UNIT 1: MATTER.

STRUCTURE OF ATOMS

Dear language assistant,

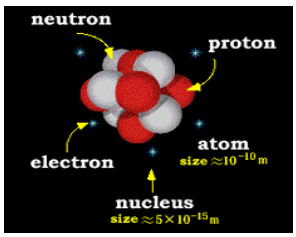
1.This class deals with atoms. We have already worked about this topic but the students have to practise it. The first activity consists of writing four words on the board: mixture, element, atom, compound. Then you have to remind them that matter has these components but they are very different in size and complexity. Which one is the smallest? Which is the more complex? Order them from the "biggest" to the smallest. After one minute you can give the right answer:

Mixture>Compound>Element>Atom

You can explain this with an example: sea water is a mixture and it contains two compounds: water and salt. Water is H_2O, so water contains two elements: hydrogen and oxygen. In a water molecule there are two atoms of hydrogen and one atom of oxygen.

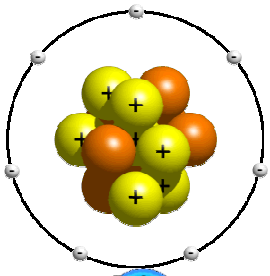
2.We usually say atom is the smallest part of matter but scientists have found out that there are small particles inside atoms. Do you remember their names? Proton, neutron and electron. Students have already filled a chart with the characteristics of these particles. Open your book on page 17 in order to answer some questions:

	Location	Charge	Mass
Proton	NUCLEUS	POSITIVE	YES
Electron	ORBIT	NEGATIVE	YES
Neutron	NUCLEUS	NO CHARGE	NO

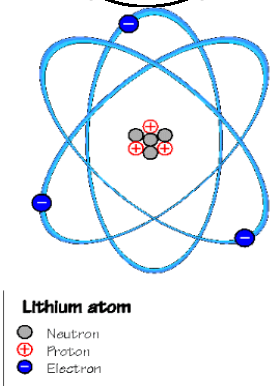


- Where are protons?
- Protons are in the nucleus.
- Which particles are in the nucleus?
- Protons and neutrons are in the nucleus?
- Where are electrons?
- They move around, in the orbit.
- Do neutrons have a charge?
- No, they don't.
- Do protons have a charge?
- Yes, they have positive charge.
- Do electrons have mass?
- We say they don't have mass (because their mass is very very small, much smaller than proton and neutron mass).
- Where is the mass of an atom?
- It's in the nucleus

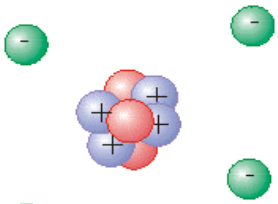
3.Then you can review the structure of atoms using a presentation with the following pictures. You can ask some questions or ask the students to describe the pictures.



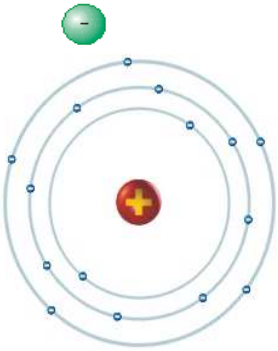
How many electrons are there?
There are seven electrons
How many protons are there?
There are seven protons
Where are the neutrons?
They are in the nucleus?



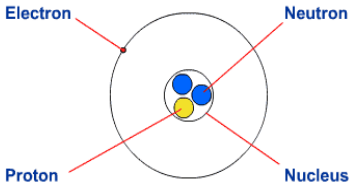
Describe the atom on the left:
There are three electrons in the orbit (moving around).
There are four neutrons and three protons in the nucleus. So the mass is seven (4+3, electrons have no mass)



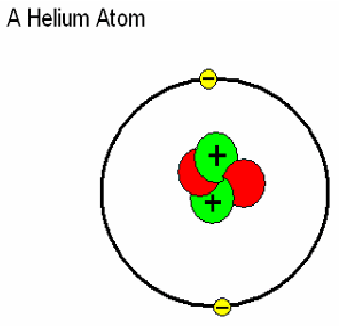
There are four electrons in the orbit and there are four protons and three neutrons in the nucleus. The mass is seven.

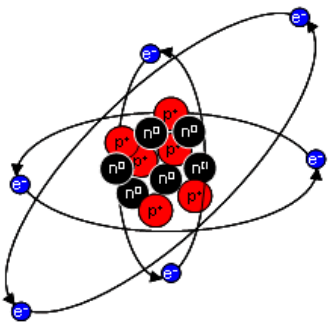


There are protons and neutrons in the nucleus but we can't see how many.
There are 15 electrons in the orbit.



It has got one electron in the orbit and three particles in the nucleus: one proton and two neutron.





4.Another way to review this topic is asking them to draw an atom you describe (Look for a volunteer to draw on the board, please). For instance:

-It has six protons and six electrons. There are seven neutrons in the nucleus.
-It has nine particles in its orbit and there are twenty particles in the nucleus.
-There are seven particles in the nucleus and two particles in the orbit. How many electrons has it got? Two (particles in the orbit). How many protons? Two (number of protons is equal to number of electrons). How many neutrons? Five (7-2=5)

5.If there is some time left you can check some activities students have done at home:

42. True or false

b. Atoms of gold are the same as atoms of oxygen. False
c. Compounds are formed by two or more elements. True
d. The horizontal rows in the periodic table are called periods. True
e. The vertical columns in the periodic table are called groups. True
f. The element carbon can be represented by the symbol C. True
g. The element silicon can be represented by the symbol S. False
h. Protons have a negative charge. False
i. Neutrons and protons are in the nucleus of a carbon atom. True

43.Find the right word for these definitions:

j. The central part of an atom: nucleus
k. A very small particle with a positive charge: proton
l. A very small particle almost without mass: electron
m. A very small particle with no charge: neutron
n. The place where the protons are: nucleus
o. A very small particle with a negative charge: electron

44. Draw the structure of an atom made up of 9 electrons, 9 protons and 10 neutrons. Look for the name of this element in the periodic table.

Thank you