



**LESSON:** Frogs (1/2 lessons) **Using the available data to gain information**

**Learning Objectives:**

- **Discuss problems that can be addressed by statistical methods, and identify related questions to explore.**
- **Determine sample sizes and degree of accuracy needed.**
- **Calculate statistics from data, mean, mode and median. Data collection: tally charts.**
- **Consider grouped data and statistics from these.**

**Keywords:**

Mean, Mode, Median, Tally chart, Grouped data, Sample, Population

**Activity:**

Send one pupil out of the room. Now briefly (for approx 1-2 secs) show the class the sheet Frogs 1. Pupil to return. Ask them to tell you how many frogs are on your sheet. Tell them they are allowed to ask one person for help. After a guess let pupil decide whether to be allowed to ask 5 more people or stick with one (appropriate sample). List all guesses on the board. Ask class what could we do with the data to help guesser be more sure? Revise mean, mode, median, and why using all three is appropriate. Check how accurate the final guess is.

Repeat the exercise using Frogs 2. Allow the whole class to have a guess. Consider with them how to collect the data (tally chart). Discuss how to find the mean, mode and median. Decide on the final answer with class. How accurate was it?

Note: It may be that the above is one whole lesson in itself.

Using the Frogs 3 sheet. Repeat show exercise. Due to the fact that there are more frogs, group the classes for the tally chart, discuss with class appropriate intervals. Discuss with class appropriate ways of finding mode and median. Why can we not find the mean? How do we estimate it? Check the final guesses with frogs on sheet.

Give class problems which reinforces ideas based on the exercises above e.g. give six numbers with a range of 29, mode of 5, median of 6 and mean of 10 (1,5,5,7,12,30).

**Attainment:**

**All pupils will:** Understand and find simple means, modes and medians.

**Most pupils will:** Calculate statistics from discrete and grouped data. Have some idea on their interpretation.

**Some pupils will:** Fully appreciate ideas on sampling and appropriate statistics and solve problems effectively and with sound methods.

**Resources:**

Frogs sheets 1-3 or Frogs PowerPoint file/Whiteboard

**Classroom Management:**

Whole class teaching. Question and answer session followed by individual consolidation on problem sheet.

**Looking backward at:**

Using simple statistics: mean, mode, median. Data collection using tally charts.

**Looking forward to:**

Effective sampling, further work on grouped data, cumulative frequency.

**Pupil Assessment:**

Verbal feedback in class.

Answers to problem sheet set

**Homework:**

Problem sheet focusing on reinforcing class ideas.