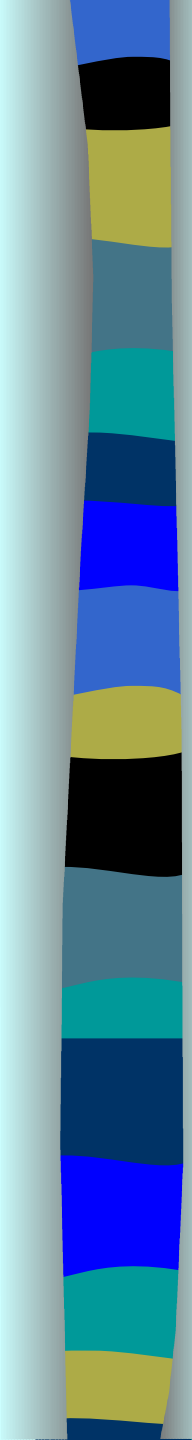




# The Particle Theory of Matter

## **1. All matter is composed of particles**

- These particles are the smallest pieces of matter that identify a substance.
- If you take a substance and break it into successively smaller pieces, eventually you come to the smallest piece...a particle
- If you are able to break a particle further, you change the substance into something new



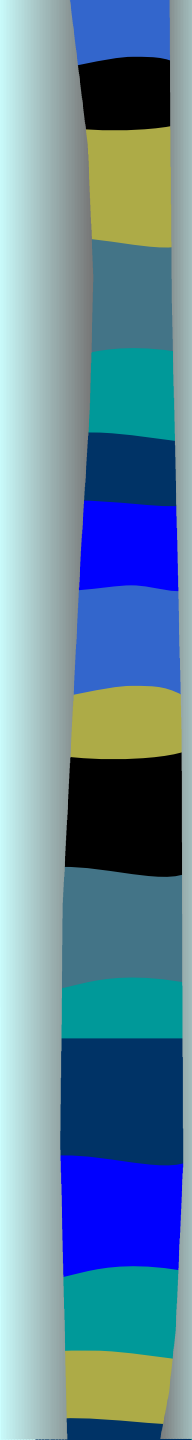
## **2. The particles of one substance are the same. The particles of different substances are made of different particles**

- Gold particles are all the same and are different from silver particles.
- There is no difference between water particles found in Aurora and water particles found in New York (or anywhere else)



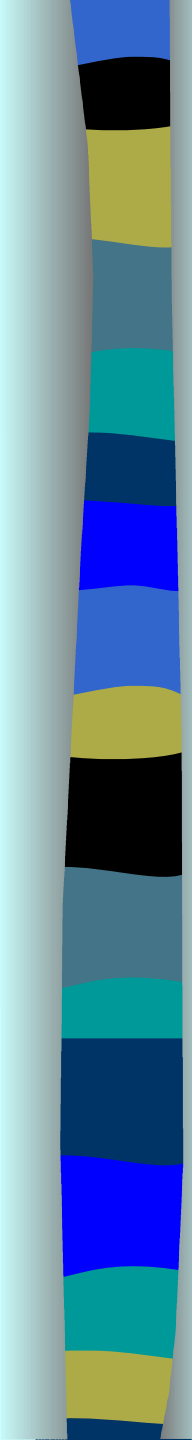
### **3. There are attractive forces between particles.**

- The closer particles are to each other, the stronger the force.
- This is why substances like solids, with particles so strongly attracted to each other, are typically more dense than liquids or gases.



## 4. Particles are always moving.

- Regardless of whether or not a substance appears to be still, the particles that make it up are moving.
- In theory, when this movement stops, a substance has reached its lowest possible temperature (absolute zero... $-273^{\circ}\text{C}$ )



## **5. The more energy particles have, the faster they move and the higher their temperature.**

- This movement is called heat or heat energy
- Temperature is a measurement of the speed of the particles.