

WA5MNAUN5

Understanding number

Core + Challenge

NAPLAN-style

Multiples — Marking Key

I can find multiples and common multiples by skip counting, and use them to solve problems.

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: 22 C Think it through: 10 D Challenge: 9 **Total: 57**

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	14, 21, 28	 7, then 14, 21, 28.	1
2	18, 27, 36	9, then 18, 27, 36.	1
3	6, 9, 12	3, then 6, 9, 12.	1
4	16, 24, 32	8, then 16, 24, 32.	1
5	yes	☒ yes ☐ no $6 \times 7 = 42$.	1
6	no	☐ yes ☒ no $4 \times 8 = 32$, $4 \times 9 = 36$; 35 is between.	1
7	yes	☒ yes ☐ no $9 \times 6 = 54$.	1
8	no	☐ yes ☒ no $6 \times 10 = 60$, $6 \times 11 = 66$; 64 is between.	1
9	11, 22, 33, 44, 55	11×1 to 11×5 .	1
10	12, 24, 36, 48, 60	12×1 to 12×5 .	1
11	25, 50, 75, 100, 125	25×1 to 25×5 .	1

Multiples · WA5MNAUN5

Q	Answer	Model answer / notes	Marks
12	15, 30, 45, 60, 75	15×1 to 15×5 .	1
13	24, 40	Multiples of 8: add 8 each time.	1
14	48, 72	Multiples of 12: add 12 each time.	1
15	25, 100	Multiples of 25: add 25 each time.	1
16	72, 90	Multiples of 9: add 9 each time.	1

B

Practise *answers and working*

/ 22 marks

Q	Answer	Working / sample response	Marks
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1	4 packs of sausages, 3 packs of rolls	<table> <tr><th>Packs</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th></tr> <tr><td>Sausages</td><td>6</td><td>12</td><td>18</td><td>24</td><td>30</td><td>36</td></tr> <tr><td>Rolls</td><td>8</td><td>16</td><td>24</td><td>32</td><td>40</td><td>48</td></tr> </table> Sausages: 6, 12, 18, 24, ... Rolls: 8, 16, 24, ... 24 is the lowest common multiple of 6 and 8. 24 ÷ 6 = 4 packs of sausages; 24 ÷ 8 = 3 packs of rolls. <i>1 mark: table correct.</i> <i>1 mark: finds 24.</i> <i>1 mark: 4 packs and 3 packs.</i>	Packs	1	2	3	4	5	6	Sausages	6	12	18	24	30	36	Rolls	8	16	24	32	40	48	3
Packs	1	2	3	4	5	6																		
Sausages	6	12	18	24	30	36																		
Rolls	8	16	24	32	40	48																		

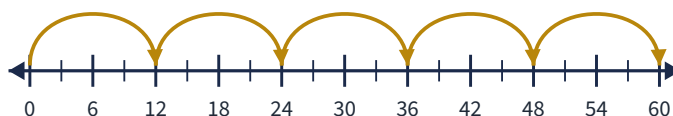
2	15, 30, 45, 60, 75, 90	<table> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr> <tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td></tr> <tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td></tr> <tr><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td></tr> <tr><td>71</td><td>72</td><td>73</td><td>74</td><td>75</td><td>76</td><td>77</td><td>78</td><td>79</td><td>80</td></tr> <tr><td>81</td><td>82</td><td>83</td><td>84</td><td>85</td><td>86</td><td>87</td><td>88</td><td>89</td><td>90</td></tr> <tr><td>91</td><td>92</td><td>93</td><td>94</td><td>95</td><td>96</td><td>97</td><td>98</td><td>99</td><td>100</td></tr> </table> Multiples of 3 and of 5: 15, 30, 45, 60, 75, 90. They are the multiples of 15, because 15 is the lowest common multiple of 3 and 5. <i>1 mark: multiples of 3 shaded.</i> <i>1 mark: multiples of 5 ringed.</i> <i>1 mark: the list (and notices they go up in 15s).</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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 3 |

Multiples · WA5MNAUN5

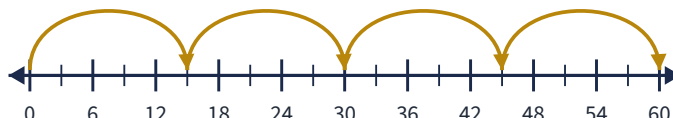
Q	Answer	Working / sample response	Marks
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Bus A



Bus B

3 8:00 am



3

Bus A: 12, 24, 36, 48, 60 minutes.

Bus B: 15, 30, 45, 60 minutes.

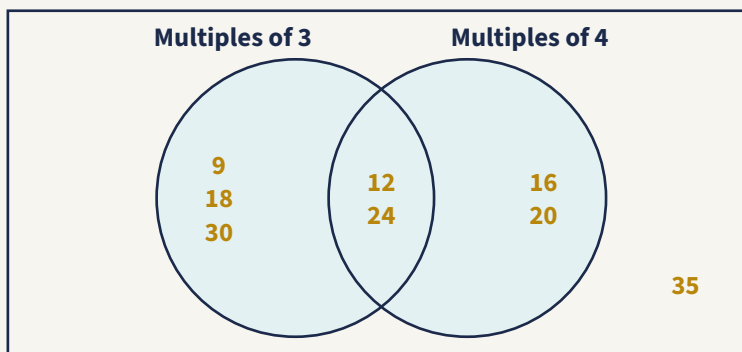
60 is the lowest common multiple, so 60 minutes after 7:00 am: 8:00 am.

1 mark: both sets of jumps (or lists).

1 mark: 60 minutes.

1 mark: 8:00 am.

4 See diagram



2

Both (multiples of 12): 12, 24. Only 3: 9, 18, 30. Only 4: 16, 20. Neither: 35.

2 marks: all eight correct. 1 mark: six or seven.

45

54

60

25

5 60

$60 = 4 \times 15$ and $60 = 5 \times 12$.

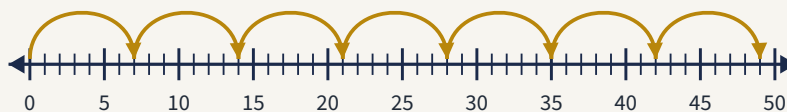
45 and 25 are not multiples of 4; 54 is not a multiple of 4 or 5.

2

1 mark: 60.

1 mark: shows 60 is in both times tables.

6 35



2

Frog: 7, 14, 21, 28, 35, 42, 49.

Kangaroo: 5, 10, 15, 20, 25, 30, 35, 40, 45. Both land on 35.

1 mark: frog's jumps drawn.

1 mark: 35.

Multiples · WA5MNAUN5

Q	Answer	Working / sample response	Marks
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7 12 and 24 March

2

M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Netball: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30.
 Swimming: 4, 8, 12, 16, 20, 24, 28.
 Both: 12 and 24 (multiples of 12).

1 mark: days ringed.
 1 mark: 12 and 24.

8	90: no; 96: yes	$12 \times 7 = 84$ and $12 \times 8 = 96$. 90 is between 84 and 96, so it is not a multiple of 12. $96 = 8$ cartons. <i>1 mark each, with a reason.</i>	2
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×	1	2	3	4	5	6	7	8	9	10
6	6	12	18	24	30	36	42	48	54	60
10	10	20	30	40	50	60	70	80	90	100

9	30 and 60	Multiples of 6: 6, 12, 18, 24, 30, 36, 42, 48, 54, 60. Multiples of 10: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100. Common multiples in the table: 30 and 60. <i>1 mark: multiples of 6.</i> <i>1 mark: multiples of 10.</i> <i>1 mark: 30 and 60 ringed.</i>	3
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C Think it through sample answers and criteria

/ 10 marks

Q	Answer	Working / sample response	Marks
1	No	1, 2, 3 and 6 are the factors of 6 (they divide into 6). The multiples of 6 are 6, 12, 18, 24, ... (the 6 times table). <i>1 mark: disagrees.</i> <i>1 mark: explains factors versus multiples, with the correct multiples.</i>	2
2	True	$6 = 2 \times 3$, so every jump of 6 is two jumps of 3. Example: $6 \times 7 = 42 = 3 \times 14$. <i>1 mark: True.</i> <i>1 mark: a clear reason ($6 = 2 \times 3$).</i>	2
3	Sometimes	15 and 35 end in 5. 10 and 20 are multiples of 5 that end in 0. <i>1 mark: Sometimes.</i> <i>1 mark: one example each way.</i>	2

Multiples · WA5MNAUN5

Q	Answer	Working / sample response	Marks
4	54	24, 36 and 48 are multiples of 12. 54 is not ($12 \times 4 = 48$, $12 \times 5 = 60$). <i>1 mark: 54.</i> <i>1 mark: a correct reason. Accept another choice with a correct reason (e.g. 48 is the only multiple of 16).</i>	2
5	No, it is 18	54 is a common multiple, but not the lowest. Multiples of 9: 9, 18, ... and $18 = 6 \times 3$. So the lowest common multiple is 18. <i>1 mark: disagrees, 18.</i> <i>1 mark: shows 18 is in both lists.</i>	2

D

Challenge solutions and criteria

/ 9 marks

Q	Answer	Working / sample response	Marks
1	a) 60 s b) 15 c) 5	a) Multiples of 10: 10, 20, 30, 40, 50, 60. 60 is the first one that is also a multiple of 4 and of 6. b) 4, 8, 12, ..., 60: $60 \div 4 = 15$ flashes. c) 5 minutes = 300 seconds. At 60, 120, 180, 240 and 300 s: $300 \div 60 = 5$ times. <i>1 mark each part.</i>	3
2	24, 48, 72, 96	Multiples of 8 less than 100: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96. The ones that are also multiples of 6: 24, 48, 72, 96. They are the multiples of 24, the lowest common multiple. <i>2 marks: all four (1 mark for two or three).</i> <i>1 mark: notices they are multiples of 24.</i>	3
3	49	Numbers 1 more than a multiple of 2, 3 and 4 are 1 more than a multiple of 12: 13, 25, 37, 49. Only 49 is a multiple of 7 (7×7). <i>1 mark: uses multiples of 12 (or checks systematically).</i> <i>1 mark: lists 13, 25, 37, 49.</i> <i>1 mark: 49.</i>	3