

MIT.nano NANOSCALE ESTIMATOR



What is nano?

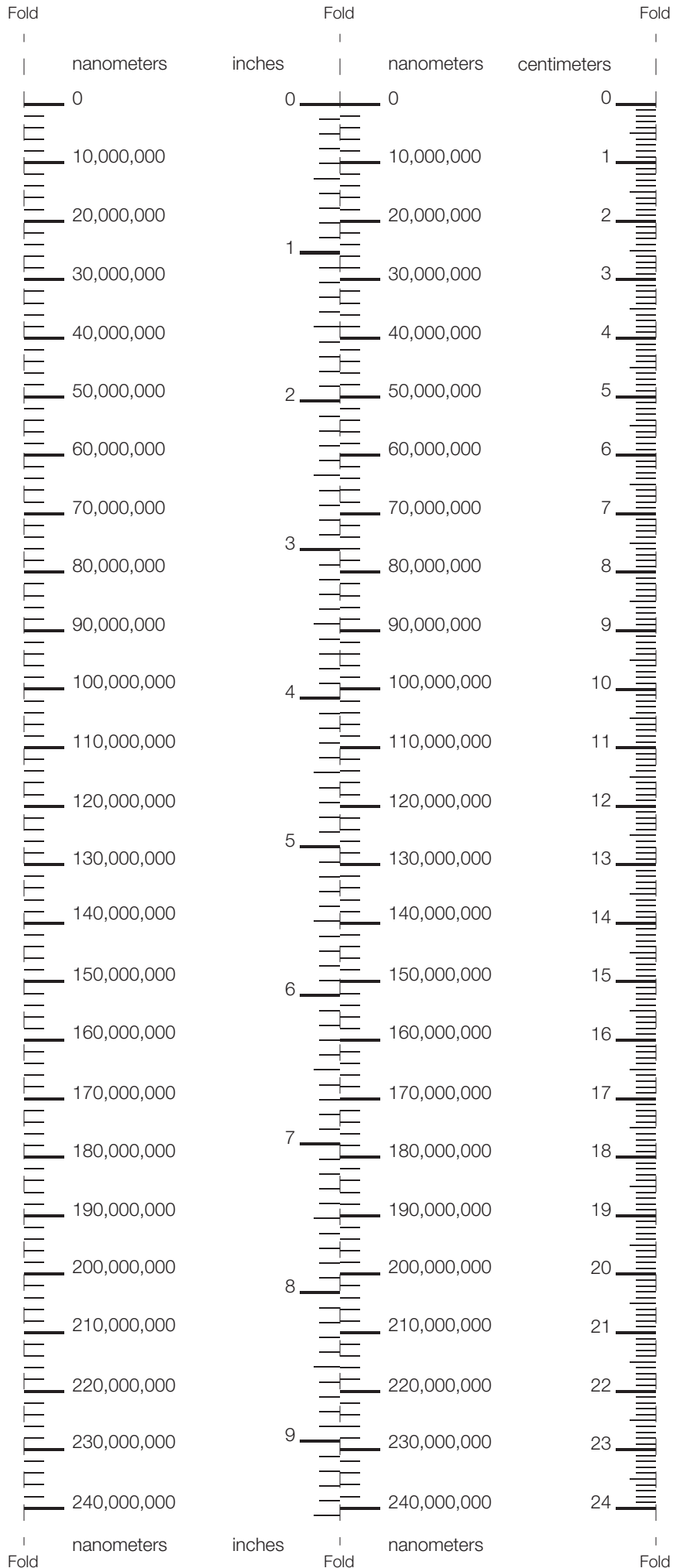
A nanometer is one billionth of a meter. In numerals, that's 0.000000001 meters. Objects measured in nanometers are too small to see with your eyes, but everything around you starts at the nanoscale—the tiny particles and molecules that form your body, the things you use, and your environment.

MIT.nano is a center with special tools and laboratories for nanoscale research. Our scientists and engineers try to understand the incredibly small nano-world and use their knowledge to design and build just like nature does: atom by atom and molecule by molecule.

What do they build? Practically anything! From renewable energy to better medicine, new materials to advanced manufacturing, faster computers to a cleaner environment, nanoscale research offers countless ways to make the world better.

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Taking measure of the nanoscale


Just how small is a nanometer? It's hard to imagine the nanoscale. Atoms, particles, and molecules make up the tiniest parts of our bodies, as well as everything we see and touch, but you won't be able to see them unless you have a very powerful microscope. If you can't take a ruler down to the nanoscale, bring the nanoscale up to your level!


Use this nano-estimator to compare nanometers to more familiar scales—inches and centimeters. Measure the objects around you: How many millions of nanometers long is your finger? How wide is a blade of grass in centimeters and nanometers? What's the width of a cookie in inches compared to nanometers? See how big the world is when you look at it from the nano point of view!

The width of things in nanometers

 Scent molecules from a rose:
1 nm

 Human DNA:
2 nm

 Titanium-dioxide particles in sunscreen:
50-100 nm

 Pixels in an iPhone screen:
25,000 nm

 Massachusetts Institute of Technology