Reasoning and Problem Solving Step 6: Pie Charts with Percentages

National Curriculum Objectives:

Mathematics Year 6: (6S1) <u>Interpret and construct pie charts and line graphs and use</u> these to solve problems

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Turn a pie chart into a table. Values are multiples of 10 up to 5 selections. Expected Turn a pie chart into a table. Values are multiples of 5 and with up to 5 selections.

Greater Depth Turn a pie chart into a table. Values are multiples of any number and with up to 5 sets of input data.

Questions 2, 5 and 8 (Reasoning)

Developing Explain a child's mistake in reading a pie chart. Values are multiples of 10 with up to 5 selections.

Expected Explain a child's mistake in reading a pie chart. Values are multiples of 5 and with up to 5 selections.

Greater Depth Values are multiples of any number and with varying amounts of input data. Can be more than 1 pie chart.

Questions 3, 6 and 9 (Reasoning)

Developing What information can you get from this pie chart. Values are multiples of 10 with up to 5 selections.

Expected What information can you get from this pie chart. Values are multiples of 10 and with up to 5 selections.

Greater Depth What information can you get from this pie chart. Values are multiples of any number and with varying amounts of input data. Can be more than 1 pie chart.

More Year 6 Statistics resources.

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



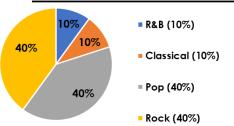
Pie Charts with Percentages

Pie Charts with Percentages

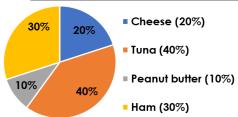
1a. Children were asked their favourite genre of music. This was the result:

1b. Children were asked their favourite sandwich filling. This was the result:

Favourite Genre of Music







20 children chose pop.

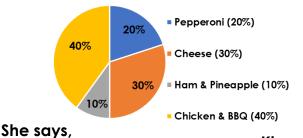
Use this information to help you convert the pie chart into a table.

5 children chose peanut butter.

Use this information to help you convert the pie chart into a table.

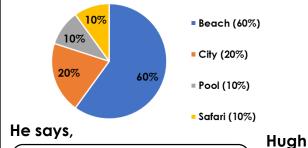
2a. Klara is reading a pie chart about the favourite pizza toppings of 50 children.





2b. Hugh is reading a pie chart about the favourite destinations of 50 children.

Favourite Holiday Destination



Most people like chicken and BBQ on their pizza.

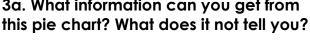
Klara

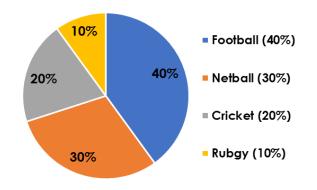
Twenty children like city breaks.

Is he right? Explain how you know.

3a. What information can you get from

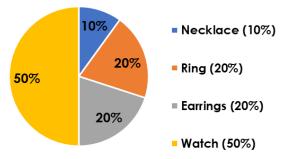
Is she right? Explain how you know.





3b. What information can you get from this pie chart? What does it not tell you?

Favourite Type of Jewellery









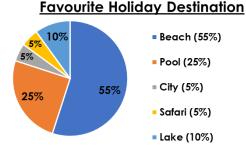
Pie Charts with Percentages

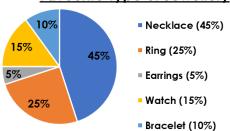
Pie Charts with Percentages

4a. Children were asked what their favourite type of jewellery was. This was the result:

4b. Children were asked their favourite holiday destination. This was the result:

Favourite Type of Jewellery





110 children chose beach holidays.

90 children prefer necklaces.

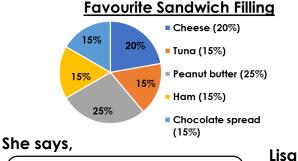
Use this information to help you convert the pie chart into a table.

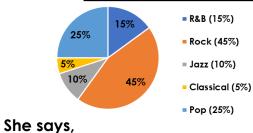
Use this information to help you convert the pie chart into a table.

> 5b. Carly is reading a pie chart about the favourite music genre of 200 children.

5a. Lisa is reading a pie chart about the favourite sandwich fillings of 60 children.







Twice as many said peanut butter as said cheese.

The number who like classical is three quarters



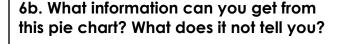
as many as like jazz.

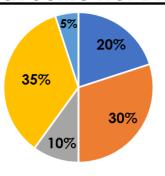
6a. What information can you get from this pie chart? What does it not tell you? Is she right? Explain how you know.

Carly

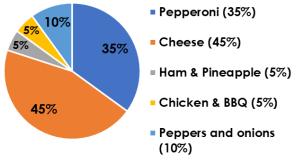
Favourite Hot Drink

Is she right? Explain how you know.





Favourite Pizza Topping









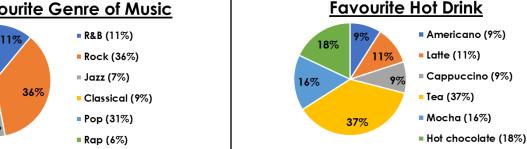
Pie Charts with Percentages

Pie Charts with Percentages

7a. Children were asked about their favourite genre of music. This was the result:

7b. Children were asked their favourite hot drink. This was the result:

Favourite Genre of Music



22 children like R&B.

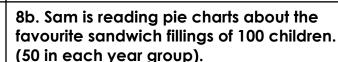
31%

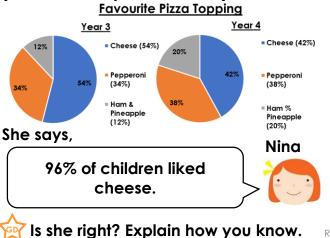
18 children chose cappuccino.

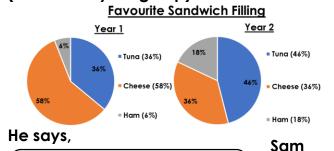
Use this information to help you convert the pie chart into a table.

Use this information to help you convert the pie chart into a table.

8a. Nina is reading pie charts about the pizza topping preferences of 100 children (50 in each of years 3 and 4.)



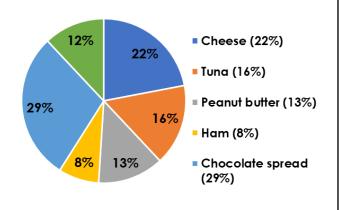




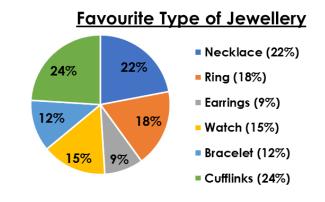
More than half of the children said cheese.

9a. What information can you get from this pie chart? What does it not tell you?

Is he right? Explain how you know.



9b. What information can you get from this pie chart? What does it not tell you?





classroomsecrets.co.uk

Reasoning and Problem Solving Pie Charts with Percentages

Developing

1a. R&B – 5, Classical – 5, Pop – 20, Rock – 20

2a. No, although that section is largest it is not over 50%.

3a. Various answers, for example: It tells you that twice as many said/chose cricket than rugby. It does not tell you what people were choosing for as it has no title.

Expected

4a. Necklace – 90, Ring – 50, Earrings – 10, Watch – 30, Bracelet – 20

5a. No because double 20% is 40%.

6a. Various answers, for example: That different numbers of people liked each drink. You cannot tell what the drinks were because there is no key.

Greater Depth

7a. R&B – 22, Rock – 72, Jazz – 14, Classical – 18, Pop – 62, Rap – 12

8a. No, she has added the percentages rather than number of children.

9a. Various answers, for example: You can tell that the proportion for cheese is larger than tuna. It does not tell you what people were choosing for as it has no title.

<u>Reasoning and Problem Solving</u> <u>Pie Charts with Percentages</u>

Developing

1b. Cheese – 10, Tuna – 20, Peanut Butter – 5, Ham – 15

2b. No, Hugh has not worked out what the percentage is worth; 10 children like city breaks.

3b. Various answers, for example: It tells you that half of the people asked chose a watch. It does not tell you how many people that might have been.

Expected

4b. Beach – 110, Pool – 50, City – 10, Safari – 10, Lake – 20

5b. No, half as many children liked classical than jazz.

6b. Various answers, for example: You can tell that just less than half of the people liked cheese. You cannot tell how many people chose any topping as there are no numbers given.

Greater Depth

7b. Americano – 18, Latte – 22, Cappuccino – 18, Tea – 74, Mocha – 32, Hot chocolate – 36

8b. No, he has only looked at the Year 6 pie chart.

9b. Various answers, for example: You can tell that half as many people liked earrings as rings. You cannot tell how many people chose any jewellery type as there are no numbers given.

