

# Level D Correlation to Grade 3 Common Core State Standards for Mathematics

## Operations and Algebraic Thinking (3.OA)

Represent and solve problems involving multiplication and division.

1. Interpret products of whole numbers, e.g., interpret  $5 \times 7$  as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as  $5 \times 7$ .

<b>Lesson</b>	<b>72</b>	<b>73</b>	<b>74</b>	<b>75</b>	<b>76</b>	<b>77</b>	<b>79</b>	<b>80</b>	<b>81</b>	<b>82</b>
<b>Exercise</b>	72.6	73.6	74.7	75.7	76.7	77.4	79.8	80.7	81.8	82.7

<b>Lesson</b>	<b>83</b>	<b>84</b>	<b>86</b>	<b>90</b>	<b>91</b>	<b>92</b>	<b>93</b>	<b>95</b>	<b>96</b>	<b>97</b>
<b>Exercise</b>	83.7	84.7	86.9	90.9	91.9	92.8	93.8	95.9	96.9	97.8

<b>Lesson</b>	<b>99</b>	<b>104</b>	<b>105</b>	<b>106</b>	<b>107</b>	<b>108</b>	<b>109</b>	<b>110</b>	<b>111</b>	<b>112</b>
<b>Exercise</b>	99.7	104.8	105.8	106.8	107.6	108.6	109.8	110.7	111.8	112.4, 112.8

<b>Lesson</b>	<b>113</b>	<b>114</b>	<b>115</b>	<b>117</b>	<b>118</b>	<b>119</b>	<b>120</b>	<b>121</b>	<b>122</b>	<b>124</b>
<b>Exercise</b>	113.8	114.7	115.8	117.9	118.3, 118.9	119.6, 119.7	120.5	121.6, 121.8	122.9	124.9

<b>Lesson</b>	<b>125</b>	<b>128</b>	<b>129</b>
<b>Exercise</b>	125.9	128.1	129.9

## Operations and Algebraic Thinking (3.OA)

Represent and solve problems involving multiplication and division.

2. Interpret whole-number quotients of whole numbers, e.g., interpret  $56 \div 8$  as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as  $56 \div 8$ .

<b>Lesson</b>	<b>73</b>	<b>75</b>	<b>77</b>	<b>78</b>	<b>79</b>	<b>85</b>	<b>87</b>	<b>88</b>	<b>90</b>	<b>92</b>
<b>Exercise</b>	73.7	75.7	77.4	78.8	79.8	85.7	87.8	88.8	90.9	92.8

<b>Lesson</b>	<b>94</b>	<b>95</b>	<b>97</b>	<b>99</b>	<b>104</b>	<b>107</b>	<b>108</b>	<b>109</b>	<b>110</b>	<b>111</b>
<b>Exercise</b>	94.9	95.9	97.8	99.7	104.8	107.6	108.6	109.8	110.7	111.8

<b>Lesson</b>	<b>112</b>	<b>113</b>	<b>115</b>	<b>116</b>	<b>117</b>	<b>118</b>	<b>119</b>	<b>121</b>	<b>128</b>	<b>129</b>
<b>Exercise</b>	112.8	113.8	115.8	116.6	117.7, 117.9	118.9	119.7	121.8	128.9	129.9

<b>Lesson</b>	<b>130</b>
<b>Exercise</b>	130.9

## Operations and Algebraic Thinking (3.OA)

Represent and solve problems involving multiplication and division.

3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Lesson	72	73	74	75	76	77	78	79	80	81
Exercise	72.6	73.6	74.7	75.7	76.7	77.4	78.8	79.8	80.7	81.8

Lesson	82	83	84	85	86	87	88	89	90	91
Exercise	82.7	83.7	84.8	85.7	86.10	87.8	88.8	89.9	90.7, 90.9	91.6, 91.9

Lesson	92	93	94	95	96	97	98	99	100	101
Exercise	92.5, 92.8	93.6, 93.8	94.9	95.9	96.9	97.8	98.6, 98.8	99.6, 99.7	100.6, 100.7	101.9

Lesson	102	103	104	105	106	107	108	109	110	111
Exercise	102.9	103.9	104.7, 104.8	105.7, 105.8	106.7, 106.8	107.6, 107.8	108.6	109.7, 109.8	110.6, 110.7	111.7, 111.8

Lesson	112	113	114	115	116	117	118	119	120	121
Exercise	112.4, 112.8	113.8	114.6, 114.7	115.3, 115.8	116.6, 116.8, 116.9	117.5, 117.7, 117.9	118.3, 118.5, 118.9	119.4, 119.6, 119.7	120.5, 120.7, 120.8	121.6, 121.8

Lesson	122	123	124	125	127	128	129
Exercise	122.9	123.9	124.9	125.9	127.9	128.4	129.9

## Operations and Algebraic Thinking (3.OA)

Represent and solve problems involving multiplication and division.

4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations  $8 \times ? = 48$ ,  $5 = \square \div 3$ ,  $6 \times 6 = ?$*

Lesson	71	72	73	74	75	76	77	78	79	80
Exercise	71.1, 71.2, 71.5, 71.7	72.1, 72.6, 72.8	73.1, 73.6, 73.7, 73.8	74.1, 74.5, 74.6, 74.7, 74.10	75.1, 75.4, 75.7, 75.9	76.1, 76.2, 76.6, 76.7, 76.8	77.1, 77.2, 77.4, 77.6, 77.9	78.1, 78.2, 78.6, 78.8	79.1, 79.2, 79.7, 79.8	80.1, 80.7

Lesson	81	82	83	84	85	86	87	88	89	90
Exercise	81.1, 81.2, 81.8	82.1, 82.3, 82.7, 82.8	83.1, 83.3, 83.7, 83.9	84.1, 84.2, 84.7, 84.8	85.1, 85.2, 85.7, 85.9	86.1, 86.10	87.1, 87.2, 87.8	88.1, 88.2, 88.8	89.1, 89.2, 89.9	90.1, 90.2, 90.5, 90.7, 90.9

Lesson	91	92	93	94	95	96	97	98	99	100
Exercise	91.1, 91.3, 91.4, 91.6, 91.7, 91.9	92.1, 92.3, 92.5, 92.6, 92.8	93.1, 93.3, 93.6, 93.7, 93.8	94.1, 94.6, 94.9	95.1, 95.9	96.1, 96.2, 96.7, 96.9	97.1, 97.2, 97.8	98.1, 98.2, 98.7, 98.8	99.6, 99.7	100.2, 100.5, 100.6, 100.7

Lesson	101	102	103	104	105	106	107	108	109	110
Exercise	101.1, 101.8, 101.9	102.1, 102.8, 102.9	103.1, 103.7, 103.9	104.1, 104.6, 104.7, 104.8	105.1, 105.7, 105.8	106.1, 106.3, 106.7, 106.8	107.1, 107.3, 107.6, 107.8	108.1, 108.6, 108.7, 108.8	109.1, 109.7, 109.8	110.1, 110.6, 110.7

Lesson	111	112	113	114	115	116	117	118	119	120
Exercise	111.1, 111.4, 111.7, 111.8	112.1, 112.4, 112.7, 112.8	113.1, 113.4, 113.8	114.1, 114.2, 114.6, 114.7	115.1, 115.2, 115.3, 115.8	116.1, 116.4, 116.6, 116.8, 116.9	117.1, 117.3, 117.5, 117.7, 117.9	118.1, 118.5, 118.7, 118.9	119.1, 119.4, 119.6, 119.7	120.1, 120.4, 120.5, 120.7, 120.8

Lesson	121	122	123	124	125	126	127	128	129	130
Exercise	121.1, 121.6, 121.8	122.1, 122.9	123.1, 123.7, 123.9	124.1, 124.7, 124.9	125.1, 125.7, 125.9	126.1, 126.8, 126.9	127.1, 127.6, 127.9	128.1, 128.4, 128.7, 128.9	129.1, 129.4, 129.9	130.1, 130.5, 130.9

## Operations and Algebraic Thinking (3.OA)

Understand properties of multiplication and the relationship between multiplication and division.

5. Apply properties of operations as strategies to multiply and divide. *Examples: If  $6 \times 4 = 24$  is known, then  $4 \times 6 = 24$  is also known. (Commutative property of multiplication.)  $3 \times 5 \times 2$  can be found by  $3 \times 5 = 15$ , then  $15 \times 2 = 30$ , or by  $5 \times 2 = 10$ , then  $3 \times 10 = 30$ . (Associative property of multiplication.) Knowing that  $8 \times 5 = 40$  and  $8 \times 2 = 16$ , one can find  $8 \times 7$  as  $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ . (Distributive property.)*

Lesson	71	72	75	76	77	83	84	85	86	87
Exercise	71.1	72.1	75.1	76.1	77.1	83.8	84.1	85.1	86.1	87.1

Lesson	90	91	92	93	94	101	102	103	104	105
Exercise	90.9	91.1	92.1	93.1	94.1	101.1	102.1	103.1	104.1	105.1

Lesson	106	107	113	114	117	118	119	120	121	122
Exercise	106.3, 106.8	107.3	113.4	114.1	117.2	118.1, 118.2	119.1, 119.3	120.1, 120.2	121.1, 121.2	122.9

Lesson	123	124	125	126	127	128	130
Exercise	123.8, 123.9	124.1, 124.9	125.1	126.1, 126.5	127.2, 127.9	128.1	130.1

## Operations and Algebraic Thinking (3.OA)

Understand properties of multiplication and the relationship between multiplication and division.

6. Understand division as an unknown-factor problem. *For example, find  $32 \div 8$  by finding the number that makes 32 when multiplied by 8.*

Lesson	124	125	126
Exercise	124.8	125.8	126.8

## Operations and Algebraic Thinking (3.OA)

Multiply and divide within 100.

7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that  $8 \times 5 = 40$ , one knows  $40 \div 5 = 8$ ) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

Lesson	71	72	73	74	75	76	77	78	79	80
Exercise	71.1, 71.5, 71.6, 71.7	72.1, 72.6, 72.7, 72.8	73.1, 73.3, 73.6, 73.8	74.1, 74.2, 74.7, 74.10	75.1, 75.2, 75.7, 75.9	76.1, 76.7, 76.8	77.1, 77.4, 77.9	78.1, 78.5, 78.8	79.1, 79.5, 79.8	80.1, 80.5, 80.7

Lesson	81	82	83	84	85	86	87	88	89	90
Exercise	81.1, 81.4, 81.8	82.1, 82.3, 82.4, 82.7, 82.8	83.1, 83.3, 83.4, 83.8, 83.9	84.1, 84.2, 84.5	85.1, 85.2, 85.5, 85.7	86.1, 86.5, 86.10	87.1, 87.4, 87.5, 87.8	88.1, 88.3, 88.5, 88.8	89.1, 89.4, 89.5, 89.9	90.1, 90.4, 90.6, 90.9

Lesson	91	92	93	94	95	96	97	98	99	100
Exercise	91.1, 91.5, 91.9	92.1, 92.3, 92.4	93.1, 93.2, 93.3, 93.5, 93.6	94.1, 94.5	95.1, 95.3, 95.5, 95.9	96.1, 96.2, 96.4, 96.5	97.1, 97.2, 97.5, 97.6, 97.7, 97.8	98.1, 98.2, 98.4, 98.5, 98.6, 98.8	99.1, 99.2, 99.6, 99.7	100.1, 100.4, 100.6, 100.7

Lesson	101	102	103	104	105	106	107	108	109	110
Exercise	101.1, 101.4, 101.5, 101.9	102.1, 102.6, 102.9	103.1, 103.6, 103.9	104.1, 104.5, 104.8	105.1, 105.5, 105.8	106.1, 106.3, 106.6, 106.7, 106.8	107.1, 107.3, 107.5, 107.6, 107.8	108.1, 108.6, 108.7, 108.8	109.1, 109.8	110.1, 110.7

Lesson	111	112	113	114	115	116	117	118	119	120
Exercise	111.1, 111.4, 111.8	112.1, 112.7, 112.8	113.1, 113.4, 113.8	114.1, 114.7	115.1, 115.3, 115.8	116.1, 116.6, 116.9	117.1, 117.5, 117.7, 117.9	118.1, 118.5, 118.7, 118.9	119.1, 119.4, 119.7	120.1, 120.2, 120.4, 120.8

Lesson	121	122	123	124	125	126	127	128	129	130
Exercise	121.1, 121.2, 121.8	122.1, 122.6, 122.9	123.1, 123.7, 123.8, 123.9	124.1, 124.7, 124.8, 124.9	125.1, 125.7, 125.8, 125.9	126.1, 126.8, 126.9	127.1, 127.2, 127.9	128.1, 128.9	129.1, 129.4, 129.9	130.1, 130.5, 130.9

## Operations and Algebraic Thinking (3.OA)

Solve problems involving the four operations, and identify and explain patterns in arithmetic.

8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Lesson	111	112	116	117	118	119	120	121	122	123
Exercise	111.7	112.4	116.6	117.5	118.5	119.4	120.7	121.8	122.3, 122.9	123.3

Lesson	124	125	127	128	129	130
Exercise	124.3	125.5	127.7	128.5	129.8	130.8

## Operations and Algebraic Thinking (3.OA)

Solve problems involving the four operations, and identify and explain patterns in arithmetic.

9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*

<b>Lesson</b>	<b>72</b>	<b>73</b>	<b>75</b>	<b>81</b>	<b>83</b>	<b>86</b>	<b>87</b>	<b>88</b>	<b>89</b>	<b>90</b>
<b>Exercise</b>	72.8	73.8	75.9	81.8	83.9	86.10	87.3	88.4	89.6	90.9

<b>Lesson</b>	<b>91</b>	<b>92</b>	<b>93</b>	<b>94</b>	<b>95</b>	<b>96</b>	<b>97</b>	<b>98</b>	<b>99</b>	<b>100</b>
<b>Exercise</b>	91.9	92.8	93.4, 93.8	94.2	95.2	96.3	97.6, 97.8	98.4, 98.8	99.2	100.2, 100.7

<b>Lesson</b>	<b>101</b>	<b>111</b>	<b>112</b>	<b>113</b>	<b>114</b>	<b>115</b>	<b>116</b>	<b>117</b>	<b>118</b>	<b>119</b>
<b>Exercise</b>	101.2, 101.9	111.8	112.6	113.4, 113.8	114.1	115.8	116.3	117.8, 117.9	118.1	119.7

<b>Lesson</b>	<b>120</b>	<b>126</b>	<b>127</b>	<b>128</b>	<b>129</b>
<b>Exercise</b>	120.8	126.7	127.8	128.6	129.1

## Number and Operations in Base Ten (3.NBT)

Use place value understanding and properties of operations to perform multi-digit arithmetic.

1. Use place value understanding to round whole numbers to the nearest 10 or 100.

<b>Lesson</b>	<b>71</b>	<b>72</b>	<b>74</b>	<b>75</b>	<b>77</b>	<b>78</b>	<b>80</b>	<b>81</b>	<b>94</b>	<b>96</b>
<b>Exercise</b>	71.7	72.8	74.10	75.9	77.9	78.8	80.7	81.8	94.9	96.9

<b>Lesson</b>	<b>97</b>	<b>98</b>	<b>99</b>	<b>100</b>	<b>101</b>	<b>102</b>	<b>103</b>	<b>104</b>	<b>105</b>	<b>106</b>
<b>Exercise</b>	97.3	98.8	99.5	100.5	101.8	102.8	103.9	104.8	105.2, 105.8	106.2, 106.8

<b>Lesson</b>	<b>107</b>	<b>108</b>	<b>110</b>	<b>111</b>	<b>112</b>	<b>113</b>	<b>114</b>	<b>115</b>	<b>116</b>	<b>117</b>
<b>Exercise</b>	107.8	108.8	110.2	111.2	112.2, 112.8	113.6	114.4	115.5	116.9	117.9

<b>Lesson</b>	<b>118</b>	<b>120</b>	<b>121</b>	<b>122</b>	<b>123</b>	<b>127</b>	<b>128</b>	<b>129</b>	<b>130</b>
<b>Exercise</b>	118.3, 118.9	120.5	121.6	122.8	123.9	127.7	128.5, 128.9	129.8	130.8

## Number and Operations in Base Ten (3.NBT)

Use place value understanding and properties of operations to perform multi-digit arithmetic.

2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Lesson	71	72	73	74	75	76	77	78	79	80
Exercise	71.6, 71.7	72.7, 72.8	73.3, 73.8	74.2, 74.10	75.2, 75.9	76.8	77.9	78.8	79.8	80.7

Lesson	81	82	83	84	85	86	87	88	89	90
Exercise	81.8	82.7, 82.8	83.7, 83.9	84.7, 84.8	85.6, 85.7, 85.9	86.8, 86.9, 86.10	87.8	88.8	89.9	90.9

Lesson	91	92	93	94	95	96	97	99	100	101
Exercise	91.9	92.8	93.8	94.9	95.9	96.9	97.8	99.7	100.7	101.9

Lesson	103	104	105	106	108	109	110	111	112	113
Exercise	103.9	104.8	105.8	106.8	108.4, 108.8	109.7, 109.8	110.6, 110.7	111.7, 111.8	112.4, 112.8	113.6, 113.8

Lesson	114	115	116	117	118	119	120	121	122	123
Exercise	114.4, 114.7	115.5, 115.8	116.7, 116.9	117.4, 117.6, 117.9	118.6, 118.8, 118.9	119.5, 119.7	120.6, 120.8	121.5, 121.7, 121.8	122.3, 122.4, 122.7, 122.8, 122.9	123.3, 123.4, 123.7

Lesson	124	125	126	127	128	129	130
Exercise	124.3, 124.5, 124.7, 124.9	125.4, 125.5, 125.7, 125.9	126.5, 126.6, 126.9	127.2, 127.7, 127.9	128.7, 128.9	129.4, 129.8	130.5, 130.8

## Number and Operations in Base Ten (3.NBT)

Use place value understanding and properties of operations to perform multi-digit arithmetic.

3. Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g.,  $9 \times 80$ ,  $5 \times 60$ ) using strategies based on place value and properties of operations.

Lesson	71	72	74	76	78	79	80	82	84	89
Exercise	71.7	72.6	74.7	76.8	78.2, 78.8	79.8	80.7	82.8	84.7	89.3

Lesson	90	91	92	93	94	95	96	97	98	99
Exercise	90.3	91.6, 91.7	92.6	93.7	94.6	95.9	96.7	97.3	98.8	99.5, 99.6, 99.7

Lesson	100	101	102	103	104	105	106	107	108	112
Exercise	100.5, 100.7	101.8	102.8	103.9	104.6, 104.8	105.6, 105.8	106.8	107.8	108.6, 108.7	112.7, 112.8

Lesson	113	114	118	119	121	122	126	128	129	130
Exercise	113.8	114.7	118.3, 118.9	119.6	121.8	122.9	126.5, 126.6	128.9	129.4	130.9

## Number and Operations—Fractions (3.NF)

Develop understanding of fractions as numbers.

1. Understand a fraction  $1/b$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts; understand a fraction  $a/b$  as the quantity formed by  $a$  parts of size  $1/b$ .

<b>Lesson</b>	<b>72</b>	<b>76</b>	<b>77</b>	<b>81</b>	<b>82</b>	<b>86</b>	<b>89</b>	<b>91</b>	<b>93</b>	<b>95</b>
<b>Exercise</b>	72.8	76.8	77.9	81.8	82.8	86.10	89.9	91.9	93.8	95.9

<b>Lesson</b>	<b>98</b>	<b>99</b>	<b>100</b>	<b>101</b>	<b>102</b>	<b>103</b>	<b>104</b>	<b>105</b>	<b>106</b>	<b>107</b>
<b>Exercise</b>	98.7	99.3	100.3	101.4	102.5	103.4, 103.9	104.4, 104.8	105.4, 105.8	106.5, 106.8	107.7, 107.8

<b>Lesson</b>	<b>109</b>	<b>110</b>	<b>111</b>	<b>112</b>	<b>114</b>	<b>115</b>	<b>116</b>	<b>117</b>	<b>118</b>	<b>119</b>
<b>Exercise</b>	109.8	110.7	111.8	112.5, 112.8	114.7	115.4	116.2, 116.9	117.9	118.4	119.2

<b>Lesson</b>	<b>120</b>	<b>122</b>	<b>123</b>	<b>124</b>	<b>125</b>	<b>126</b>	<b>127</b>	<b>128</b>	<b>129</b>	<b>130</b>
<b>Exercise</b>	120.3	122.9	123.5	124.6, 124.9	125.9	126.4	127.3	128.2	129.2, 129.9	130.2, 130.9

## Number and Operations—Fractions (3.NF)

Develop understanding of fractions as numbers.

2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.
  - a. Represent a fraction  $1/b$  on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into  $b$  equal parts. Recognize that each part has size  $1/b$  and that the endpoint of the part based at 0 locates the number  $1/b$  on the number line.
  - b. Represent a fraction  $a/b$  on a number line diagram by marking off  $a$  lengths  $1/b$  from 0. Recognize that the resulting interval has size  $a/b$  and that its endpoint locates the number  $a/b$  on the number line.

<b>Lesson</b>	<b>72</b>	<b>76</b>	<b>77</b>	<b>80</b>	<b>82</b>	<b>86</b>	<b>93</b>	<b>95</b>	<b>98</b>	<b>99</b>
<b>Exercise</b>	72.8	76.8	77.9	80.7	82.8	86.1	93.8	95.9	98.7	99.3

<b>Lesson</b>	<b>100</b>	<b>101</b>	<b>102</b>	<b>103</b>	<b>104</b>	<b>105</b>	<b>106</b>	<b>107</b>	<b>108</b>	<b>109</b>
<b>Exercise</b>	100.3	101.4	102.5	103.4	104.4	105.8	106.8	107.8	108.5	109.8

<b>Lesson</b>	<b>110</b>	<b>111</b>	<b>112</b>	<b>113</b>	<b>114</b>	<b>115</b>	<b>116</b>	<b>117</b>	<b>118</b>	<b>119</b>
<b>Exercise</b>	110.7	111.5	112.5	113.5	114.2	115.6	116.9	117.9	118.9	119.7

<b>Lesson</b>	<b>120</b>	<b>121</b>	<b>122</b>	<b>123</b>	<b>126</b>	<b>129</b>	<b>130</b>
<b>Exercise</b>	120.8	121.8	122.9	123.9	126.2	129.2	130.2

## Number and Operations—Fractions (3.NF)

Develop understanding of fractions as numbers.

3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
  - a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
  - b. Recognize and generate simple equivalent fractions, e.g.,  $\frac{1}{2} = \frac{2}{4}$ ,  $\frac{4}{6} = \frac{2}{3}$ . Explain why the fractions are equivalent, e.g., by using a visual fraction model.
  - c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form  $3 = \frac{3}{1}$ ; recognize that  $\frac{6}{1} = 6$ ; locate  $\frac{4}{4}$  and 1 at the same point of a number line diagram.*
  - d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions, e.g., by using a visual fraction model.

Lesson	71	72	73	74	75	76	77	78	79	82
Exercise	71.7	72.3	73.4	74.4	75.5	76.5	77.7	78.8	79.8	82.8

Lesson	83	85	86	87	88	89	90	91	92	93
Exercise	83.9	85.9	86.10	87.4, 87.8	88.3	89.4, 89.9	90.4, 90.9	91.2	92.2	93.2

Lesson	94	95	96	97	98	99	100	101	102	103
Exercise	94.4, 94.9	95.3	96.5	97.5, 97.8	98.8	99.3, 99.7	100.3, 100.7	101.4	102.5, 102.9	103.4, 103.9

Lesson	104	105	106	107	108	109	110	112	114	118
Exercise	104.4, 104.8	105.8	106.8	107.8	108.8	109.4, 109.8	110.7	112.8	114.7	118.4

Lesson	119	120
Exercise	119.2	120.3

**Student Practice Software:** Block 5 Activities 3 and 6

## Measurement and Data (3.MD)

Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.

Lesson	71	72	73	74	75	77	80	82	84	85
Exercise	71.7	72.8	73.8	74.10	75.9	77.9	80.7	82.8	84.8	85.9

Lesson	88	90	91	92	93	94	95	96	97	98
Exercise	88.8	90.9	91.8	92.7	93.8	94.8	95.8	96.8, 96.9	97.4, 97.8	98.3

Lesson	99	100	101	102	103	104	105	106	111	116
Exercise	99.7	100.7	101.7	102.7	103.9	104.8	105.8	106.8	111.8	116.9

Lesson	119
Exercise	119.7



## Measurement and Data (3.MD)

Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

<b>Lesson</b>	<b>72</b>	<b>73</b>	<b>78</b>	<b>88</b>	<b>89</b>	<b>90</b>	<b>91</b>	<b>92</b>	<b>93</b>	<b>94</b>
<b>Exercise</b>	72.8	73.8	78.8	88.8	89.9	90.7	91.6	92.5, 92.8	93.8	94.9

<b>Lesson</b>	<b>97</b>	<b>99</b>	<b>100</b>	<b>101</b>	<b>104</b>	<b>107</b>	<b>110</b>	<b>112</b>	<b>114</b>	<b>115</b>
<b>Exercise</b>	97.8	99.6	100.6	101.9	104.8	107.8	110.6, 110.7	112.8	114.7	115.8

<b>Lesson</b>	<b>116</b>	<b>118</b>	<b>119</b>	<b>120</b>	<b>121</b>	<b>122</b>	<b>123</b>	<b>124</b>	<b>125</b>	<b>127</b>
<b>Exercise</b>	116.9	118.9	119.7	120.8	121.4, 121.8	122.2, 122.9	123.2, 123.6, 123.9	124.4, 124.9	125.6, 125.9	127.5

<b>Lesson</b>	<b>128</b>	<b>129</b>	<b>130</b>
<b>Exercise</b>	128.9	129.5	130.3

## Measurement and Data (3.MD)

Represent and interpret data.

3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*

<b>Lesson</b>	<b>71</b>	<b>72</b>	<b>73</b>	<b>74</b>	<b>75</b>	<b>76</b>	<b>77</b>	<b>78</b>	<b>79</b>	<b>80</b>
<b>Exercise</b>	71.4	72.5	73.5	74.8	75.6, 75.9	76.3	77.5	78.7, 78.8	79.6, 79.8	80.6

<b>Lesson</b>	<b>81</b>	<b>82</b>	<b>83</b>	<b>84</b>	<b>85</b>	<b>86</b>	<b>87</b>	<b>88</b>	<b>89</b>	<b>90</b>
<b>Exercise</b>	81.6	82.5, 82.8	83.6, 83.9	84.6, 84.8	85.8, 85.9	86.2, 86.10	87.6	88.7	89.8	90.8

<b>Lesson</b>	<b>91</b>	<b>92</b>	<b>93</b>	<b>94</b>	<b>95</b>	<b>96</b>	<b>97</b>	<b>98</b>	<b>99</b>	<b>105</b>
<b>Exercise</b>	91.9	92.8	93.8	94.7, 94.9	95.6	96.9	97.8	98.8	99.7	105.8

<b>Lesson</b>	<b>106</b>	<b>108</b>	<b>110</b>	<b>111</b>	<b>113</b>	<b>115</b>	<b>120</b>	<b>124</b>	<b>125</b>	<b>126</b>
<b>Exercise</b>	106.8	108.8	110.7	111.8	113.8	115.8	120.8	124.2, 124.9	125.3	126.3

<b>Lesson</b>	<b>129</b>	<b>130</b>
<b>Exercise</b>	129.3	130.4

## Measurement and Data (3.MD)

Represent and interpret data.

4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.

Lesson	125	126	127	128	129	130
Exercise	125.2	126.2	127.3	128.3	129.6	130.6

## Measurement and Data (3.MD)

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
  - a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.
  - b. A plane figure which can be covered without gaps or overlaps by  $n$  unit squares is said to have an area of  $n$  square units.

Lesson	124	127	128	129
Exercise	124.9	127.6	128.4, 128.7	129.4

**Student Practice Software:** Block 3 Activity 6, Block 4 Activity 6

## Measurement and Data (3.MD)

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).

Lesson	92	95
Exercise	92.8	95.6

**Student Practice Software:** Block 3 Activity 6, Block 4 Activity 6

## Measurement and Data (3.MD)

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

7. Relate area to the operations of multiplication and addition.
  - a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
  - b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
  - c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths  $a$  and  $b + c$  is the sum of  $a \times b$  and  $a \times c$ . Use area models to represent the distributive property in mathematical reasoning.
  - d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

<b>Lesson</b>	<b>71</b>	<b>82</b>	<b>83</b>	<b>89</b>	<b>94</b>	<b>97</b>	<b>100</b>	<b>102</b>	<b>103</b>	<b>104</b>
<b>Exercise</b>	71.7	82.8	83.9	89.9	94.9	97.8	100.7	102.9	103.9	104.8

<b>Lesson</b>	<b>106</b>	<b>107</b>	<b>108</b>	<b>111</b>	<b>112</b>	<b>115</b>	<b>117</b>	<b>120</b>	<b>123</b>	<b>124</b>
<b>Exercise</b>	106.8	107.8	108.8	111.4	112.7	115.8	117.9	120.8	123.7	124.7, 124.9

<b>Lesson</b>	<b>125</b>	<b>126</b>	<b>127</b>	<b>128</b>	<b>129</b>	<b>130</b>
<b>Exercise</b>	125.7	126.5, 126.6	127.6	128.4, 128.7, 128.9	129.4, 129.9	130.5, 130.9

**Student Practice Software:** Block 3 Activity 6, Block 4 Activity 6, Block 5 Activities 1 and 4

## Measurement and Data (3.MD)

Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

<b>Lesson</b>	<b>71</b>	<b>82</b>	<b>83</b>	<b>89</b>	<b>91</b>	<b>94</b>	<b>97</b>	<b>100</b>	<b>106</b>	<b>107</b>
<b>Exercise</b>	71.7	82.8	83.9	89.9	91.9	94.9	97.8	100.7	106.8	107.8

<b>Lesson</b>	<b>115</b>	<b>117</b>	<b>118</b>	<b>119</b>	<b>120</b>	<b>121</b>	<b>122</b>	<b>123</b>	<b>124</b>	<b>125</b>
<b>Exercise</b>	115.8	117.6, 117.9	118.6	119.5	120.6, 120.8	121.5, 121.7	122.4, 122.7	123.4, 123.7, 123.9	124.5, 124.7, 124.9	125.4, 125.7, 125.9

<b>Lesson</b>	<b>126</b>	<b>127</b>
<b>Exercise</b>	126.6, 126.9	127.9

## Geometry (3.G)

Reason with shapes and their attributes.

1. Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

<b>Lesson</b>	<b>76</b>	<b>77</b>	<b>78</b>	<b>79</b>	<b>80</b>	<b>81</b>	<b>82</b>	<b>83</b>	<b>84</b>	<b>85</b>
<b>Exercise</b>	76.8	77.9	78.4	79.4	80.4	81.3	82.6	83.5	84.8	85.9

<b>Lesson</b>	<b>87</b>	<b>91</b>	<b>101</b>	<b>128</b>	<b>129</b>	<b>130</b>
<b>Exercise</b>	87.8	91.9	101.9	128.8	129.7	130.7, 130.9

## Geometry (3.G)

Reason with shapes and their attributes.

2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as  $\frac{1}{4}$  of the area of the shape.*

<b>Lesson</b>	<b>121</b>
<b>Exercise</b>	121.3

**Student Practice Software:** Block 5 Activities 2 and 5

# Level D Correlation to Grade 3 Common Core State Standards for Mathematics

## Operations and Algebraic Thinking (3.OA)

Represent and solve problems involving multiplication and division.

1. Interpret products of whole numbers, e.g., interpret  $5 \times 7$  as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as  $5 \times 7$ .*

Lesson	2	3	4	5	6	7	8	10	11	12
Exercise	2.6	3.2	4.2	5.2	6.6	7.7	8.7	10.8	11.9	12.2

Lesson	13	14	15	16	17	18	19	20	22	24
Exercise	13.7	14.5	15.6	16.7, 16.8	17.9	18.9	19.9	20.10	22.8	24.8

Lesson	26	29	31	33	34	57	58	59	60
Exercise	26.8	29.9	31.6, 31.8	33.9	34.5	57.5	58.4	59.6	60.2

## Operations and Algebraic Thinking (3.OA)

Represent and solve problems involving multiplication and division.

2. Interpret whole-number quotients of whole numbers, e.g., interpret  $56 \div 8$  as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as  $56 \div 8$ .*

This standard is first addressed in **Lesson 73**.

## Operations and Algebraic Thinking (3.OA)

Represent and solve problems involving multiplication and division.

3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

This standard is first addressed in **Lesson 72**.

## Operations and Algebraic Thinking (3.OA)

Represent and solve problems involving multiplication and division.

4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations  $8 \times ? = 48$ ,  $5 = \square \div 3$ ,  $6 \times 6 = ?$*

Lesson	3	4	5	6	7	8	10	16	22	24
Exercise	3.2	4.2	5.2	6.6	7.7	8.7	10.8	16.8	22.8	24.8

Lesson	26	29	31	32	33	34	35	36	37	38
Exercise	26.8	29.9	31.6	32.3	33.9	34.4, 34.5	35.4	36.7	37.8	38.9

Lesson	39	40	41	42	43	46	47	48	49	50
Exercise	39.1, 39.8	40.1	41.1	42.1	43.8	46.1, 46.7	47.1, 47.7	48.1, 48.7	49.1, 49.7	50.1, 50.7

Lesson	51	52	53	54	55	57	58	59	60	61
Exercise	51.1	52.1	53.1	54.8	55.8	57.1, 57.4	58.1	59.1, 59.9	60.1	61.1, 61.6

Lesson	62	63	64	65	66	67	68	69	70
Exercise	62.2, 62.9	63.2, 63.9	64.1, 64.9	65.1	66.1, 66.2, 66.4, 66.8	67.1, 67.2, 67.4, 67.7	68.1, 68.2, 68.3, 68.7, 68.9	69.1, 69.2, 69.4, 69.8	70.1, 70.2, 70.7, 70.8

## Operations and Algebraic Thinking (3.OA)

Understand properties of multiplication and the relationship between multiplication and division.

5. Apply properties of operations as strategies to multiply and divide. *Examples: If  $6 \times 4 = 24$  is known, then  $4 \times 6 = 24$  is also known. (Commutative property of multiplication.)  $3 \times 5 \times 2$  can be found by  $3 \times 5 = 15$ , then  $15 \times 2 = 30$ , or by  $5 \times 2 = 10$ , then  $3 \times 10 = 30$ . (Associative property of multiplication.) Knowing that  $8 \times 5 = 40$  and  $8 \times 2 = 16$ , one can find  $8 \times 7$  as  $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ . (Distributive property.)*

Lesson	29	30	31	32	33	34	37	40	41	47
Exercise	29.3	30.4	31.3	32.5	33.5	34.4	37.1	40.3, 40.5	41.3	47.5

Lesson	48	54	55	56	57	60	61	63	64	65
Exercise	48.1	54.7	55.8	56.4, 56.8	57.4	60.7	61.6	63.8	64.1	65.1

Lesson	66	67	68	69	70
Exercise	66.1	67.1	68.7	69.1	70.1

## Operations and Algebraic Thinking (3.OA)

Understand properties of multiplication and the relationship between multiplication and division.

6. Understand division as an unknown-factor problem. *For example, find  $32 \div 8$  by finding the number that makes 32 when multiplied by 8.*

This standard is first addressed in **Lesson 124**.

## Operations and Algebraic Thinking (3.OA)

Multiply and divide within 100.

7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that  $8 \times 5 = 40$ , one knows  $40 \div 5 = 8$ ) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

Lesson	31	32	33	34	35	36	37	38	39	40
Exercise	31.6	32.3	33.5	34.4	35.4	36.1, 36.4, 36.7	37.1, 37.8	38.1, 38.4, 38.9	39.1, 39.8	40.1, 40.5

Lesson	41	42	43	44	45	46	47	48	49	50
Exercise	41.1, 41.3	42.1	43.1, 43.8	44.1, 44.9	45.1, 45.8	46.1, 46.7	47.1, 47.5, 47.7	48.1, 48.7	49.1, 49.7	50.1, 50.7

Lesson	51	52	53	54	55	56	57	58	59	60
Exercise	51.1, 51.7	52.1, 52.7	53.1, 53.8	54.1, 54.8	55.1, 55.8	56.1	57.1, 57.4, 57.5, 57.8	58.1, 58.4, 58.5, 58.9	59.1, 59.5, 59.7, 59.8	60.1, 60.2

Lesson	61	62	63	64	65	66	67	68	69	70
Exercise	61.1, 61.6, 61.10	62.2, 62.9	63.2, 63.9	64.1, 64.9	65.1, 65.9	66.1, 66.4, 66.8	67.1, 67.4, 67.7	68.1, 68.3, 68.7, 68.9	69.1, 69.4, 69.8	70.1, 70.8

## Operations and Algebraic Thinking (3.OA)

Solve problems involving the four operations, and identify and explain patterns in arithmetic.

8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

This standard is first addressed in **Lesson 111**.

## Operations and Algebraic Thinking (3.OA)

Solve problems involving the four operations, and identify and explain patterns in arithmetic.

9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*

Lesson	3	6	8	9	10	11	12	13	14	15
Exercise	3.9	6.8	8.8	9.4, 9.8	10.5, 10.8	11.6, 11.9	12.7	13.1, 13.3	14.7, 14.8	15.4

Lesson	16	17	18	19	20	21	22	26	31	32
Exercise	16.5	17.9	18.9	19.9	20.9	21.8	22.8	26.9	31.6	32.3

Lesson	38	41	42	45	51	52	53	55	61	64
Exercise	38.9	41.8	42.9	45.8	51.7	52.7	53.8	55.8	61.10	64.2

Lesson	65	66	70
Exercise	65.3, 65.9	66.3	70.8

## Number and Operations in Base Ten (3.NBT)

Use place value understanding and properties of operations to perform multi-digit arithmetic.

1. Use place value understanding to round whole numbers to the nearest 10 or 100.

Lesson	23	24	25	26	27	28	29	30	31	32
Exercise	23.4	24.7	25.4	26.4	27.3	28.2	29.2	30.7, 30.8	31.8	32.6, 32.9

Lesson	33	34	36	37	38	40	42	43	48	49
Exercise	33.6	34.10	36.7	37.8	38.9	40.8	42.9	43.9	48.7	49.7

Lesson	56	57	58	59	60	61	62	63	64	65
Exercise	56.2	57.3	58.3	59.3	60.9	61.10	62.9	63.9	64.9	65.7

Lesson	66	67	68	69	70
Exercise	66.5, 66.8	67.7	68.9	69.8	70.8

## Number and Operations in Base Ten (3.NBT)

Use place value understanding and properties of operations to perform multi-digit arithmetic.

2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Lesson	1	2	3	4	5	6	7	8	9	10
Exercise	1.4, 1.5, 1.6, 1.7, 1.9	2.2, 2.4, 2.5, 2.7, 2.8	3.3, 3.5, 3.6, 3.7, 3.8, 3.9	4.1, 4.5, 4.6, 4.7, 4.8	5.1, 5.3, 5.5, 5.7, 5.8	6.1, 6.5, 6.7, 6.8	7.1, 7.3, 7.4, 7.5, 7.6, 7.8	8.1, 8.3, 8.4, 8.5, 8.6, 8.8	9.1, 9.2, 9.5, 9.6, 9.8	10.2, 10.3, 10.7, 10.8

Lesson	11	12	13	14	15	16	17	18	19	20
Exercise	11.1, 11.3, 11.4, 11.5, 11.7, 11.8, 11.9	12.1, 12.3, 12.4, 12.5, 12.6, 12.7	13.1, 13.3, 13.4, 13.5, 13.6, 13.8	14.1, 14.2, 14.3, 14.4, 14.6, 14.8	15.1, 15.2, 15.3, 15.4, 15.6	16.1, 16.3, 16.4, 16.6, 16.8	17.1, 17.2, 17.4, 17.5, 17.6, 17.7, 17.8	18.1, 18.2, 18.3, 18.4, 18.6, 18.7, 18.9	19.1, 19.2, 19.4, 19.5, 19.6, 19.7, 19.8, 19.9	20.1, 20.3, 20.4, 20.5, 20.6, 20.7, 20.9, 20.10

Lesson	21	22	23	24	25	26	27	28	29	30
Exercise	21.1, 21.4, 21.7, 21.9	22.1, 22.6, 22.8	23.1, 23.3, 23.8	24.1, 24.4, 24.8	25.1, 25.3, 25.8	26.1, 26.5, 26.6, 26.8	27.1, 27.5, 27.6, 27.7	28.1, 28.6, 28.7, 28.9	29.1, 29.2, 29.7, 29.8, 29.9	30.1, 30.5, 30.6, 30.7, 30.8

Lesson	31	32	33	34	35	36	37	38	39	40
Exercise	31.1, 31.4, 31.7, 31.8	32.1, 32.4, 32.6, 32.7, 32.9	33.1, 33.2, 33.6, 33.7, 33.9	34.1, 34.6, 34.7, 34.10	35.1, 35.3, 35.10	36.5, 36.7	37.3, 37.5, 37.8	38.2, 38.5, 38.9	39.2, 39.8	40.2, 40.8



Lesson	41	42	43	44	45	46	47	48	49	50
Exercise	41.2, 41.8	42.6, 42.9	43.7, 43.8	44.2, 44.8, 44.9	45.3, 45.4, 45.8	46.2, 46.3, 46.7	47.2, 47.6, 47.7	48.2, 48.7	49.2, 49.4, 49.6, 49.7	50.2, 50.3, 50.5, 50.6, 50.7

Lesson	51	52	53	54	55	56	57	58	59	60
Exercise	51.2, 51.4, 51.6, 51.7	52.5, 52.7	53.5, 53.7, 53.8	54.4, 54.8	55.5, 55.8	56.6, 56.8	57.5, 57.6, 57.8	58.4, 58.6, 58.8, 58.9	59.5, 59.6, 59.7, 59.8, 59.9	60.5, 60.6, 60.8, 60.9

Lesson	61	62	63	64	65	66	67	68	69	70
Exercise	61.2, 61.4, 61.5, 61.10	62.6, 62.8, 62.10	63.5, 63.7, 63.9	64.7, 64.9	65.7, 65.9	66.5, 66.6, 66.8	67.6, 67.7, 67.7	68.5, 68.9	69.8	70.6, 70.8

## Number and Operations in Base Ten (3.NBT)

Use place value understanding and properties of operations to perform multi-digit arithmetic.

3. Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g.,  $9 \times 80$ ,  $5 \times 60$ ) using strategies based on place value and properties of operations.

Lesson	5	6	7	8	10	13	15	16	24	29
Exercise	5.2	6.6	7.7	8.7	10.8	13.7, 13.8	15.6	16.8	24.8	29.9

Lesson	31	32	33	34	35	41	42	43	44	45
Exercise	31.6	32.3	33.5	34.4	35.4	41.1, 41.3	42.1	43.8	44.9	45.8

Lesson	53	69	70
Exercise	53.1	69.7	70.8

## Number and Operations—Fractions (3.NF)

Develop understanding of fractions as numbers.

1. Understand a fraction  $1/b$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts; understand a fraction  $a/b$  as the quantity formed by  $a$  parts of size  $1/b$ .

Lesson	29	30	31	32	33	34	35	36	37	38
Exercise	29.5	30.3	31.2	32.2	33.3, 33.9	34.3, 34.10	35.6	36.7	37.8	38.9

Lesson	40	42	43	44	45	46	47	48	49	51
Exercise	40.4, 40.8	42.2, 42.9	43.6	44.6, 44.9	45.5	46.6, 46.7	47.3	48.4, 48.7	49.3	51.7

Lesson	52	53	54	55	56	57	59	61	62	63
Exercise	52.5	53.3	54.8	55.8	56.8	57.8	59.9	61.9	62.9	63.9

Lesson	65	69	70
Exercise	65.9	69.8	70.8

## Number and Operations—Fractions (3.NF)

Develop understanding of fractions as numbers.

2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.
  - a. Represent a fraction  $1/b$  on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into  $b$  equal parts. Recognize that each part has size  $1/b$  and that the endpoint of the part based at 0 locates the number  $1/b$  on the number line.
  - b. Represent a fraction  $a/b$  on a number line diagram by marking off  $a$  lengths  $1/b$  from 0. Recognize that the resulting interval has size  $a/b$  and that its endpoint locates the number  $a/b$  on the number line.

<b>Lesson</b>	<b>42</b>	<b>43</b>	<b>44</b>	<b>45</b>	<b>46</b>	<b>47</b>	<b>48</b>	<b>49</b>	<b>51</b>	<b>52</b>
<b>Exercise</b>	42.2	43.6	44.6	45.5	46.6	47.3	48.4	49.3	51.7	52.5

<b>Lesson</b>	<b>53</b>	<b>54</b>	<b>55</b>	<b>56</b>	<b>57</b>	<b>59</b>	<b>61</b>	<b>62</b>	<b>63</b>	<b>69</b>
<b>Exercise</b>	53.3	54.8	55.8	56.8	57.8	59.9	61.9	62.9	63.9	69.8

<b>Lesson</b>	<b>70</b>
<b>Exercise</b>	70.8

## Number and Operations—Fractions (3.NF)

Develop understanding of fractions as numbers.

3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
  - a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
  - b. Recognize and generate simple equivalent fractions, e.g.,  $1/2 = 2/4$ ,  $4/6 = 2/3$ . Explain why the fractions are equivalent, e.g., by using a visual fraction model.
  - c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form  $3 = 3/1$ ; recognize that  $6/1 = 6$ ; locate  $4/4$  and 1 at the same point of a number line diagram.*
  - d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions, e.g., by using a visual fraction model.

<b>Lesson</b>	<b>34</b>	<b>35</b>	<b>36</b>	<b>37</b>	<b>38</b>	<b>39</b>	<b>40</b>	<b>41</b>	<b>42</b>	<b>43</b>
<b>Exercise</b>	34.3	35.6, 35.10	36.7	37.8	38.9	39.4	40.4, 40.8	41.8	42.9	43.8

<b>Lesson</b>	<b>44</b>	<b>45</b>	<b>46</b>	<b>48</b>	<b>52</b>	<b>53</b>	<b>54</b>	<b>55</b>	<b>56</b>	<b>57</b>
<b>Exercise</b>	44.9	45.8	46.7	48.7	52.5	53.3	54.8	55.8	56.8	57.8

<b>Lesson</b>	<b>59</b>	<b>60</b>	<b>61</b>	<b>62</b>	<b>63</b>	<b>64</b>	<b>65</b>	<b>66</b>	<b>67</b>	<b>69</b>
<b>Exercise</b>	59.9	60.9	61.9	62.3, 62.9	63.3, 63.9	64.4	65.9	66.8	67.7	69.8

<b>Lesson</b>	<b>70</b>
<b>Exercise</b>	70.8

## Measurement and Data (3.MD)

Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.

<b>Lesson</b>	<b>53</b>	<b>54</b>	<b>55</b>	<b>56</b>	<b>57</b>	<b>58</b>	<b>59</b>	<b>60</b>	<b>61</b>	<b>62</b>
<b>Exercise</b>	53.2	54.3	55.2	56.5	57.7	58.7	59.9	60.9	61.7	62.5

<b>Lesson</b>	<b>63</b>	<b>64</b>	<b>65</b>	<b>66</b>	<b>67</b>	<b>68</b>	<b>69</b>	<b>70</b>
<b>Exercise</b>	63.4, 63.9	64.5, 64.9	65.6	66.6, 66.8	67.6, 67.7	68.5, 68.9	69.6	70.6, 70.8

## Measurement and Data (3.MD)

Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

<b>Lesson</b>	<b>16</b>	<b>19</b>	<b>20</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>27</b>	<b>32</b>	<b>33</b>
<b>Exercise</b>	16.6	19.6	20.7	22.6	23.8	24.8	25.8	27.7	32.7	33.7

<b>Lesson</b>	<b>40</b>	<b>42</b>	<b>43</b>	<b>44</b>	<b>46</b>	<b>48</b>	<b>50</b>	<b>51</b>	<b>58</b>	<b>60</b>
<b>Exercise</b>	40.8	42.6	43.7	44.9	46.7	48.7	50.3	51.6	58.9	60.9

<b>Lesson</b>	<b>65</b>	<b>66</b>
<b>Exercise</b>	65.9	66.8

## Measurement and Data (3.MD)

Represent and interpret data.

3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*

<b>Lesson</b>	<b>61</b>	<b>62</b>	<b>63</b>	<b>64</b>	<b>65</b>	<b>66</b>	<b>68</b>	<b>69</b>	<b>70</b>
<b>Exercise</b>	61.3	62.4	63.6	64.6	65.5	66.8	68.6	69.5	70.4

## Measurement and Data (3.MD)

Represent and interpret data.

4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.

This standard is first addressed in **Lesson 125**.

## Measurement and Data (3.MD)

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
  - a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.
  - b. A plane figure which can be covered without gaps or overlaps by  $n$  unit squares is said to have an area of  $n$  square units.

<b>Lesson</b>	<b>26</b>	<b>34</b>	<b>36</b>	<b>37</b>	<b>38</b>
<b>Exercise</b>	26.8	34.5	36.7	37.7	38.7

## Measurement and Data (3.MD)

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).

<b>Lesson</b>	<b>26</b>	<b>34</b>
<b>Exercise</b>	26.8	34.5

This standard is addressed further starting in **Lesson 92** and in Blocks 3 and 4 of the Student Practice Software.

## Measurement and Data (3.MD)

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

7. Relate area to the operations of multiplication and addition.
  - a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
  - b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
  - c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths  $a$  and  $b + c$  is the sum of  $a \times b$  and  $a \times c$ . Use area models to represent the distributive property in mathematical reasoning.
  - d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

<b>Lesson</b>	<b>34</b>	<b>35</b>	<b>36</b>	<b>37</b>	<b>38</b>	<b>40</b>	<b>41</b>	<b>42</b>	<b>43</b>	<b>45</b>
<b>Exercise</b>	34.5	35.8	36.7	37.7	38.7	40.8	41.8	42.9	43.8	45.8

<b>Lesson</b>	<b>47</b>	<b>50</b>	<b>51</b>	<b>52</b>	<b>63</b>	<b>65</b>	<b>68</b>
<b>Exercise</b>	47.7	50.7	51.7	52.7	63.9	65.9	68.9

## Measurement and Data (3.MD)

Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

<b>Lesson</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>32</b>	<b>34</b>
<b>Exercise</b>	23.6	24.3	25.6	26.8	27.2	28.4	29.9	30.8	32.9	34.5, 34.10

<b>Lesson</b>	<b>35</b>	<b>36</b>	<b>37</b>	<b>38</b>	<b>40</b>	<b>41</b>	<b>42</b>	<b>43</b>	<b>45</b>	<b>47</b>
<b>Exercise</b>	35.8	36.7	37.7	38.7	40.8	41.8	42.9	43.8	45.8	47.7

<b>Lesson</b>	<b>50</b>	<b>51</b>	<b>52</b>	<b>63</b>	<b>65</b>	<b>68</b>
<b>Exercise</b>	50.7	51.7	52.7	63.9	65.9	68.9

## Geometry (3.G)

Reason with shapes and their attributes.

1. Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

Lesson	27	28	29	30	31	32	33	34	35	36
Exercise	27.4	28.5	29.4	30.8	31.5, 31.8	32.8	33.8, 33.9	34.8	35.10	36.7

Lesson	38	41	45	46	59	63
Exercise	38.8	41.8	45.8	46.7	59.9	63.9

## Geometry (3.G)

Reason with shapes and their attributes.

2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as  $\frac{1}{4}$  of the area of the shape.*

This standard is first addressed in **Lesson 121** and in Block 5 of the Student Practice Software.