How to 3 Video Narrative

Do you recall drawing models of atoms? The electrons are located in energy levels within the electron cloud.

Did you know that you can use the Periodic Table to identify the number of energy levels for an element?

In this video, we will learn that elements in the same period have the same number of energy levels.

Consider the first row of the Periodic Table, Period 1. All the elements in Period 1 have only one energy level. What about elements in Period 2? Elements in the second period have two energy levels. And the elements found in Period 3 have . . . three energy levels. What about Period 4? How many energy levels do you think Period 4 has? Four! Don't believe me? Well, let's check it out!

Remember the Bohr model of atoms and their energy levels? Let's consider carbon. Carbon has an atomic number of six, so it has six protons and six electrons. Two electrons are found in the first energy level and four are found in the second energy level. Carbon has only two energy levels. Notice carbon is located in Period 2.

Let's check out sodium. How many energy levels does sodium have? Well, sodium is located in Period 3, so it should have three energy levels.

Let's draw a model of an atom of sodium just to make sure. Sodium has an atomic number of 11, so it has 11 protons and 11 electrons. Two electrons go in the first energy level, eight electrons go in the second energy level, and one electron goes in the third energy level.

Yes! Sodium has three energy levels and is located in Period 3.

So, how many energy levels does phosphorous have? By looking at the Periodic Table, we can figure it out! Phosphorous is located in Period 3, so it has three energy levels.

What about calcium? How many energy levels does calcium have? Calcium is located in Period 4, so it has four energy levels.

So remember, elements in the same period have the same number of energy levels. Neat pattern, huh?