In this unit we will explore

1. How living organisms can be grouped in different ways

2. How scientists have developed ways to group all living organisms

3. Classification keys, and how to use and make them

4. The features of trees in our school grounds and how to use these to create a classification key

5. The life of scientist Carl Linnaeus

Science Skills that we will develop:

Explaining Science

- I use complex science words correctly

Classification

- I construct spider keys and use number keys

- I group and sub-group by fine observations

Classification

Understand what classification is and why we use it

Group a range of animals in different ways

Group and sub-group animals according to classification criteria

Learn about the ideas of the Ancient Greek philosopher Aristotle

L.O. Show an understanding of **classification** and how it is used by scientists

This Science unit is all about classification - but what does this mean? What do we do when we **classify** something?

Talk to a partner and then share your ideas.

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Scientists believe that there could be as many as 10 million different species of living things on Earth! It would be very hard to study the lives and behaviours of all these living things without grouping them together somehow.

Scientists **sort and group** living things according to their similarities and differences. This is called **classification.** Scientists who classify living things are called **taxonomists.**

(Greek: taxis *'arrangement'* **+** nomia *'distribution'*)

The task of grouping organisms starts with making **connections**.

Look at the animal cards and group them however you want.

Share with the class your criteria (reasons for sorting), but listen carefully to others' ideas:

Every time a new way of connecting the animals is shared, include that criteria in your own groupings (do **not** completely re-sort your cards, just divide up each of your existing groups according to the new criteria).

- Now try connecting the animals according to what you know about food chains.
- How about conservation?
- Finally, try connecting animals according to classification - in other words, put them into their animal 'families'.

Count and put away all your cards and return to your original tables.

Science skills success criteria: Classification	Me	Teacher
*I can create appropriate groups of animals using my own criteria		
** I create groups and **sub-groups** of animals using a range of easily observable criteria		
*** I create groups and **sub-groups** of animals using **a fine range** of observational criteria		

We will now become the directors of a new zoo: the Tyne Valley Zoo!

To help our visitors get the most out of their experience, we need to make sure that *similar species are housed near to each other.* Start with the very broad groups, then sub-divide those groups, and sub-divide again, if you can.

Use the sheet to help you record your own ideas.
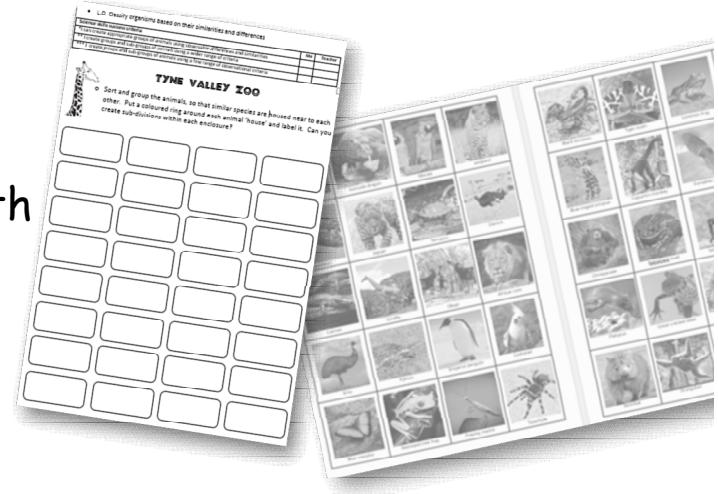
Hopefully, what you have realised, is that there are many ways to sort and group organisms.

Do you think that taxonomists use different classification methods like we have done?

Why might it be important to use the same method of classification, no matter where we are in the world?
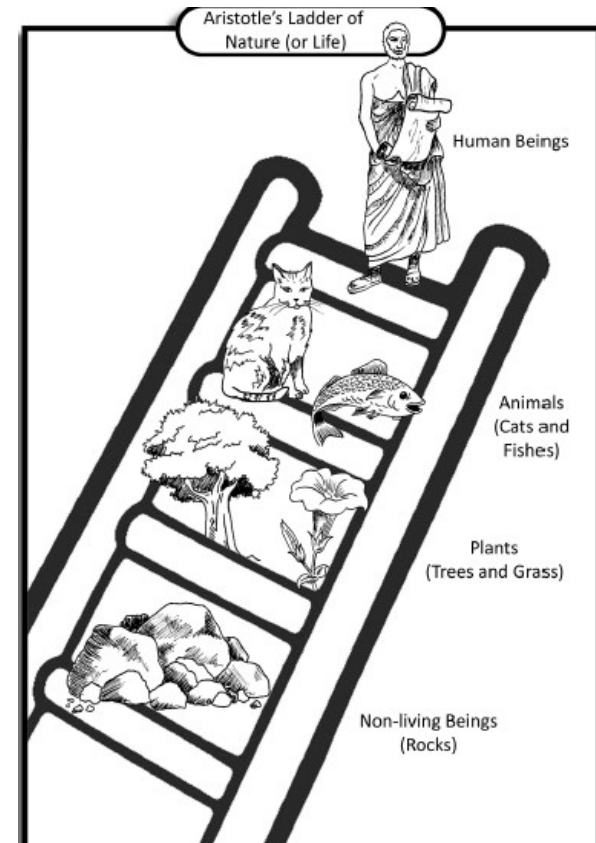
A standard system is useful because it allows scientists to accurately identify, group and properly name animals. Without a standard system, living things could be classified and named differently by different scientists.

Scientists have classified things for hundreds of years. In Ancient Greece, the philosopher and scientist **Aristotle** (384-322 BC) first classified living things. He carefully observed the world around him and decided there was a hierarchy (ranked in order) of living things, which he called the 'Ladder of Nature (or Life)'.
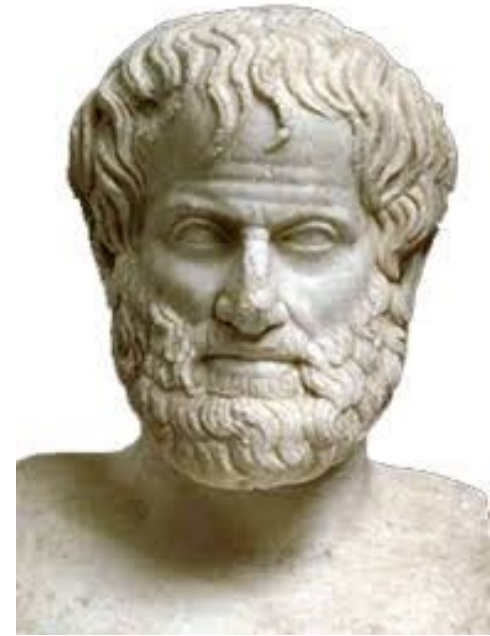
He saw two major groups: plants and animals, that he called **Kingdoms.**

- Plants were usually green, stationary and they could reproduce and grow.
- He placed animals at a higher level because they could move around to search for food and to escape from predators, and they were sensitive to their surroundings too.
- Human beings were placed at the top of the ladder because they could also think and were creative.
- Non-living things, like rocks, were at the bottom of the ladder.

Aristotle's Ladder of Nature (or Life)

Human Beings

Animals (Cats and Fishes)

Plants (Trees and Grass)

Non-living Beings (Rocks)

We still use the term Kingdom that Aristotle devised, but now most scientists use 5 Kingdoms (some prefer to use 6, others even 7). Let's explore them:

Now you have explored the five Kingdoms, try these games to see how much you have learnt.

Either use the ipads and search 'oum animal id games', or play as a class: