 Breaking the code

“HSOGQZWJR WV ZDH LJVZ TJMHUCOF MHQTJR MDWGD PJO GQR GDQRIH ZDH MJUFS”

The phrase above is a quote from a famous person. Each of the letters has been replaced by another letter to create a code. The aim of this activity is to break the code and reveal the quote.

Analysing the frequency of letters

Using a page of a newspaper or a book, complete the frequency table below. For each letter record its frequency on the page.

| **Letter** | **Tally** | **Frequency** |
| --- | --- | --- |
| A |  |  |
| B |  |  |
| C |  |  |
| D |  |  |
| E |  |  |
| F |  |  |
| G |  |  |
| H |  |  |
| I |  |  |
| J |  |  |
| K |  |  |
| L |  |  |
| M |  |  |
| N |  |  |
| O |  |  |
| P |  |  |
| Q |  |  |
| R |  |  |
| S |  |  |
| T |  |  |
| U |  |  |
| V |  |  |
| W |  |  |
| X |  |  |
| Y |  |  |
| Z |  |  |

Represent the information in the frequency table above as a histogram.

Analysing small words

Using the same page of the newspaper or book, list all of the ***two*** and ***three*** lettered words in the frequency table below and complete the frequency table. For each word record its frequency on the page.

| **Word** | **Tally** | **Frequency** |
| --- | --- | --- |
| as |  |  |
| is |  |  |
| to |  |  |
| the |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Using the analysis

Using the insights gained from the analysis above, break the code to reveal the famous quote.

Outcomes

* communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols MA4‑1WM
* recognises and explains mathematical relationships using reasoning MA4‑3WM
* collects, represents and interprets single sets of data, using appropriate statistical displays MA4‑19SP

All outcomes referred to in this unit come from [Mathematics K-10 Syllabus](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/learning-areas/mathematics/mathematics-k-10) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2012

Content

* use a tally to organise data into a frequency distribution table
* construct and interpret frequency histograms and polygons