



# STEM Lab

Science, Technology, Engineering, Math

Betty J. Evans Tutoring Center  
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**SUNY CANTON**

## Velocity:

1 mi/h = 1.47 ft/s = 0.447 m/s  
1 m/s = 100 cm/s = 3.281 ft/s  
1 mi/min = 60 mi/h = 88 ft/s

## Acceleration:

1 m/s<sup>2</sup> = 3.28 ft/s<sup>2</sup>  
= 100 cm/s<sup>2</sup>  
1 ft/s<sup>2</sup> = 0.3048 m/s<sup>2</sup>

## Pressure:

1 bar = 10<sup>5</sup> N/m<sup>2</sup>  
= 14.50 lb/in<sup>2</sup>  
1 atm = 760 mmHg  
1 atm = 14.7 lb/in<sup>2</sup>  
= 1.013 x 10<sup>5</sup> N/m<sup>2</sup>  
1 Pa = 1 N/m<sup>2</sup>  
= 1.45 x 10<sup>-4</sup> lb/in<sup>2</sup>

## Temperature:

°F = (9/5 °C) + 32  
°C = 5/9 (°F-32)  
K = °C + 273.15

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## Conversion Factors:

### Length:

1 inch = 2.54 cm  
1 m = 39.37 in = 3.281 ft  
1 ft = 0.3048 m  
12 in = 1 ft  
3 ft = 1 yd  
1 yd = 0.9144 m  
1 km = 0.621 mi  
1 mi = 1.609 km  
1 mi = 5280 ft  
1 Å = 10<sup>-10</sup> m  
1 μ = 10<sup>-6</sup> m = 10<sup>4</sup> Å  
1 lightyear = 9.461 x 10<sup>15</sup> m

### Mass:

1000 kg = 1 t (metric ton)  
1 slug = 14.59 kg  
1 u = 1.66x10<sup>-27</sup> kg  
1 t = 1.103 tons  
1 kg = 2.205 lbs  
1 lb = 453.6 g  
1 oz = 28.35 g

### Area:

1 m<sup>2</sup> = 10<sup>4</sup> cm<sup>2</sup> = 10.76 ft<sup>2</sup>  
1 ft<sup>2</sup> = 0.0929 m<sup>2</sup> = 144 in<sup>2</sup>  
1 in<sup>2</sup> = 6.452 cm<sup>2</sup>

### Volume:

1 m<sup>3</sup> = 10<sup>6</sup> cm<sup>3</sup>  
= 6.102 x 10<sup>4</sup> in<sup>3</sup>  
1 ft<sup>3</sup> = 1728 in<sup>3</sup>  
= 2.83 x 10<sup>-2</sup> m<sup>3</sup>  
128 Fl oz = 1 gal  
1 liter = 1000 cm<sup>3</sup> = 1.0576 qt  
1 ft<sup>3</sup> = 7.481 gal = 28.32 liters  
1 gal = 3.786 liters = 231 in<sup>3</sup>

### Time:

1 yr = 365 days = 3.16 x 10<sup>7</sup> s  
1 day = 24 hr = 1.44 x 10<sup>3</sup> min

### Energy:

1 J = 0.738 ft·lbs = 10<sup>7</sup> ergs  
1 cal = 4.186 J  
1 Btu = 252 cal = 1.054 x 10<sup>3</sup> J  
1 eV = 1.6 02x 10<sup>-19</sup> J  
931.5 MeV = 1 u  
1 kWh = 3.60 x 10<sup>6</sup> J

### Power:

1 hp = 550 ft·lbs/s = 0.746 kW  
1 W = 1 J/s = 0.738 ft·lbs/s  
1 Btu/h = 0.293 W

### Force:

1 N = 10<sup>5</sup> dyne = 0.2248 lb  
1 lb = 4.448 N  
1 dyne = 10<sup>-5</sup> N = 2.248 x 10<sup>-6</sup> lbs