

SuperQuizz

- Last name / First name
- Age
- Date

Use the manual and the models you have made to answer the questions.

the electron **inside the atom**

1 An atom is less than a nanometer large.

But, by the way, what is a nanometer?

- a a nanometer, it is a billion time smaller than a meter
- b a nanometer, it is a billion time bigger than a meter
- c a nanometer, it is a centimeter

2 An atom is a tiny nucleus with an electron around. Fold the model which represent the electron, then look at it. According to you:

- a the electron moves very fast and you cannot follow it
- b the electron is not in a precise place but occupies an entire region in the same time
- c the electron is invisible

the **shapes** of the electrons

3 Look at the different shapes of the electron. According to you:

- a it is more shaped like a football
- b it is more shaped like a four-leaf clover
- c it is more shaped like two rugby balls

the **chemical bonds**

4 Try to bring two electron models one from another, the closest you can.

It is like when two atoms come close for real and their electrons meet. According to you:

- a they attract themselves like two opposite poles from two magnets
- b they repulse themselves
- c they get one into another and hook on because of that covering

5 Look at the images of atoms in a metal. According to you:

- a atoms align in an ordered pattern
- b atoms move and create electrical current
- c atoms are randomly arranged

6 Look at the image of the electric flow in a metal. According to you:

- a the electrons rebound on each other and block each other
- b the electrons move freely but are often deviated
- c the electrons hook on

7 Build a pair of Cooper with two electrons. According to you:

- a the electrons repulse each other and stay as far as possible from each other
- b the electrons attract each other two by two and are trapped like in a chemical bond
- c the electrons attract each other two by two but can still move

8 Look at the image of the superconductor flow.

According to you, in a superconductor:

- a the electric flow comes from a single pair of electrons moving forward
- b the electric flow come from many pairs of electrons moving forward together
- c the electric flow comes from the electrons which are often deviated like in metal

9 Fold a magnet model and its magnetic field. According to you, if the strips represents the magnetic field:

- a the magnetic field always goes from up to down
- b the magnetic field goes from one pole of the magnet to the other and works around the magnet
- c the magnetic field goes from one pole of the magnet to the other and works only inside the magnet

10 Fold the violet superconductor and put your hand on it. According to you:

- a the magnet is attracted to the superconductor and sticks to it
- b the magnet does not care about the superconductor and behaves like the superconductor was not here
- c the magnet starts to levitate because its magnetic field is repulsed by the superconductor