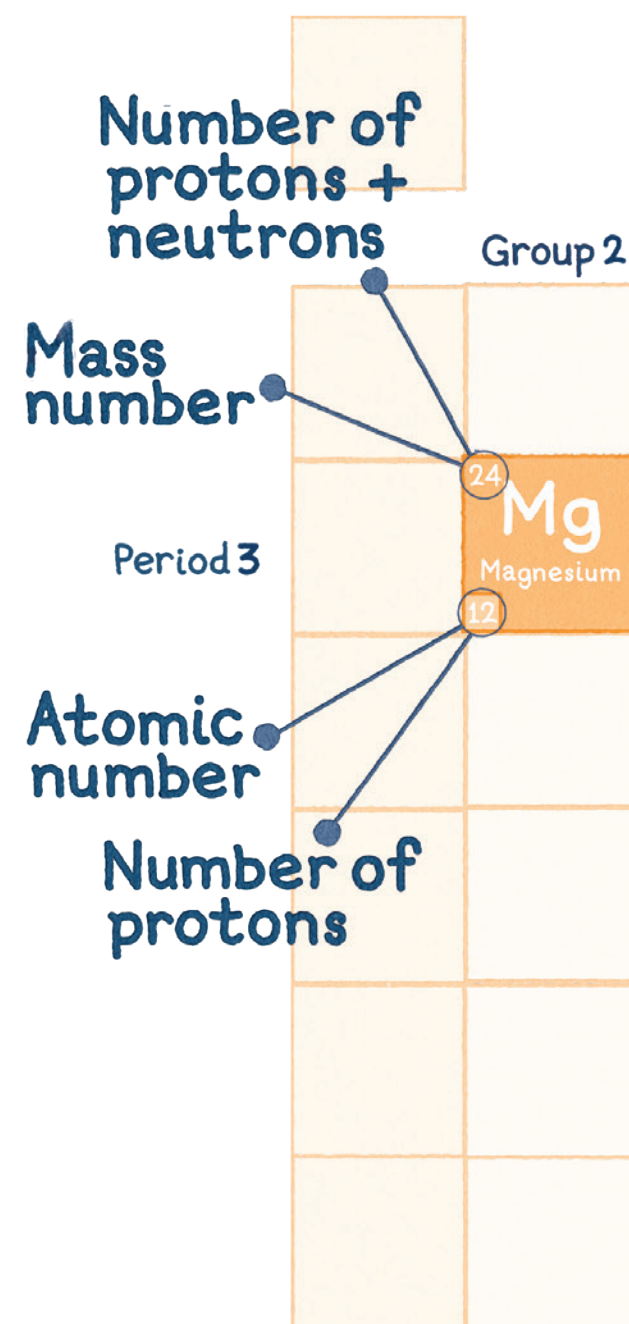


Structure of the atom

Understanding **atomic structure** helps us explain why **elements** behave the way they do and why they form different types of substances. We use a **planetary model** to describe an atom's structure.

The periodic table

The **group** number tells us how many **electrons** are in an atom's **outer shell** and the **period** number is equivalent to its number of **electron shells**.

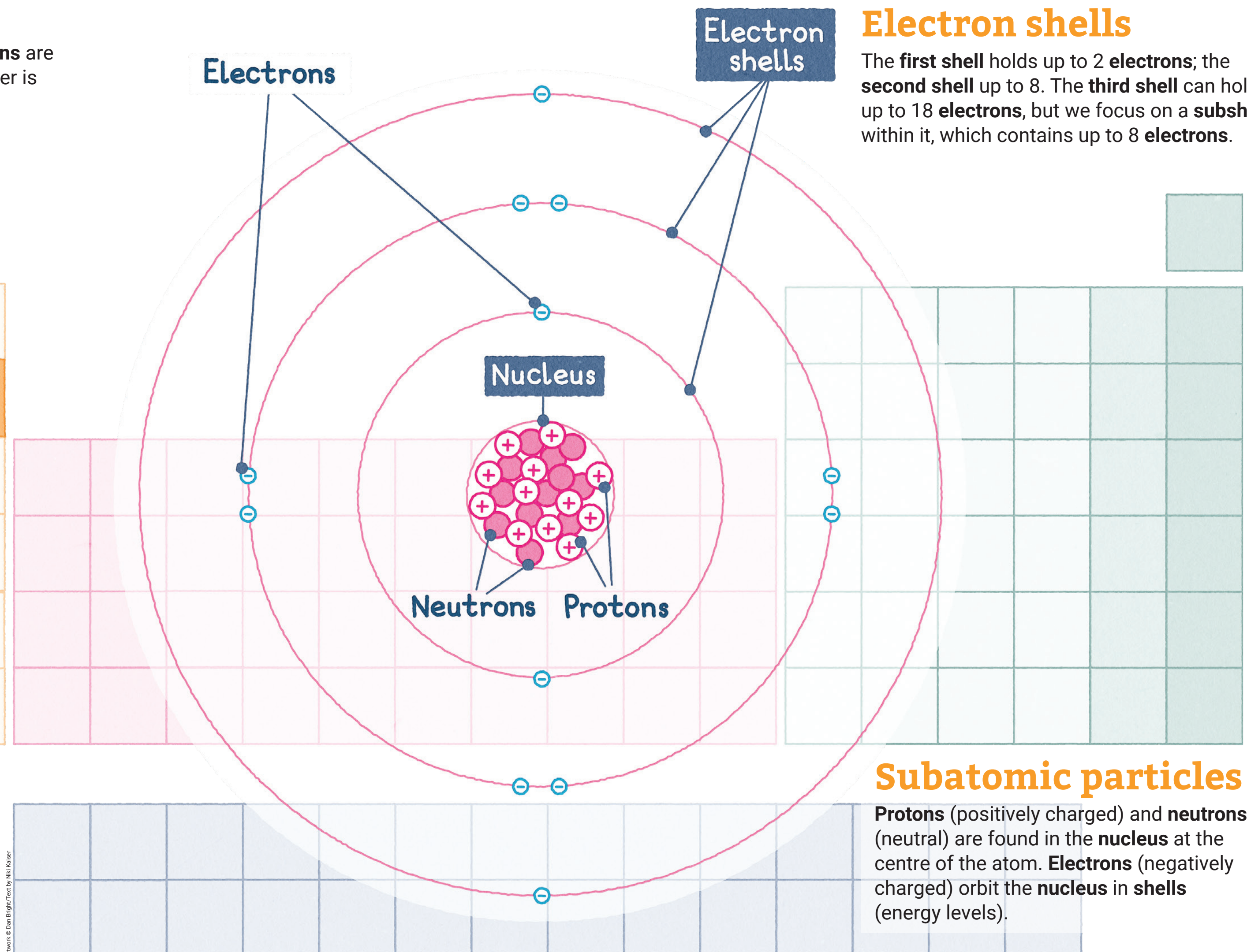


Atomic number

The **atomic number** determines an atom's identity. All atoms of a particular **element** contain the same number of **protons**.

Mass number

The **mass number** is the number of **protons** and **neutrons**. The number of **neutrons** may vary for a particular **element**.



Electron shells

The **first shell** holds up to 2 **electrons**; the **second shell** up to 8. The **third shell** can hold up to 18 **electrons**, but we focus on a **subshell** within it, which contains up to 8 **electrons**.

Subatomic particles

Protons (positively charged) and **neutrons** (neutral) are found in the **nucleus** at the centre of the atom. **Electrons** (negatively charged) orbit the **nucleus** in **shells** (energy levels).