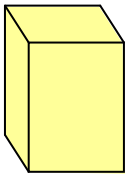
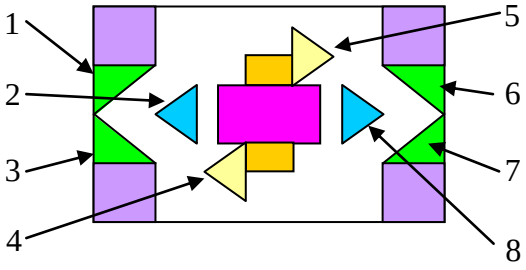
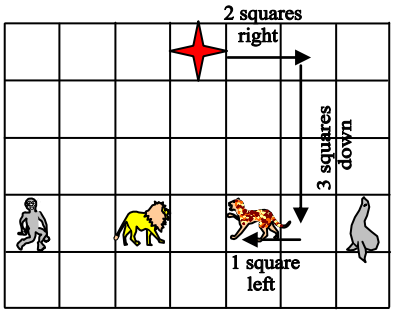
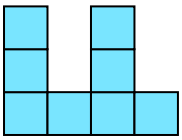
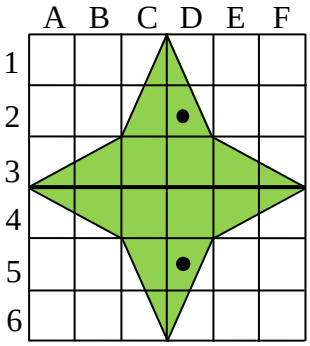
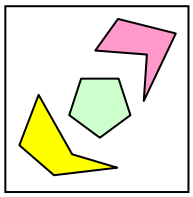
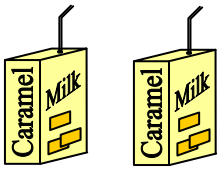
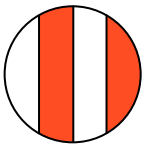
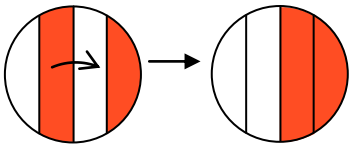
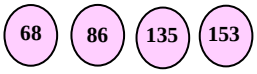
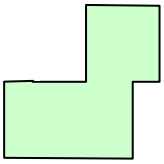
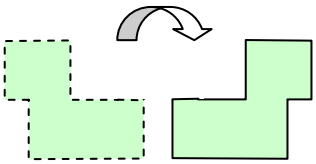
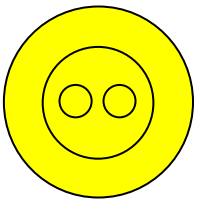
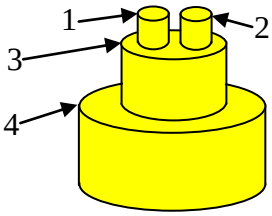
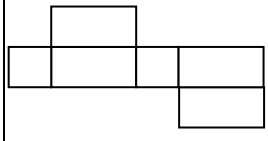
YEAR 3 – PAPER 1

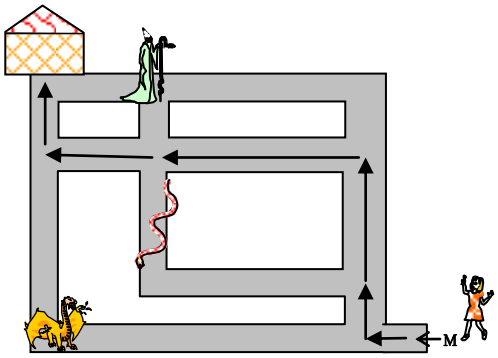
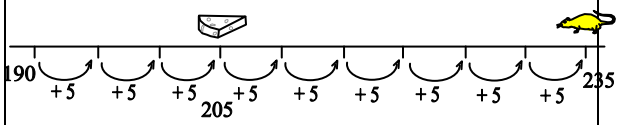
NUMERACY WORKED SOLUTIONS

	ANSWER	EXPLANATION	Australian Curriculum Reference A student can
1		The first shape is a cone. The second shape is a sphere and the fourth is a pyramid. Only the third shape is a prism.	describe the features of three-dimensional objects. (ACMMG043)
2	8		recognise and classify familiar two-dimensional shapes using obvious features. (ACMMG022)
3		Two 50c coins make $1, and one 20c coin more makes $1.20. Hence, Kylie has	count and order small collections of Australian coins and notes according to their value. (ACMNA034)
4	He took out 70 marbles.	Kevin took 376 – 306 = 70 marbles out of the bag.	solve simple subtraction problems using a range of strategies. (ACMNA030)
5	4 × 6	There are 4 lots of 6 strawberries on four plates. This is the same as 4 × 6.	represent multiplication as repeated addition, groups and arrays. (ACMNA031)
6			describe position and movement. (ACMMG010)

7	16	The four cards shown are only one quarter of Tom's cards. So Tom has 4 lots of 4 cards, which is 16 cards.	recognise and interpret common uses quarters of shapes. (ACMNA033)
8		By counting the number of squares in each shape, it can be seen that only the second shape has 8 squares. Each one of the other three shapes has 9 squares.	compare and order several shapes based on area using appropriate uniform informal units. (ACMMG037)
9	Theatre F	Hero Zero and Banana Monkey are the top two movies of the week only in Theatre F.	create displays of data tables and interpret them. (ACMSP050)
10	50 L	The water in this aquarium is more than half-full, but not completely full. So the aquarium contains more than 30 L, but less than 60 L. The only possible answer is 50 L.	compare objects using familiar metric units of capacity. (ACMMG061)
11	D5	When the picture is completed the new black spot will be drawn in D5, as shown. 	investigate the effects of one-step slides and flips without digital technologies. (ACMMG045)
12		Only the three shapes in the fourth box have the same number of side (5 sides each). In the other boxes the shapes have a mix of 3, 4 and 5 sides.	recognise and classify familiar two-dimensional shapes using obvious features. (ACMMG022)
13	4	Martin had 2 pizzas. Each pizza had 6 slices, so he had a total of 12 slices. He gave away 4 lots of 2 slices, which is 8 slices. Hence, he kept 12 – 8 = 4 slices.	solve subtraction problems using a range of efficient mental and written strategies. (ACMNA030)

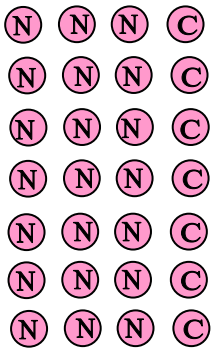
14	Likely	Three out of the four equal sections of the spinner are 5. Hence, it is likely that the spinner stops on five.	describe outcomes as 'likely' or 'unlikely' and identify some events as 'certain' or 'impossible'. (ACMSP047)
15		As we can see, only one of these cartons is caramel flavoured milk. So it is impossible for Mario to get two caramel flavoured milk cartons.	describe outcomes as 'likely' or 'unlikely' and identify some events as 'certain' or 'impossible'. (ACMSP047)
16		By moving the shaded part as shown, it can be seen that half the circle is shaded. 	recognise and interpret common uses of halves and quarters of shapes. (ACMNA033)
17	4	Half of 20 students is 10. So 10 students chose Mango, and the remaining 10 students chose Banana or Apple. Less students chose Banana than Apple, so this means less than half of 10 students (or less than 5) chose Banana. Hence, 4 is the only possible answer.	recognise and interpret common uses of halves and quarters of collections. (ACMNA033)
18		68 is the smallest number and 153 is the largest number. Only the fourth option shows this order.	recognise, model, represent and order numbers to at least 1000. (ACMNA027)
19	11:15	The hour hand is pointing just past the 11 and the minute hand is pointing at the 3, this means the time is 15 minutes past 11. So the lesson starts at 11:15.	tell time to the quarter-hour. (ACMMG039)

20		The diagram shows what would happen if the shape was flipped to the right, so the last shape is the correct one. 	investigate the effect of one-step flips. (ACMMG045)
21	Dad is opposite Jade.	It can be seen from the diagram that Dad is opposite Mum, and Kate is opposite Jade. This means that Dad is NOT opposite Jade.	identify the relative positions of key features. (ACMMG044)
22	8	Looking at the last 2 cards, the pattern could be made by adding 5 frogs to get the next card. This means on the second card there must be 3 + 5 = 8 frogs. This matches the pattern perfectly.	describe patterns with numbers and identify missing elements. (ACMNA035)
23		From above the solid, you would just see 4 circles as indicated. 	make models of three-dimensional objects and describe key features. (ACMMG063)
24	9, 16, 23, 30	Starting with 9, add 7 so 9 + 7 = 16, 16 + 7 = 23 and finally 23 + 7 = 30.	describe patterns with numbers and identify missing elements. (ACMNA035)
25	200	Kim read 4 books and each book has 50 pages. Hence, she read 4 lots of 50, which is 200 pages.	create displays of data using picture graphs and interpret them. (ACMSP050)
26		This is the net of a rectangular prism. The other nets do not form a rectangular prism when folded.	make models of three-dimensional objects and describe key features. (ACMMG063)

27	Take the first right, then second left, then second right.		interpret simple grid maps to show position and pathways. (ACMMG065)
28	$2 \times 6 = 12$	$14 - 9 = 5$ NOT 6 $2 \times 8 = 16$ NOT 14 $18 \div 2 = 9$ NOT 8 and $2 \times 6 = 12$, which is correct.	represent and solve problems involving multiplication using efficient mental and written strategies. (ACMNA057)
29	6	Draw 18 marbles. Write D for Danny in one marble then P for Peter in the next two. Repeat this pattern until you label all the marbles. As we can see, Danny has 6 marbles while Peter has 12 marbles. D P P D P P D P P D P P D P P D P P	investigate and describe number patterns formed by skip counting and patterns with objects. (ACMNA018)
30	12	Raymond's sister is 21 next year, so she is 20 now. As Raymond is 8 years younger than his sister, then he is now $20 - 8 = 12$ years old.	solve simple addition and subtraction problems using a range of efficient mental and written strategies. (ACMNA030)
31	205	 The nine spaces between 190 and 235 equal $235 - 190 = 45$. So each space is 5. Hence, the cheese is at the number $190 + 5 + 5 + 5 = 205$.	describe, continue, and create number patterns resulting from performing addition or subtraction. (ACMNA060)

<table>
<tr><td>32</td><td>10</td><td>A quarter of 16 is 4. So Victor ate 4 lollies, and had 16 – 4 = 12 lollies left.

He then gave 2 lollies to his brother, so he still had 12 – 2 = 10 lollies.</td><td>recognise and interpret common uses of quarters of collections.
(ACMNA033)</td></tr>
<tr><td>33</td><td>8</td><td>First, put the 32 beads into groups of four. Then in each group write N for necklace in 3 beads, and C on the fourth for the bead left in the container, until you label all the beads.

As we can see, there are 8 beads left in the container and 24 were used for the necklace.</td><td>recognise and interpret common uses of quarters of collections.
(ACMNA033)</td></tr>
<tr><td>34</td><td>12</td><td>By trial and error, as shown in the table we can realise that Rachelle has four $2 coins and eight 20c coins.

<table><tr><th>Number of $2 coins</th><th>Number of 20c coins (twice the $2 coins)</th><th>Total value</th></tr><tr><td>1</td><td>2</td><td>$2.40</td></tr><tr><td>2</td><td>4</td><td>$4.80</td></tr><tr><td>3</td><td>6</td><td>$7.20</td></tr><tr><td>4</td><td>8</td><td>$9.60</td></tr></table>
Hence, she has 4 + 8 = 12 coins in total.</td><td>represent money values in multiple ways.
(ACMNA059)</td></tr>
<tr><td>35</td><td>28</td><td>Jessica drinks 4 cups of milk every 2 days. This means she has to drink 2 cups every day.

As there are 14 days in 2 weeks, she needs to drink 14 lots of 2, which is 28 cups.</td><td>represent and solve problems involving multiplication using efficient mental and written strategies.
(ACMNA057)</td></tr>
</table>