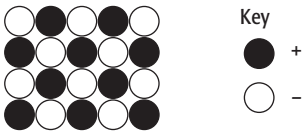
Worksheet 3.10

Ionic crystals

The diagram below shows the arrangement of particles in a crystal of sodium chloride.



1 **a** Each particle has a charge. What type of particles have a charge? Put a ring around the one you choose from the following:

atoms **molecules** **ions**

b In sodium chloride, what is the name of the particle with the positive charge?

c What is the name of the particle with the negative charge?

d What type of forces hold the particles together in the crystal lattice?

2 The table below concerns some information about the atoms of sodium and chlorine.

Complete the table.

Element	Symbol	Number of electrons	Number of electron shells	Number of electrons in outer shell	Group number in Periodic Table
sodium	Na				
chlorine	Cl				

3 Use the information you have given in the table to answer the following questions.

a Why does sodium chloride have positively and negatively charged particles? (Use dot and cross diagrams to help your explanation.)

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b Why is the formula for sodium chloride NaCl?

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