

Name: _____

Class: _____ Date: _____



BrainPOP ACTIVITY: NANOTECHNOLOGY

- Fill in the blank using words from the word bank.

atomic	electrons	molecules	precision
nanobots	billionth	waste	atoms

Nanotechnology is the science of controlling matter on a really small scale. Through nanotechnology, scientists can manipulate and build stuff out of _____ and even individual atoms. The “nano” in nanotechnology refers to the size of the nanometer. A nanometer is 0.000000001 meters, which is 1 _____ of a meter. A sheet of paper is 100,000 nm thick.

A scanning electron microscope (SEM) uses a beam of _____ to scan an object and produce three-dimensional images of the _____ on its surface. The scanning tunneling microscope (STM) uses an extremely fine point, about the width of an atom, to push other atoms around. By changing substances at the _____ level, scientists can have complete control over a material’s properties.

Scientists are also hoping to build nano-sized robots, or _____, which can be programmed to do all sorts of useful stuff. The idea is to build materials with an unimaginable level of _____. By controlling the size and shape of things down to the smallest molecule, nanotechnology will greatly reduce the _____ and pollution created in manufacturing.

- Think about it...

Do you think that the benefits of nanotechnology will outweigh the risks? Explain.

