



TEACHING KIT ABOUT THE VIDEO “HAPPY ATOMS”.

QUESTIONS

- 1) Are the isolated atoms stable? If so, why? If not, why?
- 2) Why do the atoms form bonds instead of being alone?
- 3) What kind of bond is formed if the two atoms share a pair of electrons?
- 4) In which case is a pure covalent bond formed?
- 5) What are the different colored spheres placed on the orbits of the two atoms, participating in the formation of the bond?
- 6) Based on your knowledge, where would you place the two atoms that have, respectively, one and seven electrons in the outer shell? I mean, on the left or on the right of the periodic table? and then, in which group (vertical lines) of the periodic table? Why?
- 7) So, how many electrons must an atom share in the seventh group of the periodic table? Is it important for the chemical behavior of the atom in which period (horizontal lines) it is?
- 8) In the covalent bond are the electrons counted simultaneously for both atoms? I mean, do they belong simultaneously to both atoms?
- 9) What kind of atoms come together to form a polar covalent bond?
- 10) If we make an analogy with the game of the rope where the two atoms represent the two teams of players pulling from opposite sides, to which part will the rope be moved? So, which team (atom) will win?
- 11) What does it mean that two atoms have “very different chemical characteristics”? Where would you place these different atoms within the periodic table?
- 12) What kind of atoms are formed if electrons are taken or lost?
- 13) Would you have said that an atom that loses electrons acquires a positive charge? Why? And if it lost 2 or 3 electrons, respectively, what would it become?
- 14) And what does an atom that takes 1, 2, or 3 electrons, respectively, become? Why?
- 15) Which of these described bonds can be imagined as an interaction of electrostatic nature between opposite charges?

Note well: To answer questions number 13 and 14 count the subatomic particles present in the atoms (protons and electrons).