Benchmark Numbers

Comparing numbers to familiar, local, or impressive things helps make a message memorable. Below are some ideas to help you get started. See the rest of this activity for more of examples of how these might be used. Grab a calculator and keep notes, so you don't lose track of what your numbers represent.

> Just one ounce of arsenic can contaminate enough water to fill an Olympic-sized swimming pool.

A few common units and conversions: This list is just a sample to get you thinking. Check the internet for more conversions.

Mile	5,280 feet = 1.61 km = 1610 m
Pound	16 ounces = 453.6 grams = 0.4536 kg
Acre	66 ft x 660 ft = 43,560 sq ft = 1/640 of a square mile = 0.40 Hectares
Hectare	100 m²

Cubic foot	7.48 gallons
Cubic meter	1,000 Liters = 264 gallons = 35.3 cubic feet
1 gallon	= 3.8 L = 4 quarts = 8 pints = 16 cups = 128 fluid ounces = 256 tablespoons = 768 teaspoons = 75,708 drops

Everyday items: Here are a few things most people have seen, touched, picked up, or walked by. What are other things you see and touch that have a standard size?

Pea	0.28" - 0.43" diameter
Dime	Diameter 0.705", Thickness 0.053", Weight 2.268 g
One Sheet of Letter-size paper	Single sheet: 8.5" x 11" Thickness: 0.0038", 0.01 lbs (4.5 g).
One Ream (500 sheets) of paper	8.5" x 11". 1.9" thick. 5 lbs.
US paper money	2.61" x 6.14", 1 gram
Index card	4" x 6"
Deck of Cards	2.5" x 3.5" x 0.625", 3.3 ounces
iPhone	4.8 ounces
Average newborn	7.5 lbs
Can of Coca-Cola	12 fluid ounces
Red Clay Brick	3.625" x 7.625" x 2.25", about 5 lbs
Typical toilet flush	Older: 3-4 gals. After 1994: 1.6 gals.
Gallon milk jug	8 pounds

Cinder block	33 lbs.
Kitchen trash bag	13 gallons
Trash barrel	32 gallons
Typical bathtub	About 50 gallons
Utility/Phone pole	40 ft (35 ft are above ground)
VW Beetle	2,939 lbs (1.47 tons)
Ford F-150 Truck	4,685 lbs (2.34 tons)
School bus	8' wide, 10' high, 24'-40' long, 23,000–29,500 pounds fully loaded
Football field	No end zones: 300'x160', 1.1 acres. w/end zones: 360' x 160', 1.32 acres
Tanker truck tank	5,500 to 9,000 U.S. gallons
Olympic-size Swimming Pool	2,500 m³ = 2,500,000 L = 660,430 gal
Acre-foot	325,851 gallons (volume of water covering an acre of land one foot deep)

More Benchmark Numbers

Impressive Numbers: Sometimes you just want to underscore the relative size something by comparing it to something really big. Or, break down a huge number by saying how much there would be per person, or per mile.

> If they approve the permit, the landfill could be nearly half the height of the Empire State Building!

U.S. Population	308,745,538 (2010 Census)
Passenger vehicles in the U.S. (cars and small trucks)	254,212,610 (US Bureau of Transportation Statistics, 2009)
Pop. of New York City	8,244,910 (2011 US Census est.)
Number of post offices	26,927 (2011)
Madison Square Garden	19,763 seats
Empire State Building	1250 ft

Span of the Grand Canyon at its widest point	18 mi
New York to San Francisco	2,563 mi
Circumference of the earth	24,900 mi
From Earth to the Moon	220,000 mi
Rhode Island	1,214 sq. mi
Texas	268,581 sq mi

Close to Home: The best references are most familiar or known well by your target audience.

Population of your town, county, or state	Area of a stretch of street (length x width)
Seats at a local stadium, or school auditorium	Price of a coffee (or hamburger) at a local restaurant
Height of a well-known local building	Annual town budget for [a particular service]
Distance between landmarks in your town	Median home value or tax bill in your town
Distance from your town to the nearest city	Cost of a gallon of gas today
Area of your town, county, or state	Typical local garbage truck (weight, capacity)
Area of the high school gym floor	Profits or CEO salary of a polluting company

An extra challenge: Another dimension!

For most of these, you need to compare like to like: length to length, volume to volume, weight, etc. But if you're skilled you can combine dimensions: The area of a rectangle is its length times its width (using the same units). Give that area a height or a depth and you can calculate a volume. With that, you can say things like...

> Each fracking well uses 9 million gallons of water per frack.

> That's enough water to cover a football field more than 20 feet deep!