

NSW Year 11/12, Stage 6 Biology / Investigating Science (Term 1, 2018 +)



Working Scientifically

Outcomes covered: BIO 11/12-1, BIO 11/12-3, BIO12-5, BIO 11/12-6BIO12-7, INS 11/12-2, INS 11/12-3. INS 11/12-5, INS 11/12-6, INS 11/12-7

Summary content: A 90-minute exploration using EEG headsets to work scientifically. The session is based around group scientific investigation work, not lecture and presentation. Students will **design** an investigation using provided equipment and stimuli. They will **collect, analyse and evaluate** their data following consistent criteria. They will then communicate this to a specific audience.

Time: 90 minutes

Space needed: large area where up to 5 x groups of 5 students can work without distraction

Our set-up: We need 70 minutes prior for set up

Number of students actively involved: Up to 25 (5 x groups)

Equipment required: 1 x laptop per group. We can provide 2 laptops for group use if needed.

What we provide: 1 x EEG per group, data recording sheets, 2 x laptops

Overview

Part A (20 minutes)

1. Introduction: What is the aim of the session
2. Explanation of how to use the NeuroSky MindWave EEG
3. Demonstration of use (1 x students)
4. Explanation of supplied stimuli and recording sheets
5. Teams established



Part B (70 minutes)

6. Teams design and conduct investigation following scientific guidelines provided (45 minutes)
7. Finalise and analyse data (10 minutes)
8. Communicate the findings in a 210 character 'tweet' on the Mindz site. Tweet aimed at non-scientific audience. (5 minutes)
9. Class regroups to discuss validity, variables & problems encountered with working scientifically. (10 mins)
10. **Careers in Science.** Round-up of the session and quick look at STEM careers.

Cost

\$380 + gst