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Level 6
correlated to
South Carolina Mathematics Curriculum Standards
Grade 6

South Carolina Standard and Expectation	**Houghton Mifflin *MATHEMATICS***
NUMBER AND OPERATIONS	
I. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	
A. Work flexibly with fractions, decimals, and percents to solve problems.	
1. Show the relationship among fractions, decimals, and percents.	TE: 124, 134–135, 136–137, 144, 178, 224, 226, 304, 326–327, 330–331, 338, 350, 352, 366, 390, 430, 464, 500, 508 PE: 134–135, 136–137, 144, 326–327, 330–331, 338 Assessment Guide: 6, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, 37, 40, 45, 63, 64, 65, 66, 67, 68,69, 70, 71, 73, 120, 127, 128 Internet: Where Does the Time Go?
B. Compare and order fractions, decimals, and percents efficiently and find their approximate locations on a number line.	
1. Use order symbols to compare two fractions, two decimals, or two percents.	TE: 6–7, 46, 62, 86, 126–129, 136–137, 144, 208–209, 218, 238, 326 PE: 6–7, 46, 126–129, 136–137, 144, 208–209, 238 Assessment Guide: 5, 7, 8, 10, 13, 28, 29, 32, 42, 45, 47, 60, 114 Internet: *These activities give students the opportunity to compare two decimals:* We're Just Winging It!, Where Does the Time Go?
C. Develop meaning for percents greater than 100 and less than 1.	
1. Use models to represent percents greater than 100% and solve problems involving them.	TE: 326–327, 328–329, 331, 333 PE: 326–327, 328–329, 331, 333 Assessment Guide: 120
D. Understand and use ratios and proportions to represent quantitative relationships.	
1. Connect the concept of ratio and fractions by determining the equivalence of two ratios.	TE: 304–305, 306, 308–309, 310–312, 320–321, 322, 336, 410, 498 PE: 304–305, 308–309, 310–312, 320–321, 336 Assessment Guide: 61, 63, 65, 66, 128
E. Develop an understanding of large numbers and recognize and appropriately use exponential, scientific, and calculator notation.	
1. Evaluate powers of ten up to 10^6.	TE: 2–3, 10–11, 32, 36–37, 48, 102, 106–107, 108, 142, 180, 264, 274, 326, 400, 566, 572 PE: 2–3, 10–11, 36–37, 48, 102, 106–107, 142 Assessment Guide: 9, 10, 11, 12, 13, 14, 27, 29, 31, 116, 127
F. Use factors, multiples, prime factorization, and relatively prime numbers to solve problems.	
1. Solve problems using prime factorization, common multiples, and common factors, and explain the reasoning used.	TE: 102, 104–105, 106, 108–109, 112–115, 116–117, 124–125, 126–129, 142–143, 158–161, 162–163, 170, 192, 214, 222, 252, 318, 330, 416, 426, 432 PE: 102, 104–105, 108–109, 112–115, 116–117, 124–125, 126–129, 142–143, 158–161, 162–163, 192 Assessment Guide: 6, 27, 28, 29, 31, 32, 33, 34, 35,

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	26, 37, 39, 40, 116, 117
G. Develop meaning for integers and represent and compare quantities with them.	
1. Use integers to describe real world phenomena in order to develop their meaning.	TE: 208–209, 211, 216, 220, 223, 225, 227, 235, 241, 246, 576 PE: 208–209, 211, 216, 220, 223, 225, 227, 235, 241, 246 Assessment Guide: *These pages give students the opportunity to use integers:* 42, 43, 44, 45, 46, 47, 48, 49, 50, 60, 106, 107, 108, 109, 110, 112, 113, 125, 126, 127, 129
II. Understand meanings of operations and how they relate to one another.	
A. Understand the meaning and effects of arithmetic operations with fractions, decimals, and integers.	
1. Explain the meaning and effects of adding, subtracting, multiplying and dividing.	TE: 8, 12–13, 14, 20–23, 30, 32–35, 41, 47, 48, 156–161, 162–163, 168–169, 172, 174–179, 180, 186, 192–193, 208, 210, 214–217, 218–221, 224–225, 232, 238–239, 252, 266, 280, 284, 308, 322, 404, 412, 422, 460, 472, 474, 524, 556, 572, 576 PE: 12–13, 20–23, 32–35, 41, 47, 48, 156–161, 162–163, 168–169, 174–179, 192–193, 214–217, 218–221, 224–225, 238–239 Assessment Guide: 5, 6, 7, 8, 9, 11, 12, 14, 36, 37, 39, 40, 41, 42, 43, 44, 46, 48, 59, 68, 69, 70, 71, 72, 73, 74, 75, 109, 112, 113, 114, 117, 118, 119, 120, 121, 125, 126, 127 Internet: We're Just Winging It!, What a Throw, Where Does the Time Go?
B. Use the associative and commutative properties of addition and multiplication and the distributive property of multiplication over addition to simplify computations with integers, fractions, and decimals.	
1. Apply the commutative, associative, and distributive properties to simplify computations with whole numbers, fractions, and decimals.	TE: 232–233, 250, 252–254, 256–257, 262–263, 506 PE: 232–233, 250, 252–254, 256–257, 262–263 Assessment Guide: 5, 42, 46, 48, 52, 53, 54, 56, 57, 108, 109, 112, 113
III. Compute fluently and make reasonable estimates.	
A. Select appropriate methods and tools for computing with fractions and decimals from among mental computation, estimation, calculators or computers, and paper and pencil, depending on the situation, and apply the selected methods.	
1. Select appropriate methods and tools to solve problems requiring the addition and subtraction of fractions and decimals.	TE: 12–13, 21, 23, 33, 35, 41, 47, 118, 156–161, 162–163, 180, 192, 208, 256, 270, 274, 284, 358, 460, 524 PE: 12–13, 21, 23, 33, 35, 41, 47, 156–161, 162–163, 192, 358 Assessment Guide: 5, 6, 7, 11, 14, 35, 37, 39, 117 Internet: We're Just Winging It!, What a Throw, Where Does the Time Go?

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B. Develop and analyze algorithms for computing with fractions, decimals, and integers and develop fluency in their use.	
1. Divide commonly used fractions (including decimals) using models.	TE: 32–35, 41, 48, 158, 174–179, 193, 232, 474 PE: 32–35, 41, 48, 174–179, 193 Assessment Guide: *These pages give students the opportunity to divide fractions:* 6, 7, 11, 14, 36, 37, 40, 114, 117 Internet: We're Just Winging It!, What a Throw, Where Does the Time Go?
2. Use models and numbers to develop and analyze algorithms with fractions and decimals.	TE: 12–13, 20–23, 32–35, 156–161, 162–163, 168–169, 174–179 PE: 12–13, 20–23, 32–35, 156–161, 162–163, 168–169, 174–179 Assessment Guide: 5, 6, 7, 11, 14, 35, 36, 37, 39, 40, 114, 117
3. Add, subtract, multiply and divide fractions (including decimals) to solve a variety of applied and mathematical problem situations.	TE: 12–13, 20–23, 32–35, 41, 47, 48, 156–161, 162–163, 168–169, 172, 174–179, 192–193, 180, 184, 208, 210, 252, 262, 270, 274, 314, 358, 370, 372 PE: 12–13, 20–23, 32–35, 41, 47, 48, 156–161, 162–163, 168–169, 174–179, 192–193, 358 Assessment Guide: 11, 14, 38, 41, 68, 69, 70, 71, 72, 73, 74, 75, 111, 117, 119, 120, 121, 123, 124 Internet: We're Just Winging It!, What a Throw, Where Does the Time Go?
C. Develop and use strategies to estimate the results of rational-number computations and judge the reasonableness of the results.	
1. Estimate the sums and differences of fractions, describe the method used, and determine the reasonableness of results.	TE: 13, 14–15 PE: 13, 14–15 Assessment Guide: *These pages give students the opportunity to estimate multiplication of decimals:* 71, 74
ALGEBRA	
I. Understand patterns, relations, and functions.	
A. Represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic rules.	
1. Describe, extend, and write rules for a wide variety of patterns.	TE: 10, 36, 81, 87, 106, 109, 112, 117, 128, 139, 183, 264, 304, 327, 358, 368–369, 379, 432, 445, 471, 556–557, 565, 585 PE: 10, 36, 81, 87, 109, 117, 128, 139, 183, 327, 358, 368–369, 379, 445, 471, 556–557, 565, 585 Assessment Guide: 27, 74, 75, 77, 78, 79, 80, 82, 83, 84, 107, 108, 109, 110, 111, 112, 113, 119, 122
II. Represent and analyze mathematical situations and structures using algebraic symbols.	
A. Develop an initial conceptual understanding of different uses of variables.	

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1. Use order of operations to evaluate numerical expressions.	TE: 258–260, 546, 552, 566, 570–571 PE: 258–260, 546, 570–571 Assessment Guide: 42, 52, 53, 54, 56, 57, 106, 107, 112, 118, 126, 128, 129
B. Explore relationships between symbolic expressions and graphs of lines, paying particular attention to the meaning of intercept and slope.	
1. Write simple equations and inequalities accurately to represent relationships.	TE: 548, 560–561 PE: 548, 560–561 Assessment Guide: 53, 54, 55, 57, 58, 119
D. Recognize and generate equivalent forms for simple algebraic expressions and solve linear equations.	
1.Use commutative, associative and distributive properties to examine equivalence of a variety of simple algebraic expressions.	TE: 232–233, 250, 252–254, 256–257, 306, 310, 320, 356, 418, 498, 552 PE: 232–233, 250, 252–254, 256–257 Assessment Guide: 42, 46, 48, 52, 53, 54, 55, 56, 57, 113
III. Use mathematical models to represent and understand quantitative relationships.	
A. Model and solve contextualized problems using various representations, such as graphs, tables, and equations.	
1. Use graphs and tables to solve applied problems.	TE: 5, 7, 9, 19, 21, 23, 31, 37, 44, 49, 51, 53, 64, 73, 74, 79, 90, 93, 94, 95, 96, 99, 105, 114, 137, 140, 145, 160, 163, 167, 173, 254, 257, 263, 271, 283, 285, 293, 305, 309, 312, 329, 351, 355, 365, 372, 381, 499, 505, 514, 529, 555, 566–567, 578–579, 585, 590 PE: 5, 7, 9, 19, 21, 23, 31, 37, 44, 49, 51, 53, 64, 73, 74, 79, 90, 93, 94, 95, 96, 99, 105, 114, 137, 140, 145, 160, 163, 167, 173, 254, 257, 263, 271, 283, 285, 293, 305, 309, 312, 329, 351, 355, 365, 372, 381, 499, 505, 514, 529, 555, 566–567, 578–579, 585, 590 Assessment Guide: 11, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 30, 33, 70, 96, 102, 108, 109, 111, 113, 115, 124, 126 Internet: We're Just Winging It!, What a Throw, Where Does the Time Go?, A Cool Snack
GEOMETRY	
I. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.	
A. Precisely describe, classify, and understand relationships among types of two- and three-dimensional objects using their defining properties.	
1. Compare and contrast prisms, cylinders and pyramids with the polygons or circles that constitute their faces.	TE: 470–471, 472–473, 474–475, 476–477 PE: 470–471, 472–473, 474–475, 476–477 Assessment Guide:85, 86, 87, 88, 89, 90, 91, 92, 93
B. Understand relationships among the angles, side lengths, perimeters, areas, and volumes of similar objects.	
1. Describe relationships among angles, side lengths, perimeters, and areas of similar polygons.	TE: 412–415, 426, 430–431, 438, 452, 464, 466, 472, 476, 512, 552, 576

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	PE: 412–415, 430–431, 438 Assessment Guide: 76, 77, 78, 79, 80, 82, 83, 84, 122, 128
C. Create and critique inductive and deductive arguments concerning geometric ideas and relationships, such as congruence, similarity, and the Pythagorean relationship.	
1. Identify and describe point and line symmetry in two-dimensional shapes.	TE: 426–429 PE: 426–429 Assessment Guide: 78
2. Distinguish between similarity and congruence.	TE: 412–415, 430–431, 438 PE: 412–415, 430–431, 438 Assessment Guide: 78, 80, 84, 128
II. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	
A. Use coordinate geometry to represent and examine the properties of geometric shapes.	
1. Given the coordinates of three vertices of a rectangle or square oriented horizontally or vertically, use the first quadrant of the rectangular coordinate system to locate the other vertex.	TE: 552–553 PE: 552–553 Assessment Guide: 78
B. Use coordinate geometry to examine special geometric shapes, such as regular polygons or those with pairs of parallel or perpendicular sides.	
1. Plot the vertices of squares and rectangles and determine the relationship among the coordinates.	TE: 552–553 PE: 552–553 Assessment Guide: 106
III. Apply transformations and use symmetry to analyze mathematical situations.	
A. Describe sizes, positions, and orientations of shapes under informal transformations such as flips, turns, slides, and scaling.	
1. Describe the transformation used to move a polygon from one location to another in the first quadrant.	TE: 427–429 PE: 427–429 Assessment Guide: 78
B. Examine the congruence, similarity, and line or rotational symmetry of objects using transformations.	
1. Apply a transformation to a polygon and describe how it has changed.	TE: 426–429 PE: 426–429 Assessment Guide: 78, 80, 81, 84, 122
IV. Use visualization, spatial reasoning, and geometry modeling to solve problems.	
A. Draw geometric objects with specified properties, such as side lengths or angle measures.	TE: 410–411, 412–415, 419, 457, 471 PE: 410–411, 412–415, 419, 457, 471 Assessment Guide: 77, 78
1. Use symbols for parallel lines and perpendicular lines to describe polygons and figures where appropriate.	*These pages give students the opportunity to identify parallel and perpendicular lines.* TE: 404, 408–409, 410 PE: 404, 408–409, 410 Assessment Guide: 76, 77

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B. Use two-dimensional representations of three-dimensional objects to visualize and solve problems such as those involving surface area and volume.	
1. Given the top, side, and front views, construct a 3-dimensional model using cubes.	TE: 470–471, 472–473, 474–475, 476–477 PE: 470–471, 472–473, 474–475, 476–477 Assessment Guide: *These pages give students the opportunity to use three-dimensional models:* 85, 86, 87, 89, 90, 91, 92, 93
E. Recognize and apply geometric ideas and relationships in areas outside the mathematics classroom, such as art, science, and everyday life.	
1. Identify and apply geometric concepts in a variety of practical contexts.	TE: 392, 398, 450–451, 453, 455, 456–457, 462, 465, 466–467, 468–469, 471, 472, 473, 475, 477, 479, 485, 487, 489, 490, 491, 552 PE: 450–451, 453, 455, 456–457, 462, 465, 466–467, 468–469, 471, 473, 475, 477, 479, 485, 487, 489, 490, 491 Assessment Guide: 81, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 122, 123, 124, 129
MEASUREMENT	
I. Understand measurable attributes of objects and the units, systems, and processes of measurement.	
C. Understand, select, and use units of appropriate size and type to measure angles, perimeter, area, surface area, and volume.	
1. Estimate angle measure using 45 degrees, 90 degrees, 180 degrees, 270 degrees, and 360 degrees as referents and use the appropriate tools to measure any angle.	TE: 392–393, 394–395, 396–397, 400, 404–406, 408–409, 410–411, 416–417 PE: 392–393, 394–395, 396–397, 404–406, 408–409, 410–411, 416–417 Assessment Guide: 77, 78, 79, 80, 81, 82, 83, 84, 121, 122, 128, 129
2. Use appropriate units of measure to label angles, perimeter, and area.	TE: 188, 392–393, 394–395, 396–397, 398–399, 400, 404–406, 408–409, 410–411, 416–417, 421, 424, 450–451, 452–453, 454–457, 465–467, 472, 476, 478, 482, 483, 490, 512, 552, 578 PE: 188, 392–393, 394–395, 396–397, 398–399, 404–406, 408–409, 410–411, 416–417, 421, 424, 450–451, 452–453, 454–457, 465–467, 478, 482, 483, 490 Assessment Guide: 6, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 91, 92, 121, 122, 123, 128, 129
II. Apply appropriate techniques, tools, and formulas to determine measurements.	
A. Use common benchmarks to select appropriate methods for estimating measurements.	
1. Estimate and then determine length, weight/mass, area, and volume/capacity, using standard and nonstandard units of measure.	TE: 426, 464–465, 467, 554–555 PE: 464–465, 467, 554–555 Assessment Guide: *These pages give students the opportunity to determine length, weight/mass, area, and volume/capacity:* 5, 6, 11, 15, 35, 36, 38, 41, 77, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 114, 117, 123, 124, 129 Internet: We're Just Winging It!, What a Throw

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2. Estimate and justify estimates of perimeter and area of irregular shapes.	TE: 450–451, 466 PE: 450–451 Assessment Guide: 85, 88, 91 Internet: What a Throw
B. Select and apply techniques and tools to accurately find length, area, volume, and angle measures to appropriate levels of precision.	
1. Select and use appropriate tools and units to measure to the degree of accuracy required in a particular situation.	TE: 38–40, 48, 184, 186–187, 194, 206, 388, 392–393, 394–397, 404–407, 410–411, 412–415, 426–429, 450–451, 452–453, 455–457, 460, 465–467, 472–473, 474–475, 476–477, 482–483, 554–555, 558, 573, 578, 582 PE: 38–40, 48, 186–187, 194, 388, 392–393, 394–397, 404–407, 410–411, 412–415, 426–429, 450–451, 452–453, 455–457, 465–467, 472–473, 474–475, 476–477, 482–483, 554–555, 582 Assessment Guide: 5, 6, 11, 15, 35, 36, 38, 41, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 114, 117, 121, 122, 123, 124, 128, 129
C. Develop and use formulas to determine the circumference of circles and the area of triangles, parallelograms, trapezoids, and circles and develop strategies to find the area of more-complex shapes.	
1. Investigate and describe the relationship between areas of rectangles and triangles or other quadrilaterals.	TE: 450–451, 452–453, 454–455, 476, 482 PE: 450–451, 452–453, 454–455, 482 Assessment Guide: 86, 88, 91, 123
2. Develop and apply the formulas for the area of triangles and parallelograms.	TE: 450–451, 452–453, 454–455, 456, 482, 578 PE: 450–451, 452–453, 454–455, 482 Assessment Guide: 85, 86, 88, 91, 123
E. Solve problems involving scale factors, using ratio and proportion.	
1. Use a scale to find distance.	TE: 320–321, 337, 416–417, 496 PE: 320–321, 337, 416–417 Assessment Guide: 61, 63, 66, 120, 128
DATA ANALYSIS AND PROBABILITY	
I. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.	
A. Formulate questions, design studies, and collect data about a characteristic shared by two populations or different characteristics within one population.	
1. Given a problem situation involving one population, collect, analyze, and interpret data.	TE: 62–70, 80–85, 138–139, 498, 504–507 PE: 62–70, 80–85, 138–139, 504–507 Assessment Guide: 11, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 30, 33, 70, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 115, 124, 125, 126, 129 Internet: We're Just Winging It!, What a Throw, Where Does the Time Go?, A Cool Snack

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B. Select, create, and use appropriate graphical representations of data, including histograms, box plots, and scatter plots.	
1. Organize and display data in a variety of ways including frequency tables, histograms, and stem-and-leaf plots.	TE: 58–59, 62–70, 71, 74, 78–79, 80–85, 90–91, 92–93, 94, 96–97, 138–139, 141, 191, 504–507 PE: 58–59, 62–70, 71, 74, 78–79, 80–85, 90–91, 92–93, 94, 96–97, 138–139, 141, 191, 504–507 Assessment Guide: *These pages give students the opportunity to interpret data:* 11, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 30, 33, 70, 96, 102, 115, 122, 124, 126 Internet: We're Just Winging It!, What a Throw, Where Does the Time Go?, A Cool Snack
II. Select and use appropriate statistical methods to analyze data.	
A. Find, use, and interpret measures of center and spread, including mean and interquartile range.	
1. Create and solve problems involving the mean, median, mode, and range of a set of data.	TE: 58, 60–61, 76–77, 90, 156, 262, 476, 506 PE: 58, 60–61, 76–77, 90 Assessment Guide: 5, 16, 18, 19, 21, 22, 23, 24, 114, 115, 127 Internet: We're Just Winging It!, What a Throw, Where Does the Time Go?
B. Discuss and understand the correspondence between data sets and their graphical representations, especially histograms, stem-and-leaf plots, box plots, and scatterplots.	
1. Interpret histograms and stem-and-leaf plots.	TE: 58, 66–67, 74, 82–83, 90, 92–93, 94, 96–97, 191 PE: 58, 66–67, 74, 82–83, 90, 92–93, 94, 96–97, 191 Assessment Guide: 18, 20, 21, 23, 24, 115 Internet: We're Just Winging It!
2. Describe the relationship between a data set and its corresponding histogram or stem-and-leaf plot.	TE: 66–67, 82–83, 92 PE: 66–67, 82–83, 92 Assessment Guide: 18, 20, 21, 23, 24, 115 Internet: We're Just Winging It!
III. Develop and evaluate inferences and predictions that are based on data.	
A. Use observations about differences between two or more samples to make conjectures about the populations from which the samples were taken.	
1. Analyze and list the differences between two data sets.	TE: 60–61, 62–64, 66–67, 68–70, 71, 72–73, 76–77, 78–79, 82–83, 84–85, 98, 99, 224 PE: 60–61, 62–64, 66–67, 68–70, 71, 72–73, 76–77, 78–79, 82–83, 84–85, 98, 99 Internet: A Cool Snack
IV. Understand and apply basic concepts of probability.	
A. Understand and use appropriate terminology to describe complementary and mutually exclusive events.	
1. Identify and describe complementary events.	TE: 364, 526–527, 528–529, 536, 542 PE: 526–527, 528–529, 536, 542 Assessment Guide: 5, 96, 97, 99, 100, 104, 116

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B. Use proportionality and a basic understanding of probability to make and test conjectures about the results of experiments and simulations.	
1. Create a sample space for one- or two-stage events and represent it in the form of a list, chart, picture, or tree diagram.	TE: 272¸ 418, 496–497, 498–499, 508, 512–514 PE: 496–497, 498–499, 512–514 Assessment Guide: 5, 96, 99, 102, 115, 116
2. Determine and interpret the probability of an event occurring from a given sample space.	TE: 318, 364, 496–497, 498–499, 512–514, 515–518, 520–521, 524–525, 526–527, 528–529, 530 PE: 496–497, 498–499, 512–514, 515–518, 520–521, 524–525, 526–527, 528–529 Assessment Guide: 5, 96, 99, 102, 115, 116
C. Compute probabilities for simple compound events, using such methods as organized lists, tree diagrams, and area models.	
1. Determine the number of possible outcomes in two-stage events, making a tree diagram, or using models.	TE: 272, 508, 512–514, 515–518, 520–521, 524–525, 526–527, 528–529 PE: 512–514, 515–518, 520–521, 524–525, 526–527, 528–529 Assessment Guide: 99, 100, 104, 125