

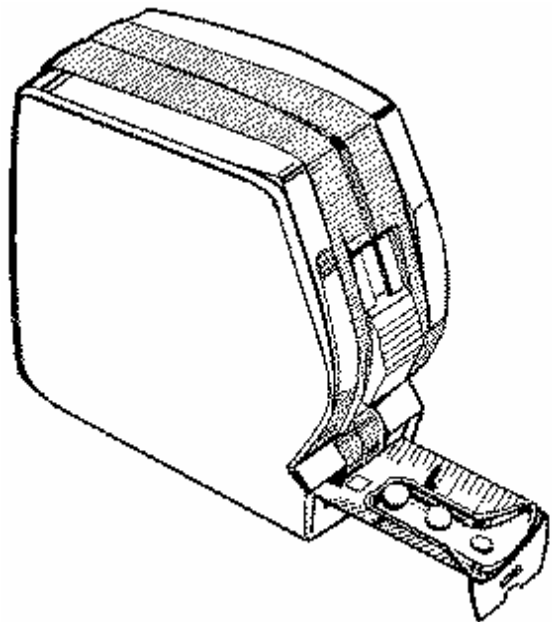
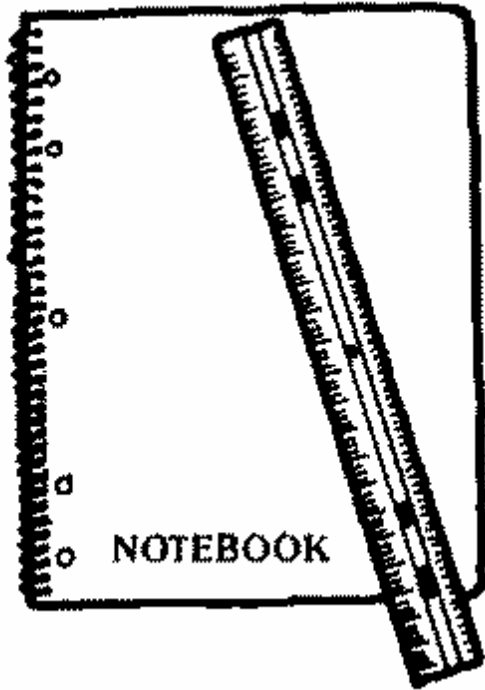
“I Don’t Get It!”

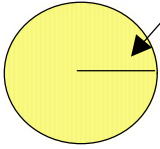
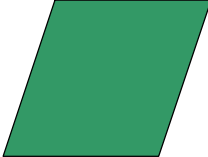
**The Middle School Math
Dictionary and
Instruction Manual**

By Nancy L. Wilkinson


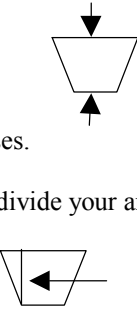
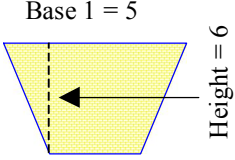


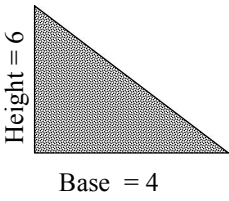
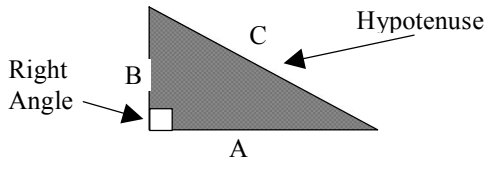
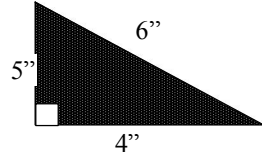
Measurement



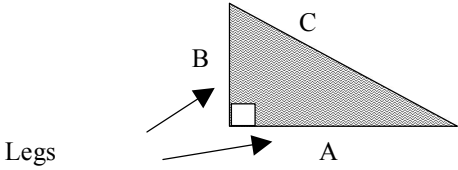
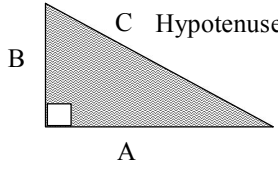
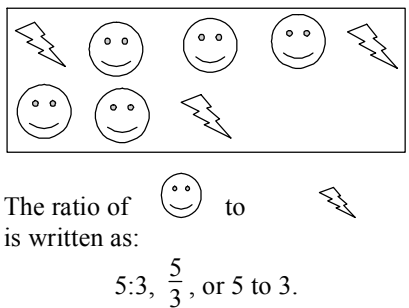
Subject Area	Word	Definition
Measurement	Area of a Circle	<p><u>The number of square units inside a circle.</u></p> <p><u>The formula for the area of a circle is πr^2</u></p> <p>How to find the area of a circle:</p> <ol style="list-style-type: none"> 1) Write down the length of the radius <div style="display: flex; align-items: center; justify-content: center;">  <p>Radius is the measurement from the center of the circle to the circle's edge.</p> </div> <ol style="list-style-type: none"> 2) Multiply the radius by itself. This is called squaring. 3) Multiply the answer from number 2 by pi (π)
Measurement	Area of a Parallelogram	<p><u>The number of square units inside a parallelogram</u></p> <p>How to find the area of a parallelogram:</p> <ol style="list-style-type: none"> 1) Write down the measurement of the height. 2) Write down the measurement of the base. 3) Multiply the measurement of the height times the measurement of the base. <div style="display: flex; align-items: center; justify-content: center; margin: 10px 0;">  <p>Height = 6</p> </div> <p style="text-align: center;">base = 5</p> <p style="text-align: center;">Area = $6 \cdot 5 = 30$ sq units</p> <p>The formula for the area of parallelogram is bh meaning base times height.</p>

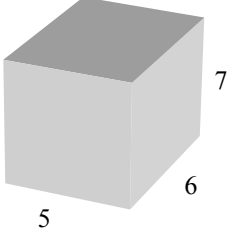
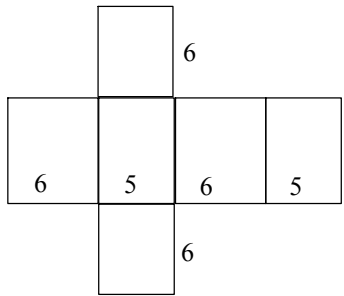
“I Don’t Get It!”

Subject Area	Word	Definition
Measurement	Area of a Square and Rectangle	<p><u>The number of square units inside a square or rectangle</u></p> <p>How to find the area of a square:</p> <ol style="list-style-type: none"> 1) Write down the measurement of the length. 2) Write down the measurement of the width 3) Multiply the measurement of the length times the measurement of the width. <div style="text-align: center;">  <p>Length = 6</p> <p>Width = 5</p> <p>Area = $6 \cdot 5 = 30$ sq units</p> </div> <p>The formula for the area of a square or rectangle is LW or length times width.</p>
Measurement	Area of a Trapezoid	<p><u>The number of square units inside a trapezoid</u></p> <p>How to find the area of a trapezoid:</p> <ol style="list-style-type: none"> 1) Write down the measurement of the two bases. 2) Add the measurement of the two bases and divide your answer by 2. 3) Write down the measurement of the height.  4) Multiply the answer you got in number 2 times the measurement of the height. <div style="text-align: center;">  <p>Base 1 = 5</p> <p>Height = 6</p> <p>Base 2 = 3</p> <p>Base average = $(3+5) \div 2 = 4$</p> <p>Area = $4 \cdot 6 = 24$ sq units</p> </div> <p>The formula for finding the area of a trapezoid is $\frac{1}{2}(b_1 + b_2)h$.</p>

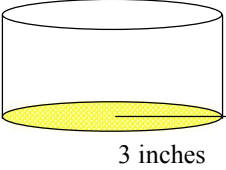
Subject Area	Word	Definition
Measurement	Area of a Triangle	<p><u>The number of square units inside a triangle</u></p> <p>How to find the area of a triangle:</p> <ol style="list-style-type: none"> 1) Write down the measurement of the base. 2) Divide it by 2. 3) Write down the measurement of the height 4) Multiply the answer you got in number 2 times the height. <div style="text-align: center;">  <p>Height = 6</p> <p>Base = 4</p> <p>Area = $(\frac{1}{2} \bullet 4) \bullet 6 = 12$ sq units</p> </div> <p>The formula for finding the area of a triangle is $\frac{1}{2} bh$.</p>
Measurement	Circumference	<p><u>The length around the outside of a circle.</u></p> <p><u>The formula for finding the circumference of a circle is: πd or pi times the diameter.</u></p> <p>How to find the circumference of the circle.</p> <ol style="list-style-type: none"> 1) Find the diameter of the circle. 2) Multiply the diameter of the circle by pi (π) (usually 3.14).
Measurement	Hypotenuse	<p><u>The side opposite the right angle in a right triangle</u></p> <div style="text-align: center;">  <p>Right Angle</p> <p>B</p> <p>A</p> <p>C Hypotenuse</p> </div>
Measurement	Perimeter	<p><u>The length around a shape.</u></p> <p>How to find the perimeter of a shape:</p> <ol style="list-style-type: none"> 1) Write down the length of each side of the shape. <div style="text-align: center;">  <p>6"</p> <p>5"</p> <p>4"</p> </div> <ol style="list-style-type: none"> 2) Add up all of the lengths of each side. $4'' + 5'' + 6'' = 15$ inches.

“I Don’t Get It!”

Subject Area	Word	Definition
Measurement	Legs	<p><u>The shorter sides of the right triangle</u></p> 
Measurement	Pi π	<p><u>The ratio between the circumference of the circle divided by the diameter</u></p> <p>Pi (π) is often rounded to 3.14 or $\frac{22}{7}$.</p>
Measurement	Pythagorean Theorem	<p><u>A relationship involving the sides of a right triangle</u></p> <p>In a right triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides.</p>  $C^2 = A^2 + B^2 \text{ or } C = \sqrt{A^2 + B^2}$ <p>If A = 3, B = 4 then</p> $C = \sqrt{3^2 + 4^2} = \sqrt{25} = 5$
Measurement	Ratio	<p><u>A fractional comparison of two items</u></p>  <p>The ratio of smiley face to lightning bolt is written as: $5:3$, $\frac{5}{3}$, or 5 to 3.</p>

Subject Area	Word	Definition																				
Measurement	Square Root $\sqrt{\quad}$	<p><u>Finding what number multiplied by itself equals that number - The opposite of square a number</u></p> <p>1)The symbol $\sqrt{\quad}$ is used to indicate a nonnegative square root.</p> <p>2)A perfect square is the square of a whole number.</p> <p>3)Some common square roots are:</p> <table style="width: 100%; text-align: center;"> <tr> <td>$\sqrt{1} = 1$</td> <td>$\sqrt{4} = 2$</td> <td>$\sqrt{9} = 3$</td> <td>$\sqrt{16} = 4$</td> <td>$\sqrt{25} = 5$</td> </tr> <tr> <td>$1 \bullet 1 = 1$</td> <td>$2 \bullet 2 = 4$</td> <td>$3 \bullet 3 = 9$</td> <td>$4 \bullet 4 = 16$</td> <td>$5 \bullet 5 = 25$</td> </tr> <tr> <td>$\sqrt{36} = 6$</td> <td>$\sqrt{49} = 7$</td> <td>$\sqrt{64} = 8$</td> <td>$\sqrt{81} = 9$</td> <td>$\sqrt{100} = 10$</td> </tr> <tr> <td>$6 \bullet 6 = 36$</td> <td>$7 \bullet 7 = 49$</td> <td>$8 \bullet 8 = 64$</td> <td>$9 \bullet 9 = 81$</td> <td>$10 \bullet 10 = 100$</td> </tr> </table>	$\sqrt{1} = 1$	$\sqrt{4} = 2$	$\sqrt{9} = 3$	$\sqrt{16} = 4$	$\sqrt{25} = 5$	$1 \bullet 1 = 1$	$2 \bullet 2 = 4$	$3 \bullet 3 = 9$	$4 \bullet 4 = 16$	$5 \bullet 5 = 25$	$\sqrt{36} = 6$	$\sqrt{49} = 7$	$\sqrt{64} = 8$	$\sqrt{81} = 9$	$\sqrt{100} = 10$	$6 \bullet 6 = 36$	$7 \bullet 7 = 49$	$8 \bullet 8 = 64$	$9 \bullet 9 = 81$	$10 \bullet 10 = 100$
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Measurement	Surface Area	<p><u>The sum of the areas of the face of a polyhedron</u></p> <p>To find the surface area of a polyhedron</p> <ol style="list-style-type: none"> 1) Find the area of each side of the polyhedron. 2) Add up all the areas. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>5, 6, 7</p> </div> <div style="text-align: center;">  </div> </div> <p>The box at the left has a length, width and height of 5, 6 and 7 respectively. The picture on the right shows the box unfolded.</p> <p>The surface area would be:</p> $(7 \bullet 5) + (7 \bullet 5) + (7 \bullet 6) + (7 \bullet 6) + (6 \bullet 5) + (6 \bullet 5) =$ $2(7 \bullet 5) + 2(7 \bullet 6) + 2(6 \bullet 5) = 214 \text{ units squared}$																				

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Subject Area	Word	Definition
Measurement	Volume	<p><u>The number of cubic units needed to fill the space inside a polyhedron</u></p> <p>To find the volume of a rectangular prism 1) Multiply the length, width and height.</p> <p>To find the volume of a cylinder 1) Find the area of the base (circle.) To do this square the radius and multiply the result by π (approximately 3.14).</p> <p>The area of the base of this cylinder would be $3 \cdot 3 \cdot \pi = 28.26$</p>  <p>2) Multiply the area of the base by the height. The volume of this cylinder would be $28.26 \cdot 4 = 113.04 \text{ inches}^3$.</p> 