

WA5MNAUN4

Understanding number

Core + Challenge

NAPLAN-style

Partitioning Decimals — Marking Key

I can partition decimals in standard and non-standard ways and explain the value of each digit.

For tutors and parents. Award method marks for correct working even if the final answer is wrong.

Marks summary

A Warm up: 16 B Practise: 23 C Think it through: 10 D Challenge: 9 **Total: 58**

Gold shading in this key shows what the child should have shaded or drawn. Accept any correct arrangement unless the question fixes it.

A

Warm up *answers*

/ 16 marks

Q	Answer	Model answer / notes	Marks
1	3.06	3 ones, 0 tenths, 6 hundredths, 0 thousandths. A zero holds the empty place.	1
2	0.407	0 ones, 4 tenths, 0 hundredths, 7 thousandths. A zero holds the empty place.	1
3	2.15	2 ones, 1 tenth, 5 hundredths, 0 thousandths.	1
4	1.003	1 one, 0 tenths, 0 hundredths, 3 thousandths. A zero holds the empty place.	1
5	0.6	$4.62 = 4 + 0.6 + 0.02$.	1
6	7	$7.39 = 7 + 0.3 + 0.09$.	1
7	0.005	$0.815 = 0.8 + 0.01 + 0.005$.	1
8	0.07	$12.07 = 10 + 2 + 0.07$.	1

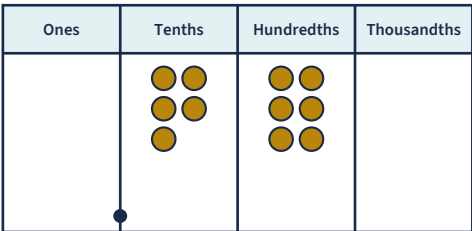
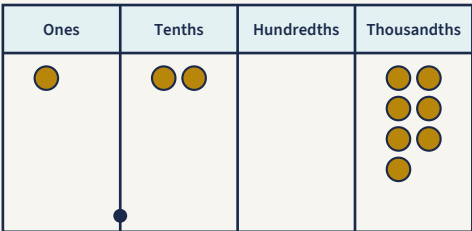
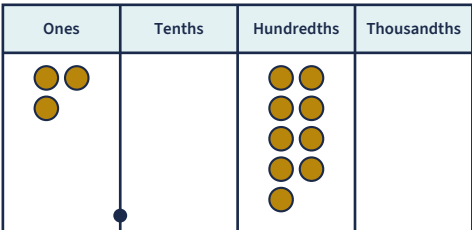
9 2.34 shown

Ones	Tenths	Hundredths	Thousandths
● ●	● ● ●	● ● ● ●	

2 ones, 3 tenths, 4 hundredths.

1

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Q	Answer	Model answer / notes	Marks
10	0.56 shown	 5 tenths, 6 hundredths.	1
11	1.207 shown	 1 one, 2 tenths, 7 thousandths.	1
12	3.09 shown	 3 ones, 9 hundredths.	1
13	26	2 ones = 20 tenths, plus 6 tenths.	1
14	145	1 one = 100 hundredths, plus 45.	1
15	30	3 tenths = 30 hundredths.	1
16	40	1 tenth = 10 hundredths.	1

B

Practise *answers and working*

/ 23 marks

Q	Answer	Working / sample response	Marks								
1	See table	<table><tr><th>Number</th><th>Standard partition</th></tr><tr><td>3.47</td><td>$3 + 0.4 + 0.07$</td></tr><tr><td>6.503</td><td>$6 + 0.5 + 0.003$</td></tr><tr><td>2.06</td><td>$2 + 0.06$</td></tr></table> $3.47 = 3 + 0.4 + 0.07$. $6.503 = 6 + 0.5 + 0.003$. $2.06 = 2 + 0.06$. <i>1 mark for each correct row.</i>	Number	Standard partition	3.47	$3 + 0.4 + 0.07$	6.503	$6 + 0.5 + 0.003$	2.06	$2 + 0.06$	3
Number	Standard partition										
3.47	$3 + 0.4 + 0.07$										
6.503	$6 + 0.5 + 0.003$										
2.06	$2 + 0.06$										

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Q	Answer	Working / sample response	Marks												
2	a) 34 tenths b) 1.58 c) 4.36	a) <table><tr><td colspan="2">3.47</td></tr><tr><td>34 tenths</td><td>7 hundredths</td></tr></table> b) <table><tr><td colspan="2">2.58</td></tr><tr><td>1</td><td>1.58</td></tr></table> c) <table><tr><td colspan="2">4.36</td></tr><tr><td>43 tenths</td><td>6 hundredths</td></tr></table> a) $3.47 = 3 \text{ ones} + 4 \text{ tenths} + 7 \text{ hundredths} = 34 \text{ tenths} + 7 \text{ hundredths}$. b) $2.58 = 1 + 1.58$. c) $43 \text{ tenths} = 4.3$, and $6 \text{ hundredths} = 0.06$, so 4.36. <i>1 mark each bar. Accept 3.4 for a).</i>	3.47		34 tenths	7 hundredths	2.58		1	1.58	4.36		43 tenths	6 hundredths	3
3.47															
34 tenths	7 hundredths														
2.58															
1	1.58														
4.36															
43 tenths	6 hundredths														
3	a) 7 b) $2 + 0.7 + 0.05$ c) 17	a) $2.75 = 2 + 0.7 + 0.05$: 7 tenths of a dollar = 7 ten-cent coins. b) $2 + 0.7 + 0.05$. c) $\\$1 = 10 \text{ ten-cent coins}$, so $7 + 10 = 17$. ($2.75 = 1 + 17 \text{ tenths} + 5 \text{ hundredths}$.) <i>1 mark each part.</i>	3												
4	a) 0.08 kg b) $3 + 0.4 + 0.08 + 0.005$	a) The 8 is in the hundredths place: 0.08 kg (8 hundredths of a kilogram). b) 3 ones, 4 tenths, 8 hundredths, 5 thousandths: $3 + 0.4 + 0.08 + 0.005$. <i>1 mark each part. Accept 8 hundredths for a).</i>	2												
5	0.6 m and 0.04 m	 $2.64 = 2 + 0.6 + 0.04$. On the line, 2.64 is a bit less than half-way between 2.6 and 2.7. <i>1 mark: marked between 2.6 and 2.7, a little before half-way.</i> <i>1 mark: 0.6 and 0.04.</i>	2												
6	a) 1.47 b) $1 + 0.4 + 0.07$ c) 147	a) 1 whole, 4 tenths (columns) and 7 hundredths (squares): 1.47. b) $1 + 0.4 + 0.07$. c) 1 whole = 100 hundredths, so $100 + 47 = 147 \text{ hundredths}$. <i>1 mark each part.</i>	3												

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Q	Answer	Working / sample response	Marks
7	See lines	0.36 = 36 hundredths. 3.6 = 360 tenths. 0.036 = 36 thousandths. 36 = 360 tenths. <i>2 marks: all four. 1 mark: two or three.</i>	2
8	a) 6, 0.6, 0.06 b) 10 times c) 100 times	a) 6 ones = 6, 6 tenths = 0.6, 6 hundredths = 0.06. b) One place to the left is worth 10 times as much. c) Two places to the left: $10 \times 10 = 100$ times. <i>1 mark each part.</i>	3
9	a) 4.27 b) 0.27	a) 4 ones, 2 tenths, 7 hundredths = 4.27 (the parts are not in order!). b) 27 hundredths = 2 tenths and 7 hundredths = 0.27. <i>1 mark each part.</i>	2

C

Think it through *sample answers and criteria*

/ 10 marks

Q	Answer	Working / sample response	Marks
1	No, it is 4.35	The 3 is 3 tenths but the 5 is 5 hundredths, so they cannot be added as 8 of the same thing. $4.3 + 0.05 = 4 + 0.3 + 0.05 = 4.35$. <i>1 mark: disagrees, 4.35.</i> <i>1 mark: explains tenths and hundredths are different places.</i>	2
2	False	$2.7 = 2$ ones and 7 tenths = 27 tenths (or 270 hundredths). 27 hundredths is only 0.27. <i>1 mark: False.</i> <i>1 mark: 27 tenths or 270 hundredths (or 27 hundredths = 0.27).</i>	2

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Q	Answer	Working / sample response	Marks
3	Sometimes	True for 2.6 = 26 tenths and 0.8 = 8 tenths. Not true for 2.65: that is 26 tenths and 5 hundredths left over. <i>1 mark: Sometimes.</i> <i>1 mark: one example each way (the false case has hundredths or thousandths).</i>	2
4	$1 + 0.6 + 0.2$	$1.6 + 0.02$ $1 + 0.62$ $16 \text{ tenths} + 2 \text{ hundredths}$ $1 + 0.6 + 0.2$ $1.6 + 0.02$, $1 + 0.62$ and $16 \text{ tenths} + 2 \text{ hundredths}$ all equal 1.62. $1 + 0.6 + 0.2 = 1.8$ (the 0.2 should be 0.02). <i>1 mark: $1 + 0.6 + 0.2$.</i> <i>1 mark: shows the other three equal 1.62.</i>	2
5	See working	Same: both have 7 ones and one 3; both are between 7 and 8. Different: in 7.3 the 3 is 3 tenths (0.3); in 7.03 it is 3 hundredths (0.03). So 7.3 is bigger. <i>1 mark: something the same.</i> <i>1 mark: explains the different value of the 3.</i>	2

D

Challenge solutions and criteria

/ 9 marks

Q	Answer	Working / sample response	Marks
1	1.4, 1.31, 1.22, 1.13, 1.04	To be between 1 and 2 the ones must be 1, leaving 4 counters for the tenths and hundredths. $4 + 0, 3 + 1, 2 + 2, 1 + 3, 0 + 4$: 1.4, 1.31, 1.22, 1.13, 1.04. <i>2 marks: all five (1 mark for three or four).</i> <i>1 mark: explains the ones must be 1 and works systematically.</i>	3
2	a) 4.52 b) $4 + 0.5 + 0.02$ c) e.g. 45 tenths + 2 hundredths	a) 14 tenths = 1.4 and 12 hundredths = 0.12. $3 + 1.4 + 0.12 = 4.52$. b) $4 + 0.5 + 0.02$. c) e.g. 45 tenths + 2 hundredths, 452 hundredths, or $4 + 0.52$. <i>1 mark each part.</i>	3
3	a) 10 b) 28 c) 235	a) $2 + 0.3 + 0.05$: $2 + 3 + 5 = 10$ pieces. b) $2.35 = 23 \text{ tenths} + 5 \text{ hundredths}$: $23 + 5 = 28$ pieces. c) $2.35 = 235 \text{ hundredths}$: 235 pieces. <i>1 mark each part.</i>	3