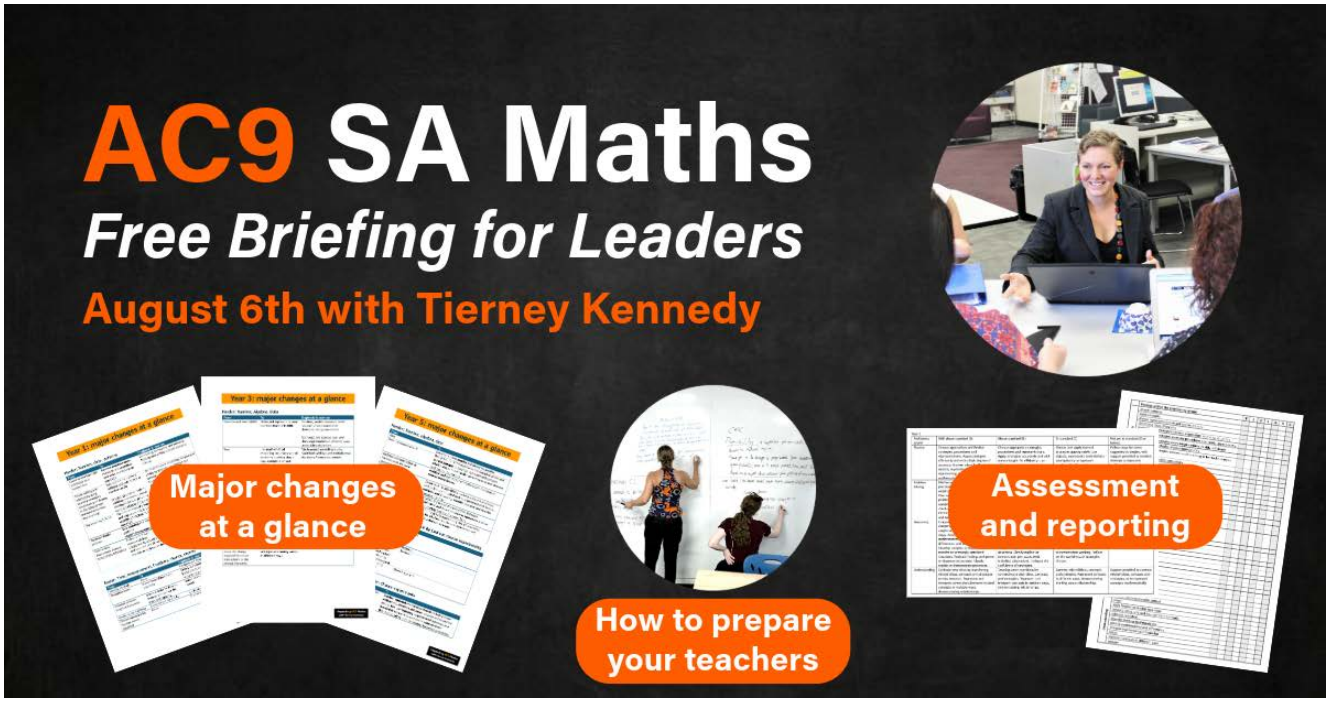

My initial questions:

Stand-outs or surprises that my team needs to know about:

Content	Actions	Models and Vocabulary

Content	Actions	Models and Vocabulary

	Process within the proficiency strand	F	1	2	3	4	5	6
Fluency	*answer robustly*							
	apply concepts							
	choose representations or and approximations							
	definitions, facts, theorems							
	manipulate mathematical objects, expressions, relations, equations							
	procedures or strategies: carry out procedures accurately, appropriately							
	procedures or strategies: carry out procedures flexibly, efficiently							
	procedures or strategies: choose appropriately							
	procedures or strategies: connect understanding to learned strategies and procedures							
	Skills: develop, practise, consolidate							
Problem solving	problems: apply strategies and heuristics							
	problems: check validity of approach							
	problems: do not immediately know the answer							
	problems: formulate or represent situations mathematically							
	problems: identify and create problems							
	problems: mathematical and real world or practical problems							
	problems: plan how to solve							
	solutions: analyse							
	solutions: communicate							
	solutions: communicate with reference to the situation							
	solutions: evaluate with regard to context							
	solutions: interpret in terms of context							
	solutions: justify reasonableness							
	solutions: make decisions mathematically							
	solutions: review and check							
Reasoning	*adapt known to unknown*							
	analyse							
	compare and contrast related ideas							
	deduce							
	evaluate							
	experiment or investigate							
	explain							
	generalise							
	infer							
	justify							
	logical thought and actions							
	model							
	prove true or false							
	reflect on choices							
	transfer learning to a new context							
Understanding	*adapt*							
	apply familiar to develop new ideas							
	connect: ideas, why and how, different concepts							
	cultivate new ideas							
	describe thinking mathematically							
	identify commonalities and differences							
	interpret mathematical information							
	relate							
	represent concepts in different ways							
	transfer							

	Process within the proficiency strand	F	1	2	3	4	5	6
Fluency	*answer robustly*							
	apply concepts	1	1	1	1	1	1	1
	choose representations or and approximations			1	1	1	1	1
	definitions, facts, theorems			1	1	1	1	1
	manipulate mathematical objects, expressions, relations, equations	1	1	1	1	1	1	1
	procedures or strategies: carry out procedures accurately, appropriately	1	1	1	1	1	1	1
	procedures or strategies: carry out procedures flexibly, efficiently				1	1	1	1
	procedures or strategies: choose appropriately		1	1	1	1	1	1
	procedures or strategies: connect understanding to learned strategies and procedures	1	1	1	1	1	1	1
	Skills: develop, practise, consolidate		1	1	1	1	1	1
Problem solving	problems: apply strategies and heuristics	1	1	1	1	1	1	1
	problems: check validity of approach						1	1
	problems: do not immediately know the answer							
	problems: formulate or represent situations mathematically	1	1	1	1	1	1	1
	problems: identify and create problems				1	1	1	1
	problems: mathematical and real world or practical problems	1	1	1	1	1	1	1
	problems: plan how to solve					1	1	1
	solutions: analyse					1	1	1
	solutions: communicate	1	1	1	1	1	1	1
	solutions: communicate with reference to the situation			1	1	1	1	1
	solutions: evaluate with regard to context						1	1
	solutions: interpret in terms of context			1	1	1	1	1
	solutions: justify reasonableness							1
	solutions: make decisions mathematically							
	solutions: review and check						1	1
Reasoning	*adapt known to unknown*							
	analyse					1	1	1
	compare and contrast related ideas	1	1	1	1	1	1	1
	deduce							
	evaluate						1	1
	experiment or investigate				1	1	1	1
	explain	1	1	1	1	1	1	1
	generalise							
	infer							
	justify							1
	logical thought and actions	1	1	1	1	1	1	1
	model		1	1	1	1	1	1
	prove true or false							
	reflect on choices	1	1	1	1	1	1	1
	transfer learning to a new context							
Understanding	*adapt*							
	apply familiar to develop new ideas					1	1	1
	connect: ideas, why and how, different concepts	1	1	1	1	1	1	1
	cultivate new ideas					1	1	1
	describe thinking mathematically	1	1	1	1	1	1	1
	identify commonalities and differences	1	1	1	1	1	1	1
	interpret mathematical information		1	1	1	1	1	1
	relate	1	1	1	1	1	1	1
	represent concepts in different ways	1	1	1	1	1	1	1
	transfer							

	Processes for each year level	F	1	2	3	4	5	6
Fluency	*answer robustly*	-	-	-	-	-	A	A
	apply concepts	C	C	C	C	C	C	C
	choose representations or and approximations	A	B	C	C	C	C	C
	definitions, facts, theorems	-	A	C	C	C	C	C
	manipulate mathematical objects, expressions, relations, equations	C	C	C	C	C	C	C
	procedures or strategies: carry out procedures accurately, appropriately	C	C	C	C	C	C	C
	procedures or strategies: carry out procedures flexibly, efficiently	A	A	B	C	C	C	C
	procedures or strategies: choose appropriately	B	C	C	C	C	C	C
	procedures or strategies: connect understanding to learned strategies and procedures	C	C	C	C	C	C	C
	Skills: develop, practise, consolidate	A	B	C	C	C	C	C
Problem Solving	problems: apply strategies and heuristics	C	C	C	C	C	C	C
	problems: check validity of approach	-	-	-	A	B	C	C
	problems: do not immediately know the answer – respond to unfamiliar	A	A	A	A	A	A	A
	problems: formulate or represent situations mathematically	C	C	C	C	C	C	C
	problems: identify and create problems	-	A	B	C	C	C	C
	problems: mathematical and real world or practical problems	C	C	C	C	C	C	C
	problems: plan how to solve ***(develop strategies)***	-	A	A	B	C	C	C
	solutions: analyse	-	-	-	A	C	C	C
	solutions: communicate	C	C	C	C	C	C	C
	solutions: communicate with reference to the situation	-	A	C	C	C	C	C
	solutions: evaluate with regard to context	-	-	-	A	B	C	C
	solutions: interpret in terms of context	A	B	C	C	C	C	C
	solutions: justify reasonableness	A	A	A	A	B	B	C
	solutions: make decisions mathematically	A	A	A	B	B	B	B
	solutions: review and check (***check the reasonableness***)	-	A	A	B	B	C	C
Reasoning	*adapt known to unknown*	-	-	A	A	B	B	B
	analyse	-	-	A	B	C	C	C
	compare and contrast related ideas	C	C	C	C	C	C	C
	deduce or infer (make inferences)	-	-	-	-	A	B	B
	evaluate	-	-	-	A	B	C	C
	experiment or investigate	A	A	B	C	C	C	C
	explain or communicate	C	C	C	C	C	C	C
	Generalise ***(create and algorithm or rule)***	-	-	A	C	C	A	A
	justify	A	A	B	B	B	B	C
	logical thought and actions	C	C	C	C	C	C	C
	Model, **formulate**	A	B	C	C	C	C	C
	prove true or false	-	-	-	-	A	A	B
	reflect on choices – give reasons for	C	C	C	C	C	C	C
	transfer learning to a new context	-	-	-	-	A	A	A
Understanding	*adapt*	-	-	A	A	B	B	B
	apply familiar to develop new ideas	-	A	B	B	C	C	C
	connect: ideas, why and how, different concepts	C	C	C	C	C	C	C
	cultivate new ideas (***develop strategies, develop understanding***, ***connect ideas***)	A	B	C	C	C	C	C
	describe thinking mathematically	C	C	C	C	C	C	C
	identify commonalities and differences	C	C	C	C	C	C	C
	interpret mathematical information	B	C	C	C	C	C	C
	relate	C	C	C	C	C	C	C
	represent concepts in different ways	C	C	C	C	C	C	C
	transfer	-	-	-	-	A	A	A

Foundation: major changes at a glance

Harder: Number, data

From	To	Emphasis is now on
Count to 20	**Quantify** (rather than count) to ***at least* 20**	Counting and subitising are given as examples
Connect numbers up to 10;	Connect numbers to ***at least* 20**	Connecting different representations (name, numeral, position in the sequence). Don't need to read the name.
Order small collections	Compare size of collections to ***at least* 20**	
New	**Add, subtract, equal sharing** of collections to *at least* 10	Partition and combine collections to 10; Represent practical situations including quantifying and operations
Yes/no questions, make simple inferences	Collect, sort and compare data represented by objects and images	Investigate familiar situations Compare and sort data

Easier: Time, measurement, space

From	To	Emphasis is now on
Duration and order of events plus sequence of days	No duration. Refer to times of the day and sequence.	Morning, lunch time, afternoon, evening Day of the week
Direct and indirect comparisons for length, mass, capacity	Identify attributes Direct comparison only	Communicate reasoning Compare size by lining them up rather than using a "go between"
Sort and classify 3D objects, explaining the basis for classification Copy, continue and create patterns with 3D objects	Sort, name and create familiar 2D shapes Recognise and describe familiar 2D shapes within 3D objects, giving reasons *Patterns are separated from objects*	2D shapes rather than names for 3D objects Sorting and describing giving reasons but without formal classification
Describe position and movement	Describe position and location, but not movement	Familiar space In relation to other objects or people

Year 1: major changes at a glance

Harder: Number, data, patterns

From	To	Emphasis is now on
Count to and from 100 and locate on a number line;	**Connect** number names, numerals and quantities, and order numbers to ***at least* 120**	Connecting, comparing and ordering. *Reading and writing number names is missing.*
Simple adding and subtracting using counting strategies (no grouping or sharing in the achievement standard other than skip counting)	Solve problems involving addition and subtraction of numbers **to 20** Practical problems involving addition, subtraction, **equal sharing and equal grouping** using calculation strategies	Use mathematical modelling for practical problems (money is suggested as a context). Solve problems. Use calculation strategies rather than counting strategies.
Skip count by 2, 5, 10	Partition into equal groups and skip count in 2, 5, 10 to quantify collections to ***at least* 120**	Purpose is for quantifying.
Continue simple patterns	Skip counting and repeating patterns Identify the **repeating unit**	Comparing to identify the repeating unit.
Collect data, draw simple displays make simple inferences	Collect and record categorical data, create one-to-one displays, and compare and discuss the data using **frequencies**	Compare data using frequencies and discuss findings. Frequencies is a new term. It means the total results for a category. Tally marks are specifically mentioned in the content descriptors.

Easier: Time, measurement, fractions, chance, money

From	To	Emphasis is now on
Identify one half	Gone	Fractions are delayed until year 2
Recognise coins	Gone from achievement standard.	Money is a context within modelling. Transactions are mentioned, but not recognising coins.
Informal units for length and capacity	Informal units for length. Indirect comparison for mass and capacity.	Units need to be uniform and used end-to-end
Clocks to the half hour	Duration but not clocks.	Clocks are delayed until year 2
Chance outcomes for familiar events classified	Gone	Chance is delayed until year 3

Year 2: major changes at a glance

Harder: Number, spatial terminology

From	To	Emphasis is now on
Count to and from 1000	Order and represent numbers to ***at least* 1000**; Use place value to partition	Rearrange and rename two- and three-digit numbers in terms of their parts Counting is no longer mentioned at all in year 2
Perform simple addition and subtraction calculations; Represent multiplication and division by grouping into sets	Solve practical problems involving calculation (+- two digit numbers **using regrouping**; x÷ by one digit numbers using strategies); **Recall** + facts to 20 and extend to subtraction facts; **Recall** x facts for 2s and extend to doubling and halving for division facts	Regroup partitioned numbers to assist in calculations Use mathematical modelling to solve practical additive and multiplicative problems (including money and where students are expected to choose the strategy) Recall is now expected for doubling and halving as well as adding and subtracting to 20 Using number sentences, part-whole strategies and “a variety of strategies”
Recognise the features of three-dimensional objects; Draw two-dimensional shapes	Compare and classify shapes, describing features using **formal spatial terms**	Comparison and classification, particularly using formal language (referencing the number of sides and using spatial terms such as “opposite”, “parallel”, “curved” and “straight” are specifically mentioned)

Easier: Time, transformations, chance, money

From	To	Emphasis is now on
Count and order coins	Gone	Money is a context within modelling. Transactions are mentioned, but not recognising or ordering coins until year 3
One-step transformations of shapes (flips, slides)	Gone	Delayed until year 4
Describe outcomes for everyday chance events	Gone	Delayed until year 3
Name and order months and seasons	Gone	Changed to Science and HAS

Year 3: major changes at a glance

Harder: Number, Algebra, Data

From	To	Emphasis is now on
Count to and from 10000	Order and represent natural numbers ***beyond* 10 000**;	Partition, model, represent, order natural numbers *beyond* ten thousand, using conventions Rearrange and regroup two- and three-digit numbers in different ways to assist in calculations
New	Use **mathematical modelling** to solve practical problems involving single-digit multiplication and division	Mathematical modelling is new. Need both additive and multiplicative situations. Finance is a context.
New	Make **estimates** and determine the reasonableness of financial and other calculations	Estimation is new for the achievement standard.
New	**Create algorithms** to investigate numbers and explore simple patterns	Creating algorithms is new. They have sequences of steps and decisions to reach an outcome.
Conduct simple data investigations for categorical variables	Adds **discrete numerical data** and **interpret their results in terms of the context**	Focus is far more on interpretation of data in terms of context, and using frequency tables and spreadsheets rather than just graphing

Easier: Space, odd/even, money

From	To	Emphasis is now on
Classify numbers as either odd or even	Gone	Delayed until year 4
Identify symmetry in the environment	Gone	Delayed until year 4
Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents	Recognise the relationships between dollars and cents and represent money values in different ways	Using money in modelling contexts rather than counting out change

Year 4: major changes at a glance

Harder: Number, algebra, data

From	To	Emphasis is now on
New	Solve problems involving multiplying or dividing natural numbers by **multiples or powers of 10**	
Solve word problems by using number sentences involving multiplication or division where there is no remainder	Use **mathematical modelling** to solve financial and other practical problems, **formulating** the problem using number sentences, solving the problem choosing efficient strategies and **interpreting** the results in terms of the situation	Formulating and modelling; interpreting results in terms of the situation
New – *previously in year 5*	Choose **rounding** and **estimation** strategies to determine whether results of calculations are reasonable	Rounding was previously only for money, and not part of the achievement standard.
New	Follow and create **algorithms** that generate sets of numbers and identify emerging patterns	Shift from patterns and sequences to algorithms
	Changes in Data: Interpret data and communicate in context; Compare data distributions; Discuss shape and variation	Comparison, interpretation and examining multiple displays; describing shape and data variation
Use scaled instruments (length, mass, capacity, temperature)	Interpret **unmarked and partial units**	Unmarked and partial units

Easier: Angles, probability

From	To	Emphasis is now on
Classify angles in relation to a right angle	Compare angles relative to a right angle using angle names	Not using degrees. Use angle names, but in reference to right angles.
Probability (theoretical calculation)	Relative Frequency (gathered data)	Conducting experiments and examining outcomes
Compare 3D objects using familiar metric units of area and volume		3D volume is delayed until high school

Year 5: major changes at a glance

Harder: Number, algebra, data

From	To
New	Determine if one number is **divisible** by another
New – *previously year 6*	Recognise that 100% represents the complete whole and use **percentages** to describe, represent and compare relative size; connect familiar percentages to their decimal and fraction equivalents
Addition and subtraction of fractions with the same denominator	Addition and subtraction of fractions with the same *or* ***related*** denominators
New	Create and use **algorithm**s involving a sequence of steps and decisions and digital tools to experiment with factors, multiples and divisibility; identify, interpret and describe emerging patterns
New	Recognise and explain the connection between multiplication and division as **inverse operations** and use this to develop families of number facts
New	Interpret **line graphs** representing change over time; discuss the relationships that are represented and conclusions that can be made

Easier: Measurement, space, probability (but not chance experiments)

From	To
Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction	Removed
3D volume	Removed
Apply the enlargement transformation to familiar two dimensional shapes and explore the properties of the resulting image compared with the original	Removed
Describe probabilities using fractions, decimals and percentages	Moved to year 6

Both easier and harder: Chance experiments

From	To
Conduct chance experiments with **equally likely outcomes** and **calculate theoretical probability** using fractions 0-1.	Conduct **repeated chance experiments** including those **without equally likely outcomes**, observe and record the results; but use **frequency** (experimental outcomes as a fraction) to compare outcomes and **estimate their likelihoods**, rather than calculating theoretical probability.

Year 6: major changes at a glance

Harder: Number, algebra, data, space, probability

From	To
New	Use **mathematical modelling** to solve financial and other practical problems involving percentages and rational numbers, **formulating** and solving the problem, and justifying choices.
New	Create and use algorithms involving a sequence of steps and decisions that use rules to generate sets of numbers; identify, interpret and explain emerging patterns
Fractions with related denominators: - locate and represent on a number line - add and subtract	**Don't have to have related denominators:** *"Apply knowledge of equivalence"* to: - compare, order and represent on number lines (e.g., halves, thirds, quarters on the same number line) and justify their order - add and subtract
New	Use estimation and rounding to check the reasonableness of answers to calculations involving decimals, rational numbers and percentages.
Find a **simple fraction** of a quantity where the result is a **whole number**	Find a **familiar fraction, decimal or percentage** of a quantity, including percentage discounts (*does not have to have a whole number answer*)
Construct simple prisms and pyramids	Compare the parallel cross-sections of objects and recognise their relationships to right prisms
Students locate an ordered pair in any quadrant on the Cartesian plane	Locate points in the 4 quadrants of a Cartesian plane; describe changes to the coordinates when a **point is moved** to a different position in the plane
Data interpretation: - interpret and compare displays (2 categorical variables) - interpret secondary data	**Data interpretation:** - interpret and compare data sets (ordinal, nominal, categorical, discrete and **continuous numerical**) including displays - compare **distribution** in terms of **mode, range, shape** - identify, discuss, critique statistically informed arguments, methods, representations, conclusions in media
New	Plan and conduct statistical investigations by posing and refining questions or identifying a problem and collecting relevant data; analyse and interpret the data and communicate findings within the context of the investigation
Chance experiments: - conduct experiments with small and large no.s of trials - compare observed and expected frequencies	**Chance experiments also now adds in:** - run simulations - discuss **effect on variation** of increasing the number of trials

Easier: Number, measurement

From	To
Triangular numbers	Removed
3D volume	Removed

Year 7: major changes at a glance

Harder:

From	To
New	Represent natural numbers in expanded notation using place value and **powers of 10**
New	Use appropriate rounding and **estimation** to check the reasonableness of solutions
New	Use **mathematical modelling** to solve practical problems involving rational numbers, percentages and ratios in financial and other applied contexts, justifying choices of representation
New	Manipulate formulas involving several variables using digital tools, and describe the effect of systematic variation in the values of the variables
Calculate volumes of rectangular prisms	Solve problems involving the **volume of right prisms** (including **triangular prisms**)
New - from year 8	Describe the relationship between π and the features of circles including the circumference, radius and diameter
Interior angles of triangle and quadrilateral	Interior angles of triangle and use this to find interior angles of **other shapes** (not just quadrilaterals)
New	Design and create **algorithms** involving a sequence of steps and decisions that will sort and classify sets of shapes according to their attributes, and describe how the algorithms work
Data changes	- Comment on **outliers** in data sets (used to be year 8) - Describe and compare **distribution** of data
New	Plan and conduct **statistical investigations** involving discrete and continuous numerical data, using appropriate displays (and producing reports on the data)
New	Conduct **repeated chance experiments** and **run simulations** with a large number of trials using digital tools; compare predictions about outcomes with observed results, explaining the differences. Experiments **no longer have to have equally likely outcomes** (this change is introduced from year 5 now)

Easier:

From	To
Identify and investigate issues involving numerical data collected from primary and secondary sources	Removed

Year 8: major changes at a glance

Harder:

From	To
Solve everyday problems involving rates, ratios and percentages; Solve problems involving profit and loss	Use **mathematical modelling** to solve practical problems involving ratios, percentages and rates in measurement and financial contexts
Solve linear equations and graph linear relationships on the Cartesian plane	graph linear relations and solve linear equations with rational solutions and **one-variable inequalitie**s, graphically and algebraically (note: inequalities were year 10)
New	Use **mathematical modelling** to solve problems using linear relations, interpreting and reviewing the model in context. **Make and test conjectures** involving linear relations using digital tools.
New – from year 9	Use **Pythagoras' theorem** to solve measurement problems involving unknown lengths of right-angle triangles
Solve problems involving duration, including using 12- and 24-hour time within a single time zone	Solve problems involving duration, including using 12- and 24-hour time across **multiple time zones**
New	Describe the position and location of objects in **3 dimensions** in different ways, including using a **three-dimensional coordinate system** with the use of dynamic geometric software and other tools
Identify conditions for the congruence of triangles	Identify conditions for **congruency and similarity in shapes**
New	Create and test **algorithms** designed to test for congruency and similarity
New	Plan and conduct statistical investigations involving samples of a population; use ethical and fair methods to make inferences about the population and report findings, acknowledging uncertainty
New	Conduct experiments and **simulations, using digital tools** to determine related probabilities of **compound events**.
New – from year 9	Area of composite shapes

Reporting comments

Tierney Kennedy

Background and requirements

Plain-language reporting twice per year is a requirement agreed to by all States and Territories. According to the National Education Agreement (2008)[1], this requires:

"Provision to parents and carers by all schools of plain language reports twice a year that:

a) are readily understandable to those responsible for the student and give an accurate and objective assessment of the student's progress and achievement;
b) include an assessment of the student's achievement against any available national standards; and
c) include, for subjects studied, an assessment of the student's achievement-
   (i) reported as A, B, C, D and E (or an equivalent five-point scale), clearly defined against specific learning standards; and
   (ii) relative to the performance of the student's peer group." (p. D-41)

According to ACARA:
"Parents and families should have access to… data on student outcomes that enables them to monitor the individual performance of their child. Importantly this includes what their child knows and is able to do and how this relates to what is expected for children in their cohort, and how they can contribute to their child's progress"[2]

My four-statement guide to plain-language reporting comments

It is really important that report-cards be easy for parents and carers to understand. This means that I tend to avoid writing a long list of skills that only teachers can interpret, and instead use four objective statements about the student's performance in relation to the expected standards. They are included below, along with A-E examples on the following page. *Note:* statements should be about what students have done, not what they can do.

1. Statement that says the student has produced work that is at the expected standard (above, not yet at… see below for example A-E language). This statement needs to be clear.
2. Statement about the problem solving. This should include the type of problem (e.g., challenging, unfamiliar, complex, routine…) and what students did (developed, adapted, applied strategies).
3. Statement about the connections and patterns (understanding), and transference or adaptation to other areas of maths (reasoning).
4. Statement about the fluency of the processes (fluency), clarity of working and proof or justification (reasoning).

[1] https://apo.org.au/sites/default/files/resource-files/2008-01/apo-nid30169.pdf

[2] https://www.acara.edu.au/docs/default-source/corporate-publications/principles-and-protocols-for-reporting-on-schooling-in-australia.pdf?sfvrsn=57674d07_0#:~:text=Principle%201%3A%20Reporting%20should%20be,and%20understanding%20of%20the%20information.

Example of four-statement report-card comments:

Note: these will need to be adapted for your context (e.g., some States require a statement about effort or engagement, or what a student needs to do to improve).

A Standard

1. This student has produced work that is well-above the expected standard for this year level.
2. They have consistently solved challenging and multistep problems, including both developing their own strategies and adapting strategies they have been taught.
3. They have connected related concepts in mathematics in multiple ways, demonstrating relationships and identifying patterns and rules. They have transferred processes from one area of mathematics to another, generalising their findings where appropriate.
4. They have selected efficient mathematical processes and applied them accurately and flexibly to reach solutions. They have shown their working clearly and provided solid proof or justification for conclusions.

B Standard

1. This student has produced work that is above the expected standard for this year level.
2. They have consistently solved multistep problems in familiar contexts and attempted some problems in unfamiliar contexts, by applying and adapting strategies they have been taught.
3. They have connected related concepts in mathematics, identifying some underlying patterns and relationships.
4. They have selected efficient mathematical processes and applied them accurately to reach solutions. They have shown their working clearly, and provided some justification for conclusions reached.

C Standard

1. This student has produced work that is at the expected standard for this year level.
2. They have consistently solved routine problems in familiar contexts, using rehearsed strategies.
3. They have identified some similarities and differences between related mathematical concepts.
4. They have selected appropriate mathematical processes and applied them with a fair degree of accuracy. They have shown the main steps in their working and provided some explanations for conclusions reached.

D Standard

1. This student is not yet consistently producing work at the expected standard across the range of mathematical content and skills required at this level.
2. They have solved routine problems accurately in some content areas.
3. They have demonstrated understanding of simple mathematical concepts.
4. They have applied mathematical processes with guidance.

Possible addend: Support will continue to be provided to ensure progress.

E Standard (three statements only)

1. This student has consistently produced work below the expected standard for this level.
2. Substantial guidance, correction and support have been provided for this student across the range of content and skills in this course, including when solving straightforward problems.
3. While some progress has been made in developing content and skills, most mathematical processes taught have been applied inconsistently or with limited accuracy.

Possible addend: Intervention/support will continue to be provided to this student.

Child-friendly descriptions

A Standard
When a problem was unfamiliar to me and required multiple steps:

- I looked for similarities and differences to what I already knew to plan my way forward
- I made reasonable conjectures about what might work, then tested them
- I developed my own plan that had multiple steps
- I applied and adapted strategies efficiently, accurately and flexibly, making use of known facts to simplify calculations and to develop more complex strategies
- I checked for errors along the way, changed my steps as needed, documented my working and explained what I did clearly
- I evaluated my solution carefully, checking for two things: that the mathematics worked, and that the solution made sense in context
- I justified my results and generalised any findings to create rules or principles that I could apply in other areas of maths.

B Standard
When a problem required multiple steps to solve:

- I looked for similarities to what I already knew so that I could work out what to do
- I made some conjectures about what might work, then tested them
- I applied and adapted strategies efficiently and accurately, making use of known facts to make calculations easier
- I checked for errors, then showed my working and solution clearly
- I referred to the context of the problem when communicating my findings, including stating my reasons and any general rules that I found.

C Standard
When solving a problem that was familiar to me:

- I chose an appropriate strategy from those that I had been taught
- I recalled known facts to make calculations easier
- As I checked for errors my answers were mostly accurate, but sometimes my working was not as clear as it could be
- I communicated my solution to the problem in a way that could be understood by someone else.

D Standard
When solving a simple problem:

- I attempted to use a strategy to solve it, with some guidance or support provided by a helper or teacher
- Sometimes I solved the problem, but at other times I missed some steps or made mistakes in the process because I didn't really understand how it worked
- With some help, I tried to fix the mistakes and communicated what I had done.

E Standard
When attempting to solve simple problems:

- I attempted to solve the problem or apply a strategy, with guidance or support provided by the teacher or another adult
- As I didn't really understand the process, my attempts tended to be off-track or I applied procedures in ways that didn't work
- With some help, I could understand what went wrong.