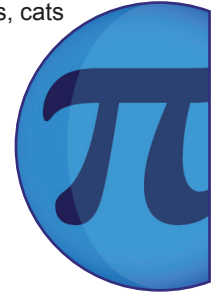




Most Popular Pet

Key Learning Content

This film serves as a simple introduction to different types of graph. Using the question of whether dogs, cats or fish are the most popular pet in America as an example, data is shown as a pictogram, bar graph, scatter graph and pie chart. The scatter graph shows a negative correlation between number of pets and number of pet owners for each animal.



Core Outcomes

Learning Points

- Be able to use and apply number in everyday personal, domestic or community life.
- Be able to use different methods of presenting data, such as pictograms, bar charts, scatter graphs and pie charts.
- Be able to use appropriate methods of tabulation to enable the construction of statistical diagrams.
- Be able to interpret statistical diagrams.
- Be able to understand the concept of average (data could be in list or tabulated form).

Suggested Activities

- Collect data on household pets owned by families of students; analyse and tabulate results.
- Find examples of pictograms, bar charts and pie charts in the media and interpret them.

Extension Outcomes

Learning Points

- Be able to understand and use conventions for rectangular Cartesian Coordinates.
- Be able to plot points (x, y) in any of the four quadrants of a graph.
- Be able to assess the correlation of data from a scatter graph and interpret results.

Suggested Activities

- Collect data on height and weight of students and plot data on a scatter graph.
- Use a spreadsheet package to assess the correlation of data and compare with assessments of correlation made by eye.



Pictograms can be used to plot the number of pet owners and the type of pet they have.

Related Films

To use before the lesson plan:

Numbers: Animal Maths

This film tries to establish whether animals understand and are able to use mathematics.

To use after the lesson plan:

Nightingale's Diagram

This film explains why Florence Nightingale could claim to be as much a mathematician as a nurse.

Coordinate Geometry: Descartes

This film tells the story of Descartes, the mathematician and philosopher who invented x,y coordinates.

Can Eating Fish Prevent Murder?

This film asks whether correlation between data proves any causal link.

Guide Lesson Plan

Introduction

Ask the students to say what is their favourite pet. Then survey how many pets the students have, and how many households have different types of pet. Discuss whether there is more than one answer to the question: What is the most popular pet?

Show Film

Most Popular Pet

Main Activity

Foundation

Ask students to design a questionnaire on a topic of their choice and use it to conduct a survey of other students within the school. Discuss and agree different ways of collecting and recording the data, to aid drawing graphs. Present and analyse the results using pictograms, bar charts and pie charts. Compare different presentation styles and vote on the most effective presentation.

Advanced

Ask students to come up with hypotheses about causal links between the characteristics and behaviour of students, e.g. taller students do better at sports, students who live a long way from school are more likely to be late. Design a questionnaire and conduct a survey to collect data for a scatter graph. Plot the scatter graph, assess correlation and interpret results.

Extension Activity

Get students to find examples of mathematical graphs in the media, and summarise and present their findings. Get students to vote for the most informative, the most misleading and the clearest examples. Find examples of other types of graph and discuss their use.

Optional Extra

Enter data into a spreadsheet package and use the built-in functions to generate scatter graphs. Give a numerical measure of correlation, and fit 'best-fit' lines to the data. Compare the computer-generated correlations and best-fit lines to those done by eye.

