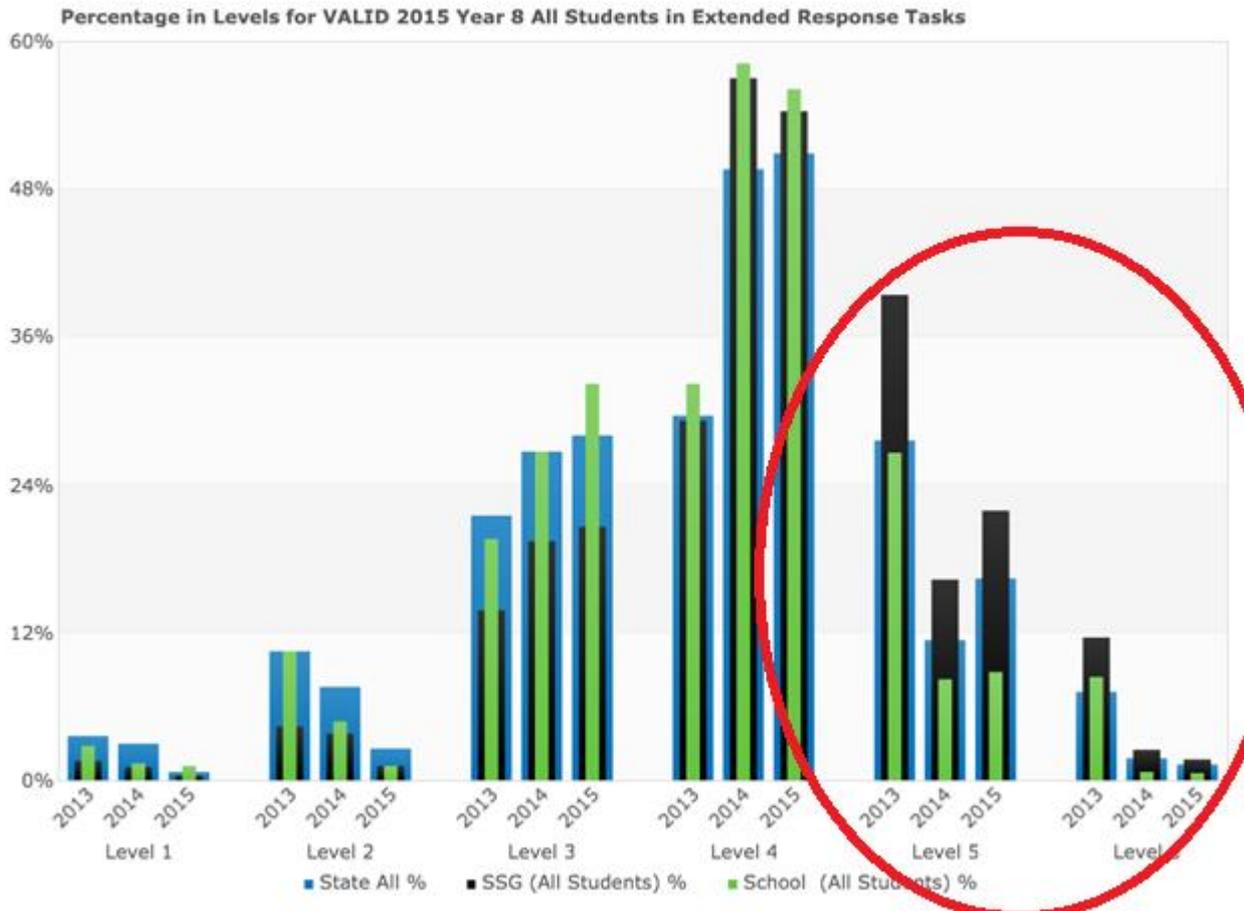


Appendix

SMART Analysis of VALID 2015 Science Assessment



This chart of student performance in the Year 8 VALID Science assessment shows compares the performance of three groups over three years. The three groups: a middle class inner west school; Similar schools group performance (based on the socioeconomic ICSEA) and State All students which includes all students (government and non-government) that sat the test shows two significant trends over three years:

The tail is diminishing. There are fewer students in the lower two performance bands (Levels 1 and 2)

There are fewer students performing at the highest level (Level 6).

VALID Science Written Response Analysis

The VALID Science test assessed three written tasks:

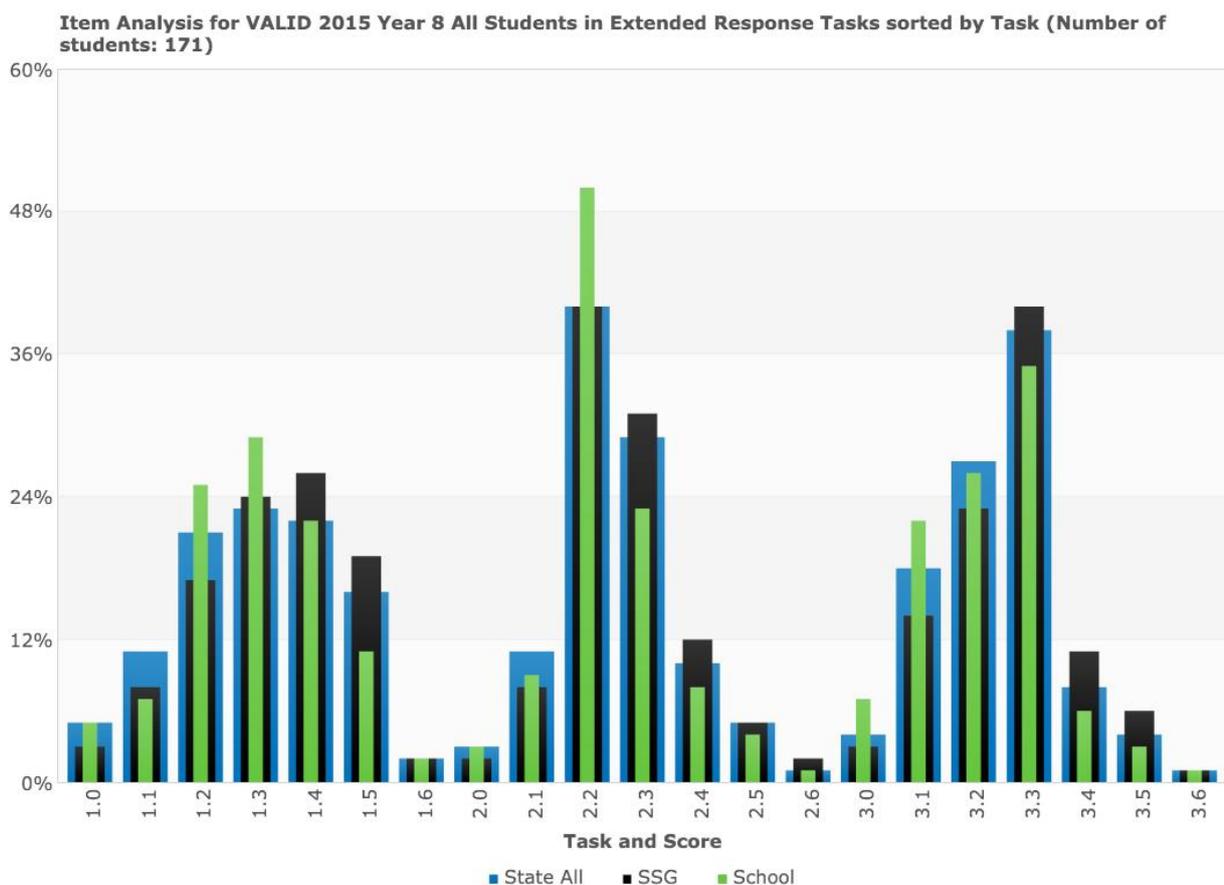
1. Animal footprints
2. Get out Jack! Time's up.
3. Perry's party trick

Each of the three tasks has clear links to the syllabus. They have been developed as instruments of assessment to illicit best responses from students.

Each task is marked holistically using a SOLO assessment framework.

Yet the item analysis chart below shows that the majority of students do not respond well to these questions.

Scores of 1,2 and 3 in these marking schemes indicate a common sense response. Scores of 4,5 and 6 indicate the student has responded using knowledge gleaned from what they have been taught from the science syllabus over the past two years.



VALID Science Written Tasks

These written three tasks were used to assess student knowledge and understanding of aspects of the Science syllabus. These images were accessed from the School Measurement, Assessment & Reporting Toolkit (SMART).

Animal footprints

Here is a video of a koala and a kangaroo and diagrams of their footprints.

Identify two differences between the footprints of these animals.

Why do the koala and kangaroo have different features?

Explain your answer in as much detail as you can.



koala



kangaroo

Get out Jack, your time is up!

Jack's house uses electricity to heat water for the shower.

Jack often has long showers.

His mum bought a four-minute timer that sticks to the wall in the shower to let Jack know when he should turn off the water and get out of the shower.

Which natural resources might be used when someone is having a warm shower?

How can reducing shower time benefit our environment?

Explain your answer in as much detail as you can.



Perry's Party Trick

Perry rubbed an air-filled balloon with a woollen cloth.

This caused the effect shown in the video.

Explain the effect shown in the video.



A Generalised SOLO Marking Schema

Scoring for each extended response task is done holistically, with all information provided by the student being considered in an assessment of the extent to which the student demonstrates knowledge and understanding of a major concept. In this way, scoring provides a way to capture information about how well the concept is known, as well as finding out how much is known about the concept being tested.

The SOLO taxonomy can be used by students to evaluate the quality of their own responses. Sharing this simple taxonomy with students provides them with a tool of self-assessment. That is, a metacognitive tool for assessment AS learning.

Here is a simplified summary of the meaning of each score/code.

Code	SOLO	Description
NA		non-attempt; the page for responding to the task is left blank
0	P	a response was made but it does not meet any of the marking criteria
1	U ₁	the response contains a single piece of commonsense information relevant to the major concept
2	M ₁	the response contains two or more pieces of commonsense information relevant to the major concept
3	R ₁	the response contains a commonsense explanation about the major concept that relates two or more pieces of commonsense information
4	U ₂	the response contains a single piece of 'scientific' information relevant to the major concept that clearly reflects syllabus expectations or accepted science
5	M ₂	the response contains two or more pieces of 'scientific' information relevant to the major concept that clearly reflect syllabus expectations or accepted science
6	R ₂	the response contains a clearly stated 'scientific' explanation about the major concept that relates two or more pieces of information, which clearly reflect syllabus expectations or accepted science