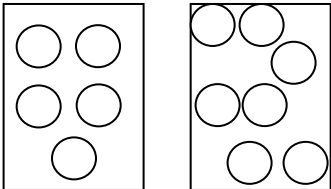


6th Grade - Mathematics

Reporting Category	Standard	Essential Skills and Knowledge	Related Basic Skill or Concept	Sample Instructional Activities
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Number, Number Sense, Computation and Estimation	6M-NSCE 1	The student will a) demonstrate a simple ratio relationship.	<ul style="list-style-type: none"> • ability to count and compare amounts • exposure to the three ways to write ratios; 5:6, 5/6, or 5 to 6 	<ul style="list-style-type: none"> • Show the students a picture and have them describe the relationship within a set by comparing part of the set to the entire set (e.g. Show them a picture of cats and dogs. There might be 3 cats and 7 dogs. Looking at the cats, the picture shows 3:7).
	6M-NSCE 2	The student will a) understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g. temperature above/below zero).	<ul style="list-style-type: none"> • Positive numbers are larger than zero, negative numbers are less than zero • Zero is neither negative or positive 	<ul style="list-style-type: none"> • Given a number line, the student can identify the missing positive or negative number. • Given a thermometer, the students can read the positive or negative temperature. • Given two integers, identify the larger number (e.g. If given 2 and -2, 2 would have the larger quantity).
	6M-NSCE 3	The student will a) compare the relationships between two unit fractions.	<ul style="list-style-type: none"> • Name and identify fractional parts from a whole • Recognize that shapes can be cut into equal and/or unequal parts 	<ul style="list-style-type: none"> • Given fraction bars, have the student build and compare two fractions. Have them point or tell you which fraction is larger. • Given two measuring cups filled to 1/2 and 1/4 with water or sand, compare fractional amounts to determine which is greater. • Using circle shaped fraction pieces to compare two fraction amounts, determine which piece is greater or less.
	6M -NSCE 4	The student will a) solve two factor multiplication problems with products up to 50 using concrete objects and/or calculators.	<ul style="list-style-type: none"> • Understanding of repeated addition • Make equal groups to find a total • Multiply by powers of 10 	<ul style="list-style-type: none"> • Ask the student to model a multiplication problem by building equal groups. Give them two different choice mats they could use to build the problem. For example, you ask the student to find the product for 7 x 5. You could give them the choice to use a mat that has five circles or a mat that has seven circles and then solve the problem using the mat they chose.

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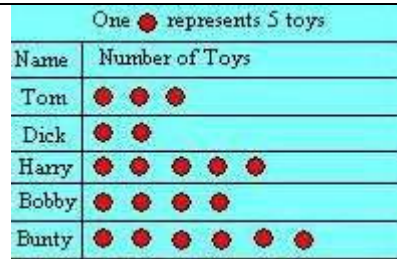
				 <ul style="list-style-type: none"> Use a calculator and have the student use repeated addition to find the product.
	6M-NSCE 5	The student will a) identify equivalent number sentences.	<ul style="list-style-type: none"> Understanding of equivalency, $7 = 7$ Understand the = sign doesn't mean the answer, but means both sides of the equation are the same value Understand that changing the order of the addends does not affect the sum (e.g. $4 + 3 = 3 + 4$) 	<ul style="list-style-type: none"> Use number balances and have the student find different ways to make 10 on both sides of the number balance (e.g. $7 + 3 = 5 + 5$). Give the students several different number sentences and have them identify if the number sentence is equivalent or not equivalent (e.g. $5 + 6 = 10 + 1$ is equivalent, $3 \times 2 = 6 \times 0$ is not equivalent). Solve equivalent expressions to illustrate that they are equivalent. <ul style="list-style-type: none"> Fill in the blank to make a true statement: $1 + 4 = 4 + \underline{\quad}$. Fill in the blank to make a true statement: $2 + 6 = \underline{\quad} + 3$. Fill in the blank to make a true statement: $3 + \underline{\quad} = 7 + 3$.
	6M-MG 1	The student will a) demonstrate area; b) identify common three-dimensional shapes.	<ul style="list-style-type: none"> Counting square tiles Understanding that area is a measure to cover a surface Identify 3D figures Describe 3D figures Relate 3D figures to 2D shapes 	<ul style="list-style-type: none"> Determine the area of a given surface by estimating and then counting the number of square units needed to cover the surface. Use squares of colored paper to cover their desk or tray on a wheelchair. Give students two different rectangular figures. Have them tell or choose which figure is larger inside.

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			<ul style="list-style-type: none"> Understand similarities and differences between figures 	<ul style="list-style-type: none"> Give the student a set of 5 different solid shapes. Have them identify all of the rectangular prisms in the group of solid shapes. Have students trace the shapes of geometric solids and name the shapes of faces they traced. Sort real world items by their solid geometric shapes (e.g. A tissue box, a cereal box, and a textbook would all be examples of rectangular prisms. A glue stick or Chap Stick would be examples of cylinders). 																						
Probability, Statistics, Patterns, Functions, and Algebra	6M-PSPFA 1	<p>The student will</p> <ol style="list-style-type: none"> display data on a graph or table that shows variability in the data; summarize data distributions on a graph or table; answer a question related to the collected data from an experiment, given a model of data, or from data collected by the student. 	<ul style="list-style-type: none"> Recognize bar graphs, picture, and line plots Use collected data in graphs Interpret data 	<ul style="list-style-type: none"> Use computer software to create a graph. Identify bar and pictographs from several graphing formats and answer questions about the graphs. <div data-bbox="1436 922 1694 1105" data-label="Figure"> <table border="1"> <caption>Our favorite fruit</caption> <thead> <tr> <th>Fruit</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Apple</td> <td>5</td> </tr> <tr> <td>Banana</td> <td>3</td> </tr> <tr> <td>Orange</td> <td>8</td> </tr> <tr> <td>Kiwi</td> <td>4</td> </tr> <tr> <td>Grape</td> <td>2</td> </tr> </tbody> </table> </div> <p>(bar graph)</p> <div data-bbox="1390 1177 1803 1455" data-label="Figure"> <table border="1"> <caption>Favorite Pizza Toppings</caption> <thead> <tr> <th>Topping</th> <th>Number of Pizzas</th> </tr> </thead> <tbody> <tr> <td>cheese</td> <td>10</td> </tr> <tr> <td>mushroom</td> <td>5</td> </tr> <tr> <td>sausage</td> <td>10</td> </tr> <tr> <td>pepperoni</td> <td>10</td> </tr> </tbody> </table> </div> <p>(picture graph)</p>	Fruit	Number	Apple	5	Banana	3	Orange	8	Kiwi	4	Grape	2	Topping	Number of Pizzas	cheese	10	mushroom	5	sausage	10	pepperoni	10
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				 <p>(pictograph)</p> <ul style="list-style-type: none"> When looking at a table of what sport students like to watch most, summarize the data in multiple ways (e.g. football has the most, golf has the least). Collect data from a class survey on height of classmates and create a table showing the variance in height (e.g. shortest person is 4'2", the tallest person is 5'9"). Collect data for a classroom experiment and chart height of students, temperature of water, etc. Have the student answer questions about the graph they created.
	6M-PSPFA 2	The student will a) match an equation to a real-world problem in which variables are used to represent numbers.		<ul style="list-style-type: none"> Give students two different story situations and two different equations. Have them match the equation to the correct story.
	6M-PSPFA 3	The student will a) demonstrate understanding of equivalent expressions.	<ul style="list-style-type: none"> understanding of equivalency, $7 = 7$ understand the = sign doesn't mean the answer, but means both sides of the equation are the same value 	<ul style="list-style-type: none"> Use number balances to display equivalent expressions (e.g. A student might place a chip on 3 and 4 on the left side of the balance and a chip on 1 and 6 on the right side of the balance.). Use number balances and have the student find different ways to make 10 on both

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			<ul style="list-style-type: none">understand that changing the order of the addends does not affect the sum (e.g. $4 + 3 = 3 + 4$)	<p>sides of the number balance (e.g. $7+3 = 5+5$).</p> <ul style="list-style-type: none">Give the students several different expressions and have them identify if the expression is equivalent or not equivalent (e.g. $5+6 = 10 + 1$ is equivalent, $3 \times 2 = 6 \times 0$ is not equivalent).