Year 7 Numeracy 2014 ANSWERS

Results and item descriptions

The numeracy strands are abbreviated as follows: Algebra, function and pattern (AFP); Measurement, chance and data (MCD); Number (N); Space (S). All items are worth one score point.

The percentage columns give the proportion of correct answers (facility rates). These results are based on provisional data.

Calculator-allowed paper

Item	Strand	Answer	Qld%	Aust%	Description
1	N	A	90.2	91.1	Calculates the difference between two 6-digit numbers.
2	MCD	A	83.1	84.8	Locates two values in a table and calculates difference.
3	MCD	C	90.2	90	Reads the time from an analogue clock.
4	S	B	77.4	78.4	Identifies the pair of images that are out of order in a sequence.
5	MCD	B	74	74.8	Determines the most likely outcome from a simple event.
6	S	A	74.6	72.6	Identifies congruent triangles in a quadrilateral.
7	AFP	C	71.7	71.5	Interprets a numerical expression to identify the value of a term.
8	S	C	62.6	63.5	Identifies a pair of parallel lines.
9	N	A	65.4	66.1	Solves a division problem that involves rounding.
10	S	B	63.2	64.9	Identifies the correct directions for a given route on a map.
11	S	A	60.8	61.6	Solves a problem involving similar triangles and proportional reasoning.
12	S	D	66.4	65.7	Recognises different nets of a 3-D object.
13	N	C	56.6	54.7	Identifies a group of prime numbers.
14	N	C	46.3	47.9	Calculates the smallest number of coins needed to make a given total.
15	AFP	C	48.2	50.3	Uses algebraic reasoning, subtraction and division to solve a problem.
16	N	D	45.9	45.2	Identifies the number closest in value to the square of a decimal number.
17	MCD	B	45.3	45.4	Estimates to identify an angle of a given size.
18	S	A	47.2	49.3	Identifies an irregular hexagon.
19	MCD	B	37.5	39.3	Interprets a scale with uncommon graduations.
20	S	D	40.3	40.7	Calculates a distance using a map and scale.
21	AFP	A	41	41.7	Matches a word problem to an algebraic representation.

Item	Strand	Answer	Qld%	Aust%	Description
22	MCD	D	39	40.6	Calculates the arrival time given the departure time and durations.
23	AFP	81	28.3	28.3	Calculates a future term in a geometric pattern.
24	AFP	D	28.8	30.7	Substitutes into a given equation to solve a word problem.
25	N	79	22.1	23.7	Solves a multistep problem involving annual and monthly costs.
26	N	350	22.8	24.9	Solves a problem involving proportional reasoning.
27	MCD	22	18.8	20.2	Interprets the unmarked vertical scale on a column graph to solve a problem.
28	N	66	19.9	18.6	Solves a problem involving successive percentage increases.
29	S	36	12.5	12.5	Uses geometric reasoning to calculate an internal angle.
30	MCD	8	9.6	11.3	Solves a measurement problem involving the areas of rectangles and metric conversion.
31	N	25	8.7	9.6	Solves a multistep problem involving metric conversion and ratio.
32	N	D	8.6	10.9	Solves a multistep problem involving calculating equivalent fractions.

Non-calculator paper

Item	Strand	Answer	Qld%	Aust%	Description
1	AFP	B	81.1	82	Shares an amount of money proportionally.
2	MCD	B	88.4	87.4	Identifies a right angle.
3	N	B	79.7	79.3	Solves a money problem using addition or subtraction.
4	N	C	79.5	80.4	Solves a word problem involving division.
5	S	A	75.6	76.6	Identifies the top view of an object given the front and side views.
6	MCD	A	75.2	76.4	Interprets and matches data in a table to a line graph.
7	AFP	D	76.2	76.5	Identifies the number sequence that matches a given rule.
8	AFP	D	66.6	66.2	Continues a visual pattern to identify a future term.
9	MCD	C	74.2	74.3	Identifies the number of millilitres in half a litre.
10	S	A	66.7	67.3	Identifies a prism in a set of 3-D objects.
11	N	C	70.6	73.6	Uses proportional reasoning to solve a rate problem.
12	N	C	58.6	60.6	Identifies an area model of a unit fraction.
13	AFP	B	59.3	61.2	Identifies the order of operations required to solve a given word problem.
14	MCD	C	64.1	65	Estimates the amount of liquid in a container.
15	N	C	59.7	58.7	Compares and orders the totals of four pairs of decimal numbers.

Item	Strand	Answer	Qld%	Aust%	Description
16	MCD	D	55.3	57.6	Calculates the probability of a random activity.
17	AFP	D	53.8	52	Interprets and solves a simple inequality.
18	S	D	54.3	53.9	Visualises a folded rectangle to identify the position of a given vertex.
19	MCD	B	47.7	50	Matches results in a graph to the spinner most likely to produce them.
20	S	C	55	52.2	Describes the transformation of a 2-D shape in terms of angle and direction.
21	N	600	37.9	40.5	Solves a problem involving proportional reasoning.
22	S	A	38.3	39.9	Follows directions on a street map.
23	N	6240	44.2	43.7	Solves a problem involving multiplication.
24	S	B	36.9	39.5	Uses geometric reasoning to calculate the shaded area of a complex shape.
25	S	24	33.9	35.5	Interprets a diagram to calculate the total number of faces on three objects.
26	AFP	12	30.2	33	Uses algebraic reasoning to solve a measurement problem.
27	N	D	19.4	17.7	Identifies the midpoint between two fractions on a number line.
28	AFP	D	21.5	22.6	Estimates the missing number in an equation involving order of operations and decimals.
29	MCD	32	21.9	23.2	Calculates the area of a rectangle given the proportional lengths of its sides and perimeter.
30	MCD	C	25.5	26.5	Applies proportional reasoning and converts measures to solve a problem.
31	S	10	23.9	21.8	Visualises a complex construction of cubes from three viewpoints to calculate the number of cubes used.
32	N	0.0625	10.1	11	Uses the relationship between two unit fractions to calculate a decimal fraction.

Year 7 Numeracy: Key messages

Performance

Student results for Numeracy in Years 7 and 9 are reported as a single score. However, as shown in the preceding tables, there appear to be significant differences between the results of the two tests — calculator-allowed and non-calculator. A significant difference between the raw scores achieved by an individual student on the two tests may warrant investigation.

While most students attempted to answer all test items, a number omitted the more difficult items towards the end of each test. These are items for which students have to construct a response rather than select an answer from among given options. The number of students omitting questions ranges up to 5% on the non-calculator test and, interestingly, up to 12% for the calculator-allowed test. These figures are lower than in 2013 but are still significant. Teachers will need to ask students their reasons for omitting questions, as a non-response provides no information teachers can use to improve learning.