The <u>atoms, elements, compounds, mixtures</u> video provides an introduction to this aspect of the Chemistry GCSE. However exam-style questions on this topic will, of course, include more complex material. To answer the exam-style question below you will also need to know some of the material covered in the <u>atomic structure</u> and <u>electronic structure</u> videos.

| 0 | 1 | . | 1 | Most substances are either elements, compounds or mixtures.

How many known elements exist?

Circle the correct answer. **[1 mark]**

About 50   (About 100)   About 1000   More than 1000

| 0 | 1 | . | 2 | How many known compounds exist?

Circle the correct answer. **[1 mark]**

About 50   About 100   About 1000   (More than 1000)

| 0 | 1 | . | 3 | Oxygen is an example of an element. The following information is given about oxygen in the periodic table.

Mass number (atomic mass) $\longrightarrow$ 16
Atomic number $\longrightarrow$ 8

O

What information about oxygen is given by the mass number and the atomic number? **[2 marks]**

Atomic number _____ The number of protons [1] _____

_____

Mass number _____ The number of protons plus neutrons [1] _____

_____

| 0 | 2 | . | 1 | (a) Which of the given numbers identifies the element? **[1 mark]**

The atomic number [1]

_____

| 0 | 2 | . | 2 |

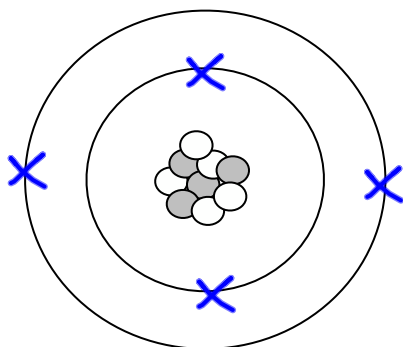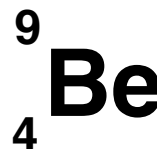The diagram shows an atom of the element beryllium and its data from the periodic table.

Diagram 1

$^{9}_{4}\text{Be}$

Table 1 shows two of the sub-atomic particles that are present in an atom of beryllium.

Table 1

Particle	Number
Protons	4 [1]
Neutrons	5 [1]

Complete the table to show the number of each of the particles. **[2 marks]**

| 0 | 2 | . | 3 |

Complete **Diagram 1** to show the number and position of electrons that are present in an atom of beryllium.

4 electrons in total [1]

2 in first shell [1]

2 in second shell [1]

TOP TIP : Where the electrons are on the shell doesn't matter. You don't have to use crosses for this question but generally you should use either a cross (x) or a dot (o).

[3 marks]

(Total 10 marks)

End