

Name _____

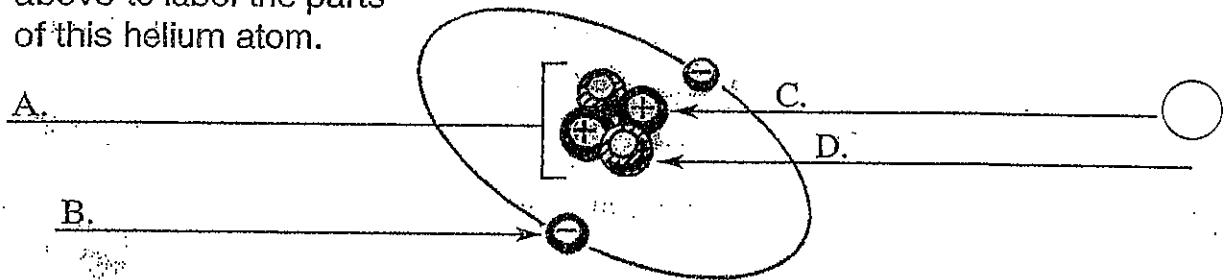
Atoms

Everything around you is made up of matter. All matter is made of tiny particles called atoms. Atoms are so small you cannot see them with your eyes or even with a powerful microscope.

An atom has many parts. The center of an atom is called its **nucleus**. The nucleus is made up of protons and neutrons. **Protons** have a positive charge. **Neutrons** have no charge. Outside of an atom's nucleus are negatively charged particles called **electrons**. Electrons move around the atom's nucleus.

An **element** is one of over one hundred basic substances scientists have discovered or created. All atoms of an element are exactly the same. The element iron, for example, is made up of only iron atoms. The element carbon is made up of only carbon atoms. The number of protons, neutrons, and electrons within an atom is what makes elements different from one another.

1. Use the information above to label the parts of this helium atom.



2. Whether a substance is a solid, liquid, or gas is determined by how close together its atoms are. Think about water, iron, and oxygen.

A. Which substance has the most tightly packed atoms? _____

B. Which substance has the most loosely packed atoms? _____

3. Write letters in the blanks to match each word with its definition.

_____ a negatively charged particle

_____ the center of an atom

_____ anything that has weight and takes up space

_____ a particle with no charge

_____ a basic substance

_____ a positively charged particle

_____ the "building blocks" of matter

A. proton

B. atoms

C. nucleus

D. electron

E. matter

F. neutron

G. element

Name: _____

FILL IN THE BLANK

Complete each statement using a term or terms from the list below. Write your answers in the spaces provided. Some answers may be used more than once.

outside
protons
nucleus

neutrons
atoms
smaller

same
negative
no

cancel out
electrons
positive

1. All matter is made of tiny parts called _____.
2. The center part of an atom is called the _____.
3. A nucleus is made up of _____ and _____.
4. Electrons are found _____ the nucleus.
5. Electrons are _____ than protons or neutrons.
6. The main parts of an atom are _____, _____, and _____.
7. Since protons have a _____ charge, and neutrons have _____ charge, the nucleus will have a _____ charge.
8. Electrons have a _____ charge.
9. An atom has the _____ number of protons and electrons.
10. The plus and minus charges of an atom _____ each other.

TRUE OR FALSE

In the space provided, write "true" if the sentence is true. Write "false" if the sentence is false.

- _____ 1. A proton is found outside the nucleus.
- _____ 2. A proton has a negative charge.
- _____ 3. A neutron has a positive charge.
- _____ 4. An electron has a negative charge.
- _____ 5. An electron is found inside the nucleus.