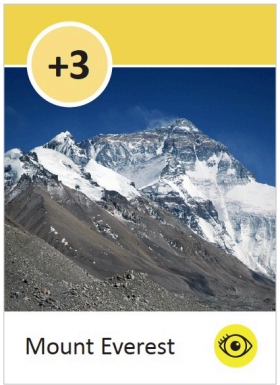
Get In Order

Can you sort yourselves by size?

Try this!

1. Take a card.
2. Compare the picture on your card to the pictures on the other cards. Some things are big and others are small.
3. Try to line up in order of size. How fast can you get in order?



EXPLORE SCIENCE

Things in the universe come in different sizes—and size is important! Nanometers are used to measure tiny things.

What's going on?

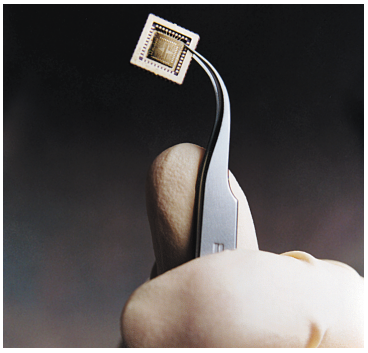
The objects on the cards are organized according to powers of ten. Each number on the scale represents a ten-fold change in size. An object marked with a 0, like a person, is about a meter tall. An object marked +1 is around ten times bigger, and an object marked -1 is around ten times smaller.

That means an object marked with a +3, like Mount Everest, is around a thousand times bigger than a person. An object marked with a -3, like a pea, is around a thousand times smaller.

Really tiny objects, like DNA, are marked with even lower numbers. DNA (-9) is so tiny it's measured in nanometers! In the emerging field of nanotechnology, scientists work with very tiny things measured in nanometers.

Nanometers, centimeters, and meters are all part of the metric system. The metric system is a measuring system using units based on powers of ten. Scientists use the metric system because it makes calculations easier.

How is this nano?



Computer chip

Nanometers measure things like atoms and molecules, the basic building blocks of our world. Nanoscale science focuses on things that are measured in nanometers. In the field of nanotechnology, scientists and engineers make new materials and tiny devices. Nanotechnology allows them to make things like smaller, faster computer chips and new medicines to treat diseases like cancer.