

Maths Mastery

Year 4

Graphs and Charts Solve Problems



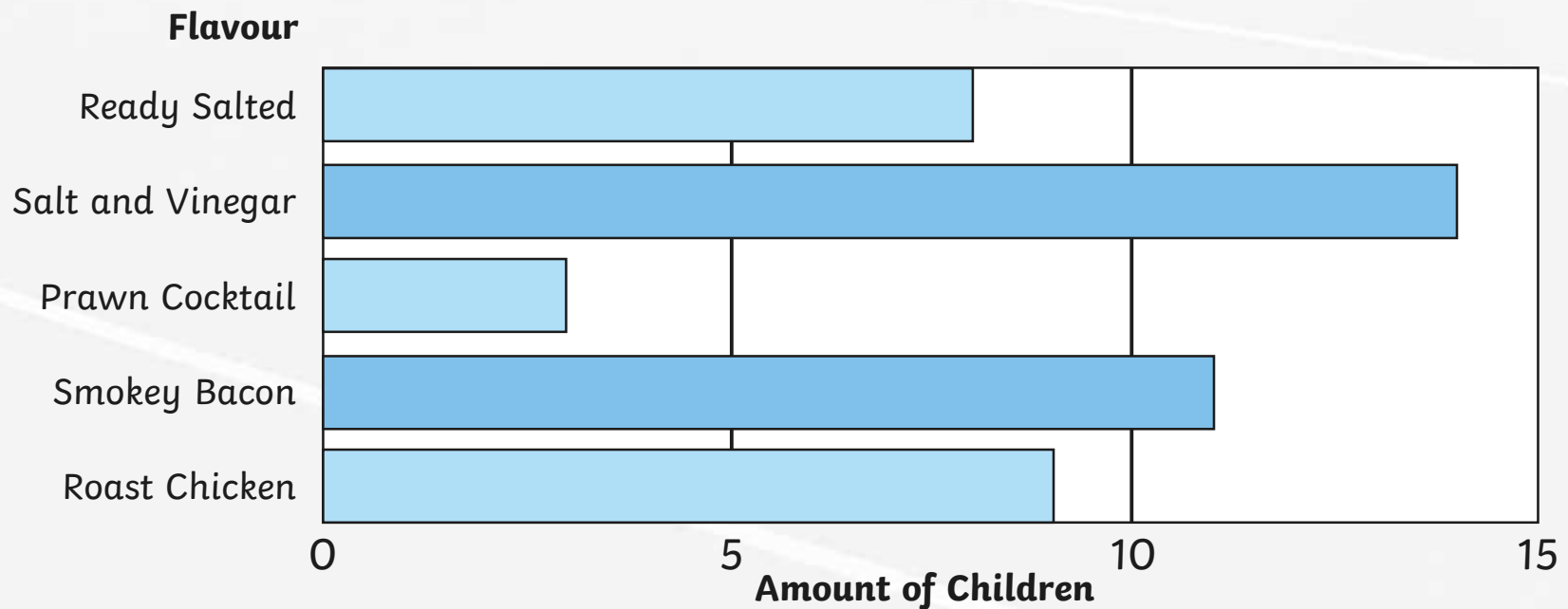
Favourite Crisps

Alfie draws this bar chart to show the data he has collected about some children's favourite flavour of crisps.

He has written some questions.

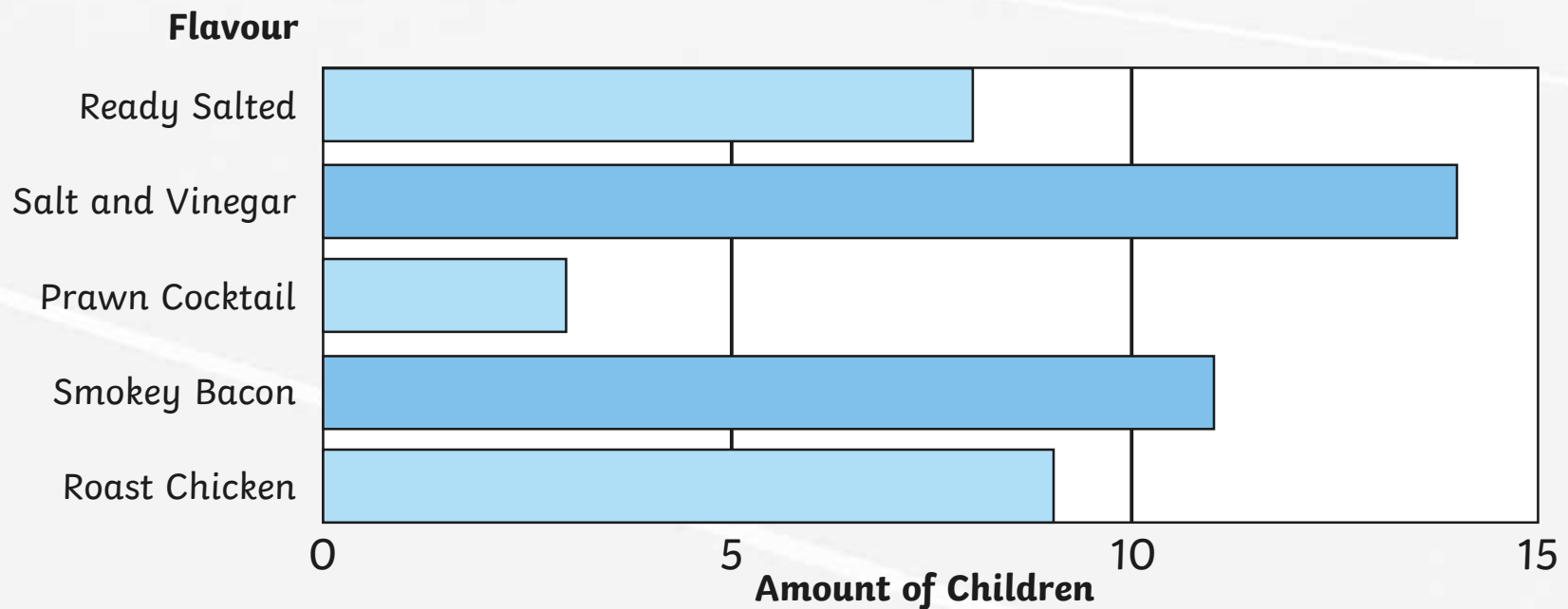
Answer the questions, then discuss your answers with a partner.

Write some questions of your own for your partner to answer.



Favourite Crisps

1. How do you know which flavours are most and least popular?
2. One flavour is chosen by two more children than another flavour. Which flavours are they?
3. Alfie says, "More children chose Ready Salted and Salt and Vinegar than the other 3 flavours." Explain why he is not correct.
4. Four more children are asked their favourite flavour and all choose Smokey Bacon. How will this change the favourite flavour?



Favourite Crisps Answers

1. How do you know which flavours are most and least popular?

Longest and shortest bars.

2. One flavour is chosen by two more children than another flavour. Which flavours are they?

Smokey bacon and roast chicken.

3. Alfie says, "More children chose Ready Salted and Salt and Vinegar than the other 3 flavours." Explain why he is not correct.

Ready salted and salt and vinegar were chosen by 22 children, but 23 chose the other 3 flavours, so he is incorrect.

4. Four more children are asked their favourite flavour and all choose Smokey Bacon. How will this change the favourite flavour?

15 children will have chosen Smokey Bacon, which is more than the 14 who chose Salt and Vinegar, so Smokey Bacon is now the flavour chosen by the most children.



Children's Heights

Laura and Fatima draw this histogram to show the data they have collected about the height of some children.

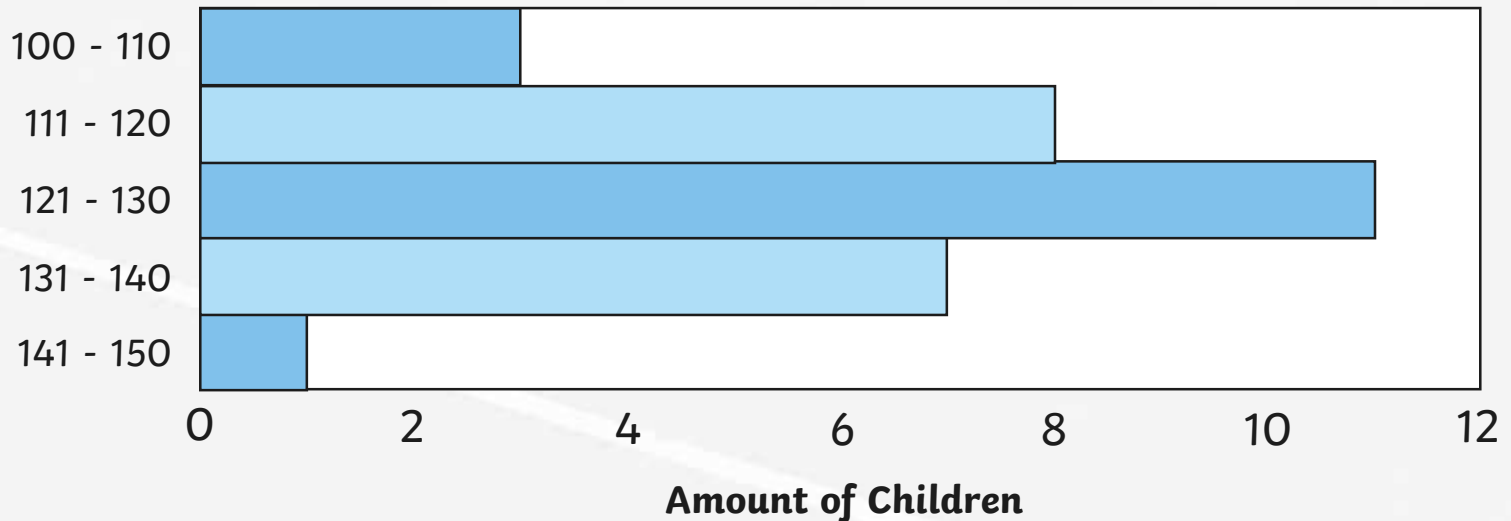
They have written some questions.

Answer the questions, then discuss your answers with a partner.

Write some questions of your own for your partner to answer.

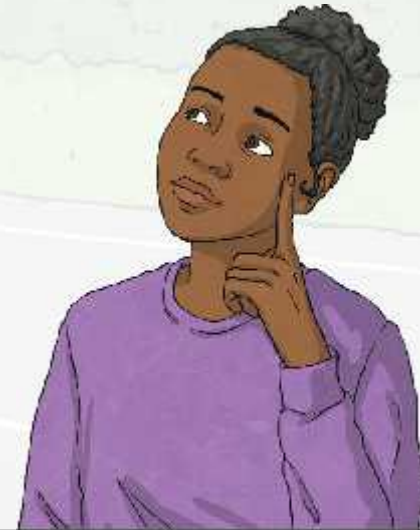


Height of Children

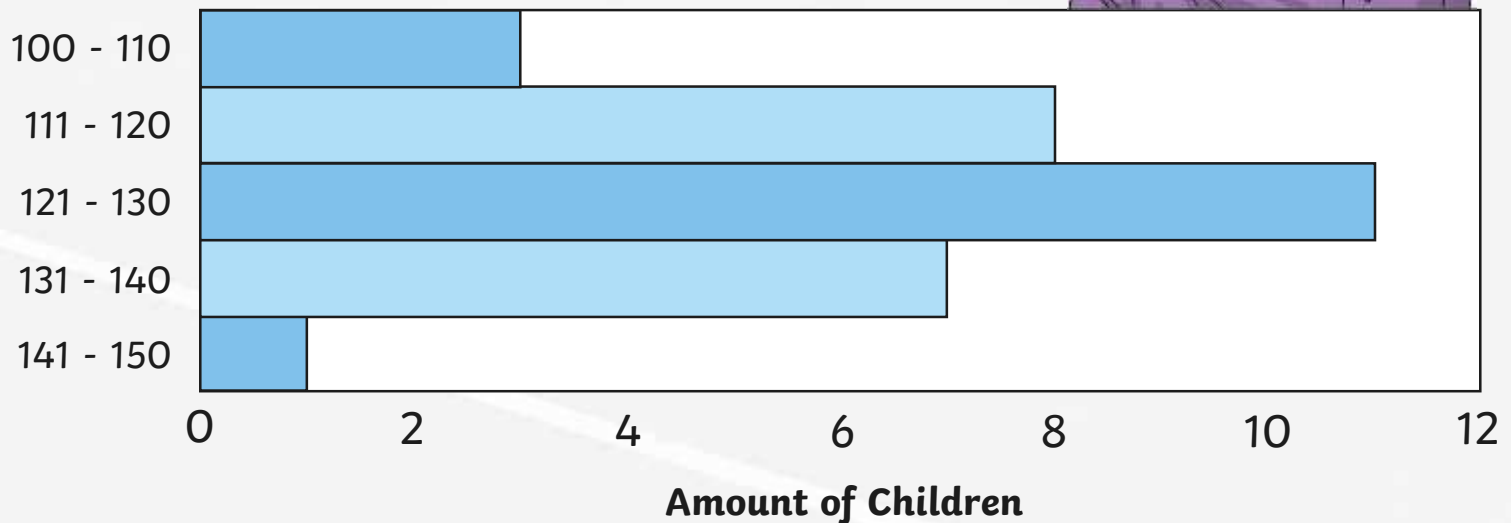


Children's Heights

1. How many children are 131cm or taller?
2. Laura says, "I am 125cm tall. That means 21 children are shorter than me." Explain why Laura could be correct, but is unlikely to be correct.
3. Explain what you notice about the shape made by the bars. What does this tell you about the height of a group of children?



Height of Children



Children's Heights Answers

1. How many children are 131cm or taller?

8 children.

2. Laura says, "I am 125cm tall. That means 21 children are shorter than me." Explain why Laura could be correct, but is unlikely to be correct.

22 children are shorter than 131cm. There are 11 children that are shorter than 120cm and 11 children that are between 121cm and 130cm. It is possible that all 10 of those children (not including Laura) are shorter than 124cm but this is unlikely.

3. Explain what you notice about the shape made by the bars. What does this tell you about the height of a group of children?

The middle bars are the tallest, and the outer bars are shorter. It shows that in this group of children most children's heights are closer together, and there are few children who are much taller or shorter.



Pizza Sales

Alfie and Laura ask a local pizza takeaway to record how many of each different pizza are sold in one day. They record the answers on a pictogram.

They have written some questions.

Answer the questions, then discuss your answers with a partner.

Write some questions of your own for your partner to answer.



Type of Pizza

Cheese and Tomato



Hawaiian



Pepperoni



Chilli Beef



Vegetarian



Amount Sold



Pizza Sales

1. How many pizzas are sold altogether?
2. Explain how you can find the total number of pizzas sold without counting the number of each pizza sold.
3. How many more pizzas without meat (cheese and tomato and vegetarian) are sold than pizzas with meat? Explain how you found the answer.
4. The pizza takeaway charges £5 for the cheese and tomato and £8 for the Hawaiian pizzas. Which of these two pizzas takes more money?

Type of Pizza

Cheese and Tomato



Hawaiian



Pepperoni



Chilli Beef



Vegetarian



Amount Sold  = 4

Pizza Sales Answers

1. How many pizzas are sold altogether?

82

2. Explain how you can find the total number of pizzas sold without counting the number of each pizza sold.

Count whole pizzas on the pictogram and multiply by 4 ($19 \times 4 = 76$), then add on the extras ($3 + 1 + 1 + 1 = 6$.)

3. How many more pizzas without meat (cheese and tomato and vegetarian) are sold than pizzas with meat? Explain how you found the answer.

8 ($45 - 37 = 8$, or match the whole and part pizza of the 2 groups and 2 pizzas are left, which represents 8 pizzas.)

4. The pizza takeaway charges £5 for the cheese and tomato and £8 for the Hawaiian pizzas. Which of these two pizzas takes more money?

They take the same amount of money.
($£5 \times 24 = £120$, $£8 \times 15 = £120$)



