

**Flexible
schedule**

Student workshops (Years 7 to 10) Using Data to Develop our World! (Statistics in the Data Age)



SIX-SESSION option

Compared with the 3-session option, the 6-session option:

- supports deeper exploration and learning
- utilises additional hands-on apparatus (or equivalent) where students apply statistics to problem-solve
- enables students to begin applying knowledge to their own investigation earlier and receive increased feedback

\$12 incl GST per student per session (minimum student numbers apply)

Session 1: What's the problem?

- Examples from practice – how, where & why Statistics, Systems thinking & Scientific research are applied
- Problem Solving Cycle, Experimental Design & Statistical Investigation Process
- Systems thinking and Cause-and-effect
- Acknowledging & reflecting real-world variation
- Developing research questions which are answerable – testable hypotheses & investigations

Session 3: Designing for Data

- Types of studies – Experiment, Observational, Survey
- Data Sources & Quality
- Sampling / Inference – reflecting real-world variation
- Validity & Reliability, Bias & Precision
- Applying to student investigations – group support & discussions

Session 5: Are we related, or different?

- Exploring and presenting data – two variables
 - Comparing groups
 - Visual displays
 - Assessing associations/relationships
 - How to do so using free software
 - Summary reporting

Session 2: Student-led investigations

- Facilitating student-led investigations – to be submitted to national competition by 10 Nov
- Establishing project (investigation) topics
- Discussions with each group – exploring and developing their ideas
- Reporting

Session 4: Dealing with Data

- Data set construction
- Variable Types
- Exploring and presenting data – single variable
 - Data checking
 - Visual displays – pitfalls and best practice
- Introduction to free statistical software
- Introduction to models, analyses and comparisons – overview

Session 6: Applying in practice

- Hands-on apparatus (F2F deliveries) or online equivalent: problem-solving, testing & reflecting



About the presenter - Dr Peter Howley

Professor of Statistics & Systems thinking -- Award Winning Educator

STEM Professional -- Statistical Consultant

ACARA Curriculum Officer -- Director - School Maths Competition

National STA STEM Ambassador

Statistical Education Section Chair - Statistical Society of Australia

Creator - National Schools Poster Comp

See also <https://ssss.org.au/about-the-presenters/>