

Episode 6 - The Atom

1. What are the three basic components (particles) that make up an atom?
2. What are the two regions of any atom?
3. How does the size of the nucleus compare to the size of an atom?
4. What is the Scanning and Tunneling electron Microscope (STM) used for?
5. What holds the electrons and the nucleus together?
6. Unlike charges _____; like charges _____.
7. What are the charges on the electron _____, the proton _____, and the neutron _____?
8. Why is the overall charge of the atom neutral?
9. What did Rutherford's gold foil experiment show?
10. When two atoms meet, what parts of the atoms interact?
11. What are some ways that signals from the atom can be used?

Answer Key

1. What are the three basic components (particles) that make up an atom?

Protons, neutrons, electrons

2. What are the two regions of any atom?

The nucleus and the electron cloud

3. How does the size of the nucleus compare to the size of an atom?

The average atom is 10,000 larger in diameter than the nucleus.

4. What is the Scanning and Tunneling electron Microscope (STM) used for?

It provides 2 and 3 dimensional images of atoms.

5. What holds the electrons and the nucleus together?

Electrical charge

6. Unlike charges attract; like charges repel.

7. What are the charges on the electron negative, the proton positive, and the neutron neutral?

8. Why is the overall charge of the atom neutral?

protons = # electrons

9. What did Rutherford's gold foil experiment show?

The nucleus contains most of the atoms mass and has a positive charge.

10. When two atoms meet, what parts of the atoms interact?

The electrons

11. What are some ways that signals from the atom can be used?

They can be used to determine the number and types of atoms present.