The Periodic Table of the Elements

* Lanthanide Series
  - Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu

+ Actinide Series
  - Th, Pa, U, Np, Pu, Am, Cm, Bk, Cf, Es, Fm, Md, No, Lr

By Shelley Moore
Scientists organize things too. They have organized everything we know into 2 groups. Matter and Energy.

All things in the world are made up of matter; Chairs, clouds, Harry Potter, and your favorite ice-cream sundae. We could go on FOREVER!!! We need to organize the matter into groups to help us understand. Do you know what the 3 groups of matter are called?
Matter is organized into 3 groups; solids, liquids and gases
People have always loved to organize things. Organizing things helps us to understand by seeing how things are different and how things are the same. What types of things do you organize at home? Your movies, your books, your closet?
My closet is organized by colour.

My books are organized by title.

My movies are organized by theme.

Organization helps us understand.
Another way that scientists organize matter is the Periodic Table. The Periodic Table is a chart that shows all the different elements that make up our world.
The periodic table is organized by:

- Rows and columns
- Element squares
- Metal and non metal
- Heavy and light
The Periodic Table is used to organize elements found in the world.

The Periodic Table is a chart that organizes different types of matter.
The Periodic Table is organized by rows and columns. The rows are called periods, and the columns are called groups.
The table is organized by rows (periods) and columns (groups).
The Periodic Table is also organized by little squares. Each square is a different element. A square for copper, a square for oxygen, and so on.
The table is organized into squares for each element.
This is one of the elements close up. It is called Helium. You may have heard of this element before. Helium is used to fill up balloons to make them float.

The letters in the middle of the square is the element’s symbol. It is kind of like the symbol’s nickname.
Each square has information about the element inside of it.

This is the square for the element Helium.
The square has other information on it too. There is a small number 2 in the corner. This number tells us the atomic number. The atomic number tells us how many protons and electrons the element has.

How many protons does Helium have?
How many electrons does Helium have?
The number in the corner tells us how many protons and electrons the element has.

The atomic number tells us how many protons and electrons there are.

He
The periodic table also organizes by elements made out of metal, and elements not made out of metal.

Can you think of other things made out of metal? Can you think of think made out of non-metal?
Elements are made out of either metals, or non-metals.

- Metals
- Non-metals
We can tell what the element is made out of by where it is on the table. The elements on the left side of the staircase are metals, and the elements on the right side of the staircase are non metals.
Elements on the left of the staircase are metals, elements on the right of the staircase are non-metals.
The periodic table also organizes by elements by how heavy they are.

Can you think of some things that are heavy? Which do you think would be lighter, metals or non-metals?
Elements can be heavy or lighter than each other.
One way that we can tell how heavy an element is, is by where it is located on the periodic table.

As you move up the table, elements get lighter, and as you move down the chart, elements get heavier.

For example: Helium is near the top of the chart so it would be lighter than Copper which is further down the table.

Which element would be heavier; Oxygen or Lead?
As the elements move down the table, they get heavier.
Another way that we can tell how heavy an element is, is by the atomic number.

As the atomic number gets bigger, the element gets heavier.

For example: The Atomic Number for Helium is 2 and the Atomic number for Copper is 29. Because the Atomic number for Copper is bigger, it is heavier than Helium.

Which element would be heavier; Hydrogen or Magnesium?
As the atomic number of the elements gets bigger, the weight of the element gets bigger too.
The Periodic Table is a chart that organizes elements that make up our world.