

## Homework 35a Electric charges

1. Use the words in the HELP-BOX to copy and complete the paragraph below.

orbit	same	repel	charge
attract		nucleus	negative

Some materials can be given an electric . . . . . by rubbing them. There are two types of charge called positive (+) and . . . . . (-). Charged objects put forces on each other. If they have the . . . . . type of charge then they repel. If one object has a positive charge and the other has a negative charge then they . . . . . All atoms are made of charged particles. The centre of the atom is called the . . . . . and is positive. Electrons . . . . . around the nucleus and they have a negative charge.

2. Some small pieces of polystyrene have been given a negative charge. A positively charged plastic comb is brought near to them. Describe what you think happens.
3. Write out the **true** sentences from those below:
- (a) Protons exist in the nuclei of atoms
  - (b) Protons have positive charge
  - (c) A proton has equal but opposite charge to an electron
  - (d) Electrons can move and charge an object
  - (e) Protons can move freely from atom to atom
4. Explain, using ideas of atoms, protons and electrons:
- (a) How an uncharged plastic ruler can become negatively charged when rubbed with a neutral cloth.
  - (b) How an uncharged piece of acetate can become positively charged when rubbed with a neutral cloth.