**Statistical Surprises and Stories**

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| **Key Ideas in Statistics and Mathematics****(from Senior Secondary Guides)** |
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| **Uncover stories** **in which variation is omnipresent** | **Unlock stories** **using models, abstractions and representations** | **Tell stories** **using evidence and reasoning** |

[**https://sway.com/JBTWmM8vpxS6FN5t**](https://sway.com/JBTWmM8vpxS6FN5t)

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| **Topic** | **Resources** | **Variation** | **Surprise / Story**  |
| 1. Time Series
 | Baby names A, B, C, ResearchSummary 1 /2 Written responseTime Series Report Writing | How does this data vary over time?Trend Seasonal / cyclical | Don’t start with ‘model’ example |
| 1. Bivariate Data
 | Learning from exemplar (AIS Data set)Inzight instructionsBivariate Report Writing | How do these data sets vary in relation to each other? | AttendanceDiamondsAISHeptathlon |
| 1. Inference
 | IntroBootstrappingInference Report Writing | Variation within a groupBy chance aloneSample variabilitySampling variation | Perception of graphs / difference |
| 1. Simultaneous equations
 | Play doh creations | Types of solutions (deterministic models…) | Makes 15 internal credits |
| 1. Probability
 | Alcohol testing drunk driversProbability summarySee think do checkEstimating means and standard deviations | Experimental / Theoretical / True Random variables / variation | Risk / Absolute / Relative |
| 1. Probability Distributions
 | One page summaries​Using geogebraDistributions experimental and theoretical​All black scenarios  | How much variation is too much?Model and ‘real life’ | What do we expect?  |
| 1. Revision
 | Post its | Every one… | Key ideas |
| 1. Data Visualisation
 | http://www.radionz.co.nz/national/programmes/thiswayup/audio/201779602/data-visualisation​http://pitchinteractive.com/ |  |  |