# Grade 5: Standards-Based Skills Worksheet

*Revised March 20, 2018*

The skills inventory worksheets are designed to assist with data analysis and goal writing for standards-based IEPs. They are based on the [Virginia SOL Curriculum Frameworks](http://www.doe.virginia.gov/testing/sol/standards_docs/index.shtml). Go to [Standards-Based IEP](http://www.doe.virginia.gov/special_ed/iep_instruct_svcs/stds-based_iep/) for the *Standards-based Individualized Education Program (IEP) A Guide for School Divisions* for additional information on the process for creating standards-based IEPs.

## Directions

### **Step 1**

Go to [Standards-Based IEP](http://www.doe.virginia.gov/special_ed/iep_instruct_svcs/stds-based_iep/) for to print the appropriate PDF file **Skills Worksheet** that will match the projected (or current if mid-year) grade level for the student.

### **Step 2**

Gather and analyze data to identify how the student has performed in each of the strands included in the curriculum. **Review data on student performance** and indicate all data sources analyzed to assess performance in this strand:

* Present Level of Performance (PLOP)
* Prior SOL data
* Standardized test data
* Classroom assessments
* Teacher observations

### **Step 3**

Based on prior performance, predict what level of instruction ***will be*** necessary for the student to successfully master upcoming curriculum in each of the strands using the following worksheets. Check the areas that specially designed instruction and/or supports may be critical to meeting the standard.

### **Step 4**

After completing the Worksheet, based on data and your knowledge of the student as discussed in the present level of academic and functional performance (PLOP), determine if a goal(s) is/are needed to address the specific skill(s). Guiding Question:  **Is/Are standard-based goal(s) needed?**

* **YES** Address areas of need in PLOP
* **NO Check one or more justifications:**
	+ Accommodations Available (specify):
	+ Area of Strength in PLOP
	+ New Content
	+ Other (Specify):

### **Step 5**

Additional space is provided under each strand for comments or notes on data analysis

## Essential Knowledge and Skills

### Strand: Number and Number Sense (SOL 5.1, 5.2a-b, 5.3a-b)

The student will:

* Given a decimal through thousandths, round to the nearest whole number, tenth, or hundredth.
* Represent fractions with denominators that are thirds, eighths, and factors of 100 in their equivalent decimal form with concrete or pictorial models. (a)
* Represent decimals in their equivalent fraction form (thirds, eighths, and factors of 100) with concrete or pictorial models. (a)
* Identify equivalent relationships between decimals and fractions with denominators that are thirds, eighths, and factors of 100 in their equivalent decimal form without models. (a)
* Compare and order from least to greatest and greatest to least a given set of no more than four decimals, fractions (proper or improper), and/or mixed numbers with denominators of 12 or less. (b)
* Use the symbols >, <, =, and ≠ to compare decimals through thousandths, fractions (proper or improper fractions), and/or mixed numbers, having denominators of 12 or less. (b)
* Identify prime numbers less than or equal to 100. (a)
* Identify composite numbers less than or equal to 100. (a)
* Demonstrate with concrete or pictorial representations and explain orally or in writing why a number is prime or composite. (a)
* Identify which numbers are even or odd. (b)
* Demonstrate with concrete or pictorial representations and explain orally or in writing why a number is even or odd. (b)
* Demonstrate with concrete or pictorial representations and explain orally or in writing why the sum or difference of two numbers is even or odd. (b)

### Strand: Computation and Estimation (SOL 5.4, 5.5a-b, 5.6a-b, 5.7)

The student will:

* Create single-step and multistep practical problems involving addition, subtraction, multiplication, and division of whole numbers, with and without remainders.
* Estimate the sum, difference, product, and quotient of whole numbers.
* Apply strategies, including place value and application of the properties of addition and multiplication, to solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of whole numbers, with and without remainders, in which:
	+ sums, differences, and products do not exceed five digits;
	+ factors do not exceed two digits by three digits;
	+ divisors do not exceed two digits; or
	+ dividends do not exceed four digits.
* Use the context of a practical problem to interpret the quotient and remainder.
* Estimate and determine the product of two numbers in which:
	+ the factors do not exceed two digits by two digits (e.g., 2.3 × 4.5, 0.08 × 0.9, 0.85 × 2.3, 1.8 × 5); and
	+ the products do not exceed the thousandths place. (Leading zeroes will not be considered when counting digits.) (a)
* Estimate and determine the quotient of two numbers in which
	+ quotients do not exceed four digits with or without a decimal point;
	+ quotients may include whole numbers, tenths, hundredths, or thousandths;
	+ divisors are limited to a single digit whole number or a decimal expressed as tenths; and
	+ no more than one additional zero will need to be annexed. (a)
* Use multiple representations to model multiplication and division of decimals and whole numbers. (a)
* Create and solve single-step and multistep practical problems involving addition, subtraction, and multiplication of decimals. (b)
* Create and solve single-step practical problems involving division of decimals. (b)
* Solve single-step and multistep practical problems involving addition and subtraction with fractions (proper or improper) having like and unlike denominators and/or mixed numbers. Denominators in the problems should be limited to 12 or less (e.g., $\frac{5}{8}$ + $\frac{1}{4}$, $\frac{5}{6} $− $\frac{2}{3}$, 3$\frac{3}{4}$ + 2$\frac{5}{12} $) and answers should be expressed in simplest form. (a)
* Solve single-step practical problems involving multiplication of a whole number, limited to 12 or less, and a proper fraction (e.g., 6 × $\frac{1}{3}$, $\frac{1}{4}$ × 8, 9 × $\frac{2}{3}$), with models. The denominator will be a factor of the whole number and answers should be expressed in simplest form. (b)
* Apply the inverse property of multiplication in models. (For example, use a visual fraction model to represent $\frac{4}{4}$ or 1 as the product of 4 × $\frac{1}{4}$). (b)
* Use the order of operations to simplify whole number numerical expressions, limited to addition, subtraction, multiplication, and division. Expressions may contain parentheses.
* Given a whole number numerical expression involving more than one operation, describe which operation is completed first, which is second, etc

### **Strand: Measurement and Geometry** (SOL 5.8a-b, 5.9a-b, 5.10, 5.11, 5.12, 5.13a-b, 5.14a-b)

The student will

* Solve practical problems that involve perimeter, area, and volume in standard units of measure. (a)
* Determine the perimeter of a polygon, with or without diagrams, when
	+ the lengths of all sides of a polygon that is not a rectangle or a square are given;
	+ the length and width of a rectangle are given; or
	+ the length of a side of a square is given. (a)
* Estimate and determine the area of a square and rectangle using whole number measurements given in metric or U.S. Customary units, and record the solution with the appropriate unit of measure (e.g., 24 square inches). (a)
* Develop a procedure for determining the area of a right triangle using only whole number measurements given in metric or U.S. Customary units, and record the solution with the appropriate unit of measure (e.g., 12 square inches). (a)
* Estimate and determine the area of a right triangle, with diagrams, when the base and the height are given. (a)
* Develop a procedure for determining volume using manipulatives (e.g., cubes). (a)
* Estimate and determine the volume of a rectangular prism with diagrams, when the length, width, and height are given, using whole number measurements. Record the solution with the appropriate unit of measure (e.g., 12 cubic inches). (a)
* Describe practical situations where perimeter, area, and volume are appropriate measures to use, and justify orally or in writing. (b)
* Identify whether the application of the concept of perimeter, area, or volume is appropriate for a given situation. (b)
* Given the equivalent measure of one unit, identify equivalent measurements within the metric system for the following:
	+ length (millimeters, centimeters, meters, and kilometers);
	+ mass (grams and kilograms); and
	+ liquid volume (milliliters and liters). (a)
* Estimate and measure to solve practical problems that involve metric units:
* length (millimeters, centimeters, meters, and kilometers);
* mass (grams and kilograms); and
* liquid volume (milliliters, and liters). (b)
* Identify and describe the diameter, radius, chord, and circumference of a circle.
* Investigate and describe the relationship between
	+ diameter and radius;
	+ diameter and chord;
	+ radius and circumference; and
	+ diameter and circumference.
* Solve practical problems related to elapsed time in hours and minutes within a 24-hour period:
	+ when given the beginning time and the ending time, determine the time that has elapsed;
	+ when given the beginning time and amount of elapsed time in hours and minutes, determine the ending time; or
	+ when given the ending time and the elapsed time in hours and minutes, determine the beginning time.
* Classify angles as right, acute, obtuse, or straight.
* Identify the appropriate tools (e.g., protractor and straightedge or angle ruler as well as available software) used to measure and draw angles.
* Measure right, acute, obtuse, and straight angles, using appropriate tools, and identify their measures in degrees.
* Solve addition and subtraction problems to determine unknown angle measures on a diagram in practical problems.
* Classify triangles as right, acute, or obtuse. (a)
* Classify triangles as equilateral, scalene, or isosceles. (a)
* Compare and contrast the properties of triangles. (a)
* Identify congruent sides and right angles using geometric markings to denote properties of triangles. (a)
* Use models to prove that the sum of the interior angles of a triangle is 180 degrees, and use that relationship to determine an unknown angle measure in a triangle. (b)
* Apply transformations to polygons in order to determine congruence. (a)
* Recognize that translations, reflections, and rotations preserve congruency. (a)
* Identify the image of a polygon resulting from a single transformation (translation, reflection, or rotation). (a)
* Investigate and describe the results of combining and subdividing polygons. (b)
* Compare and contrast the characteristics of a given polygon that has been subdivided with the characteristics of the resulting parts. (b)

### Strand: Probability and Statistics (SOL 5.15, 5.16a-c, 5.17a-d)

The student will:

* Construct a sample space, using a tree diagram to identify all possible outcomes.
* Construct a sample space, using a list or chart to represent all possible outcomes.
* Determine the probability of an outcome by constructing a sample space. The sample space will have a total of 24 or fewer equally likely possible outcomes.
* Determine the number of possible outcomes by using the Fundamental (Basic) Counting Principle.
* Collect data, using observations (e.g., weather), measurement (e.g., shoe sizes), surveys (e.g., hours watching television), or experiments (e.g., plant growth). (a)
* Organize the data into a chart or table. (a)
* Represent data in a line plot. Line plots will have no more than 30 data points. (a)
* Represent data in a stem-and-leaf plot where the stem is listed in ascending order and the leaves are in ascending order, with or without commas between leaves. Stem-and-leaf plots will be limited to no more than 30 data points. (a)
* Title the given graph or identify an appropriate title. (a)
* Interpret data by making observations from line plots and stem-and-leaf plots, describing the characteristics of the data and describing the data as a whole. One set of data will be represented on a graph. (b)
* Interpret data by making inferences from line plots and stem-and-leaf plots. (b)
* Compare data represented in a line plot with the same data represented in a stem-and-leaf plot. (c)
* Describe and determine the mean of a group of numbers representing data from a given context as a measure of center. (a, d)
* Describe and determine the median of a group of numbers representing data from a given context as a measure of center. (a, d)
* Describe and determine the mode of a group of numbers representing data from a given context as a measure of center. (a, d)
* Describe mean as fair share. (b)
* Describe and determine the range of a group of numbers representing data from a given context as a measure of spread. (c, d)

### Strand: Patterns, Functions, and Algebra (SOL 5.18, 5.19a-d)

*The student will:*

* Identify, create, describe, and extend patterns using concrete materials, number lines, tables, or pictures.
* Describe and express the relationship found in patterns, using words, tables, and symbols.
* Solve practical problems that involve identifying, describing, and extending single-operation input and output rules (limited to addition, subtraction and multiplication of whole numbers; addition and subtraction of fractions, with denominators of 12 or less; and addition and subtraction of decimals expressed in tenths or hundredths).
* Identify the rule in a single-operation numerical pattern found in a list or table (limited to addition, subtraction and multiplication of whole numbers; addition and subtraction of fractions, with denominators of 12 or less; and addition and subtraction of decimals expressed in tenths or hundredths).
* Describe the concept of a variable (presented as boxes, letters, or other symbols) as a representation of an unknown quantity. (a)
* Write an equation with addition, subtraction, multiplication, or division, using a variable to represent an unknown quantity. (b)
* Use an expression with a variable to represent a given verbal expression involving one operation (e.g., “5 more than a number” can be represented by *y* + 5). (c)
* Create and write a word problem to match a given equation with a single variable and one operation. (d)