Assessment Schedule – Term 2, 2024

Subject: Numeracy (32406)

Outcomes

Outcome 1	Outcome 2	Outcome 3
Formulate mathematical and statistical approaches to solving problems in a range of everyday situations.	Use mathematics and statistics to meet the numeracy demands of a range of everyday situations.	Explain mathematical and statistical responses to situations.

Evidence

Question 1	Answer / Judgement	Outcome 1	Outcome 2	Outcome 3
1a	Arrow 5	✓		
1b	**40** times heavier.		✓	

1c	12 (min) to 30 (max) hatched tuatara **and supported** by a reasonable calculation. The answer may be a single number, e.g., 25 tuatara, or a range (both values within accepted values), e.g., 15-25 tuatara.
	
	Examples (not exhaustive):
	  a. 2 clutches x 6 eggs per clutch = 12 baby tuatara
	     3 clutches x 10 eggs per clutch = 30 baby tuatara (assumes first clutch laid in first year)
	  b. 2 x 8 eggs per clutch = 16 baby tuatara (using average eggs per clutch)
	  c. 6 ÷ 4 = 1.5 eggs per year, 1.5 x 10 = 15 tuatara
	     10 ÷ 4 = 2.5 eggs per year, 2.5 x 10 = 25 tuatara
			✓	

1d	200 (accept between 180 and 220)	✓		
1e	Answer should note some lengths appear to belong to young tuatara based on the main clustering of lengths. The student should reference **at least one** length of the shorter tuatara from the graph in mm. Not essential for Achieved but evidence of strong reasoning: Students might add that the median of 220 mm and the central clustering suggests adults are mostly between 190mm and 260mm long. Not achieved: Reference to any length less than the median of 220mm indicating a young tuatara. Reference only to the number of 3 or 6 lower lengths, without at least one of the three measurements associated with those data points.			✓
1f	D.		✓	

Question 2	Answer / Judgement	Outcome		
		1	2	3
2a	31 squares.	✓		
2b	Middle vertical axis (2) AND only horizontal axis (5). Both needed with no extras.	✓		
2c	Position is taken (agree or disagree) or can be reasonably inferred from the answer. There should be reference to fractions and comparison of the two diagrams is clear or can be inferred. Disagree. The diagram on the left has the bottom of the nose two thirds down the face or one third up the face. The bottom of Richie's nose is 7½ out of twelve spaces down. Two thirds is eight twelfths so the bottom of the nose is too high. Student may use a similar argument for not one third up the face. Agree. There are 12 horizontal divisions. The bottom of the nose is about 4 spaces up from the chin. Since 4/12 = 1/3 that approximately matches the diagram. Student may use a similar argument for down the face. *Other suitable answers considered if fractions are used to justify the position..*			✓
2d	E.		✓	
2e	2,600		✓	
2f	**6** hours. (Watch for 5 hours, as some students may forget that time is base 60).		✓	

Question 3	Answer / Judgement	Outcome		
		1	2	3
3a	352 g.	✓		
3b	1.5 x 3 = 4.5 L or 4,500 mL. 4,500 / 300 = **15** glasses (or 4.5 / 0.3 = **15** glasses). Accept also if student gives an answer of 5 glasses, inferring that all 3 bottles fill the same number of glasses.		✓	
3c	**54** kg or 54 L. 75% x 8 = 6kg. 50% x 120 = 60kg. 60 – 6 = 54kg or 54L (since 1 kg of water has a volume of 1 L). *Unit not required.* Also accepted is "ten times more" since 10 x 6 = 60.		✓	
3d	**$1.45** ($35.96 ÷ 24.8)	✓		
3e	Students must include information about the savings from reducing shower times, as this is the best option. They need not include a direct comparison with reducing washing. They should use a consistent time period, such as: Over 2 days: • Shower of 2 minutes gives 6 x 2 x 24 = 288 litres saving (2-minute shower uses 24 L) Over 1 day: • Shower of 2 minutes gives 6 x 1 x 24 = 144 litres saving per day Also accept a calculation based on the usual shower time being 8 minutes. In that case the saving is 6 x 2 x 72 = 864 L every 2 days or 432 L every day. *Other reasonable responses are acceptable.* **Exception:** Some students may assume each person uses the washing machine each day. In that case, using the machine once every two days saves 6 x 60 = 360L every two days. Accept this scenario.			✓
3f	Winter (JJA).	✓		

Question 4	Answer / Judgement	Outcome		
		1	2	3
4a	85,000 – 45,000 = **40,000** people. (Accept between 35,000 to 45,000)	✓		
4b	Accept answers based on a trend of rising attendance or an uncertainty argument based of unpredictable events. For example: Agree – the numbers are trending upwards 2023-2024 and should return to pre-COVID levels of about 100,000. Disagree – removing the 2019 to 2022 numbers (due to issues), there is a relatively constant trend from 2014 to 2018 of attendance mostly under 100,000. Cannot tell – an external factor, e.g., online / hardcopy advertisements, other unforeseen happenings may occur in 2025.			✓
4c	6 adults x $6.00 x two days = $72. 15% of $72 = $10.8. Online discounted total cost for 6 adults for two days is **$61.20** (may be left as $61.2) **Exceptions:** Accept 2 x 6 x 7 = $84 (Assumes flexi-passes) or 2 x 6 x 8.5 = $102 (assumes gate entry).	✓		
4d	**Arrow 2** 5 out of 11 acts are from SA. 5/11 or 0.4545 or 45% (45.5%)		✓	
4e	**8 minutes longer.** (Number only needed) Consider the first hour (9:00 – 10:00am). Tongan performances are **15 minutes** since (60 – 3 x 5) = 45 minutes of performance. 45 ÷ 3 = 15 minutes per performance. Samoan performances are **7 minutes since** 60 – (5 x 5) = 35 minutes of performance. 35 ÷ 5 = 7 minutes per performance.	✓		
4f	**8** performers. Accept also 9 performers if leader is also included.		✓	

06/08/2024

Question 5	Answer / Judgement	Outcome		
		1	2	3
5a	68 x 106 = **7,208** m²	✓		
5b	Josh and Caleb. (both needed in either order) Student may use measures 1.77m and 1.9m.		✓	
5c	Position must be taken and supported by measurement-based calculations. Ani's claim is correct as Michaela runs faster than 100 m / min. 540 metres / 14 minutes = 110 m / min.) Ani's claim is correct as 14 x 100m = 1400m. Michaela ran 1540m so ran faster than 100m per minute. Ani's claim is incorrect as 540 metres / 14 minutes = 110 m / min and that is much faster than 100 m / min.			✓
5d	Accept in range 15 - 40 °.	✓		
5e	It won't matter what she chooses – she could choose H or T. She has a 50% chance of success with either choice. Student need not explain that each toss is independent of previous tosses. Do **not** accept answers based on misconceptions about non-independence, such as Sarah should choose heads since the last 3 tosses have been tails and the run won't continue.			✓
5f	Agree. New Zealand has been first or second in five of the eight world cups. 5/8 = 62.5% which is greater than 60%. If 62.5% is stated, is it reasonable to assume 5/8 has been used, even if not stated. If student states 5/8 > 60% assume conversion to percentage was done, in some way.			✓