



Distorted Graphs: Heatwave

Key Learning Content

This film shows how easy it is to give a misleading message from a chart by omitting the labelling or presenting the axes incorrectly, using a simple bar chart as an example. The importance of accuracy in creating chart titles, axes labels and scales is stressed.

No specific knowledge is required prior to watching the film beyond familiarity with graphs and charts.



Core Outcomes

Learning Points

- Be able to use and apply number in everyday personal, domestic or community life.
- Be able to use bar charts to present data.

Suggested Activities

- Take mislabelled graphs and correct their labelling.
- Present data on a bar chart.

Extension Outcomes

Learning Points

- Be able to interpret information presented in a range of different graphs and statistical diagrams.
- Be able to use appropriate methods of tabulation to enable the construction of statistical diagrams.

Suggested Activities

- Take charts with their labels and titles removed and attempt to interpret them.
- Collect data from different sources; consolidate and present these using graphs and charts.
- Interpret graphs and charts in order to explore global warming issues.



Without the correct information, graphs can be useless or misleading!

Related Films

To use before the lesson plan:

Histograms: Snapshot

This film shows how drawing a chart with frequency proportional to area and not bar height helps photographers take better pictures.

To use after the lesson plan:

The Sardine Run

This film demonstrates how to show positive and negative data on the same chart or graph.

How Long is a Metre?

This film stresses the importance of accuracy in chart measurements.

Guide Lesson Plan

Introduction

Take a newspaper, magazine or internet article which uses a graph or chart to illustrate a news headline. Black out the headline and the titles and labels on the chart and ask students to speculate about what is hidden. Compare attempts and contrast the different possible interpretations.

Show Film

Distorted Graphs: Heatwave

Main Activity

Foundation

Show the students examples of poorly drawn, poorly labelled or mislabelled graphs and charts and ask them correct them. Give the students chart data and get them to present the data in misleading ways so as to make contradictory points.

Advanced

Find a government or academic report that presents analysis on charts and graphs, and black out all the chart titles and labels. Get the students to read the report, understand its conclusions, and then relabel and retitle the graphs and charts so that they make sense and support the argument made.

Extension Activity

Foundation

Give students a spreadsheet containing data on a particular topic (e.g. a group of students, their age, height, weight, sporting activities and academic results) and get them to draw a single graph or chart that communicates an interesting point, without any explanation beyond the chart titles and labels.

Advanced

Get students to collect data from the form, tabulate it clearly then, working independently, draw a bar chart illustrating the data. Display all the charts and see how many different versions there are. Do different versions of the chart give different messages?

Optional Extra

Give students access to one of the reports published by the IPCC (Intergovernmental Panel on Climate Change) which contains graphs and charts showing different aspects of global warming. Get students to select an example of one of the more complicated charts and present it, with an interpretation, to their peers.

