MATH SKILLS

EQUIVALENCIES

Metric System

	Length	Volume	Weight
Basic Unit	meter (m)	liter (l)	gram (g)
x10	decameter (dam)	decaliter (dal)	decagram (dag)
x100	hectometer (hm)	hectoliter (hl)	hectogram (hg)
x1,000	kilometer (km)	kiloliter (kl)	kilogram (kg)*
÷10	decimeter (dm)	deciliter (dl)	decigram (dg)
÷100	centimeter (cm)	centiliter (cl)	centigram (cg)
÷1,000	millimeter (mm)	milliliter (ml)	milligram (mg)

*a metric ton is 1,000 kilograms

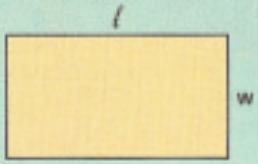
English System

Length/Distance		Volume	
1 foot	= 12 inches	1 tablespoon	= 3 teaspoons
1 yard	= 3 feet	1 cup	= 16 tablespoons
1 mile	= 1,760 yards	1 cup	= 8 fluid ounces
1.15 miles	= 1 nautical mile	1 pint	= 2 cups
3 miles	= 1 league	1 quart	= 2 pints
		2 pints	= 32 fluid ounces
Area		1 gallon	= 4 quarts
1 acre	= 4,840 sq. yards		
1 sq. mile	= 640 acres	**Weight**	
1 sq. foot	= 144 sq. inches	1 pound	= 16 ounces
1 sq. yard	= 9 sq. feet	1 ton	= 2,000 pounds

PERIMETER & CIRCUMFERENCE

Perimeter is the distance around an object.
Circumference refers to the distance around a circle.

Rectangle: $2(\ell + w)$



Circle: πd or $2\pi r$



CALCULATING THE AREA

ℓ = length s = side
w = width b = base
h = height r = radius

Square: s^2

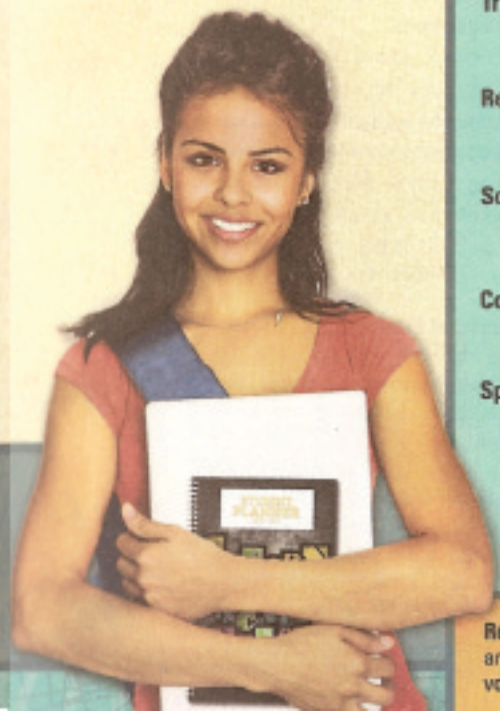
Triangle: $\frac{1}{2}\, b \cdot h$

Rectangle: $\ell \cdot w$

Parallelogram: $b \cdot h$

Circle: πr^2

Trapezoid: $\frac{1}{2}\,(b_1 + b_2)\, h$



SURFACE & VOLUME

Surface Area: Find the area of each face and add together.

Volume of Prisms: Find the area of the base (B) and multiply by the height (h).

Cube: volume (V) = s^3

Rectangular Prism: $V = \ell \cdot w \cdot h$

Triangular Prism: $V = Bh$

Cylinder: $V = \pi r^2 h$
surface area (SA) = $2\pi r^2 + 2\pi rh$

Volume of Pyramids: Find the area of the base (B), multiply by height (h), and divide by 3.

Triangular Pyramid: $V = \frac{1}{3}\, Bh$

Rectangular Pyramid: $V = \frac{1}{3}\, Bh$

Square Pyramid: $V = \frac{1}{3}\, Bh$

Cone: $V = \frac{1}{3}\, \pi r^2 h$

Sphere: $V = \frac{4}{3}\, \pi r^3$
$SA = 4\pi r^2$

HIP TIP

Remember: The answers to surface area problems are labeled as square units (units^2). The answers to volume problems are labeled as cubic units (units^3).