WHY I DON'T HATE NAPLAN

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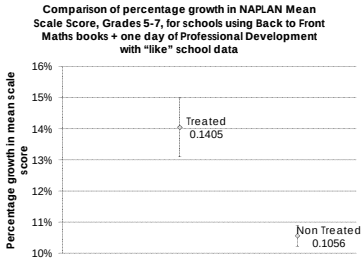
MAVCON 2015

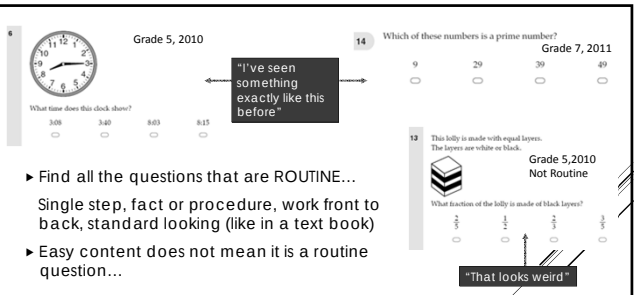
PROOF… NAPLAN GROWTH GRADES 5-7



Data source: MySchool website NAPLAN results	Every B2F school, 2012-14	"Like" schools for B2F
Mean growth percentage: diff in means/grade 3 mean	14.05%	10.56%
Standard Error	0.0095	0.0034
Variance	0.0008	9.08E-05
P(T<=t) two-tail, unequal variance	0.006	
t Stat	3.48	
P(Z<=z) two-tail	0.0005	
z	3.4705	

TODAY IS ABOUT:

1. NAPLAN can be improved because maths is not genetic
2. Looking at NAPLAN tests to see proficiency strands
3. Looking at NAPLAN tests to see content
4. What is NAPLAN really testing?
5. Examining NAPLAN graph shapes
6. So… what do we do to improve data without compromising learning?

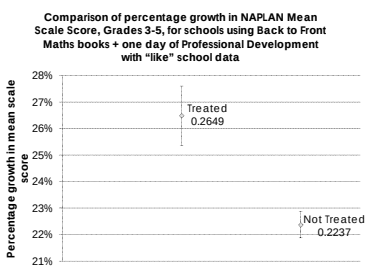


- Find all the questions that are ROUTINE…

  Single step, fact or procedure, work front to back, standard looking (like in a text book)
- Easy content does not mean it is a routine question…

HOW MANY QUESTIONS ARE **ROUTINE**?

PROOF… NAPLAN GROWTH GRADES 3-5



Data source: MySchool website NAPLAN results	Every B2F school, 2012-14	"Like" schools for B2F
Mean growth percentage: diff in means/grade 3 mean	26.49%	22.37%
Standard Error	0.0112	0.0049
Variance	0.00150	0.00024
P(T<=t) two-tail, unequal variance	0.0042	
t Stat	3.3727	
P(Z<=z) two-tail	0.0007	
z	3.3721	

- Only 5-10 questions on any NAPLAN test since 2008 are routine.
- Average is 7.
- Less for grades 7-9 than grade 3.

MY FINDINGS ON **ROUTINE** QUESTIONS IN NAPLAN:

- **For grade 3:** How many questions have three digit numbers?
- **For grade 5:** How many questions have numbers with more than three digits? How many have decimal numbers?
- **For grade 7:** How many questions have indices, negative numbers, or tricky fractions (e.g. not halves, quarters, fifths or tenths)?

NAPLAN is not a Fluency Test

HOW MANY QUESTIONS HAVE **HARD CONTENT**?

My findings:

- 50-75% of questions on all tests were key number concepts
- 25-45% of questions on all tests were "weird space"
- 5 or less questions on all tests were "everything else". These were also usually the routine questions.

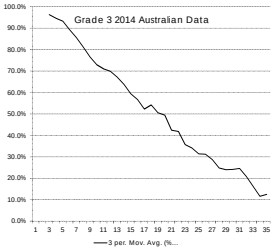
WHAT PATTERNS ARE THERE IN THE CONTENT FOR NAPLAN?

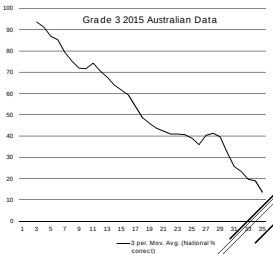
Look for:

- Multi-step questions
- Working backwards or filling a gap rather than working forwards
- Non-standard looking example (irregular shapes…)
- Pick the operation instead of work out the answer
- What proficiency strand do these questions include?

NAPLAN is an Understanding Test

WHAT MAKES NAPLAN TRICKY?



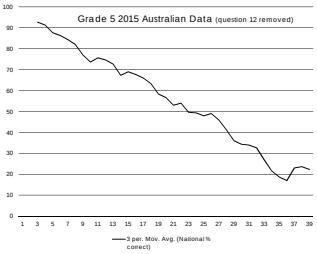


GRADE 3 DATA SHAPE

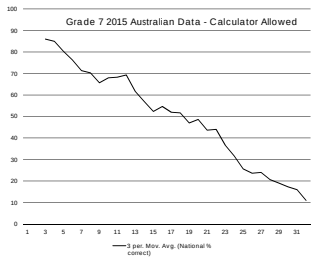
How many questions fit into these three categories?

- N: It's a key number concept (think: place value, fractions, operations, number lines)
- S: It's a weird looking question about measurement or geometry (think: an irregular shape, a flip on an angle)
- E: Everything else that doesn't fit into the first two categories (think: clocks, algebraic patterns, chance that isn't fractions, geometry that isn't weird…)

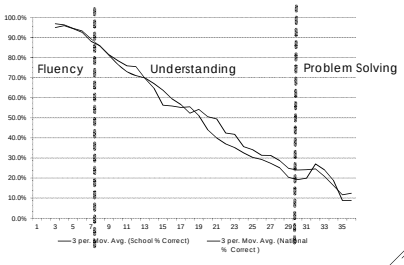
WHAT PATTERNS ARE THERE IN THE CONTENT FOR NAPLAN?



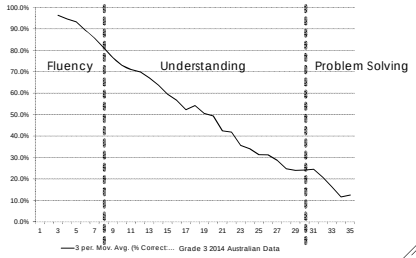
GRADE 5 DATA SHAPE



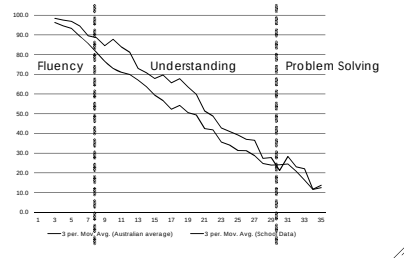
GRADE 7 DATA SHAPE



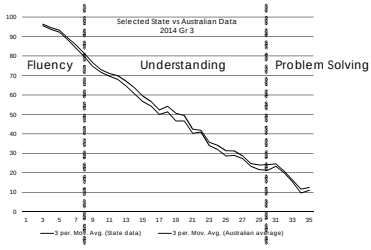
A TYPICAL SCHOOL IN THAT STATE



FEATURES OF THE SHAPE



HOW IS THIS DATA DIFFERENT?



WHAT YOUR DATA SHAPE SAYS: STATE

1. Focusing on drill and skill will only improve the first few questions, as those are the only routine questions on the test.
2. Focusing on building deep understanding and transference is pivotal. Make sure that kids really understand what they are being taught.
3. Don't skip key number concepts.
4. Make sure that kids solve UNFAMILIAR or NON ROUTINE questions regularly, not as an "added extra".

KEYS TO IMPROVING NAPLAN

To see more:

Email: tierney@kennedypress.com.au

Free online modules:
www.backtofrontmaths.academy/lms

Intervention program now available through MAV, QAMT, MASA and MAWA. Effect size 0.77 in 10 weeks.