# Name:

Year 9 Science Revision 2022

1. Complete the following table about sub-atomic particles (parts of an atom):

|  |  |  |  |
| --- | --- | --- | --- |
| Name of particle | Location of particle in an atom | Electric charge of particle | Relative size of particle.  (Ie largest or smallest) |
| Proton |  |  |  |
|  | The nucleus of the atom |  | Equal largest |
|  |  |  | The smallest particle in an atom |

1. What is the difference between an element and a compound?

1. What is the difference between an ion and an atom?

1. When magnesium is burned, the magnesium combines with oxygen to form a white substance called Magnesium Oxide
   1. List the reactants of the chemical reaction described above:

* 1. List the products of the chemical reaction described above:

* 1. Write the word equation for the reaction described above: (Use an arrow to separate reactants and products)

1. Complete the following table which relates to the number of electrons that can fit into an electron shell of an atom:

|  |  |
| --- | --- |
| Shell position from nucleus | Number of electrons that can fit in the shell |
| 1st shell |  |
| 2nd shell |  |
| 3rd shell |  |

1. Draw the arrangement of electrons around the following atoms: Potassium (19 electrons)

Fluorine (9 electrons) Sodium (11 electrons)

**F**

**Na**

**K**

1. The word equation for igniting hydrogen gas in air (oxygen) is:

Hydrogen + Oxygen 🡺 Water

List the product/s:

List the Reactant/s:

1. State the law of conservation of mass.

1. What is the difference between endothermic and exothermic chemical reactions?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Use the periodic table and your knowledge from class to complete the following table:

The first one has been completed for you.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Element** | **Symbol** | **Atomic Number** | **Atomic Mass** | **Number of Protons** | **Number of Neutrons** |
| Magnesium | Mg | 12 | 24 | 12 | 12 |
|  | O |  |  | 8 | 8 |
|  |  | 16 | 32 |  |  |
|  |  |  | 27 |  | 14 |
|  |  |  | 4 | 2 |  |

1. Read the following passage describing a chemical reaction that you did in class:

**Potassium Iodide** and **Lead Nitrate** are both clear liquids. When they are added together the liquid instantly turned bright yellow. This is due to a substance called **Lead Iodide** being formed along with another substance called **Potassium Nitrate**.

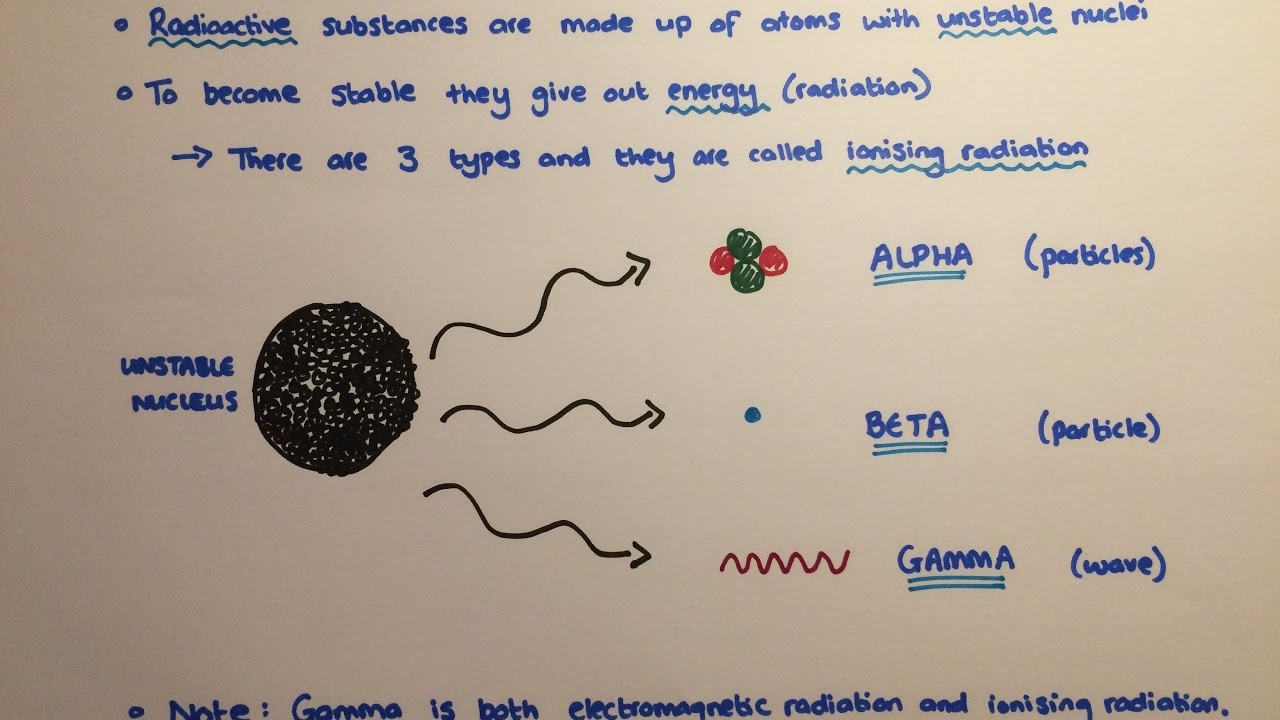
1. List the **products** of the reaction:
2. List the **reactants** of the reaction:
3. Write a word equation (using an arrow to separate the reactants and the products) for the chemical reaction:

1. Fill in the missing name and chemical diagram for the following chemical reaction:

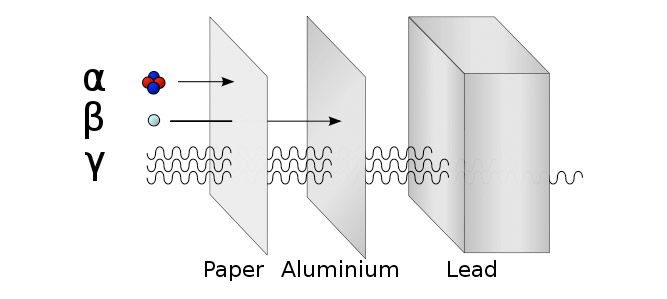
Copper + Hydrogen Sulphate 🡺 Copper Sulphate +

1. Your friend made excellent revision notes on Radiation, but you notice they have left out what the Alpha, Beta particles are comprised of. Add the following terms to the diagram;

* 2 protons and 2 neutrons
* Electron



Using the information from the notes above. **Explain** the following diagram in the space provided below.



\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_