

# Grade 3 Mathematics Standards-based Skills Worksheet

Student: \_\_\_\_\_

Date: \_\_\_\_\_

Completed by (name): \_\_\_\_\_

Position: \_\_\_\_\_

School Division: \_\_\_\_\_

**1. Review SOL strand for**

Number and Number Sense  
(SOL 3.1a-c, 3.2, & 3.3a-c)

**2. 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

**3. Check the areas that will require specially designed instruction** critical to meeting the standard.

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- Investigate and identify the place and value for each digit in a six-digit numeral, using Base-10 manipulatives (e.g., Base-10 blocks).
- Use the patterns in the place value system to read and write numbers.
- Read six-digit numerals orally.
- Write six-digit numerals that are stated verbally or written in words.
- Round a given whole number, 9,999 or less, to the nearest ten, hundred, and thousand.
- Solve problems, using rounding of numbers, 9,999 or less, to the nearest ten, hundred, and thousand
- Determine which of two whole numbers between 0 and 9,999 is greater.
- Determine which of two whole numbers between 0 and 9,999 is less.
- Compare two whole numbers between 0 and 9,999, using the symbols  $>$ ,  $<$ , or  $=$ .
- Use the terms *greater than*, *less than*, and *equal to* when comparing two whole numbers.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Use the inverse relationships between addition/subtraction and multiplication/division to solve related basic fact sentences. For example,  $5 + 3 = 8$  and  $8 - 3 = \underline{\quad}$ ;  $4 \times 3 = 12$  and  $12 \div 4 = \underline{\quad}$ .
- Write three related basic fact sentences when given one basic fact sentence for addition/subtraction and for multiplication/division. For example, given  $3 \times 2 = 6$ , solve the related facts  $\underline{\quad} \times 3 = 6$ ,  $6 \div 3 = \underline{\quad}$ , and  $6 \div \underline{\quad} = 3$ .

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Name and write fractions (including mixed numbers) represented by a model to include halves, thirds, fourths, eighths, tenths, and twelfths.
- Use concrete materials and pictures to model at least halves, thirds, fourths, eighths, tenths, and twelfths.
- Compare fractions using the terms greater than, less than, or equal to and the symbols ( $<$ ,  $>$ , and  $=$ ). Comparisons are made between fractions with both like and unlike denominators, using models, concrete materials and pictures.

**4. 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):

## 5. Notes Supporting Data Analysis

<b>1. Review SOL strand for</b>  <b>Computation and Estimation</b> <b>(SOL 3.4, 3.5, 3.6, &amp; 3.7)</b>	<b>2. Review data on student performance</b> and indicate all data sources analyzed to assess performance in this strand: <input type="checkbox"/> Present Level of Performance (PLOP) <input type="checkbox"/> Prior SOL data <input type="checkbox"/> Standardized test data <input type="checkbox"/> Classroom assessments <input type="checkbox"/> Teacher observations
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**3. Check the areas that will require specially designed instruction** critical to meeting the standard.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Determine whether an estimate or an exact answer is an appropriate solution for practical addition and subtraction problems situations involving single-step and multistep problems.
- Determine whether to add or subtract in practical problem situations.
- Estimate the sum or difference of two whole numbers, each 9,999 or less when an exact answer is not required.
- Add or subtract two whole numbers, each 9,999 or less.
- Solve practical problems involving the sum of two whole numbers, each 9,999 or less, with or without regrouping, using calculators, paper and pencil, or mental computation in practical problem situations.
- Solve practical problems involving the difference of two whole numbers, each 9,999 or less, with or without regrouping, using calculators, paper and pencil, or mental computation in practical problem situations.
- Solve single-step and multistep problems involving the sum or difference of two whole numbers, each 9,999 or less, with or without regrouping.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Recall and state the multiplication and division facts through the twelve's table.
- Recall and write the multiplication and division facts through the twelve's table.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Model multiplication, using area, set, and number line models.
- Model division, using area, set, and number line models.
- Solve multiplication problems, using the multiplication algorithm, where one factor is 99 or less and the second factor is 5 or less.
- Create and solve word problems involving multiplication, where one factor is 99 or less and the second factor is 5 or less.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Demonstrate a fractional part of a whole, using**
  - region/area models (e.g., pie pieces, pattern blocks, geoboards, drawings);
  - set models (e.g., chips, counters, cubes, drawings); and
  - length/measurement models (e.g., nonstandard units such as rods, connecting cubes, and drawings).
- Name and write fractions and mixed numbers represented by drawings or concrete materials.
- Represent a given fraction or mixed number, using concrete materials, pictures, and symbols. For example, write the symbol for one-fourth and represent it with concrete materials and/or pictures.
- Add and subtract with proper fractions having like denominators of 12 or less, using concrete materials and pictorial models representing area/regions (circles, squares, and rectangles), length/measurements (fraction bars and strips), and sets (counters)

**4. 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):

### 5. Notes Supporting Data Analysis

**1. Review SOL strand for**

**Measurement  
(SOL 3.8, 3.9a-d, 3.10a-b, 3.11a-b, 3.12 & 3.13)**

**2. 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

**3. Check the areas that will require specially designed instruction** critical to meeting the standard.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Count the value of collections of coins and bills up to \$5.00.
- Compare the values of two sets of coins or bills, up to \$5.00, using the terms *greater than*, *less than*, and *equal to*.
- Make change from \$5.00 or less.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Estimate and use U.S. Customary and metric units to measure lengths of objects to the nearest  $\frac{1}{2}$  of an inch, inch, foot, yard, centimeter, and meter.
- Determine the actual measure of length using U.S. Customary and metric units to measure objects to the nearest  $\frac{1}{2}$  of an inch, foot, yard, centimeter, and meter.
- Estimate and use U.S. Customary and metric units to measure liquid volume to the nearest cup, pint, quart, gallon, and liter.
- Determine the actual measure of liquid volume using U.S. Customary and metric units to measure to the nearest cup, pint, quart, gallon, and liter.
- Estimate and use U.S. Customary and metric units to measure the weight/mass of objects to the nearest ounce, pound, gram, and kilogram.
- Determine the actual measure of weight/mass using U.S. Customary and metric units to measure the weight/mass of objects to the nearest ounce, pound, gram, and kilogram.
- Estimate and use U.S. Customary and metric units to measure area and perimeter.
- Determine the actual measure of area or perimeter using U.S. Customary and metric units.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Measure each side of a variety of polygons and add the measures of the sides to determine the perimeter of each polygon.
- Determine the area of a given surface by estimating and then counting the number of square units needed to cover the surface.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Tell time to the nearest minute, using analog and digital clocks.
- Match the times shown on analog and digital clocks to written times and to each other.
- When given the beginning time and ending time, determine the elapsed time in one-hour increments within a 12-hour period (times do not cross between a.m. and p.m.).
- Solve practical problems in relation to time that has elapsed.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Identify equivalent relationships observed in a calendar, including the number of days in a given month, the number of days in a week, the number of days in a year, and the number of months in a year.
- Identify the number of minutes in an hour and the number of hours in a day.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Read temperature to the nearest degree from real Celsius and Fahrenheit thermometers and from physical models (including pictorial representations) of such thermometers.

**4. 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):

### 5. Notes Supporting Data Analysis

**1. Review SOL strand for**

**Geometry (SOL 3.14, 3.15 & 3.16)**

**2. 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

**3. Check the areas that will require specially designed instruction** critical to meeting the standard.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Identify models and pictures of plane geometric figures (circle, square, rectangle, and triangle) and solid geometric figures (cube, rectangular prism, square pyramid, sphere, cone, and cylinder) by name.
- Identify and describe plane geometric figures by counting the number of sides and angles.
- Identify and describe solid geometric figures by counting the number of angles, vertices, edges, and by the number and shape of faces.
- Compare and contrast characteristics of plane and solid geometric figures (e.g., circle/sphere, square/cube, triangle/square pyramid, and rectangle/rectangular prism), by counting the number of sides, angles, vertices, edges, and the number and shape of faces.

- Compare and contrast characteristics of solid geometric figures (i.e., cube, rectangular prism, square pyramid, sphere, cylinder, and cone) to similar objects in everyday life (e.g., a party hat is like a cone).
- Identify characteristics of solid geometric figures (cylinder, cone, cube, square pyramid, and rectangular prism).

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representation**

- Identify examples of points, line segments, rays, angles, and lines.
- Draw representations of points, line segments, rays, angles, and lines, using a ruler or straightedge.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Identify examples of congruent and noncongruent figures. Verify their congruence by laying one on top of the other using drawings or models.
- Determine and explain why plane figures are congruent or noncongruent, using tracing procedures.

**4. 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):

### 5. Notes Supporting Data Analysis

**1. Review SOL strand for**

**Probability and Statistics  
(SOL 3.17a-c, 3.18,)**

**2. 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

**3. Check the areas that will require specially designed instruction** critical to meeting the standard.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Formulate questions to investigate.
- Design data investigations to answer formulated questions, limiting the number of categories for data collection to four.
- Collect data, using surveys, polls, questionnaires, scientific experiments, and observations.
- Organize data and construct a bar graph on grid paper representing 16 or fewer data points for no more than four categories.
- Construct a line plot with no more than 30 data points.
- Read, interpret and analyze information from line plots by writing at least one statement.
- Label each axis on a bar graph and give the bar graph a title. Limit increments on the numerical axis to whole numbers representing multiples of 1, 2, 5, or 10.
- Read the information presented on a simple bar or picture graph (e.g., the title, the categories, the description of the two axes).
- Analyze and interpret information from picture and bar graphs, with up to 30 data points and up to 8 categories, by writing at least one sentence.

- Describe the categories of data and the data as a whole (e.g., data were collected on four ways to cook or prepare eggs — scrambled, fried, hard boiled, and egg salad — eaten by students).
- Identify parts of the data that have special characteristics, including categories with the greatest, the least, or the same (e.g., most students prefer scrambled eggs).

Select a correct interpretation of a graph from a set of interpretations of the graph, where one is correct and the remaining are incorrect. For example, a bar graph containing data on four ways to cook or prepare eggs — eaten by students show that more students prefer scrambled eggs. A correct answer response, if given, would Be that more students prefer scrambled eggs than any other way to cook or prepare eggs.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Define probability as the chance that an event will happen.
- List all possible outcomes for a given situation (e.g., heads and tails are the two possible outcomes of flipping a coin).
- Identify the degree of likelihood of an outcome occurring using terms such as *impossible*, *unlikely*, *as likely as*, *equally likely*, *likely*, and *certain*.

**4. 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):

**5. Notes Supporting Data Analysis**

**1. Review SOL strand for**

**Patterns, Functions, and Algebra  
(SOL3.19, 3.20)**

**2. 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

**3. Check the areas that will require specially designed instruction** critical to meeting the standard.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Recognize repeating and growing numeric and geometric patterns (e.g., skip counting, addition tables, and multiplication tables).
- Describe repeating and growing numeric and geometric patterns formed using numbers, tables, and/or pictures, using the same or different forms.
- Extend repeating and growing patterns of numbers or figures using concrete objects, numbers, tables, and/or pictures.

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

- Investigate the identity property for addition and determine that when the number zero is added to another number or another number is added to the number zero, that number remains unchanged. Examples of the identity property for addition are  $0 + 2 = 2$ ;  $5 + 0 = 5$ .
- Investigate the identity property for multiplication and determine that when the number one is multiplied by another number or another number is multiplied by the number one, that number remains unchanged. Examples of the identity property for multiplication are  $1 \times 3 = 3$ ;  $6 \times 1 = 6$ .

- Recognize that the commutative property for addition is an order property. Changing the order of the addends does not change the sum ( $5 + 4 = 9$  and  $4 + 5 = 9$ ).
- Recognize that the commutative property for multiplication is an order property. Changing the order of the factors does not change the product ( $2 \times 3 = 3 \times 2$ ).
- Write number sentences to represent equivalent mathematical relationships (e.g.,  $4 \times 3 = 14 - 2$ ).
- Identify examples of the identity and commutative properties for addition and multiplication.

**4. 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):

**5. Notes Supporting Data Analysis**