

Mathematics Department Workshops

Topic: Relative Frequency

Resource Sheet HT1.REL.3

Prompt sheet

Are you or your learners interested in code breaking?

Much of code breaking relies on knowing the relative frequencies of the letters in the language. (Think about why the term used here is relative frequency rather than probability)

There is some data on

http://en.wikipedia.org/wiki/Letter_frequencies#Relative_frequencies_of_letters_in_other_languages

What questions would you want to ask to have confidence in the data?

You may want to search for data on languages that are known to your learners.

Your learners can collect data from a range of sources but in general it is best working as a pair so that one can read out the letters and one record using a tally chart to speed up the process.

It can be useful to collect the data in batches (say every 100 words).

Alternative approaches could include:

- Everyone can work on the same text
- Everyone working on the same language but from different sources
- Groups working on different languages

At appropriate stages the collected data can be compared with the published data and the possible reasons for any differences explored.

If you extend the work into code breaking the NRICH site

http://nrich.maths.org/public/viewer.php?obj_id=2197 is a good starting point.

Some pupils may like to try the Cipher Challenge <http://www.cipher.maths.soton.ac.uk/>

The Bletchley Park offers a wide range of code breaking possibilities some of which are relevant in the context of this topic. <http://www.bletchleypark.org.uk/edu/teachers/ccresources.rhtm>