

Can I interpret sets of data with different sample sizes represented in pie charts?

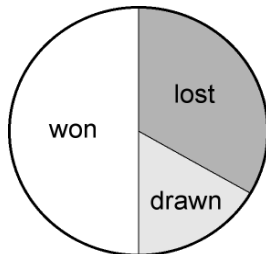
Teaching guidance

Key vocabulary

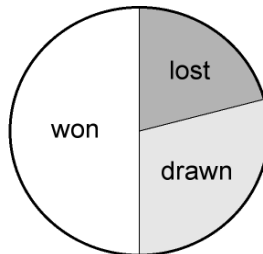
pie chart, fraction, percentage, proportion, segment, angle, sample size, compare, represent

Models and images and resources

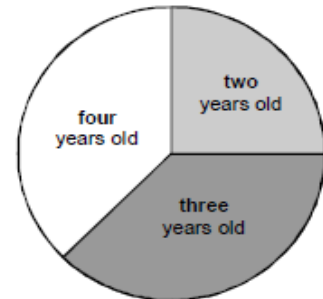
Pie charts from educational resources, newspapers, magazines and websites



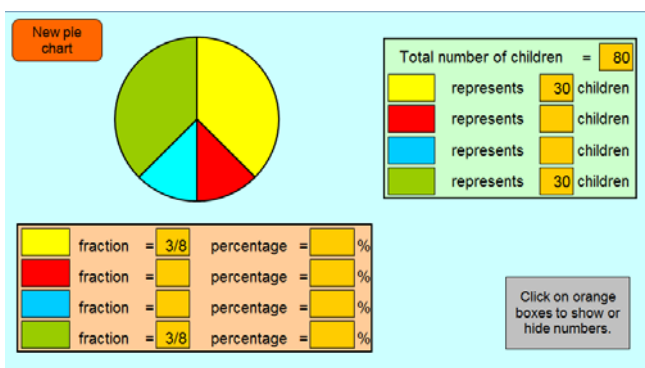
Netball



Football



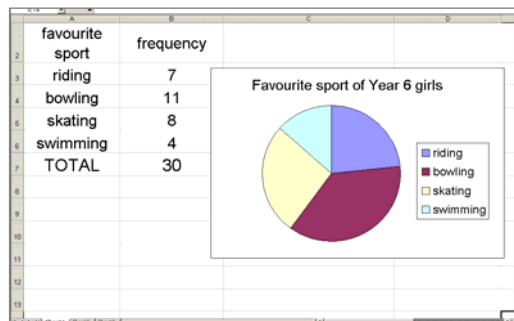
Pie chart spreadsheet



This spreadsheet produces random pie charts. For each pie chart, you can hide or reveal the number of children that the whole chart represents and the number of children that each segment represents.

Data-handling programs

Data handling ITP

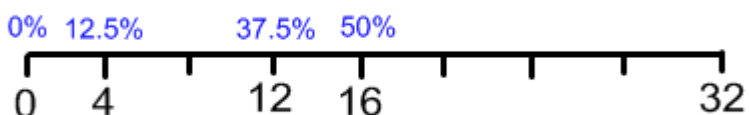
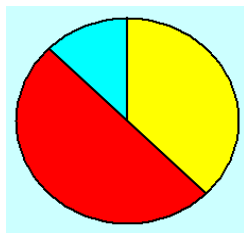


Spreadsheet programs

Teaching tips

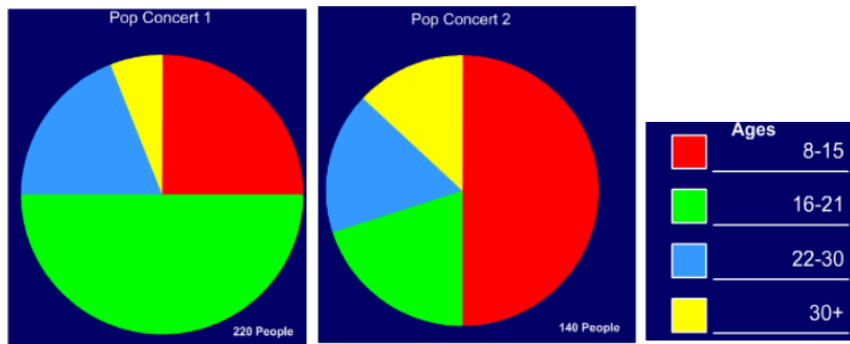
- Encourage children to ‘read’ any representation of data in order to establish key information about what it represents, before interpreting the chart to answer specific questions. For example, they should establish what the chart represents and what they know about the sample size.
- Model using an empty number line to represent the total sample represented by a pie chart, marking onto the number line the percentage represented by each segment and the actual number represented. Next, cut up the segments for the children to place in order of value of the total along the line.

32 children



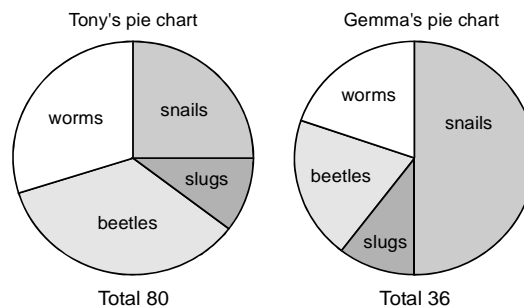
- Use ICT to quickly create pie charts representing different sample sizes, in order to compare them, and discuss how errors in interpreting the numbers represented by equivalent segments might arise.

Data handling ITP



- Develop mathematical explanations, using a range of explanations for children to rate and discuss. (Test mark schemes are a good source of explanations that achieved full marks and those that did not achieve any marks.) For example, ask children to compare and discuss the responses to the test question below.

Test question: Tony and Gemma looked for snails, worms, slugs and beetles in their gardens. They each made a pie chart to show what they found. Who found more snails?



Question and chart based on 2000 KS2 Test A Question 17 © QCA

Some answers:

- Gemma found a half and Tony found a quarter, and a half is more than a quarter so Gemma found more.
- Tony found two more than Gemma.
- Tony found one quarter of 80 which is 20 but Gemma found half of 36 which is 18 and 20 is more than 18 so Tony found more.
- Tony found more but Gemma's amount is bigger.