developing Use the clues to work out how many images could be missing from the pictogram. Images represented with the value of 5 or 10 with no half pictures.
Expected Use the clues to work out how many images could be missing from the pictogram. Pictogram includes half pictures.
Greater Depth Use the clues to work out how many images could be missing from the pictogram. using commutative law to calculate a wider range of multiplication facts.

Questions 3, 6 and 9 (Reasoning)
Developing Use the pictogram to explain whether the statement is correct. Images represented with the value of 5 or 10 with no half pictures.
Expected Use the pictogram to explain whether the statement is correct. Pictogram includes half pictures.
Greater Depth Calculate the value of each image and complete the pictogram. Justify if the statement is correct. using commutative law to calculate a wider range of multiplication facts. Some pictograms include half and quarter pictures.
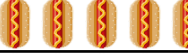
## More Year 3 Statistics resources.

## Did you like this resource? Don't forget to review it on our website.

# Pictograms

## Pictograms

**1a.** Leah has created this pictogram.

| Day | Number of Hot Dogs Sold |
|---|---|
| Monday | (5 hot dogs) |
| Tuesday | (4 hot dogs) |
| Wednesday | (7 hot dogs) |
| Thursday | (6 hot dogs) |

Key: = 2 hot dogs sold

She thinks 3 fewer hot dogs were sold on Monday than on Wednesday. True or false? Convince me.

D

R

**1b.** Danish has created this pictogram.

| Day | Number of Pretzels Sold |
|---|---|
| Thursday | (2 pretzels) |
| Friday | (6 pretzels) |
| Saturday | (7 pretzels) |
| Sunday | (5 pretzels) |

Key: = 1 pretzels sold

He thinks four more pretzels were sold on Friday than on Thursday. True or false? Convince me.

D

R

**2a.** Julia is drawing a pictogram. She knows more children swim on Wednesday than on Thursday, but fewer children swim on Wednesday than on Friday. Complete the pictogram showing one of the possibilities.

| Day | Number of Children |
|---|---|
| Wednesday | |
| Thursday | |
| Friday | (5 faces) |
| Sunday | (6 faces) |

Key: = 5 children

D

PS

**2b.** James is drawing a pictogram. He knows more children play the keyboard than guitar, but fewer children play drums than recorder. Complete the pictogram showing one of the possibilities.

| Instrument | Number of Children |
|---|---|
| Recorder | (5 notes) |
| Guitar | (7 notes) |
| Keyboard | |
| Drums | |

Key: = 10 children

D

PS

**3a.** Ian draws a pictogram to show the minibeasts that Year 3 saw in the garden.

| Minibeast | Number of Insects 1 picture = 10 insects |
|---|---|
| Worm | (5 pictures) |
| Slug | (3 pictures) |
| Snail | (2 pictures) |
| Ant | (8 pictures) |

We saw 40 worms.

Is he correct? Explain your answer.

D

R

**3b.** Amelia draws a pictogram to show when KS1 children have their birthday.

| Month | Number of Birthdays 1 picture = 5 birthdays |
|---|---|
| January | (2 cakes) |
| February | (1 cake) |
| March | (5 cakes) |
| April | (4 cakes) |

20 children have their birthday in March.

Is she correct? Explain your answer.

D

R

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**Reasoning and Problem Solving – Pictograms – Year 3 Developing**

# Pictograms

## Pictograms

**4a.** Joe has created this pictogram.

| Day | Number of Sweets Sold |
|---|---|
| Thursday | ❤❤❤❤◗ |
| Friday | ❤❤❤❤❤❤ |
| Saturday | ❤❤❤❤❤❤❤ |
| Sunday | ❤❤❤ |

Key: ❤ = 4 sweets sold

He thinks twice as many sweets were sold on Saturday than Thursday. True or false? Convince me.

R

**4b.** Ellie has created this pictogram.

| Day | Number of T-shirts Sold |
|---|---|
| Wednesday | 👕👕👕👕👕👕 |
| Thursday | 👕👕👕◗ |
| Friday | 👕👕👕👕👕👕👕👕◗ |
| Saturday | 👕👕👕👕👕👕👕👕👕◗ |

Key: 👕 = 10 t-shirts sold

She thinks half the number of T-shirts sold on Friday were sold on Wednesday. True or false? Convince me.

R

**5a.** Dave is drawing a pictogram. He knows more children have blonde hair than ginger, but fewer children have blonde hair than black.
Complete the pictogram showing one of the possibilities.

| Hair Colour | Number of Children |
|---|---|
| Black | 😌😌😌😌 |
| Blonde | |
| Brown | 😌😌😌😌😌😌😌◗ |
| Ginger | |

Key: 😌 = 2 children

PS

**5b.** Ishani is drawing a pictogram. She knows more children have brown eyes than grey, but fewer children have green eyes than blue. Complete the pictogram showing one of the possibilities.

| Eye Colour | Number of Children |
|---|---|
| Brown | |
| Blue | 🙂🙂🙂 |
| Green | |
| Grey | 🙂🙂🙂🙂🙂◗ |

Key: 🙂 = 4 children

PS

**6a.** Sue draws a pictogram to show the children's favourite author.

| Author | Number of Children 1 book = 10 children |
|---|---|
| Dahl | 📕📕📕📕📕 |
| Walliams | 📕📕◗ |
| Rowling | 📕📕📕📕📕📕📕 |
| Morpurgo | 📕📕📕◗ |

Half the number of children that voted Dahl, voted Morpurgo.

Is she correct? Explain your answer.

R

**6b.** Jay draws a pictogram to show children's favourite dessert.

| Dessert | Number of Children 1 picture = 8 children |
|---|---|
| Yoghurt | 🥣🥣🥣🥣🥣◗ |
| Fruit | 🥣🥣🥣🥣🥣🥣 |
| Ice cream | 🥣🥣🥣🥣🥣🥣 |
| Custard | 🥣🥣🥣🥣 |

Half the number of children that voted fruit, voted custard.

Is he correct? Explain your answer.

R

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Reasoning and Problem Solving – Pictograms – Year 3 Expected

**7a. Maria has created this pictogram.**

| Vegetable | Number of Vegetables Sold |
|-----------|---------------------------|
| Potato | 🥬🥬🥬🥬🥬🥬 |
| Broccoli | 🥬🥬🥬🥬 |
| Cabbage | 🥬🥬🥬🥬 |
| Pepper | 🥬🥬🥬🥬 |

**Key:** 🥬 = 6 sold

She thinks the difference between the number of peppers and broccoli sold is 12. True or false? Convince me.

GD

R

**7b. Shane has created this pictogram.**

| Toy | Number of Toys Sold |
|-----|---------------------|
| Doll's house | 🏠🏠🏠🏠🏠🏠🏠 |
| Car | 🏠 |
| Ball | 🏠🏠🏠🏠 |
| Rattle | 🏠🏠🏠🏠🏠 |

**Key:** 🏠 = 12 sold

He thinks half the number of balls sold is equal to the number of cars sold. True or false? Convince me.

GD

R

**8a. Brad is drawing a pictogram.**

| Flowers | Number of Children |
|---------|--------------------|
| Rose | 🌻🌻🌻🌻🌻 |
| Sunflower | 🌻🌻🌻 |
| Bluebell | |
| Daisy | |

He knows more children like daisies than bluebells, but fewer children like daisies than roses. Complete the pictogram showing one of the possibilities, if one flower is worth 7.

GD

PS

**8b. Evie is drawing a pictogram.**

| Accessory | Number of People |
|-----------|------------------|
| Watch | 🎀🎀 |
| Bowtie | 🎀🎀🎀🎀 |
| Necklace | |
| Ring | |

She knows fewer people like necklaces than watches, but more people like rings than bowties. Complete the pictogram showing one of the possibilities, if one item is worth 9.

GD

PS

**9a. Mary draws a pictogram to show KS2's favourite sport. The total number of children that voted is 72. She thinks each image is worth 8.**

| Sport | Number of Children | Total |
|-------|--------------------|-------|
| Cricket | 🏀🏀◗ | |
| Basketball | 🏀🏀🏀 | |
| Rugby | 🏀◗ | |
| Tennis | 🏀🏀◗ | |

Complete the total for each activity to see if she is correct. Prove it.

GD

R

**9b. Chen draws a pictogram to show KS2's favourite vehicle. The total number of children that voted is 54. He thinks each image is worth 5.**

| Vehicle | Number of Children | Total |
|---------|--------------------|-------|
| Bike | 🚲🚲🚲🚲 | |
| Aeroplane | 🚲🚲🚲🚲 | |
| Train | 🚲 | |
| Ship | 🚲🚲🚲 | |

Complete the total for each activity to see if he is correct. Prove it.

GD

R

# Reasoning and Problem Solving
## Pictograms

### Developing
**1a.** False. 6 fewer hotdogs were sold on Monday than on Wednesday.
**2a.** Various answers, for example: Wednesday = 20 and Thursday = 15.
**3a.** No, Ian is incorrect because they saw 50 worms.

### Expected
**4a.** False. Only 10 more sweets were sold on Saturday than Thursday.
**5a.** Various answers, for example: Blonde = 6 and Ginger = 5.
**6a.** No, Sue is incorrect because 50 children voted Dahl and 35 children voted Morpurgo. That is a difference of 15.

### Greater Depth
**7a.** False. The difference between the number of broccoli and peppers sold is 9 because pepper = 33 and broccoli = 24. 33 – 24 = 9.
**8a.** Various answers, for example: Bluebell = 7 and Daisy = 14.
**9a.** Mary is correct, if 72 pupils voted, each image must be worth 8. Cricket = 18; Basketball = 24; Rugby = 10; Tennis = 20; 18 + 24 + 10 + 20 = 72.

# Reasoning and Problem Solving
## Pictograms

### Developing
**1b.** True. Only 2 pretzels were sold on Thursday and 6 pretzels were sold on Friday.
**2b.** Various answers, for example: Keyboard = 80 and Drums = 10.
**3b.** No, Amelia is incorrect because 25 children have their birthday in March.

### Expected
**4b.** False. Only 25 more shirts were sold on Friday than Wednesday.
**5b.** Various answers, for example: Brown = 28 and Green = 10.
**6b.** No, Jay is incorrect because 52 children voted fruit and 40 children voted custard. That is a difference of 12.

### Greater Depth
**7b.** False. The number of balls sold = 54 and the number of cars sold = 24.
**8b.** Various answers, for example: Necklace = 9 and Rings = 45.
**9b.** Chen is incorrect, if 54 children voted, each image must be worth 6. Bike = 18; Airplane = 18; Train = 6; Ship = 12; 18 + 18 + 6 + 12 = 54.

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Reasoning and Problem Solving – Pictograms  ANSWERS

# Tables (1)

1. This table shows which vegetables children like.

| | Gemma | Kim | Daniel | Jennie | Sam | Hannah |
|---|---|---|---|---|---|---|
| Carrots | ✓ | | ✓ | ✓ | ✓ | ✓ |
| Peas | | ✓ | ✓ | ✓ | | |
| Runner Beans | ✓ | ✓ | | ✓ | | ✓ |
| Broccoli | | | | ✓ | ✓ | |
| Sweetcorn | ✓ | ✓ | | | ✓ | ✓ |

Which is the most popular vegetable? ..............................................................................................

Which is the least popular vegetable? ............................................................................................

Which children like runner beans and sweetcorn? ......................................................................

.......................................................................................................................................................

Who likes the most vegetables? .....................................................................................................

2. This table shows which ice cream flavours children like.

| | Donna | Rachel | Nick | Robin | Natalie | Beth |
|---|---|---|---|---|---|---|
| Vanilla | ✓ | ✓ | | | | |
| Pineapple | ✓ | | ✓ | ✓ | | ✓ |
| Lemon | | ✓ | | | | |
| Chocolate | ✓ | | ✓ | | ✓ | |
| Strawberry | | | | ✓ | ✓ | ✓ |

Which is the most popular ice cream flavour? ...........................................................................

Which is the least popular ice cream flavour? ...........................................................................

Which children like pineapple and strawberry ice cream? ......................................................

.......................................................................................................................................................

Who likes the most flavours? .........................................................................................................

Name:

1. This table shows which colours children like.

| | David | Anna | Dom | Lucy | Edward | Sandra |
|---|---|---|---|---|---|---|
| Red | ✔ | ✔ | | | ✔ | ✔ |
| Purple | | | | ✔ | | |
| Green | ✔ | ✔ | | | | |
| Black | ✔ | | ✔ | | ✔ | |
| Blue | ✔ | | | ✔ | | ✔ |

Which is the most popular colour? ………………………………………………………………………………………

Which is the least popular colour? ……………………………………………………………………………………..

Which children like red and blue? ………………………………………………………………………………..

……………………………………………………………………………………………………………………………………………………..

Who likes the most colours? ……………………………………………………………………………………………………

---

2. This table shows which pets children have got.

| | Toria | John | Katie | Leah | Julia | Jo |
|---|---|---|---|---|---|---|
| Gerbil | ✔ | | | ✔ | | |
| Cat | | ✔ | | ✔ | | ✔ |
| Fish | ✔ | ✔ | | ✔ | ✔ | |
| Hamster | | | ✔ | | | |
| Dog | ✔ | | | ✔ | ✔ | |

Which type of pet is the most popular? …………………………………………………………………………………………

Which type of pet is the least popular? …………………………………………………………………………………..

Which children have got a fish and a dog? ………………………………….………………………………………..

……………………………………………………………………………………………………………………………………………………..

Who has the most pets? ……………………………………………………………………………………………………………..

# Tables (1)

1. This table shows which clubs children go to.

|          | Eleanor | Tom | Archie | Kitty | Daisy | Alfie |
|----------|---------|-----|--------|-------|-------|-------|
| Swimming | ✔       | ✔   |        |       |       | ✔     |
| Drama    |         |     |        | ✔     |       | ✔     |
| Football |         |     | ✔      |       |       |       |
| Music    |         | ✔   |        | ✔     | ✔     |       |
| Sewing   | ✔       |     | ✔      |       | ✔     | ✔     |

Which is the most popular club? ...................................................................................................................

Which is the least popular club? ...............................................................................................................

Which children go to both the swimming and sewing clubs? ......................................................................

..............................................................................................................................................................

Who attends the most clubs? .....................................................................................................................

---

2. This table shows which countries children have visited.

|          | Chrissie | Joan | Gerry | Jimmy | Tommy | Olive |
|----------|----------|------|-------|-------|-------|-------|
| Spain    | ✔        |      |       | ✔     |       |       |
| Germany  |          | ✔    |       |       | ✔     |       |
| France   | ✔        |      | ✔     | ✔     |       | ✔     |
| Portugal |          | ✔    |       | ✔     |       |       |
| USA      |          |      |       |       | ✔     |       |

Which country has been visited the most? .................................................................................................

Which country has been visited the least? ................................................................................................

Who has visited Germany and USA? .......................................................................................................

..............................................................................................................................................................

Who has visited the most countries? ........................................................................................................

# Answers:

Page 1

1.

The most popular vegetable is carrots.

The least popular vegetable is broccoli.

The children who like runner beans and sweetcorn are: Gemma, Kim and Hannah.

Jennie likes the most vegetables.

2.

The most popular ice cream flavour is pineapple.

The least popular ice cream flavour is lemon.

The children who like pineapple and strawberry ice cream are: Robin and Beth.

Donna likes the most flavours of ice cream.

Page 2

1.

The most popular colour is red.

The least popular colour is purple.

The children who like red and blue are: David and Sandra.

David likes the most colours.

2.

The most popular type of pet is fish.

The least popular type of pet is a hamster.

The children who have got a pet fish and dog are: Toria, Leah and Julia.

Leah has the most pets.

Page 3

1.

The most popular club is the sewing club.

The least popular club is the football club.

The children who go to both the swimming club and sewing club are: Eleanor and Alfie.

Alfie attends the most clubs.

2.

The country which has been visited the most is France.

The country which has been visited the least is USA.

Tommy has visited Germany and USA.

Jimmy has visited the most countries.

URBrainy

1. This table shows how much Tommy has increased the price of his stamps.

Jasmine's stamp now costs 28p, how much has it increased by?

What is the greatest price increase?

What is the smallest price increase?

| Stamp prices for Tommy's speedy postal service | |
|---|---|
| last year | this year |
| 19p | 21p |
| 25p | 28p |
| 28p | 39p |
| 50p | 58p |
| 65p | 75p |

2. The children in Year 3 are going on a school trip.
They have been given five options for places they could visit on the trip and have been asked to vote to see which is the most popular.

| Place to visit | Number of votes | |
|---|---|---|
| | girls | boys |
| farm | 14 | 5 |
| swimming pool | 16 | 15 |
| cinema | 8 | 12 |
| Roman villa | 12 | 9 |
| 10 pin bowling | 5 | 13 |

Which is the most popular option?

Which is the least popular option?

How many children voted altogether?

How many more girls voted than boys?

1. This table shows how much sweet prices have increased.

Tommy's sweet now costs 81p, how much has it increased by?

| Prices of sweets | |
|---|---|
| last year | this year |
| 50p | 55p |
| 55p | 62p |
| 66p | 74p |
| 72p | 81p |
| 76p | 87p |

What is the greatest price increase?

What is the smallest price increase?

2. Tom and Sophie have created this table to show how many ice creams and drinks they sold last week.

| Day | Number sold | |
|---|---|---|
| | ice creams | drinks |
| Monday | 14 | 16 |
| Tuesday | 7 | 9 |
| Wednesday | 18 | 15 |
| Thursday | 12 | 14 |
| Friday | 15 | 17 |
| Saturday | 22 | 19 |

Tom says that they sold more ice creams altogether than drinks. Sophie doesn't agree. Is Tom correct? Explain your answer.

.........................................................................................................................................................

.........................................................................................................................................................

Which day did they sell the most ice creams and drinks altogether?

.........................................................................................................................................................

Which day did they sell the least ice creams and drinks altogether?

.........................................................................................................................................................

Name:

1. This table shows how much ice lollies have increased in price in Jade's shop.

Will's ice lolly now costs £1.01, how much has it increased by?

What is the greatest price increase?

What is the smallest price increase?

| Prices of ice lollies | |
|---|---|
| last year | this year |
| 25p | 31p |
| 46p | 52p |
| 64p | 74p |
| 89p | £1.01 |
| £1.15 | £1.30 |

2. Robyn and Jess have created this table to show how many loaves of bread they sold last week.

| Day | Number sold | |
|---|---|---|
| | white loaf | wholemeal loaf |
| Monday | 21 | 23 |
| Tuesday | 18 | 17 |
| Wednesday | 14 | 15 |
| Thursday | 16 | 12 |
| Friday | 19 | 16 |
| Saturday | 25 | 27 |

Jess says that they sold 223 wholemeal loaves of bread last week.
Robyn doesn't agree. Is Jess correct? Explain your answer.

..........................................................................................................................................................

..........................................................................................................................................................

Which day did they sell the most loaves altogether?

..........................................................................................................................................................

Which day did they sell the least loaves altogether?

..........................................................................................................................................................

Answers:

Page 1
1. Jasmine's stamp has increased by 3p.
The greatest price increase is 11p.
The smallest price increase is 2p.

2. The most popular option is to visit the swimming pool.
The least popular option is 10 pin bowling.
109 children voted altogether.
1 more girl voted than boys.

Page 2
1. Tommy's sweet has increased by 9p.
The greatest price increase is 11p.
The smallest price increase is 5p.

2. Tom is incorrect, they sold 90 drinks last week and only 88 ice creams.
They sold the most ice creams and drinks on Saturday.
They sold the least ice creams and drinks on Tuesday.

Page 3
1. Will's ice lolly has increased by 12p.
The greatest price increase is 15p.
The smallest price increase is 6p.

2. Jess is incorrect, they sold 223 loaves of bread altogether last week and only 110 of which were wholemeal.
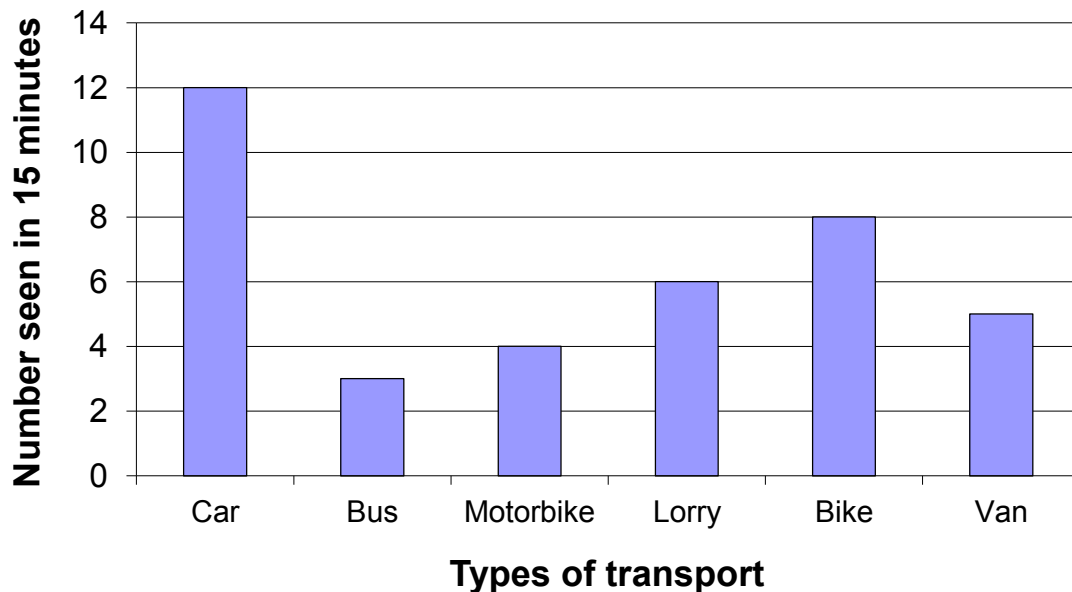They sold the most loaves altogether on Saturday.
The sold the least loaves altogether on Thursday.

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UR Brainy

# Bar chart of vehicles passing the school

Below is a bar chart showing the vehicles that passed the school during a 15 minute period.

**Transport graph**



**1.** How many cars are shown on the graph?

**2.** How many buses passed the school?

**3.** How many more lorries than vans passed the school?

**4.** How many bikes and motorbikes were there, added toget

**5.** What was the total number of cars and lorries that passed the school?

**6.** What was the least common form of transport seen?

Watch how the numbers go up in twos! Work out where the odd numbers would be.

Below is a bar chart showing children's favourite types of sweets.

## Chart of favourite sweets
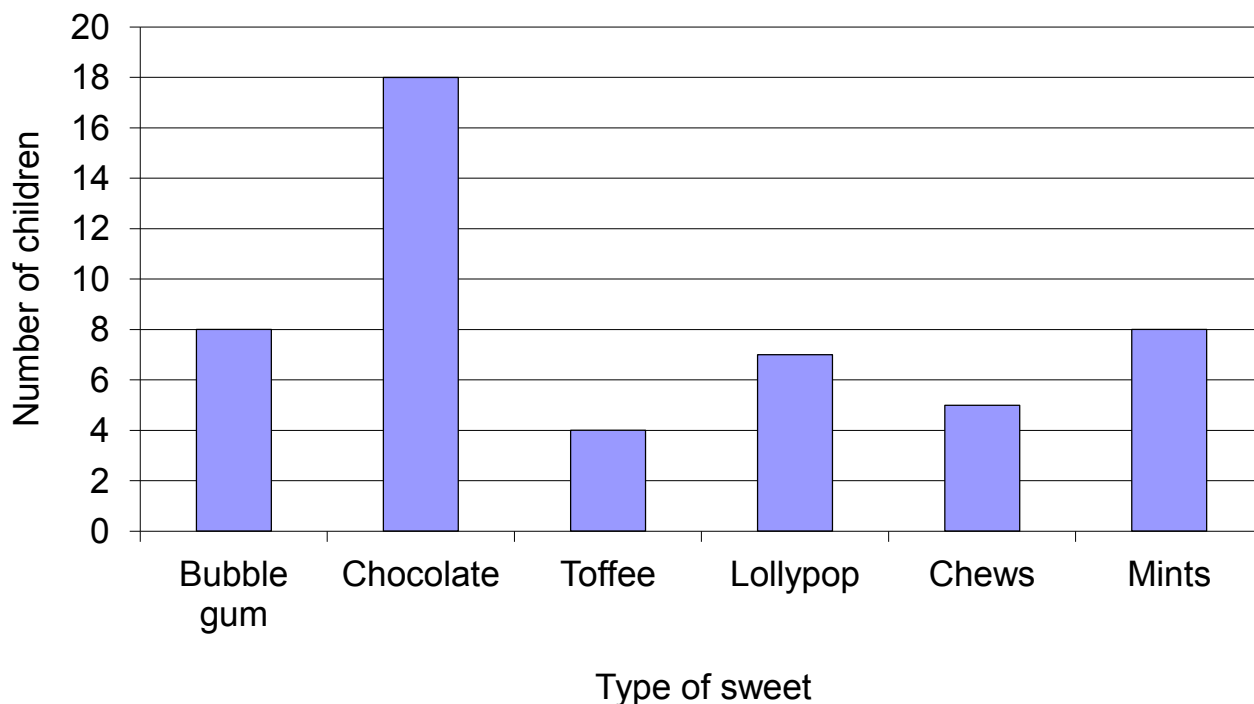


**1.** Which type of sweet was the most popular?

**2.** How many children voted for mints?

**3.** How many more children chose chocolate than toffee?

**4.** How many more children chose lollypops than chews?

**5.** Which was the least popular type of sweet chosen?

**6.** How many fewer children chose toffee than bubblegum?

**7.** How many children voted altogether for chews and mints?

**8.** How many children voted altogether?

Collect your own data on favourite sweets and make a graph.

Title:

|  |  |  |  |  |  |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

Types of

Remember to label both axes.

What does the graph tell you?

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## **Answers**

**Page 1**

**1.** 12     **2.** 3     **3.** 1     **4.** 12     **5.** 18     **6.** Bus

**Page 2**

**1.** chocolate     **2.** 8     **3.** 14     **4.** 2     **5.** Toffee     **6.** 4     **7.** 13     **8.** 50

Packets of crisps sold by the corner shop.
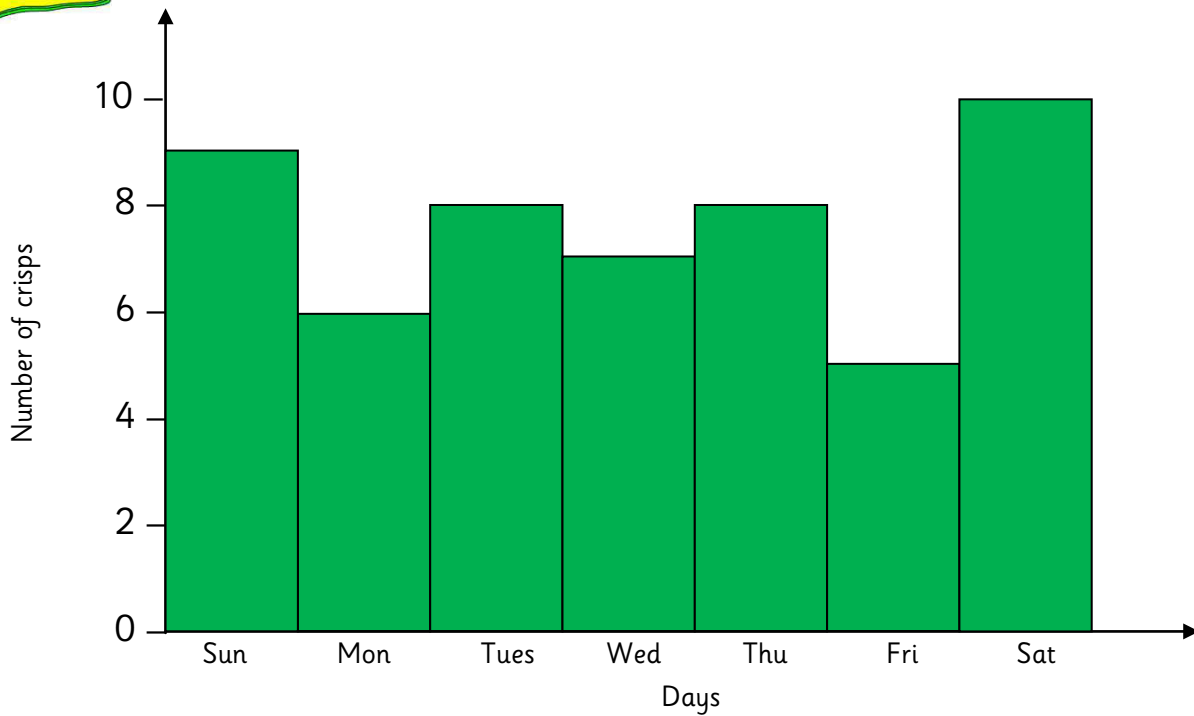


1. Which day of the week were most crisps sold?

2. How many packets of crisps were sold on Wednesday.

3. On which two days were the same number of crisps sold?

4. On which day of the week were the least number of crisps sold?

5. How many more packets of crisps were sold on Sunday than Friday?

6. How many packets of crisps were sold altogether on Monday and Tuesday?

7. How many packets of crisps were sold altogether on Thursday and Friday?

8. Why do you think more packets of crisps were sold at the weekend than during the week?

Children going on a donkey ride.
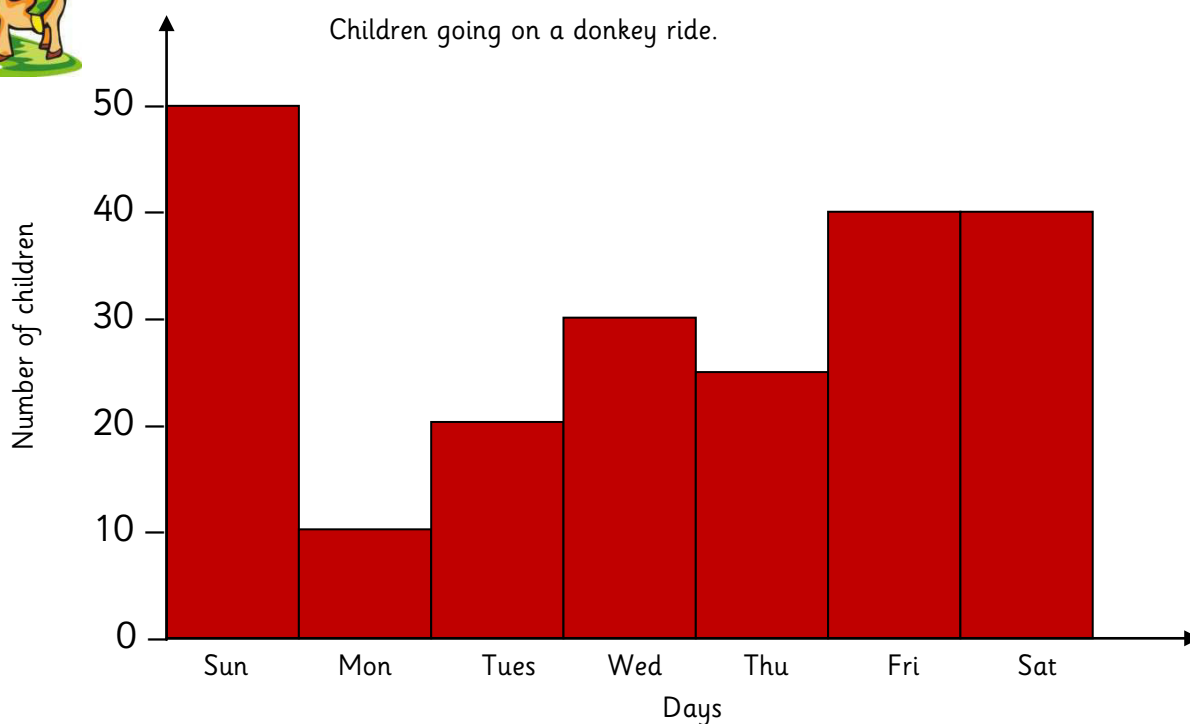


1. On which day of the week were there the most donkey rides?

2. How many donkey rides were there on Wednesday?

3. How many donkey rides were there on Thursday?

4. Which two days had the same number of donkey rides?

5. How many more donkey rides were there on Tuesday than on Monday?

6. How many donkey rides altogether were there on Saturday and Sunday?

7. Why do think there were more donkey rides on Sunday than any other day?

8. Would the next week's graph of donkey rides be the same or different? Why?

Children going swimming
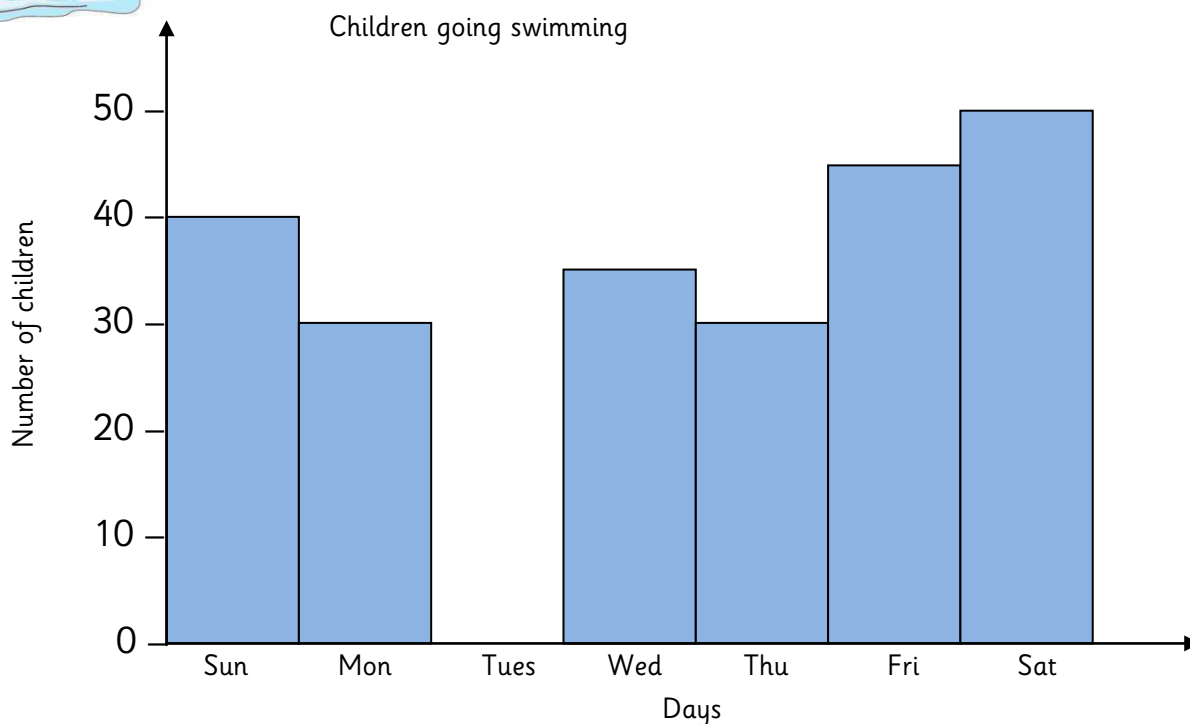


1. On which day of the week did the most children go swimming?

2. How many children went swimming on Wednesday?

3. How many children went swimming on Tuesday?

4. On which two days did the same number of children go swimming?

5. How many more children went swimming on Friday than on Thursday?

6. How many children went swimming altogether on Saturday and Sunday?

7. Why do think there were no swimmers on Tuesday?

8. Would the next week's graph of children going swimming be the same or different? Why?

## Answers

Page 1

1. Saturday    2. 7     3. Tuesday and Thursday     4. Friday
5. 4       6. 14     7. 13      8. Any sensible answer.


Page 2

1. Sunday    2. 30     3. 25     4. Friday and Saturday
5. 10       6. 90     7. Any sensible answer.     8. Any sensible answer.


Page 3

1. Saturday    2. 35     3. None     4. Monday and Thursday
5. 15       6. 90     7. Any sensible answer (e.g. pool closed)
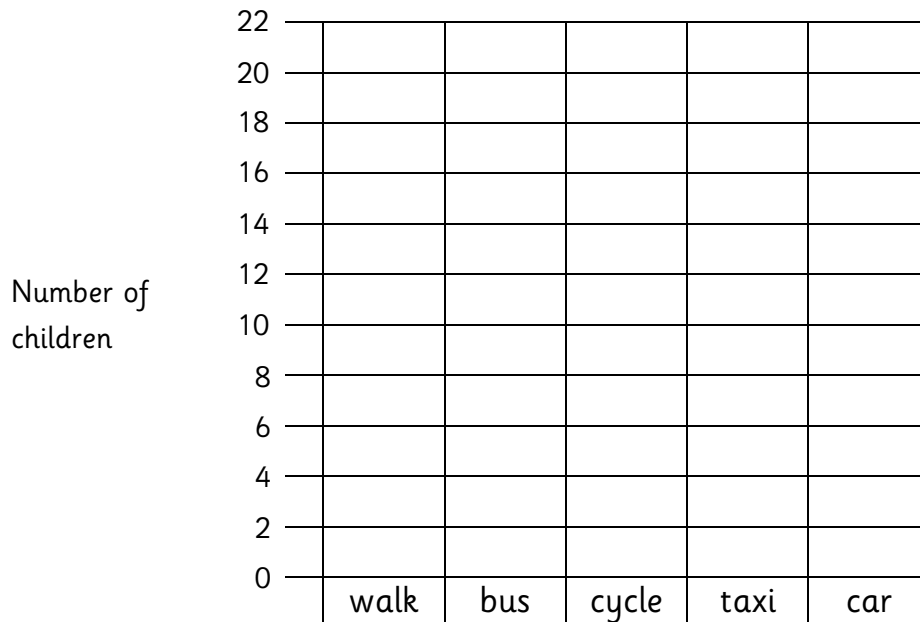8. Any sensible answer.

## Tally charts

Here is a tally chart of how children go to school:

| Type of transport | Tally | Total |
|---|---|---|
| Walk | ⵘⵘ ⵘⵘ ⵘⵘ ⵘⵘ l | |
| Bus | ⵘⵘ ⵘⵘ llll | |
| Cycle | ⵘⵘ ll | |
| Taxi | ⵘⵘ lll | |
| Car | ⵘⵘ ⵘⵘ ⵘⵘ | |

Draw a graph showing these totals:

Graph showing how children go to school

Number of children

22
20
18
16
14
12
10
8
6
4
2
0

walk   bus   cycle   taxi   car

Ways of getting to school

Name:

## Tally charts - using the Internet

Here is a tally chart of how many children used the Internet at school during the week:

| Day of week | Tally | Total |
|---|---|---|
| Monday | ⅢⅠ ⅢⅠ ⅢⅠ | |
| Tuesday | ⅢⅠ ⅢⅠ Ⅰ | |
| Wednesday | ⅢⅠ ⅠⅠⅠ | |
| Thursday | ⅢⅠ ⅢⅠ ⅠⅠ | |
| Friday | ⅢⅠ ⅢⅠ ⅢⅠ ⅢⅠ | |

Draw a graph showing these totals:

Graph showing number of children using the Internet

Number of children

22
20
18
16
14
12
10
8
6
4
2
0

Mon | Tue | Wed | Thu | Fri

Day of the week

Name:
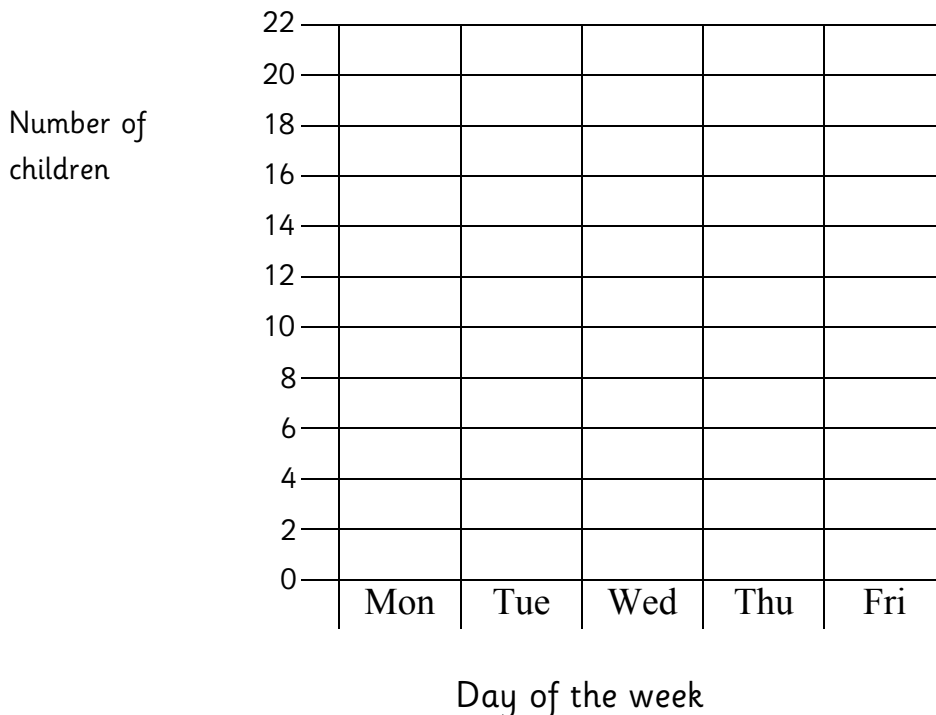
Children at Red School, Bluetown were asked to vote on their favourite colour. Here are the results:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| blue | red | green | red | blue | yellow | green | red | blue |
| red | green | yellow | blue | red | red | red | blue | green |
| yellow | pink | yellow | blue | pink | red | red | blue | |
| red | green | green | blue | red | yellow | green | red | |

Draw a tally chart showing these results:

| Colour | Tally | Total |
|---|---|---|
| Blue | | |
| Red | | |
| Green | | |
| Yellow | | |
| Pink | | |

Draw a graph showing your results.
Remember to label your graph.
What does your graph tell you?

Name:

# Data for bar graphs and pictograms

## 1. Eye colour

Green 10        Hazel 12        Blue  8        Grey  6        Brown  16

## 2. Favourite fruits

Apples 30        Bananas 25        Grapes   10        Oranges 30        Peaches 15

## 3. Favourite sport

Football 55        Cricket 15        Rugby 10        Basketball 40        Athletics 25

---

### 4. Data collected for a tally chart:        on colour of cars passing the school.

Red      blue      green      red      white      black      red      white      black
white      green      blue      blue      blue      white      blue      red      black
green      yellow      green      blue      red      white      white      green
blue      yellow      red      green      white      white      red      blue      green

---

### 5. Data collected for a tally chart:      on colour of socks of 3D

Black      grey      grey      white      white      white      red      white      grey
grey      black      red      blue      white      white      white      white      red
blue      grey      white      black      black      white      black      grey      grey
black      white      white      white      red      white      white      blue      blue
blue      black      black      white      blue      red      red      white      grey

---

Name:

# Answers

Page 3

1. blue 8      red 12      green 7      yellow 5      pink 2

Name:

# Varied Fluency
## Step 2: Bar Charts

## National Curriculum Objectives:

Mathematics Year 3: (3S1) Interpret and present data using bar charts, pictograms and tables
Mathematics Year 3: (3S2) 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

## Differentiation:

**Developing** Questions to support drawing and interpreting bar charts from pictograms and tables. Scales of 1, 2 or 10. No half pictures on pictograms or half intervals on bar charts.
**Expected** Questions to support drawing and interpreting bar charts from pictograms and tables. Scales of 1, 2, 5 or 10. Including half pictures on pictograms, no half intervals on bar charts.
**Greater Depth** Questions to support drawing and interpreting bar charts from pictograms and tables. Scales of 1, 2, 5 and 10. Including half and quarter pictures on pictograms and half intervals on bar charts, with some different values represented on pictograms.

More Year 3 Statistics resources.

Did you like this resource? Don't forget to review it on our website.

# Bar Charts

## 1a. Use the information to complete the pictogram and the bar chart.

| Colour | Number of children |
|--------|--------------------|
| Green  | 😍 😍 😍 😍 😍 😍 😍 😍 |
| Blue   |                    |
| Pink   | 😍 😍 😍 😍 😍      |
| Purple |                    |

1 face = 2 children
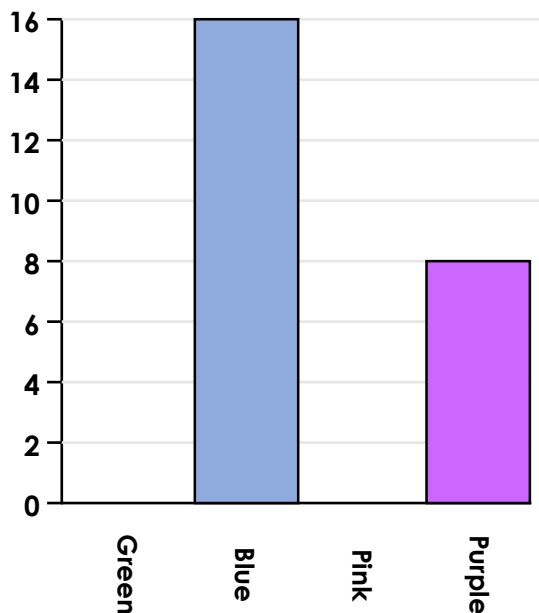
VF

## 2a. Use this bar chart to answer the questions about favourite shops.
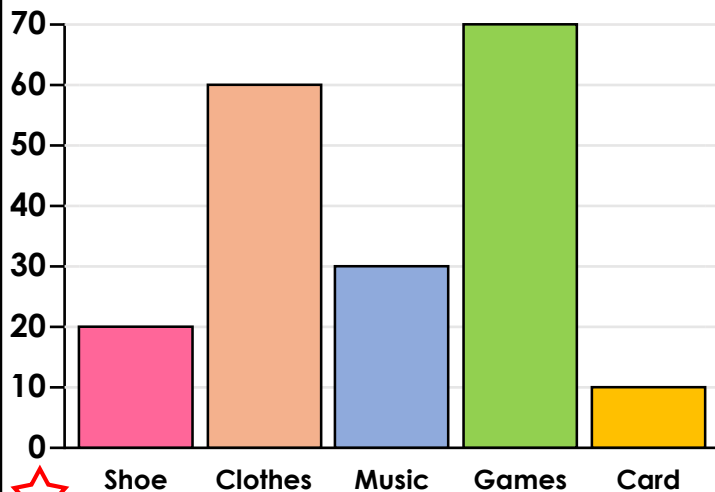
A. Which shop is most popular?

B. How many more children like clothes shops than card shops?

C. How many children like shoe shops?

D. How many children are asked in total?

VF

## 3a. Create a bar chart using this tally chart.

| Favourite dessert | Number of children |
|-------------------|--------------------|
| Fruit   | 𝍫𝍫 𝍫𝍫 IIII |
| Ice cream | 𝍫𝍫 III |
| Cake    | 𝍫𝍫 𝍫𝍫 |
| Yoghurt | 𝍫𝍫 I |

VF

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### Varied Fluency – Bar Charts – Year 3 Developing
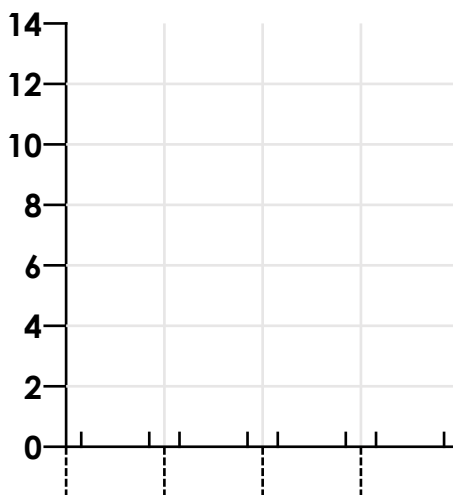
# Bar Charts

## 1b. Use the information to complete the pictogram and the bar chart.

| Eye colour | Number of children |
|------------|--------------------|
| Blue       |                    |
| Green      | 😍                 |
| Brown      |                    |
| Hazel      | 😍 😍 😍 😍          |

1 face = 10 children



D
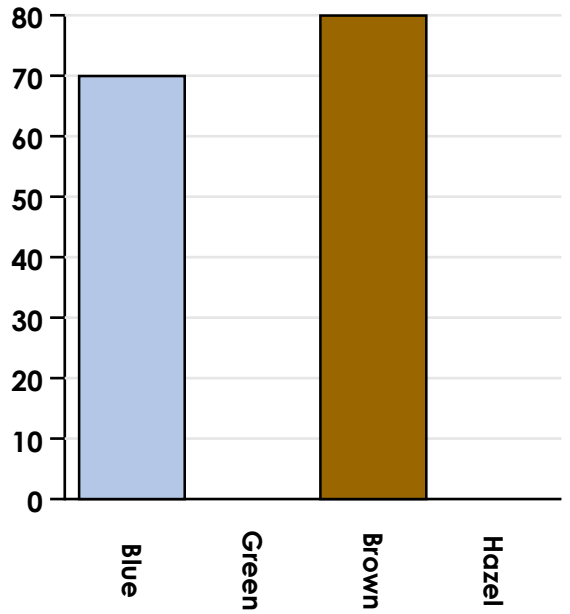
VF

## 2b. Use this bar chart to answer the questions about favourite school dinners.
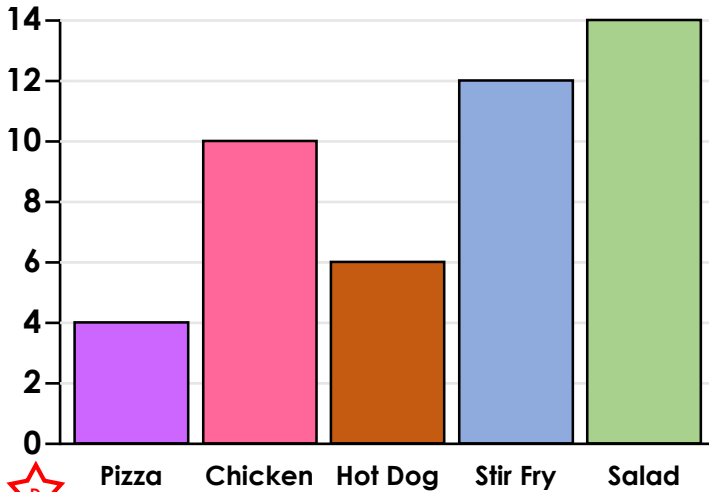


A. Which dinner is least popular?

B. How many more children like salad than hot dogs?

C. How many children like chicken?

D. How many children are asked in total?

D

VF

## 3b. Create a bar chart using this tally chart.

| Day       | Number of apples sold |
|-----------|-----------------------|
| Monday    | ⲚⲚ Ⅰ                  |
| Tuesday   | ⲚⲚ ⲚⲚ ⅠⅠⅠⅠ            |
| Wednesday | ⲚⲚ ⲚⲚ                 |
| Thursday  | ⅠⅠⅠⅠ                  |



D

VF

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**Varied Fluency – Bar Charts – Year 3 Developing**
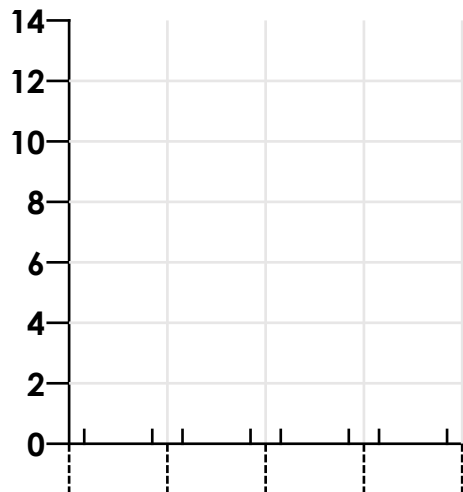
# Bar Charts

## 4a. Use the information to complete the pictogram and the bar chart.

| Fruit | Number of children |
|-------|--------------------|
| Orange | 🍊🍊🍊 |
| Apple | |
| Pear | 🍊🍊 |
| Lemon | |

🍊 = 10 children
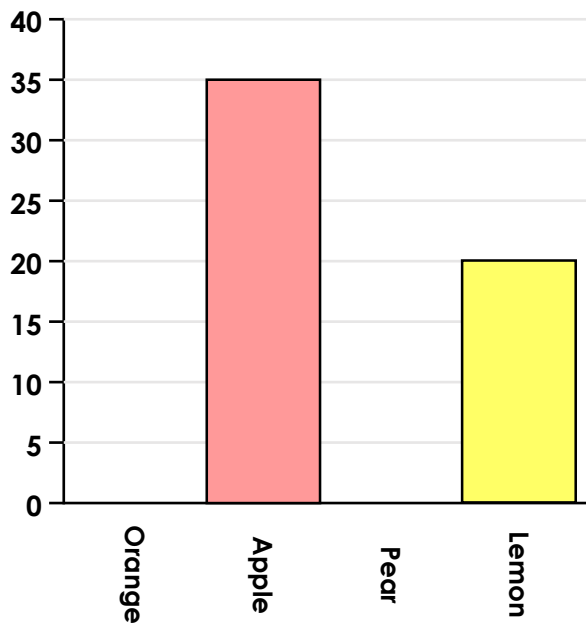
VF

## 5a. Use this bar chart to answer the questions about favourite drinks.
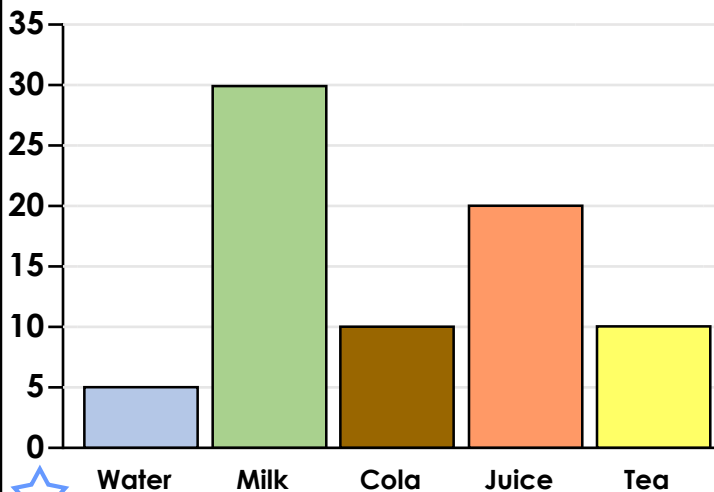
A. How many children like cola?
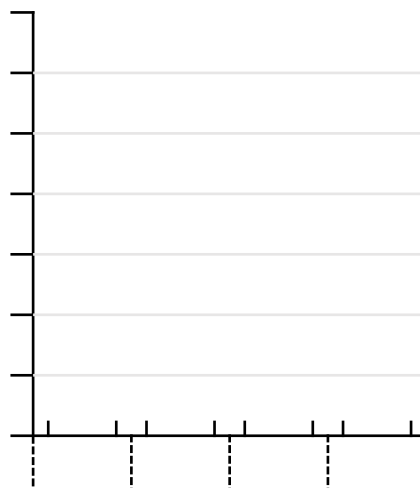
B. How many more children like milk than juice?

C. How many children like water and tea altogether?

D. How many children are asked in total?

VF

## 6a. Create a bar chart using this tally chart.
## Use a scale of 2 and add in the labels.
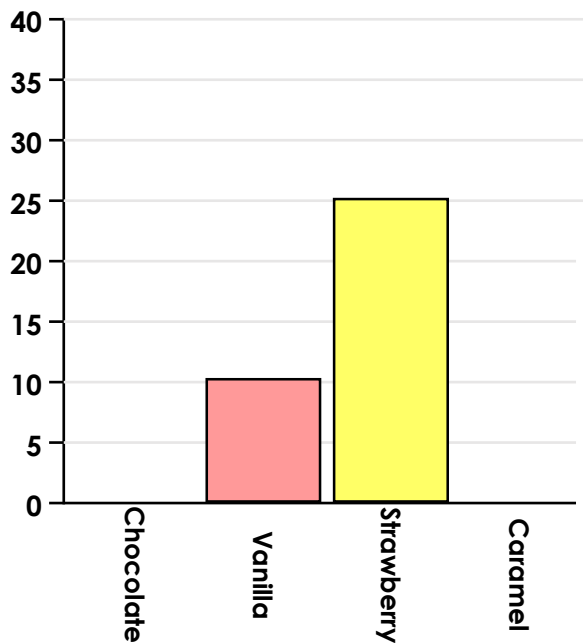
| Favourite Sports | Number of children |
|------------------|--------------------|
| Swimming | ||||  |||| |
| Football | ||||  ||||  || |
| Rugby | ||||  ||||  |||| |
| Golf | ||||  | |

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**Varied Fluency – Bar Charts – Year 3 Expected**

# Bar Charts

**4b.** Use the information to complete the pictogram and the bar chart.

| Ice cream | Number of children |
|---|---|
| Chocolate | 😍 😍 😍 😍 |
| Vanilla | |
| Strawberry | |
| Caramel | 😍 😍 |

😍 = 10 children

(Bar chart, y-axis 0 to 40 in steps of 5; Vanilla = 10, Strawberry = 25; x-axis labels: Chocolate, Vanilla, Strawberry, Caramel)

VF

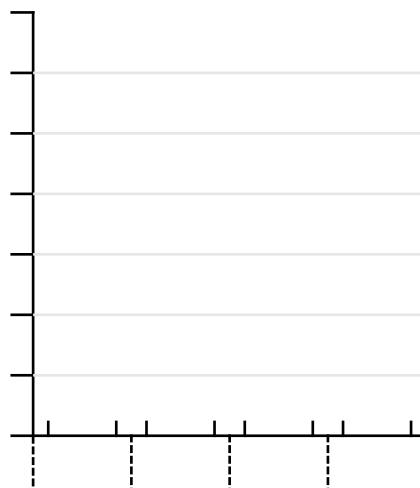**5b.** Use this bar chart to answer the questions about the number of diners in a restaurant.

(Bar chart, y-axis 0 to 14 in steps of 2; Weds = 2, Thurs = 6, Fri = 10, Sat = 14, Sun = 12)
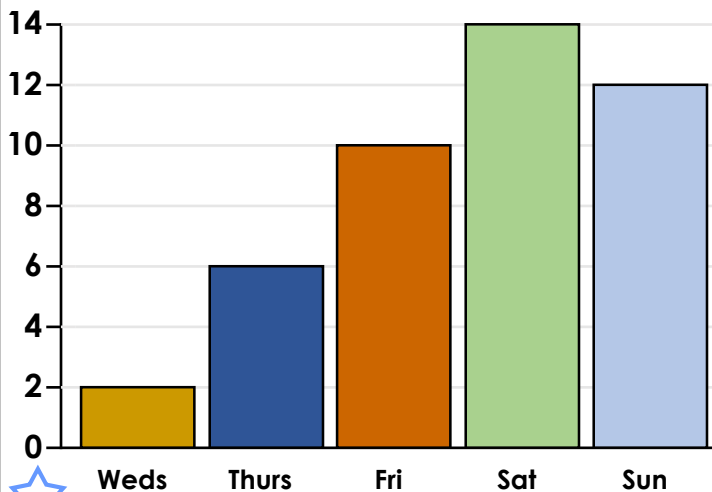
A. How many diners are there on Thursday?

B. How many fewer diners are there on Wednesday compared to Sunday?

C. How many diners are there at the weekend?

D. How many diners are there in total?

VF

**6b.** Create a bar chart using this tally chart.
Use a scale of 5 and add in the labels.
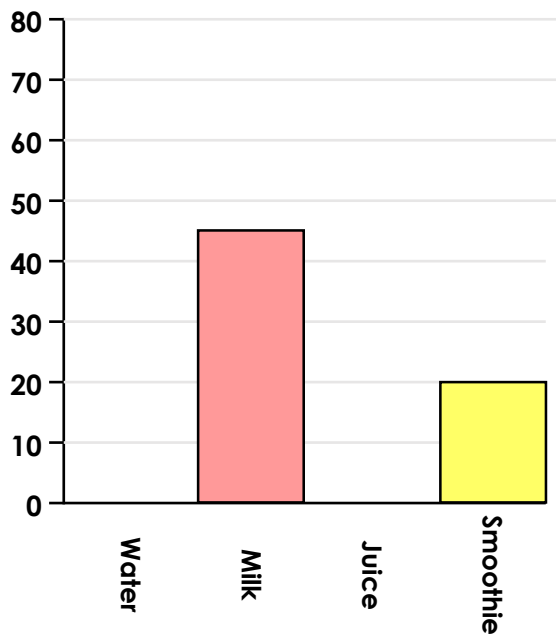
| Favourite TV shows | Number of children |
|---|---|
| Drama | ⅢⅠ |
| Comedy | ⅢⅠ ⅢⅠ ⅢⅠ ⅢⅠ ⅢⅠ |
| Cartoons | ⅢⅠ ⅢⅠ ⅢⅠ |
| News | ⅢⅠ |

VF

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# Bar Charts

**7a. Use the information to complete the pictogram and the bar chart.**

| Drinks sold | Number of drinks |
|---|---|
| Water | 🥛🥛🥛🥛🥛🥛🥛 |
| Milk | |
| Juice | 🧃🧃🧃 |
| Smoothie | |

🧃 = 2 cups

🥛 = 4 cups

(Bar chart with scale 0–80, bars: Milk = 45, Smoothie = 20; Water and Juice blank. Labels: Water, Milk, Juice, Smoothie)

VF

**8a. Use this bar chart to answer the questions about desserts sold in a cafe.**

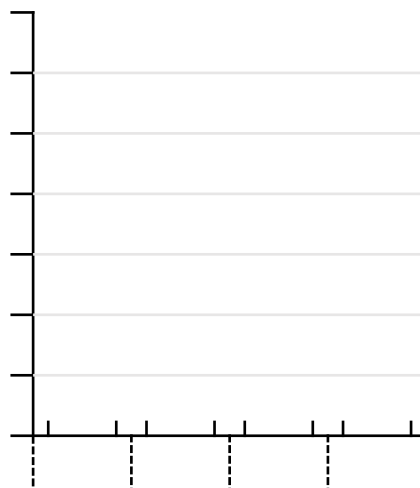(Bar chart scale 0–70. Bars: Cake = 5, Yoghurt = 55, Fruit = 65, Apple Pie = 35, Ice cream = 15)
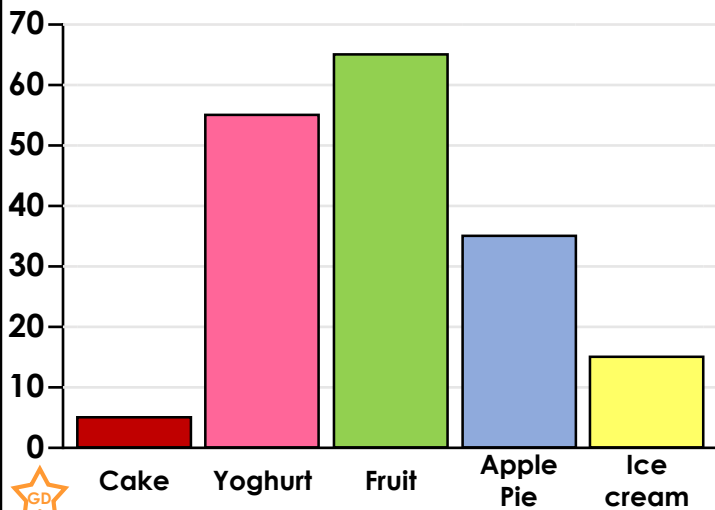
A.  How many portions of apple pie were sold?

B.  How many fewer portions of ice cream were sold than fruit?

C.  Which dessert was least popular?

D.  How many portions of dessert were sold altogether?

VF

**9a. Create a bar chart using this tally chart. Write on the correct scale and labels.**

| Pizzas | Number of pizzas sold |
|---|---|
| Cheese | ||||  ||||  ||||  ||||  ||||  |||| |
| Veggie | ||||  ||||  ||||  ||||  ||||  ||||  ||||  ||| |
| Pepperoni | ||||  ||||  ||||  |||| |
| Tuna | ||||  ||||  ||||  ||||  ||||  | |

VF

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**Varied Fluency – Bar Charts – Year 3 Greater Depth**

# Bar Charts

**7b. Use the information to complete the pictogram and the bar chart.**

| Shoes | Number of pairs of shoes sold |
|---|---|
| Sandals | |
| Boots | 🥾🥾🥾🥾 |
| Trainers | 👟👟👟 |
| School Shoes | |

🥾 = 2 pairs

👟 = 4 pairs

(Bar chart: vertical axis 0 to 16 in intervals of 2. Sandals = 5, Boots = (blank), Trainers = (blank), School Shoes = 10)
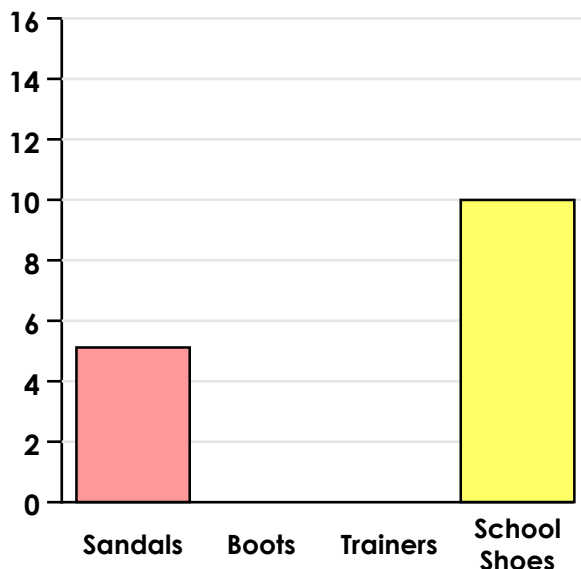
VF

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**8b. Use this bar chart to answer the questions about the number of animals on a farm.**

(Bar chart: vertical axis 0 to 70 in intervals of 10. Cows = 65, Sheep = 70, Goats = 45, Pigs = 30, Ducks = 5)

A. How many goats are there?

B. How many fewer ducks are there than pigs?

C. How many four-legged animals are there?

D. How many animals are there in total?

VF

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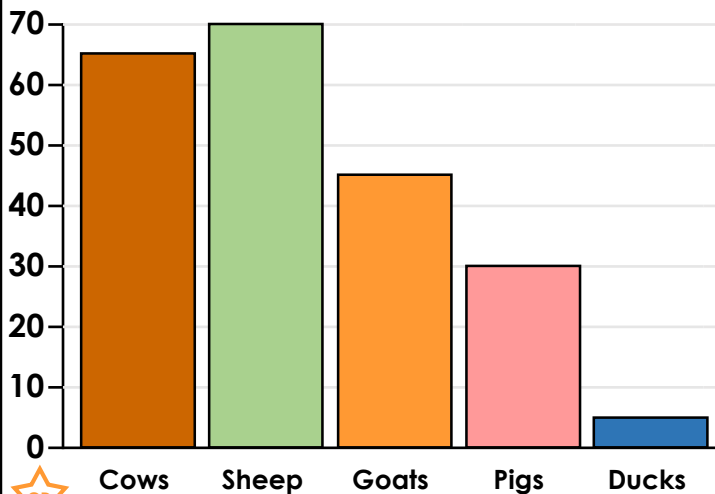**9b. Create a bar chart using this tally chart. Write on the correct scale and labels.**

| Teams | Number of points scored |
|---|---|
| Green | 卌 卌 卌 卌 卌 卌 |
| Blue | 卌 卌 卌 卌 I |
| Red | 卌 卌 卌 III |
| Purple | 卌 卌 卌 卌 卌 卌 IIII |

VF

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## Developing

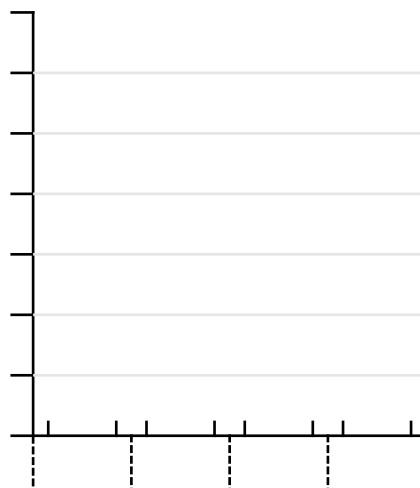**1a.** 8 faces for blue and 4 faces for purple on the pictogram. Green to 16 and pink to 10 on the bar chart.

**2a.** A. Games; B. 50; C. 20; D. 190

**3a.** Accept an accurate bar chart with appropriate labels which shows 14 for fruit, 8 for ice cream, 10 for cake and 6 for yoghurt.

## Expected

**4a.** 3 and a half fruit bowls for apples and 2 fruit bowls for lemons on the pictogram. Oranges to 25 and pears to 20 on the bar chart.

**5a.** A. 10; B. 10, C. 15; D. 75

**6a.** Accept an accurate bar chart with scale marked and appropriate labels which shows 10 for swimming, 12 for football, 14 for rugby and 6 for golf.

## Greater Depth

**7a.** 45 for milk and 20 for smoothie using one of the values given on the pictogram. Water to 25 and juice to 5 on the bar chart.

**8a.** A. 35; B. 50; C. Cake; D. 175

**9a.** Accept an accurate bar chart with appropriate scale and labels which shows 30 for cheese, 38 for veggie, 19 for pepperoni and 26 for tuna.

## Developing

**1b.** 7 faces for blue and 8 faces for brown on the pictogram. Green to 10 and hazel to 40 on the bar chart.

**2b.** A. Pizza; B. 8; C. 10; D. 46

**3b.** Accept an accurate bar chart with appropriate labels which shows 6 for Monday, 14 for Tuesday, 10 for Wednesday and 4 for Thursday.

## Expected

**4b.** 1 face for vanilla and 2 and a half faces for strawberry on the pictogram. Chocolate to 40 and caramel to 15 on the bar chart.

**5b.** A. 6; B. 10; C. 26; D. 44

**6b.** Accept an accurate bar chart with scale marked and appropriate labels which shows 5 for drama, 25 for comedy, 15 for cartoons and 5 for news.

## Greater Depth

**7b.** 5 pairs for sandals and 10 pairs for school shoes using one of the values given on the pictogram. Boots to 7 and trainers to 12 on the bar chart.

**8b.** A. 45; B. 25; C. 210; D. 215

**9b.** Accept an accurate bar chart with appropriate scale and labels which shows 30 for green, 21 for blue, 18 for red and 34 for purple.

# Reasoning and Problem Solving
## Step 2: Bar Charts

## National Curriculum Objectives:

Mathematics Year 3: (3S1) [Interpret and present data using bar charts, pictograms and tables](#)
Mathematics Year 3: (3S2) [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](#)

## Differentiation:

Questions 1, 4 and 7 (Problem Solving)
**Developing** Use the clues to work out the missing bars on the bar chart. Scales of 1, 2 or 10. No half intervals on bar charts.
**Expected** Use the clues to work out the missing bars on the bar chart. Scales of 1, 2, 5 or 10. No half intervals on bar charts.
**Greater Depth** Use the clues to work out the missing bars on the bar chart. Scales of 1, 2, 5 and 10. Includes half intervals on bar charts.

Questions 2, 5 and 8 (Reasoning)
**Developing** Use the bar chart to explain whether the statement is correct. Scales of 1, 2 or 10. No half intervals on bar charts.
**Expected** Use the bar chart to explain whether the statement is correct. Scales of 1, 2, 5 or 10. No half intervals on bar charts.
**Greater Depth** Use the bar chart to explain whether the statement is correct. Scales of 1, 2, 5 and 10. Includes half intervals on bar charts.

Questions 3, 6 and 9 (Problem Solving)
**Developing** Draw a bar chart from the given statements and partially completed pictogram. Scale given. No half intervals on bar charts.
**Expected** Draw a bar chart from the given statements and partially completed pictogram. Includes half pictures on pictograms, no half intervals on bar charts and independent choice of appropriate scale.
**Greater Depth** Draw a bar chart from the given statements and partially completed pictogram. Includes half pictures on pictograms, half intervals on bar charts and independent choice of appropriate scale.
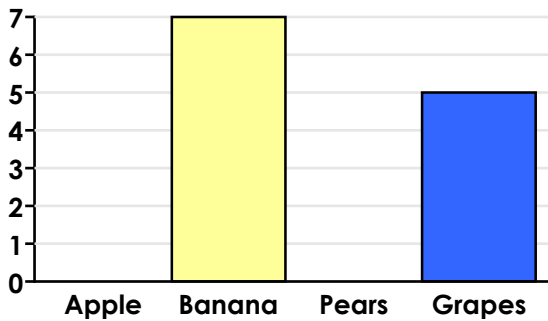
## More [Year 3 Statistics](#) resources.

## Did you like this resource? Don't forget to [review](#) it on our website.

# Bar Charts

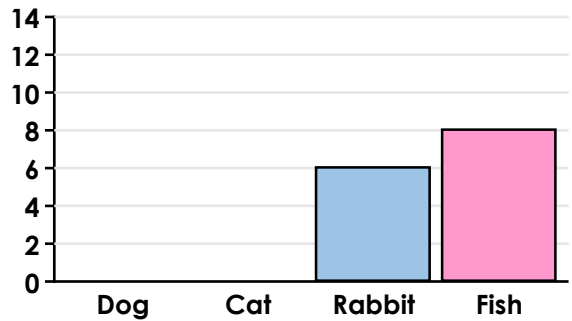**1a.** The bar chart shows favourite fruits.



More children like apples than pears, but fewer like pears than grapes. Complete the bar chart showing how many children could like apples and pears.

⭐D

PS

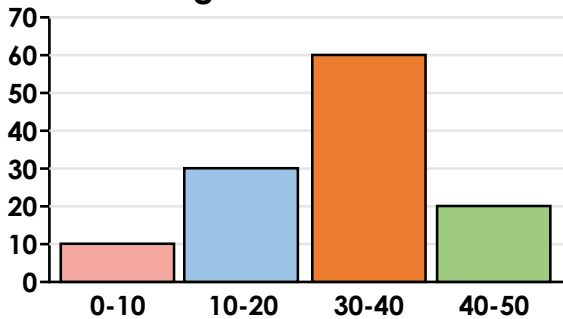**1b.** The bar chart shows favourite pets.



Fewer children have dogs than cats, but more children have dogs than fish. Complete the bar chart showing how many children could have dogs or cats.

⭐D

PS

**2a.** Zain interprets the bar chart below about reading books.



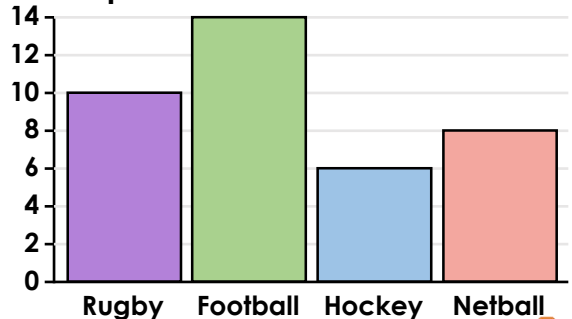2 children read 40-50 books.

Is he correct? Explain your answer.

⭐D

R

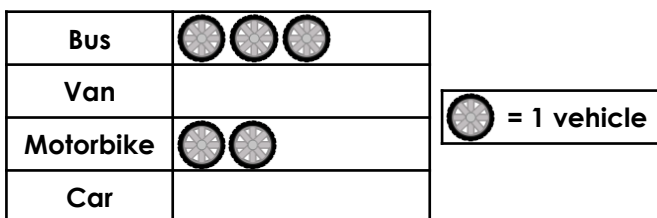**2b.** Olivia interprets the bar chart below about sports.



30 children like hockey.

Is she correct? Explain your answer.

⭐D

R

**3a.** A class collects data about the traffic.

| Bus | 🛞🛞🛞 |
|---|---|
| Van | |
| Motorbike | 🛞🛞 |
| Car | |

🛞 = 1 vehicle

We saw 5 more cars than vans.

We saw 1 more van than bus.
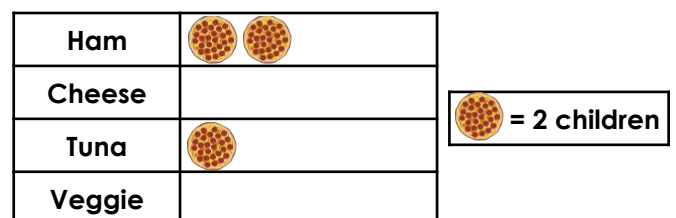
Draw a bar chart to display this information. The scale should go up in 1s.

⭐D

PS

**3b.** A class collects data about pizzas.

| Ham | 🍕🍕 |
|---|---|
| Cheese | |
| Tuna | 🍕 |
| Veggie | |

🍕 = 2 children

6 fewer children like veggie than cheese pizzas.

6 more children like cheese than ham pizzas.

Draw a bar chart to display this information. The scale should go up in 2s.

⭐D

PS

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Reasoning and Problem Solving – Bar Charts – Year 3 Developing

# Bar Charts

# Bar Charts

## 4a. The bar chart shows favourite authors.
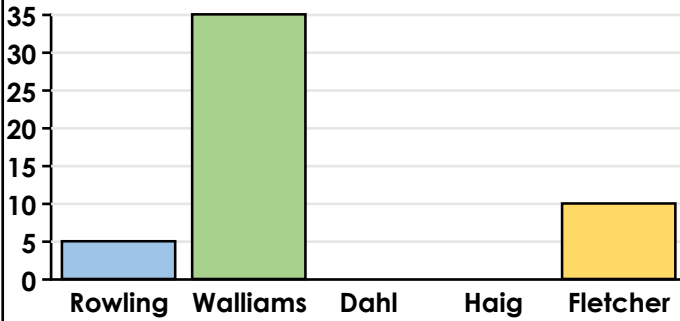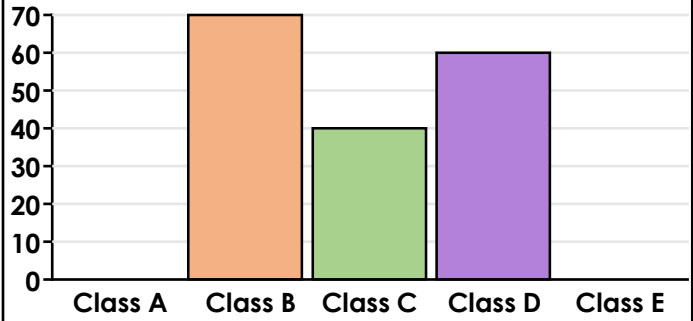


More children like Dahl than Haig, and fewer like Haig than Walliams. Complete the bar chart showing how many children could like Dahl and Haig.

⭐E    PS
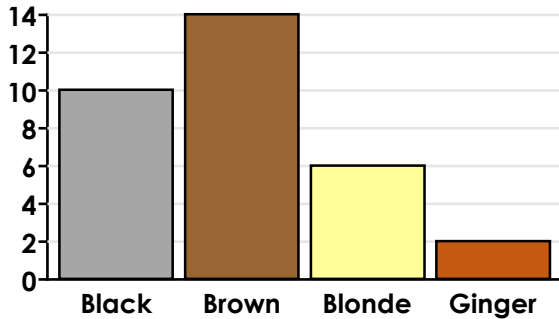
## 4b. The bar chart shows house points.



Class A have fewer points than Class E, but Class E have more than Class C. Complete the bar chart showing how many points Classes A and E could have.

⭐E    PS

## 5a. Maleeha interprets the bar chart below about hair colour.



More children have blonde hair than brown hair.
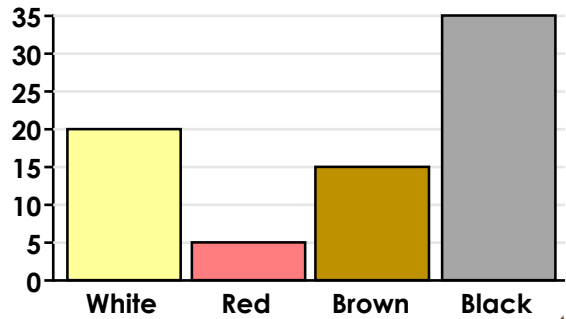
Is she correct? Explain your answer.

⭐E    R

## 5b. Jakub interprets the bar chart below about shoes.



Fewer children have white shoes than brown shoes.

Is he correct? Explain your answer.

⭐E    R

## 6a. A class collects data about pets.

| Hamsters | •••• •• |
| Rabbits | ••• •• |
| Cats | |
| Dogs | |

🐾 = 10 pets

There are 10 more cats than dogs

There are 20 more dogs than rabbits.

Draw a bar chart to display this information. Choose a suitable scale.

⭐E    PS

## 6b. A class collects data about bugs.

| Slug | |
| Worm | |
| Ladybird | 🔍 🔍 |
| Butterfly | 🔍 |

🔍 = 2 bugs

We saw 6 fewer slugs than worms.

We saw 12 more worms than ladybirds.

Draw a bar chart to display this information. Choose a suitable scale.

⭐E    PS

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**Reasoning and Problem Solving – Bar Charts – Year 3 Expected**
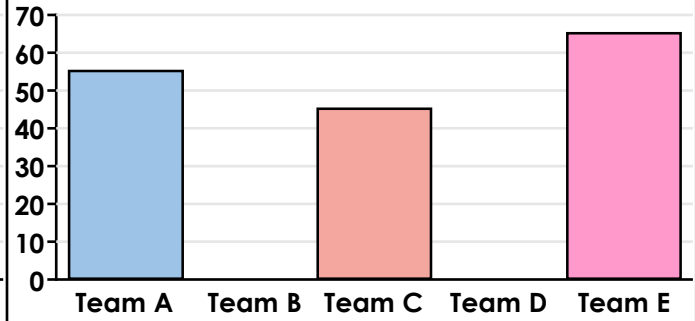
**7a. The bar chart shows favourite stories.**
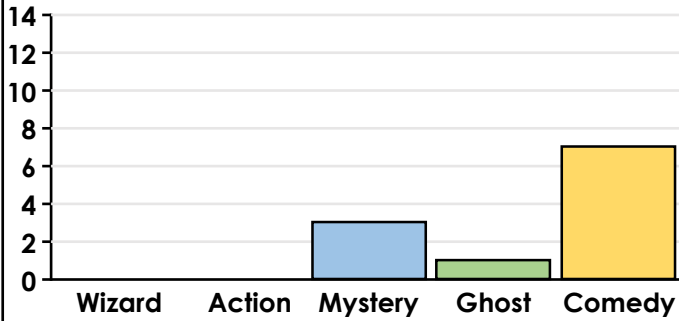


Fewer children like action than wizards, but more like action than comedy. Complete the bar chart to show how many children could like wizards and action.

GD · PS

**7b. The bar chart shows quiz scores.**
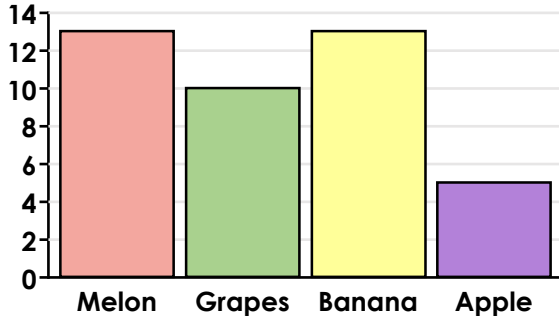


Team B have more points than Team D, and Team D have fewer than Team C. Complete the bar chart to show how many points Teams B and D could have.

GD · PS

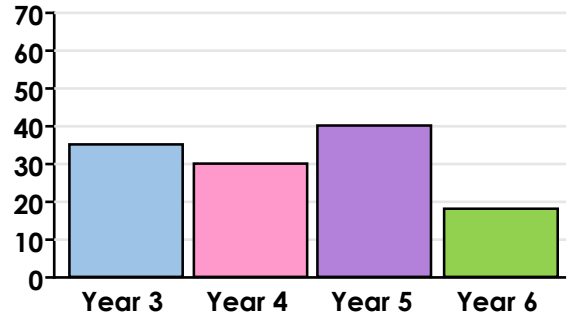**8a. Blake interprets the bar chart below about fruit.**



We sold more apples than bananas.

Is he correct? Explain your answer.

GD · R

**8b. Julia interprets the bar chart below about school dinners.**



10 more Year 5 children have school dinners than Year 3.

Is she correct? Explain your answer.

GD · R

**9a. A class collects data about cakes.**

| Chocolate | |
| Red Velvet | 🍰🍰🍰 |
| Rainbow | 🍰🍰🍰🍰🍰 |
| Vanilla | |

🍰 = 2 cakes
🍰 = 4 cakes

We sold 3 more chocolate cakes than vanilla cakes.

We sold 6 fewer vanilla cakes than rainbow cakes.

Draw a bar chart to display this information. Choose a suitable scale.

GD · PS

**9b. A class collects data about goals.**

| Team A | 👕👕👕 |
| Team B | |
| Team C | |
| Team D | 👕👕👕👕👕 |

👕 = 2 goals
👕 = 4 goals

Team B scored 5 fewer goals than Team C.

Team C scored 10 more goals than Team D.

Draw a bar chart to display this information. Choose a suitable scale.

GD · PS

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**Reasoning and Problem Solving – Bar Charts – Year 3 Greater Depth**

# Reasoning and Problem Solving
## Bar Charts

### Developing
**1a. Various answers, for example: 1 child likes pears and 7 children like apples.**
**2a. No, the scale goes up in tens so 20 children have read between 40-50 books.**
**3a. An accurate bar chart showing 3 for bus, 4 for van, 2 for motorbike and 9 for car. The scale should have intervals of 1.**

### Expected
**4a. Various answers, for example: 30 children like Dahl and 5 like Haig.**
**5a. No, 6 children have blonde hair and 14 children have brown hair.**
**6a. An accurate bar chart showing 10 for hamsters, 15 for rabbits, 45 for cats and 35 for dogs.**

### Greater Depth
**7a. Various answers, for example: 8 children like action stories and 14 like wizard stories.**
**8a. No, the chart shows that they have sold 5 apples and 13 bananas.**
**9a. An accurate bar chart showing 6 for chocolate, 10 for red velvet, 9 for rainbow and 3 for vanilla.**

# Reasoning and Problem Solving
## Bar Charts

### Developing
**1b. Various answers, for example: 9 children have dogs and 13 have cats.**
**2b. No, the scale goes up in twos so 6 children like hockey.**
**3b. An accurate bar chart showing 4 for ham, 10 for cheese, 2 for tuna and 4 for veggie. The scale should have intervals of 2.**

### Expected
**4b. Various answers, for example: Class E have 50 points and Class A have 10.**
**5b. No, 20 children have white shoes and 15 children have brown shoes.**
**6b. An accurate bar chart showing 10 for slug, 16 for worm, 4 for ladybird and 1 for butterfly.**

### Greater Depth
**7b. Various answers, for example: Team D have 20 points and Team B have 60.**
**8b. No, the chart shows 35 Year 3 children and 40 Year 5 children have school dinners.**
**9b. An accurate bar chart showing 5 for Team A, 25 for Team B, 30 for Team C and 20 for Team D.**