

I. Introduction: Matter in Ecosystems

- A. Organisms are composed of _____ (anything that takes up _____ and has _____)
- B. Organisms in ecosystems connect to one another through their need for _____ as well as _____
- C. As **matter** and **energy** flow through different organisms _____ are _____ in different ways to form different products.

II. What is the relationship between matter, elements, and atoms?

- A. Matter is composed of _____
- B. _____ is a substance that is made entirely from one type of _____
- C. Atoms are made of sub atomic particles: _____

III. A Closer Look at Atoms

- A. Determine _____ of matter
- B. Electrons arranged in _____ (orbitals)
- C. _____ electrons: _____ (electrons) in outermost shell
- D. Valence shells are _____ (happy) when _____

1st orbital= _____

2nd orbital= _____

3rd orbital= _____

4th orbital= _____

E. Special Types of Atoms

a. Ions = _____

b. Isotopes = _____

IV. Atoms bond together to form molecules and compounds.

- A. _____ = 2 or more atoms joined together
- B. _____ = 2 or more elements in a _____ ratio; (molecule consisting of more than _____ of element)

V. How do atoms bond together?

- A. **Covalent Bonds** = two atoms _____ one or more valence electrons
- B. **Ionic Bonds** = one atom _____ a valence electron to another atom
- C. **Hydrogen Bonds** = Weak attractive forces between _____ parts of molecules