



Comparing Distributions

**Description:**

Compare the rainfall patterns in two different areas of the UK over 12 months.

Numeracy Strategy reference:

Interpreting and discussing results

Compare two simple distributions using the range and one of the mode, median or mean.

Task analysis:

Pupils are required to:

- Suggest and test hypotheses
- Calculate Mode, Median, Mean and Range
- Draw frequency diagrams.

Learning Objectives:

Suggest a hypothesis. Calculate the mean, mode, median and range from discrete data. Construct a frequency diagram for discrete data. Use this data to compare two distributions.

Suggested activities:**Oral work and mental calculation:**

Using the OHP or whiteboard, display the monthly rainfall figures for York and Plymouth from the activity sheet. Discuss with pupils how to calculate the mean, median, mode and range of each and the relative merits of each. Introduce potential hypotheses about rainfall patterns in the N. East and S. West.

Teaching activity:

Using the activity sheet pupils should calculate the mean, median, mode and range of the data and answer the questions.

With further rainfall data downloaded from the Met Office website, pupils should suggest a hypothesis about rainfall patterns in two other comparative locations, for example in the N. East and the N. West. Ask the pupils to print out some annual rainfall information, for example the Manchester and Durham weather stations. They should use this information to produce sufficient results to support or reject their hypothesis. (Ideally pupils should produce mean, mode, median and range data as well as completing a frequency polygon for both areas)

Plenary:

Look at the data produced to see which produced the most reliable and most useable information. Review the terms and vocabulary used.

Resources:

Printable activity sheets of rainfall. Access to the Met Office website. Excel spreadsheet software.

Learning outcomes:

Pupils will be able to hypothesise and interpret data sets in order to make comparisons. They will be able to calculate the mean, mode, median and range. They will be able to draw and interpret a frequency polygon.

Extension activities:

Suggest a hypothesis about changing temperature in the UK using the figures for 1659 and 2000. Produce results to test the hypothesis and discuss as a class.

Extension activities (cont):

Monthly Mean Central England Temperatures (degrees C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1659	3.0	4.0	6.0	7.0	11.0	13.0	16.0	16.0	13.0	10.0	5.0	2.0
2000	4.9	6.3	7.6	7.8	12.1	15.1	15.5	16.6	14.7	10.3	7.0	5.8