



Answer Key

GRADE 3 • MODULE 3

Multiplication and Division with Units of 0, 1, 6–9, and Multiples of 10

Lesson 1

Sprint

Side A

- | | | | |
|--------|--------|--------|--------|
| 1. 2 | 12. 6 | 23. 14 | 34. 16 |
| 2. 4 | 13. 9 | 24. 25 | 35. 18 |
| 3. 6 | 14. 5 | 25. 30 | 36. 35 |
| 4. 4 | 15. 10 | 26. 35 | 37. 40 |
| 5. 8 | 16. 15 | 27. 20 | 38. 45 |
| 6. 12 | 17. 7 | 28. 24 | 39. 28 |
| 7. 6 | 18. 14 | 29. 28 | 40. 32 |
| 8. 12 | 19. 9 | 30. 15 | 41. 36 |
| 9. 8 | 20. 18 | 31. 18 | 42. 21 |
| 10. 16 | 21. 10 | 32. 21 | 43. 24 |
| 11. 3 | 22. 12 | 33. 14 | 44. 27 |

Side B

- | | | | |
|--------|--------|--------|--------|
| 1. 5 | 12. 4 | 23. 35 | 34. 40 |
| 2. 10 | 13. 6 | 24. 10 | 35. 45 |
| 3. 15 | 14. 4 | 25. 12 | 36. 14 |
| 4. 3 | 15. 8 | 26. 14 | 37. 16 |
| 5. 6 | 16. 12 | 27. 15 | 38. 18 |
| 6. 9 | 17. 6 | 28. 18 | 39. 21 |
| 7. 7 | 18. 12 | 29. 21 | 40. 24 |
| 8. 14 | 19. 8 | 30. 20 | 41. 27 |
| 9. 9 | 20. 16 | 31. 24 | 42. 28 |
| 10. 18 | 21. 25 | 32. 28 | 43. 32 |
| 11. 2 | 22. 30 | 33. 35 | 44. 36 |

Problem Set

1. a. Answers will vary.
b. (2, 14); (3, 21); (4, 28); (5, 35); (6, 42)
2. 24, 4, 6; 24, 6, 4
3. a. 7
b. sixes; 18
c. tens; 80
d. 6; 24
e. 5; 40
f. 4; 4
g. 1; 27
h. 9; 36
i. 3; 32
j. 5; 30
k. 7; 3; 21
l. 5; 5; 20

Exit Ticket

1. $28 = 4 \times 7$; $28 = 7 \times 4$
2. Explanations will vary.

Homework

1. a. (3, 9); (4, 12); (5, 15); (6, 18); (7, 21)
b. (5, 20); (6, 24); (7, 28); (8, 32); (9, 36)
c. (6, 30); (7, 35); (8, 40); (9, 45); (10, 50)
2. $24 = 4 \times 6$; $24 = 6 \times 4$
 $24 = 3 \times 8$; $24 = 8 \times 3$
3. Expressions accurately matched
4. a. 6
b. 3; 18
c. 8; 32
d. 7; 7
e. 7; 2; 14
f. 5; 30

Lesson 2

Sprint

Side A

- | | | | |
|--------|--------|--------|--------|
| 1. 4 | 12. 16 | 23. 30 | 34. 12 |
| 2. 6 | 13. 16 | 24. 30 | 35. 12 |
| 3. 6 | 14. 18 | 25. 35 | 36. 18 |
| 4. 8 | 15. 18 | 26. 35 | 37. 18 |
| 5. 8 | 16. 20 | 27. 40 | 38. 21 |
| 6. 10 | 17. 20 | 28. 40 | 39. 21 |
| 7. 10 | 18. 15 | 29. 45 | 40. 24 |
| 8. 12 | 19. 15 | 30. 45 | 41. 24 |
| 9. 12 | 20. 20 | 31. 50 | 42. 27 |
| 10. 14 | 21. 20 | 32. 50 | 43. 27 |
| 11. 14 | 22. 25 | 33. 9 | 44. 16 |

Side B

- | | | | |
|--------|--------|--------|--------|
| 1. 10 | 12. 40 | 23. 12 | 34. 12 |
| 2. 10 | 13. 40 | 24. 12 | 35. 12 |
| 3. 15 | 14. 45 | 25. 14 | 36. 18 |
| 4. 15 | 15. 45 | 26. 14 | 37. 18 |
| 5. 20 | 16. 50 | 27. 16 | 38. 21 |
| 6. 20 | 17. 50 | 28. 16 | 39. 21 |
| 7. 25 | 18. 4 | 29. 18 | 40. 24 |
| 8. 30 | 19. 6 | 30. 18 | 41. 24 |
| 9. 30 | 20. 6 | 31. 20 | 42. 27 |
| 10. 35 | 21. 8 | 32. 20 | 43. 27 |
| 11. 35 | 22. 8 | 33. 9 | 44. 9 |

Problem Set

- Sevens, 7, 7, 35
5, 1, 7, 42; 6, 7, 42; 7, 6, 42
- Eights, 8, 8, 40
 - 48; Answers will vary.
- 63
- 4
- No; explanations will vary.

Exit Ticket

- 42; answers will vary.

Homework

- 5 nines, 9, 9, 45
5, 1, 9, 54; 6, 9, 54; 9, 6, 54
- 42; solutions will vary.
- 6
- 3

Lesson 3

Problem Set

- $e = 20$; $l = 7$; $i = 6$; $c = 3$; $s = 4$; $n = 10$; $t = 70$; $k = 9$; $b = 2$; $a = 24$; $h = 5$; kitchen tables
- $m = \$24$
 - $c = \$6$
- 4, n , 28; 28, 4, n ; $n = 7$; 7 pans
- Shorter game: 10 minutes; longer game: 22 min

Exit Ticket

- 45
- 5
- 3
- 28
- 3, n , 15; 15, 3, n ; $n = 5$; 5 rose bushes

Homework

- 40, 50, 70, 80, 100
 - $e = 30$; $f = 40$; $p = 50$; $w = 60$; $n = 70$; $g = 80$
- $n = 4$; $a = 4$; $p = 5$; $c = 3$; $d = 6$; $h = 35$; $f = 18$; $y = 8$
- $b = \$28$
 - $c = \$2$; answers will vary.
- 50 m; answers will vary.

Lesson 4

Problem Set

- 12, 24, 42, 54; each number matched to its corresponding multiplication fact
- 12, 18, 24; 4, 24; 24, 4
- 12, 18, 24, 30, 36, 42; 7, 42; 42, 7
- 12, 24, 18, 18, 36, 18, 30, 42
 - 8; 8
- No; explanations will vary.

Exit Ticket

- 54; explanations will vary.
- 48
 - 9

Homework

- 12
 - 18
 - 20, 4, 24
 - 20, 10, 30
 - 36
 - 40, 2, 42
 - Answers will vary; 48
 - Answers will vary; 54
 - Answers will vary; 60
- 12, 18, 24, 30; 5, 30; 30, 5
- 12, 18, 24, 30, 36; 6, 36; 36, 6
- 8; answers will vary.

Lesson 5

Pattern Sheet

6	12	18	24
30	6	12	6
18	6	24	6
30	6	12	18
12	24	12	30
12	6	12	18
6	18	12	18
24	18	30	18
24	6	24	12
24	18	24	30
24	30	6	30
12	30	18	30
24	12	24	18
30	18	12	24
18	30	12	24

Problem Set

- 14, 28, 35, 56, 63
42, 6; 21, 3; 56, 8; 49, 7; 7, 1; 35, 5; 63, 9; 28, 4; 14, 2
- 21, 35, 49, 56, 70
 - 3, 21; 21, 3
 - 5, 35; 35, 5
 - 7, 49; 49, 7
 - 8, 56; 56, 8
 - 10, 70; 70, 10
- Explanations will vary.
- Both are correct; explanations will vary.

Exit Ticket

21, 35, 49, 56, 70

- a. 1, 7; 7, 1
- b. 2, 14; 14, 2
- c. 3, 21; 21, 3
- d. 4, 28; 28, 4
- e. 5, 35; 35, 5
- f. 6, 42; 42, 6
- g. 7, 49; 49, 7
- h. 8, 56; 56, 8
- i. 9, 63; 63, 7
- j. 10, 70; 70, 10

Homework

- 1.
 - a. 14
 - b. 20, 1, 21
 - c. 20, 8, 28
 - d. 30, 5, 35
 - e. 40, 2, 42
 - f. 40, 9, 49
 - g. 50, 6, 56; answers may vary.
 - h. 60, 3, 63; answers may vary.
- 2. 70, 63, 56, 42, 35, 21, 14
70, 63, 56, 49, 42, 35, 28, 21, 14, 7
70, 10; 63, 9; 56, 8; 49, 7; 42, 6; 35, 5; 28, 4; 21, 3; 14, 2; 7, 1

Lesson 6

Pattern Sheet

6	12	18	24
30	36	42	48
54	60	30	36
30	42	30	48
30	54	30	60
36	30	36	42
36	48	36	54
36	42	36	42
48	42	54	42
48	36	48	42
48	54	54	36
54	42	54	48
54	48	36	54
42	54	36	48
54	42	36	48

Problem Set

- 36; 30; 1, 6; 6; 36
 - 42; 30; 2, 12; 12; 42
 - 48; 30; 3, 18; 3; 3; 18; 48
 - 54; 30; 4, 24; 4; 4; 24; 54
- 24, 6; 24; 4; 9
- 14, 7; 14; 2; 7
- Yes; explanations will vary.
- Answers will vary.

Exit Ticket

- 8 cars; answers will vary.
- Both are correct; explanations will vary.

Homework

1.
 - a. Tape diagrams accurately labeled; 42; 35; 1, 7; 7, 42
 - b. Tape diagrams accurately labeled; 49; 35; 2, 14; 14, 49
 - c. Tape diagrams accurately labeled; 56; 35; 3, 21; 3; 3; 21; 56
 - d. Tape diagrams accurately labeled; 63; 35; 4, 28; 4; 4; 28; 63
2. 24; 24; 4; 9
3. 21; 35, 7; 21, 7; 3; 8
4. 7; explanations will vary.
5. Yes; explanations will vary.

Lesson 7

Pattern Sheet

7	14	21	28
35	7	14	7
21	7	28	7
35	7	14	21
14	28	14	35
14	7	14	21
7	21	14	21
28	21	35	21
28	7	28	14
28	21	28	35
28	35	7	35
14	35	21	35
28	14	28	21
35	21	14	28
21	35	14	28

Problem Set

- Words matched to corresponding equations
- $k = 48$; equations may vary.
- Picture models equation; 7
 - Picture models equation; 4 min
 - Picture models equation; 48 cm
 - Picture models equation; 9

Exit Ticket

- 42; equations may vary.
- \$8; equations may vary.

Homework

1. Words matched to corresponding equations
2.
 - a. $m = \$42$; tape diagram drawn and labeled; equations may vary.
 - b. $p = 36$; tape diagram drawn and labeled; equations may vary.
3. $n = 4$; tape diagram drawn and labeled; equations may vary.

Lesson 8

Pattern Sheet

7	14	21	28
35	42	49	56
63	70	35	42
35	49	35	56
35	63	35	70
42	35	42	49
42	56	42	63
42	49	42	49
56	49	63	49
56	42	56	49
56	63	63	42
63	49	63	56
63	56	42	63
49	63	42	56
63	49	42	56

Problem Set

1.
 - a. 14
 - b. 2
 - c. 5
 - d. 11
 - e. 30
 - f. 15
 - g. 20
 - h. 26
 - i. 10
 - j. 2
 - k. 14
 - l. 8
 - m. 10
 - n. 2
 - o. 37
 - p. 9
2.
 - a. $(16 - 4) + 7 = 19$
 - b. $16 - (4 + 7) = 5$
 - c. $2 = 22 - (15 + 5)$
 - d. $12 = (22 - 15) + 5$
 - e. $(3 + 7) \times 6 = 60$
 - f. $3 + (7 \times 6) = 45$
 - g. $5 = (10 \div 10) \times 5$
 - h. $50 = (100 \div 10) \times 5$
 - i. $(26 - 5) \div 7 = 3$
 - j. $36 = 4 \times (25 - 16)$
3. Chad used $(24 \div 4) + 2 = 8$; Samir used $24 \div (4 + 2) = 4$.
4. $12 + (15 \div 3) = 17$
5. 13; 20

Exit Ticket

1.
 - a. $24 = (32 - 14) + 6$
 - b. $12 = 32 - (14 + 6)$
 - c. $(2 + 8) \times 7 = 70$
 - d. $2 + (8 \times 7) = 58$
2. Marcos used $(24 \div 6) + 2 = 6$; Iris used $24 \div (6 + 2) = 3$.

Homework

1.
 - a. 0
 - b. 6
 - c. 8
 - d. 12
 - e. 42
 - f. 22
 - g. 12
 - h. 2
2.
 - a. $14 - (8 + 2) = 4$
 - b. $(14 - 8) + 2 = 8$
 - c. $2 + (4 \times 7) = 30$
 - d. $(2 + 4) \times 7 = 42$
 - e. $12 = (18 \div 3) \times 2$
 - f. $3 = 18 \div (3 \times 2)$
 - g. $50 \div (5 \times 2) = 5$
 - h. $20 = (50 \div 5) \times 2$
3.
 - a. Answer provided
 - b. True
 - c. False
 - d. True
 - e. False
4. Explanations may vary.
5. $(4 \times 7) - 3 = 25$
6. Answers will vary.

Lesson 9

Application Problems

- 17
 - 17Circled
- 24
 - 24Circled
- 10
 - 10Circled
- 16
 - 16Circled
- 25
 - 13
- 8
 - 2
- 7
 - 1
- 36
 - 8

Problem Set

- 36
 - 9; 36
 - 42
 - 3, 2; 6, 7; 42
- Answer provided.
 - 4; 28
 - 9, 4; 36
 - 6, 7; 42
 - 5, 9; 45
 - 5, 6; 30
- Explanations will vary.

Exit Ticket

- 54; explanations will vary.

Homework

1.
 - a. 48
 - b. 2; 6, 8; 48
 - c. 72
 - d. 2; 8, 9; 72
2.
 - a. 6, 42
 - b. 9, 36
3.
 - a. Answer provided.
 - b. $60; 6 \times (5 \times 2)$
 - c. $70; 7 \times (5 \times 2)$
 - d. $80; 8 \times (5 \times 2)$

Lesson 10

Problem Set

- Arrays accurately labeled; 64; 40; 3, 24; 3; 3; 24; 64
 - Arrays accurately labeled; 72; 40; 4, 32; 4; 4; 32; 72
- 16; 2; 7
- 32, 8; 32; 4; 9
- 24, 32, 40, 48, 56, 64, 72; 72
- Answer provided; 48; 24; 80; 64; 56
- Answer provided; 4; 2; 8; 6; 9

Exit Ticket

56; strategy accurately used to solve

Homework

- 56; 35; 3, 21; 3; 3; 21; 56
- 32; 4; 9
- 16, 24, 32, 40, 48, 56, 64, 72, 80; 72, 40, 64, 48, 56
- 2; 5; 4; 6; 7; 9

Lesson 11

Pattern Sheet

8	16	24	32
40	8	16	8
24	8	32	8
40	8	16	24
16	32	16	40
16	8	16	24
8	24	16	24
32	24	40	24
32	8	32	16
32	24	32	40
32	40	8	40
16	40	24	40
32	16	32	24
40	24	16	32
24	40	16	32

Problem Set

1. Tape diagram drawn and labeled; $n = 4$
2. Tape diagram drawn and labeled; $m = \$48$
3. Tape diagram drawn and labeled; $c = 3$
4. Tape diagram drawn and labeled; 5
5. Tape diagram drawn and labeled; 21
6. Tape diagram drawn and labeled; $\$36$

Exit Ticket

1. a. Tape diagram drawn and labeled; $p = 7$
b. 38

Homework

1. Tape diagram drawn and labeled; $c = 70$
2. Tape diagram drawn and labeled; $v = 6$
3. Tape diagram drawn and labeled; $m = 7$
4. Tape diagram drawn and labeled; 54
5. Tape diagram drawn and labeled; 10
6. Tape diagram drawn and labeled; \$18

Lesson 12

Pattern Sheet

8	16	24	32
40	48	56	64
72	80	40	48
40	56	40	64
40	72	40	80
48	40	48	56
48	64	48	72
48	56	48	56
64	56	72	56
64	48	64	56
64	72	72	48
72	56	72	64
72	64	48	72
56	72	48	64
72	56	48	64

Problem Set

- 54; 9; 9; 54
 - 63; 2, 18; 2; 2; 18; 63
 - 72; 45; 3, 27; 3; 3, 9; 27; 72
 - 81; 45; 4, 36; 4; 4, 9; 36; 81
- 54; 60; 54
 - 63; 70; 63
 - 72; 80; 72
 - 81; 90, 9; 81
- 36; answers will vary.
- Products matched

Exit Ticket

- 6, 1; 9, 1, 9; 9; 54
- Picture models equation; explanations may vary.

Homework

- 54; 24; 24; 54
 - 63; 35; 4, 28; 4; 4; 28; 63
 - 72; 40; 4, 32; 4; 4, 8; 32; 72
 - 81; 45; 4, 36; 4; 4, 9; 36; 81
- Answer provided
 - 60; 54; 9×6
 - 70; 63; 9×7
 - 80; 72; 9×8
 - 90, 9; 81; 9×9
 - 40, 4; 36; 9×4

Lesson 13

Sprint

Side A

- | | | | |
|--------|--------|--------|---------|
| 1. 16 | 12. 56 | 23. 10 | 34. 8 |
| 2. 24 | 13. 64 | 24. 4 | 35. 7 |
| 3. 32 | 14. 72 | 25. 3 | 36. 9 |
| 4. 40 | 15. 80 | 26. 10 | 37. 6 |
| 5. 8 | 16. 8 | 27. 5 | 38. 8 |
| 6. 2 | 17. 7 | 28. 8 | 39. 88 |
| 7. 3 | 18. 9 | 29. 2 | 40. 11 |
| 8. 5 | 19. 6 | 30. 3 | 41. 96 |
| 9. 8 | 20. 10 | 31. 6 | 42. 12 |
| 10. 4 | 21. 5 | 32. 7 | 43. 112 |
| 11. 48 | 22. 2 | 33. 9 | 44. 14 |

Side B

- | | | | |
|--------|--------|--------|---------|
| 1. 8 | 12. 48 | 23. 6 | 34. 7 |
| 2. 16 | 13. 56 | 24. 10 | 35. 8 |
| 3. 24 | 14. 64 | 25. 3 | 36. 9 |
| 4. 32 | 15. 72 | 26. 2 | 37. 6 |
| 5. 40 | 16. 7 | 27. 8 | 38. 7 |
| 6. 3 | 17. 6 | 28. 10 | 39. 88 |
| 7. 2 | 18. 8 | 29. 5 | 40. 11 |
| 8. 4 | 19. 10 | 30. 3 | 41. 96 |
| 9. 8 | 20. 9 | 31. 8 | 42. 12 |
| 10. 5 | 21. 2 | 32. 4 | 43. 104 |
| 11. 80 | 22. 5 | 33. 9 | 44. 13 |

Problem Set

- 18, 27, 45, 54, 63, 81, 90
 - +1
 - 1
- Answer provided
 - 18
 - 28; 27; 27
 - 37; 36; 36
 - 46; 45; 45
 - 55; 54; 54
 - 64; 63; 63
 - 73; 72; 72
 - 82; 81; 81
 - 91; 90; 90
- +10, -1
 - 99; 108; 117; 126
 - 54; 63; strategy accurately used to solve
 - Answers will vary.
- a = 6; g = 9; d = 8; 0 = 90; e = 7; n = 3; s = 4;
t = 2; i = 45
Add a 'g' and it's gone!

Exit Ticket

- 64; 63; 63
82; 81; 81
- Answers will vary.

Homework

- 81, 63, 54, 45, 27, 18, 9
 - 1
 - +1
- a = 2; m = 27; e = 5; f = 36; d = 9; w = 54; s = 10;
k = 72
- 10; 9; 9
 - 19; 18; 18
 - 28; 27; 27
 - 37; 36; 36
 - 46; 45; 45
 - 55; 54; 54
 - 64; 63; 63
 - 73; 72; 72
 - 82; 81; 81
 - 91; 90; 90
- Answers will vary.; 99; 108; 117

Lesson 14

Pattern Sheet

9	18	27	36
45	9	18	9
27	9	36	9
45	9	18	27
18	36	18	45
18	9	18	27
9	27	18	27
36	27	45	27
36	9	36	18
36	27	36	45
36	45	9	45
18	45	27	45
36	18	36	27
45	27	18	36
27	45	18	36

Problem Set

- Answer provided
9
27, 2, 7, 9
36, 3, 6, 9
45, 4, 5, 9
54, 5, 4, 9
63, 6, 3, 9
72, 7, 2, 9
81, 8, 1, 9
90, 9, 0, 9
 - 9; answers will vary.
- Answers will vary.
- Explanations will vary.
- 63; explanations will vary.

Exit Ticket

- Answers will vary.

Homework

- Answer provided
Answer provided
72, 7, 2, 9
63, 6, 3, 9
54, 5, 4, 9
45, 4, 5, 9
36, 3, 6, 9
27, 2, 7, 9
18, 1, 8, 9
9, 0, 9, 9
 - 9; answers will vary.
- Answers will vary.
 - 54; explanations will vary.
 - Correct; answers will vary.

Lesson 15

Pattern Sheet

9	18	27	36
45	54	63	72
81	90	45	54
45	63	45	72
45	81	45	90
54	45	54	63
54	72	54	81
54	63	54	63
72	63	81	63
72	54	72	63
72	81	81	54
81	63	81	72
81	72	54	81
63	81	54	72
81	63	54	72

Problem Set

- 4; solution includes equation and an unknown
- 3 L; solution includes equation and an unknown
- 63 m; solution includes equation and an unknown
- \$7; solution includes equation and an unknown
- 3; solution includes equation and an unknown
- 37; solution includes equation and an unknown

Exit Ticket

- 4 L; solution includes equation and an unknown
- 19

Homework

1. Tape diagram drawn and labeled; $36 \div 9 = a$; $a = 4$
2. 5; solution includes an unknown
3. \$63; solution includes an unknown
4. 9 m
5. 54
6. 3

Lesson 16

Sprint

Side A

- | | | | |
|--------|--------|--------|---------|
| 1. 18 | 12. 63 | 23. 10 | 34. 8 |
| 2. 27 | 13. 72 | 24. 2 | 35. 7 |
| 3. 36 | 14. 81 | 25. 3 | 36. 9 |
| 4. 45 | 15. 90 | 26. 10 | 37. 6 |
| 5. 9 | 16. 8 | 27. 5 | 38. 8 |
| 6. 2 | 17. 7 | 28. 1 | 39. 99 |
| 7. 3 | 18. 9 | 29. 2 | 40. 11 |
| 8. 5 | 19. 6 | 30. 3 | 41. 108 |
| 9. 1 | 20. 10 | 31. 6 | 42. 12 |
| 10. 4 | 21. 5 | 32. 7 | 43. 126 |
| 11. 54 | 22. 1 | 33. 9 | 44. 14 |

Side B

- | | | | |
|--------|--------|--------|---------|
| 1. 9 | 12. 54 | 23. 2 | 34. 7 |
| 2. 18 | 13. 63 | 24. 10 | 35. 8 |
| 3. 27 | 14. 72 | 25. 3 | 36. 9 |
| 4. 36 | 15. 81 | 26. 2 | 37. 6 |
| 5. 45 | 16. 7 | 27. 1 | 38. 7 |
| 6. 3 | 17. 6 | 28. 10 | 39. 99 |
| 7. 2 | 18. 8 | 29. 5 | 40. 11 |
| 8. 4 | 19. 10 | 30. 3 | 41. 108 |
| 9. 1 | 20. 9 | 31. 3 | 42. 12 |
| 10. 5 | 21. 1 | 32. 4 | 43. 117 |
| 11. 90 | 22. 5 | 33. 9 | 44. 13 |

Problem Set

- 6
 - 0
 - 1
 - 1
 - 0
 - Any number
 - 4
 - 3
- Equations matched to solutions
- 1, 2, 3, 4, 5, 6, 7, 8, 9, n
Answers will vary.
- $n \div 1 = n$
 - $6 \div 1 = 6$
 - $6 \times 1 = 6$
- Explanations may vary.
 - Explanations may vary.
 - Explanations may vary.

Exit Ticket

- 5
 - 1
 - 0
 - 0
 - 9
 - 8
- No; explanations may vary.

Homework

- 4
 - 0
 - 5
 - 0
 - 1
 - 0
 - 0
 - 0
 - 1
 - 1
 - 1
 - 9
- Equations matched to solutions
- Answer provided
 - True
 - True
 - True
 - False
 - True
 - True
 - False
- $n \times 1 = n$
 - Answers will vary.

Lesson 17

Problem Set

1. Products accurately recorded
 - a. Even-product squares colored; Yes
 - b. No
 - c. Explanations may vary.
 - d. 112
2.
 - a. Products accurately labeled
 - b. Arrays accurately drawn; 5, 7, 9, 11
 - c. Answers may vary.
 - d. Explanations may vary.

Exit Ticket

1. 96
2. Explanations will vary.

Homework

1.
 - a. Products accurately recorded
 - b. Even factors accurately identified
 - c. Explanations may vary.
 - d. Odd; even; even; examples will vary.
 - e. Explanations may vary.
 - f. Answers will vary.
2.
 - a. Answer provided
 - b. $16 = 4 \times 4$
 - c. $36 = 6 \times 6$
 - d. $64 = 8 \times 8$
 - e. $100 = 10 \times 10$

Lesson 18

Sprint

Side A

- | | | | |
|-------|-------|----------------|--------|
| 1. 2 | 12. 0 | 23. 1 | 34. 0 |
| 2. 3 | 13. 0 | 24. 1 | 35. 1 |
| 3. 4 | 14. 0 | 25. 1 | 36. 0 |
| 4. 9 | 15. 0 | 26. 0 | 37. 0 |
| 5. 0 | 16. 1 | 27. 7 | 38. 0 |
| 6. 0 | 17. 1 | 28. 0 | 39. 1 |
| 7. 0 | 18. 1 | 29. 1 | 40. 79 |
| 8. 1 | 19. 1 | 30. 0 | 41. 0 |
| 9. 1 | 20. 1 | 31. Any number | 42. 96 |
| 10. 1 | 21. 5 | 32. 1 | 43. 1 |
| 11. 1 | 22. 0 | 33. 24 | 44. 0 |

Side B

- | | | | |
|-------|-------|--------|--------|
| 1. 3 | 12. 0 | 23. 1 | 34. 0 |
| 2. 4 | 13. 0 | 24. 1 | 35. 1 |
| 3. 5 | 14. 0 | 25. 1 | 36. 0 |
| 4. 8 | 15. 0 | 26. 0 | 37. 0 |
| 5. 0 | 16. 1 | 27. 9 | 38. 0 |
| 6. 0 | 17. 1 | 28. 0 | 39. 1 |
| 7. 0 | 18. 1 | 29. 1 | 40. 78 |
| 8. 1 | 19. 1 | 30. 0 | 41. 0 |
| 9. 1 | 20. 1 | 31. 1 | 42. 97 |
| 10. 1 | 21. 6 | 32. 0 | 43. 1 |
| 11. 1 | 22. 0 | 33. 34 | 44. 0 |

Problem Set

1. 27 cm; solution includes model, equation, and explanation.
2. 57 min; solution includes model, equation, and explanation.
3. 8; solution includes model, equation, and explanation.
4. 6; solution includes model, equation, and explanation.
5. 9 g; solution includes model, equation, and explanation.

Exit Ticket

117 minutes; solution includes model, equation, and explanation.

Homework

1. 34 kg; solution includes model, equation, and explanation.
2. 57 min; solution includes model, equation, and explanation.
3. 33; solution includes model, equation, and explanation.
4. 7; solution includes model, equation, and explanation.
5. 8 cm; solution includes model, equation, and explanation.
6. \$8; solution includes model, equation, and explanation.

Lesson 19

Problem Set

- 12; 12
 - 12; 120
- 8; 8
 - 8; 80
 - 15; 15
 - 15; 150
 - 20; 20
 - 20; 200
- 14
 - 14
 - 24
 - 24
 - 300
 - 320
 - 280
 - 400
- 240; tape diagram models equation.

Exit Ticket

- 30, 30; 30, 300
- 80
 - 240

Homework

- 9; 9
 - 9; 90
- 10; 10
 - 10; 100
 - 25; 25
 - 25; 250
- Products matched to corresponding solutions
- 240; tape diagram models equation.

Lesson 20

Problem Set

- Answer provided
 - 80
 - 15; 150
 - 5; 150
- Answer provided
9; 90;
6; 60
10; 100
- Explanations will vary.

Exit Ticket

- $(4 \times 2) \times 10$; 8; 80
 - $(3 \times 3) \times 10$; 9; 90
- Explanations will vary.

Homework

- 100
 - 100
 - 20; 200
 - 5; 200
- 60
 - 9; 90
 - 12; 120
 - 15; 150
- Explanations will vary.

Lesson 21

Sprint

Side A

- | | | | |
|---------|---------|---------|---------|
| 1. 6 | 12. 150 | 23. 320 | 34. 560 |
| 2. 60 | 13. 16 | 24. 320 | 35. 480 |
| 3. 60 | 14. 160 | 25. 54 | 36. 630 |
| 4. 4 | 15. 160 | 26. 540 | 37. 300 |
| 5. 40 | 16. 18 | 27. 10 | 38. 640 |
| 6. 40 | 17. 180 | 28. 100 | 39. 720 |
| 7. 8 | 18. 180 | 29. 270 | 40. 480 |
| 8. 80 | 19. 35 | 30. 280 | 41. 490 |
| 9. 80 | 20. 350 | 31. 200 | 42. 400 |
| 10. 15 | 21. 350 | 32. 360 | 43. 540 |
| 11. 150 | 22. 32 | 33. 420 | 44. 810 |

Side B

- | | | | |
|---------|---------|---------|---------|
| 1. 8 | 12. 250 | 23. 360 | 34. 420 |
| 2. 80 | 13. 12 | 24. 360 | 35. 360 |
| 3. 80 | 14. 120 | 25. 48 | 36. 490 |
| 4. 9 | 15. 120 | 26. 480 | 37. 300 |
| 5. 90 | 16. 21 | 27. 10 | 38. 480 |
| 6. 90 | 17. 210 | 28. 100 | 39. 560 |
| 7. 6 | 18. 210 | 29. 240 | 40. 480 |
| 8. 60 | 19. 24 | 30. 320 | 41. 630 |
| 9. 60 | 20. 240 | 31. 200 | 42. 400 |
| 10. 25 | 21. 240 | 32. 640 | 43. 720 |
| 11. 250 | 22. 36 | 33. 540 | 44. 630 |

Problem Set

1. 345 s; tape diagram models equation
2. No; explanations will vary; solution includes model and equation with unknown
3. 400¢; solution includes model and equation with unknown
4. 9 g; solution includes model and equation with unknown
5. 41; solution includes model and equation with unknown
6. \$126; solution includes model and equation with unknown

Exit Ticket

1. 200 g; solution includes model and equation with unknown

Homework

1. 375 minutes; solution includes model and equation with unknown
2. 210; solution includes model and equation with unknown
3. Yes; explanations will vary; solution includes model and equation with unknown
4. 23; solution includes model and equation with unknown
5. No; explanations will vary; solution includes model and equation with unknown
6. \$450; solution includes model and equation with unknown